0033123

SD-CP-TI-094, REV 0

ORIGEN2 PREDICTIONS OF N-RECTOR CLADDING AND FUEL ACTIVATION PRODUCT COMPOSITION

SECTION 1 OF 2

ORIGINAL

0033123

Rockwell Hanford Operations

SUPPORTING DOCUMENT

Number	Rev. No.	Page A of 846 Total Pages
SD- CP-TI-094	Rev. 0	

PROGRAM: Chemical Processing

Document Title:
ORIGEN2 Predictions of N Reactor Cladding and Fuel Activation Product Composition

Baseline Document ☐ Yes ☒ No

WBS No. or Work Package No.
KP44C

Key Words:
ORIGEN2, N Reactor Fuel, Fission Products, Decay, Mark IV, Mark IA, PUREX, N Reactor

Prepared by (Name, Dept. No. and Signature)
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PROGRAM: Chemical Processing	Number: SD- CP-TI-094
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DESCRIPTION OF CHANGE

ORIGEN2 Predictions of N Reactor Fuel Fission Product Composition

1.0 INTRODUCTION

This document provides ORIGEN2 predictions of the cladding and fuel activation product composition of irradiated N Reactor fuels. This document supplements ORIGEN2 Predications of N Reactor Fuel Fission Product Composition (Reference 7), which replaces UNI-436 (Reference 1) as the "official" source of fission product composition predictions for irradiated N Reactor fuel (Reference 4).

Nine sets of the decay characteristics of N Reactor fuel and cladding activation products have been prepared (Reference 5) for a useful range of fuel exposures and decay times for Mark IV and Mark IA fuels and for a mixture of Mark IV and Mark IA fuels.*

Appendix	Fuel Type	Average Exposure** (MWd/ton***)	Pu-240 (% of Total Pu)
A	Mark IV	1000	6
B	Mark IV	1667	9
C	Mark IV	2500	12
D	Mark IA	1200	6
E	Mark IA	2000	9
F	Mark IA	3000	12
G	Mixture*	1040	6
H	Mixture*	1734	9
I	Mixture*	2600	12

Data for 12 decay times are included for each case.

(i.e., Discharge, 120 days, 180 days, 0.8 year, 1.0 year, 1.5 year, 2.0 years, 3.0 years, 4.0 years, 5.0 years, 7.5 years and 10.0 years).

The compositions of N Reactor fuel cladding and fuel impurities (Reference 9) used in ORIGEN2 to calculate activation products are given in Table 1 and Table 2, respectively. Each appendix provides activation product compositions in units of grams, curies and watts per metric ton of uranium for each of three cases:

1. Cladding only
2. Fuel impurities only
3. Fuel impurities plus cladding

---

*Eighty weight percent Mark IV and 20 weight percent Mark IA.

**Calculated by F. Schmittroth using data from Reference 1 and 3.

***"Ton" means short ton, i.e., 2000 pounds.

In general, maximum concentrations of fuel and cladding impurities have been used to provide upper limits for the activation product compositions of irradiated N Reactor fuel. Where lower, more typical impurity levels are known, additional ORIGEN2 cases can readily be generated. In some cases a direct ratio can be used. For example, the C-14 production in 8 ppm nitrogen cladding would be approximately 1/10 of the C-14 production in 80 ppm nitrogen cladding (Reference 5).

Table 1

N Reactor Fuel Cladding Composition
Used in ORIGEN2 Activation Product Calculations

Alloying Element	Weight Percent (Average)
Tin	1.45
Iron	0.135
Chromium	0.10
Nickel	0.055
Zirconium	98.26

Impurities	Maximum Concentrations (ppm) by Weight
Aluminum	75.0
Boron	0.5
Cadmium	0.5
Carbon	275.0
Cobalt	10.0
Copper	50.0
Hafnium	200.0
Hydrogen	25.0
Lead	100.0
Magnesium	20.0
Manganese	50.0
Molybdenum	50.0
Nitrogen	80.0
Silicon	100.0
Sodium	20.0
Titanium	50.0
Tungsten	50.0
Uranium	2.5
Vanadium	50.0

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Magnesium	20.0
Manganese	50.0
Molybdenum	50.0
Nitrogen	80.0
Silicon	100.0
Sodium	20.0
Titanium	50.0
Tungsten	50.0
Uranium	2.5
Vanadium	50.0

Table 2

N Reactor Fuel Impurity Concentrations
Used in ORIGEN2 Activation Product Calculations

Impurity	Concentration (ppm)	
Iron	350.0	Average
Aluminum	800.0	Average
Carbon	550.0	Average
Beryllium	10.0	Maximum
Boron	2.25	Maximum
Cadmium	0.25	Maximum
Chromium	65.0	Maximum
Copper	75.0	Maximum
Hydrogen	2.0	Maximum
Magnesium	25.0	Maximum
Manganese	25.0	Maximum
Nickel	100.0	Maximum
Nitrogen	75.0	Maximum
Silicon	125.0	Maximum
Zirconium	65.0	Maximum

The appendices are available both on paper (over 90 pages per case) and on microfiche. Additional cases may be generated and added to this document as the needs for them are established.

2.0 BACKGROUND

The computer code ORIGEN2 is a versatile point-depletion, production, and radioactive-decay code for used in simulating nuclear fuel cycles, and calculating the nuclide compositions and characteristics of materials contained therein. It represents a revision and update of the original ORIGEN computer code, which was developed at the Oak Ridge National Laboratory and distributed and used world-wide beginning in the early 1970s. Included in ORIGEN2 are provisions for incorporating data generated by more sophisticated reactor physics codes, a free-format input, and a highly flexible and controllable output. With these features, ORIGEN2 has the capability for simulating a wide variety of fuel cycle flowsheets.

The ORIGEN2 program can simulate fuel reprocessing by using separation factors for the various separation processes. Concentrations, activities, and decay heats can be expressed in a wide variety of units at selected decay times. The irradiation of fuel cladding and fuel impurities can be modeled in ORIGEN2 to calculate decayed activation products. Examples of the types of output which are available from ORIGEN2 are given in Reference 2.

In response to the need to have more accurate and versatile irradiated fuel composition data, N Reactor data libraries were generated beginning in fiscal year 1983 for the computer code ORIGEN2. This work was performed by Westinghouse Hanford Company, using multi-group cross sections and neutron fluxes (Reference 8) for the N Reactor provided by UNC Nuclear Industries Inc. (UNC) (Reference 6). Funding for this work was shared by Rockwell Hanford Operations, Pacific Northwest Laboratory and UNC. An upgrade of ORIGEN2 with N Reactor activation cross sections has been made. This upgrade calculates N Reactor fuel and cladding activation products. Results of these calculations are presented in this document. N Reactor fuel fission products are presented in Reference 7.

Table of Contents

Fuel Type	Pu-240, (% of Total Pu)	Appendix
Mark IV	6	A
Mark IV	9	B
Mark IV	12	C
Mark IA	6	D
Mark IA	9	E
Mark IA	12	F
Mixture*	6	G
Mixture*	9	H
Mixture*	12	I

*Eighty weight percent Mark IV and 20 weight percent Mark IA N Reactor fuel.

3.0 REFERENCES

1. J. P. McNeece, Isotopic Composition of Irradiated Mark IV and Mark IA Fuel, UNI-436, United Nuclear Industries, Inc., Richland Washington, (September 1975).

2. A. G. Croff and C. W. Alexander, Decay Characteristics of Once-Through LWR and LMFBR Spent Fuels, High-Level Wastes, and Fuel-Assembly Structural-Material Wastes, ORNL/TM-7431, Oak Ridge National Laboratory, Oak Ridge Tennessee (November 1980).

3. PUREX Plant Final Safety Analysis Report, SD-HS-SAR-001 (Rev. A-0), Rockwell Hanford Operations, Richland, Washington (September 1982).

4. Letter, June 7, 1984, J. H. Roecker and B. E. Knight to Those Listed, "ORIGEN2 Predictions of N Reactor Fuel Fission Product Composition."

5. Letter, July 8, 1986, H. J. Goldberg to D. C. Hedengren, "Activation Product Inventory for N Reactor Fuel."

6. F. A. Schmittroth, N Reactor Cross Sections for ORIGEN2, HEDL TME 85-7, Westinghouse Hanford Company, Richland, Washington, (To be issued).

7. D. C. Hedengren, ORIGEN2 Predictions of N Reactor Fuel Fission Product Composition, SD-CP-TI-077, Rockwell Hanford Operations, Richland Washington (March 1985).

8. Letter, January 10, 1985, G. H. Meriwether to F. M. Mann, "N Reactor Neutron Fluxes."

9. T. L. Deobald, N Reactor Updated Safety Analysis Report, NUSAR, UNI-M-90, UNC Nuclear Industries, Richland, Washington (February 1978).

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INTRODUCTION

THIS TEXT IS INTENDED TO BE A BRIEF OUTLINE OF THE ORIGEN2 COMPUTER CODE, WHICH IS A REVISED AND UPDATED VERSION OF THE ORIGEN DOCUMENTED IN REPORT ORNL-4628 (MAY 1973). INCLUDED HERE ARE A BRIEF DESCRIPTION OF THE FUNCTIONS OF ORIGEN2, A LISTING OF THE MAJOR DATA SOURCES, A LISTING OF THE PUBLISHED DOCUMENTATION CONCERNING ORIGEN2, AND AN OUTLINE OF THE ORIGEN2 OUTPUT ORGANIZATION. ORIGEN2 IS AVAILABLE FROM THE ORNL RADIATION SHIELDING INFORMATION CENTER (RSIC) AT THE FOLLOWING ADDRESS:

CODES COORDINATOR
RADIATION SHIELDING INFORMATION CENTER
BLDG. 6025
OAK RIDGE NATIONAL LABORATORY
OAK RIDGE, TENNESSEE 37830
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QUESTIONS CONCERNING ORIGEN2 SHOULD BE ADDRESSED TO RSIC.

DESCRIPTION

ORIGEN2 IS A REVISION AND UPDATE OF THE ORIGEN COMPUTER CODE. SPECIFICALLY, THE INPUT, OUTPUT, CONTROL, AND DATA BASE ASPECTS OF ORIGEN HAVE BEEN SIGNIFICANTLY REVISED AND UPDATED TO REFLECT CURRENT INFORMATION AND NEEDS. IT SHOULD BE NOTED THAT THE MATHEMATICAL METHODS USED TO SOLVE THE NUCLIDE BUILDUP, DEPLETION, AND DECAY EQUATIONS ARE ESSENTIALLY UNCHANGED FROM THAT IN ORIGEN. ORIGEN2 IS A COMPUTER CODE DESIGNED TO CALCULATE THE COMPOSITION AND CHARACTERISTICS OF NUCLEAR MATERIALS AS A FUNCTION OF DECAY TIME AND THE CHANGES THE MATERIALS UNDERGO DURING VARIOUS FUEL CYCLE OPERATIONS. INPUT AND OUTPUT FEATURES HAVE BEEN DESIGNED TO FACILITATE FLEXIBILITY IN THE TYPE OF CASES THAT CAN BE CONSIDERED AND IN CONTROLLING THE DETAIL OF THE OUTPUT. FOR FURTHER INFORMATION, THE USER IS REFERRED TO THE DOCUMENTATION LISTED BELOW.

MAJOR DATA SOURCES

VIRTUALLY ALL ASPECTS OF THE DATA INPUT TO ORIGEN2 HAVE BEEN UPDATED OR REVISED TO REFLECT CURRENT INFORMATION. THE PRINCIPAL SOURCES OF CROSS SECTION DATA WERE THE ENDF/B-IV, ENDF/B-V, AND LENDL COMPILATIONS. DECAY AND PHOTON INFORMATION WERE PRIMARILY BASED ON THE EVALUATED NUCLEAR STRUCTURE DATA FILE (ENSDF) AT ORNL AND ENDF/B-IV. DATA CONCERNING REACTOR AND FUEL CHARACTERISTICS WERE OBTAINED FROM REFERENCE SAFETY ANALYSIS REPORTS AND, WHERE POSSIBLE, THE COMMERCIAL REACTOR VENDORS.

DOCUMENTATION

THE FOLLOWING ITEMS CONSTITUTE THE ORIGEN2 DOCUMENTATION PUBLISHED AS OF THE DATE OF THIS CODE PACKAGE:

A.G. CROFF, 'ORIGEN2 - A REVISED AND UPDATED VERSION OF THE OAK RIDGE ISOTOPE GENERATION AND DEPLETION CODE', ORNL-5621 (JULY 1980).
A.G. CROFF, 'A USER'S MANUAL FOR THE ORIGEN2 COMPUTER CODE', ORNL/TM-7175 (JULY 1980).
A.G. CROFF, M.A. BJERKE, G.W.MORRISON, AND L.M. PETRIE, 'REVISED URANIUM-PLUTONIUM CYCLE PWR AND BWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-6051 (SEPTEMBER 1978).
A.G. CROFF AND M.A. BJERKE, 'ALTERNATIVE FUEL CYCLE PWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-7005 (FEB 1980).
A.G. CROFF, R.L. HAESE, AND N.B. GOVE, 'UPDATED DECAY AND PHOTON LIBRARIES FOR THE ORIGEN CODE', ORNL/TM-6055 (FEB 1979)
A.G. CROFF, 'ORIGEN2: A REVISED AND UPDATED VERSION OF ORIGEN', TRANS. AM. NUCL. SOC., VOL. 34, P. 349-50 (JUNE 1980).

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****************************** ORIGEN2:  A REVISED AND UPDATED VERSION OF THE ORIGEN COMPUTER CODE ******************************
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ORGANIZATION OF ORIGEN2 OUTPUT

PAST EXPERIENCE HAS INDICATED THAT MANY USERS ENCOUNTER CONSIDERABLE DIFFICULTY IN FINDING THE DESIRED INFORMATION IN A ORIGEN2 OUT PUT WHICH IS SOMETIMES RATHER MASSIVE. THIS SECTION IS INTENDED AS A BRIEF OUTLINE OF THE ORGANIZATION OF ORIGEN2 OUTPUT. FOR DETAILS REFER TO THE USER'S MANUAL (ORNL/TM-7175, SECT. 8.2). THE ORIGEN2 OUTPUT IS EXTREMELY HIERARCHICAL, AND IS ORGANIZED AS FOLLOWS:

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CARD INPUT ECHO
MISCELLANEOUS INPUT DATA (NEUTRON YIELDS, REPROCESSING LOSSES,ELEMENT CHEMICAL TOXICITIES
LISTING OF ORIGEN2 COMMANDS CURRENTLY BEING EXECUTED
LISTING OF ORIGEN2 DATA LIBRARIES (IF SPECIFIED)
  DECAY LIBRARY
    ACTIVATION PRODUCTS
    ACTINIDES
    FISSION PRODUCTS
  CROSS SECTION/FISSION PRODUCT YIELD LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
  PHOTON LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
OUTPUT 1
  REACTIVITY AND BURNUP DATA
  ACTIVATION PRODUCT TABLES
    GRAM TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    CURIE TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    ETC. (DEPENDING ON THE OUTPUT OPTIONS SPECIFIED, MANY OF THESE TABLES MAY BE OMITTED
      .
  ACTINIDE TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  FISSION PRODUCT TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  NEUTRON PRODUCTION RATE TABLES: (ALPHA,N) AND SPONTANEOUS FISSION
  PHOTON TABLES
    ACTIVATION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    ACTINIDES (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    FISSION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
OUTPUT 2
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
  .
  .
OUTPUT N
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
TABLE OF CONTENTS (UNIT 12) FOR THE ABOVE (UNIT 6) OUTPUT
VARIABLE CROSS SECTION INFORMATION OUTPUT (UNIT 16)
DEBUGGING AND OTHER INTERNAL INFORMATION OUTPUT (UNIT 15)
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THE SCENARIO LISTED ABOVE CONSTITUTES A TYPICAL ORIGEN2 OUTPUT FOR MANY CASES. ONE POSSIBLE MODIFICATION IS THE USE OF AN STP COMMAND TO EXECUTE AN ADDITIONAL SET OF INSTRUCTIONS AFTER THE FIRST SET HAS BEEN EXECUTED. IF THIS IS DONE, THE OUTPUT WILL BEGIN WITH 'MISCELLANEOUS INPUT DATA' IF NSTP=1, 'ORIGEN2COMMANDS CURRENTLY BEING EXECUTED' IF NSTP=2, OR 'OUTPUT 1' FOR NSTP=3. ANOTHER OFTEN-USED OPTION IS TO EMPLOY BOTH THE PRIMARY (UNIT 6) AND ALTERNATE (UNIT 11) OUTPUT UNITS. IF BOTH ARE ROUTED TO PAPER, THE TABLE OF CONTENTS FOR UNIT 11, WHICH IS ON UNIT 13, WILL IMMEDIATELY FOLLOW THE DEBUGGING AND INTERNAL INFORMATION (UNIT 15) OUTPUT. THE 'OUTPUT N' TABLES FOR UNIT 11 WILL BE PRINTED FOLLOWING THE TABLE OF CONTENTS.

LISTING OF INPUT DATA ON UNIT = 5

INPUT UNIT	WRITE UNIT	CARD NUMBER		CARD IMAGE
5	50	1	-1	
5	50	2	-1	
5	50	3	-1	
5	50	4	TIT	ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
5	50	5	RDA	CALCULATED BY HARVEY GOLDBERG , SENIOR ENGINEER
5	50	6	RDA	NUCLEAR & SAFETY ANALYSIS GROUP , R. H. O.
5	50	7	LIP	0 0 0
5	50	8	LIB	0 1 2 3 421 422 423 9 3 0 1 42
5	50	9	RDA	TWO IRRADIATION RUNS WERE DONE PREVIOUSLY WITH RESULTS
5	50	10	RDA	STORED ON FILES 6PCMKIVI, 6PCMKIVO.
5	50	11	RDA	1 METRIC TON MK IV INNER FUEL IRRADIATED FOR AN AVERAGE
5	50	12	RDA	BURNUP OF 913 MWD/MTIHM
5	50	13	RDA	THIS IS THE INITIAL PURE URANIUM AND HARDWARE
5	50	14	INP	-8 -2 -1 -1 1 1
5	50	15	RDA	THIS IS THE INITIAL IMPURITIES IN THE URANIUM
5	50	16	INP	-7 -2 -1 -1 1 1
5	50	17	RDA	THIS IS THE DISCHARGED PURE FUEL AND HARDWARE
5	50	18	INP	-6 -2 -1 -1 1 1
5	50	19	RDA	THIS IS THE DISCHARGED IMPURITIES
5	50	20	INP	-5 -2 -1 -1 1 1
5	50	21	RDA	1 METRIC TON MK IV OUTER FUEL IRRADIATED FOR AN AVERAGE
5	50	22	RDA	BURNUP OF 1188 MWD/MTIHM
5	50	23	RDA	THIS IS THE INITIAL PURE URANIUM AND HARDWARE
5	50	24	INP	-4 -2 -1 -1 1 1
5	50	25	RDA	THIS IS THE INITIAL IMPURITIES IN THE URANIUM
5	50	26	INP	-3 -2 -1 -1 1 1
5	50	27	RDA	THIS IS THE DISCHARGED PURE FUEL AND HARDWARE
5	50	28	INP	-2 -2 -1 -1 1 1
5	50	29	RDA	THIS IS THE DISCHARGED IMPURITIES
5	50	30	INP	-1 -2 -1 -1 1 1
5	50	31	RDA	COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF PURE FUEL
5	50	32	MOV	-6 -9 0 0.317 31.7 PCT MK IV INNER
5	50	33	ADD	-2 -9 0 0.683 68.3 PCT MK IV OUTER
5	50	34	MOV	-9 -2 0 1.0 PURE FUEL DISCHARGED
5	50	35	RDA	COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF IMPURITIES
5	50	36	MOV	-5 -9 0 0.317 31.7 PCT MK IV INNER
5	50	37	ADD	-1 -9 0 0.683 68.3 PCT MK IV OUTER
5	50	38	MOV	-9 -1 0 1.0 DISCHARGED IMPURITIES
5	50	39	RDA	COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF PURE FUEL
5	50	40	MOV	-8 -9 0 0.317 31.7 PCT MK IV INNER
5	50	41	ADD	-4 -9 0 0.683 68.3 PCT MK IV OUTER
5	50	42	MOV	-9 -4 0 1.0 INITIAL CHARGE OF PURE FUEL
5	50	43	RDA	COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF IMPURITIES
5	50	44	MOV	-7 -9 0 0.317 31.7 PCT MK IV INNER
5	50	45	ADD	-3 -9 0 0.683 68.3 PCT MK IV OUTER
5	50	46	MOV	-9 -3 0 1.0 INITIAL CHARGE OF IMPURITIES
5	50	47	BAS	ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240
5	50	48	MOV	-4 1 0 1.0
5	50	49	MOV	-2 2 0 1.0

LISTING OF INPUT DATA ON UNIT = 5

INPUT UNIT	WRITE UNIT	CARD NUMBER		CARD IMAGE
5	50	50	DEC	120. 2 3 4 2
5	50	51	DEC	180. 3 4 4 0
5	50	52	DEC	0.75 4 5 5 0
5	50	53	DEC	1.0 5 6 5 0
5	50	54	DEC	1.5 6 7 5 0
5	50	55	DEC	2.0 7 8 5 0
5	50	56	DEC	3.0 8 9 5 0
5	50	57	DEC	5.0 9 10 5 0
5	50	58	DEC	7.5 10 11 5 0
5	50	59	DEC	10.0 11 12 5 0
5	50	60	PHO	101 102 103 10
5	50	61	CUT	5 1.E-10 7 1.E-10 9 1.E-10 23 1.E-10 27 1.0 -1
5	50	62	RDA	ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
5	50	63	OPTL	8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
5	50	64	RDA	FISSION PRODUCTS OUTPUT TABLE OPTIONS
5	50	65	OPTF	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
5	50	66	RDA	ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
5	50	67	OPTA	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
5	50	68	HED	1 CHARGE
5	50	69	HED	2 DISCHARGE
5	50	70	OUT	12 1 -1 0
5	50	71	BAS	ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240
5	50	72	MOV	-3 1 0 1.0
5	50	73	MOV	-1 2 0 1.0
5	50	74	DEC	120. 2 3 4 2
5	50	75	DEC	180. 3 4 4 0
5	50	76	DEC	0.75 4 5 5 0
5	50	77	DEC	1.0 5 6 5 0
5	50	78	DEC	1.5 6 7 5 0
5	50	79	DEC	2.0 7 8 5 0
5	50	80	DEC	3.0 8 9 5 0
5	50	81	DEC	5.0 9 10 5 0
5	50	82	DEC	7.5 10 11 5 0
5	50	83	DEC	10.0 11 12 5 0
5	50	84	PHO	101 102 103 10
5	50	85	CUT	5 1.E-10 7 1.E-10 9 1.E-10 23 1.E-10 27 1.0 -1
5	50	86	RDA	ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
5	50	87	OPTL	8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
5	50	88	RDA	FISSION PRODUCTS OUTPUT TABLE OPTIONS
5	50	89	OPTF	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
5	50	90	RDA	ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
5	50	91	OPTA	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
5	50	92	HED	1 CHARGE
5	50	93	HED	2 DISCHARGE
5	50	94	OUT	12 1 -1 0
5	50	95	BAS	ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240
5	50	96	MOV	-4 1 0 1.0
5	50	97	ADD	-3 1 0 1.0
5	50	98	MOV	-2 2 0 1.0
5	50	99	ADD	-1 2 0 1.0

LISTING OF INPUT DATA ON UNIT = 5

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INPUT   WRITE    CARD                                        CARD IMAGE
UNIT    UNIT     NUMBER
   5      50       100    DEC     120.      2   3   4   2
   5      50       101    DEC     180.      3   4   4   0
   5      50       102    DEC     0.75      4   5   5   0
   5      50       103    DEC      1.0      5   6   5   0
   5      50       104    DEC      1.5      6   7   5   0
   5      50       105    DEC      2.0      7   8   5   0
   5      50       106    DEC      3.0      8   9   5   0
   5      50       107    DEC      5.0      9  10   5   0
   5      50       108    DEC      7.5     10  11   5   0
   5      50       109    DEC     10.0     11  12   5   0
   5      50       110    PHO     101  102  103  10
   5      50       111    CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
   5      50       112    RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
   5      50       113    OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50       114    RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
   5      50       115    OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50       116    RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
   5      50       117    OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50       118    HED     1   CHARGE
   5      50       119    HED     2   DISCHARGE
   5      50       120    OUT     12  1  -1  0
   5      50       121    STP 4
   5      50       122    2        922350  0.01249E+6    922380  0.98709E+6  0  0.0   PURE FUEL
   5      50       123    2        922340  0.00008E+6    922360  0.00033E+6  0  0.0   1.25 %
   5      50       124    0
   5      50       125    2        922350  0.00947E+6    922380  0.99041E+6  0  0.0   PURE FUEL
   5      50       126    2        922340  0.00009E+6    922360  0.00003E+6  0  0.0   0.947 %
   5      50       127    0
   5      50       128    4 130000  75.    500000 1.45E+4   260000 1350.   240000 1000.        ZIRCALOY
   5      50       129    4 280000 550.     60000 275.      920000    2.5  400000 0.9814E+6    ZIRCALOY
   5      50       130    4  50000   0.5  480000   0.5     270000   10.   290000   50.        ZIRCALOY
   5      50       131    4 720000 200.     10000  25.      820000  100.   120000   20.        ZIRCALOY
   5      50       132    4 250000  50.    420000  50.       70000   80.   140000  100.        ZIRCALOY
   5      50       133    4 110000  20.    220000  50.      740000   50.   230000   50.        ZIRCALOY
   5      50       134    0
   5      50       135    4 400000  65.    290000  75.      480000    0.25  40000    10.    IMPURITIES IN
   5      50       136    4 130000 800.     10000   2.      140000  125.   280000  100.    1 METRIC TON
   5      50       137    4 250000   25.   120000   25.     260000  350.   240000   65.          OF
   5      50       138    4  50000   2.25  70000   75.      60000  550.        0    0.0       URANIUM
   5      50       139    0
   5      50       140    END
```

OUTPUT UNIT = 6

NEUTRON YIELD PER NEUTRON-INDUCED FISSION

NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD
832090	.0000	882230	.0000	882260	.0000	882280	.0000	892270	.0000	902270	.0000
902280	.0000	902290	2.0490	902300	.0000	902320	2.4180	902330	.0000	902340	.0000
912310	.0000	912320	.0000	912330	2.6630	912341	.0000	912340	.0000	922300	.0000
922310	.0000	922320	.0000	922330	2.4990	922340	2.6310	922350	2.4210	922360	2.7340
922370	.0000	922380	2.8010	922390	.0000	922400	.0000	932360	.0000	932370	3.0050
932380	.0000	932390	.0000	942360	2.8700	942370	.0000	942380	2.8330	942390	2.8750
942400	3.1350	942410	2.9340	942420	3.2800	942430	.0000	952410	3.2770	952421	3.1820
952420	3.3600	952430	3.7320	952441	.0000	952440	.0000	962420	3.7460	962430	3.4340
962440	3.7250	962450	3.8320	962460	3.8580	962470	3.5920	962480	3.7960	962490	.0000
972490	3.7600	982490	4.0620	982500	3.9700	982510	4.1400	982520	4.1260	982530	4.1500
982540	.0000	992530	.0000	992541	.0000	992540	.0000	0	0000	0	.0000

SPONTANEOUS FISSION NEUTRON YIELD, NEUT/FISSION

NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE	
922350	1.6950	922360	1.6500	922370	1.8720	922380	2.0000	922390	2.0480	932361	1.7900
932360	1.7830	932370	1.8730	932380	1.9830	932390	2.0530	942360	2.2200	942370	1.8860
942380	2.2800	942390	2.2400	942400	2.1600	942410	2.2500	942420	2.1500	942430	2.4300
942440	2.3000	952400	2.2900	952410	2.3830	952420	2.4750	952421	2.5900	952430	2.5200
952440	2.6570	952441	2.6650	962410	2.5000	962420	2.5900	962430	2.6870	962440	2.7600
962450	2.8720	962460	3.0000	962480	3.3200	962500	3.5600	972490	3.7200	982490	3.4400
982500	3.5600	982520	3.7250	982540	3.9000	992530	3.9200	992540	4.0400	992550	4.1600

THE REMAINING NEUTRON YIELDS ARE CALCULATED FROM THE EQUATION: NEUT/FISS=(2.84+0.1225*(AT WT-244)

OUTPUT UNIT = 6

INDIVIDUAL ELEMENT FRACTIONAL RECOVERIES

ELEMENT	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
1	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.9000000	1.0000000
2	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
3	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
4	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
5	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
6	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
7	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
8	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
9	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
10	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
11	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
12	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
13	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
14	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
15	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
16	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
17	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
18	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
19	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
20	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
21	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
22	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
23	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
24	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
25	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
26	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
27	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
28	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
29	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
30	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
31	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
32	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
33	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
34	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
35	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
36	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
37	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
38	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
39	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
40	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
41	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
42	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
43	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
44	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
45	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
46	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
47	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
48	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
49	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000

INDIVIDUAL ELEMENT FRACTIONAL RECOVERIES

ELEMENT	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
50	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
51	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
52	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
53	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
54	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
55	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
56	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
57	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
58	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
59	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
60	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
61	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
62	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
63	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
64	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
65	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
66	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
67	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
68	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
69	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
70	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
71	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
72	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
73	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
74	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
75	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
76	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
77	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
78	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
79	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
80	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
81	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
82	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
83	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
84	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
85	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
86	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
87	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
88	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
89	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
90	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
91	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
92	.9950000	1.0000000	.0005000	.9990000	1.0000000	.2000000	.8000000	1.0000000	.0000000	1.0000000
93	.0000000	1.0000000	.0005000	.0000000	.0500000	.0500000	.0000000	.0000000	.0000000	1.0000000
94	.9950000	1.0000000	.0005000	.9999000	1.0000000	.0200000	.0000000	.0000000	.0000000	1.0000000
95	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
96	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
97	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
98	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
99	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000

GROUP FRACTIONAL RECOVERIES

GROUP	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
1	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000
2	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
3	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
4	.9950000	1.0000000	.0005000	.9990000	1.0000000	.2000000	.6000000	1.0000000	.0000000	.0000000
5	.0000000	1.0000000	.0005000	.0000000	.0500000	.0500000	.0000000	.0000000	.0000000	.0000000
6	.9950000	1.0000000	.0005000	.9999000	1.0000000	.0200000	.0000000	.0000000	.0000000	.0000000
7	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
8	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
9	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
10	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
11	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
12	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000
13	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
14	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.9000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
16	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
17	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
18	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
19	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

OUTPUT UNIT = 6

ELEMENT ASSIGNMENTS TO FRACTIONAL RECOVERY GROUPS

ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP
1	14	2	13	3	1	4	1	5	1	6	13	7	13	8	1	9	12
10	13	11	1	12	1	13	1	14	1	15	1	16	1	17	12	18	13
19	1	20	1	21	1	22	1	23	1	24	1	25	1	26	1	27	1
28	1	29	1	30	1	31	1	32	1	33	1	34	1	35	12	36	13
37	1	38	1	39	1	40	1	41	1	42	1	43	1	44	1	45	1
46	1	47	1	48	1	49	1	50	1	51	1	52	1	53	12	54	13
55	1	56	1	57	1	58	1	59	1	60	1	61	1	62	1	63	1
64	1	65	1	66	1	67	1	68	1	69	1	70	1	71	1	72	1
73	1	74	1	75	1	76	1	77	1	78	1	79	1	80	1	81	1
82	1	83	1	84	1	85	1	86	13	87	1	88	1	89	1	90	2
91	3	92	4	93	5	94	6	95	7	96	8	97	9	98	10	99	11

OUTPUT UNIT = 6

CHEMICAL TOXICITIES, GRAMS PER M**3 WATER

NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY
1	3.50+003	2	2.00-001	3	5.00+000	4	1.00+000	5	1.00+000	6	4.00+002
7	1.00-002	8	9.45+005	9	1.00+000	10	1.00+000	11	1.00+003	12	1.00+001
13	1.00-002	14	5.00+000	15	1.00-002	16	5.00+001	17	1.50-001	18	1.00+001
19	1.00+003	20	3.00+001	21	5.00-001	22	1.00-001	23	1.00-001	24	2.00-002
25	1.00-002	26	5.00-002	27	5.00-002	28	5.00-002	29	1.00-002	30	5.00-002
31	2.00-001	32	5.00-001	33	1.00-002	34	1.00-002	35	3.00+000	36	4.00+001
37	5.00+001	38	1.00+001	39	1.00-003	40	1.00+000	41	2.00-002	42	5.00-001
43	1.00+002	44	1.00+000	45	5.00-002	46	5.00-002	47	1.00-003	48	1.00-002
49	2.00-002	50	5.00-002	51	5.00-002	52	2.00-001	53	1.00+001	54	1.50+002
55	5.00+000	56	5.00-001	57	1.00+000	58	2.00+000	59	1.00+000	60	2.00-001
61	1.00+000	62	2.00-001	63	2.00-001	64	2.00-001	65	5.00-001	66	1.00+000
67	1.00+000	68	1.00-001	69	2.00-001	70	1.00-001	71	1.00-001	72	5.00-002
73	1.00+000	74	1.00+002	75	1.00+001	76	1.00+000	77	8.00-001	78	3.00-001
79	2.00-002	80	2.00-003	81	5.00-003	82	1.00-002	83	1.00-001	84	2.00-001
85	1.00+001	86	5.00+002	87	5.00+000	88	1.00-003	89	2.00-002	90	5.00-004
91	5.00-003	92	5.00-001	93	8.00-003	94	8.00-004	95	4.00-002	96	5.00-001
97	5.00-003	98	1.00-002	99	1.00-002						

OUTPUT UNIT = 6 PAGE

```
 1   0 TIT  *TIT    ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0          *
 2   0 RDA  *RDA    CALCULATED BY HARVEY GOLDBERG , SENIOR ENGINEER                    *
 3   0 RDA  *RDA    NUCLEAR & SAFETY ANALYSIS GROUP , R. H. O.                         *
 4   0 LIP  *LIP    0 0 0                                                              *
 5   0 LIB  *LIB    0 1 2 3 421 422 423 9 3 0 1 42                                     *
 6   0 RDA  *RDA    TWO IRRADIATION RUNS WERE DONE PREVIOUSLY WITH RESULTS             *
 7   0 RDA  *RDA     STORED ON FILES 6PCMKIVI, 6PCMKIVO,                               *
 8   0 RDA  *RDA    1 METRIC TON MK IV INNER FUEL IRRADIATED FOR AN AVERAGE            *
 9   0 RDA  *RDA     BURNUP OF 913 MWD/MTIHM                                           *
10   0 RDA  *RDA     THIS IS THE INITIAL PURE URANIUM AND HARDWARE                     *
11   0 INP  *INP    -8 -2  -1  -1  1  1                                                *
12   0 RDA  *RDA     THIS IS THE INITIAL IMPURITIES IN THE URANIUM                     *
13   0 INP  *INP    -7 -2  -1  -1  1  1                                                *
14   0 RDA  *RDA     THIS IS THE DISCHARGED PURE FUEL AND HARDWARE                     *
15   0 INP  *INP    -6 -2  -1  -1  1  1                                                *
16   0 RDA  *RDA     THIS IS THE DISCHARGED IMPURITIES                                 *
17   0 INP  *INP    -5 -2  -1  -1  1  1                                                *
18   0 RDA  *RDA    1 METRIC TON MK IV OUTER FUEL IRRADIATED FOR AN AVERAGE            *
19   0 RDA  *RDA    BURNUP OF 1188 MWD/MTIHM                                           *
20   0 RDA  *RDA     THIS IS THE INITIAL PURE URANIUM AND HARDWARE                     *
21   0 INP  *INP    -4 -2  -1  -1  1  1                                                *
22   0 RDA  *RDA     THIS IS THE INITIAL IMPURITIES IN THE URANIUM                     *
23   0 INP  *INP    -3 -2  -1  -1  1  1                                                *
24   0 RDA  *RDA     THIS IS THE DISCHARGED PURE FUEL AND HARDWARE                     *
25   0 INP  *INP    -2 -2  -1  -1  1  1                                                *
26   0 RDA  *RDA     THIS IS THE DISCHARGED IMPURITIES                                 *
27   0 INP  *INP    -1 -2  -1  -1  1  1                                                *
28   0 RDA  *RDA    COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF PURE FUEL        *
29   0 MOV  *MOV    -6 -9  0  0.317      31.7 PCT MK IV INNER                          *
30   0 ADD  *ADD    -2 -9  0  0.683      68.3 PCT MK IV OUTER                          *
31   0 MOV  *MOV    -9 -2  0  1.0        PURE FUEL DISCHARGED                          *
32   0 RDA  *RDA    COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF IMPURITIES       *
33   0 MOV  *MOV    -5 -9  0  0.317      31.7 PCT MK IV INNER                          *
34   0 ADD  *ADD    -1 -9  0  0.683      68.3 PCT MK IV OUTER                          *
35   0 MOV  *MOV    -9 -1  0  1.0        DISCHARGED IMPURITIES                         *
36   0 RDA  *RDA    COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF PURE FUEL    *
37   0 MOV  *MOV    -8 -9  0  0.317      31.7 PCT MK IV INNER                          *
38   0 ADD  *ADD    -4 -9  0  0.683      68.3 PCT MK IV OUTER                          *
39   0 MOV  *MOV    -9 -4  0  1.0        INITIAL CHARGE OF PURE FUEL                   *
40   0 RDA  *RDA    COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF IMPURITIES   *
41   0 MOV  *MOV    -7 -9  0  0.317      31.7 PCT MK IV INNER                          *
42   0 ADD  *ADD    -3 -9  0  0.683      68.3 PCT MK IV OUTER                          *
43   0 MOV  *MOV    -9 -3  0  1.0        INITIAL CHARGE OF IMPURITIES                  *
44   0 BAS  *BAS    ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240 *
45   0 MOV  *MOV    -4  1   0   1.0                                                    *
46   0 MOV  *MOV    -2  2   0   1.0                                                    *
47   0 DEC  *DEC    120.       2   3  4  2                                             *
48   0 DEC  *DEC    180.       3   4  4  0                                             *
49   0 DEC  *DEC    0.75       4   5  5  0                                             *
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50    0 DEC  *DEC      1.0       5   6  5  0                                    *
51    0 DEC  *DEC      1.5       6   7  5  0                                    *
52    0 DEC  *DEC      2.0       7   8  5  0                                    *
53    0 DEC  *DEC      3.0       8   9  5  0                                    *
54    0 DEC  *DEC      5.0       9  10  5  0                                    *
55    0 DEC  *DEC      7.5      10  11  5  0                                    *
56    0 DEC  *DEC     10.0      11  12  5  0                                    *
57    0 PHO  *PHO     101  102  103  10                                         *
58    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1    *
59    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                  *
60    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
61    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                     *
62    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
63    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS                *
64    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
65    0 HED  *HED     1   CHARGE                                                *
66    0 HED  *HED     2   DISCHARGE                                             *
67    0 OUT  *OUT     12  1  -1  0                                              *
68    0 BAS  *BAS     ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240 *
69    0 MOV  *MOV     -3  1   0   1.0                                          *
70    0 MOV  *MOV     -1  2   0   1.0                                          *
71    0 DEC  *DEC     120.      2   3  4  2                                    *
72    0 DEC  *DEC     180.      3   4  4  0                                    *
73    0 DEC  *DEC     0.75      4   5  5  0                                    *
74    0 DEC  *DEC      1.0      5   6  5  0                                    *
75    0 DEC  *DEC      1.5      6   7  5  0                                    *
76    0 DEC  *DEC      2.0      7   8  5  0                                    *
77    0 DEC  *DEC      3.0      8   9  5  0                                    *
78    0 DEC  *DEC      5.0      9  10  5  0                                    *
79    0 DEC  *DEC      7.5      10  11  5  0                                    *
80    0 DEC  *DEC     10.0      11  12  5  0                                    *
81    0 PHO  *PHO     101  102  103  10                                         *
82    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1    *
83    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                  *
84    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
85    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                     *
86    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
87    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS                *
88    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
89    0 HED  *HED     1   CHARGE                                                *
90    0 HED  *HED     2   DISCHARGE                                             *
91    0 OUT  *OUT     12  1  -1  0                                              *
92    0 BAS  *BAS     ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240 *
93    0 MOV  *MOV     -4  1   0   1.0                                          *
94    0 ADD  *ADD     -3  1   0   1.0                                          *
95    0 MOV  *MOV     -2  2   0   1.0                                          *
96    0 ADD  *ADD     -1  2   0   1.0                                          *
97    0 DEC  *DEC     120.      2   3  4  2                                    *
98    0 DEC  *DEC     180.      3   4  4  0                                    *
99    0 DEC  *DEC     0.75      4   5  5  0                                    *
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100    0 DEC  *DEC      1.0      5   6  5  0                                  *
101    0 DEC  *DEC      1.5      6   7  5  0                                  *
102    0 DEC  *DEC      2.0      7   8  5  0                                  *
103    0 DEC  *DEC      3.0      8   9  5  0                                  *
104    0 DEC  *DEC      5.0      9  10  5  0                                  *
105    0 DEC  *DEC      7.5     10  11  5  0                                  *
106    0 DEC  *DEC     10.0     11  12  5  0                                  *
107    0 PHO  *PHO     101  102  103  10                                      *
108    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1 *
109    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS               *
110    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 *
111    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                  *
112    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 *
113    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS             *
114    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 *
115    0 HED  *HED     1   CHARGE                                             *
116    0 HED  *HED     2   DISCHARGE                                          *
117    0 OUT  *OUT     12  1  -1  0                                           *
118    0 STP  *STP 4                                                          *
OVERFLOW AT LINE 197 OF NUDAT1 FOR I =    11

SUM OF YIELDS FOR EACH FISSILE ISOTOPE:                    .0000      .0000     2.0001+000 2.0002+000 2.0006+000 2.0003+000

ISOTOPES FOR WHICH YIELDS ARE EXPLICITLY ACCOUNTED FOR: 922350 922380 942390 942410
```

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	1.14030	1.14031	1.14036	1.14041	1.14050	1.14058	1.14069	1.14078	1.14076	1.14066
NEUT PRODN	.00	.00	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003
NEUT DESTN	.00	.00	4.75+003	4.75+003	4.75+003	4.75+003	4.75+003	4.75+003	4.75+003	4.75+003	4.75+003	4.75+003
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	1.758+000	1.758+000	1.758+000	1.758+000	1.758+000	1.758+000	1.758+000	1.758+000	1.758+000	1.758+000	1.758+000	1.758+000
H 2	5.276-004	7.136-004	7.136-004	7.136-004	7.136-004	7.136-004	7.136-004	7.136-004	7.136-004	7.136-004	7.136-004	7.136-004
HE 4	.000	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003
LI 7	.000	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003
BE 9	.000	8.490-006	8.490-006	8.490-006	8.490-006	8.490-006	8.490-006	8.490-006	8.490-006	8.490-006	8.490-006	8.490-006
B 10	6.514-003	3.537-003	3.537-003	3.537-003	3.537-003	3.537-003	3.537-003	3.537-003	3.537-003	3.537-003	3.537-003	3.537-003
B 11	2.866-002	2.884-002	2.884-002	2.884-002	2.884-002	2.884-002	2.884-002	2.884-002	2.884-002	2.884-002	2.884-002	2.884-002
C 12	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001
C 13	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001
C 14	.000	1.871-003	1.871-003	1.871-003	1.871-003	1.871-003	1.871-003	1.870-003	1.870-003	1.870-003	1.869-003	1.869-003
N 14	5.606+000	5.604+000	5.604+000	5.604+000	5.604+000	5.604+000	5.604+000	5.604+000	5.604+000	5.604+000	5.604+000	5.604+000
N 15	2.206-002	2.213-002	2.213-002	2.213-002	2.213-002	2.213-002	2.213-002	2.213-002	2.213-002	2.213-002	2.213-002	2.213-002
NA 23	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG 24	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000
MG 25	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001
MG 26	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001
AL 27	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000
SI 28	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000
SI 29	3.390-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001
SI 30	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001
TI 46	2.786-001	2.785-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001
TI 47	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001
TI 48	2.597+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000
TI 49	1.942-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001
TI 50	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001
V 50	8.621-003	8.561-003	8.561-003	8.561-003	8.561-003	8.561-003	8.561-003	8.561-003	8.561-003	8.561-003	8.561-003	8.561-003
V 51	3.509+000	3.511+000	3.513+000	3.513+000	3.513+000	3.513+000	3.513+000	3.513+000	3.513+000	3.513+000	3.513+000	3.513+000
CR 50	2.939+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000
CR 51	.000	2.240-003	1.113-004	2.482-005	2.367-006	2.411-007	2.501-009	2.594-011	2.791-015	3.232-023	3.882-033	.000
CR 52	5.888+001	5.886+001	5.886+001	5.886+001	5.886+001	5.886+001	5.886+001	5.886+001	5.886+001	5.886+001	5.886+001	5.886+001
CR 53	6.805+000	6.817+000	6.817+000	6.817+000	6.817+000	6.817+000	6.817+000	6.817+000	6.817+000	6.817+000	6.817+000	6.817+000
CR 54	1.722+000	1.740+000	1.740+000	1.740+000	1.740+000	1.740+000	1.740+000	1.740+000	1.740+000	1.740+000	1.740+000	1.740+000
MN 54	.000	1.179-004	9.036-005	7.910-005	6.422-005	5.245-005	3.498-005	2.333-005	1.038-005	2.053-006	2.709-007	3.574-008
MN 55	3.518+000	3.510+000	3.510+000	3.510+000	3.510+000	3.511+000	3.511+000	3.511+000	3.512+000	3.513+000	3.513+000	3.513+000
MN 56	.000	1.307-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	5.329+000	5.325+000	5.325+000	5.325+000	5.325+000	5.325+000	5.325+000	5.325+000	5.325+000	5.325+000	5.325+000	5.325+000
FE 55	.000	4.132-003	3.786-003	3.624-003	3.384-003	3.165-003	2.770-003	2.425-003	1.857-003	1.090-003	5.596-004	2.873-004
FE 56	8.728+001	8.725+001	8.725+001	8.725+001	8.725+001	8.725+001	8.725+001	8.725+001	8.725+001	8.725+001	8.725+001	8.725+001
FE 57	2.082+000	2.117+000	2.117+000	2.117+000	2.117+000	2.117+000	2.117+000	2.117+000	2.117+000	2.117+000	2.117+000	2.117+000
FE 58	2.857-001	2.867-001	2.870-001	2.871-001	2.871-001	2.871-001	2.871-001	2.871-001	2.871-001	2.871-001	2.871-001	2.871-001
FE 59	.000	2.540-005	4.000-006	1.587-006	3.735-007	9.151-008	5.493-009	3.297-010	1.188-012	1.542-017	1.201-023	9.359-030
CO 58	.000	4.107-004	1.268-004	7.046-005	2.808-005	1.148-005	1.920-006	3.210-007	8.974-009	7.013-012	9.165-016	1.198-019
CO 59	7.035-001	6.969-001	6.970-001	6.970-001	6.970-001	6.970-001	6.970-001	6.970-001	6.970-001	6.970-001	6.970-001	6.970-001
CO 60	.000	6.609-003	6.330-003	6.194-003	5.988-003	5.795-003	5.426-003	5.081-003	4.454-003	3.424-003	2.464-003	1.774-003
NI 58	2.608+001	2.605+001	2.605+001	2.605+001	2.605+001	2.605+001	2.605+001	2.605+001	2.605+001	2.605+001	2.605+001	2.605+001
NI 59	.000	2.620-002	2.620-002	2.620-002	2.620-002	2.620-002	2.620-002	2.620-002	2.620-002	2.620-002	2.620-002	2.620-002
NI 60	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001
NI 61	4.539-001	4.580-001	4.580-001	4.580-001	4.580-001	4.580-001	4.580-001	4.580-001	4.580-001	4.580-001	4.580-001	4.580-001
NI 62	1.466+000	1.462+000	1.462+000	1.462+000	1.462+000	1.462+000	1.462+000	1.462+000	1.462+000	1.462+000	1.462+000	1.462+000
NI 63	.000	4.003-003	3.993-003	3.988-003	3.981-003	3.973-003	3.958-003	3.943-003	3.914-003	3.855-003	3.783-003	3.713-003
NI 64	3.835-001	3.846-001	3.846-001	3.846-001	3.846-001	3.846-001	3.846-001	3.846-001	3.846-001	3.846-001	3.846-001	3.846-001
CU 63	2.411+000	2.409+000	2.409+000	2.409+000	2.409+000	2.409+000	2.409+000	2.409+000	2.409+000	2.409+000	2.409+000	2.409+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CU 64	.000	1.355-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	1.107+000	1.107+000	1.107+000	1.107+000	1.107+000	1.107+000	1.107+000	1.107+000	1.107+000	1.107+000	1.107+000	1.107+000
ZN 64	.000	6.670-004	6.720-004	6.720-004	6.720-004	6.720-004	6.720-004	6.720-004	6.720-004	6.720-004	6.720-004	6.720-004
ZN 66	.000	4.014-004	4.014-004	4.014-004	4.014-004	4.014-004	4.014-004	4.014-004	4.014-004	4.014-004	4.014-004	4.014-004
SR 87	.000	5.696-005	5.696-005	5.696-005	5.696-005	5.696-005	5.696-005	5.696-005	5.696-005	5.696-005	5.696-005	5.696-005
SR 88	.000	5.220-003	5.220-003	5.220-003	5.220-003	5.220-003	5.220-003	5.220-003	5.220-003	5.220-003	5.220-003	5.220-003
SR 89	.000	1.986-004	3.825-005	1.679-005	4.624-006	1.320-006	1.076-007	8.776-009	5.834-011	2.578-015	9.287-021	3.346-026
Y 89	.000	1.984-004	3.588-004	3.803-004	3.924-004	3.957-004	3.969-004	3.970-004	3.970-004	3.970-004	3.970-004	3.970-004
Y 90	.000	5.567-004	4.866-012	4.847-012	4.818-012	4.789-012	4.733-012	4.677-012	4.567-012	4.354-012	4.103-012	3.866-012
Y 91	.000	5.628-004	1.358-004	6.673-005	2.193-005	7.433-006	8.542-007	9.815-008	1.296-009	2.260-013	4.527-018	9.070-023
ZR 90	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004
ZR 91	7.706+003	7.704+003	7.704+003	7.704+003	7.704+003	7.704+003	7.704+003	7.704+003	7.704+003	7.704+003	7.704+003	7.704+003
ZR 92	1.189+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004
ZR 93	.000	8.619-001	8.619-001	8.619-001	8.619-001	8.619-001	8.619-001	8.619-001	8.619-001	8.619-001	8.619-001	8.619-001
ZR 94	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004
ZR 95	.000	1.555-001	4.238-002	2.212-002	7.996-003	2.973-003	4.112-004	5.685-005	1.087-006	3.975-010	2.010-014	1.016-018
ZR 96	2.032+003	2.032+003	2.032+003	2.032+003	2.032+003	2.032+003	2.032+003	2.032+003	2.032+003	2.032+003	2.032+003	2.032+003
ZR 97	.000	5.517-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	5.689-002	3.922-002	2.316-002	9.151-003	3.526-003	4.986-004	6.924-005	1.372-006	4.848-010	2.451-014	1.239-018
NB 95M	.000	6.262-005	1.773-005	9.257-006	3.346-006	1.244-006	1.720-007	2.379-008	4.549-010	1.663-013	8.408-018	4.251-022
NB 97	.000	3.922-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 92	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001
MO 93	.000	1.303-005	1.304-005	1.304-005	1.303-005	1.303-005	1.303-005	1.303-005	1.303-005	1.302-005	1.302-005	1.301-005
MO 94	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001
MO 95	5.533-001	6.112-001	7.420-001	7.783-001	8.065-001	8.171-001	8.227-001	8.235-001	8.236-001	8.236-001	8.236-001	8.236-001
MO 96	5.873-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001
MO 97	3.411-001	8.879-001	8.938-001	8.938-001	8.938-001	8.938-001	8.938-001	8.938-001	8.938-001	8.938-001	8.938-001	8.938-001
MO 98	8.652-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001
MO 99	.000	1.230-005	8.999-019	2.434-025	1.269-035	.000	.000	.000	.000	.000	.000	.000
MO100	3.517-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001
TC 99	.000	3.753-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005
RU101	.000	8.002-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005
CD106	4.308-004	4.308-004	4.308-004	4.308-004	4.308-004	4.308-004	4.308-004	4.308-004	4.308-004	4.308-004	4.308-004	4.308-004
CD108	3.005-004	3.004-004	3.004-004	3.004-004	3.004-004	3.004-004	3.004-004	3.004-004	3.004-004	3.004-004	3.004-004	3.004-004
CD110	4.299-003	4.284-003	4.284-003	4.284-003	4.284-003	4.284-003	4.284-003	4.284-003	4.284-003	4.284-003	4.284-003	4.284-003
CD111	4.442-003	4.433-003	4.433-003	4.433-003	4.433-003	4.433-003	4.433-003	4.433-003	4.433-003	4.433-003	4.433-003	4.433-003
CD112	8.443-003	8.455-003	8.455-003	8.455-003	8.455-003	8.455-003	8.455-003	8.455-003	8.455-003	8.455-003	8.455-003	8.455-003
CD113	4.310-003	1.888-006	1.888-006	1.888-006	1.888-006	1.888-006	1.888-006	1.888-006	1.888-006	1.888-006	1.888-006	1.888-006
CD114	1.023-002	1.457-002	1.457-002	1.457-002	1.457-002	1.457-002	1.457-002	1.457-002	1.457-002	1.457-002	1.457-002	1.457-002
CD116	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003
IN113	.000	8.331-003	1.262-002	1.385-002	1.507-002	1.575-002	1.636-002	1.657-002	1.666-002	1.667-002	1.667-002	1.667-002
IN114M	.000	1.973-005	3.678-006	1.588-006	4.263-007	1.187-007	9.211-009	7.145-010	4.299-012	1.556-016	4.371-022	1.228-027
SN112	9.618+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000
SN113	.000	8.336-003	4.047-003	2.820-003	1.602-003	9.241-004	3.077-004	1.024-004	1.136-005	1.396-007	5.711-010	2.337-012
SN114	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000
SN115	3.753+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000
SN116	1.464+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002
SN117	7.787+001	7.791+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001
SN117M	.000	1.147-002	3.022-005	1.551-006	1.484-008	1.817-010	1.919-014	2.278-018	3.210-026	.000	.000	.000
SN118	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002
SN119	8.789+001	8.790+001	8.791+001	8.792+001	8.792+001	8.793+001	8.793+001	8.793+001	8.794+001	8.794+001	8.794+001	8.794+001
SN119M	.000	3.427-002	2.440-002	2.059-002	1.570-002	1.219-002	7.274-003	4.330-003	1.544-003	1.955-004	1.477-005	1.116-006

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SN120	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002
SN121	.000	5.324-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	1.960-004	1.951-004	1.946-004	1.939-004	1.933-004	1.919-004	1.906-004	1.880-004	1.828-004	1.766-004	1.706-004
SN122	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001
SN123	.000	2.601-003	1.366-003	9.901-004	5.981-004	3.664-004	1.375-004	5.161-005	7.269-006	1.442-007	1.074-009	7.995-012
SN124	5.963+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001
SN125	.000	1.727-003	3.090-007	4.134-009	4.819-012	6.785-015	1.345-020	2.666-026	.000	.000	.000	.000
SB121	.000	3.296-002	3.349-002	3.349-002	3.349-002	3.349-002	3.350-002	3.350-002	3.350-002	3.350-002	3.351-002	3.352-002
SB122	.000	1.069-005	4.476-019	9.160-026	3.088-036	.000	.000	.000	.000	.000	.000	.000
SB123	.000	9.224-004	2.158-003	2.534-003	2.926-003	3.157-003	3.386-003	3.472-003	3.517-003	3.524-003	3.524-003	3.524-003
SB125	.000	2.053-002	2.051-002	1.969-002	1.846-002	1.734-002	1.530-002	1.350-002	1.051-002	6.373-003	3.409-003	1.824-003
TE122	.000	1.309-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004
TE125	.000	6.905-004	2.329-003	3.144-003	4.373-003	5.503-003	7.569-003	9.394-003	1.242-002	1.662-002	1.963-002	2.123-002
TE125M	.000	1.225-004	2.419-004	2.534-004	2.510-004	2.401-004	2.137-004	1.888-004	1.470-004	8.916-005	4.768-005	2.551-005
TE126.	.000	8.785-006	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005
LU175	.000	5.678-004	1.139-003	1.252-003	1.335-003	1.368-003	1.386-003	1.389-003	1.390-003	1.390-003	1.390-003	1.390-003
HF174	2.194-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002
HF175	.000	8.222-004	2.506-004	1.383-004	5.457-005	2.209-005	3.621-006	5.936-007	1.595-008	1.152-011	1.363-015	1.613-019
HF176	7.212-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001
HF177	2.594+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000
HF178	3.801+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000
HF179	1.938+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000
HF180	4.993+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000
HF181	.000	7.170-003	1.008-003	3.780-004	8.137-005	1.829-005	9.234-007	4.663-008	1.189-010	7.733-016	2.539-022	8.339-029
HF182	.000	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005
TA181	.000	8.857-003	1.483-002	1.547-002	1.577-002	1.583-002	1.585-002	1.585-002	1.585-002	1.585-002	1.585-002	1.585-002
TA182	.000	6.789-005	3.294-005	2.294-005	1.302-005	7.511-006	2.498-006	8.310-007	9.194-008	1.126-009	5.465-012	9.021-013
W180	4.476-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003
W181	.000	2.581-005	1.299-005	9.219-006	5.387-006	3.195-006	1.124-006	3.955-007	4.896-008	7.502-010	4.044-012	2.180-014
W182	9.156-001	8.932-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001
W183	5.005-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001
W184	1.079+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000
W185	.000	4.966-004	1.641-004	9.429-005	3.962-005	1.706-005	3.162-006	5.860-007	2.013-008	2.375-011	5.194-015	1.136-018
W186	1.018+000	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001
W187	.000	3.295-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.165-005	6.532-006	3.587-006	1.404-006	5.639-007	9.099-008	1.468-008	3.824-010	2.593-013	2.837-017	3.105-021
RE185	.000	3.063-004	6.388-004	7.086-004	7.633-004	7.858-004	7.997-004	8.023-004	8.029-004	8.029-004	8.029-004	8.029-004
RE187	.000	2.304-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002
OS186	.000	8.147-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006
OS188	.000	2.507-004	2.708-004	2.738-004	2.760-004	2.769-004	2.774-004	2.774-004	2.774-004	2.774-004	2.774-004	2.774-004
PB204	9.695-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002
PB205	.000	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005
PB206	1.685+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000
PB207	1.553+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000
PB208	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000
SUMTOT	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004
TOTAL	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000
HE	.000	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003	1.536-003
LI	.000	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003	2.084-003
BE	.000	8.726-006	8.726-006	8.726-006	8.726-006	8.726-006	8.726-006	8.726-006	8.726-006	8.726-006	8.726-006	8.726-006
B	3.518-002	3.237-002	3.237-002	3.237-002	3.237-002	3.237-002	3.237-002	3.237-002	3.237-002	3.237-002	3.237-002	3.237-002
C	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001
N	5.628+000	5.626+000	5.626+000	5.626+000	5.626+000	5.626+000	5.626+000	5.626+000	5.626+000	5.626+000	5.626+000	5.626+000
NA	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
AL	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000
SI	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000
TI	3.517+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000
V	3.518+000	3.520+000	3.522+000	3.522+000	3.522+000	3.522+000	3.522+000	3.522+000	3.522+000	3.522+000	3.522+000	3.522+000
CR	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001
MN	3.518+000	3.510+000	3.510+000	3.510+000	3.510+000	3.511+000	3.511+000	3.511+000	3.512+000	3.513+000	3.513+000	3.513+000
FE	9.497+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001
CO	7.035-001	7.040-001	7.034-001	7.032-001	7.030-001	7.028-001	7.024-001	7.020-001	7.014-001	7.004-001	6.994-001	6.987-001
NI	3.869+001	3.869+001	3.869+001	3.869+001	3.869+001	3.869+001	3.869+001	3.869+001	3.870+001	3.870+001	3.870+001	3.870+001
CU	3.518+000	3.515+000	3.515+000	3.515+000	3.515+000	3.515+000	3.515+000	3.515+000	3.515+000	3.516+000	3.516+000	3.516+000
ZN	.000	1.068-003	1.073-003	1.073-003	1.073-003	1.073-003	1.073-003	1.073-003	1.073-003	1.073-003	1.073-003	1.073-003
SR	.000	5.476-003	5.315-003	5.294-003	5.282-003	5.278-003	5.277-003	5.277-003	5.277-003	5.277-003	5.277-003	5.277-003
Y	.000	1.320-003	4.946-004	4.470-004	4.143-004	4.032-004	3.978-004	3.971-004	3.970-004	3.970-004	3.970-004	3.970-004
ZR	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004
NB	.000	5.735-002	3.924-002	2.317-002	9.155-003	3.528-003	4.995-004	7.024-005	2.740-006	2.154-006	3.136-006	4.119-006
MO	3.518+000	4.126+000	4.262+000	4.299+000	4.327+000	4.338+000	4.343+000	4.344+000	4.344+000	4.344+000	4.344+000	4.344+000
TC	.000	3.754-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005
RU	.000	8.040-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005
CD	3.518-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002
IN	.000	8.357-003	1.263-002	1.386-002	1.507-002	1.575-002	1.637-002	1.657-002	1.666-002	1.667-002	1.667-002	1.667-002
SN	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003
SB	.000	5.442-002	5.616-002	5.571-002	5.488-002	5.399-002	5.218-002	5.047-002	4.753-002	4.340-002	4.044-002	3.886-002
TE	.000	9.534-004	2.726-003	3.552-003	4.779-003	5.899-003	7.938-003	9.738-003	1.273-002	1.687-002	1.983-002	2.142-002
LU	.000	5.701-004	1.142-003	1.254-003	1.338-003	1.370-003	1.389-003	1.392-003	1.392-003	1.392-003	1.392-003	1.392-003
HF	1.407+001	1.407+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001
TA	.000	8.730-003	1.487-002	1.549-002	1.578-002	1.584-002	1.585-002	1.585-002	1.585-002	1.585-002	1.585-002	1.585-002
W	3.517+000	3.494+000	3.494+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000
RE	.000	2.336-002	2.401-002	2.408-002	2.414-002	2.416-002	2.417-002	2.418-002	2.418-002	2.418-002	2.418-002	2.418-002
OS	.000	2.594-004	2.807-004	2.837-004	2.859-004	2.867-004	2.872-004	2.873-004	2.873-004	2.873-004	2.873-004	2.873-004
PB	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000
SUMTOT	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004
TOTAL	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004

CUMULATIVE TABLE TOTALS

AP+FP	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	7.052-007	6.823-007	6.859-007	6.761-007	6.667-007	6.482-007	6.303-007	5.959-007	5.326-007	4.629-007	4.023-007
H 4	.000	6.658-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.022-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	2.685-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009
B 12	.000	3.972-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	8.342-003	8.342-003	8.342-003	8.342-003	8.341-003	8.341-003	8.340-003	8.339-003	8.337-003	8.335-003	8.332-003
N 16	.000	9.180-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	2.970-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	9.814-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	1.585+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	6.578+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	9.975-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	5.909-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	1.335+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	2.732-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	2.649-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	2.463-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	4.864-006	1.449-008	7.982-010	1.608-011	7.853-012	7.750-012	7.746-012	7.736-012	7.720-012	7.699-012	7.679-012
CA 45	.000	1.763-004	1.058-004	8.200-005	5.499-005	3.729-005	1.715-005	7.887-006	1.668-006	7.461-008	1.535-009	3.157-011
SC 46	.000	3.617-002	1.340-002	8.160-003	3.752-003	1.763-003	3.892-004	8.592-005	4.188-006	9.947-009	5.217-012	2.736-015
SC 47	.000	1.040-001	1.789-012	1.397-017	4.084-024	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	1.001-002	1.619-022	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	7.999-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	1.649-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.944-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.542-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015
V 52	.000	9.103+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.103-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	1.114-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	2.071+002	1.029+001	2.294+000	2.188-001	2.229-002	2.312-004	2.398-006	2.580-010	2.988-018	.000	.000
CR 55	.000	3.115+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	9.128-001	6.995-001	6.123-001	4.972-001	4.060-001	2.708-001	1.806-001	8.032-002	1.589-002	2.097-003	2.767-004
MN 56	.000	2.838+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	1.289-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	4.272-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	1.034+001	9.469+000	9.063+000	8.482+000	7.917+000	6.929+000	6.064+000	4.645+000	2.725+000	1.399+000	7.187-001
FE 59	.000	1.250+000	1.968-001	7.811-002	1.838-002	4.502-003	2.702-004	1.622-005	5.844-008	7.586-013	5.910-019	4.605-025
CO 58	.000	1.307+001	4.035+000	2.242+000	8.936-001	3.654-001	6.109-002	1.021-002	2.858-004	2.232-007	2.916-011	3.811-015
CO 60	.000	7.476+000	7.160+000	7.007+000	6.774+000	6.555+000	6.137+000	5.747+000	5.038+000	3.873+000	2.788+000	2.006+000
CO 60M	.000	1.122+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	1.253-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	4.247-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	1.985-003	1.985-003	1.985-003	1.985-003	1.985-003	1.985-003	1.985-003	1.985-003	1.985-003	1.985-003	1.985-003
NI 63	.000	2.470-001	2.464-001	2.461-001	2.456-001	2.452-001	2.442-001	2.433-001	2.415-001	2.379-001	2.335-001	2.291-001
NI 65	.000	2.506+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	1.276-005	1.700-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	5.225+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.126+001	1.703-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	1.074-005	1.038-019	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	3.746-004	2.663-004	2.246-004	1.719-004	1.326-004	7.893-005	4.697-005	1.663-005	2.085-006	1.556-007	1.161-008
SR 89	.000	5.773+000	1.112+000	4.879-001	1.344-001	3.837-002	3.129-003	2.551-004	1.696-006	7.492-011	2.699-016	9.724-022

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 90	.000	2.669-006	2.648-006	2.638-006	2.622-006	2.606-006	2.575-006	2.545-006	2.485-006	2.369-006	2.233-006	2.104-006
SR 91	.000	1.591+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.492-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	1.457-004	1.293-015	3.850-021	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	3.030+002	2.649-006	2.638-006	2.622-006	2.607-006	2.576-006	2.545-006	2.486-006	2.370-006	2.233-006	2.104-006
Y 91	.000	1.381+001	3.333+000	1.637+000	5.380-001	1.824-001	2.096-002	2.408-003	3.180-005	5.544-009	1.111-013	2.225-018
Y 92	.000	1.789+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.492-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.138+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	7.310-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.459-004	1.295-015	3.856-021	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.167-003	2.167-003	2.167-003	2.167-003	2.167-003	2.167-003	2.167-003	2.167-003	2.167-003	2.167-003	2.167-003
ZR 95	.000	3.342+003	9.108+002	4.755+002	1.718+002	6.390+001	8.836+000	1.222+000	2.336-002	8.542-008	4.319-010	2.184-014
ZR 97	.000	1.055+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	2.837-002	7.894-006	1.317-007	2.170-010	4.275-013	1.659-018	6.441-024	.000	.000	.000	.000
NB 93M	.000	1.702-005	5.091-005	6.765-005	9.357-005	1.184-004	1.673-004	2.148-004	3.064-004	4.762-004	6.655-004	8.321-004
NB 94	.000	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.316-008
NB 95	.000	2 226+003	1.534+003	9.060+002	3.580+002	1.380+002	1.950+001	2.709+000	5.368-002	1.897-005	9.588-010	4.848-014
NB 95M	.000	2.386+001	6.756+000	3.527+000	1.275+000	4.741-001	6.555-002	9.064-003	1.733-004	6.337-008	3.204-012	1.620-016
NB 96	.000	1.456+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.055+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	9.984+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	6.101-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	8.435-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	1.433-005	1.433-005	1.433-005	1.433-005	1.433-005	1.433-005	1.432-005	1.432-005	1.432-005	1.431-005	1.430-005
MO 99	.000	5.904+000	4.318-013	1.168-019	.000	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.470+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	6.365-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007
TC100	.000	8.538-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	1.470+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	9.985-006	4.631-011	4.626-011	4.620-011	4.614-011	4.601-011	4.589-011	4.564-011	4.514-011	4.453-011	4.393-011
AG109M	.000	2.765-004	2.311-004	2.113-004	1.836-004	1.602-004	1.220-004	9.285-005	5.380-005	1.807-005	4.618-006	1.181-006
AG110	.000	1.103-005	5.353-010	4.532-010	3.493-010	2.711-010	1.634-010	9 843-011	3.574-011	4.711-012	3.742-013	2.972-014
AG110M	.000	5.614-008	4.025-008	3.408-008	2.626-008	2.038-008	1.228-008	7.401-009	2.687-009	3.542-010	2.813-011	2.235-012
CD107	.000	1.054-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	2.765-004	2.311-004	2.113-004	1.836-004	1.602-004	1.220-004	9.285-005	5.380-005	1.807-005	4.618-006	1.181-006
CD111M	.000	1.872-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	2.328-001	1.424-017	1.114-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.446-002	2.240-003	8.815-004	2.047-004	4.951-005	2.897-006	1.695-007	5.803-010	6.801-015	4.663-021	.000
CD117	.000	1.174-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.642-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.365-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	4.154-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	8.374+001	4.067+001	2.834+001	1.609+001	9.287+000	3.092+000	1.030+000	1.141-001	1.403-003	5.739-006	2.348-008
IN114	.000	1.922+000	8.147-002	3.517-002	9.442-003	2.630-003	2.040-004	1.582-005	9.521-008	3.447-012	9.681-018	2.719-023
IN114M	.000	4.567-001	8.513-002	3.675-002	9.867-003	2.748-003	2.132-004	1.653-005	9.949-008	3.602-012	1.012-017	2.841-023
IN116	.000	5.753-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	2.371-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	5.793-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	1.103-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN118	.000	1.803-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.277-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN119M	.000	1.365-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	3.407-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	8.372+001	4.064+001	2.832+001	1.608+001	9.281+000	3.090+000	1.029+000	1.141-001	1.402-003	5.736-006	2.347-008
SN113M	.000	8.343+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	9.148+002	2.410+000	1.237-001	1.183-003	1.289-005	1.530-009	1.816-013	2.559-021	.000	.000	.000
SN119M	.000	1.535+002	1.093+002	9.226+001	7.073+001	5.463+001	3.259+001	1.944+001	6.917+000	8.759-001	6.616-002	4.998-003
SN121	.000	5.147+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	1.159-002	1.154-002	1.151-002	1.147-002	1.143-002	1.135-002	1.127-002	1.112-002	1.081-002	1.045-002	1.009-002
SN123	.000	2.139+001	1.123+001	8.141+000	4.918+000	3.013+000	1.131+000	4.243-001	5.977-002	1.186-003	8.829-006	6.574-008
SN123M	.000	2.025-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.872+002	3.350-002	4.481-004	5.224-007	7.355-010	1.458-015	2.890-021	.000	.000	.000	.000
SN125M	.000	1.509+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	4.237+000	1.775-013	3.632-020	.000	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	3.687-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	2.326-002	5.841-003	2.927-003	9.924-004	3.468-004	4.234-005	5.170-006	7.709-008	1.714-011	4.652-016	1.263-020
SB124M	.000	2.019-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	2.120+001	2.119+001	2.034+001	1.907+001	1.791+001	1.581+001	1.395+001	1.086+001	6.583+000	3.521+000	1.884+000
SB126	.000	2.638-001	3.214-004	1.122-005	5.871-008	3.558-010	1.307-014	4.800-019	.000	.000	.000	.000
SB126M	.000	3.293-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	4.522-004	2.257-004	1.594-004	9.252-005	5.452-005	1.893-005	6.574-006	7.928-007	1.152-008	5.818-011	2.937-013
TE125M	.000	2.208+000	4.358+000	4.565+000	4.523+000	4.327+000	3.851+000	3.402+000	2.649+000	1.607+000	8.592-001	4.596-001
TE127	.000	8.607-005	6.428-007	4.389-007	2.415-007	1.351-007	4.231-008	1.325-008	1.299-009	1.248-011	3.753-014	1.129-016
TE127M	.000	1.408-006	6.563-007	4.481-007	2.466-007	1.380-007	4.320-008	1.352-008	1.326-009	1.274-011	3.832-014	1.153-016
LU176M	.000	1.531-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	5.620-003	3.733-007	2.677-007	1.759-007	1.169-007	5.166-008	2.283-008	4.458-009	1.700-010	2.864-012	4.826-014
LU177M	.000	2.604-006	1.522-006	1.164-006	7.648-007	5.084-007	2.247-007	9.928-008	1.939-008	7.392-010	1.246-011	2.099-013
HF175	.000	8.768+000	2.672+000	1.475+000	5.819-001	2.356-001	3.862-002	6.330-003	1.701-004	1.228-007	1.453-011	1.720-015
HF178M	.000	1.896+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	2.241+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	4.886+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	1.221+002	1.716+001	6.434+000	1.385+000	3.113-001	1.572-002	7.938-004	2.024-006	1.316-011	4.323-018	1.420-024
HF182	.000	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009
TA182	.000	4.237-001	2.056-001	1.432-001	8.128-002	4.688-002	1.559-002	5.187-003	5.738-004	7.030-006	3.411-008	5.630-009
TA182M	.000	1.272-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	6.247-001	5.159-008	1.483-011	4.230-017	1.724-022	.000	.000	.000	.000	.000	.000
W181	.000	1.537-001	7.739-002	5.491-002	3.208-002	1.903-002	6.695-003	2.356-003	2.916-004	4.468-006	2.409-008	1.299-010
W183M	.000	6.322-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	4.669+000	1.542+000	8.866-001	3.725-001	1.604-001	2.973-002	5.509-003	1.893-004	2.233-007	4.883-011	1.068-014
W185M	.000	8.972-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	2.311+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.168-001	6.540-002	3.592-002	1.405-002	5.646-003	9.111-004	1.470-004	3.828-006	2.596-009	2.841-013	3.108-017
RE186	.000	2.423-001	6.599-011	1.089-015	3.544-023	.000	.000	.000	.000	.000	.000	.000
RE187	.000	8.814-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010
RE188	.000	4.881+000	6.607-002	3.629-002	1.420-002	5.704-003	9.205-004	1.485-004	3.868-006	2.623-009	2.870-013	3.141-017
RE188M	.000	4.563+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	1.382-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015
PB205	.000	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010
PB209	.000	2.247-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	2.756-015	4.273+004	2.740+003	1.600+003	6.828+002	3.173+002	1.018+002	5.550+001	3.082+001	1.595+001	8.893+000	5.326+000
TOTAL	2.756-015	4.273+004	2.740+003	1.600+003	6.828+002	3.173+002	1.018+002	5.550+001	3.082+001	1.595+001	8.893+000	5.326+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	6.658-003	6.923-007	6.859-007	6.761-007	6.667-007	6.482-007	6.303-007	5.959-007	5.326-007	4.629-007	4.023-007
HE	.000	1.022-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	2.685-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.139-008	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009	5.261-009
B	.000	3.972-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	8.345-003	8.342-003	8.342-003	8.342-003	8.341-003	8.341-003	8.340-003	8.339-003	8.337-003	8.335-003	8.332-003
N	.000	9.180-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	2.970-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	9.814-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	2.244+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	5.909-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	1.338+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	2.463-001	7.758-012	7.757-012	7.755-012	7.753-012	7.748-012	7.744-012	7.736-012	7.720-012	7.699-012	7.678-012
P	.000	4.864-006	1.449-008	7.982-010	1.608-011	7.853-012	7.750-012	7.746-012	7.736-012	7.720-012	7.699-012	7.679-012
CA	.000	1.779-004	1.058-004	8.200-005	5.499-005	3.729-005	1.715-005	7.887-006	1.668-006	7.461-008	1.535-009	3.157-011
SC	.000	1.584-001	1.340-002	8.160-003	3.752-003	1.763-003	3.892-004	8.592-005	4.188-006	9.947-009	5.217-012	2.736-015
TI	.000	1.944-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.542-015	9.104+001	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015	1.531-015
CR	.000	2.102+002	1.029+001	2.294+000	2.188-001	2.229-002	2.312-004	2.398-006	2.580-010	2.988-018	.000	.000
MN	.000	2.847+002	6.995-001	6.123-001	4.972-001	4.060-001	2.708-001	1.806-001	8.032-002	1.589-002	2.097-003	2.767-004
FE	.000	1.159+001	9.665+000	9.141+000	8.481+000	7.921+000	6.929+000	6.064+000	4.645+000	2.725+000	1.399+000	7.187-001
CO	.000	1.329+002	1.120+001	9.249+000	7.667+000	6.920+000	6.199+000	5.757+000	5.039+000	3.873+000	2.788+000	2.006+000
NI	.000	2.755+000	2.484-001	2.481-001	2.476-001	2.472-001	2.462-001	2.453-001	2.435-001	2.399-001	2.354-001	2.311-001
CU	.000	6.351+001	1.055-019	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	3.746-004	2.663-004	2.246-004	1.719-004	1.326-004	7.893-005	4.697-005	1.663-005	2.085-006	1.556-007	1.161-008
SR	.000	7.369+000	1.112+000	4.879-001	1.344-001	3.838-002	3.131-003	2.576-004	4.181-006	2.369-006	2.233-006	2.104-006
Y	.000	3.358+002	3.333+000	1.637+000	5.380-001	1.824-001	2.096-002	2.411-003	3.428-005	2.376-006	2.233-006	2.104-006
ZR	.000	1.389+004	9.108+002	4.755+002	1.718+002	6.390+001	8.839+000	1.224+000	2.553-002	2.175-003	2.167-003	2.167-003
NB	.000	2.278+004	1.541+003	9.095+002	3.593+002	1.384+002	1.957+001	2.718+000	5.416-002	4.953-004	6.655-004	8.321-004
MO	.000	7.382+000	1.433-005	1.433-005	1.433-005	1.433-005	1.433-005	1.432-005	1.432-005	1.432-005	1.431-005	1.430-005
TC	.000	1.479+000	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007
AG	.000	2.976-004	2.312-004	2.113-004	1.837-004	1.602-004	1.220-004	9.285-005	5.381-005	1.807-005	4.619-006	1.181-006
CD	.000	2.626-001	2.471-003	1.093-003	3.883-004	2.097-004	1.249-004	9.302-005	5.380-005	1.807-005	4.618-006	1.181-006
IN	.000	8.628+001	4.084+001	2.841+001	1.611+001	9.292+000	3.092+000	1.030+000	1.141-001	1.403-003	5.739-006	2.348-008
SN	.000	2.110+003	1.637+002	1.289+002	9.174+001	6.693+001	3.682+001	2 090+001	7.102+000	8.893-001	7.662-002	1.509-002
SB	.000	2.580+001	2.119+001	2.034+001	1.907+001	1.791+001	1.581+001	1.395+001	1.086+001	6.583+000	3.521+000	1.884+000
TE	.000	2.209+000	4.359+000	4.566+000	4.524+000	4.327+000	3.851+000	3.402+000	2.649+000	1.607+000	8.592-001	4.596-001
LU	.000	1.587-001	1.896-006	1.432-006	9.407-007	6.253-007	2.763-007	1.221-007	2.384-008	9.094-010	1.547-011	4.089-013
HF	.000	2.396+003	1.983+001	7.909+000	1.967+000	5.469-001	5.434-002	7.124-003	1.721-004	1.283-007	5.528-009	5.514-009
TA	.000	1.050+000	2.056-001	1.432-001	8.128-002	4.688-002	1.559-002	5.187-003	5.738-004	7.030-006	3.411-008	5.630-009
W	.000	2.368+002	1.685+000	9.774-001	4.187-001	1.851-001	3.733-002	8.012-003	4.847-004	4.694-006	2.414-008	1.299-010
RE	.000	9.686+000	6.607-002	3.629-002	1.420-002	5.704-003	9.205-004	1.485-004	3.869-006	3.517-009	8.943-010	8.940-010
PB	1.214-015	2.247-003	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010
SUMTOT	2.756-015	4.273+004	2.740+003	1.600+003	6.828+002	3.173+002	1.018+002	5.550+001	3.082+001	1.595+001	8.893+000	5.326+000
TOTAL	2.756-015	4.273+004	2.740+003	1.600+003	6.828+002	3.173+002	1.018+002	5.550+001	3.082+001	1.595+001	8.893+000	5.326+000

CUMULATIVE TABLE TOTALS

AP+FP	2.756-015	4.273+004	2.740+003	1.600+003	6.828+002	3.173+002	1.018+002	5.550+001	3.082+001	1.595+001	8.893+000	5.326+000
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.756-015	4.273+004	2.740+003	1.600+003	6.828+002	3.173+002	1.018+002	5.550+001	3.082+001	1.595+001	8.893+000	5.326+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	2.374-011	2.331-011	2.309-011	2.276-011	2.245-011	2.182-011	2.122-011	2.006-011	1.793-011	1.558-011	1.354-011
HE 6	.000	9.496-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.001-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012
B 12	.000	3.148-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	2.446-006	2.446-006	2.446-006	2.446-006	2.446-006	2.446-006	2.446-006	2.445-006	2.445-006	2.444-006	2.443-006
C 15	.000	4.291-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	3.978-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	1.238-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	1.203-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	4.392-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	1.840-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.145-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	5.580-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	2.395-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	3.807-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	8.988-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	8.710-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	4.930-008	1.469-010	8.091-012	1.630-013	7.960-014	7.856-014	7.851-014	7.842-014	7.825-014	7.804-014	7.784-014
CA 45	.000	8.069-008	4.843-008	3.752-008	2.516-008	1.707-008	7.848-009	3.609-009	7.633-010	3.414-011	7.024-013	1.445-014
SC 46	.000	4.550-004	1.686-004	1.028-004	4.719-005	2.217-005	4.895-006	1.081-006	5.267-008	1.251-010	6.562-014	3.441-017
SC 47	.000	1.670-004	2.872-015	2.242-020	6.556-027	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	2.118-004	3.425-024	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	9.521-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	4.719-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.423-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.700-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017
V 52	.000	1.357+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.331-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	4.820-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	4.432-002	2.202-003	4.909-004	4.682-005	4.769-006	4.947-008	5.131-010	5.522-014	6.394-022	7.680-032	.000
CR 55	.000	2.033-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	4.545-003	3.483-003	3.049-003	2.475-003	2.022-003	1.348-003	8.992-004	4.000-004	7.913-005	1.044-005	1.378-006
MN 56	.000	4.241+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	8.950-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	1.012-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	1.421-002	1.302-002	1.246-002	1.164-002	1.089-002	9.529-003	8.339-003	6.388-003	3.748-003	1.825-003	8.883-004
FE 59	.000	1.165-002	1.835-003	7.283-004	1.714-004	4.198-005	2.520-006	1.512-007	5.449-010	7.073-015	5.511-021	4.294-027
CO 58	.000	7.825-002	2.416-002	1.342-002	5.350-003	2.188-003	3.658-004	6.115-005	1.710-006	1.336-009	1.746-013	2.282-017
CO 60	.000	1.153-001	1.104-001	1.080-001	1.044-001	1.011-001	9.463-002	8.860-002	7.768-002	5.971-002	4.298-002	3.094-002
CO 60M	.000	4.191-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	4.058-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	8.055-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	1.264-005	1.264-005	1.264-005	1.264-005	1.264-005	1.264-005	1.264-005	1.264-005	1.264-005	1.264-005	1.264-005
NI 63	.000	9.811-005	9.786-005	9.774-005	9.755-005	9.737-005	9.700-005	9.664-005	9.591-005	9.448-005	9.272-005	9.099-005
NI 65	.000	1.754-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	9.695-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	7.710-002	1.166-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	1.312-006	9.331-007	7.868-007	6.024-007	4.647-007	2.765-007	1.646-007	5.827-008	7.307-009	5.452-010	4.068-011
SR 89	.000	1.996-002	3.844-003	1.687-003	4.646-004	1.327-004	1.082-005	8.818-007	5.862-009	2.590-013	9.331-019	3.362-024
SR 90	.000	3.098-009	3.073-009	3.061-009	3.043-009	3.025-009	2.989-009	2.954-009	2.884-009	2.750-009	2.591-009	2.441-009
SR 91	.000	1.275-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 93	.000	8.322-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	7.918-007	7.025-018	2.093-023	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.679+000	1.468-008	1.462-008	1.453-008	1.445-008	1.428-008	1.411-008	1.378-008	1.314-008	1.238-008	1.166-008
Y 91	.000	4.959-002	1.197-002	5.881-003	1.932-003	6.550-004	7.527-005	8.649-006	1.142-007	1.991-011	3.990-016	7.993-021
Y 92	.000	1.801-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	4.109-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.896-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.676-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.088-006	9.655-018	2.876-023	6.414-032	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.517-007	2.517-007	2.517-007	2.517-007	2.517-007	2.517-007	2.517-007	2.517-007	2.517-007	2.517-007	2.517-007
ZR 95	.000	1.693+001	4.613+000	2.408+000	8.704-001	3.237-001	4.476-002	6.189-003	1.183-004	4.327-008	2.188-012	1.106-016
ZR 97	.000	5.498+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.380-004	9.406-008	1.569-009	2.585-012	5.093-015	1.977-020	7.674-026	.000	.000	.000	.000
NB 93M	.000	3.015-009	9.021-009	1.199-008	1.658-008	2.099-008	2.963-008	3.806-008	5.429-008	8.437-008	1.179-007	1.474-007
NB 94	.000	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.360-010
NB 95	.000	1.068+001	7.359+000	4.346+000	1.717+000	6.617-001	9.356-002	1.299-002	2.575-004	9.097-008	4.599-012	2.325-016
NB 95M	.000	3.315-002	9.388-003	4.901-003	1.771-003	6.587-004	9.108-005	1.259-005	2.408-007	8.805-011	4.452-015	2.251-019
NB 96	.000	2.421-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	7.023+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.395+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	7.529-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB100	.000	7.156-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.180-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	1.339-009	1.340-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.338-009	1.338-009	1.337-009
MO 99	.000	1.896-002	1.387-015	3.750-022	1.855-032	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.679-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	3.192-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010
TC100	.000	7.516-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	7.056-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	3.721-008	1.725-013	1.724-013	1.721-013	1.719-013	1.714-013	1.710-013	1.700-013	1.682-013	1 659-013	1.637-013
AG108M	.000	5.070-012	5.061-012	5.057-012	5.049-012	5.043-012	5.029-012	5.015-012	4.988-012	4.934-012	4.867-012	4.801-012
AG109M	.000	1.425-007	1.191-007	1.089-007	9.466-008	8.259-008	6.287-008	4.786-008	2.773-008	9.313-009	2.381-009	6.085-010
AG110	.000	7.927-008	3.846-012	3.256-012	2.509-012	1.948-012	1.174-012	7.072-013	2.568-013	3.385-014	2.688-015	2.135-016
AG110M	.000	9.375-010	6.721-010	5.690-010	4.385-010	3.404-010	2.051-010	1.236-010	4.487-011	5.915-012	4.698-013	3.732-014
CD107	.000	4.786-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	1.760-007	1.471-007	1.345-007	1.169-007	1.020-007	7.765-008	5.911-008	3.425-008	1.150-008	2.940-009	7.515-010
CD111M	.000	4.395-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	7.389-004	4.521-020	3.536-028	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	5.394-005	8.354-006	3.288-006	7.634-007	1.847-007	1.080-008	6.322-010	2.164-012	2.536-017	1.739-023	1.192-029
CD117	.000	8.454-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.147-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.497-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	6.883-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	1.951-001	9.474-002	6.601-002	3.749-002	2.163-002	7.203-003	2.398-003	2.659-004	3.267-006	1.337-008	5.471-011
IN114	.000	8.823-003	3.740-004	1.615-004	4.335-005	1.207-005	9.365-007	7.265-008	4.371-010	1.583-014	4.445-020	1.248-025
IN114M	.000	6.440-004	1.200-004	5.183-005	1.391-005	3.875-006	3.006-007	2.332-008	1.403-010	5.080-015	1.427-020	4.007-026
IN116	.000	4.713-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	3.903-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	2.610-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	4.166-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN118	.000	2.177-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.022-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN119M	.000	1.153-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	4.103-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.426-002	6.924-003	4.824-003	2.740-003	1.581-003	5.264-004	1.753-004	1.943-005	2.388-007	9.771-010	3.998-012
SN113M	.000	5.435-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.697+000	4.469-003	2.294-004	2.194-006	2.391-008	2.838-012	3.369-016	4.747-024	.000	.000	.000
SN119M	.000	7.935-002	5.651-002	4.769-002	3.656-002	2.824-002	1.684-002	1.005-002	3.576-003	4.528-004	3.420-005	2.583-006
SN121	.000	6.224-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	2.322-005	2.312-005	2.306-005	2.298-005	2.290-005	2.274-005	2.259-005	2.228-005	2.167-005	2.093-005	2.021-005
SN123	.000	6.680-002	3.509-002	2.543-002	1.536-002	9.410-003	3.531-003	1.325-003	1.867-004	3.704-006	2.758-008	2.053-010
SN123M	.000	7.381-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.240+000	2.220-004	2.970-006	3.462-009	4.874-012	9.662-018	1.915-023	.000	.000	.000	.000
SN125M	.000	1.015+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	2.534-002	1.062-015	2.172-022	7.320-033	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	3.541-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	3.088-004	7.756-005	3.887-005	1.318-005	4.604-006	5.622-007	6.865-008	1.024-009	2.275-013	6.176-018	1.676-022
SB124M	.000	5.189-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	6.629-002	6.624-002	6.357-002	5.961-002	5.600-002	4.941-002	4.360-002	3.395-002	2.058-002	1.101-002	5.889-003
SB126	.000	4.874-003	5.939-006	2.073-007	1.085-009	6.574-012	2.415-016	8.868-021	1.196-029	.000	.000	.000
SB126M	.000	4.193-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	6.585-007	3.287-007	2.322-007	1.348-007	7.940-008	2.757-008	9.574-009	1.154-009	1.678-011	8.473-014	4.278-016
TE125M	.000	1.856-003	3.663-003	3.837-003	3.802-003	3.637-003	3.237-003	2.860-003	2.227-003	1.350-003	7.222-004	3.863-004
TE127	.000	1.162-007	8.680-010	5.927-010	3.262-010	1.825-010	5.714-011	1.789-011	1.753-012	1.685-014	5.068-017	1.525-019
LU176M	.000	1.189-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	6.063-006	4.027-010	2.889-010	1.898-010	1.261-010	5.574-011	2.463-011	4.809-012	1.834-013	3.090-015	5.207-017
LU177M	.000	2.096-008	1.225-008	8.371-009	6.157-009	4.093-009	1.809-009	7.992-010	1.561-010	5.950-012	1.003-013	1.689-015
HF175	.000	3.066-002	9.345-003	5.159-003	2.035-003	8.239-004	1.351-004	2.214-005	5.949-007	4.295-010	5.083-014	6.016-018
HF178M	.000	1.289-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	5.022+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	3.308-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	5.456-001	7.670-002	2.876-002	6.191-003	1.391-003	7.025-005	3.548-006	9.047-009	5.884-014	1.932-020	6.345-027
HF182	.000	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011
TA182	.000	3.772-003	1.830-003	1.275-003	7.237-004	4.174-004	1.388-004	4.618-005	5.109-006	6.259-008	3.037-010	5.013-011
TA182M	.000	3.791-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	3.962-003	3.272-010	9.404-014	2.683-019	1.094-024	.000	.000	.000	.000	.000	.000
W181	.000	4.335-005	2.182-005	1.548-005	9.046-006	5.366-006	1.888-006	6.642-007	8.222-008	1.260-009	6.792-012	3.662-014
W183M	.000	9.743-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	1.197-002	3.955-003	2.273-003	9.551-004	4.112-004	7.621-005	1.412-005	4.852-007	5.724-010	1.252-013	2.738-017
W185M	.000	1.048-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	1.048+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	1.297-004	3.911-005	2.148-005	8.406-006	3.377-006	5.449-007	8.793-008	2.290-009	1.553-012	1.699-016	1.859-020
RE186	.000	1.501-003	4.088-013	6.745-018	2.195-025	1.156-032	.000	.000	.000	.000	.000	.000
RE187	.000	1.353-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011
RE188	.000	2.422-002	3.278-004	1.801-004	7.046-005	2.830-005	4.567-006	7.370-007	1.919-008	1.301-011	1.424-015	1.558-019
RE188M	.000	4.652-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	8.275-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017
PB209	.000	2.583-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002
TOTAL	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	2.374-011	2.331-011	2.309-011	2.276-011	2.245-011	2.182-011	2.122-011	2.006-011	1.793-011	1.558-011	1.354-011
HE	.000	9.496-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.001-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	4.244-010	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012
B	.000	3.148-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	2.489-006	2.446-006	2.446-006	2.446-006	2.446-006	2.446-006	2.446-006	2.445-006	2.445-006	2.444-006	2.443-006
N	.000	3.978-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	1.238-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	1.203-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.578-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	5.580-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	2.399-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	8.710-004	9.657-015	9.656-015	9.653-015	9.650-015	9.645-015	9.640-015	9.630-015	9.609-015	9.584-015	9.558-015
P	.000	4.930-008	1.469-010	8.091-012	1.630-013	7.960-014	7.856-014	7.851-014	7.842-014	7.825-014	7.804-014	7.784-014
CA	.000	9.409-008	4.843-008	3.752-008	2.516-008	1.707-008	7.848-009	3.609-009	7.633-010	3.414-011	7.024-013	1.445-014
SC	.000	9.336-004	1.686-004	1.026-004	4.719-005	2.217-005	4.895-006	1.081-006	5.267-008	1.251-010	6.562-014	3.441-017
TI	.000	1.423-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.700-017	1.357+000	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017
CR	.000	6.465-002	2.202-003	4.909-004	4.682-005	4.769-006	4.947-008	5.131-010	5.522-014	6.394-022	7.680-032	.000
MN	.000	4.246+000	3.483-003	3.049-003	2.475-003	2.022-003	1.348-003	8.992-004	4.000-004	7.913-005	1.044-005	1.378-006
FE	.000	2.587-002	1.486-002	1.319-002	1.181-002	1.093-002	9.531-003	8.340-003	6.388-003	3.748-003	1.925-003	9.883-004
CO	.000	2.359-001	1.345-001	1.215-001	1.098-001	1.032-001	9.499-002	8.866-002	7.768-002	5.971-002	4.298-002	3.094-002
NI	.000	1.766-002	1.105-004	1.104-004	1.102-004	1.100-004	1.096-004	1.093-004	1.086-004	1.071-004	1.054-004	1.036-004
CU	.000	1.741-001	1.784-022	1.639-029	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	1.312-006	9.331-007	7.868-007	6.024-007	4.647-007	2.765-007	1.646-007	5.827-008	7.307-009	5.452-010	4.068-011
SR	.000	3.279-002	3.844-003	1.687-003	4.646-004	1.327-004	1.082-005	8.848-007	8.746-009	2.750-009	2.591-009	2.441-009
Y	.000	1.928+000	1.197-002	5.881-003	1.932-003	6.551-004	7.529-005	8.664-006	1.280-007	1.316-008	1.238-008	1.166-008
ZR	.000	7.191+001	4.613+000	2.408+000	8.704-001	3.237-001	4.476-002	6.189-003	1.186-004	2.950-007	2.517-007	2.517-007
NB	.000	1.249+002	7.368+000	4.351+000	1.719+000	6.624-001	9.365-002	1.301-002	2.578-004	1.757-007	1.181-007	1.477-007
MO	.000	3.587-002	1.340-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.338-009	1.338-009	1.337-009
TC	.000	7.131-003	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010
AG	.000	2.599-007	1.198-007	1.095-007	9.511-008	8.294-008	6.308-008	4.799-008	2.778-008	9.324-009	2.386-009	6.135-010
CD	.000	8.868-004	8.501-006	3.422-006	8.803-007	2.867-007	8.845-008	5.974-008	3.425-008	1.150-008	2.940-009	7.515-010
IN	.000	2.057-001	9.523-002	6.622-002	3.755-002	2.165-002	7.204-003	2.398-003	2.659-004	3.267-006	1.337-008	5.471-011
SN	.000	5.279+000	1.032-001	7.820-002	5.468-002	3.925-002	2.092-002	1.157-002	3.804-003	4.784-004	5.516-005	2.280-005
SB	.000	9.727-002	6.632-002	6.361-002	5.962-002	5.600-002	4.941-002	4.360-002	3.395-002	2.058-002	1.101-002	5.889-003
TE	.000	1.857-003	3.664-003	3.838-003	3.802-003	3.637-003	3.237-003	2.860-003	2.227-003	1.350-003	7.222-004	3.863-004
LU	.000	1.195-003	1.266-008	9.660-009	6.346-009	4.219-009	1.864-009	8.238-010	1.609-010	6.135-012	1.043-013	2.653-015
HF	.000	5.760+000	8.604-002	3.392-002	8.226-003	2.215-003	2.053-004	2.569-005	6.039-007	4.459-010	1.639-011	1.634-011
TA	.000	7.738-003	1.830-003	1.275-003	7.237-004	4.174-004	1.388-004	4.618-005	5.109-006	6.259-008	3.037-010	5.013-011
W	.000	1.061+000	4.015-003	2.310-003	9.726-004	4.199-004	7.864-005	1.488-005	5.697-007	1.834-009	6.917-012	3.664-014
RE	.000	3.037-002	3.278-004	1.801-004	7.046-005	2.830-005	4.567-006	7.371-007	1.921-008	2.674-011	1.373-011	1.373-011
PB	1.871-017	2.583-006	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013
SUMTOT	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002
TOTAL	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002

CUMULATIVE TABLE TOTALS

AP+FP	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0

(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC

BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U234	2.430+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.361+002	2.361+002
U235	7.486+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000
U236	1.104+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001
U238	1.047+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002
PU238	.000	6.266+003	6.690+003	6.685+003	6.676+003	6.666+003	6.643+003	6.618+003	6.567+003	6.464+003	6.338+003	6.214+003
PU239	.000	3.898+004	4.063+004	4.063+004	4.063+004	4.063+004	4.063+004	4.063+004	4.063+004	4.063+004	4.062+004	4.062+004
PU240	.000	1.080+004	1.080+004	1.080+004	1.080+004	1.080+004	1.080+004	1.080+004	1.080+004	1.079+004	1.079+004	1.079+004
AM241	.000	9.847+001	5.221+002	7.313+002	1.055+003	1.367+003	1.977+003	2.573+003	3.721+003	5.851+003	8.229+003	1.033+004
CM244	.000	6.023+001	5.965+001	5.928+001	5.870+001	5.814+001	5.704+001	5.596+001	5.386+001	4.989+001	4.533+001	4.120+001
TOTALS												
TABLE	3.663+002	5.657+004	5.908+004	5.928+004	5.959+004	5.989+004	6.048+004	6.105+004	6.214+004	6.416+004	6.640+004	6.836+004
ACTUAL	3.663+002	5.657+004	5.908+004	5.928+004	5.959+004	5.989+004	6.048+004	6.105+004	6.214+004	6.416+004	6.640+004	6.836+004

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U238	1.256+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004
PU238	.000	1.022+003	1.091+003	1.090+003	1.089+003	1.087+003	1.083+003	1.079+003	1.071+003	1.054+003	1.034+003	1.013+003
PU240	.000	5.693+004	5.693+004	5.693+004	5.693+004	5.693+004	5.692+004	5.692+004	5.692+004	5.690+004	5.689+004	5.687+004
PU242	.000	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002
CM242	.000	3.600+004	2.258+004	1.750+004	1.175+004	7.974+003	3.678+003	1.700+003	3.700+002	2.826+001	1.239+001	1.192+001
CM244	.000	7.251+003	7.182+003	7.137+003	7.067+003	7.000+003	6.867+003	6.737+003	6.484+003	6.006+003	5.458+003	4.960+003
TOTALS												
TABLE	1.257+004	1.142+005	1.008+005	9.565+004	8.983+004	8.598+004	8.155+004	7.943+004	7.784+004	7.699+004	7.639+004	7.586+004
ACTUAL	1.257+004	1.142+005	1.008+005	9.565+004	8.983+004	8.598+004	8.155+004	7.943+004	7.784+004	7.699+004	7.639+004	7.586+004
OVERALL TOTALS												
TABLE	1.293+004	1.708+005	1.599+005	1.549+005	1.494+005	1.459+005	1.420+005	1.405+005	1.400+005	1.411+005	1.428+005	1.442+005
ACTUAL	1.293+004	1.708+005	1.599+005	1.549+005	1.494+005	1.459+005	1.420+005	1.405+005	1.400+005	1.411+005	1.428+005	1.442+005

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	4.166+013	8.501+011	5.002+011	2.575+011	1.584+011	8.198+010	5.210+010	2.645+010	1.085+010	5.270+009	2.852+009
2.500-002	.000	3.381+013	3.451+012	2.763+012	2.048+012	1.576+012	1.000+012	6.863+011	3.829+011	1.766+011	8.794+010	4.656+010
3.750-002	.000	3.889+012	1.532+011	1.393+011	1.247+011	1.148+011	1.000+011	8.804+010	6.849+010	4.153+010	2.223+010	1.190+010
5.750-002	.000	9.609+012	2.563+011	1.056+011	2.938+010	1.033+010	2.587+009	1.194+009	4.860+008	2.014+008	1.095+008	6.664+007
8.500-002	.000	4.232+012	1.347+010	7.502+009	3.157+009	1.479+009	4.592+008	2.307+008	1.282+008	7.768+007	4.627+007	2.822+007
1.250-001	.000	5.759+012	3.554+011	1.365+011	3.245+010	9.731+009	2.836+009	2.104+009	1.577+009	9.533+008	5.118+008	2.751+008
2.250-001	3.763-013	3.304+013	2.134+011	1.127+011	7.140+010	5.377+010	3.879+010	3.206+010	2.422+010	1.481+010	7.818+009	4.182+009
3.750-001	.000	1.808+013	3.976+011	3.099+011	2.622+011	2.409+011	2.112+011	1.863+011	1.450+011	8.791+010	4.703+010	2.516+010
5.750-001	.000	4.790+014	8.658+011	5.446+011	3.735+011	3.195+011	2.723+011	2.395+011	1.864+011	1.130+011	6.044+010	3.233+010
8.500-001	1.500-013	5.200+014	8.058+013	4.558+013	1.750+013	6.680+012	9.461+011	1.365+011	5.482+009	5.888+008	8.379+007	1.554+007
1.250+000	8.532-014	3.128+013	5.400+011	5.254+011	5.051+011	4.872+011	4.548+011	4.254+011	3.728+011	2.865+011	2.062+011	1.484+011
1.750+000	4.275-014	1.072+013	8.499+008	4.649+008	1.822+008	7.344+007	1.200+007	1.972+006	5.394+004	4.876+001	5.578+000	5.139+000
2.250+000	2.142-014	1.571+012	4.112+007	9.077+006	4.684+006	3.279+006	2.493+006	2.264+006	1.976+006	1.519+006	1.093+006	7.867+005
2.750+000	1.073-014	7.853+011	1.737+004	1.285+004	9.694+003	8.468+003	7.509+003	6.980+003	6.113+003	4.699+003	3.382+003	2.434+003
3.500+000	7.904-015	1.744+010	1.213-008	8.979-009	5.610-009	3.551-009	1.423-009	5.703-010	9.160-011	2.383-012	4.571-014	2.097-014
5.000+000	2.353-015	5.126+006	3.610-009	2.673-009	1.670-009	1.057-009	4.237-010	1.698-010	2.727-011	7.061-013	1.029-014	3.097-015
7.000+000	1.527-016	3.598+005	2.342-010	1.735-010	1.084-010	6.860-011	2.749-011	1.102-011	1.769-012	4.582-014	6.674-016	2.008-016
1.100+001	9.655-018	2.823+004	1.481-011	1.097-011	6.853-012	4.338-012	1.738-012	6.966-013	1.119-013	2.897-015	4.221-017	1.270-017
TOTAL	6.970-013	1.193+015	8.767+013	5.072+013	2.121+013	9.651+012	3.111+012	1.850+012	1.214+012	7.328+011	4.377+011	2.718+011
MEV/SEC	5.120-013	7.985+014	7.003+013	3.996+013	1.591+013	6.621+012	1.648+012	8.842+011	6.504+011	4.662+011	3.152+011	2.162+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	6.250+005	1.275+004	7.503+003	3.862+003	2.375+003	1.230+003	7.816+002	3.967+002	1.627+002	7.905+001	4.278+001
2.500-002	.000	8.453+005	8.628+004	6.907+004	5.121+004	3.939+004	2.501+004	1.716+004	9.572+003	4.415+003	2.198+003	1.164+003
3.750-002	.000	1.459+005	5.746+003	5.225+003	4.677+003	4.306+003	3.751+003	3.301+003	2.568+003	1.558+003	8.335+002	4.462+002
5.750-002	.000	5.525+005	1.474+004	6.072+003	1.689+003	5.938+002	1.487+002	6.865+001	2.794+001	1.158+001	6.296+000	3.832+000
8.500-002	.000	3.598+005	1.145+003	6.377+002	2.683+002	1.257+002	3.903+001	1.961+001	1.090+001	6.602+000	3.933+000	2.399+000
1.250-001	.000	7.199+005	4.443+004	1.706+004	4.056+003	1.216+003	3.546+002	2.630+002	1.972+002	1.192+002	6.397+001	3.439+001
2.250-001	8.467-020	7.434+006	4.802+004	2.536+004	1.607+004	1.210+004	8.727+003	7.214+003	5.449+003	3.288+003	1.759+003	9.411+002
3.750-001	.000	6.781+006	1.491+005	1.162+005	9.833+004	9.034+004	7.920+004	6.985+004	5.438+004	3.297+004	1.764+004	9.434+003
5.750-001	.000	2.754+008	4.978+005	3.132+005	2.148+005	1.837+005	1.566+005	1.377+005	1.072+005	6.496+004	3.475+004	1.859+004
8.500-001	1.275-019	4.420+008	6.849+007	3.874+007	1.488+007	5.678+006	8.042+005	1.160+005	4.660+003	5.004+002	7.123+001	1.321+001
1.250+000	1.067-019	3.910+007	6.751+005	6.568+005	6.314+005	6.090+005	5.685+005	5.318+005	4.660+005	3.582+005	2.578+005	1.855+005
1.750+000	7.482-020	1.877+007	1.487+003	8.136+002	3.188+002	1.285+002	2.100+001	3.452+000	9.440-002	8.532-005	9.761-006	8.994-006
2.250+000	4.820-020	3.535+006	9.252+001	2.042+001	1.054+001	7.377+000	5.609+000	5.094+000	4.445+000	3.417+000	2.459+000	1.770+000
2.750+000	2.952-020	2.160+006	4.777-002	3.535-002	2.666-002	2.329-002	2.065-002	1.920-002	1.681-002	1.292-002	9.301-003	6.694-003
3.500+000	2.766-020	6.106+004	4.244-014	3.143-014	1.963-014	1.243-014	4.981-015	1.996-015	3.206-016	8.342-018	1.600-019	7.340-020
5.000+000	1.177-020	2.563+001	1.805-014	1.337-014	8.351-015	5.286-015	2.118-015	8.489-016	1.363-016	3.531-018	5.144-020	1.548-020
7.000+000	1.069-021	2.519+000	1.640-015	1.214-015	7.586-016	4.802-016	1.924-016	7.712-017	1.238-017	3.207-019	4.672-021	1.406-021
1.100+001	1.062-022	3.105-001	1.629-016	1.207-016	7.538-017	4.772-017	1.912-017	7.663-018	1.231-018	3.187-020	4.643-022	1.397-022
TOTAL	5.120-019	7.985+008	7.003+007	3.996+007	1.591+007	6.621+006	1.648+006	8.842+005	6.504+005	4.662+005	3.152+005	2.162+005
GAM POW	8.207-026	1.280+002	1.123+001	6.406+000	2.550+000	1.061+000	2.641-001	1.417-001	1.043-001	7.472-002	5.053-002	3.466-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	9.655-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	5.530+011	5.297+011	5.184+011	5.011+011	4.849+011	4.540+011	4.251+011	3.727+011	2.865+011	2.062+011	1.484+011

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	2.931+006	2.807+006	2.747+006	2.656+006	2.570+006	2.406+006	2.253+006	1.976+006	1.519+006	1.093+006	7.867+005
PB204	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	7.904-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	4.058+009	3.458+017	2.883+011	2.692+011	2.665+011	2.656+011	2.666+011	2.697+011	2.778+011	2.949+011	3.142+011	3.312+011
2.500-002	.000	1.751+015	1.416+009	1.100+009	1.415+009	1.719+009	2.315+009	2.896+009	4.016+009	6.094+009	8.415+009	1.046+010
3.750-002	6.916+005	1.749+016	5.302+008	5.035+008	5.167+008	5.332+008	5.722+008	6.150+008	7.028+008	8.703+008	1.058+009	1.223+009
5.750-002	2.520+007	7.473+015	1.677+010	1.193+010	1.656+010	2.103+010	2.979+010	3.833+010	5.480+010	8.536+010	1.195+011	1.496+011
8.500-002	5.908+007	1.892+017	5.008+009	1.365+009	1.361+009	1.364+009	1.370+009	1.375+009	1.386+009	1.406+009	1.428+009	1.447+009
1.250-001	1.231+008	1.501+017	6.920+009	5.349+008	5.237+008	5.260+008	5.309+008	5.360+008	5.460+008	5.647+008	5.857+008	6.042+008
2.250-001	4.129+008	1.044+017	5.394+009	5.780+008	5.677+008	5.677+008	5.677+008	5.679+008	5.684+008	5.694+008	5.704+008	5.712+008
3.750-001	1.030+006	1.039+016	6.341+008	3.524+008	3.525+008	3.527+008	3.530+008	3.533+008	3.539+008	3.550+008	3.562+008	3.574+008
5.750-001	5.804+004	1.602+015	5.418+007	5.423+007	5.427+007	5.433+007	5.449+007	5.467+007	5.504+007	5.571+007	5.641+007	5.700+007
8.500-001	3.326+004	2.920+015	7.802+007	7.810+007	7.814+007	7.816+007	7.823+007	7.829+007	7.841+007	7.862+007	7.884+007	7.901+007
1.250+000	1.207+004	1.003+014	6.926+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007
1.750+000	5.908+003	4.920+011	1.161+007	1.162+007	1.162+007	1.163+007	1.163+007	1.163+007	1.164+007	1.165+007	1.166+007	1.166+007
2.250+000	3.422+003	2.855+004	2.573+004	2.464+004	2.341+004	2.260+004	2.168+004	2.125+004	2.095+004	2.086+004	2.086+004	2.091+004
2.750+000	1.988+003	3.904+004	8.291+004	1.038+005	1.346+005	1.627+005	2.137+005	2.586+005	3.316+005	4.283+005	4.914+005	5.189+005
3.500+000	1.778+003	1.462+004	1.314+004	1.258+004	1.194+004	1.152+004	1.104+004	1.081+004	1.064+004	1.057+004	1.052+004	1.048+004
5.000+000	7.638+002	6.208+003	5.575+003	5.334+003	5.060+003	4.880+003	4.672+003	4.574+003	4.502+003	4.467+003	4.445+003	4.425+003
7.000+000	8.793+001	7.070+002	6.340+002	6.063+002	5.748+002	5.541+002	5.302+002	5.189+002	5.105+002	5.063+002	5.035+002	5.010+002
1.100+001	1.011+001	8.092+001	7.247+001	6.928+001	6.564+001	6.325+001	6.049+001	5.917+001	5.820+001	5.770+001	5.737+001	5.707+001
TOTAL	4.680+009	8.313+017	3.252+011	2.857+011	2.880+011	2.919+011	3.023+011	3.146+011	3.404+011	3.903+011	4.463+011	4.956+011
MEV/SEC	1.762+008	7.209+016	8.290+009	5.420+009	5.651+009	5.903+009	6.440+009	6.995+009	8.098+009	1.017+010	1.250+010	1.454+010

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	6.088+001	5.187+009	4.324+003	4.038+003	3.997+003	3.984+003	3.999+003	4.045+003	4.167+003	4.423+003	4.713+003	4.968+003
2.500-002	.000	4.377+007	3.539+001	2.750+001	3.538+001	4.297+001	5.787+001	7.240+001	1.004+002	1.523+002	2.104+002	2.615+002
3.750-002	2.593-002	6.560+008	1.988+001	1.888+001	1.938+001	1.999+001	2.146+001	2.306+001	2.636+001	3.264+001	3.967+001	4.586+001
5.750-002	1.449+000	4.297+008	9.641+002	8.860+002	9.525+002	1.209+003	1.713+003	2.204+003	3.151+003	4.908+003	6.870+003	8.600+003
8.500-002	5.022+000	1.608+010	4.257+002	1.161+002	1.157+002	1.160+002	1.164+002	1.169+002	1.178+002	1.195+002	1.214+002	1.230+002
1.250-001	1.539+001	1.877+010	8.651+002	6.686+001	6.546+001	6.575+001	6.637+001	6.700+001	6.825+001	7.059+001	7.322+001	7.553+001
2.250-001	9.290+001	2.349+010	1.214+003	1.301+002	1.277+002	1.277+002	1.277+002	1.278+002	1.279+002	1.281+002	1.283+002	1.285+002
3.750-001	3.863-001	3.898+009	2.378+002	1.322+002	1.322+002	1.323+002	1.324+002	1.325+002	1.327+002	1.331+002	1.336+002	1.340+002
5.750-001	3.337-002	9.210+008	3.115+001	3.118+001	3.121+001	3.124+001	3.133+001	3.143+001	3.165+001	3.203+001	3.244+001	3.278+001
8.500-001	2.827-002	2.482+009	6.632+001	6.638+001	6.642+001	6.644+001	6.649+001	6.655+001	6.665+001	6.683+001	6.701+001	6.716+001
1.250+000	1.509-002	1.254+008	8.657+001	8.664+001	8.665+001	8.665+001	8.665+001	8.665+001	8.665+001	8.665+001	8.665+001	8.665+001
1.750+000	1.034-002	8.610+005	2.032+001	2.034+001	2.034+001	2.035+001	2.035+001	2.036+001	2.037+001	2.039+001	2.040+001	2.040+001
2.250+000	7.700-003	6.423-002	5.788-002	5.545-002	5.268-002	5.086-002	4.878-002	4.781-002	4.713-002	4.693-002	4.694-002	4.705-002
2.750+000	5.468-003	1.074-001	2.280-001	2.854-001	3.700-001	4.475-001	5.878-001	7.111-001	9.118-001	1.178+000	1.351+000	1.427+000
3.500+000	6.222-003	5.116-002	4.601-002	4.404-002	4.180-002	4.032-002	3.863-002	3.783-002	3.725-002	3.698-002	3.682-002	3.667-002
5.000+000	3.819-003	3.104-002	2.787-002	2.687-002	2.530-002	2.440-002	2.336-002	2.287-002	2.251-002	2.234-002	2.223-002	2.213-002
7.000+000	6.155-004	4.949-003	4.438-003	4.244-003	4.024-003	3.879-003	3.711-003	3.632-003	3.573-003	3.544-003	3.524-003	3.507-003
1.100+001	1.112-004	8.901-004	7.972-004	7.620-004	7.221-004	6.957-004	6.653-004	6.509-004	6.402-004	6.347-004	6.310-004	6.277-004
TOTAL	1.762+002	7.209+010	8.290+003	5.420+003	5.651+003	5.903+003	6.440+003	6.995+003	8.098+003	1.017+004	1.250+004	1.454+004
GAM POW	2.824-005	1.156+004	1.329-003	8.688-004	9.058-004	9.462-004	1.032-003	1.121-003	1.298-003	1.631-003	2.003-003	2.331-003

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U235	6.918+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.031+017	5.083+014	3.422+014	2.245+014	1.686+014	1.095+014	7.610+013	4.097+013	1.901+013	1.373+013	1.229+013
2.500-002	.000	4.842+016	2.052+014	1.121+014	6.348+013	4.655+013	3.166+013	2.358+013	1.466+013	7.750+012	4.882+012	3.623+012
3.750-002	.000	5.793+016	5.799+014	3.692+014	2.525+014	1.978+014	1.299+014	8.749+013	4.265+013	1.577+013	9.956+012	8.606+012
5.750-002	.000	2.205+016	9.694+013	6.810+013	4.637+013	3.544+013	2.327+013	1.615+013	8.592+012	3.871+012	2.753+012	2.456+012
8.500-002	.000	2.918+016	1.205+014	9.496+013	7.147+013	5.644+013	3.675+013	2.450+013	1.154+013	3.732+012	2.064+012	1.707+012
1.250-001	.000	5.837+016	1.033+015	4.888+014	2.613+014	1.919+014	1.212+014	7.834+013	3.330+013	6.992+012	2.029+012	1.345+012
2.250-001	.000	1.770+017	6.841+013	4.571+013	3.024+013	2.287+013	1.501+013	1.051+013	5.706+012	2.578+012	1.739+012	1.484+012
3.750-001	.000	1.314+017	5.086+013	3.024+013	2.170+013	1.767+013	1.291+013	9.880+012	6.274+012	3.244+012	1.870+012	1.252+012
5.750-001	.000	2.592+017	1.422+015	6.966+014	3.681+014	2.850+014	2.289+014	1.980+014	1.602+014	1.273+014	1.116+014	1.028+014
8.500-001	.000	2.976+017	8.358+015	4.727+015	1.825+015	7.050+014	1.103+014	2.451+013	7.826+012	3.796+012	1.784+012	9.332+011
1.250+000	.000	1.814+017	3.328+013	2.454+013	1.773+013	1.397+013	9.414+012	6.580+012	3.395+012	1.163+012	5.204+011	3.432+011
1.750+000	.000	6.481+016	3.137+013	2.863+012	1.421+012	1.174+012	8.153+011	5.700+011	2.840+011	7.979+010	2.552+010	1.480+010
2.250+000	.000	3.599+016	2.171+013	1.836+013	1.460+013	1.170+013	7.520+012	4.835+012	2.000+012	3.443+011	3.873+010	4.463+009
2.750+000	.000	1.582+016	1.201+012	1.192+011	6.361+010	5.305+010	3.723+010	2.615+010	1.293+010	3.189+009	5.602+008	9.916+007
3.500+000	.000	9.369+015	2.031+010	1.031+010	8.343+009	7.023+009	4.980+009	3.531+009	1.775+009	4.487+008	8.042+007	1.441+007
5.000+000	.000	5.592+015	1.895-006	1.920-006	1.956-006	1.989-006	2.049-006	2.102-006	2.188-006	2.306-006	2.387-006	2.429-006
7.000+000	.000	3.650+013	1.230-007	1.246-007	1.269-007	1.291-007	1.330-007	1.364-007	1.420-007	1.496-007	1.549-007	1.576-007
1.100+001	.000	3.580+009	7.775-009	7.876-009	8.026-009	8.162-009	8.408-009	8.624-009	8.979-009	9.461-009	9.795-009	9.968-009
TOTAL	.000	1.497+018	1.253+018	7.021+015	3.198+015	1.754+015	8.372+014	5.611+014	3.374+014	1.957+014	1.530+014	1.369+014
MEV/SEC	.000	1.033+018	8.284+015	4.613+015	1.891+015	8.628+014	2.907+014	1.788+014	1.199+014	8.309+013	6.884+013	6.225+013

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.547+009	7.625+006	5.134+006	3.367+006	2.528+006	1.643+006	1.141+006	6.145+005	2.851+005	2.059+005	1.843+005
2.500-002	.000	1.211+009	5.131+006	2.802+006	1.587+006	1.164+006	7.916+005	5.896+005	3.665+005	1.937+005	1.220+005	9.059+004
3.750-002	.000	2.172+009	2.175+007	1.385+007	9.470+006	7.418+006	4.871+006	3.281+006	1.599+006	5.915+005	3.733+005	3.227+005
5.750-002	.000	1.268+009	5.574+006	3.916+006	2.666+006	2.038+006	1.338+006	9.285+005	4.940+005	2.226+005	1.583+005	1.412+005
8.500-002	.000	2.480+009	1.025+007	8.072+006	6.075+006	4.797+006	3.124+006	2.082+006	9.806+005	3.172+005	1.754+005	1.451+005
1.250-001	.000	7.297+009	1.292+008	6.111+007	3.266+007	2.399+007	1.515+007	9.793+006	4.162+006	8.740+005	2.536+005	1.682+005
2.250-001	.000	3.983+010	1.539+007	1.028+007	6.804+006	5.145+006	3.378+006	2.365+006	1.284+006	5.801+005	3.913+005	3.340+005
3.750-001	.000	4.926+010	1.807+007	1.134+007	8.137+006	6.624+006	4.841+006	3.705+006	2.353+006	1.217+006	7.012+005	4.696+005
5.750-001	.000	1.491+011	8.174+008	4.005+008	2.117+008	1.638+008	1.316+008	1.139+008	9.213+007	7.321+007	6.416+007	5.913+007
8.500-001	.000	2.530+011	7.104+009	4.018+009	1.551+009	5.993+008	9.373+007	2.083+007	6.652+006	3.227+006	1.516+006	7.932+005
1.250+000	.000	2.267+011	4.160+007	3.068+007	2.217+007	1.747+007	1.177+007	8.225+006	4.243+006	1.454+006	6.505+005	4.290+005
1.750+000	.000	1.134+011	5.490+007	5.011+006	2.487+006	2.054+006	1.427+006	9.974+005	4.969+005	1.396+005	4.466+004	2.590+004
2.250+000	.000	8.099+010	4.885+007	4.131+007	3.285+007	2.633+007	1.692+007	1.088+007	4.500+006	7.746+005	8.713+004	1.004+004
2.750+000	.000	4.351+010	3.301+006	3.278+005	1.749+005	1.459+005	1.024+005	7.191+004	3.557+004	8.770+003	1.540+003	2.727+002
3.500+000	.000	3.279+010	7.110+004	3.608+004	2.920+004	2.458+004	1.743+004	1.236+004	6.213+003	1.570+003	2.815+002	5.045+001
5.000+000	.000	2.796+010	9.475-012	9.598-012	9.780-012	9.946-012	1.025-011	1.051-011	1.094-011	1.153-011	1.194-011	1.215-011
7.000+000	.000	2.555+008	8.607-013	8.719-013	8.884-013	9.035-013	9.307-013	9.546-013	9.939-013	1.047-012	1.084-012	1.103-012
1.100+001	.000	3.938+004	8.553-014	8.664-014	8.828-014	8.978-014	9.249-014	9.486-014	9.877-014	1.041-013	1.077-013	1.096-013
TOTAL	.000	1.033+012	8.284+009	4.613+009	1.891+009	8.628+008	2.907+008	1.788+008	1.199+008	8.309+007	6.884+007	6.225+007
GAM POW	.000	1.655+005	1.328+003	7.394+002	3.031+002	1.383+002	4.660+001	2.866+001	1.922+001	1.332+001	1.104+001	9.978+000

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	2.690+010	1.114+010	9.954+009	8.340+009	7.023+009	4.980+009	3.531+009	1.775+009	4.487+008	8.042+007	1.441+007

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RB 94	.000	3.580+009	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
NEUT PRODN	.00	.00	2.15-009	2.15-009	2.15-009	2.15-009	2.15-009	2.15-009	2.15-009	2.15-009	2.15-009	2.14-009
NEUT DESTN	.00	.00	9.78+000	9.78+000	9.78+000	9.78+000	9.78+000	9.78+000	9.78+000	9.78+000	9.78+000	9.78+000
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 858 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	1.999+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000
H 2	5.999-004	8.116-004	8.116-004	8.116-004	8.116-004	8.116-004	8.116-004	8.116-004	8.116-004	8.116-004	8.116-004	8.116-004
H 3	.000	1.509-005	1.481-005	1.468-005	1.447-005	1.426-005	1.387-005	1.349-005	1.275-005	1.140-005	9.903-006	8.607-006
HE 3	.000	7.237-008	3.481-007	4.840-007	6.943-007	8.959-007	1.291-006	1.674-006	2.411-006	3.764-006	5.256-006	6.553-006
HE 4	.000	7.837-002	7.837-002	7.837-002	7.837-002	7.837-002	7.837-002	7.837-002	7.837-002	7.837-002	7.837-002	7.837-002
LI 6	.000	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004
LI 7	.000	1.333-001	1.333-001	1.333-001	1.333-001	1.333-001	1.333-001	1.333-001	1.333-001	1.333-001	1.333-001	1.333-001
BE 9	1.000+001	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000
BE 10	.000	2.160-005	2.160-005	2.160-005	2.160-005	2.160-005	2.160-005	2.160-005	2.160-005	2.160-005	2.160-005	2.160-005
B 10	4.167-001	2.262-001	2.262-001	2.262-001	2.262-001	2.262-001	2.262-001	2.262-001	2.262-001	2.262-001	2.262-001	2.262-001
B 11	1.833+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000
C 12	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002
C 13	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000
C 14	.000	2.493-002	2.493-002	2.493-002	2.493-002	2.493-002	2.493-002	2.493-002	2.492-002	2.492-002	2.491-002	2.490-002
N 14	7.471+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001
N 15	2.940-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001
NE 21	.000	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005
NE 22	.000	1.794-005	1.794-005	1.794-005	1.794-005	1.794-005	1.794-005	1.794-005	1.794-005	1.794-005	1.794-005	1.794-005
NA 23	.000	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006
NA 24	.000	2.013-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 24	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001
MG 25	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000
MG 26	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000
AL 27	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002
AL 28	.000	6.395-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 28	1.148+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002
SI 29	6.023+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000
SI 30	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000
P 31	.000	7.316-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005
TI 47	.000	7.741-007	7.741-007	7.741-007	7.741-007	7.741-007	7.741-007	7.741-007	7.741-007	7.741-007	7.741-007	7.741-007
TI 49	.000	2.094-006	2.094-006	2.094-006	2.094-006	2.094-006	2.094-006	2.094-006	2.094-006	2.094-006	2.094-006	2.094-006
TI 50	.000	8.314-006	8.314-006	8.314-006	8.314-006	8.314-006	8.314-006	8.314-006	8.314-006	8.314-006	8.314-006	8.314-006
V 50	.000	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005
V 51	.000	4.153-003	6.125-003	6.205-003	6.226-003	6.228-003	6.228-003	6.228-003	6.228-003	6.228-003	6.228-003	6.228-003
CR 50	2.716+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000
CR 51	.000	2.075-003	1.031-004	2.299-005	2.192-006	2.233-007	2.316-009	2.403-011	2.586-015	2.994-023	3.596-033	.000
CR 52	5.441+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001
CR 53	6.287+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000
CR 54	1.591+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000
MN 54	.000	4.346-004	3.330-004	2.915-004	2.367-004	1.933-004	1.289-004	8.597-005	3.824-005	7.565-006	9.982-007	1.317-007
MN 55	2.500+001	2.494+001	2.494+001	2.494+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.496+001	2.496+001
MN 56	.000	9.094-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	1.964+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001
FE 55	.000	1.517-002	1.390-002	1.331-002	1.242-002	1.162-002	1.017-002	8.903-003	6.820-003	4.001-003	2.055-003	1.055-003
FE 56	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002
FE 57	7.672+000	7.802+000	7.802+000	7.802+000	7.802+000	7.802+000	7.802+000	7.802+000	7.802+000	7.802+000	7.802+000	7.802+000
FE 58	1.053+000	1.056+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000
FE 59	.000	9.339-005	1.471-005	5.837-006	1.373-006	3.365-007	2.020-008	1.212-009	4.367-012	5.669-017	4.416-023	3.441-029
CO 58	.000	1.061-003	3.277-004	1.821-004	7.257-005	2.967-005	4.962-006	8.296-007	2.319-008	1.813-011	2.369-015	3.095-019
CO 59	.000	4.488-004	5.277-004	5.366-004	5.412-004	5.424-004	5.430-004	5.433-004	5.439-004	5.451-004	5.466-004	5.480-004
CO 60	.000	3.375-005	3.232-005	3.163-005	3.058-005	2.959-005	2.770-005	2.594-005	2.274-005	1.748-005	1.258-005	9.057-006
NI 58	6.740+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NI 59	.000	6.771-002	6.771-002	6.771-002	6.771-002	6.771-002	6.771-002	6.771-002	6.770-002	6.770-002	6.770-002	6.770-002
NI 60	2.665+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001
NI 61	1.173+000	1.184+000	1.184+000	1.184+000	1.184+000	1.184+000	1.184+000	1.184+000	1.184+000	1.184+000	1.184+000	1.184+000
NI 62	3.788+000	3.779+000	3.779+000	3.779+000	3.779+000	3.779+000	3.779+000	3.779+000	3.779+000	3.779+000	3.779+000	3.779+000
NI 63	.000	1.054-002	1.051-002	1.050-002	1.048-002	1.046-002	1.042-002	1.038-002	1.030-002	1.015-002	9.956-003	9.771-003
NI 64	8.912-001	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000
NI 65	.000	3.508-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 63	5.140+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001
CU 64	.000	2.888-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	2.360+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001
CU 66	.000	4.297-007	8.165-030	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 64	.000	1.422-002	1.433-002	1.433-002	1.433-002	1.433-002	1.433-002	1.433-002	1.433-002	1.433-002	1.433-002	1.433-002
ZN 65	.000	9.691-007	6.890-007	5.810-007	4.448-007	3.432-007	2.042-007	1.215-007	4.303-008	5.395-009	4.026-010	3.004-011
ZN 66	.000	8.559-003	8.559-003	8.559-003	8.559-003	8.559-003	8.559-003	8.559-003	8.559-003	8.559-003	8.559-003	8.559-003
ZN 67	.000	5.902-007	5.905-007	5.905-007	5.905-007	5.905-007	5.905-007	5.905-007	5.905-007	5.905-007	5.905-007	5.905-007
SR 88	.000	4.914-006	4.914-006	4.914-006	4.914-006	4.914-006	4.914-006	4.914-006	4.914-006	4.914-006	4.914-006	4.914-006
Y 89	.000	1.868-007	3.378-007	3.580-007	3.694-007	3.725-007	3.737-007	3.738-007	3.738-007	3.738-007	3.738-007	3.738-007
Y 90	.000	5.241-007	4.581-015	4.563-015	4.536-015	4.509-015	4.455-015	4.403-015	4.299-015	4.099-015	3.862-015	3.639-015
Y 91	.000	5.298-007	1.279-007	6.282-008	2.064-008	6.998-009	8.041-010	9.240-011	1.220-012	2.127-016	4.262-021	8.539-026
ZR 90	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001
ZR 91	7.255+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000
ZR 92	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001
ZR 93	.000	8.115-004	8.115-004	8.115-004	8.115-004	8.115-004	8.115-004	8.115-004	8.115-004	8.115-004	8.115-004	8.115-004
ZR 94	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001
ZR 95	.000	1.464-004	3.989-005	2.083-005	7.527-006	2.799-006	3.871-007	5.352-008	1.023-009	3.742-013	1.892-017	9.564-022
ZR 96	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000
ZR 97	.000	5.193-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	5.356-005	3.692-005	2.180-005	8.615-006	3.320-006	4.694-007	6.519-008	1.292-009	4.564-013	2.307-017	1.167-021
NB 97	.000	3.693-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 95	.000	5.792-005	1.811-004	2.153-004	2.418-004	2.518-004	2.571-004	2.578-004	2.579-004	2.579-004	2.579-004	2.579-004
MO 97	.000	5.145-004	5.201-004	5.201-004	5.201-004	5.201-004	5.201-004	5.201-004	5.201-004	5.201-004	5.201-004	5.201-004
MO 98	.000	2.749-007	2.749-007	2.749-007	2.749-007	2.749-007	2.749-007	2.749-007	2.749-007	2.749-007	2.749-007	2.749-007
AG107	.000	4.290-007	4.306-007	4.306-007	4.306-007	4.306-007	4.306-007	4.306-007	4.306-007	4.306-007	4.306-007	4.306-007
AG109	.000	6.889-008	1.938-007	2.483-007	3.244-007	3.888-007	4.941-007	5.743-007	6.817-007	7.800-007	8.170-007	8.265-007
CD106	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003
CD108	2.136-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003
CD109	.000	7.608-007	6.360-007	5.815-007	5.053-007	4.409-007	3.356-007	2.555-007	1.481-007	4.972-008	1.271-008	3.249-009
CD110	3.055-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002
CD111	3.157-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002
CD112	6.001-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002
CD113	3.063-002	1.331-005	1.331-005	1.331-005	1.331-005	1.331-005	1.331-005	1.331-005	1.331-005	1.331-005	1.331-005	1.331-005
CD114	7.270-002	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001
CD115	.000	3.239-006	1.982-022	1.550-030	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	4.035-006	6.249-007	2.459-007	5.710-008	1.381-008	8.082-010	4.729-011	1.619-013	1.897-018	1.301-024	8.918-031
CD116	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002
IN115	.000	3.957-006	7.367-006	7.746-006	7.935-006	7.978-006	7.991-006	7.992-006	7.992-006	7.992-006	7.992-006	7.992-006
SN117	.000	3.211-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006
SUMTOT	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
TOTAL	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	2.000+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000
HE	.000	7.837-002	7.837-002	7.838-002	7.838-002	7.838-002	7.838-002	7.838-002	7.838-002	7.838-002	7.838-002	7.838-002
LI	.000	1.336-001	1.336-001	1.336-001	1.336-001	1.336-001	1.336-001	1.336-001	1.336-001	1.336-001	1.336-001	1.336-001
BE	1.000+001	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000
B	2.250+000	2.062+000	2.062+000	2.062+000	2.062+000	2.062+000	2.062+000	2.062+000	2.062+000	2.062+000	2.062+000	2.062+000
C	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002
N	7.500+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001
NE	.000	2.989-005	2.989-005	2.989-005	2.989-005	2.989-005	2.989-005	2.989-005	2.989-005	2.989-005	2.989-005	2.989-005
NA	.000	5.658-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006	3.646-006
MG	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001
AL	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002
SI	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002
P	.000	7.316-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005	7.327-005
TI	.000	1.118-005	1.118-005	1.118-005	1.118-005	1.118-005	1.118-005	1.118-005	1.118-005	1.118-005	1.118-005	1.118-005
V	.000	4.185-003	6.157-003	6.237-003	6.258-003	6.260-003	6.260-003	6.260-003	6.260-003	6.260-003	6.260-003	6.260-003
CR	6.500+001	6.500+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001
MN	2.500+001	2.494+001	2.494+001	2.494+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.496+001	2.496+001
FE	3.500+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.500+002	3.500+002	3.500+002
CO	.000	1.544-003	8.877-004	7.504-004	6.444-004	6.017-004	5.757-004	5.701-004	5.667-004	5.626-004	5.592-004	5.571-004
NI	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002
CU	7.500+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001
ZN	.000	2.278-002	2.289-002	2.289-002	2.289-002	2.289-002	2.289-002	2.289-002	2.289-002	2.289-002	2.289-002	2.289-002
SR	.000	5.155-006	5.004-006	4.984-006	4.972-006	4.969-006	4.968-006	4.968-006	4.968-006	4.968-006	4.968-006	4.968-006
Y	.000	1.242-006	4.657-007	4.208-007	3.901-007	3.795-007	3.745-007	3.739-007	3.738-007	3.738-007	3.738-007	3.738-007
ZR	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001
NB	.000	5.400-005	3.694-005	2.181-005	8.618-006	3.321-006	4.702-007	6.600-008	2.455-009	1.899-009	2.817-009	3.736-009
MO	.000	5.729-004	7.016-004	7.358-004	7.623-004	7.723-004	7.776-004	7.783-004	7.784-004	7.784-004	7.784-004	7.784-004
AG	.000	4.981-007	6.246-007	6.791-007	7.552-007	8.197-007	9.249-007	1.005-006	1.112-006	1.211-006	1.248-006	1.257-006
CD	2.500-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001
IN	.000	3.962-006	7.367-006	7.746-006	7.935-006	7.978-006	7.991-006	7.992-006	7.992-006	7.992-006	7.992-006	7.992-006
SN	.000	3.211-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006	3.220-006
SUMTOT	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
TOTAL	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

CUMULATIVE TABLE TOTALS

AP+FP	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	1.457-001	1.430-001	1.417-001	1.397-001	1.377-001	1.339-001	1.302-001	1.231-001	1.100-001	9.561-002	8.309-002
H 4	.000	4.259-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.198+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.717-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007
B 12	.000	2.520-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	1.112-001	1.112-001	1.112-001	1.112-001	1.112-001	1.111-001	1.111-001	1.111-001	1.111-001	1.111-001	1.110-001
C 15	.000	3.360-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	1.223-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	2.934-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	1.753+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	1.709-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.772-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.060+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	1.918+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	4.853-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	4.707-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	4.377+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	8.643-005	2.575-007	1.418-008	2.857-010	1.395-010	1.377-010	1.376-010	1.375-010	1.372-010	1.368-010	1.364-010
TI 51	.000	1.199-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 52	.000	1.536+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.019-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	1.029-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	1.918+002	9.533+000	2.125+000	2.027-001	2.064-002	2.141-004	2.221-006	2.390-010	2.768-018	.000	.000
CR 55	.000	3.290+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	3.364+000	2.578+000	2.257+000	1.832+000	1.496+000	9.979-001	6.655-001	2.960-001	5.856-002	7.727-003	1.020-003
MN 56	.000	1.975+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	4.752-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	1.574-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	3.795+001	3.477+001	3.328+001	3.107+001	2.907+001	2.544+001	2.227+001	1.706+001	1.001+001	5.139+000	2.639+000
FE 59	.000	4.595+000	7.237-001	2.872-001	6.757-002	1.656-002	9.937-004	5.965-005	2.149-007	2.789-012	2.173-018	1.693-024
CO 58	.000	3.378+001	1.043+001	5.795+000	2.309+000	9.443-001	1.579-001	2.640-002	7.380-004	5.768-007	7.538-011	9.850-015
CO 60	.000	3.817-002	3.656-002	3.578-002	3.459-002	3.347-002	3.134-002	2.934-002	2.573-002	1.978-002	1.423-002	1.024-002
CO 60M	.000	7.327-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	2.910-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	5.236-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	5.130-003	5.130-003	5.130-003	5.130-003	5.130-003	5.130-003	5.130-003	5.130-003	5.130-003	5.130-003	5.130-003
NI 63	.000	6.501-001	6.485-001	6.477-001	6.464-001	6.452-001	6.428-001	6.404-001	6.356-001	6.261-001	6.144-001	6.029-001
NI 65	.000	6.715+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	3.418-005	4.556-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.114+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	2.401+002	4.563-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	2.290-004	2.214-018	2.177-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	7.986-003	5.678-003	4.788-003	3.666-003	2.828-003	1.683-003	1.001-003	3.546-004	4.446-005	3.318-006	2.476-007
SR 89	.000	5.435-003	1.047-003	4.594-004	1.265-004	3.613-005	2.945-006	2.401-007	1.596-009	7.054-014	2.541-019	9.155-025
SR 90	.000	2.513-009	2.493-009	2.483-009	2.468-009	2.453-009	2.424-009	2.396-009	2.339-009	2.231-009	2.102-009	1.980-009
SR 91	.000	1.497-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.171-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	2.853-001	2.494-009	2.484-009	2.469-009	2.454-009	2.425-009	2.396-009	2.340-009	2.231-009	2.102-009	1.981-009
Y 91	.000	1.300-002	3.138-003	1.541-003	5.065-004	1.717-004	1.973-005	2.267-006	2.994-008	5.220-012	1.046-016	2.095-021
Y 92	.000	1.685-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.171-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
Y 94	.000	1.071-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	6.882-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.040-006	2.040-006	2.040-006	2.040-006	2.040-006	2.040-006	2.040-006	2.040-006	2.040-006	2.040-006	2.040-006
ZR 95	.000	3.146+000	8.574-001	4.476-001	1.618-001	6.016-002	8.319-003	1.150-003	2.200-005	8.042-009	4.066-013	2.056-017
ZR 97	.000	9.932+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	1.602-008	4.793-008	6.369-008	8.809-008	1.115-007	1.575-007	2.023-007	2.885-007	4.483-007	6.265-007	7.834-007
NB 95	.000	2.095+000	1.444+000	8.529-001	3.370-001	1.299-001	1.836-002	2.550-003	5.053-005	1.785-008	9.026-013	4.564-017
NB 95M	.000	2.246-002	6.361-003	3.321-003	1.200-003	4.463-004	6.171-005	8.533-006	1.632-007	5.966-011	3.016-015	1.525-019
NB 96	.000	1.370-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	9.932+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	9.399+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 99	.000	1.825-006	1.334-019	3.609-026	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	7.097-005	3.291-010	3.288-010	3.283-010	3.279-010	3.270-010	3.261-010	3.243-010	3.208-010	3.165-010	3.122-010
AG108M	.000	3.704-009	3.698-009	3.694-009	3.689-009	3.684-009	3.674-009	3.664-009	3.644-009	3.605-009	3.556-009	3.508-009
AG109M	.000	1.965-003	1.643-003	1.502-003	1.305-003	1.139-003	8.669-004	6.599-004	3.824-004	1.284-004	3.282-005	8.390-006
AG110	.000	7.842-005	3.804-009	3.221-009	2.482-009	1.927-009	1.161-009	6.996-010	2.540-010	3.348-011	2.659-012	2.112-013
AG110M	.000	3.990-007	2.860-007	2.422-007	1.866-007	1.449-007	8.729-008	5.260-008	1.910-008	2.517-009	2.000-010	1.588-011
CD107	.000	7.490-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	1.965-003	1.643-003	1.502-003	1.305-003	1.139-003	8.669-004	6.599-004	3.824-004	1.284-004	3.282-005	8.390-006
CD111M	.000	1.331-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	1.651+000	1.010-016	7.903-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.028-001	1.592-002	6.264-003	1.455-003	3.518-004	2.059-005	1.204-006	4.123-009	4.832-014	3.313-020	.000
CD117	.000	4.924-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.877-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116	.000	1.188-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	8.370-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	2.641-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	4.662-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	2.104-006	3.766-010	5.038-012	5.880-015	7.977-018	1.581-023	.000	.000	.000	.000	.000
SB125	.000	.000	1.864-008	1.790-008	1.678-008	1.576-008	1.391-008	1.227-008	9.556-009	5.793-009	3.099-009	1.658-009
TE125M	.000	.000	3.372-009	3.791-009	3.907-009	3.783-009	3.386-009	2.994-009	2.331-009	1.414-009	7.561-010	4.045-010
SUMTOT	.000	5.792+003	6.131+001	4.600+001	3.693+001	3.268+001	2.755+001	2.388+001	1.826+001	1.094+001	5.987+000	3.452+000
TOTAL	.000	5.792+003	6.131+001	4.600+001	3.693+001	3.268+001	2.755+001	2.388+001	1.826+001	1.094+001	5.987+000	3.452+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 8% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	5.715-001	1.430-001	1.417-001	1.397-001	1.377-001	1.339-001	1.302-001	1.231-001	1.100-001	9.561-002	8.309-002
HE	.000	1.198+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.717-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.045-006	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007	4.828-007
B	.000	2.520-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	1.112-001	1.112-001	1.112-001	1.112-001	1.112-001	1.111-001	1.111-001	1.111-001	1.111-001	1.111-001	1.110-001
N	.000	1.223-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	2.934-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	1.770+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.060+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	1.919+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	4.377+000	1.378-010	1.378-010	1.378-010	1.377-010	1.377-010	1.376-010	1.375-010	1.372-010	1.368-010	1.364-010
P	.000	8.643-005	2.575-007	1.418-008	2.857-010	1.395-010	1.377-010	1.376-010	1.375-010	1.372-010	1.368-010	1.364-010
SC	.000	6.557-007	7.668-018	2.798-022	.000	.000	.000	.000	.000	.000	.000	.000
TI	.000	1.199-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	.000	1.547+000	5.707-018	5.707-018	5.707-018	5.707-018	5.707-018	5.707-018	5.707-018	5.707-018	5.707-018	5.707-018
CR	.000	1.951+002	9.533+000	2.125+000	2.027-001	2.064-002	2.141-004	2.221-006	2.390-010	2.768-018	.000	.000
MN	.000	1.978+003	2.578+000	2.257+000	1.832+000	1.496+000	9.979-001	6.655-001	2.960-001	5.856-002	7.727-003	1.020-003
FE	.000	4.255+001	3.549+001	3.357+001	3.114+001	2.909+001	2.544+001	2.227+001	1.706+001	1.001+001	5.139+000	2.639+000
CO	.000	3.397+001	1.047+001	5.831+000	2.344+000	9.778-001	1.892-001	5.574-002	2.646-002	1.978-002	1.423-002	1.024-002
NI	.000	7.370+000	6.536-001	6.528-001	6.516-001	6.503-001	6.479-001	6.455-001	6.407-001	6.312-001	6.195-001	6.080-001
CU	.000	1.354+003	2.218-018	2.177-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	7.986-003	5.678-003	4.788-003	3.666-003	2.828-003	1.683-003	1.001-003	3.546-004	4.446-005	3.318-006	2.476-007
SR	.000	6.937-003	1.047-003	4.594-004	1.265-004	3.613-005	2.948-006	2.425-007	3.936-009	2.231-009	2.102-009	1.980-009
Y	.000	3.162-001	3.138-003	1.541-003	5.065-004	1.717-004	1.973-005	2.270-006	3.228-008	2.236-009	2.102-009	1.981-009
ZR	.000	1.308+001	8.574-001	4.476-001	1.618-001	6.016-002	8.321-003	1.152-003	2.403-005	2.048-006	2.040-006	2.040-006
NB	.000	2.145+001	1.451+000	8.562-001	3.382-001	1.303-001	1.842-002	2.559-003	5.098-005	4.662-007	6.265-007	7.834-007
MO	.000	1.825-006	1.334-019	3.609-026	.000	.000	.000	.000	.000	.000	.000	.000
AG	.000	2.115-003	1.643-003	1.502-003	1.305-003	1.139-003	8.670-004	6.600-004	3.824-004	1.284-004	3.283-005	8.394-006
CD	.000	1.828+000	1.756-002	7.766-003	2.760-003	1.491-003	8.875-004	6.611-004	3.824-004	1.284-004	3.282-005	8.390-006
IN	.000	9.428-002	4.585-017	4.821-017	4.938-017	4.965-017	4.973-017	4.974-017	4.974-017	4.974-017	4.974-017	4.974-017
SN	.000	2.104-006	3.766-010	5.038-012	5.880-015	7.977-018	1.581-023	.000	.000	.000	.000	.000
SB	.000	.000	1.864-008	1.790-008	1.678-008	1.576-008	1.391-008	1.227-008	9.556-009	5.793-009	3.099-009	1.658-009
TE	.000	.000	3.372-009	3.791-009	3.907-009	3.783-009	3.386-009	2.994-009	2.331-009	1.414-009	7.561-010	4.045-010
SUMTOT	.000	5.792+003	6.131+001	4.600+001	3.693+001	3.268+001	2.755+001	2.388+001	1.826+001	1.094+001	5.987+000	3.452+000
TOTAL	.000	5.792+003	6.131+001	4.600+001	3.693+001	3.268+001	2.755+001	2.388+001	1.826+001	1.094+001	5.987+000	3.452+000

CUMULATIVE TABLE TOTALS

AP+FP	.000	5.792+003	6.131+001	4.600+001	3.693+001	3.268+001	2.755+001	2.388+001	1.826+001	1.094+001	5.987+000	3.452+000
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	.000	5.792+003	6.131+001	4.600+001	3.693+001	3.268+001	2.755+001	2.388+001	1.826+001	1.094+001	5.987+000	3.452+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	4.904-006	4.814-006	4.770-006	4.702-006	4.636-006	4.508-006	4.383-006	4.144-006	3.704-006	3.219-006	2.798-006
HE 6	.000	1.114+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	6.403-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010
BE 11	.000	3.837-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	1.997-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	3.260-005	3.260-005	3.260-005	3.260-005	3.260-005	3.259-005	3.259-005	3.259-005	3.258-005	3.257-005	3.256-005
C 15	.000	5.718-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	5.302-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	3.597-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	4.857-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	4.782-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	2.034-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	7.611-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	3.440+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	6.764-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	1.597-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	1.548-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	8.761-007	2.610-009	1.438-010	2.896-012	1.414-012	1.396-012	1.395-012	1.393-012	1.390-012	1.387-012	1.383-012
TI 51	.000	8.778-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 52	.000	2.290-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.230-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	4.454-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	4.105-002	2.040-003	4.547-004	4.337-005	4.417-006	4.582-008	4.753-010	5.115-014	5.922-022	7.113-032	.000
CR 55	.000	2.147-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	1.675-002	1.284-002	1.124-002	9.123-003	7.450-003	4.969-003	3.314-003	1.474-003	2.916-004	3.847-005	5.077-006
MN 56	.000	2.951+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	3.298-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	3.727-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	5.219-002	4.782-002	4.577-002	4.273-002	3.998-002	3.499-002	3.062-002	2.346-002	1.376-002	7.067-003	3.629-003
FE 59	.000	4.285-002	6.748-003	2.678-003	6.301-004	1.544-004	9.266-006	5.562-007	2.004-009	2.601-014	2.026-020	1.579-026
CO 58	.000	2.022-001	6.244-002	3.469-002	1.383-002	5.654-003	9.453-004	1.581-004	4.419-006	3.453-009	4.513-013	5.897-017
CO 60	.000	5.885-004	5.636-004	5.516-004	5.332-004	5.160-004	4.831-004	4.524-004	3.966-004	3.049-004	2.194-004	1.580-004
CO 60M	.000	2.737-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	9.419-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	9.931-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	3.266-005	3.266-005	3.266-005	3.266-005	3.266-005	3.266-005	3.266-005	3.266-005	3.266-005	3.266-005	3.266-005
NI 63	.000	2.582-004	2.575-004	2.572-004	2.567-004	2.562-004	2.553-004	2.543-004	2.524-004	2.486-004	2.440-004	2.394-004
NI 65	.000	4.701-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	1.358-008	1.809-024	2.089-032	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	2.067+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.644+000	3.124-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	3.677-007	3.555-021	3.495-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	2.798-005	1.990-005	1.678-005	1.285-005	9.909-006	5.896-006	3.509-006	1.242-006	1.558-007	1.162-008	8.674-010
SR 89	.000	1.879-005	3.618-006	1.588-006	4.374-007	1.249-007	1.018-008	8.302-010	5.518-012	2.438-016	8.785-022	3.165-027
SR 90	.000	2.916-012	2.893-012	2.882-012	2.865-012	2.848-012	2.814-012	2.781-012	2.715-012	2.589-012	2.439-012	2.298-012
SR 91	.000	1.200-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	7.834-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.581-003	1.382-011	1.377-011	1.368-011	1.360-011	1.344-011	1.328-011	1.297-011	1.237-011	1.165-011	1.098-011
Y 91	.000	4.669-005	1.127-005	5.536-006	1.819-006	6.167-007	7.086-008	8.143-009	1.075-010	1.875-014	3.756-019	7.525-024
Y 92	.000	1.696-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	3.868-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
Y 94	.000	1.785-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.578-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.370-010	2.370-010	2.370-010	2.370-010	2.370-010	2.370-010	2.370-010	2.370-010	2.370-010	2.370-010	2.370-010
ZR 95	.000	1.594-002	4.343-003	2.267-003	8.194-004	3.047-004	4.214-005	5.826-006	1.114-007	4.073-011	2.059-015	1.041-019
ZR 97	.000	5.176-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	2.839-012	8.493-012	1.128-011	1.561-011	1.976-011	2.790-011	3.583-011	5.111-011	7.943-011	1.110-010	1.388-010
NB 95	.000	1.005-002	6.928-003	4.091-003	1.616-003	6.229-004	8.808-005	1.223-005	2.424-007	8.564-011	4.330-015	2.189-019
NB 95M	.000	3.121-005	8.838-006	4.614-006	1.668-006	6.201-007	8.574-008	1.186-008	2.267-010	8.289-014	4.191-018	2.119-022
NB 96	.000	2.278-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	6.612-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.138-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	2.644-007	1.226-012	1.225-012	1.223-012	1.222-012	1.218-012	1.215-012	1.209-012	1.195-012	1.179-012	1.163-012
AG108M	.000	3.603-011	3.597-011	3.594-011	3.589-011	3.584-011	3.574-011	3.564-011	3.545-011	3.506-011	3.459-011	3.412-011
AG109M	.000	1.013-006	8.467-007	7.741-007	6.728-007	5.870-007	4.468-007	3.402-007	1.971-007	6.619-008	1.692-008	4.325-009
AG110	.000	5.634-007	2.733-011	2.314-011	1.783-011	1.384-011	8.341-012	5.026-012	1.825-012	2.405-013	1.911-014	1.518-015
AG110M	.000	6.663-009	4.777-009	4.044-009	3.116-009	2.419-009	1.458-009	8.783-010	3.189-010	4.204-011	3.339-012	2.652-013
CD107	.000	3.401-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	1.251-006	1.046-006	9.561-007	8.309-007	7.250-007	5.519-007	4.201-007	2.434-007	8.175-008	2.090-008	5.342-009
CD111M	.000	3.124-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	5.242-003	3.207-019	2.508-027	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	3.833-004	5.937-005	2.336-005	5.425-006	1.312-006	7.678-008	4.492-009	1.538-011	1.802-016	1.236-022	8.473-029
CD117	.000	3.546-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.526-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116	.000	9.736-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	1.542-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	1.190-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	1.760-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.395-008	2.496-012	3.339-014	3.897-017	5.287-020	1.048-025	2.077-031	.000	.000	.000	.000
SB125	.000	.000	5.828-011	5.595-011	5.246-011	4.928-011	4.348-011	3.837-011	2.987-011	1.811-011	9.688-012	5.182-012
SUMTOT	.000	7.068+001	1.441-001	1.021-001	6.968-002	5.503-002	4.186-002	3.489-002	2.566-002	1.468-002	7.638-003	4.100-003
TOTAL	.000	7.068+001	1.441-001	1.021-001	6.968-002	5.503-002	4.186-002	3.489-002	2.566-002	1.468-002	7.638-003	4.100-003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	4.904-006	4.814-006	4.770-006	4.702-006	4.636-006	4.508-006	4.383-006	4.144-006	3.704-006	3.219-006	2.798-006
HE	.000	1.114+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	6.403-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	3.895-008	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010	5.796-010
B	.000	1.997-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	3.317-005	3.260-005	3.260-005	3.260-005	3.260-005	3.259-005	3.259-005	3.259-005	3.258-005	3.257-005	3.256-005
N	.000	5.302-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	3.597-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.877-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	7.611-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	3.441+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	1.548-002	1.716-013	1.716-013	1.715-013	1.715-013	1.714-013	1.713-013	1.711-013	1.707-013	1.703-013	1.698-013
P	.000	8.761-007	2.610-009	1.438-010	2.896-012	1.414-012	1.396-012	1.395-012	1.393-012	1.390-012	1.387-012	1.383-012
TI	.000	8.778-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	.000	2.302-002	6.293-020	6.293-020	6.293-020	6.293-020	6.293-020	6.293-020	6.293-020	6.293-020	6.293-020	6.293-020
CR	.000	6.252-002	2.040-003	4.547-004	4.337-005	4.417-006	4.582-008	4.753-010	5.115-014	5.922-022	7.113-032	.000
MN	.000	2.952+001	1.284-002	1.124-002	9.123-003	7.450-003	4.969-003	3.314-003	1.474-003	2.916-004	3.847-005	5.077-006
FE	.000	9.504-002	5.456-002	4.844-002	4.336-002	4.013-002	3.500-002	3.062-002	2.346-002	1.376-002	7.067-003	3.629-003
CO	.000	2.039-001	6.300-002	3.525-002	1.436-002	6.170-003	1.428-003	6.104-004	4.011-004	3.049-004	2.194-004	1.580-004
NI	.000	4.730-002	2.902-004	2.899-004	2.894-004	2.889-004	2.879-004	2.870-004	2.851-004	2.813-004	2.767-004	2.721-004
CU	.000	3.711+000	3.586-021	3.495-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	2.798-005	1.990-005	1.678-005	1.285-005	9.909-006	5.896-006	3.509-006	1.242-006	1.558-007	1.162-008	8.674-010
SR	.000	3.087-005	3.618-006	1.588-006	4.374-007	1.249-007	1.019-008	8.330-010	8.234-012	2.589-012	2.439-012	2.298-012
Y	.000	1.815-003	1.127-005	5.536-006	1.819-006	6.167-007	7.088-008	8.156-009	1.205-010	1.238-011	1.165-011	1.098-011
ZR	.000	6.769-002	4.343-003	2.267-003	8.194-004	3.047-004	4.214-005	5.827-006	1.116-007	2.777-010	2.370-010	2.370-010
NB	.000	1.176-001	6.937-003	4.096-003	1.618-003	6.236-004	8.816-005	1.224-005	2.427-007	1.652-010	1.110-010	1.388-010
AG	.000	1.848-006	8.516-007	7.782-007	6.760-007	5.895-007	4.483-007	3.411-007	1.975-007	6.627-008	1.696-008	4.361-009
CD	.000	6.031-003	6.041-005	2.432-005	6.256-006	2.037-006	6.287-007	4.246-007	2.435-007	8.175-008	2.090-008	5.342-009
IN	.000	5.466-004	6.577-020	6.915-020	7.084-020	7.122-020	7.134-020	7.135-020	7.135-020	7.135-020	7.135-020	7.135-020
SN	.000	1.395-008	2.496-012	3.339-014	3.897-017	5.287-020	1.048-025	2.077-031	.000	.000	.000	.000
SB	.000	.000	5.828-011	5.595-011	5.246-011	4.928-011	4.348-011	3.837-011	2.987-011	1.811-011	9.688-012	5.182-012
SUMTOT	.000	7.068+001	1.441-001	1.021-001	6.968-002	5.503-002	4.186-002	3.489-002	2.566-002	1.468-002	7.638-003	4.100-003
TOTAL	.000	7.068+001	1.441-001	1.021-001	6.968-002	5.503-002	4.186-002	3.489-002	2.566-002	1.468-002	7.638-003	4.100-003

CUMULATIVE TABLE TOTALS

AP+FP	.000	7.068+001	1.441-001	1.021-001	6.968-002	5.503-002	4.186-002	3.489-002	2.566-002	1.468-002	7.638-003	4.100-003
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	.000	7.068+001	1.441-001	1.021-001	6.968-002	5.503-002	4.186-002	3.489-002	2.566-002	1.468-002	7.638-003	4.100-003

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NP237	.000	2.490-007	2.490-007	2.490-007	2.490-007	2.490-007	2.490-007	2.490-007	2.490-007	2.490-007	2.490-007	2.490-007
PU238	.000	1.280-004	1.343-004	1.342-004	1.339-004	1.336-004	1.331-004	1.326-004	1.315-004	1.295-004	1.269-004	1.245-004
TOTALS												
TABLE	.000	1.283-004	1.346-004	1.344-004	1.342-004	1.339-004	1.334-004	1.328-004	1.318-004	1.297-004	1.272-004	1.247-004
ACTUAL	.000	1.283-004	1.346-004	1.344-004	1.342-004	1.339-004	1.334-004	1.328-004	1.318-004	1.297-004	1.272-004	1.247-004

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PU238	.000	2.087-005	2.191-005	2.188-005	2.184-005	2.179-005	2.171-005	2.162-005	2.145-005	2.112-005	2.070-005	2.030-005
TOTALS												
TABLE	.000	2.087-005	2.191-005	2.188-005	2.184-005	2.179-005	2.171-005	2.162-005	2.145-005	2.112-005	2.070-005	2.030-005
ACTUAL	.000	2.087-005	2.191-005	2.188-005	2.184-005	2.179-005	2.171-005	2.162-005	2.145-005	2.112-005	2.070-005	2.030-005
OVERALL TOTALS												
TABLE	.000	1.491-004	1.565-004	1.563-004	1.560-004	1.557-004	1.551-004	1.545-004	1.533-004	1.509-004	1.479-004	1.450-004
ACTUAL	.000	1.491-004	1.565-004	1.563-004	1.560-004	1.557-004	1.551-004	1.545-004	1.533-004	1.509-004	1.479-004	1.450-004

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.541+013	1.208+011	5.820+010	2.531+010	1.393+010	6.163+009	3.601+009	1.540+009	3.180+008	5.679+007	2.171+007
2.500-002	.000	2.041+012	5.535+008	3.302+008	1.628+008	9.486+007	4.852+007	3.349+007	1.965+007	7.855+006	3.331+006	2.100+006
3.750-002	.000	1.372+012	3.089+008	1.689+008	6.642+007	2.736+007	5.341+006	1.715+006	9.678+005	8.556+005	7.693+005	7.068+005
5.750-002	.000	2.059+012	4.380+008	2.397+008	9.423+007	3.857+007	7.090+006	1.893+006	8.341+005	7.027+005	6.074+005	5.388+005
8.500-002	.000	1.320+012	2.657+008	1.474+008	6.006+007	2.621+007	6.485+006	2.757+006	1.337+006	5.553+005	2.456+005	1.492+005
1.250-001	.000	9.105+011	1.685+008	9.266+007	3.654+007	1.488+007	2.538+006	4.901+005	8.359+004	5.624+004	4.162+004	3.114+004
2.250-001	.000	1.392+012	2.857+008	1.558+008	6.051+007	2.422+007	3.830+006	6.616+005	4.168+004	1.869+004	1.339+004	9.637+003
3.750-001	.000	1.318+012	2.957+010	6.622+009	6.469+008	7.211+007	2.113+006	3.146+005	7.540+004	5.267+004	3.788+004	2.729+004
5.750-001	.000	1.434+013	1.030+011	5.724+010	2.281+010	9.329+009	1.561+009	2.617+008	7.632+006	4.925+004	3.696+003	6.196+002
8.500-001	.000	7.807+013	5.377+011	3.295+011	1.646+011	9.397+010	4.270+010	2.523+010	1.078+010	2.127+009	2.807+008	3.706+007
1.250+000	.000	2.590+012	2.805+009	2.729+009	2.621+009	2.523+009	2.346+009	2.187+009	1.909+009	1.464+009	1.053+009	7.579+008
1.750+000	.000	9.291+013	1.910+009	1.061+009	4.229+008	1.729+008	2.891+007	4.834+006	1.352+005	1.172+002	9.362-001	7.779-002
2.250+000	.000	9.864+012	1.433+004	1.403+004	1.356+004	1.312+004	1.229+004	1.150+004	1.009+004	7.754+003	5.581+003	4.017+003
2.750+000	.000	2.029+012	4.435+001	4.341+001	4.196+001	4.060+001	3.802+001	3.560+001	3.121+001	2.399+001	1.727+001	1.243+001
3.500+000	.000	1.189+011	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	4.330+007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	1.173+007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	1.794+006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	2.237+014	7.979+011	4.565+011	2.169+011	1.202+011	5.288+010	3.133+010	1.426+010	3.919+009	1.396+009	8.202+008
MEV/SEC	.000	2.684+014	5.362+011	3.217+011	1.577+011	8.895+010	4.028+010	2.439+010	1.158+010	3.643+009	1.556+009	9.793+008

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	2.312+005	1.812+003	8.730+002	3.796+002	2.089+002	9.244+001	5.402+001	2.310+001	4.769+000	8.519-001	3.256-001
2.500-002	.000	5.102+004	1.384+001	8.254+000	4.069+000	2.371+000	1.213+000	8.373-001	4.914-001	1.964-001	8.329-002	5.250-002
3.750-002	.000	5.145+004	1.158+001	6.332+000	2.491+000	1.026+000	2.003-001	6.433-002	3.629-002	3.208-002	2.885-002	2.650-002
5.750-002	.000	1.184+005	2.519+001	1.378+001	5.418+000	2.218+000	4.077-001	1.089-001	4.796-002	4.041-002	3.493-002	3.098-002
8.500-002	.000	1.122+005	2.258+001	1.253+001	5.105+000	2.228+000	5.512-001	2.344-001	1.136-001	4.720-002	2.088-002	1.268-002
1.250-001	.000	1.138+005	2.107+001	1.158+001	4.568+000	1.860+000	3.173-001	6.126-002	1.045-002	7.030-003	5.203-003	3.893-003
2.250-001	.000	3.131+005	6.428+001	3.505+001	1.361+001	5.450+000	8.842-001	1.489-001	9.377-003	4.205-003	3.013-003	2.168-003
3.750-001	.000	4.944+005	1.109+004	2.483+003	2.426+002	2.704+001	7.924-001	1.180-001	2.827-002	1.975-002	1.421-002	1.023-002
5.750-001	.000	8.244+006	5.923+004	3.291+004	1.312+004	5.364+003	8.976+002	1.505+002	4.388+000	2.832-002	2.125-003	3.563-004
8.500-001	.000	6.466+007	4.571+005	2.801+005	1.399+005	7.987+004	3.630+004	2.144+004	9.164+003	1.808+003	2.386+002	3.150+001
1.250+000	.000	3.238+006	3.506+003	3.411+003	3.276+003	3.154+003	2.933+003	2.734+003	2.386+003	1.830+003	1.316+003	9.474+002
1.750+000	.000	1.626+008	3.342+003	1.857+003	7.400+002	3.026+002	5.059+001	8.460+000	2.366-001	2.050-004	1.638-006	1.361-007
2.250+000	.000	2.219+007	3.225-002	3.156-002	3.051-002	2.952-002	2.765-002	2.589-002	2.270-002	1.745-002	1.256-002	9.038-003
2.750+000	.000	5.579+006	1.220-004	1.194-004	1.154-004	1.117-004	1.046-004	9.790-005	8.583-005	6.598-005	4.749-005	3.418-005
3.500+000	.000	4.161+005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	2.165+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	8.214+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	1.974+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	2.684+008	5.362+005	3.217+005	1.577+005	8.895+004	4.028+004	2.439+004	1.158+004	3.643+003	1.556+003	9.793+002
GAM POW	.000	4.303+001	8.598-002	5.157-002	2.527-002	1.426-002	6.456-003	3.910-003	1.856-003	5.840-004	2.494-004	1.570-004

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	1.497+004	1.433+004	1.403+004	1.356+004	1.312+004	1.229+004	1.150+004	1.009+004	7.754+003	5.581+003	4.017+003

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	4.631+001	4.435+001	4.341+001	4.196+001	4.060+001	3.802+001	3.560+001	3.121+001	2.399+001	1.727+001	1.243+001

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	2.208+006	8.394+002	8.383+002	8.366+002	8.350+002	8.317+002	8.285+002	8.221+002	8.095+002	7.941+002	7.789+002
2.500-002	.000	1.765+004	1.522+000	1.522+000	1.522+000	1.522+000	1.522+000	1.522+000	1.522+000	1.522+000	1.522+000	1.522+000
3.750-002	.000	1.603+004	2.370+000	2.367+000	2.362+000	2.357+000	2.348+000	2.339+000	2.321+000	2.284+000	2.240+000	2.196+000
5.750-002	.000	1.556+004	1.018-001	1.018-001	1.018-001	1.018-001	1.018-001	1.017-001	1.017-001	1.017-001	1.018-001	1.018-001
8.500-002	.000	1.406+004	7.229+000	7.200+000	7.192+000	7.191+000	7.189+000	7.188+000	7.185+000	7.180+000	7.174+000	7.167+000
1.250-001	.000	2.524+004	1.210+000	1.203+000	1.202+000	1.202+000	1.202+000	1.202+000	1.202+000	1.202+000	1.202+000	1.202+000
2.250-001	.000	7.542+003	3.248-001	3.238-001	3.237-001	3.238-001	3.243-001	3.249-001	3.263-001	3.290-001	3.316-001	3.330-001
3.750-001	.000	6.798+003	5.257+000	5.220+000	5.211+000	5.211+000	5.211+000	5.211+000	5.211+000	5.211+000	5.211+000	5.211+000
5.750-001	.000	1.193+004	3.671-004	4.257-004	5.556-004	7.204-004	1.138-003	1.642-003	2.777-003	5.055-003	7.287-003	8.708-003
8.500-001	.000	1.315+006	2.572-003	2.597-003	2.653-003	2.725-003	2.912-003	3.140-003	3.654-003	4.688-003	5.691-003	6.313-003
1.250+000	.000	8.252+005	1.053-004	1.067-004	1.099-004	1.140-004	1.246-004	1.374-004	1.665-004	2.248-004	2.814-004	3.169-004
1.750+000	.000	1.330-005	1.832-005	2.346-005	3.484-005	4.929-005	8.593-005	1.301-004	2.298-004	4.293-004	6.249-004	7.494-004
2.250+000	.000	7.371-006	7.737-006	7.727-006	7.712-006	7.696-006	7.666-006	7.636-006	7.576-006	7.457-006	7.311-006	7.189-006
2.750+000	.000	4.074-006	4.828-005	1.002-004	2.153-004	3.613-004	7.314-004	1.177-003	2.182-003	4.199-003	6.174-003	7.432-003
3.500+000	.000	3.466-006	3.638-006	3.633-006	3.626-006	3.619-006	3.604-006	3.590-006	3.562-006	3.506-006	3.438-006	3.370-006
5.000+000	.000	1.374-006	1.442-006	1.441-006	1.438-006	1.435-006	1.429-006	1.423-006	1.412-006	1.390-006	1.363-006	1.336-006
7.000+000	.000	1.449-007	1.521-007	1.519-007	1.515-007	1.512-007	1.506-007	1.501-007	1.489-007	1.465-007	1.437-007	1.409-007
1.100+001	.000	1.578-008	1.656-008	1.654-008	1.651-008	1.647-008	1.641-008	1.634-008	1.622-008	1.596-008	1.565-008	1.534-008
TOTAL	.000	4.463+006	8.574+002	8.562+002	8.545+002	8.529+002	8.496+002	8.464+002	8.400+002	8.274+002	8.119+002	7.967+002
MEV/SEC	.000	2.200+006	1.554+001	1.550+001	1.547+001	1.545+001	1.540+001	1.535+001	1.526+001	1.508+001	1.485+001	1.463+001

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	3.312-002	1.259-005	1.257-005	1.255-005	1.252-005	1.248-005	1.243-005	1.233-005	1.214-005	1.191-005	1.168-005
2.500-002	.000	4.413-004	3.806-008	3.806-008	3.806-008	3.806-008	3.806-008	3.806-008	3.806-008	3.806-008	3.806-008	3.806-008
3.750-002	.000	6.013-004	8.887-008	8.875-008	8.857-008	8.840-008	8.805-008	8.771-008	8.702-008	8.567-008	8.400-008	8.237-008
5.750-002	.000	8.946-004	5.856-009	5.854-009	5.853-009	5.852-009	5.851-009	5.850-009	5.849-009	5.849-009	5.851-009	5.853-009
8.500-002	.000	1.195-003	6.145-007	6.120-007	6.113-007	6.112-007	6.111-007	6.109-007	6.108-007	6.103-007	6.098-007	6.092-007
1.250-001	.000	3.155-003	1.512-007	1.504-007	1.502-007	1.502-007	1.502-007	1.502-007	1.502-007	1.502-007	1.502-007	1.502-007
2.250-001	.000	1.697-003	7.307-008	7.286-008	7.283-008	7.286-008	7.297-008	7.310-008	7.341-008	7.404-008	7.461-008	7.493-008
3.750-001	.000	2.549-003	1.971-006	1.958-006	1.954-006	1.954-006	1.954-006	1.954-006	1.954-006	1.954-006	1.954-006	1.954-006
5.750-001	.000	6.857-003	2.111-010	2.448-010	3.194-010	4.142-010	6.545-010	9.440-010	1.597-009	2.907-009	4.190-009	5.007-009
8.500-001	.000	1.118+000	2.187-009	2.207-009	2.255-009	2.317-009	2.475-009	2.669-009	3.106-009	3.985-009	4.837-009	5.366-009
1.250+000	.000	1.032+000	1.316-010	1.334-010	1.374-010	1.425-010	1.558-010	1.718-010	2.081-010	2.809-010	3.518-010	3.961-010
1.750+000	.000	2.327-011	3.206-011	4.105-011	6.097-011	8.626-011	1.504-010	2.276-010	4.018-010	7.513-010	1.094-009	1.311-009
2.250+000	.000	1.659-011	1.741-011	1.739-011	1.735-011	1.732-011	1.725-011	1.718-011	1.705-011	1.678-011	1.645-011	1.613-011
2.750+000	.000	1.120-011	1.328-010	2.757-010	5.921-010	9.937-010	2.011-009	3.237-009	6.001-009	1.155-008	1.698-008	2.044-008
3.500+000	.000	1.213-011	1.273-011	1.272-011	1.269-011	1.267-011	1.262-011	1.257-011	1.247-011	1.227-011	1.203-011	1.180-011
5.000+000	.000	6.871-012	7.212-012	7.203-012	7.188-012	7.174-012	7.146-012	7.117-012	7.061-012	6.951-012	6.815-012	6.681-012
7.000+000	.000	1.014-012	1.064-012	1.063-012	1.061-012	1.059-012	1.055-012	1.050-012	1.042-012	1.026-012	1.006-012	9.860-013
1.100+001	.000	1.736-013	1.822-013	1.819-013	1.816-013	1.812-013	1.805-013	1.798-013	1.784-013	1.756-013	1.721-013	1.688-013
TOTAL	.000	2.200+000	1.554-005	1.550-005	1.547-005	1.545-005	1.540-005	1.535-005	1.526-005	1.508-005	1.485-005	1.463-005
GAM POW	.000	3.526-007	2.490-012	2.485-012	2.480-012	2.476-012	2.469-012	2.461-012	2.447-012	2.417-012	2.381-012	2.345-012

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NP238	.000	8.252+005	7.115-012	2.089-020	.000	.000	.000	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	8.074+007	1.363+004	1.289+004	1.182+004	1.087+004	9.185+003	7.764+003	5.547+003	2.832+003	1.222+003	5.274+002
2.500-002	.000	2.049+006	2.521+003	2.385+003	2.187+003	2.011+003	1.700+003	1.437+003	1.027+003	5.242+002	2.262+002	9.761+001
3.750-002	.000	1.049+009	1.321+004	1.237+004	1.135+004	1.043+004	8.819+003	7.454+003	5.326+003	2.719+003	1.173+003	5.064+002
5.750-002	.000	1.350+006	2.048+003	1.938+003	1.777+003	1.634+003	1.381+003	1.168+003	8.342+002	4.259+002	1.838+002	7.931+001
8.500-002	.000	9.440+008	1.202+003	1.022+003	9.373+002	8.617+002	7.284+002	6.157+002	4.399+002	2.246+002	9.692+001	4.182+001
1.250-001	.000	8.439+005	6.021+002	5.698+002	5.226+002	4.804+002	4.061+002	3.433+002	2.453+002	1.252+002	5.404+001	2.332+001
2.250-001	.000	1.269+006	9.436+002	8.927+002	8.188+002	7.528+002	6.363+002	5.379+002	3.843+002	1.962+002	8.467+001	3.654+001
3.750-001	.000	1.703+005	3.098+002	2.932+002	2.689+002	2.472+002	2.090+002	1.766+002	1.262+002	6.443+001	2.780+001	1.200+001
5.750-001	.000	2.489+006	2.223+006	2.103+006	1.929+006	1.774+006	1.499+006	1.267+006	9.055+005	4.623+005	1.995+005	8.609+004
8.500-001	.000	1.723+006	1.544+006	1.461+006	1.340+006	1.232+006	1.041+006	8.801+005	6.289+005	3.211+005	1.385+005	5.979+004
1.250+000	.000	1.140+005	1.020+005	9.656+004	8.856+004	8.142+004	6.883+004	5.818+004	4.157+004	2.122+004	9.158+003	3.952+003
1.750+000	.000	5.018+000	1.322-005	2.143-008	9.193-013	5.242-017	1.860-019	1.860-019	1.860-019	1.860-019	1.860-019	1.860-019
2.250+000	.000	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020
2.750+000	.000	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020
3.500+000	.000	3.439-020	3.439-020	3.439-020	3.439-020	3.439-020	3.439-020	3.439-020	3.439-020	3.439-020	3.439-020	3.439-020
5.000+000	.000	1.024-020	1.024-020	1.024-020	1.024-020	1.024-020	1.024-020	1.024-020	1.024-020	1.024-020	1.024-020	1.024-020
7.000+000	.000	6.643-022	6.643-022	6.643-022	6.643-022	6.643-022	6.643-022	6.643-022	6.643-022	6.643-022	6.643-022	6.643-022
1.100+001	.000	4.201-023	4.201-023	4.201-023	4.201-023	4.201-023	4.201-023	4.201-023	4.201-023	4.201-023	4.201-023	4.201-023
TOTAL	.000	2.083+009	3.903+006	3.693+006	3.387+006	3.114+006	2.632+006	2.225+006	1.590+006	8.117+005	3.503+005	1.512+005
MEV/SEC	.000	1.244+008	2.719+006	2.573+006	2.360+006	2.170+006	1.834+006	1.550+006	1.108+006	5.655+005	2.440+005	1.053+005

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.211+000	2.044-004	1.933-004	1.773-004	1.630-004	1.378-004	1.165-004	8.321-005	4.248-005	1.833-005	7.911-006
2.500-002	.000	5.123-002	6.302-005	5.963-005	5.469-005	5.028-005	4.250-005	3.592-005	2.567-005	1.310-005	5.655-006	2.440-006
3.750-002	.000	3.932+001	4.954-004	4.640-004	4.255-004	3.912-004	3.307-004	2.795-004	1.997-004	1.020-004	4.400-005	1.899-005
5.750-002	.000	7.760-002	1.178-004	1.114-004	1.022-004	9.396-005	7.942-005	6.713-005	4.797-005	2.449-005	1.057-005	4.560-006
8.500-002	.000	8.024+001	1.022-004	8.687-005	7.967-005	7.325-005	6.191-005	5.233-005	3.739-005	1.909-005	8.238-006	3.555-006
1.250-001	.000	1.055-001	7.527-005	7.122-005	6.532-005	6.005-005	5.076-005	4.291-005	3.066-005	1.565-005	6.754-006	2.915-006
2.250-001	.000	2.854-001	2.123-004	2.009-004	1.842-004	1.694-004	1.432-004	1.210-004	8.647-005	4.414-005	1.905-005	8.221-006
3.750-001	.000	6.387-002	1.162-004	1.099-004	1.008-004	9.270-005	7.836-005	6.624-005	4.733-005	2.416-005	1.043-005	4.499-006
5.750-001	.000	1.431+000	1.278+000	1.209+000	1.109+000	1.020+000	8.621-001	7.287-001	5.207-001	2.658-001	1.147-001	4.950-002
8.500-001	.000	1.465+000	1.312+000	1.242+000	1.139+000	1.047+000	8.851-001	7.481-001	5.345-001	2.729-001	1.178-001	5.082-002
1.250+000	.000	1.425-001	1.276-001	1.207-001	1.107-001	1.018-001	8.603-002	7.272-002	5.196-002	2.653-002	1.145-002	4.940-003
1.750+000	.000	8.781-006	2.313-011	3.750-014	1.609-018	9.173-023	3.255-025	3.255-025	3.255-025	3.255-025	3.255-025	3.255-025
2.250+000	.000	2.097-025	2.097-025	2.097-025	2.097-025	2.097-025	2.097-025	2.097-025	2.097-025	2.097-025	2.097-025	2.097-025
2.750+000	.000	1.284-025	1.284-025	1.284-025	1.284-025	1.284-025	1.284-025	1.284-025	1.284-025	1.284-025	1.284-025	1.284-025
3.500+000	.000	1.204-025	1.204-025	1.204-025	1.204-025	1.204-025	1.204-025	1.204-025	1.204-025	1.204-025	1.204-025	1.204-025
5.000+000	.000	5.119-026	5.119-026	5.119-026	5.119-026	5.119-026	5.119-026	5.119-026	5.119-026	5.119-026	5.119-026	5.119-026
7.000+000	.000	4.650-027	4.650-027	4.650-027	4.650-027	4.650-027	4.650-027	4.650-027	4.650-027	4.650-027	4.650-027	4.650-027
1.100+001	.000	4.621-028	4.621-028	4.621-028	4.621-028	4.621-028	4.621-028	4.621-028	4.621-028	4.621-028	4.621-028	4.621-028
TOTAL	.000	1.244+002	2.719+000	2.573+000	2.360+000	2.170+000	1.834+000	1.550+000	1.108+000	5.655-001	2.440-001	1.053-001
GAM POW	.000	1.994-005	4.359-007	4.125-007	3.783-007	3.478-007	2.940-007	2.485-007	1.776-007	9.065-008	3.912-008	1.688-008

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS134	.000	1.520+004	1.362+004	1.289+004	1.182+004	1.087+004	9.185+003	7.764+003	5.547+003	2.832+003	1.222+003	5.274+002

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS134	.000	1.460+004	1.307+004	1.237+004	1.135+004	1.043+004	8.819+003	7.454+003	5.326+003	2.719+003	1.173+003	5.064+002

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS134	.000	2.286+003	2.048+003	1.938+003	1.777+003	1.634+003	1.381+003	1.168+003	8.342+002	4.259+002	1.838+002	7.931+001

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS134	.000	1.206+003	1.080+003	1.022+003	9.373+002	8.617+002	7.284+002	6.157+002	4.399+002	2.246+002	9.692+001	4.182+001

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS134	.000	1.053+003	9.434+002	8.927+002	8.188+002	7.528+002	6.363+002	5.379+002	3.843+002	1.962+002	8.467+001	3.654+001

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS134	.000	3.458+002	3.098+002	2.932+002	2.689+002	2.472+002	2.090+002	1.766+002	1.262+002	6.443+001	2.780+001	1.200+001

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS134	.000	2.481+006	2.223+006	2.103+006	1.929+006	1.774+006	1.499+006	1.267+006	9.055+005	4.623+005	1.995+005	8.609+004

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS134	.000	1.723+006	1.544+006	1.461+006	1.340+006	1.232+006	1.041+006	8.801+005	6.289+005	3.211+005	1.385+005	5.979+004

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS134	.000	1.139+005	1.020+005	9.656+004	8.856+004	8.142+004	6.883+004	5.818+004	4.157+004	2.122+004	9.158+003	3.952+003

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS132	.000	5.018+000	1.322-005	2.143-008	9.193-013	5.223-017	.000	.000	.000	.000	.000	.000
SM149	.000	1.860-019	1.860-019	1.860-019	1.860-019	1.860-019	1.860-019	1.860-019	1.860-019	1.860-019	1.860-019	1.860-019

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM149	.000	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020	9.320-020

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM149	.000	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020	4.670-020

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	1.13796	1.13797	1.13802	1.13806	1.13816	1.13823	1.13835	1.13844	1.13841	1.13831
NEUT PRODN	.00	.00	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003	5.42+003
NEUT DESTN	.00	.00	4.76+003	4.76+003	4.76+003	4.76+003	4.76+003	4.76+003	4.76+003	4.76+003	4.76+003	4.76+003
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	3.758+000	3.760+000	3.760+000	3.760+000	3.760+000	3.760+000	3.760+000	3.760+000	3.760+000	3.760+000	3.760+000	3.760+000
H 2	1.128-003	1.525-003	1.525-003	1.525-003	1.525-003	1.525-003	1.525-003	1.525-003	1.525-003	1.525-003	1.525-003	1.525-003
H 3	.000	1.509-005	1.481-005	1.468-005	1.447-005	1.426-005	1.387-005	1.349-005	1.275-005	1.140-005	9.904-006	8.607-006
HE 4	.000	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002
LI 6	.000	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004	3.579-004
LI 7	.000	1.354-001	1.354-001	1.354-001	1.354-001	1.354-001	1.354-001	1.354-001	1.354-001	1.354-001	1.354-001	1.354-001
BE 9	1.000+001	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000
BE 10	.000	2.183-005	2.183-005	2.183-005	2.183-005	2.183-005	2.183-005	2.183-005	2.183-005	2.183-005	2.183-005	2.183-005
B 10	4.232-001	2.298-001	2.298-001	2.298-001	2.298-001	2.298-001	2.298-001	2.298-001	2.298-001	2.298-001	2.298-001	2.298-001
B 11	1.862+000	1.865+000	1.865+000	1.865+000	1.865+000	1.865+000	1.865+000	1.865+000	1.865+000	1.865+000	1.865+000	1.865+000
C 12	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002
C 13	6.840+000	6.840+000	6.840+000	6.840+000	6.840+000	6.840+000	6.840+000	6.840+000	6.840+000	6.840+000	6.840+000	6.840+000
C 14	.000	2.680-002	2.680-002	2.680-002	2.680-002	2.680-002	2.680-002	2.680-002	2.679-002	2.679-002	2.678-002	2.677-002
N 14	8.031+001	8.028+001	8.028+001	8.028+001	8.028+001	8.028+001	8.028+001	8.028+001	8.028+001	8.028+001	8.028+001	8.028+001
N 15	3.161-001	3.170-001	3.170-001	3.170-001	3.170-001	3.170-001	3.170-001	3.170-001	3.170-001	3.170-001	3.170-001	3.170-001
NE 21	.000	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005
NE 22	.000	1.895-005	1.895-005	1.895-005	1.895-005	1.895-005	1.895-005	1.895-005	1.895-005	1.895-005	1.895-005	1.895-005
NA 23	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG 24	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001
MG 25	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000
MG 26	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000
AL 27	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002
SI 28	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002
SI 29	6.362+000	6.364+000	6.364+000	6.364+000	6.364+000	6.364+000	6.364+000	6.364+000	6.364+000	6.364+000	6.364+000	6.364+000
SI 30	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000
P 31	.000	7.728-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005
TI 46	2.786-001	2.785-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001	2.786-001
TI 47	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001
TI 48	2.597+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000	2.594+000
TI 49	1.942-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001	1.971-001
TI 50	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001	1.909-001
V 50	8.621-003	8.593-003	8.593-003	8.593-003	8.593-003	8.593-003	8.593-003	8.593-003	8.593-003	8.593-003	8.593-003	8.593-003
V 51	3.509+000	3.515+000	3.519+000	3.519+000	3.519+000	3.519+000	3.519+000	3.519+000	3.519+000	3.519+000	3.519+000	3.519+000
CR 50	5.655+000	5.643+000	5.643+000	5.643+000	5.643+000	5.643+000	5.643+000	5.643+000	5.643+000	5.643+000	5.643+000	5.643+000
CR 51	.000	4.316-003	2.144-004	4.780-005	4.559-006	4.644-007	4.817-009	4.997-011	5.377-015	6.226-023	7.478-033	.000
CR 52	1.133+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002
CR 53	1.309+001	1.312+001	1.312+001	1.312+001	1.312+001	1.312+001	1.312+001	1.312+001	1.312+001	1.312+001	1.312+001	1.312+001
CR 54	3.314+000	3.348+000	3.348+000	3.348+000	3.348+000	3.348+000	3.348+000	3.348+000	3.348+000	3.348+000	3.348+000	3.348+000
MN 54	.000	5.525-004	4.234-004	3.706-004	3.009-004	2.457-004	1.639-004	1.093-004	4.862-005	9.618-006	1.269-006	1.674-007
MN 55	2.852+001	2.845+001	2.845+001	2.845+001	2.846+001	2.846+001	2.846+001	2.846+001	2.846+001	2.847+001	2.847+001	2.847+001
MN 56	.000	1.040-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	2.497+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001
FE 55	.000	1.931-002	1.769-002	1.693-002	1.581-002	1.479-002	1.294-002	1.133-002	8.677-003	5.091-003	2.614-003	1.342-003
FE 56	4.089+002	4.088+002	4.088+002	4.088+002	4.088+002	4.088+002	4.088+002	4.088+002	4.088+002	4.088+002	4.088+002	4.088+002
FE 57	9.753+000	9.920+000	9.920+000	9.920+000	9.920+000	9.920+000	9.920+000	9.920+000	9.920+000	9.920+000	9.920+000	9.920+000
FE 58	1.339+000	1.343+000	1.344+000	1.344+000	1.344+000	1.344+000	1.344+000	1.344+000	1.344+000	1.344+000	1.344+000	1.344+000
FE 59	.000	1.188-004	1.871-005	7.425-006	1.747-006	4.280-007	2.569-008	1.542-009	5.556-012	7.211-017	5.618-023	4.377-029
CO 58	.000	1.472-003	4.545-004	2.526-004	1.007-004	4.116-005	6.881-006	1.151-006	3.217-008	2.514-011	3.285-015	4.293-019
CO 59	7.035-001	6.974-001	6.975-001	6.975-001	6.975-001	6.975-001	6.975-001	6.975-001	6.975-001	6.975-001	6.975-001	6.975-001
CO 60	.000	6.643-003	6.362-003	6.226-003	6.019-003	5.824-003	5.454-003	5.106-003	4.477-003	3.441-003	2.477-003	1.783-003
NI 58	9.347+001	9.337+001	9.337+001	9.337+001	9.337+001	9.337+001	9.337+001	9.337+001	9.337+001	9.337+001	9.337+001	9.337+001
NI 59	.000	9.390-002	9.390-002	9.390-002	9.390-002	9.390-002	9.390-002	9.390-002	9.390-002	9.390-002	9.390-002	9.390-002

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NI 60	3.697+001	3.695+001	3.695+001	3.695+001	3.695+001	3.695+001	3.695+001	3.695+001	3.695+001	3.696+001	3.696+001	3.696+001
NI 61	1.627+000	1.642+000	1.642+000	1.642+000	1.642+000	1.642+000	1.642+000	1.642+000	1.642+000	1.642+000	1.642+000	1.642+000
NI 62	5.254+000	5.241+000	5.241+000	5.241+000	5.241+000	5.241+000	5.241+000	5.241+000	5.241+000	5.241+000	5.241+000	5.241+000
NI 63	.000	1.454-002	1.450-002	1.448-002	1.446-002	1.443-002	1.438-002	1.432-002	1.421-002	1.400-002	1.374-002	1.348-002
NI 64	1.375+000	1.400+000	1.400+000	1.400+000	1.400+000	1.400+000	1.400+000	1.400+000	1.400+000	1.400+000	1.400+000	1.400+000
CU 63	5.381+001	5.377+001	5.377+001	5.377+001	5.377+001	5.377+001	5.377+001	5.377+001	5.377+001	5.377+001	5.377+001	5.377+001
CU 64	.000	3.024-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	2.471+001	2.470+001	2.470+001	2.470+001	2.470+001	2.470+001	2.470+001	2.470+001	2.470+001	2.470+001	2.470+001	2.470+001
ZN 64	.000	1.489-002	1.500-002	1.500-002	1.500-002	1.500-002	1.500-002	1.500-002	1.500-002	1.500-002	1.500-002	1.500-002
ZN 66	.000	8.960-003	8.960-003	8.960-003	8.960-003	8.960-003	8.960-003	8.960-003	8.960-003	8.960-003	8.960-003	8.960-003
SR 87	.000	5.702-005	5.702-005	5.702-005	5.702-005	5.702-005	5.702-005	5.702-005	5.702-005	5.702-005	5.702-005	5.702-005
SR 88	.000	5.225-003	5.225-003	5.225-003	5.225-003	5.225-003	5.225-003	5.225-003	5.225-003	5.225-003	5.225-003	5.225-003
SR 89	.000	1.988-004	3.829-005	1.680-005	4.628-006	1.321-006	1.077-007	8.784-009	5.839-011	2.580-015	9.296-021	3.349-026
Y 89	.000	1.986-004	3.591-004	3.806-004	3.928-004	3.961-004	3.973-004	3.974-004	3.974-004	3.974-004	3.974-004	3.974-004
Y 90	.000	5.572-004	4.871-012	4.852-012	4.822-012	4.794-012	4.737-012	4.681-012	4.571-012	4.358-012	4.107-012	3.869-012
Y 91	.000	5.633-004	1.360-004	6.680-005	2.195-005	7.440-006	8.550-007	9.825-008	1.297-009	2.262-013	4.532-018	9.079-023
ZR 90	3.508+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004
ZR 91	7.713+003	7.711+003	7.711+003	7.711+003	7.711+003	7.711+003	7.711+003	7.711+003	7.711+003	7.711+003	7.711+003	7.711+003
ZR 92	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004
ZR 93	.000	8.628-001	8.628-001	8.628-001	8.628-001	8.628-001	8.628-001	8.627-001	8.627-001	8.627-001	8.627-001	8.627-001
ZR 94	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004
ZR 95	.000	1.556-001	4.242-002	2.214-002	8.003-003	2.976-003	4.115-004	5.691-005	1.088-006	3.978-010	2.011-014	1.017-018
ZR 96	2.034+003	2.034+003	2.034+003	2.034+003	2.034+003	2.034+003	2.034+003	2.034+003	2.034+003	2.034+003	2.034+003	2.034+003
ZR 97	.000	5.522-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	5.695-002	3.926-002	2.318-002	9.160-003	3.530-003	4.891-004	6.931-005	1.373-006	4.853-010	2.453-014	1.240-018
NB 95M	.000	6.267-005	1.775-005	9.266-006	3.349-006	1.245-006	1.722-007	2.381-008	4.553-010	1.665-013	8.416-018	4.255-022
NB 97	.000	3.926-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 92	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001	4.988-001
MO 93	.000	1.303-005	1.304-005	1.304-005	1.303-005	1.303-005	1.303-005	1.303-005	1.303-005	1.302-005	1.302-005	1.301-005
MO 94	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001
MO 95	5.533-001	6.112-001	7.422-001	7.785-001	8.067-001	8.174-001	8.230-001	8.238-001	8.239-001	8.239-001	8.239-001	8.239-001
MO 96	5.873-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001	5.906-001
MO 97	3.411-001	8.884-001	8.943-001	8.943-001	8.943-001	8.943-001	8.943-001	8.943-001	8.943-001	8.943-001	8.943-001	8.943-001
MO 98	8.652-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001	8.655-001
MO 99	.000	1.230-005	8.999-019	2.434-025	1.269-035	.000	.000	.000	.000	.000	.000	.000
MO100	3.517-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001	3.516-001
TC 99	.000	3.753-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005
RU101	.000	8.002-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005	8.004-005
CD106	3.493-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003
CD108	2.436-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003
CD110	3.485-002	3.473-002	3.473-002	3.473-002	3.473-002	3.473-002	3.473-002	3.473-002	3.473-002	3.473-002	3.473-002	3.473-002
CD111	3.601-002	3.594-002	3.594-002	3.594-002	3.594-002	3.594-002	3.594-002	3.594-002	3.594-002	3.594-002	3.594-002	3.594-002
CD112	6.845-002	6.855-002	6.855-002	6.855-002	6.855-002	6.855-002	6.855-002	6.855-002	6.855-002	6.855-002	6.855-002	6.855-002
CD113	3.494-002	1.519-005	1.519-005	1.519-005	1.519-005	1.519-005	1.519-005	1.519-005	1.519-005	1.519-005	1.519-005	1.519-005
CD114	8.293-002	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001
CD116	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002
IN113	.000	8.331-003	1.262-002	1.385-002	1.507-002	1.575-002	1.636-002	1.657-002	1.666-002	1.667-002	1.667-002	1.667-002
IN114M	.000	1.973-005	3.678-006	1.588-006	4.263-007	1.187-007	9.211-009	7.145-010	4.299-012	1.556-016	4.371-022	1.228-027
IN115	.000	4.959-006	8.849-006	9.281-006	9.496-006	9.546-006	9.560-006	9.561-006	9.561-006	9.561-006	9.561-006	9.561-006
SN112	9.618+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000	9.602+000
SN113	.000	8.336-003	4.047-003	2.820-003	1.602-003	9.241-004	3.077-004	1.024-004	1.136-005	1.396-007	5.711-010	2.337-012
SN114	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SN115	3.753+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000	3.727+000
SN116	1.464+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002	1.463+002
SN117	7.787+001	7.791+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001	7.792+001
SN117M	.000	1.147-002	3.022-005	1.551-006	1.484-008	1.817-010	1.919-014	2.278-018	3.210-026	.000	.000	.000
SN118	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002
SN119	8.789+001	8.790+001	8.791+001	8.792+001	8.792+001	8.793+001	8.793+001	8.793+001	8.794+001	8.794+001	8.794+001	8.794+001
SN119M	.000	3.427-002	2.440-002	2.059-002	1.579-002	1.219-002	7.274-003	4.339-003	1.544-003	1.955-004	1.477-005	1.116-008
SN120	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002
SN121	.000	5.324-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	1.960-004	1.951-004	1.946-004	1.939-004	1.933-004	1.919-004	1.906-004	1.880-004	1.828-004	1.766-004	1.706-004
SN122	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001
SN123	.000	2.601-003	1.366-003	9.901-004	5.981-004	3.664-004	1.375-004	5.161-005	7.269-006	1.442-007	1.074-009	7.995-012
SN124	5.963+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001	5.961+001
SN125	.000	1.727-003	3.090-007	4.134-009	4.818-012	6.783-015	1.344-020	2.665-026	.000	.000	.000	.000
SB121	.000	3.296-002	3.349-002	3.349-002	3.349-002	3.349-002	3.350-002	3.350-002	3.350-002	3.350-002	3.351-002	3.352-002
SB122	.000	1.069-005	4.476-019	9.160-026	3.086-036	.000	.000	.000	.000	.000	.000	.000
SB123	.000	9.224-004	2.158-003	2.534-003	2.926-003	3.157-003	3.386-003	3.472-003	3.517-003	3.524-003	3.524-003	3.524-003
SB125	.000	2.053-002	2.051-002	1.969-002	1.846-002	1.734-002	1.530-002	1.350-002	1.051-002	6.373-003	3.409-003	1.824-003
TE122	.000	1.309-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004	1.413-004
TE125	.000	6.905-004	2.329-003	3.144-003	4.373-003	5.503-003	7.569-003	9.394-003	1.242-002	1.662-002	1.963-002	2.123-002
TE125M	.000	1.225-004	2.419-004	2.534-004	2.510-004	2.401-004	2.137-004	1.888-004	1.470-004	8.916-005	4.768-005	2.551-005
TE126	.000	8.785-006	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005	1.194-005
LU175	.000	5.678-004	1.139-003	1.252-003	1.335-003	1.368-003	1.386-003	1.389-003	1.390-003	1.390-003	1.390-003	1.390-003
HF174	2.194-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002	2.055-002
HF175	.000	8.222-004	2.506-004	1.383-004	5.457-005	2.209-005	3.621-006	5.936-007	1.595-008	1.152-011	1.363-015	1.813-019
HF176	7.212-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001	6.993-001
HF177	2.594+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000	1.909+000
HF178	3.801+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000	4.177+000
HF179	1.938+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000	2.217+000
HF180	4.993+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000	5.036+000
HF181	.000	7.170-003	1.008-003	3.780-004	8.137-005	1.829-005	9.234-007	4.663-008	1.189-010	7.733-016	2.539-022	8.339-029
HF182	.000	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005	2.525-005
TA181	.000	8.657-003	1.483-002	1.547-002	1.577-002	1.583-002	1.585-002	1.585-002	1.585-002	1.585-002	1.585-002	1.585-002
TA182	.000	6.789-005	3.294-005	2.294-005	1.302-005	7.511-006	2.498-006	8.310-007	9.194-008	1.126-009	5.465-012	9.021-013
W180	4.476-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003	4.440-003
W181	.000	2.581-005	1.299-005	9.219-006	5.387-006	3.195-006	1.124-006	3.955-007	4.896-008	7.502-010	4.044-012	2.180-014
W182	9.156-001	8.932-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001	8.933-001
W183	5.005-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001	5.158-001
W184	1.079+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000	1.086+000
W185	.000	4.966-004	1.641-004	9.429-005	3.962-005	1.706-005	3.162-006	5.860-007	2.013-008	2.375-011	5.194-015	1.136-018
W186	1.018+000	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001	9.940-001
W187	.000	3.295-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.165-005	6.532-006	3.587-006	1.404-006	5.639-007	9.099-008	1.468-008	3.824-010	2.593-013	2.837-017	3.105-021
RE185	.000	3.063-004	6.388-004	7.086-004	7.633-004	7.858-004	7.997-004	8.023-004	8.029-004	8.029-004	8.029-004	8.029-004
RE187	.000	2.304-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002	2.337-002
OS186	.000	8.147-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006	9.365-006
OS188	.000	2.507-004	2.708-004	2.738-004	2.760-004	2.769-004	2.774-004	2.774-004	2.774-004	2.774-004	2.774-004	2.774-004
PB204	9.695-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002	9.694-002
PB205	.000	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005	1.413-005
PB206	1.685+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000	1.679+000
PB207	1.553+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000	1.559+000
PB208	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000
SUMTOT	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004
TOTAL	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 8%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	3.759+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000
HE	.000	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.991-002	7.992-002	7.992-002
LI	.000	1.357-001	1.357-001	1.357-001	1.357-001	1.357-001	1.357-001	1.357-001	1.357-001	1.357-001	1.357-001	1.357-001
BE	1.000+001	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000
B	2.285+000	2.094+000	2.094+000	2.094+000	2.094+000	2.094+000	2.094+000	2.094+000	2.094+000	2.094+000	2.094+000	2.094+000
C	5.693+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002
N	8.063+001	8.060+001	8.060+001	8.060+001	8.060+001	8.060+001	8.060+001	8.060+001	8.060+001	8.060+001	8.060+001	8.060+001
NE	.000	3.189-005	3.189-005	3.189-005	3.189-005	3.189-005	3.189-005	3.189-005	3.189-005	3.189-005	3.189-005	3.189-005
NA	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001
AL	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002	8.053+002
SI	1.320+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002
P	.000	7.728-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005	7.740-005
TI	3.517+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000
V	3.518+000	3.524+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000
CR	1.354+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002
MN	2.852+001	2.845+001	2.846+001	2.846+001	2.846+001	2.846+001	2.846+001	2.846+001	2.846+001	2.847+001	2.847+001	2.847+001
FE	4.450+002	4.450+002	4.450+002	4.450+002	4.450+002	4.450+002	4.450+002	4.450+002	4.450+002	4.450+002	4.450+002	4.450+002
CO	7.035-001	7.055-001	7.043-001	7.040-001	7.036-001	7.034-001	7.030-001	7.026-001	7.020-001	7.010-001	7.000-001	6.993-001
NI	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002
CU	7.852+001	7.847+001	7.847+001	7.847+001	7.847+001	7.847+001	7.847+001	7.847+001	7.847+001	7.847+001	7.847+001	7.847+001
ZN	.000	2.385-002	2.396-002	2.396-002	2.396-002	2.396-002	2.396-002	2.396-002	2.396-002	2.396-002	2.396-002	2.396-002
SR	.000	5.481-003	5.320-003	5.299-003	5.287-003	5.283-003	5.282-003	5.282-003	5.282-003	5.282-003	5.282-003	5.282-003
Y	.000	1.321-003	4.951-004	4.474-004	4.147-004	4.035-004	3.982-004	3.975-004	3.974-004	3.974-004	3.974-004	3.974-004
ZR	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004
NB	.000	5.741-002	3.927-002	2.319-002	9.163-003	3.532-003	5.000-004	7.031-005	2.742-006	2.156-006	3.139-006	4.122-006
MO	3.518+000	4.126+000	4.263+000	4.299+000	4.328+000	4.338+000	4.344+000	4.345+000	4.345+000	4.345+000	4.345+000	4.345+000
TC	.000	3.754-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005	3.906-005
RU	.000	8.040-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005	8.043-005
CD	2.852-001	2.853-001	2.853-001	2.853-001	2.853-001	2.853-001	2.853-001	2.853-001	2.853-001	2.853-001	2.853-001	2.853-001
IN	.000	8.361-003	1.264-002	1.386-002	1.508-002	1.576-002	1.637-002	1.658-002	1.667-002	1.668-002	1.668-002	1.668-002
SN	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003
SB	.000	5.442-002	5.616-002	5.571-002	5.488-002	5.399-002	5.218-002	5.047-002	4.753-002	4.340-002	4.044-002	3.886-002
TE	.000	9.534-004	2.726-003	3.552-003	4.779-003	5.899-003	7.938-003	9.738-003	1.273-002	1.687-002	1.983-002	2.142-002
LU	.000	5.701-004	1.142-003	1.254-003	1.338-003	1.370-003	1.389-003	1.392-003	1.392-003	1.392-003	1.392-003	1.392-003
HF	1.407+001	1.407+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001	1.406+001
TA	.000	8.730-003	1.487-002	1.549-002	1.578-002	1.584-002	1.585-002	1.585-002	1.585-002	1.585-002	1.585-002	1.585-002
W	3.517+000	3.494+000	3.494+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000	3.493+000
RE	.000	2.336-002	2.401-002	2.408-002	2.414-002	2.416-002	2.417-002	2.418-002	2.418-002	2.418-002	2.418-002	2.418-002
OS	.000	2.594-004	2.807-004	2.837-004	2.859-004	2.867-004	2.872-004	2.873-004	2.873-004	2.873-004	2.873-004	2.873-004
PB	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000
SUMTOT	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004
TOTAL	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004

CUMULATIVE TABLE TOTALS

AP+FP	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	1.457-001	1.430-001	1.417-001	1.397-001	1.377-001	1.339-001	1.302-001	1.231-001	1.100-001	9.561-002	8.309-002
H 4	.000	4.325-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.198+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.744-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007
B 12	.000	2.560-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	1.195-001	1.195-001	1.195-001	1.195-001	1.195-001	1.195-001	1.195-001	1.195-001	1.194-001	1.194-001	1.194-001
C 15	.000	3.612-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	1.315-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	2.970-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	3.916-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	3.338+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	6.578+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.872-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.119+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	1.931+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	5.127-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	4.972-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	4.623+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	9.129-005	2.720-007	1.498-008	3.018-010	1.474-010	1.455-010	1.454-010	1.452-010	1.449-010	1.445-010	1.441-010
CA 45	.000	1.763-004	1.058-004	8.200-005	5.499-005	3.729-005	1.715-005	7.887-006	1.668-006	7.461-008	1.535-009	3.157-011
SC 46	.000	3.617-002	1.340-002	8.160-003	3.752-003	1.763-003	3.892-004	8.592-005	4.188-006	9.947-009	5.217-012	2.736-015
SC 47	.000	1.040-001	1.789-012	1.397-017	4.084-024	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	1.001-002	1.619-022	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	7.999-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	1.649-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.956-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1 542-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015
V 52	.000	9.257+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	2.121-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	2.143-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	3.989+002	1.982+001	4.419+000	4.215-001	4.293-002	4.453-004	4.619-006	4.971-010	5.755-018	.000	.000
CR 55	.000	6.405+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	4.277+000	3.277+000	2.869+000	2.329+000	1.902+000	1.269+000	8.461-001	3.763-001	7.445-002	9.824-003	1.296-003
MN 56	.000	2.258+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	6.041-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	2.001-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	4.829+001	4.424+001	4.234+001	3.954+001	3.699+001	3.237+001	2.833+001	2.170+001	1.273+001	6.539+000	3.358+000
FE 59	.000	5.845+000	9.205-001	3.653-001	8.595-002	2.106-002	1.264-003	7.587-005	2.733-007	3.548-012	2.764-018	2.154-024
CO 58	.000	4.685+001	1.446+001	8.037+000	3.203+000	1.310+000	2.190-001	3.661-002	1.024-003	8.000-007	1.045-010	1.366-014
CO 60	.000	7.514+000	7.196+000	7.043+000	6.808+000	6.588+000	6.169+000	5.776+000	5.064+000	3.893+000	2.802+000	2.017+000
CO 60M	.000	1.123+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	1.544-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	5.660-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	7.115-003	7.115-003	7.115-003	7.115-003	7.115-003	7.115-003	7.115-003	7.115-003	7.115-003	7.115-003	7.115-003
NI 63	.000	8.971-001	8.949-001	8.938-001	8.921-001	8.904-001	8.870-001	8.837-001	8.771-001	8.639-001	8.478-001	8.320-001
NI 65	.000	9.221+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	4.694-005	6.256-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.166+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	2.514+002	6.266-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	2.397-004	2.318-018	2.279-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	8.361-003	5.945-003	5.013-003	3.838-003	2.981-003	1.762-003	1.048-003	3.712-004	4.655-005	3.473-006	2.592-007

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6XPU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 89	.000	5.778+000	1.113+000	4.884-001	1.345-001	3.841-002	3.132-003	2.553-004	1.697-006	7.500-011	2.702-016	9.734-022
SR 90	.000	2.671-006	2.651-006	2.640-006	2.624-006	2.609-006	2.578-006	2.547-006	2.487-006	2.372-006	2.235-006	2.106-006
SR 91	.000	1.592+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.498-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	1.457-004	1.293-015	3.850-021	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	3.033+002	2.651-006	2.641-006	2.625-006	2.609-006	2.578-006	2.548-006	2.488-006	2.372-006	2.235-006	2.106-006
Y 91	.000	1.382+001	3.336+000	1.639+000	5.385-001	1.826-001	2.098-002	2.411-003	3.183-005	5.550-009	1.112-013	2.228-018
Y 92	.000	1.791+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.498-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.139+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	7.317-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.459-004	1.295-015	3.856-021	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.169-003	2.169-003	2.169-003	2.169-003	2.169-003	2.169-003	2.169-003	2.169-003	2.169-003	2.169-003	2.169-003
ZR 95	.000	3.345+003	9.116+002	4.759+002	1.720+002	6.396+001	8.845+000	1.223+000	2.339-002	8.550-006	4.323-010	2.186-014
ZR 97	.000	1.056+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	2.837-002	7.894-006	1.317-007	2.170-010	4.275-013	1.659-018	6.441-024	.000	.000	.000	.000
NB 93M	.000	1.704-005	5.096-005	6.771-005	9.366-005	1.186-004	1.674-004	2.150-004	3.067-004	4.766-004	6.661-004	8.329-004
NB 94	.000	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.317-008	2.316-008
NB 95	.000	2.228+003	1.536+003	9.069+002	3.583+002	1.381+002	1.952+001	2.711+000	5.373-002	1.898-005	9.597-010	4.852-014
NB 95M	.000	2.388+001	6.763+000	3.531+000	1.276+000	4.745-001	6.561-002	9.073-003	1.735-004	6.343-008	3.207-012	1.621-016
NB 96	.000	1.457+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.056+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	9.993+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	6.101-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	8.435-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	1.433-005	1.433-005	1.433-005	1.433-005	1.433-005	1.433-005	1.432-005	1.432-005	1.432-005	1.431-005	1.430-005
MO 99	.000	5.904+000	4.318-013	1.168-019	.000	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.470+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	6.365-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007
TC100	.000	8.538-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	1.470+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	8.095-005	3.754-010	3.751-010	3.745-010	3.740-010	3.730-010	3.720-010	3.700-010	3.660-010	3.610-010	3.561-010
AG108M	.000	4.226-009	4.218-009	4.214-009	4.208-009	4.203-009	4.191-009	4.180-009	4.157-009	4.112-009	4.056-009	4.001-009
AG109M	.000	2.242-003	1.874-003	1.713-003	1.489-003	1.299-003	9.888-004	7.527-004	4.362-004	1.465-004	3.744-005	9.571-006
AG110	.000	8.945-005	4.340-009	3.674-009	2.832-009	2.198-009	1.324-009	7.980-010	2.897-010	3.819-011	3.034-012	2.410-013
AG110M	.000	4.552-007	3.263-007	2.763-007	2.129-007	1.653-007	9.968-008	6.000-008	2.178-008	2.872-009	2.281-010	1.812-011
CD107	.000	8.544-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	2.242-003	1.874-003	1.713-003	1.489-003	1.299-003	9.888-004	7.527-004	4.362-004	1.465-004	3.744-005	9.571-006
CD111M	.000	1.518-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	1.884+000	1.153-016	9.016-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.172-001	1.816-002	7.145-003	1.659-003	4.013-004	2.348-005	1.374-006	4.704-009	5.512-014	3.780-020	2.591-026
CD117	.000	6.098-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.142-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.365-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	4.154-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	8.374+001	4.067+001	2.834+001	1.609+001	9.287+000	3.092+000	1.030+000	1.141-001	1.403-003	5.739-006	2.348-008
IN114	.000	1.922+000	8.147-002	3.517-002	9.442-003	2.630-003	2.040-004	1.582-005	9.521-008	3.447-012	9.681-018	2.719-023
IN114M	.000	4.567-001	8.513-002	3.675-002	9.867-003	2.748-003	2.132-004	1.653-005	9.949-008	3.602-012	1.012-017	2.841-023
IN116	.000	6.942-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	1.174-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	8.434-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	5.765-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN118	.000	1.803-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.277-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.365-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	3.407-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	8.372+001	4.064+001	2.832+001	1.608+001	9.281+000	3.090+000	1.029+000	1.141-001	1.402-003	5.736-006	2.347-008
SN113M	.000	8.343+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	9.148+002	2.410+000	1.237-001	1.183-003	1.289-005	1.530-009	1.816-013	2.559-021	.000	.000	.000
SN119M	.000	1.535+002	1.093+002	9.226+001	7.073+001	5.463+001	3.259+001	1.944+001	6.917+000	8.759-001	6.616-002	4.998-003
SN121	.000	5.147+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	1.159-002	1.154-002	1.151-002	1.147-002	1.143-002	1.135-002	1.127-002	1.112-002	1.081-002	1.045-002	1.009-002
SN123	.000	2.139+001	1.123+001	8.141+000	4.918+000	3.013+000	1.131+000	4.243-001	5.977-002	1.186-003	8.829-006	6.574-008
SN123M	.000	2.025-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.872+002	3.350-002	4.481-004	5.223-007	7.353-010	1.458-015	2.889-021	.000	.000	.000	.000
SN125M	.000	1.509+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	4.237+000	1.775-013	3.632-020	.000	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	3.687-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	2.326-002	5.841-003	2.927-003	9.924-004	3.468-004	4.234-005	5.170-006	7.709-008	1.714-011	4.652-016	1.263-020
SB124M	.000	2.019-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	2.120+001	2.119+001	2.034+001	1.907+001	1.791+001	1.581+001	1.395+001	1.086+001	6.583+000	3.521+000	1.884+000
SB126	.000	2.638-001	3.214-004	1.122-005	5.871-008	3.558-010	1.307-014	4.800-019	.000	.000	.000	.000
SB126M	.000	3.293-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	4.522-004	2.257-004	1.594-004	9.252-005	5.452-005	1.893-005	6.574-006	7.926-007	1.152-008	5.818-011	2.937-013
TE125M	.000	2.208+000	4.358+000	4.565+000	4.523+000	4.327+000	3.851+000	3.402+000	2.649+000	1.607+000	8.592-001	4.596-001
TE127	.000	8.607-005	6.428-007	4.389-007	2.415-007	1.351-007	4.231-008	1.325-008	1.299-009	1.248-011	3.753-014	1.129-016
TE127M	.000	1.408-006	6.563-007	4.481-007	2.466-007	1.380-007	4.320-008	1.352-008	1.326-009	1.274-011	3.832-014	1.153-016
LU176M	.000	1.531-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	5.620-003	3.733-007	2.677-007	1.759-007	1.169-007	5.166-008	2.283-008	4.458-009	1.700-010	2.864-012	4.826-014
LU177M	.000	2.604-006	1.522-006	1.164-006	7.648-007	5.084-007	2.247-007	9.928-008	1.939-008	7.392-010	1.246-011	2.099-013
HF175	.000	8.768+000	2.672+000	1.475+000	5.819-001	2.356-001	3.862-002	6.330-003	1.701-004	1.228-007	1.453-011	1.720-015
HF178M	.000	1.896+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	2.241+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	4.886+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	1.221+002	1.716+001	6.434+000	1.385+000	3.113-001	1.572-002	7.938-004	2.024-006	1.316-011	4.323-018	1.420-024
HF182	.000	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009	5.514-009
TA182	.000	4.237-001	2.056-001	1.432-001	8.128-002	4.688-002	1.559-002	5.187-003	5.738-004	7.030-006	3.411-008	5.630-009
TA182M	.000	1.272-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	6.247-001	5.159-008	1.483-011	4.230-017	1.724-022	.000	.000	.000	.000	.000	.000
W181	.000	1.537-001	7.739-002	5.491-002	3.208-002	1.903-002	6.695-003	2.356-003	2.916-004	4.468-006	2.409-008	1.299-010
W183M	.000	6.322-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	4.669+000	1.542+000	8.866-001	3.725-001	1.604-001	2.973-002	5.509-003	1.893-004	2.233-007	4.883-011	1.068-014
W185M	.000	8.972-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	2.311+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.168-001	6.540-002	3.592-002	1.405-002	5.646-003	9.111-004	1.470-004	3.828-006	2.596-008	2.841-013	3.108-017
RE186	.000	2.423-001	6.599-011	1.089-015	3.544-023	.000	.000	.000	.000	.000	.000	.000
RE187	.000	8.814-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010	8.940-010
RE188	.000	4.881+000	6.607-002	3.629-002	1.420-002	5.704-003	9.205-004	1.485-004	3.868-006	2.623-009	2.870-013	3.141-017
RE188M	.000	4.563+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	1.382-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015
PB209	.000	2.247-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	2.756-015	4.852+004	2.801+003	1.646+003	7.198+002	3.500+002	1.293+002	7.938+001	4.908+001	2.688+001	1.488+001	8.779+000
TOTAL	2.756-015	4.852+004	2.801+003	1.646+003	7.198+002	3.500+002	1.293+002	7.938+001	4.908+001	2.688+001	1.488+001	8.779+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	5.782-001	1.430-001	1.417-001	1.397-001	1.377-001	1.339-001	1.302-001	1.231-001	1.100-001	9.561-002	8.309-002
HE	.000	1.198+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.744-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.057-006	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007	4.881-007
B	.000	2.560-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	1.195-001	1.195-001	1.195-001	1.195-001	1.195-001	1.195-001	1.195-001	1.195-001	1.194-001	1.194-001	1.194-001
N	.000	1.315-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	2.970-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	3.916-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.014+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.119+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	1.932+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	4.623+000	1.456-010	1.456-010	1.455-010	1.455-010	1.454-010	1.453-010	1.452-010	1.449-010	1.445-010	1.441-010
P	.000	9.129-005	2.720-007	1.498-008	3.018-010	1.474-010	1.455-010	1.454-010	1.452-010	1.449-010	1.445-010	1.441-010
CA	.000	1.779-004	1.058-004	8.200-005	5.498-005	3.729-005	1.715-005	7.887-006	1.668-006	7.461-008	1.535-009	3.157-011
SC	.000	1.584-001	1.340-002	8.160-003	3.752-003	1.763-003	3.892-004	8.592-005	4.188-006	9.947-009	5.217-012	2.736-015
TI	.000	1.956-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.542-015	9.259+001	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015	1.537-015
CR	.000	4.053+002	1.982+001	4.419+000	4.215-001	4.293-002	4.453-004	4.619-006	4.971-010	5.755-018	.000	.000
MN	.000	2.263+003	3.277+000	2.869+000	2.329+000	1.902+000	1.269+000	8.461-001	3.763-001	7.445-002	9.824-003	1.296-003
FE	.000	5.413+001	4.516+001	4.271+001	3.962+001	3.701+001	3.237+001	2.833+001	2.170+001	1.273+001	6.539+000	3.358+000
CO	.000	1.668+002	2.166+001	1.508+001	1.001+001	7.898+000	6.388+000	5.813+000	5.065+000	3.893+000	2.802+000	2.017+000
NI	.000	1.013+001	9.020-001	9.009-001	8.992-001	8.975-001	8.941-001	8.908-001	8.842-001	8.711-001	8.549-001	8.391-001
CU	.000	1.418+003	2.324-018	2.279-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	8.361-003	5.945-003	5.013-003	3.838-003	2.961-003	1.762-003	1.048-003	3.712-004	4.655-005	3.473-006	2.592-007
SR	.000	7.376+000	1.113+000	4.884-001	1.345-001	3.841-002	3.134-003	2.579-004	4.185-006	2.372-006	2.235-006	2.106-006
Y	.000	3.362+002	3.336+000	1.639+000	5.385-001	1.826-001	2.098-002	2.413-003	3.432-005	2.378-006	2.235-006	2.106-006
ZR	.000	1.391+004	9.116+002	4.759+002	1.720+002	6.396+001	8.847+000	1.225+000	2.555-002	2.177-003	2.169-003	2.169-003
NB	.000	2.281+004	1.542+003	9.104+002	3.596+002	1.386+002	1.959+001	2.721+000	5.421-002	4.957-004	6.661-004	8.329-004
MO	.000	7.382+000	1.433-005	1.433-005	1.433-005	1.433-005	1.433-005	1.432-005	1.432-005	1.432-005	1.431-005	1.430-005
TC	.000	1.479+000	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007	6.624-007
AG	.000	2.413-003	1.874-003	1.713-003	1.489-003	1.299-003	9.889-004	7.528-004	4.362-004	1.465-004	3.745-005	9.575-006
CD	.000	2.091+000	2.003-002	8.858-003	3.148-003	1.700-003	1.012-003	7.541-004	4.362-004	1.465-004	3.744-005	9.571-006
IN	.000	8.637+001	4.084+001	2.841+001	1.611+001	9.292+000	3.092+000	1.030+000	1.141-001	1.403-003	5.739-006	2.348-008
SN	.000	2.110+003	1.637+002	1.289+002	9.174+001	6.693+001	3.682+001	2.090+001	7.102+000	8.893-001	7.662-002	1.509-002
SB	.000	2.580+001	2.119+001	2.034+001	1.907+001	1.791+001	1.581+001	1.395+001	1.086+001	6.583+000	3.521+000	1.884+000
TE	.000	2.209+000	4.359+000	4.566+000	4.524+000	4.327+000	3.851+000	3.402+000	2.649+000	1.607+000	8.592-001	4.596-001
LU	.000	1.587-001	1.896-006	1.432-006	9.407-007	6.253-007	2.763-007	1.221-007	2.384-008	9.094-010	1.547-011	4.089-013
HF	.000	2.396+003	1.983+001	7.909+000	1.967+000	5.469-001	5.434-002	7.124-003	1.721-004	1.283-007	5.528-009	5.514-009
TA	.000	1.050+000	2.056-001	1.432-001	8.128-002	4.688-002	1.559-002	5.187-003	5.738-004	7.030-006	3.411-008	5.630-009
W	.000	2.368+002	1.685+000	9.774-001	4.187-001	1.851-001	3.733-002	8.012-003	4.847-004	4.694-006	2.414-008	1.299-010
RE	.000	9.686+000	6.607-002	3.629-002	1.420-002	5.704-003	9.205-004	1.485-004	3.869-006	3.517-009	8.943-010	8.940-010
PB	1.214-015	2.247-003	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010	8.220-010
SUMTOT	2.756-015	4.852+004	2.801+003	1.646+003	7.198+002	3.500+002	1.293+002	7.938+001	4.908+001	2.688+001	1.488+001	8.779+000
TOTAL	2.756-015	4.852+004	2.801+003	1.646+003	7.198+002	3.500+002	1.293+002	7.938+001	4.908+001	2.688+001	1.488+001	8.779+000

CUMULATIVE TABLE TOTALS

AP+FP	2.756-015	4.852+004	2.801+003	1.646+003	7.198+002	3.500+002	1.293+002	7.938+001	4.908+001	2.688+001	1.488+001	8.779+000
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.756-015	4.852+004	2.801+003	1.646+003	7.198+002	3.500+002	1.293+002	7.938+001	4.908+001	2.688+001	1.488+001	8.779+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	4.904-006	4.814-006	4.770-006	4.702-006	4.636-006	4.508-006	4.383-006	4.144-006	3.704-006	3.219-006	2.798-006
HE 6	.000	1.114+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	6.503-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010
BE 11	.000	3.879-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	2.029-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	3.505-005	3.504-005	3.504-005	3.504-005	3.504-005	3.504-005	3.504-005	3.503-005	3.502-005	3.501-005	3.500-005
C 15	.000	6.147-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	5.699-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	1.238-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	4.800-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	9.249-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	1.840-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	2.149-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	7.667-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	3.464+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	7.144-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	1.687-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	1.635-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	9.254-007	2.757-009	1.519-010	3.059-012	1.494-012	1.474-012	1.474-012	1.472-012	1.469-012	1.465-012	1.461-012
CA 45	.000	8.069-008	4.843-008	3.752-008	2.516-008	1.707-008	7.848-009	3.609-009	7.633-010	3.414-011	7.024-013	1.445-014
SC 46	.000	4.550-004	1.686-004	1.026-004	4.719-005	2.217-005	4.895-006	1.081-006	5.267-008	1.251-010	6.562-014	3.441-017
SC 47	.000	1.670-004	2.872-015	2.242-020	6.556-027	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	2.118-004	3.425-024	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	9.521-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	4.720-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.432-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.700-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017
V 52	.000	1.379+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	2.561-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	9.274-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	8.537-002	4.242-003	9.456-004	9.019-005	9.186-006	9.529-008	9.885-010	1.064-013	1.232-021	1.479-031	.000
CR 55	.000	4.180-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	2.129-002	1.632-002	1.428-002	1.160-002	9.472-003	6.317-003	4.213-003	1.874-003	3.707-004	4.892-005	6.454-006
MN 56	.000	3.375+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	4.193-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	4.739-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	6.641-002	6.084-002	5.823-002	5.437-002	5.087-002	4.452-002	3.896-002	2.984-002	1.751-002	8.992-003	4.617-003
FE 59	.000	5.450-002	8.583-003	3.406-003	8.014-004	1.963-004	1.179-005	7.074-007	2.549-009	3.308-014	2.578-020	2.008-026
CO 58	.000	2.805-001	8.660-002	4.812-002	1.918-002	7.841-003	1.311-003	2.192-004	6.128-006	4.790-009	6.259-013	8.179-017
CO 60	.000	1.158-001	1.110-001	1.086-001	1.050-001	1.016-001	9.511-002	8.906-002	7.808-002	6.002-002	4.320-002	3.109-002
CO 60M	.000	4.194-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	4.997-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	1.074-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	4.530-005	4.530-005	4.530-005	4.530-005	4.530-005	4.530-005	4.530-005	4.530-005	4.530-005	4.530-005	4.529-005
NI 63	.000	3.563-004	3.554-004	3.550-004	3.543-004	3.536-004	3.523-004	3.510-004	3.483-004	3.431-004	3.367-004	3.304-004
NI 65	.000	6.455-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	2.164+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.721+000	4.290-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	3.850-007	3.722-021	3.659-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	2.930-005	2.083-005	1.756-005	1.345-005	1.037-005	6.173-006	3.673-006	1.301-006	1.631-007	1.217-008	9.081-010
SR 89	.000	1.998-002	3.847-003	1.688-003	4.650-004	1.328-004	1.083-005	8.827-007	5.867-009	2.593-013	9.341-019	3.365-024

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6XPU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 90	.000	3.101-009	3.076-009	3.064-009	3.046-009	3.028-009	2.992-009	2.958-009	2.887-009	2.753-009	2.594-009	2.444-009
SR 91	.000	1.276-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	8.329-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	7.918-007	7.025-018	2.093-023	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.681+000	1.469-008	1.464-008	1.455-008	1.446-008	1.429-008	1.412-008	1.379-008	1.315-008	1.239-008	1.167-008
Y 91	.000	4.964-002	1.198-002	5.886-003	1.934-003	6.557-004	7.534-005	8.658-006	1.143-007	1.893-011	3.993-016	8.001-021
Y 92	.000	1.803-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	4.113-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.898-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.678-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.088-006	9.655-018	2.876-023	6.414-032	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.520-007	2.520-007	2.520-007	2.520-007	2.520-007	2.520-007	2.520-007	2.520-007	2.520-007	2.520-007	2.520-007
ZR 95	.000	1.694+001	4.618+000	2.411+000	8.712-001	3.240-001	4.480-002	6.195-003	1.185-004	4.331-008	2.190-012	1.107-016
ZR 97	.000	5.503+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.380-004	9.406-008	1.569-009	2.585-012	5.093-015	1.977-020	7.674-026	.000	.000	.000	.000
NB 93M	.000	3.018-009	9.029-009	1.200-008	1.659-008	2.101-008	2.966-008	3.810-008	5.434-008	8.445-008	1.180-007	1.476-007
NB 94	.000	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.361-010	2.360-010
NB 95	.000	1.069+001	7.366+000	4.350+000	1.719+000	6.623-001	9.365-002	1.301-002	2.577-004	9.106-008	4.604-012	2.327-016
NB 95M	.000	3.318-002	9.397-003	4.905-003	1.773-003	6.593-004	9.117-005	1.261-005	2.411-007	8.813-011	4.456-015	2.253-019
NB 96	.000	2.423-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	7.030+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.399+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	7.529-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB100	.000	7.156-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.180-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	1.339-009	1.340-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.338-009	1.338-009	1.337-009
MO 99	.000	1.896-002	1.387-015	3.750-022	1.955-032	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.679-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	3.192-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010
TC100	.000	7.516-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	7.056-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	3.016-007	1.399-012	1.398-012	1.396-012	1.394-012	1.390-012	1.386-012	1.379-012	1.364-012	1.345-012	1.327-012
AG108M	.000	4.110-011	4.103-011	4.099-011	4.094-011	4.088-011	4.077-011	4.066-011	4.044-011	4.000-011	3.946-011	3.892-011
AG109M	.000	1.156-006	9.659-007	8.831-007	7.674-007	6.696-007	5.097-007	3.880-007	2.248-007	7.550-008	1.930-008	4.934-009
AG110	.000	6.427-007	3.118-011	2.640-011	2.034-011	1.579-011	9.515-012	5.733-012	2.082-012	2.744-013	2.179-014	1.731-015
AG110M	.000	7.601-009	5.449-009	4.613-009	3.555-009	2.760-009	1.663-009	1.002-009	3.638-010	4.795-011	3.809-012	3.025-013
CD107	.000	3.880-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	1.427-006	1.193-006	1.091-006	9.478-007	8.270-007	6.295-007	4.792-007	2.777-007	9.325-008	2.384-008	6.093-009
CD111M	.000	3.563-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	5.981-003	3.659-019	2.862-027	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	4.373-004	6.772-005	2.665-005	6.188-006	1.497-006	8.758-008	5.124-009	1.754-011	2.056-016	1.410-022	9.865-029
CD117	.000	4.392-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.740-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.497-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	6.883-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	1.951-001	9.474-002	6.601-002	3.749-002	2.163-002	7.203-003	2.398-003	2.659-004	3.267-006	1.337-008	5.471-011
IN114	.000	8.823-003	3.740-004	1.615-004	4.335-005	1.207-005	9.365-007	7.265-008	4.371-010	1.583-014	4.445-020	1.248-025
IN114M	.000	6.440-004	1.200-004	5.183-005	1.391-005	3.875-006	3.006-007	2.332-008	1.403-010	5.080-015	1.427-020	4.007-026
IN116	.000	5.687-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	1.933-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	3.800-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	2.177-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN118	.000	2.177-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.022-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.153-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	4.103-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.426-002	6.924-003	4.824-003	2.740-003	1.581-003	5.264-004	1.753-004	1.943-005	2.388-007	9.771-010	3.998-012
SN113M	.000	5.435-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.697+000	4.469-003	2.294-004	2.194-006	2.391-008	2.838-012	3.369-016	4.747-024	.000	.000	.000
SN119M	.000	7.935-002	5.651-002	4.769-002	3.658-002	2.824-002	1.684-002	1.005-002	3.576-003	4.528-004	3.420-005	2.583-006
SN121	.000	6.224-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	2.322-005	2.312-005	2.306-005	2.298-005	2.290-005	2.274-005	2.259-005	2.228-005	2.167-005	2.093-005	2.021-005
SN123	.000	6.680-002	3.509-002	2.543-002	1.536-002	9.410-003	3.531-003	1.325-003	1.867-004	3.704-006	2.758-008	2.053-010
SN123M	.000	7.381-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.240+000	2.220-004	2.970-006	3.461-009	4.873-012	9.659-018	1.915-023	.000	.000	.000	.000
SN125M	.000	1.015+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	2.534-002	1.062-015	2.172-022	7.320-033	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	3.541-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	3.088-004	7.756-005	3.887-005	1.318-005	4.604-006	5.622-007	6.865-008	1.024-009	2.275-013	6.176-018	1.676-022
SB124M	.000	5.189-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	6.629-002	6.624-002	6.357-002	5.961-002	5.600-002	4.941-002	4.360-002	3.395-002	2.058-002	1.101-002	5.889-003
SB126	.000	4.874-003	5.939-006	2.073-007	1.085-009	6.574-012	2.415-016	8.868-021	1.196-028	.000	.000	.000
SB126M	.000	4.193-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	6.585-007	3.287-007	2.322-007	1.348-007	7.940-008	2.757-008	9.574-009	1.154-009	1.678-011	8.473-014	4.278-016
TE125M	.000	1.856-003	3.663-003	3.837-003	3.802-003	3.637-003	3.237-003	2.860-003	2.227-003	1.350-003	7.222-004	3.863-004
TE127	.000	1.162-007	8.680-010	5.927-010	3.262-010	1.825-010	5.714-011	1.789-011	1.753-012	1.685-014	5.068-017	1.525-019
LU176M	.000	1.189-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	6.063-006	4.027-010	2.889-010	1.898-010	1.261-010	5.574-011	2.463-011	4.809-012	1.834-013	3.090-015	5.207-017
LU177M	.000	2.096-008	1.225-008	9.371-009	6.157-009	4.093-009	1.809-009	7.992-010	1.561-010	5.950-012	1.003-013	1.689-015
HF175	.000	3.066-002	9.345-003	5.159-003	2.035-003	8.239-004	1.351-004	2.214-005	5.949-007	4.295-010	5.083-014	6.016-018
HF178M	.000	1.289-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	5.022+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	3.308-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	5.456-001	7.670-002	2.876-002	6.191-003	1.391-003	7.025-005	3.548-006	9.047-009	5.884-014	1.932-020	6.345-027
HF182	.000	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011	1.634-011
TA182	.000	3.772-003	1.830-003	1.275-003	7.237-004	4.174-004	1.388-004	4.618-005	5.109-006	6.259-008	3.037-010	5.013-011
TA182M	.000	3.791-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	3.962-003	3.272-010	9.404-014	2.683-019	1.094-024	.000	.000	.000	.000	.000	.000
W181	.000	4.335-005	2.182-005	1.548-005	9.046-006	5.366-006	1.888-006	6.642-007	8.222-008	1.260-009	6.792-012	3.662-014
W183M	.000	9.743-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	1.197-002	3.955-003	2.273-003	9.551-004	4.112-004	7.621-005	1.412-005	4.852-007	5.724-010	1.252-013	2.738-017
W185M	.000	1.048-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	1.048+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	1.297-004	3.911-005	2.148-005	8.406-006	3.377-006	5.449-007	8.793-008	2.290-009	1.553-012	1.699-016	1.859-020
RE186	.000	1.501-003	4.088-013	6.745-018	2.195-025	1.156-032	.000	.000	.000	.000	.000	.000
RE187	.000	1.353-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011	1.373-011
RE188	.000	2.422-002	3.278-004	1.801-004	7.046-005	2.830-005	4.567-006	7.370-007	1.919-008	1.301-011	1.424-015	1.558-019
RE188M	.000	4.652-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	8.275-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017
PB209	.000	2.583-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	3.571-017	2.888+002	1.266+001	7.257+000	2.951+000	1.282+000	3.675-001	2.126-001	1.509-001	1.007-001	6.445-002	4.243-002
TOTAL	3.571-017	2.888+002	1.266+001	7.257+000	2.951+000	1.282+000	3.675-001	2.126-001	1.509-001	1.007-001	6.445-002	4.243-002

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	4.904-006	4.814-006	4.770-006	4.702-006	4.636-006	4.508-006	4.383-006	4.144-006	3.704-006	3.219-006	2.798-006
HE	.000	1.114+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	6.503-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	3.938-008	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010	5.859-010
B	.000	2.029-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	3.566-005	3.504-005	3.504-005	3.504-005	3.504-005	3.504-005	3.504-005	3.503-005	3.502-005	3.501-005	3.500-005
N	.000	5.699-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	1.238-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	4.800-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	9.455-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	7.667-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	3.465+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	1.635-002	1.812-013	1.812-013	1.812-013	1.811-013	1.810-013	1.809-013	1.807-013	1.803-013	1.799-013	1.794-013
P	.000	9.254-007	2.757-009	1.519-010	3.059-012	1.494-012	1.474-012	1.474-012	1.472-012	1.469-012	1.465-012	1.461-012
CA	.000	9.409-008	4.843-008	3.752-008	2.516-008	1.707-008	7.848-009	3.609-009	7.633-010	3.414-011	7.024-013	1.445-014
SC	.000	9.336-004	1.686-004	1.026-004	4.719-005	2.217-005	4.895-006	1.081-006	5.267-008	1.251-010	6.562-014	3.441-017
TI	.000	1.432-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.700-017	1.380+000	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017	1.694-017
CR	.000	1.272-001	4.242-003	9.456-004	9.019-005	9.186-006	9.528-008	9.885-010	1.064-013	1.232-021	1.479-031	.000
MN	.000	3.377+001	1.632-002	1.428-002	1.160-002	9.472-003	6.317-003	4.213-003	1.874-003	3.707-004	4.892-005	8.454-006
FE	.000	1.209-001	6.942-002	6.164-002	5.517-002	5.106-002	4.453-002	3.896-002	2.984-002	1.751-002	8.992-003	4.617-003
CO	.000	4.398-001	1.976-001	1.567-001	1.241-001	1.094-001	9.642-002	8.927-002	7.809-002	6.002-002	4.320-002	3.109-002
NI	.000	6.495-002	4.007-004	4.003-004	3.996-004	3.989-004	3.976-004	3.963-004	3.936-004	3.884-004	3.820-004	3.757-004
CU	.000	3.885+000	3.764-021	3.659-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	2.930-005	2.083-005	1.756-005	1.345-005	1.037-005	6.173-006	3.673-006	1.301-006	1.631-007	1.217-008	9.081-010
SR	.000	3.282-002	3.847-003	1.688-003	4.650-004	1.328-004	1.083-005	8.856-007	8.754-009	2.753-009	2.594-009	2.444-009
Y	.000	1.930+000	1.198-002	5.886-003	1.934-003	6.557-004	7.536-005	8.672-006	1.281-007	1.317-008	1.239-008	1.167-008
ZR	.000	7.197+001	4.618+000	2.411+000	8.712-001	3.240-001	4.480-002	6.195-003	1.187-004	2.953-007	2.520-007	2.520-007
NB	.000	1.250+002	7.375+000	4.355+000	1.720+000	6.630-001	9.374-002	1.302-002	2.580-004	1.758-007	1.183-007	1.478-007
MO	.000	3.587-002	1.340-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.338-009	1.338-009	1.337-009
TC	.000	7.131-003	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010
AG	.000	2.107-006	9.714-007	8.877-007	7.711-007	6.724-007	5.114-007	3.891-007	2.253-007	7.559-008	1.934-008	4.974-009
CD	.000	6.918-003	6.891-005	2.774-005	7.136-006	2.324-006	7.171-007	4.843-007	2.777-007	9.325-008	2.384-008	6.093-009
IN	.000	2.062-001	9.523-002	6.622-002	3.755-002	2.165-002	7.204-003	2.398-003	2.659-004	3.267-006	1.337-008	5.471-011
SN	.000	5.279+000	1.032-001	7.820-002	5.468-002	3.925-002	2.092-002	1.157-002	3.804-003	4.784-004	5.516-005	2.280-005
SB	.000	9.727-002	6.632-002	6.361-002	5.962-002	5.600-002	4.941-002	4.360-002	3.395-002	2.058-002	1.101-002	5.889-003
TE	.000	1.857-003	3.664-003	3.838-003	3.802-003	3.637-003	3.237-003	2.860-003	2.227-003	1.350-003	7.222-004	3.863-004
LU	.000	1.195-003	1.266-008	9.660-009	6.346-009	4.219-009	1.864-009	8.238-010	1.609-010	6.135-012	1.043-013	2.653-015
HF	.000	5.760+000	8.604-002	3.392-002	8.226-003	2.215-003	2.053-004	2.569-005	6.039-007	4.459-010	1.639-011	1.634-011
TA	.000	7.738-003	1.830-003	1.275-003	7.237-004	4.174-004	1.388-004	4.618-005	5.109-006	6.259-008	3.037-010	5.013-011
W	.000	1.061+000	4.015-003	2.310-003	9.726-004	4.199-004	7.864-005	1.488-005	5.697-007	1.834-009	6.917-012	3.664-014
RE	.000	3.037-002	3.278-004	1.801-004	7.046-005	2.830-005	4.567-006	7.371-007	1.921-008	2.674-011	1.373-011	1.373-011
PB	1.871-017	2.583-006	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013
SUMTOT	3.571-017	2.888+002	1.266+001	7.257+000	2.951+000	1.282+000	3.675-001	2.126-001	1.509-001	1.007-001	6.445-002	4.243-002
TOTAL	3.571-017	2.888+002	1.266+001	7.257+000	2.951+000	1.282+000	3.675-001	2.126-001	1.509-001	1.007-001	6.445-002	4.243-002

CUMULATIVE TABLE TOTALS

AP+FP	3.571-017	2.888+002	1.266+001	7.257+000	2.951+000	1.282+000	3.675-001	2.126-001	1.509-001	1.007-001	6.445-002	4.243-002
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	3.571-017	2.888+002	1.266+001	7.257+000	2.951+000	1.282+000	3.675-001	2.126-001	1.509-001	1.007-001	6.445-002	4.243-002

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U234	2.430+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.360+002	2.361+002	2.361+002
U235	7.486+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000	6.604+000
U236	1.104+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001	1.631+001
U238	1.047+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002	1.046+002
PU238	.000	6.266+003	6.690+003	6.685+003	6.676+003	6.666+003	6.643+003	6.618+003	6.567+003	6.464+003	6.338+003	6.214+003
PU239	.000	3.898+004	4.063+004	4.063+004	4.063+004	4.063+004	4.063+004	4.063+004	4.063+004	4.063+004	4.062+004	4.062+004
PU240	.000	1.080+004	1.080+004	1.080+004	1.080+004	1.080+004	1.080+004	1.080+004	1.080+004	1.079+004	1.079+004	1.079+004
AM241	.000	9.847+001	5.221+002	7.313+002	1.055+003	1.367+003	1.977+003	2.573+003	3.721+003	5.851+003	8.229+003	1.033+004
CM244	.000	6.023+001	5.965+001	5.928+001	5.870+001	5.814+001	5.704+001	5.596+001	5.386+001	4.989+001	4.533+001	4.120+001
TOTALS												
TABLE	3.663+002	5.657+004	5.908+004	5.928+004	5.959+004	5.989+004	6.048+004	6.105+004	6.214+004	6.416+004	6.640+004	6.836+004
ACTUAL	3.663+002	5.657+004	5.908+004	5.928+004	5.959+004	5.989+004	6.048+004	6.105+004	6.214+004	6.416+004	6.640+004	6.836+004

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 8%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U238	1.256+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004	1.255+004
PU238	.000	1.022+003	1.091+003	1.090+003	1.089+003	1.087+003	1.083+003	1.079+003	1.071+003	1.054+003	1.034+003	1.013+003
PU240	.000	5.693+004	5.693+004	5.693+004	5.693+004	5.693+004	5.692+004	5.692+004	5.692+004	5.690+004	5.689+004	5.687+004
PU242	.000	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002	4.217+002
CM242	.000	3.600+004	2.258+004	1.750+004	1.175+004	7.974+003	3.678+003	1.700+003	3.700+002	2.826+001	1.239+001	1.192+001
CM244	.000	7.251+003	7.182+003	7.137+003	7.067+003	7.000+003	6.867+003	6.737+003	6.484+003	6.006+003	5.458+003	4.960+003
TOTALS												
TABLE	1.257+004	1.142+005	1.008+005	9.565+004	8.983+004	8.598+004	8.155+004	7.943+004	7.784+004	7.699+004	7.639+004	7.586+004
ACTUAL	1.257+004	1.142+005	1.008+005	9.565+004	8.983+004	8.598+004	8.155+004	7.943+004	7.784+004	7.699+004	7.639+004	7.586+004
OVERALL TOTALS												
TABLE	1.293+004	1.708+005	1.599+005	1.549+005	1.494+005	1.459+005	1.420+005	1.405+005	1.400+005	1.411+005	1.428+005	1.442+005
ACTUAL	1.293+004	1.708+005	1.599+005	1.549+005	1.494+005	1.459+005	1.420+005	1.405+005	1.400+005	1.411+005	1.428+005	1.442+005

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6XPU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	5.708+013	9.709+011	5.584+011	2.828+011	1.723+011	8.814+010	5.571+010	2.799+010	1.117+010	5.327+009	2.874+009
2.500-002	.000	3.585+013	3.452+012	2.763+012	2.049+012	1.576+012	1.000+012	6.863+011	3.829+011	1.766+011	8.794+010	4.656+010
3.750-002	.000	5.261+012	1.535+011	1.395+011	1.248+011	1.149+011	1.000+011	8.804+010	6.849+010	4.153+010	2.223+010	1.190+010
5.750-002	.000	1.167+013	2.567+011	1.058+011	2.947+010	1.036+010	2.594+009	1.196+009	4.868+008	2.021+008	1.101+008	6.718+007
8.500-002	.000	5.552+012	1.373+010	7.650+009	3.217+009	1.505+009	4.657+008	2.335+008	1.296+008	7.823+007	4.652+007	2.837+007
1.250-001	.000	6.669+012	3.556+011	1.366+011	3.249+010	9.746+009	2.839+009	2.104+009	1.578+009	9.534+008	5.118+008	2.751+008
2.250-001	3.763-013	3.443+013	2.137+011	1.129+011	7.146+010	5.379+010	3.879+010	3.206+010	2.422+010	1.461+010	7.818+009	4.183+009
3.750-001	.000	1.940+013	4.272+011	3.165+011	2.628+011	2.410+011	2.112+011	1.863+011	1.450+011	8.791+010	4.703+010	2.516+010
5.750-001	.000	4.933+014	9.688+011	6.019+011	3.963+011	3.288+011	2.739+011	2.398+011	1.864+011	1.130+011	6.044+010	3.233+010
8.500-001	1.500-013	5.961+014	8.111+013	4.591+013	1.767+013	6.773+012	9.888+011	1.617+011	1.626+010	2.716+009	3.645+008	5.260+007
1.250+000	8.532-014	3.387+013	5.428+011	5.281+011	5.077+011	4.897+011	4.572+011	4.276+011	3.747+011	2.880+011	2.073+011	1.492+011
1.750+000	4.275-014	1.036+014	2.759+009	1.526+009	6.050+008	2.463+008	4.091+007	6.806+006	1.892+005	1.659+002	6.514+000	5.217+000
2.250+000	2.142-014	1.143+013	4.114+007	9.091+006	4.697+006	3.292+006	2.505+006	2.275+006	1.986+006	1.526+006	1.099+006	7.907+005
2.750+000	1.073-014	2.814+012	1.742+004	1.290+004	9.736+003	8.509+003	7.547+003	7.016+003	6.144+003	4.723+003	3.399+003	2.447+003
3.500+000	7.904-015	1.363+011	1.213-008	8.979-009	5.610-009	3.551-009	1.423-009	5.703-010	9.160-011	2.383-012	4.571-014	2.097-014
5.000+000	2.353-015	4.843+007	3.610-009	2.673-009	1.670-009	1.057-009	4.237-010	1.698-010	2.727-011	7.061-013	1.029-014	3.097-015
7.000+000	1.527-016	1.209+007	2.342-010	1.735-010	1.084-010	6.860-011	2.749-011	1.102-011	1.769-012	4.582-014	6.674-016	2.008-016
1.100+001	9.655-018	1.823+006	1.481-011	1.097-011	6.853-012	4.338-012	1.738-012	6.966-013	1.119-013	2.897-015	4.221-017	1.270-017
TOTAL	6.970-013	1.417+015	8.847+013	5.118+013	2.143+013	9.771+012	3.164+012	1.881+012	1.228+012	7.367+011	4.391+011	2.726+011
MEV/SEC	5.120-013	1.067+015	7.056+013	4.028+013	1.606+013	6.710+012	1.688+012	9.085+011	6.620+011	4.698+011	3.167+011	2.172+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6XPU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	8.561+005	1.456+004	8.376+003	4.242+003	2.584+003	1.322+003	8.356+002	4.198+002	1.675+002	7.990+001	4.311+001
2.500-002	.000	8.963+005	8.630+004	6.908+004	5.122+004	3.939+004	2.501+004	1.716+004	9.572+003	4.415+003	2.199+003	1.164+003
3.750-002	.000	1.973+005	5.758+003	5.231+003	4.680+003	4.307+003	3.752+003	3.301+003	2.569+003	1.558+003	8.335+002	4.462+002
5.750-002	.000	6.709+005	1.476+004	6.085+003	1.695+003	5.960+002	1.491+002	6.876+001	2.799+001	1.162+001	6.331+000	3.863+000
8.500-002	.000	4.719+005	1.167+003	6.502+002	2.734+002	1.280+002	3.959+001	1.985+001	1.101+001	6.650+000	3.954+000	2.411+000
1.250-001	.000	8.337+005	4.445+004	1.707+004	4.061+003	1.218+003	3.549+002	2.630+002	1.972+002	1.192+002	6.397+001	3.439+001
2.250-001	8.467-020	7.747+006	4.809+004	2.539+004	1.608+004	1.210+004	8.728+003	7.214+003	5.449+003	3.288+003	1.759+003	9.411+002
3.750-001	.000	7.275+006	1.602+005	1.187+005	9.857+004	9.037+004	7.920+004	6.985+004	5.438+004	3.297+004	1.764+004	9.435+003
5.750-001	.000	2.837+008	5.571+005	3.461+005	2.279+005	1.891+005	1.575+005	1.379+005	1.072+005	6.496+004	3.475+004	1.859+004
8.500-001	1.275-019	5.067+008	6.895+007	3.902+007	1.502+007	5.757+006	8.405+005	1.375+005	1.382+004	2.309+003	3.098+002	4.471+001
1.250+000	1.067-019	4.234+007	6.786+005	6.602+005	6.347+005	6.122+005	5.715+005	5.345+005	4.684+005	3.600+005	2.591+005	1.865+005
1.750+000	7.482-020	1.814+008	4.829+003	2.670+003	1.059+003	4.311+002	7.159+001	1.191+001	3.310-001	2.904-004	1.140-005	9.130-006
2.250+000	4.820-020	2.573+007	9.255+001	2.045+001	1.057+001	7.407+000	5.637+000	5.120+000	4.468+000	3.434+000	2.472+000	1.779+000
2.750+000	2.952-020	7.739+006	4.790-002	3.547-002	2.677-002	2.340-002	2.075-002	1.929-002	1.690-002	1.298-002	9.348-003	6.729-003
3.500+000	2.766-020	4.771+005	4.244-014	3.143-014	1.963-014	1.243-014	4.981-015	1.996-015	3.206-016	8.342-018	1.600-019	7.340-020
5.000+000	1.177-020	2.421+002	1.805-014	1.337-014	8.351-015	5.286-015	2.118-015	8.489-016	1.363-016	3.531-018	5.144-020	1.548-020
7.000+000	1.069-021	8.466+001	1.640-015	1.214-015	7.586-016	4.802-016	1.924-016	7.712-017	1.238-017	3.207-019	4.672-021	1.406-021
1.100+001	1.062-022	2.005+001	1.629-016	1.207-016	7.538-017	4.772-017	1.912-017	7.663-018	1.231-018	3.187-020	4.643-022	1.397-022
TOTAL	5.120-019	1.067+009	7.056+007	4.028+007	1.606+007	6.710+006	1.688+006	9.085+005	6.620+005	4.698+005	3.167+005	2.172+005
GAM POW	8.207-026	1.710+002	1.131+001	6.457+000	2.575+000	1.076+000	2.706-001	1.456-001	1.061-001	7.531-002	5.077-002	3.482-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	2.946+006	2.822+006	2.761+006	2.669+006	2.583+006	2.419+006	2.265+006	1.986+006	1.526+006	1.099+006	7.907+005
PB204	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	9.116+003	8.731+003	8.544+003	8.260+003	7.993+003	7.484+003	7.008+003	6.144+003	4.723+003	3.399+003	2.447+003

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	7.904-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015	7.903-015

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016	1.527-016

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	9.655-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018	9.654-018

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6XPU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	4.058+009	3.458+017	2.883+011	2.692+011	2.665+011	2.656+011	2.666+011	2.697+011	2.778+011	2.949+011	3.142+011	3.312+011
2.500-002	.000	1.751+015	1.416+009	1.100+009	1.415+009	1.719+009	2.315+009	2.896+009	4.016+009	6.094+009	8.415+009	1.046+010
3.750-002	6.916+005	1.749+016	5.302+008	5.035+008	5.167+008	5.332+008	5.722+008	6.150+008	7.028+008	8.703+008	1.058+009	1.223+009
5.750-002	2.520+007	7.473+015	1.677+010	1.193+010	1.656+010	2.103+010	2.979+010	3.833+010	5.480+010	8.536+010	1.195+011	1.496+011
8.500-002	5.908+007	1.892+017	5.008+009	1.365+009	1.361+009	1.364+009	1.370+009	1.375+009	1.386+009	1.406+009	1.428+009	1.447+009
1.250-001	1.231+008	1.501+017	6.920+009	5.349+008	5.237+008	5.260+008	5.309+008	5.360+008	5.460+008	5.647+008	5.857+008	6.042+008
2.250-001	4.129+008	1.044+017	5.394+009	5.780+008	5.677+008	5.677+008	5.677+008	5.679+008	5.684+008	5.694+008	5.704+008	5.712+008
3.750-001	1.030+006	1.039+016	6.341+008	3.524+008	3.525+008	3.527+008	3.530+008	3.533+008	3.539+008	3.550+008	3.562+008	3.574+008
5.750-001	5.804+004	1.602+015	5.418+007	5.423+007	5.427+007	5.433+007	5.449+007	5.467+007	5.504+007	5.571+007	5.641+007	5.700+007
8.500-001	3.326+004	2.920+015	7.802+007	7.810+007	7.814+007	7.816+007	7.823+007	7.829+007	7.841+007	7.862+007	7.884+007	7.901+007
1.250+000	1.207+004	1.003+014	6.926+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007	6.932+007
1.750+000	5.908+003	4.920+011	1.161+007	1.162+007	1.162+007	1.163+007	1.163+007	1.163+007	1.164+007	1.165+007	1.166+007	1.166+007
2.250+000	3.422+003	2.855+004	2.573+004	2.464+004	2.341+004	2.260+004	2.168+004	2.125+004	2.095+004	2.086+004	2.086+004	2.091+004
2.750+000	1.988+003	3.904+004	8.291+004	1.038+005	1.346+005	1.627+005	2.137+005	2.586+005	3.316+005	4.283+005	4.914+005	5.189+005
3.500+000	1.778+003	1.462+004	1.314+004	1.258+004	1.194+004	1.152+004	1.104+004	1.081+004	1.064+004	1.057+004	1.052+004	1.048+004
5.000+000	7.638+002	6.208+003	5.575+003	5.334+003	5.060+003	4.880+003	4.672+003	4.574+003	4.502+003	4.467+003	4.445+003	4.425+003
7.000+000	8.793+001	7.070+002	6.340+002	6.063+002	5.748+002	5.541+002	5.302+002	5.189+002	5.105+002	5.063+002	5.035+002	5.010+002
1.100+001	1.011+001	8.092+001	7.247+001	6.928+001	6.564+001	6.325+001	6.049+001	5.917+001	5.820+001	5.770+001	5.737+001	5.707+001
TOTAL	4.680+009	8.313+017	3.252+011	2.857+011	2.880+011	2.919+011	3.023+011	3.146+011	3.404+011	3.903+011	4.463+011	4.956+011
MEV/SEC	1.762+008	7.209+016	8.290+009	5.420+009	5.651+009	5.903+009	6.440+009	6.995+009	8.098+009	1.017+010	1.250+010	1.454+010

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6XPU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	6.088+001	5.187+009	4.324+003	4.038+003	3.997+003	3.984+003	3.999+003	4.045+003	4.167+003	4.423+003	4.713+003	4.968+003
2.500-002	.000	4.377+007	3.539+001	2.750+001	3.538+001	4.297+001	5.787+001	7.240+001	1.004+002	1.523+002	2.104+002	2.615+002
3.750-002	2.593-002	6.560+008	1.988+001	1.888+001	1.938+001	1.999+001	2.146+001	2.306+001	2.636+001	3.264+001	3.967+001	4.586+001
5.750-002	1.449+000	4.297+008	9.641+002	6.860+002	9.525+002	1.209+003	1.713+003	2.204+003	3.151+003	4.908+003	6.870+003	8.600+003
8.500-002	5.022+000	1.608+010	4.257+002	1.161+002	1.157+002	1.160+002	1.164+002	1.169+002	1.178+002	1.195+002	1.214+002	1.230+002
1.250-001	1.539+001	1.877+010	8.651+002	6.686+001	6.546+001	6.575+001	6.637+001	6.700+001	6.825+001	7.059+001	7.322+001	7.553+001
2.250-001	9.290+001	2.349+010	1.214+003	1.301+002	1.277+002	1.277+002	1.277+002	1.278+002	1.279+002	1.281+002	1.283+002	1.285+002
3.750-001	3.863-001	3.898+009	2.378+002	1.322+002	1.322+002	1.323+002	1.324+002	1.325+002	1.327+002	1.331+002	1.336+002	1.340+002
5.750-001	3.337-002	9.210+008	3.115+001	3.118+001	3.121+001	3.124+001	3.133+001	3.143+001	3.165+001	3.203+001	3.244+001	3.278+001
8.500-001	2.827-002	2.482+009	6.632+001	6.638+001	6.642+001	6.644+001	6.649+001	6.655+001	6.665+001	6.683+001	6.701+001	6.716+001
1.250+000	1.509-002	1.254+008	8.657+001	8.664+001	8.665+001	8.665+001	8.665+001	8.665+001	8.665+001	8.665+001	8.665+001	8.665+001
1.750+000	1.034-002	8.610+005	2.032+001	2.034+001	2.034+001	2.035+001	2.035+001	2.036+001	2.037+001	2.039+001	2.040+001	2.040+001
2.250+000	7.700-003	6.423-002	5.788-002	5.545-002	5.268-002	5.086-002	4.878-002	4.781-002	4.713-002	4.693-002	4.694-002	4.705-002
2.750+000	5.468-003	1.074-001	2.280-001	2.854-001	3.700-001	4.475-001	5.878-001	7.111-001	9.118-001	1.178+000	1.351+000	1.427+000
3.500+000	6.222-003	5.116-002	4.601-002	4.404-002	4.180-002	4.032-002	3.863-002	3.783-002	3.725-002	3.698-002	3.682-002	3.667-002
5.000+000	3.819-003	3.104-002	2.787-002	2.667-002	2.530-002	2.440-002	2.336-002	2.287-002	2.251-002	2.234-002	2.223-002	2.213-002
7.000+000	6.155-004	4.949-003	4.438-003	4.244-003	4.024-003	3.879-003	3.711-003	3.632-003	3.573-003	3.544-003	3.524-003	3.507-003
1.100+001	1.112-004	8.901-004	7.972-004	7.620-004	7.221-004	6.957-004	6.653-004	6.509-004	6.402-004	6.347-004	6.310-004	6.277-004
TOTAL	1.762+002	7.209+010	8.290+003	5.420+003	5.651+003	5.903+003	6.440+003	6.995+003	8.098+003	1.017+004	1.250+004	1.454+004
GAM POW	2.824-005	1.156+004	1.329-003	8.688-004	9.058-004	9.462-004	1.032-003	1.121-003	1.298-003	1.631-003	2.003-003	2.331-003

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U235	6.916+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005	6.101+005

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.031+017	5.083+014	3.422+014	2.245+014	1.686+014	1.095+014	7.610+013	4.097+013	1.901+013	1.373+013	1.229+013
2.500-002	.000	4.842+016	2.052+014	1.121+014	6.348+013	4.655+013	3.166+013	2.358+013	1.466+013	7.750+012	4.882+012	3.623+012
3.750-002	.000	5.793+016	5.799+014	3.692+014	2.525+014	1.978+014	1.299+014	8.749+013	4.265+013	1.577+013	9.956+012	8.606+012
5.750-002	.000	2.205+016	9.694+013	6.810+013	4.637+013	3.544+013	2.327+013	1.615+013	8.592+012	3.871+012	2.753+012	2.456+012
8.500-002	.000	2.918+016	1.205+014	9.496+013	7.147+013	5.644+013	3.675+013	2.450+013	1.154+013	3.732+012	2.064+012	1.707+012
1.250-001	.000	5.837+016	1.033+015	4.888+014	2.613+014	1.919+014	1.212+014	7.834+013	3.330+013	6.992+012	2.029+012	1.345+012
2.250-001	.000	1.770+017	6.841+013	4.571+013	3.024+013	2.287+013	1.501+013	1.051+013	5.706+012	2.578+012	1.739+012	1.484+012
3.750-001	.000	1.314+017	5.086+013	3.024+013	2.170+013	1.767+013	1.291+013	9.880+012	6.274+012	3.244+012	1.870+012	1.252+012
5.750-001	.000	2.592+017	1.422+015	6.966+014	3.681+014	2.850+014	2.289+014	1.980+014	1.602+014	1.273+014	1.116+014	1.028+014
8.500-001	.000	2.976+017	8.358+015	4.727+015	1.825+015	7.050+014	1.103+014	2.451+013	7.826+012	3.796+012	1.784+012	9.332+011
1.250+000	.000	1.814+017	3.328+013	2.454+013	1.773+013	1.397+013	9.414+012	6.580+012	3.395+012	1.163+012	5.204+011	3.432+011
1.750+000	.000	6.481+016	3.137+013	2.863+012	1.421+012	1.174+012	8.153+011	5.700+011	2.840+011	7.979+010	2.552+010	1.480+010
2.250+000	.000	3.599+016	2.171+013	1.836+013	1.460+013	1.170+013	7.520+012	4.835+012	2.000+012	3.443+011	3.873+010	4.463+009
2.750+000	.000	1.582+016	1.201+012	1.192+011	6.361+010	5.305+010	3.723+010	2.615+010	1.293+010	3.189+009	5.602+008	9.916+007
3.500+000	.000	9.369+015	2.031+010	1.031+010	8.343+009	7.023+009	4.980+009	3.531+009	1.775+009	4.487+008	8.042+007	1.441+007
5.000+000	.000	5.592+015	1.895-006	1.920-006	1.956-006	1.989-006	2.049-006	2.102-006	2.188-006	2.306-006	2.387-006	2.429-006
7.000+000	.000	3.650+013	1.230-007	1.246-007	1.269-007	1.291-007	1.330-007	1.364-007	1.420-007	1.496-007	1.549-007	1.576-007
1.100+001	.000	3.580+009	7.775-009	7.876-009	8.026-009	8.162-009	8.408-009	8.624-009	8.979-009	9.461-009	9.795-009	9.968-009
TOTAL	.000	1.497+018	1.253+016	7.021+015	3.198+015	1.754+015	8.372+014	5.611+014	3.374+014	1.957+014	1.530+014	1.369+014
MEV/SEC	.000	1.033+018	8.284+015	4.613+015	1.891+015	8.628+014	2.907+014	1.788+014	1.199+014	8.309+013	6.884+013	6.225+013

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 6%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.547+009	7.625+006	5.134+006	3.367+006	2.528+006	1.643+006	1.141+006	6.145+005	2.851+005	2.059+005	1.843+005
2.500-002	.000	1.211+009	5.131+006	2.802+006	1.587+006	1.164+006	7.916+005	5.896+005	3.665+005	1.937+005	1.220+005	9.059+004
3.750-002	.000	2.172+009	2.175+007	1.385+007	9.470+006	7.418+006	4.871+006	3.281+006	1.599+006	5.915+005	3.733+005	3.227+005
5.750-002	.000	1.268+009	5.574+006	3.916+006	2.666+006	2.038+006	1.338+006	9.285+005	4.940+005	2.226+005	1.583+005	1.412+005
8.500-002	.000	2.480+009	1.025+007	8.072+006	6.075+006	4.797+006	3.124+006	2.082+006	9.806+005	3.172+005	1.754+005	1.451+005
1.250-001	.000	7.297+009	1.292+008	6.111+007	3.266+007	2.399+007	1.515+007	9.793+006	4.162+006	8.740+005	2.536+005	1.682+005
2.250-001	.000	3.983+010	1.539+007	1.028+007	6.804+006	5.145+006	3.378+006	2.365+006	1.284+006	5.801+005	3.913+005	3.340+005
3.750-001	.000	4.926+010	1.907+007	1.134+007	8.137+006	6.624+006	4.841+006	3.705+006	2.353+006	1.217+006	7.012+005	4.696+005
5.750-001	.000	1.491+011	8.174+008	4.005+008	2.117+008	1.638+008	1.316+008	1.139+008	9.213+007	7.321+007	6.416+007	5.913+007
8.500-001	.000	2.530+011	7.104+009	4.018+009	1.551+009	5.993+008	9.373+007	2.083+007	6.652+006	3.227+006	1.516+006	7.932+005
1.250+000	.000	2.267+011	4.160+007	3.068+007	2.217+007	1.747+007	1.177+007	8.225+006	4.243+006	1.454+006	6.505+005	4.290+005
1.750+000	.000	1.134+011	5.490+007	5.011+006	2.487+006	2.054+006	1.427+006	9.974+005	4.969+005	1.396+005	4.466+004	2.590+004
2.250+000	.000	8.099+010	4.885+007	4.131+007	3.285+007	2.633+007	1.692+007	1.088+007	4.500+006	7.746+005	8.713+004	1.004+004
2.750+000	.000	4.351+010	3.301+006	3.278+005	1.749+005	1.459+005	1.024+005	7.191+004	3.557+004	8.770+003	1.540+003	2.727+002
3.500+000	.000	3.279+010	7.110+004	3.608+004	2.920+004	2.458+004	1.743+004	1.236+004	6.213+003	1.570+003	2.815+002	5.045+001
5.000+000	.000	2.796+010	9.475-012	9.598-012	9.780-012	9.946-012	1.025-011	1.051-011	1.094-011	1.153-011	1.194-011	1.215-011
7.000+000	.000	2.555+008	8.607-013	8.719-013	8.884-013	9.035-013	9.307-013	9.546-013	9.939-013	1.047-012	1.084-012	1.103-012
1.100+001	.000	3.938+004	8.553-014	8.664-014	8.828-014	8.978-014	9.249-014	9.486-014	9.877-014	1.041-013	1.077-013	1.096-013
TOTAL	.000	1.033+012	8.284+009	4.613+009	1.891+009	8.628+008	2.907+008	1.788+008	1.199+008	8.309+007	6.884+007	6.225+007
GAM POW	.000	1.655+005	1.328+003	7.394+002	3.031+002	1.383+002	4.660+001	2.866+001	1.922+001	1.332+001	1.104+001	9.978+000

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	2.690+010	1.114+010	9.954+009	8.340+009	7.023+009	4.980+009	3.531+009	1.775+009	4.487+008	8.042+007	1.441+007

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RB 94	.000	3.580+009	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

STOP 100

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* WARNING - FLOATING UNDERFLOW FAULT-RERUN USING UNDSET NEG *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WARNING - FLOATING OVERFLOW FAULT-RERUN USING OVFSET NEG  *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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********** ORIGEN2: A REVISED AND UPDATED VERSION OF THE ORIGEN COMPUTER CODE **********
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INTRODUCTION

THIS TEXT IS INTENDED TO BE A BRIEF OUTLINE OF THE ORIGEN2 COMPUTER CODE, WHICH IS A REVISED AND UPDATED VERSION OF THE ORIGEN DOCUMENTED IN REPORT ORNL-4628 (MAY 1973). INCLUDED HERE ARE A BRIEF DESCRIPTION OF THE FUNCTIONS OF ORIGEN2, A LISTING OF THE MAJOR DATA SOURCES, A LISTING OF THE PUBLISHED DOCUMENTATION CONCERNING ORIGEN2, AND AN OUTLINE OF THE ORIGEN2 OUTPUT ORGANIZATION. ORIGEN2 IS AVAILABLE FROM THE ORNL RADIATION SHIELDING INFORMATION CENTER (RSIC) AT THE FOLLOWING ADDRESS:

CODES COORDINATOR
RADIATION SHIELDING INFORMATION CENTER
BLDG. 6025
OAK RIDGE NATIONAL LABORATORY
OAK RIDGE, TENNESSEE 37830
PHONE: (615) 574-6176

QUESTIONS CONCERNING ORIGEN2 SHOULD BE ADDRESSED TO RSIC.

DESCRIPTION

ORIGEN2 IS A REVISION AND UPDATE OF THE ORIGEN COMPUTER CODE. SPECIFICALLY, THE INPUT, OUTPUT, CONTROL, AND DATA BASE ASPECTS OF ORIGEN HAVE BEEN SIGNIFICANTLY REVISED AND UPDATED TO REFLECT CURRENT INFORMATION AND NEEDS. IT SHOULD BE NOTED THAT THE MATHEMATICAL METHODS USED TO SOLVE THE NUCLIDE BUILDUP, DEPLETION, AND DECAY EQUATIONS ARE ESSENTIALLY UNCHANGED FROM THAT IN ORIGEN. ORIGEN2 IS A COMPUTER CODE DESIGNED TO CALCULATE THE COMPOSITION AND CHARACTERISTICS OF NUCLEAR MATERIALS AS A FUNCTION OF DECAY TIME AND THE CHANGES THE MATERIALS UNDERGO DURING VARIOUS FUEL CYCLE OPERATIONS. INPUT AND OUTPUT FEATURES HAVE BEEN DESIGNED TO FACILITATE FLEXIBILITY IN THE TYPE OF CASES THAT CAN BE CONSIDERED AND IN CONTROLLING THE DETAIL OF THE OUTPUT. FOR FURTHER INFORMATION, THE USER IS REFERRED TO THE DOCUMENTATION LISTED BELOW.

MAJOR DATA SOURCES

VIRTUALLY ALL ASPECTS OF THE DATA INPUT TO ORIGEN2 HAVE BEEN UPDATED OR REVISED TO REFLECT CURRENT INFORMATION. THE PRINCIPAL SOURCES OF CROSS SECTION DATA WERE THE ENDF/B-IV, ENDF/B-V, AND LENDL COMPILATIONS. DECAY AND PHOTON INFORMATION WERE PRIMARILY BASED ON THE EVALUATED NUCLEAR STRUCTURE DATA FILE (ENSDF) AT ORNL AND ENDF/B-IV. DATA CONCERNING REACTOR AND FUEL CHARACTERISTICS WERE OBTAINED FROM REFERENCE SAFETY ANALYSIS REPORTS AND, WHERE POSSIBLE, THE COMMERCIAL REACTOR VENDORS.

DOCUMENTATION

THE FOLLOWING ITEMS CONSTITUTE THE ORIGEN2 DOCUMENTATION PUBLISHED AS OF THE DATE OF THIS CODE PACKAGE:

A.G. CROFF, 'ORIGEN2 - A REVISED AND UPDATED VERSION OF THE OAK RIDGE ISOTOPE GENERATION AND DEPLETION CODE', ORNL-5621 (JULY 1980).
A.G. CROFF, 'A USER'S MANUAL FOR THE ORIGEN2 COMPUTER CODE', ORNL/TM-7175 (JULY 1980).
A.G. CROFF, M.A. BJERKE, G.W.MORRISON, AND L.M. PETRIE, 'REVISED URANIUM-PLUTONIUM CYCLE PWR AND BWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-6051 (SEPTEMBER 1978).
A.G. CROFF AND M.A. BJERKE, 'ALTERNATIVE FUEL CYCLE PWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-7005 (FEB 1980).
A.G. CROFF, R.L. HAESE, AND N.B. GOVE, 'UPDATED DECAY AND PHOTON LIBRARIES FOR THE ORIGEN CODE', ORNL/TM-6055 (FEB 1979)
A.G. CROFF, 'ORIGEN2: A REVISED AND UPDATED VERSION OF ORIGEN', TRANS. AM. NUCL. SOC., VOL. 34, P. 349-50 (JUNE 1980).

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***************************** ORIGEN2:  A REVISED AND UPDATED VERSION OF THE ORIGEN COMPUTER CODE ******************************
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ORGANIZATION OF ORIGEN2 OUTPUT

PAST EXPERIENCE HAS INDICATED THAT MANY USERS ENCOUNTER CONSIDERABLE DIFFICULTY IN FINDING THE DESIRED INFORMATION IN A ORIGEN2 OUT PUT WHICH IS SOMETIMES RATHER MASSIVE. THIS SECTION IS INTENDED AS A BRIEF OUTLINE OF THE ORGANIZATION OF ORIGEN2 OUTPUT. FOR DETAILS REFER TO THE USER'S MANUAL (ORNL/TM-7175, SECT. 8.2). THE ORIGEN2 OUTPUT IS EXTREMELY HIERARCHICAL, AND IS ORGANIZED AS FOLLOWS:

```
CARD INPUT ECHO
MISCELLANEOUS INPUT DATA (NEUTRON YIELDS, REPROCESSING LOSSES,ELEMENT CHEMICAL TOXICITIES
LISTING OF ORIGEN2 COMMANDS CURRENTLY BEING EXECUTED
LISTING OF ORIGEN2 DATA LIBRARIES (IF SPECIFIED)
  DECAY LIBRARY
    ACTIVATION PRODUCTS
    ACTINIDES
    FISSION PRODUCTS
  CROSS SECTION/FISSION PRODUCT YIELD LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
  PHOTON LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
OUTPUT 1
  REACTIVITY AND BURNUP DATA
  ACTIVATION PRODUCT TABLES
    GRAM TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    CURIE TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    ETC. (DEPENDING ON THE OUTPUT OPTIONS SPECIFIED, MANY OF THESE TABLES MAY BE OMITTED
    .
  ACTINIDE TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  FISSION PRODUCT TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  NEUTRON PRODUCTION RATE TABLES: (ALPHA,N) AND SPONTANEOUS FISSION
  PHOTON TABLES
    ACTIVATION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    ACTINIDES (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    FISSION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
OUTPUT 2
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
  .
  .
  .
OUTPUT N
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
TABLE OF CONTENTS (UNIT 12) FOR THE ABOVE (UNIT 6) OUTPUT
VARIABLE CROSS SECTION INFORMATION OUTPUT (UNIT 16)
DEBUGGING AND OTHER INTERNAL INFORMATION OUTPUT (UNIT 15)
```

THE SCENARIO LISTED ABOVE CONSTITUTES A TYPICAL ORIGEN2 OUTPUT FOR MANY CASES. ONE POSSIBLE MODIFICATION IS THE USE OF AN STP COMMAND TO EXECUTE AN ADDITIONAL SET OF INSTRUCTIONS AFTER THE FIRST SET HAS BEEN EXECUTED. IF THIS IS DONE, THE OUTPUT WILL BEGIN WITH 'MISCELLANEOUS INPUT DATA' IF NSTP=1, 'ORIGEN2COMMANDS CURRENTLY BEING EXECUTED' IF NSTP=2, OR 'OUTPUT 1' FOR NSTP=3. ANOTHER OFTEN-USED OPTION IS TO EMPLOY BOTH THE PRIMARY (UNIT 6) AND ALTERNATE (UNIT 11) OUTPUT UNITS. IF BOTH ARE ROUTED TO PAPER, THE TABLE OF CONTENTS FOR UNIT 11, WHICH IS ON UNIT 13, WILL IMMEDIATELY FOLLOW THE DEBUGGING AND INTERNAL INFORMATION (UNIT 15) OUTPUT. THE 'OUTPUT N' TABLES FOR UNIT 11 WILL BE PRINTED FOLLOWING THE TABLE OF CONTENTS.

LISTING OF INPUT DATA ON UNIT = 5

INPUT UNIT	WRITE UNIT	CARD NUMBER		CARD IMAGE
5	50	1	-1	
5	50	2	-1	
5	50	3	-1	
5	50	4	TIT	ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
5	50	5	RDA	CALCULATED BY HARVEY GOLDBERG , SENIOR ENGINEER
5	50	6	RDA	NUCLEAR & SAFETY ANALYSIS GROUP , R. H. O.
5	50	7	LIP	0 0 0
5	50	8	LIB	0 1 2 3 421 422 423 9 3 0 1 42
5	50	9	RDA	TWO IRRADIATION RUNS WERE DONE PREVIOUSLY WITH RESULTS
5	50	10	RDA	STORED ON FILES 9PCMKIVI, 9PCMKIVO.
5	50	11	RDA	1 METRIC TON MK IV INNER FUEL IRRADIATED FOR AN AVERAGE
5	50	12	RDA	BURNUP OF 1521 MWD/MTIHM
5	50	13	RDA	THIS IS THE INITIAL PURE URANIUM AND HARDWARE
5	50	14	INP	-8 -2 -1 -1 1 1
5	50	15	RDA	THIS IS THE INITIAL IMPURITIES IN THE URANIUM
5	50	16	INP	-7 -2 -1 -1 1 1
5	50	17	RDA	THIS IS THE DISCHARGED PURE FUEL AND HARDWARE
5	50	18	INP	-6 -2 -1 -1 1 1
5	50	19	RDA	THIS IS THE DISCHARGED IMPURITIES
5	50	20	INP	-5 -2 -1 -1 1 1
5	50	21	RDA	1 METRIC TON MK IV OUTER FUEL IRRADIATED FOR AN AVERAGE
5	50	22	RDA	BURNUP OF 1979 MWD/MTIHM
5	50	23	RDA	THIS IS THE INITIAL PURE URANIUM AND HARDWARE
5	50	24	INP	-4 -2 -1 -1 1 1
5	50	25	RDA	THIS IS THE INITIAL IMPURITIES IN THE URANIUM
5	50	26	INP	-3 -2 -1 -1 1 1
5	50	27	RDA	THIS IS THE DISCHARGED PURE FUEL AND HARDWARE
5	50	28	INP	-2 -2 -1 -1 1 1
5	50	29	RDA	THIS IS THE DISCHARGED IMPURITIES
5	50	30	INP	-1 -2 -1 -1 1 1
5	50	31	RDA	COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF PURE FUEL
5	50	32	MOV	-6 -9 0 0.317 31.7 PCT MK IV INNER
5	50	33	ADD	-2 -9 0 0.683 68.3 PCT MK IV OUTER
5	50	34	MOV	-9 -2 0 1.0 PURE FUEL DISCHARGED
5	50	35	RDA	COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF IMPURITIES
5	50	36	MOV	-5 -9 0 0.317 31.7 PCT MK IV INNER
5	50	37	ADD	-1 -9 0 0.683 68.3 PCT MK IV OUTER
5	50	38	MOV	-9 -1 0 1.0 DISCHARGED IMPURITIES
5	50	39	RDA	COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF PURE FUEL
5	50	40	MOV	-8 -9 0 0.317 31.7 PCT MK IV INNER
5	50	41	ADD	-4 -9 0 0.683 68.3 PCT MK IV OUTER
5	50	42	MOV	-9 -4 0 1.0 INITIAL CHARGE OF PURE FUEL
5	50	43	RDA	COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF IMPURITIES
5	50	44	MOV	-7 -9 0 0.317 31.7 PCT MK IV INNER
5	50	45	ADD	-3 -9 0 0.683 68.3 PCT MK IV OUTER
5	50	46	MOV	-9 -3 0 1.0 INITIAL CHARGE OF IMPURITIES
5	50	47	BAS	ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240
5	50	48	MOV	-4 1 0 1.0
5	50	49	MOV	-2 2 0 1.0

LISTING OF INPUT DATA ON UNIT = 5

```
INPUT   WRITE    CARD                                        CARD IMAGE
UNIT    UNIT     NUMBER
   5      50        50    DEC     120.      2   3  4  2
   5      50        51    DEC     180.      3   4  4  0
   5      50        52    DEC     0.75      4   5  5  0
   5      50        53    DEC      1.0      5   6  5  0
   5      50        54    DEC      1.5      6   7  5  0
   5      50        55    DEC      2.0      7   8  5  0
   5      50        56    DEC      3.0      8   9  5  0
   5      50        57    DEC      5.0      9  10  5  0
   5      50        58    DEC      7.5      10 11  5  0
   5      50        59    DEC     10.0      11 12  5  0
   5      50        60    PHO     101  102  103  10
   5      50        61    CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
   5      50        62    RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        63    OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        64    RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        65    OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        66    RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
   5      50        67    OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        68    HED     1   CHARGE
   5      50        69    HED     2   DISCHARGE
   5      50        70    OUT     12  1  -1  0
   5      50        71    BAS     ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240
   5      50        72    MOV     -3  1   0   1.0
   5      50        73    MOV     -1  2   0   1.0
   5      50        74    DEC     120.      2   3  4  2
   5      50        75    DEC     180.      3   4  4  0
   5      50        76    DEC     0.75      4   5  5  0
   5      50        77    DEC      1.0      5   6  5  0
   5      50        78    DEC      1.5      6   7  5  0
   5      50        79    DEC      2.0      7   8  5  0
   5      50        80    DEC      3.0      8   9  5  0
   5      50        81    DEC      5.0      9  10  5  0
   5      50        82    DEC      7.5      10 11  5  0
   5      50        83    DEC     10.0      11 12  5  0
   5      50        84    PHO     101  102  103  10
   5      50        85    CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
   5      50        86    RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        87    OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        88    RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        89    OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        90    RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
   5      50        91    OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        92    HED     1   CHARGE
   5      50        93    HED     2   DISCHARGE
   5      50        94    OUT     12  1  -1  0
   5      50        95    BAS     ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240
   5      50        96    MOV     -4  1   0   1.0
   5      50        97    ADD     -3  1   0   1.0
   5      50        98    MOV     -2  2   0   1.0
   5      50        99    ADD     -1  2   0   1.0
```

LISTING OF INPUT DATA ON UNIT = 5

```
INPUT   WRITE    CARD                                          CARD IMAGE
UNIT    UNIT     NUMBER
   5      50       100    DEC     120.      2   3   4   2
   5      50       101    DEC     180.      3   4   4   0
   5      50       102    DEC     0.75      4   5   5   0
   5      50       103    DEC      1.0      5   6   5   0
   5      50       104    DEC      1.5      6   7   5   0
   5      50       105    DEC      2.0      7   8   5   0
   5      50       106    DEC      3.0      8   9   5   0
   5      50       107    DEC      5.0      9  10   5   0
   5      50       108    DEC      7.5     10  11   5   0
   5      50       109    DEC     10.0     11  12   5   0
   5      50       110    PHO     101  102  103  10
   5      50       111    CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
   5      50       112    RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
   5      50       113    OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50       114    RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
   5      50       115    OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50       116    RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
   5      50       117    OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50       118    HED     1   CHARGE
   5      50       119    HED     2   DISCHARGE
   5      50       120    OUT     12  1  -1  0
   5      50       121    STP 4
   5      50       122    2        922350  0.01249E+6    922380  0.98709E+6  0  0.0   PURE FUEL
   5      50       123    2        922340  0.00008E+6    922360  0.00033E+6  0  0.0   1.25 %
   5      50       124    0
   5      50       125    2        922350  0.00947E+6    922380  0.99041E+6  0  0.0   PURE FUEL
   5      50       126    2        922340  0.00009E+6    922360  0.00003E+6  0  0.0   0.947 %
   5      50       127    0
   5      50       128    4 130000  75.    500000 1.45E+4   260000 1350.   240000 1000.        ZIRCALOY
   5      50       129    4 280000 550.     60000 275.      920000    2.5  400000 0.9814E+6    ZIRCALOY
   5      50       130    4  50000   0.5  480000   0.5     270000   10.   280000   50.        ZIRCALOY
   5      50       131    4 720000 200.     10000  25.     820000  100.   120000   20.        ZIRCALOY
   5      50       132    4 250000  50.    420000  50.      70000   80.   140000  100.        ZIRCALOY
   5      50       133    4 110000  20.    220000  50.     740000   50.   230000   50.        ZIRCALOY
   5      50       134    0
   5      50       135    4 400000  65.    280000  75.     480000    0.25  40000    10.    IMPURITIES IN
   5      50       136    4 130000 800.     10000   2.     140000  125.   280000  100.    1 METRIC TON
   5      50       137    4 250000   25.   120000  25.     260000  350.   240000   65.          OF
   5      50       138    4  50000   2.25  70000  75.      60000  550.        0    0.0       URANIUM
   5      50       139    0
   5      50       140    END
```

NEUTRON YIELD PER NEUTRON-INDUCED FISSION

NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD
832090	.0000	882230	.0000	882260	.0000	882280	.0000	892270	.0000	902270	.0000
902280	.0000	902290	2.0490	902300	.0000	902320	2.4180	902330	.0000	902340	.0000
912310	.0000	912320	.0000	912330	2.6630	912341	.0000	912340	.0000	922300	.0000
922310	.0000	922320	.0000	922330	2.4990	922340	2.6310	922350	2.4210	922360	2.7340
922370	.0000	922380	2.8010	922390	.0000	922400	.0000	932360	.0000	932370	3.0050
932380	.0000	932390	.0000	942360	2.8700	942370	.0000	942380	2.8330	942390	2.8750
942400	3.1350	942410	2.9340	942420	3.2800	942430	.0000	952410	3.2770	952421	3.1620
952420	3.3600	952430	3.7320	952441	.0000	952440	.0000	962420	3.7460	962430	3.4340
962440	3.7250	962450	3.8320	962460	3.8580	962470	3.5920	962480	3.7960	962490	.0000
972490	3.7600	982490	4.0620	982500	3.9700	982510	4.1400	982520	4.1260	982530	4.1500
982540	.0000	992530	.0000	992541	.0000	992540	.0000	0	.0000	0	.0000

OUTPUT UNIT = 6 PAGE

SPONTANEOUS FISSION NEUTRON YIELD, NEUT/FISSION

NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE	
922350	1.6950	922360	1.6500	922370	1.8720	922380	2.0000	922390	2.0480	932361	1.7900
932360	1.7830	932370	1.8730	932380	1.9630	932390	2.0530	942360	2.2200	942370	1.8860
942380	2.2800	942390	2.2400	942400	2.1600	942410	2.2500	942420	2.1500	942430	2.4300
942440	2.3000	952400	2.2900	952410	2.3830	952420	2.4750	952421	2.5900	952430	2.5200
952440	2.6570	952441	2.6650	962410	2.5000	962420	2.5900	962430	2.6870	962440	2.7600
962450	2.8720	962460	3.0000	962480	3.3200	962500	3.5600	972490	3.7200	982490	3.4400
982500	3.5600	982520	3.7250	982540	3.9000	992530	3.9200	992540	4.0400	992550	4.1600

THE REMAINING NEUTRON YIELDS ARE CALCULATED FROM THE EQUATION: NEUT/FISS=(2.84+0.1225*(AT WT-244)

OUTPUT UNIT = 6

INDIVIDUAL ELEMENT FRACTIONAL RECOVERIES

ELEMENT	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
1	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.9000000	1.0000000
2	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
3	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
4	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
5	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
6	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
7	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
8	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
9	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
10	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
11	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
12	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
13	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
14	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
15	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
16	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
17	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
18	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
19	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
20	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
21	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
22	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
23	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
24	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
25	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
26	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
27	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
28	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
29	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
30	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
31	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
32	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
33	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
34	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
35	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
36	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
37	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
38	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
39	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
40	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
41	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
42	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
43	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
44	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
45	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
46	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
47	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
48	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
49	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000

OUTPUT UNIT = 6 PAGE

INDIVIDUAL ELEMENT FRACTIONAL RECOVERIES

ELEMENT	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
50	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
51	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
52	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
53	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
54	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
55	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
56	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
57	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
58	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
59	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
60	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
61	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
62	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
63	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
64	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
65	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
66	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
67	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
68	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
69	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
70	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
71	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
72	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
73	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
74	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
75	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
76	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
77	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
78	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
79	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
80	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
81	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
82	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
83	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
84	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
85	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
86	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
87	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
88	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
89	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
90	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
91	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
92	.9950000	1.0000000	.0005000	.9990000	1.0000000	.2000000	.6000000	1.0000000	.0000000	1.0000000
93	.0000000	1.0000000	.0005000	.0000000	.0500000	.0500000	.0000000	.0000000	.0000000	1.0000000
94	.9950000	1.0000000	.0005000	.9999000	1.0000000	.0200000	.0000000	.0000000	.0000000	1.0000000
95	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
96	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
97	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
98	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
99	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000

GROUP FRACTIONAL RECOVERIES

GROUP	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
1	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000
2	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
3	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
4	.9950000	1.0000000	.0005000	.9990000	1.0000000	.2000000	.6000000	1.0000000	.0000000	.0000000
5	.0000000	1.0000000	.0005000	.0000000	.0500000	.0500000	.0000000	.0000000	.0000000	.0000000
6	.9950000	1.0000000	.0005000	.9999000	1.0000000	.0200000	.0000000	.0000000	.0000000	.0000000
7	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
8	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
9	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
10	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
11	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
12	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000
13	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
14	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.9000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
16	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
17	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
18	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
19	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

ELEMENT ASSIGNMENTS TO FRACTIONAL RECOVERY GROUPS

ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP
1	14	2	13	3	1	4	1	5	1	6	13	7	13	8	1	9	12
10	13	11	1	12	1	13	1	14	1	15	1	16	1	17	12	18	13
19	1	20	1	21	1	22	1	23	1	24	1	25	1	26	1	27	1
28	1	29	1	30	1	31	1	32	1	33	1	34	1	35	12	36	13
37	1	38	1	39	1	40	1	41	1	42	1	43	1	44	1	45	1
46	1	47	1	48	1	49	1	50	1	51	1	52	1	53	12	54	13
55	1	56	1	57	1	58	1	59	1	60	1	61	1	62	1	63	1
64	1	65	1	66	1	67	1	68	1	69	1	70	1	71	1	72	1
73	1	74	1	75	1	76	1	77	1	78	1	79	1	80	1	81	1
82	1	83	1	84	1	85	1	86	13	87	1	88	1	89	1	90	2
91	3	92	4	93	5	94	6	95	7	96	8	97	9	98	10	99	11

OUTPUT UNIT = 6

CHEMICAL TOXICITIES, GRAMS PER M**3 WATER

NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY
1	3.50+003	2	2.00-001	3	5.00+000	4	1.00+000	5	1.00+000	6	4.00+002
7	1.00-002	8	9.45+005	9	1.00+000	10	1.00+000	11	1.00+003	12	1.00+001
13	1.00-002	14	5.00+000	15	1.00-002	16	5.00+001	17	1.50-001	18	1.00+001
19	1.00+003	20	3.00+001	21	5.00-001	22	1.00-001	23	1.00-001	24	2.00-002
25	1.00-002	26	5.00-002	27	5.00-002	28	5.00-002	29	1.00-002	30	5.00-002
31	2.00-001	32	5.00-001	33	1.00-002	34	1.00-002	35	3.00+000	36	4.00+001
37	5.00+001	38	1.00+001	39	1.00-003	40	1.00+000	41	2.00-002	42	5.00-001
43	1.00+002	44	1.00+000	45	5.00-002	46	5.00-002	47	1.00-003	48	1.00-002
49	2.00-002	50	5.00-002	51	5.00-002	52	2.00-001	53	1.00+001	54	1.50+002
55	5.00+000	56	5.00-001	57	1.00+000	58	2.00+000	59	1.00+000	60	2.00-001
61	1.00+000	62	2.00-001	63	2.00-001	64	2.00-001	65	5.00-001	66	1.00+000
67	1.00+000	68	1.00-001	69	2.00-001	70	1.00-001	71	1.00-001	72	5.00-002
73	1.00+000	74	1.00+002	75	1.00+001	76	1.00+000	77	8.00-001	78	3.00-001
79	2.00-002	80	2.00-003	81	5.00-003	82	1.00-002	83	1.00-001	84	2.00-001
85	1.00+001	86	5.00+002	87	5.00+000	88	1.00-003	89	2.00-002	90	5.00-004
91	5.00-003	92	5.00-001	93	8.00-003	94	8.00-004	95	4.00-002	96	5.00-001
97	5.00-003	98	1.00-002	99	1.00-002						

```
  1    0 TIT  *TIT     ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0          *
  2    0 RDA  *RDA     CALCULATED BY HARVEY GOLDBERG , SENIOR ENGINEER                   *
  3    0 RDA  *RDA     NUCLEAR & SAFETY ANALYSIS GROUP , R. H. O.                        *
  4    0 LIP  *LIP     0 0 0                                                             *
  5    0 LIB  *LIB     0 1 2 3 421 422 423 9 3 0 1 42                                    *
  6    0 RDA  *RDA     TWO IRRADIATION RUNS WERE DONE PREVIOUSLY WITH RESULTS            *
  7    0 RDA  *RDA      STORED ON FILES 9PCMKIVI, 9PCMKIVO                               *
  8    0 RDA  *RDA     1 METRIC TON MK IV INNER FUEL IRRADIATED FOR AN AVERAGE           *
  9    0 RDA  *RDA      BURNUP OF 1521 MWD/MTIHM                                         *
 10    0 RDA  *RDA      THIS IS THE INITIAL PURE URANIUM AND HARDWARE                    *
 11    0 INP  *INP     -8 -2  -1  -1  1  1                                               *
 12    0 RDA  *RDA      THIS IS THE INITIAL IMPURITIES IN THE URANIUM                    *
 13    0 INP  *INP     -7 -2  -1  -1  1  1                                               *
 14    0 RDA  *RDA      THIS IS THE DISCHARGED PURE FUEL AND HARDWARE                    *
 15    0 INP  *INP     -6 -2  -1  -1  1  1                                               *
 16    0 RDA  *RDA      THIS IS THE DISCHARGED IMPURITIES                                *
 17    0 INP  *INP     -5 -2  -1  -1  1  1                                               *
 18    0 RDA  *RDA     1 METRIC TON MK IV OUTER FUEL IRRADIATED FOR AN AVERAGE           *
 19    0 RDA  *RDA     BURNUP OF 1979 MWD/MTIHM                                          *
 20    0 RDA  *RDA      THIS IS THE INITIAL PURE URANIUM AND HARDWARE                    *
 21    0 INP  *INP     -4 -2  -1  -1  1  1                                               *
 22    0 RDA  *RDA      THIS IS THE INITIAL IMPURITIES IN THE URANIUM                    *
 23    0 INP  *INP     -3 -2  -1  -1  1  1                                               *
 24    0 RDA  *RDA      THIS IS THE DISCHARGED PURE FUEL AND HARDWARE                    *
 25    0 INP  *INP     -2 -2  -1  -1  1  1                                               *
 26    0 RDA  *RDA      THIS IS THE DISCHARGED IMPURITIES                                *
 27    0 INP  *INP     -1 -2  -1  -1  1  1                                               *
 28    0 RDA  *RDA     COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF PURE FUEL       *
 29    0 MOV  *MOV     -6 -9  0  0.317      31.7 PCT MK IV INNER                         *
 30    0 ADD  *ADD     -2 -9  0  0.683      68.3 PCT MK IV OUTER                         *
 31    0 MOV  *MOV     -9 -2  0  1.0        PURE FUEL DISCHARGED                         *
 32    0 RDA  *RDA     COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF IMPURITIES      *
 33    0 MOV  *MOV     -5 -9  0  0.317      31.7 PCT MK IV INNER                         *
 34    0 ADD  *ADD     -1 -9  0  0.683      68.3 PCT MK IV OUTER                         *
 35    0 MOV  *MOV     -9 -1  0  1.0        DISCHARGED IMPURITIES                        *
 36    0 RDA  *RDA     COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF PURE FUEL   *
 37    0 MOV  *MOV     -8 -9  0  0.317      31.7 PCT MK IV INNER                         *
 38    0 ADD  *ADD     -4 -9  0  0.683      68.3 PCT MK IV OUTER                         *
 39    0 MOV  *MOV     -9 -4  0  1.0        INITIAL CHARGE OF PURE FUEL                  *
 40    0 RDA  *RDA     COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF IMPURITIES  *
 41    0 MOV  *MOV     -7 -9  0  0.317      31.7 PCT MK IV INNER                         *
 42    0 ADD  *ADD     -3 -9  0  0.683      68.3 PCT MK IV OUTER                         *
 43    0 MOV  *MOV     -9 -3  0  1.0        INITIAL CHARGE OF IMPURITIES                 *
 44    0 BAS  *BAS     ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240 *
 45    0 MOV  *MOV     -4  1   0   1.0                                                  *
 46    0 MOV  *MOV     -2  2   0   1.0                                                  *
 47    0 DEC  *DEC     120.       2   3  4  2                                           *
 48    0 DEC  *DEC     180.       3   4  4  0                                           *
 49    0 DEC  *DEC     0.75       4   5  5  0                                           *
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50    0 DEC  *DEC      1.0       5   6  5  0                                                  *
51    0 DEC  *DEC      1.5       6   7  5  0                                                  *
52    0 DEC  *DEC      2.0       7   8  5  0                                                  *
53    0 DEC  *DEC      3.0       8   9  5  0                                                  *
54    0 DEC  *DEC      5.0       9  10  5  0                                                  *
55    0 DEC  *DEC      7.5      10  11  5  0                                                  *
56    0 DEC  *DEC     10.0      11  12  5  0                                                  *
57    0 PHO  *PHO     101  102  103  10                                                       *
58    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1                  *
59    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                                 *
60    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                       *
61    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                                    *
62    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                       *
63    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS                               *
64    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                       *
65    0 HED  *HED     1   CHARGE                                                               *
66    0 HED  *HED     2   DISCHARGE                                                            *
67    0 OUT  *OUT     12  1  -1  0                                                             *
68    0 BAS  *BAS     ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240             *
69    0 MOV  *MOV     -3  1   0   1.0                                                          *
70    0 MOV  *MOV     -1  2   0   1.0                                                          *
71    0 DEC  *DEC     120.      2   3  4  2                                                    *
72    0 DEC  *DEC     180.      3   4  4  0                                                    *
73    0 DEC  *DEC     0.75      4   5  5  0                                                    *
74    0 DEC  *DEC      1.0      5   6  5  0                                                    *
75    0 DEC  *DEC      1.5      6   7  5  0                                                    *
76    0 DEC  *DEC      2.0      7   8  5  0                                                    *
77    0 DEC  *DEC      3.0      8   9  5  0                                                    *
78    0 DEC  *DEC      5.0      9  10  5  0                                                    *
79    0 DEC  *DEC      7.5     10  11  5  0                                                    *
80    0 DEC  *DEC     10.0     11  12  5  0                                                    *
81    0 PHO  *PHO     101  102  103  10                                                       *
82    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1                  *
83    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                                 *
84    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                       *
85    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                                    *
86    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                       *
87    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS                               *
88    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                       *
89    0 HED  *HED     1   CHARGE                                                               *
90    0 HED  *HED     2   DISCHARGE                                                            *
91    0 OUT  *OUT     12  1  -1  0                                                             *
92    0 BAS  *BAS     ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240   *
93    0 MOV  *MOV     -4  1   0   1.0                                                          *
94    0 ADD  *ADD     -3  1   0   1.0                                                          *
95    0 MOV  *MOV     -2  2   0   1.0                                                          *
96    0 ADD  *ADD     -1  2   0   1.0                                                          *
97    0 DEC  *DEC     120.      2   3  4  2                                                    *
98    0 DEC  *DEC     180.      3   4  4  0                                                    *
99    0 DEC  *DEC     0.75      4   5  5  0                                                    *
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 100    0 DEC  *DEC      1.0      5   6  5  0                                    *
 101    0 DEC  *DEC      1.5      6   7  5  0                                    *
 102    0 DEC  *DEC      2.0      7   8  5  0                                    *
 103    0 DEC  *DEC      3.0      8   9  5  0                                    *
 104    0 DEC  *DEC      5.0      9  10  5  0                                    *
 105    0 DEC  *DEC      7.5     10  11  5  0                                    *
 106    0 DEC  *DEC     10.0     11  12  5  0                                    *
 107    0 PHO  *PHO     101  102  103  10                                        *
 108    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1   *
 109    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                 *
 110    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8    *
 111    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                    *
 112    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8    *
 113    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS               *
 114    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8    *
 115    0 HED  *HED     1   CHARGE                                               *
 116    0 HED  *HED     2   DISCHARGE                                            *
 117    0 OUT  *OUT     12  1  -1  0                                             *
 118    0 STP  *STP 4                                                            *
OVERFLOW AT LINE 197 OF NUDAT1 FOR I =    11

SUM OF YIELDS FOR EACH FISSILE ISOTOPE:                          .0000      .0000     2.0001+000 2.0002+000 2.0006+000 2.0003+000

ISOTOPES FOR WHICH YIELDS ARE EXPLICITLY ACCOUNTED FOR: 922350 922380 942390 942410
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*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	1.14607	1.14609	1.14611	1.14614	1.14619	1.14621	1.14620	1.14602	1.14562	1.14516
NEUT PRODN	.00	.00	5.78+003	5.78+003	5.78+003	5.78+003	5.78+003	5.78+003	5.78+003	5.77+003	5.77+003	5.77+003
NEUT DESTN	.00	.00	5.04+003	5.04+003	5.04+003	5.04+003	5.04+003	5.04+003	5.04+003	5.04+003	5.04+003	5.03+003
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 0% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	1.758+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000
H 2	5.276-004	8.418-004	8.418-004	8.418-004	8.418-004	8.418-004	8.418-004	8.418-004	8.418-004	8.418-004	8.418-004	8.418-004
HE 4	.000	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003
LI 7	.000	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003
BE 9	.000	1.434-005	1.434-005	1.434-005	1.434-005	1.434-005	1.434-005	1.434-005	1.434-005	1.434-005	1.434-005	1.434-005
B 10	6.514-003	2.324-003	2.324-003	2.324-003	2.324-003	2.324-003	2.324-003	2.324-003	2.324-003	2.324-003	2.324-003	2.324-003
B 11	2.866-002	2.896-002	2.896-002	2.896-002	2.896-002	2.896-002	2.896-002	2.896-002	2.896-002	2.896-002	2.896-002	2.896-002
C 12	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001
C 13	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001
C 14	.000	3.159-003	3.158-003	3.158-003	3.158-003	3.158-003	3.158-003	3.158-003	3.158-003	3.157-003	3.156-003	3.155-003
N 14	5.606+000	5.602+000	5.602+000	5.602+000	5.602+000	5.602+000	5.602+000	5.602+000	5.602+000	5.602+000	5.602+000	5.602+000
N 15	2.206-002	2.217-002	2.217-002	2.217-002	2.217-002	2.217-002	2.217-002	2.217-002	2.217-002	2.217-002	2.217-002	2.217-002
NA 23	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG 24	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000
MG 25	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001
MG 26	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001
AL 27	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000
SI 28	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000
SI 29	3.390-001	3.392-001	3.392-001	3.392-001	3.392-001	3.392-001	3.392-001	3.392-001	3.392-001	3.392-001	3.392-001	3.392-001
SI 30	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001
TI 46	2.786-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001
TI 47	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001
TI 48	2.597+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000
TI 49	1.942-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001
TI 50	1.909-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001
V 50	8.621-003	8.519-003	8.519-003	8.519-003	8.519-003	8.519-003	8.519-003	8.519-003	8.519-003	8.519-003	8.519-003	8.519-003
V 51	3.509+000	3.514+000	3.516+000	3.516+000	3.516+000	3.516+000	3.516+000	3.516+000	3.516+000	3.516+000	3.516+000	3.516+000
CR 50	2.939+000	2.928+000	2.928+000	2.928+000	2.928+000	2.928+000	2.928+000	2.928+000	2.928+000	2.928+000	2.928+000	2.928+000
CR 51	.000	2.553-003	1.269-004	2.828-005	2.697-006	2.747-007	2.850-009	2.956-011	3.181-015	3.683-023	4.424-033	.000
CR 52	5.888+001	5.884+001	5.884+001	5.884+001	5.884+001	5.884+001	5.884+001	5.884+001	5.884+001	5.884+001	5.884+001	5.884+001
CR 53	6.805+000	6.827+000	6.827+000	6.827+000	6.827+000	6.827+000	6.827+000	6.827+000	6.827+000	6.827+000	6.827+000	6.827+000
CR 54	1.722+000	1.752+000	1.752+000	1.752+000	1.752+000	1.752+000	1.753+000	1.753+000	1.753+000	1.753+000	1.753+000	1.753+000
MN 54	.000	1.841-004	1.411-004	1.235-004	1.003-004	8.190-005	5.462-005	3.643-005	1.620-005	3.206-006	4.230-007	5.581-008
MN 55	3.518+000	3.504+000	3.505+000	3.505+000	3.506+000	3.506+000	3.507+000	3.507+000	3.508+000	3.509+000	3.510+000	3.511+000
MN 56	.000	1.364-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	5.329+000	5.322+000	5.322+000	5.322+000	5.322+000	5.322+000	5.322+000	5.322+000	5.322+000	5.322+000	5.322+000	5.322+000
FE 55	.000	6.792-003	6.222-003	5.955-003	5.561-003	5.202-003	4.553-003	3.985-003	3.052-003	1.791-003	9.196-004	4.722-004
FE 56	8.728+001	8.723+001	8.723+001	8.723+001	8.723+001	8.723+001	8.723+001	8.723+001	8.723+001	8.723+001	8.723+001	8.723+001
FE 57	2.082+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000
FE 58	2.857-001	2.875-001	2.879-001	2.880-001	2.880-001	2.880-001	2.880-001	2.880-001	2.880-001	2.880-001	2.880-001	2.880-001
FE 59	.000	3.078-005	4.848-006	1.924-006	4.527-007	1.109-007	6.656-009	3.995-010	1.440-012	1.869-017	1.456-023	1.134-029
CO 58	.000	4.954-004	1.530-004	8.499-005	3.387-005	1.385-005	2.316-006	3.872-007	1.082-008	8.460-012	1.105-015	1.445-019
CO 59	7.035-001	6.925-001	6.926-001	6.926-001	6.926-001	6.926-001	6.926-001	6.926-001	6.926-001	6.926-001	6.926-001	6.926-001
CO 60	.000	1.097-002	1.051-002	1.029-002	9.944-003	9.622-003	9.009-003	8.436-003	7.396-003	5.685-003	4.092-003	2.945-003
NI 58	2.608+001	2.603+001	2.603+001	2.603+001	2.603+001	2.603+001	2.603+001	2.603+001	2.603+001	2.603+001	2.603+001	2.603+001
NI 59	.000	4.389-002	4.389-002	4.389-002	4.389-002	4.389-002	4.389-002	4.389-002	4.389-002	4.388-002	4.388-002	4.388-002
NI 60	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.032+001
NI 61	4.539-001	4.608-001	4.608-001	4.608-001	4.608-001	4.608-001	4.608-001	4.608-001	4.608-001	4.608-001	4.608-001	4.608-001
NI 62	1.466+000	1.459+000	1.459+000	1.459+000	1.459+000	1.459+000	1.459+000	1.459+000	1.459+000	1.459+000	1.459+000	1.459+000
NI 63	.000	6.739-003	6.722-003	6.714-003	6.701-003	6.688-003	6.663-003	6.638-003	6.588-003	6.490-003	6.369-003	6.250-003
NI 64	3.835-001	3.853-001	3.853-001	3.853-001	3.853-001	3.853-001	3.853-001	3.853-001	3.853-001	3.853-001	3.853-001	3.853-001
CU 63	2.411+000	2.408+000	2.408+000	2.408+000	2.408+000	2.408+000	2.408+000	2.408+000	2.408+000	2.408+000	2.408+000	2.408+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CU 64	.000	1.415-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	1.107+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000
ZN 64	.000	1.129-003	1.135-003	1.135-003	1.135-003	1.135-003	1.135-003	1.135-003	1.135-003	1.135-003	1.135-003	1.135-003
ZN 66	.000	6.779-004	6.779-004	6.779-004	6.779-004	6.779-004	6.779-004	6.779-004	6.779-004	6.779-004	6.779-004	6.779-004
SR 87	.000	9.599-005	9.599-005	9.599-005	9.599-005	9.599-005	9.599-005	9.599-005	9.599-005	9.599-005	9.599-005	9.599-005
SR 88	.000	8.816-003	8.816-003	8.816-003	8.816-003	8.816-003	8.816-003	8.816-003	8.816-003	8.816-003	8.816-003	8.816-003
SR 89	.000	2.444-004	4.707-005	2.066-005	5.690-006	1.825-006	1.325-007	1.080-008	7.179-011	3.172-015	1.143-020	4.117-026
Y 89	.000	4.262-004	6.235-004	6.499-004	6.649-004	6.690-004	6.705-004	6.706-004	6.706-004	6.706-004	6.706-004	6.706-004
Y 90	.000	5.818-004	1.231-011	1.226-011	1.218-011	1.211-011	1.197-011	1.183-011	1.155-011	1.101-011	1.037-011	9.775-012
Y 91	.000	7.090-004	1.711-004	8.406-005	2.762-005	9.364-006	1.076-006	1.236-007	1.633-009	2.847-013	5.703-018	1.143-022
ZR 90	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004
ZR 91	7.706+003	7.703+003	7.703+003	7.703+003	7.703+003	7.703+003	7.703+003	7.703+003	7.703+003	7.703+003	7.703+003	7.703+003
ZR 92	1.189+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004
ZR 93	.000	1.455+000	1.455+000	1.455+000	1.455+000	1.455+000	1.455+000	1.455+000	1.455+000	1.455+000	1.455+000	1.455+000
ZR 94	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004
ZR 95	.000	1.987-001	5.416-002	2.827-002	1.022-002	3.800-003	5.255-004	7.266-005	1.389-006	5.080-010	2.568-014	1.298-018
ZR 96	2.032+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003
ZR 97	.000	5.765-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	8.715-002	5.148-002	3.001-002	1.176-002	4.518-003	6.375-004	8.851-005	1.754-006	6.196-010	3.133-014	1.584-018
NB 95M	.000	7.951-005	2.266-005	1.183-005	4.276-006	1.590-006	2.199-007	3.040-008	5.814-010	2.126-013	1.075-017	5.433-022
NB 97	.000	4.099-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 92	4.988-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001
MO 93	.000	2.202-005	2.202-005	2.202-005	2.201-005	2.201-005	2.201-005	2.201-005	2.200-005	2.200-005	2.199-005	2.197-005
MO 94	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001
MO 95	5.533-001	7.232-001	9.035-001	9.509-001	9.872-001	1.001+000	1.008+000	1.009+000	1.009+000	1.009+000	1.009+000	1.009+000
MO 96	5.873-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001
MO 97	3.411-001	1.268+000	1.274+000	1.274+000	1.274+000	1.274+000	1.274+000	1.274+000	1.274+000	1.274+000	1.274+000	1.274+000
MO 98	8.652-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001
MO 99	.000	1.287-005	9.413-019	2.546-025	1.327-035	.000	.000	.000	.000	.000	.000	.000
MO100	3.517-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001
TC 99	.000	6.411-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005
RU101	.000	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004
CD106	4.308-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004
CD108	3.005-004	3.003-004	3.003-004	3.003-004	3.003-004	3.003-004	3.003-004	3.003-004	3.003-004	3.003-004	3.003-004	3.003-004
CD110	4.299-003	4.274-003	4.274-003	4.274-003	4.274-003	4.274-003	4.274-003	4.274-003	4.274-003	4.274-003	4.274-003	4.274-003
CD111	4.442-003	4.427-003	4.427-003	4.427-003	4.427-003	4.427-003	4.427-003	4.427-003	4.427-003	4.427-003	4.427-003	4.427-003
CD112	8.443-003	8.464-003	8.464-003	8.464-003	8.464-003	8.464-003	8.464-003	8.464-003	8.464-003	8.464-003	8.464-003	8.464-003
CD113	4.310-003	9.213-007	9.213-007	9.213-007	9.213-007	9.213-007	9.213-007	9.213-007	9.213-007	9.213-007	9.213-007	9.213-007
CD114	1.023-002	1.458-002	1.458-002	1.458-002	1.458-002	1.458-002	1.458-002	1.458-002	1.458-002	1.458-002	1.458-002	1.458-002
CD116	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003
IN113	.000	1.633-002	2.235-002	2.407-002	2.578-002	2.673-002	2.760-002	2.788-002	2.801-002	2.803-002	2.803-002	2.803-002
IN114M	.000	5.341-005	9.955-006	4.298-006	1.154-006	3.214-007	2.493-008	1.934-009	1.164-011	4.212-016	1.183-021	3.323-027
SN112	9.618+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000
SN113	.000	1.169-002	5.677-003	3.956-003	2.247-003	1.296-003	4.317-004	1.437-004	1.593-005	1.958-007	8.013-010	3.279-012
SN114	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000
SN115	3.753+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000
SN116	1.464+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002
SN117	7.787+001	7.794+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001
SN117M	.000	1.248-002	3.286-005	1.687-006	1.814-008	1.758-010	2.087-014	2.477-018	3.491-026	.000	.000	.000
SN118	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002
SN119	8.789+001	8.792+001	8.794+001	8.794+001	8.795+001	8.796+001	8.796+001	8.797+001	8.797+001	8.797+001	8.797+001	8.797+001
SN119M	.000	5.252-002	3.740-002	3.156-002	2.420-002	1.869-002	1.115-002	6.650-003	2.366-003	2.997-004	2.263-005	1.710-006

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SN120	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002
SN121	.000	5.564-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	3.305-004	3.290-004	3.282-004	3.271-004	3.259-004	3.237-004	3.214-004	3.170-004	3.083-004	2.978-004	2.877-004
SN122	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001
SN123	.000	3.712-003	1.949-003	1.413-003	8.534-004	5.228-004	1.962-004	7.364-005	1.037-005	2.058-007	1.532-009	1.141-011
SN124	5.963+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001
SN125	.000	1.837-003	3.287-007	4.397-009	5.126-012	7.218-015	1.431-020	2.836-026	.000	.000	.000	.000
SB121	.000	5.585-002	5.640-002	5.640-002	5.641-002	5.641-002	5.641-002	5.641-002	5.642-002	5.642-002	5.644-002	5.645-002
SB122	.000	1.891-005	7.922-019	1.621-025	5.463-036	.000	.000	.000	.000	.000	.000	.000
SB123	.000	2.235-003	3.997-003	4.533-003	5.093-003	5.423-003	5.750-003	5.873-003	5.936-003	5.946-003	5.946-003	5.946-003
SB125	.000	3.480-002	3.376-002	3.240-002	3.038-002	2.854-002	2.518-002	2.222-002	1.730-002	1.049-002	5.611-003	3.001-003
TE122	.000	3.800-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004
TE124	.000	2.861-006	6.446-006	7.046-006	7.444-006	7.577-006	7.640-006	7.647-006	7.648-006	7.648-006	7.648-006	7.648-006
TE125	.000	2.025-003	4.777-003	6.126-003	8.156-003	1.002-002	1.342-002	1.642-002	2.141-002	2.832-002	3.326-002	3.591-002
TE125M	.000	2.743-004	4.154-004	4.255-004	4.159-004	3.962-004	3.519-004	3.108-004	2.420-004	1.467-004	7.848-005	4.198-005
TE126	.000	2.949-005	3.562-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005
LU175	.000	1.246-003	1.963-003	2.104-003	2.209-003	2.250-003	2.273-003	2.277-003	2.278-003	2.278-003	2.278-003	2.278-003
LU176	.000	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006
HF174	2.194-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002
HF175	.000	1.032-003	3.145-004	1.736-004	6.850-005	2.773-005	4.546-006	7.452-007	2.002-008	1.446-011	1.711-015	2.025-019
HF176	7.212-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001
HF177	2.594+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000
HF178	3.801+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000
HF179	1.938+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000
HF180	4.993+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000
HF181	.000	8.637-003	1.214-003	4.553-004	9.801-005	2.202-005	1.112-006	5.616-008	1.432-010	9.315-016	3.059-022	1.005-028
HF182	.000	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005
TA181	.000	1.797-002	2.541-002	2.817-002	2.654-002	2.662-002	2.664-002	2.664-002	2.664-002	2.664-002	2.664-002	2.664-002
TA182	.000	1.973-004	9.574-005	6.669-005	3.786-005	2.183-005	7.263-006	2.416-006	2.673-007	3.273-009	1.523-011	1.968-012
TA183	.000	1.589-005	1.313-012	3.772-016	1.076-021	4.387-027	.000	.000	.000	.000	.000	.000
W180	4.476-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003
W181	.000	3.638-005	1.831-005	1.299-005	7.592-006	4.504-006	1.584-006	5.575-007	6.901-008	1.057-009	5.700-012	3.073-014
W182	9.156-001	8.782-001	8.783-001	8.783-001	8.783-001	8.784-001	8.784-001	8.784-001	8.784-001	8.784-001	8.784-001	8.784-001
W183	5.005-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001
W184	1.079+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000
W185	.000	6.541-004	2.161-004	1.242-004	5.219-005	2.247-005	4.164-006	7.718-007	2.651-008	3.130-011	6.845-015	1.497-018
W186	1.018+000	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001
W187	.000	3.389-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.878-005	8.680-006	4.767-006	1.865-006	7.494-007	1.209-007	1.951-008	5.081-010	3.446-013	3.770-017	4.126-021
RE185	.000	6.834-004	1.121-003	1.213-003	1.285-003	1.315-003	1.333-003	1.337-003	1.338-003	1.338-003	1.338-003	1.338-003
RE187	.000	3.854-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002
RE188	.000	8.591-006	8.940-008	4.910-008	1.921-008	7.718-009	1.246-009	2.010-010	5.234-012	3.549-015	3.884-019	4.250-023
OS186	.000	3.349-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005
OS188	.000	7.049-004	7.337-004	7.376-004	7.405-004	7.417-004	7.423-004	7.424-004	7.424-004	7.424-004	7.424-004	7.424-004
PB204	9.695-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002
PB205	.000	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005
PB206	1.685+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000
PB207	1.553+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000
PB208	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000
SUMTOT	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004
TOTAL	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	1.759+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000
HE	.000	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003	2.262-003
LI	.000	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003	2.933-003
BE	.000	1.473-005	1.473-005	1.473-005	1.473-005	1.473-005	1.473-005	1.473-005	1.473-005	1.473-005	1.473-005	1.473-005
B	3.518-002	3.128-002	3.128-002	3.128-002	3.128-002	3.128-002	3.128-002	3.128-002	3.128-002	3.128-002	3.128-002	3.128-002
C	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001
N	5.628+000	5.624+000	5.624+000	5.624+000	5.624+000	5.624+000	5.624+000	5.624+000	5.624+000	5.624+000	5.624+000	5.624+000
NA	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
AL	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000
SI	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000
TI	3.517+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000
V	3.518+000	3.522+000	3.525+000	3.525+000	3.525+000	3.525+000	3.525+000	3.525+000	3.525+000	3.525+000	3.525+000	3.525+000
CR	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001	7.035+001
MN	3.518+000	3.505+000	3.505+000	3.505+000	3.506+000	3.506+000	3.507+000	3.507+000	3.508+000	3.509+000	3.510+000	3.511+000
FE	9.497+001	9.499+001	9.499+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001	9.498+001
CO	7.035-001	7.040-001	7.032-001	7.029-001	7.025-001	7.022-001	7.016-001	7.010-001	7.000-001	6.983-001	6.967-001	6.955-001
NI	3.869+001	3.869+001	3.869+001	3.869+001	3.869+001	3.870+001	3.870+001	3.870+001	3.870+001	3.870+001	3.870+001	3.870+001
CU	3.518+000	3.514+000	3.514+000	3.514+000	3.514+000	3.514+000	3.514+000	3.514+000	3.514+000	3.514+000	3.514+000	3.514+000
ZN	.000	1.807-003	1.813-003	1.813-003	1.813-003	1.813-003	1.813-003	1.813-003	1.813-003	1.813-003	1.813-003	1.813-003
SR	.000	9.157-003	8.959-003	8.933-003	8.918-003	8.914-003	8.912-003	8.912-003	8.912-003	8.912-003	8.912-003	8.912-003
Y	.000	1.719-003	7.947-004	7.340-004	6.925-004	6.783-004	6.715-004	6.707-004	6.706-004	6.706-004	6.706-004	6.706-004
ZR	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004
NB	.000	8.764-002	5.150-002	3.003-002	1.177-002	4.520-003	6.391-004	9.025-005	4.129-006	3.703-006	5.360-006	7.019-006
MO	3.518+000	4.621+000	4.808+000	4.855+000	4.891+000	4.905+000	4.912+000	4.913+000	4.913+000	4.913+000	4.913+000	4.913+000
TC	.000	6.412-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005
RU	.000	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004
CD	3.518-002	3.519-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002
IN	.000	1.639-002	2.236-002	2.408-002	2.579-002	2.673-002	2.760-002	2.789-002	2.802-002	2.803-002	2.803-002	2.803-002
SN	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003
SB	.000	9.291-002	9.416-002	9.334-002	9.188-002	9.037-002	8.734-002	8.451-002	7.965-002	7.286-002	6.799-002	6.539-002
TE	.000	2.712-003	5.634-003	6.994-003	9.014-003	1.086-002	1.421-002	1.718-002	2.209-002	2.891-002	3.379-002	3.640-002
LU	.000	1.254-003	1.971-003	2.112-003	2.217-003	2.258-003	2.281-003	2.285-003	2.286-003	2.286-003	2.286-003	2.286-003
HF	1.407+001	1.406+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001
TA	.000	1.818-002	2.551-002	2.624-002	2.658-002	2.664-002	2.665-002	2.664-002	2.664-002	2.664-002	2.664-002	2.664-002
W	3.517+000	3.478+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000
RE	.000	3.924-002	4.001-002	4.010-002	4.017-002	4.020-002	4.022-002	4.022-002	4.022-002	4.022-002	4.022-002	4.022-002
OS	.000	7.407-004	7.723-004	7.762-004	7.792-004	7.803-004	7.809-004	7.810-004	7.810-004	7.810-004	7.810-004	7.810-004
PB	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000
SUMTOT	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004
TOTAL	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004

CUMULATIVE TABLE TOTALS

AP+FP	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 0% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	1.430-006	1.404-006	1.391-006	1.371-006	1.352-006	1.315-006	1.278-006	1.208-006	1.080-006	9.387-007	8.158-007
H 4	.000	9.786-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.803-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	3.938-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009
B 12	.000	4.169-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	1.408-002	1.408-002	1.408-002	1.408-002	1.408-002	1.408-002	1.408-002	1.408-002	1.408-002	1.407-002	1.407-002
N 16	.000	9.614-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	3.104-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	1.026-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	1.657+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	6.875+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.043-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	6.176-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	1.396+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	2.856-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	2.769-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	2.575-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	9.545-006	2.844-008	1.564-009	2.962-011	1.348-011	1.328-011	1.327-011	1.326-011	1.323-011	1.319-011	1.316-011
CA 45	.000	2.599-004	1.560-004	1.208-004	8.104-005	5.496-005	2.527-005	1.162-005	2.458-006	1.100-007	2.262-009	4.653-011
SC 46	.000	4.835-002	1.792-002	1.091-002	5.015-003	2.358-003	5.202-004	1.148-004	5.597-006	1.330-008	6.973-012	3.657-015
SC 47	.000	1.087-001	1.878-012	1.547-017	4.776-024	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	1.046-002	1.691-022	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	8.444-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	1.725-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	2.032-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.542-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015
V 52	.000	9.522+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.154-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	1.173-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	2.360+002	1.173+001	2.614+000	2.493-001	2.539-002	2.634-004	2.733-006	2.940-010	3.405-018	.000	.000
CR 55	.000	3.278+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	1.425+000	1.092+000	9.562-001	7.763-001	6.340-001	4.228-001	2.820-001	1.254-001	2.481-002	3.274-003	4.320-004
MN 56	.000	2.962+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	1.363-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	4.478-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	1.699+001	1.556+001	1.489+001	1.391+001	1.301+001	1.139+001	9.966+000	7.634+000	4.479+000	2.300+000	1.181+000
FE 59	.000	1.514+000	2.385-001	9.466-002	2.227-002	5.456-003	3.275-004	1.966-005	7.083-008	9.194-013	7.163-019	5.581-025
CO 58	.000	1.577+001	4.867+000	2.705+000	1.078+000	4.407-001	7.369-002	1.232-002	3.445-004	2.692-007	3.518-011	4.597-015
CO 60	.000	1.241+001	1.189+001	1.163+001	1.125+001	1.088+001	1.019+001	9.542+000	8.366+000	6.431+000	4.629+000	3.332+000
CO 60M	.000	1.165+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	2.097-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	4.434-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	3.325-003	3.325-003	3.325-003	3.325-003	3.325-003	3.325-003	3.325-003	3.325-003	3.325-003	3.325-003	3.325-003
NI 63	.000	4.158-001	4.148-001	4.143-001	4.135-001	4.127-001	4.112-001	4.096-001	4.065-001	4.005-001	3.930-001	3.856-001
NI 65	.000	2.625+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	1.396-005	1.860-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	5.459+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.177+001	1.863-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	1.172-005	1.133-019	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	1.007-003	7.162-004	6.039-004	4.624-004	3.567-004	2.123-004	1.263-004	4.473-005	5.608-006	4.185-007	3.123-008
SR 89	.000	7.104+000	1.368+000	6.004-001	1.654-001	4.722-002	3.850-003	3.139-004	2.087-006	9.220-011	3.322-016	1.197-021

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 90	.000	6.749-006	6.896-006	6.870-006	6.829-006	6.590-006	6.512-006	6.435-006	6.284-006	5.992-006	5.645-006	5.319-006
SR 91	.000	1.662+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.740-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	1.523-004	1.351-015	4.025-021	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	3.167+002	6.698-006	6.672-006	6.631-006	6.592-006	6.514-006	6.437-006	6.285-006	5.993-006	5.647-006	5.321-006
Y 91	.000	1.740+001	4.199+000	2.063+000	6.778-001	2.298-001	2.640-002	3.034-003	4.006-005	6.984-009	1.399-013	2.803-018
Y 92	.000	1.871+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.740-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.189+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	7.639-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.525-004	1.353-015	4.031-021	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	3.656-003	3.656-003	3.656-003	3.656-003	3.656-003	3.656-003	3.656-003	3.656-003	3.656-003	3.656-003	3.656-003
ZR 95	.000	4.271+003	1.164+003	6.077+002	2.196+002	8.167+001	1.129+001	1.562+000	2.986-002	1.092-005	5.520-010	2.791-014
ZR 97	.000	1.103+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.027-002	8.424-006	1.405-007	2.315-010	4.563-013	1.771-018	6.875-024	.000	.000	.000	.000
NB 93M	.000	4.672-005	1.036-004	1.317-004	1.752-004	2.170-004	2.989-004	3.788-004	5.326-004	8.176-004	1.135-003	1.415-003
NB 94	.000	3.905-008	3.905-008	3.905-008	3.905-008	3.905-008	3.905-008	3.905-008	3.905-008	3.904-008	3.904-008	3.904-008
NB 95	.000	3.409+003	2.014+003	1.174+003	4.601+002	1.767+002	2.494+001	3.462+000	6.860-002	2.424-005	1.225-009	6.196-014
NB 95M	.000	3.030+001	8.635+000	4.508+000	1.629+000	6.059-001	8.378-002	1.158-002	2.215-004	8.099-008	4.095-012	2.070-016
NB 96	.000	2.324+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.103+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	1.043+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	6.381-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	8.816-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	2.420-005	2.420-005	2.420-005	2.420-005	2.420-005	2.420-005	2.419-005	2.419-005	2.418-005	2.417-005	2.416-005
MO 99	.000	6.175+000	4.517-013	1.221-019	.000	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.536+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	1.087-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006
TC100	.000	1.523-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	1.536+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	1.758-005	1.319-010	1.318-010	1.316-010	1.314-010	1.311-010	1.307-010	1.300-010	1.286-010	1.268-010	1.251-010
AG108M	.000	1.485-009	1.482-009	1.481-009	1.479-009	1.477-009	1.473-009	1.469-009	1.461-009	1.445-009	1.425-009	1.406-009
AG109M	.000	4.302-004	3.596-004	3.288-004	2.857-004	2.493-004	1.898-004	1.445-004	8.372-005	2.811-005	7.186-006	1.837-006
AG110	.000	2.947-005	2.272-009	1.924-009	1.483-009	1.151-009	6.934-010	4.178-010	1.517-010	2.000-011	1.588-012	1.262-013
AG110M	.000	2.383-007	1.708-007	1.446-007	1.115-007	8.652-008	5.214-008	3.141-008	1.141-008	1.504-009	1.194-010	9.486-012
CD107	.000	1.101-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	4.302-004	3.596-004	3.288-004	2.857-004	2.493-004	1.898-004	1.445-004	8.372-005	2.811-005	7.186-006	1.837-006
CD111M	.000	1.952-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	2.434-001	1.489-017	1.165-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.766-002	2.735-003	1.076-003	2.499-004	6.045-005	3.537-006	2.069-007	7.084-010	8.302-015	5.692-021	.000
CD117	.000	1.227-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.761-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.427-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	4.341-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	1.175+002	5.705+001	3.975+001	2.258+001	1.303+001	4.338+000	1.444+000	1.601-001	1.968-003	8.053-006	3.295-008
IN114	.000	4.207+000	2.205-001	9.519-002	2.556-002	7.117-003	5.521-004	4.283-005	2.577-007	9.330-012	2.620-017	7.359-023
IN114M	.000	1.236+000	2.304-001	9.947-002	2.670-002	7.437-003	5.769-004	4.475-005	2.693-007	9.749-012	2.738-017	7.689-023
IN116	.000	6.254-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	4.396-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	6.058-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	1.153-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN118	.000	1.884-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN119	.000	1.336-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.427-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	3.560-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.175+002	5.702+001	3.973+001	2.257+001	1.302+001	4.335+000	1.443+000	1.600-001	1.967-003	8.048-006	3.293-008
SN113M	.000	8.709+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	9.948+002	2.620+000	1.345-001	1.287-003	1.402-005	1.664-009	1.975-013	2.783-021	.000	.000	.000
SN119M	.000	2.353+002	1.676+002	1.414+002	1.084+002	8.373+001	4.995+001	2.979+001	1.060+001	1.342+000	1.014-001	7.660-003
SN121	.000	5.380+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	1.955-002	1.946-002	1.941-002	1.935-002	1.928-002	1.915-002	1.901-002	1.875-002	1.824-002	1.762-002	1.702-002
SN123	.000	3.052+001	1.603+001	1.162+001	7.017+000	4.299+000	1.613+000	6.055-001	8.528-002	1.692-003	1.260-005	9.380-008
SN123M	.000	2.117-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.991+002	3.563-002	4.767-004	5.557-007	7.825-010	1.551-015	3.075-021	.000	.000	.000	.000
SN125M	.000	1.577+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	7.500+000	3.141-013	6.429-020	.000	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	6.526-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	8.378-002	2.104-002	1.054-002	3.575-003	1.249-003	1.525-004	1.862-005	2.777-007	6.173-011	1.676-015	4.548-020
SB124M	.000	5.108-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	3.595+001	3.487+001	3.347+001	3.138+001	2.948+001	2.601+001	2.295+001	1.787+001	1.083+001	5.796+000	3.100+000
SB126	.000	5.131-001	6.253-004	2.183-005	1.142-007	6.922-010	2.542-014	9.338-019	.000	.000	.000	.000
SB126M	.000	5.833-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	2.026-003	1.011-003	7.143-004	4.146-004	2.443-004	8.483-005	2.946-005	3.552-008	5.164-008	2.607-010	1.316-012
TE125M	.000	4.942+000	7.485+000	7.667+000	7.495+000	7.138+000	6.341+000	5.600+000	4.361+000	2.644+000	1.414+000	7.565-001
TE127	.000	3.043-004	3.441-006	2.349-006	1.293-006	7.234-007	2.265-007	7.091-008	6.950-009	6.678-011	2.009-013	6.043-016
TE127M	.000	7.534-006	3.513-006	2.399-006	1.320-006	7.385-007	2.312-007	7.239-008	7.096-009	6.818-011	2.051-013	6.170-016
LU176M	.000	3.509-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	2.763-002	2.302-006	1.873-006	1.099-006	7.308-007	3.229-007	1.427-007	2.786-008	1.062-009	1.790-011	3.016-013
LU177M	.000	1.627-005	9.515-006	7.275-006	4.780-006	3.177-006	1.404-006	6.205-007	1.212-007	4.620-009	7.784-011	1.312-012
HF175	.000	1.101+001	3.354+000	1.852+000	7.304-001	2.957-001	4.848-002	7.946-003	2.135-004	1.542-007	1.824-011	2.159-015
HF178M	.000	1.607+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	2.417+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	5.573+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	1.470+002	2.067+001	7.750+000	1.668+000	3.749-001	1.893-002	9.561-004	2.439-006	1.586-011	5.208-018	1.710-024
HF182	.000	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008
TA182	.000	1.232+000	5.976-001	4.162-001	2.363-001	1.363-001	4.533-002	1.508-002	1.668-003	2.043-005	9.507-008	1.228-008
TA182M	.000	2.758-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	2.225+000	1.837-007	5.280-011	1.506-016	6.140-022	.000	.000	.000	.000	.000	.000
W181	.000	2.167-001	1.091-001	7.739-002	4.522-002	2.682-002	9.437-003	3.320-003	4.110-004	6.297-006	3.395-008	1.830-010
W183M	.000	6.497-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	6.150+000	2.032+000	1.168+000	4.907-001	2.113-001	3.916-002	7.257-003	2.493-004	2.943-007	6.436-011	1.407-014
W185M	.000	9.418-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	2.377+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.881-001	8.691-002	4.773-002	1.868-002	7.503-003	1.211-003	1.954-004	5.088-006	3.450-009	3.775-013	4.131-017
RE186	.000	5.650-001	1.539-010	2.539-015	8.262-023	.000	.000	.000	.000	.000	.000	.000
RE187	.000	1.474-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009
RE188	.000	8.437+000	8.780-002	4.822-002	1.887-002	7.580-003	1.223-003	1.974-004	5.140-006	3.485-009	3.814-013	4.173-017
RE188M	.000	7.974+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	2.495-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015
PB205	.000	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009
PB209	.000	2.348-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	2.756-015	4.687+004	3.608+003	2.108+003	9.126+002	4.365+002	1.516+002	8.717+001	4.991+001	2.620+001	1.468+001	8.803+000
TOTAL	2.756-015	4.687+004	3.608+003	2.108+003	9.126+002	4.365+002	1.516+002	8.717+001	4.991+001	2.620+001	1.468+001	8.803+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	9.787-003	1.404-006	1.391-006	1.371-006	1.352-006	1.315-006	1.278-006	1.208-006	1.080-006	9.387-007	8.158-007
HE	.000	1.803-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	3.938-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.944-008	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009	8.770-009
B	.000	4.169-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	1.409-002	1.408-002	1.408-002	1.408-002	1.408-002	1.408-002	1.408-002	1.408-002	1.408-002	1.407-002	1.407-002
N	.000	9.614-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	3.104-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	1.026-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	2.345+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	6.176-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	1.399+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	2.575-001	1.329-011	1.329-011	1.329-011	1.328-011	1.328-011	1.327-011	1.326-011	1.323-011	1.319-011	1.316-011
P	.000	9.545-006	2.844-008	1.564-009	2.962-011	1.348-011	1.328-011	1.327-011	1.326-011	1.323-011	1.319-011	1.316-011
CA	.000	2.617-004	1.560-004	1.208-004	8.104-005	5.496-005	2.527-005	1.162-005	2.458-006	1.100-007	2.262-009	4.653-011
SC	.000	1.761-001	1.792-002	1.091-002	5.015-003	2.356-003	5.202-004	1.148-004	5.597-006	1.330-008	6.973-012	3.657-015
TI	.000	2.032-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.542-015	9.523+001	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015	1.523-015
CR	.000	2.393+002	1.173+001	2.614+000	2.493-001	2.539-002	2.634-004	2.733-006	2.940-010	3.405-018	.000	.000
MN	.000	2.977+002	1.092+000	9.562-001	7.763-001	6.340-001	4.228-001	2.820-001	1.254-001	2.481-002	3.274-003	4.320-004
FE	.000	1.850+001	1.580+001	1.499+001	1.393+001	1.302+001	1.139+001	9.966+000	7.634+000	4.479+000	2.300+000	1.181+000
CO	.000	1.449+002	1.676+001	1.434+001	1.233+001	1.132+001	1.026+001	9.555+000	8.367+000	6.431+000	4.629+000	3.332+000
NI	.000	3.044+000	4.181-001	4.176-001	4.168-001	4.160-001	4.145-001	4.129-001	4.099-001	4.038-001	3.963-001	3.890-001
CU	.000	6.636+001	1.152-019	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	1.007-003	7.162-004	6.039-004	4.624-004	3.567-004	2.123-004	1.263-004	4.473-005	5.608-006	4.185-007	3.123-008
SR	.000	8.772+000	1.368+000	6.004-001	1.654-001	4.723-002	3.856-003	3.203-004	8.370-006	5.992-006	5.645-006	5.319-006
Y	.000	3.540+002	4.199+000	2.063+000	6.778-001	2.298-001	2.641-002	3.040-003	4.634-005	6.000-006	5.647-006	5.321-006
ZR	.000	1.530+004	1.164+003	6.077+002	2.196+002	8.167+001	1.130+001	1.565+000	3.352-002	3.667-003	3.656-003	3.656-003
NB	.000	2.490+004	2.022+003	1.179+003	4.617+002	1.773+002	2.502+001	3.474+000	6.936-002	8.419-004	1.135-003	1.415-003
MO	.000	7.721+000	2.420-005	2.420-005	2.420-005	2.420-005	2.420-005	2.419-005	2.419-005	2.418-005	2.417-005	2.416-005
TC	.000	1.552+000	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006
AG	.000	4.776-004	3.598-004	3.289-004	2.859-004	2.494-004	1.898-004	1.445-004	8.373-005	2.812-005	7.188-006	1.838-006
CD	.000	2.773-001	3.094-003	1.405-003	5.356-004	3.098-004	1.933-004	1.447-004	8.372-005	2.811-005	7.186-006	1.837-006
IN	.000	1.231+002	5.751+001	3.995+001	2.263+001	1.304+001	4.339+000	1.444+000	1.601-001	1.968-003	8.053-006	3.295-008
SN	.000	2.360+003	2.433+002	1.929+002	1.380+002	1.011+002	5.591+001	3.186+001	1.087+001	1.364+000	1.190-001	2.468-002
SB	.000	4.417+001	3.490+001	3.348+001	3.139+001	2.948+001	2.601+001	2.295+001	1.787+001	1.083+001	5.796+000	3.100+000
TE	.000	4.945+000	7.486+000	7.667+000	7.495+000	7.139+000	6.341+000	5.600+000	4.361+000	2.644+000	1.414+000	7.565-001
LU	.000	3.785-001	1.182-005	8.949-006	5.879-006	3.908-006	1.727-006	7.631-007	1.490-007	5.683-009	9.630-011	2.173-012
HF	.000	2.596+003	2.402+001	9.602+000	2.399+000	6.707-001	6.741-002	8.902-003	2.160-004	1.661-007	1.196-008	1.194-008
TA	.000	3.459+000	5.976-001	4.162-001	2.363-001	1.363-001	4.533-002	1.508-002	1.668-003	2.043-005	9.507-008	1.228-008
W	.000	2.450+002	2.228+000	1.293+000	5.546-001	2.456-001	4.980-002	1.077-002	6.653-004	6.595-006	3.401-008	1.830-010
RE	.000	1.698+001	8.780-002	4.822-002	1.887-002	7.580-003	1.223-003	1.974-004	5.142-006	4.973-009	1.488-009	1.487-009
PB	1.214-015	2.348-003	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009
SUMTOT	2.756-015	4.687+004	3.608+003	2.108+003	9.126+002	4.365+002	1.516+002	8.717+001	4.991+001	2.620+001	1.468+001	8.803+000
TOTAL	2.756-015	4.687+004	3.608+003	2.108+003	9.126+002	4.365+002	1.516+002	8.717+001	4.991+001	2.620+001	1.468+001	8.803+000

CUMULATIVE TABLE TOTALS

AP+FP	2.756-015	4.687+004	3.608+003	2.108+003	9.126+002	4.365+002	1.516+002	8.717+001	4.991+001	2.620+001	1.468+001	8.803+000
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.756-015	4.687+004	3.608+003	2.108+003	9.126+002	4.365+002	1.516+002	8.717+001	4.991+001	2.620+001	1.468+001	8.803+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	4.815-011	4.727-011	4.683-011	4.616-011	4.552-011	4.426-011	4.304-011	4.069-011	3.637-011	3.160-011	2.747-011
HE 6	.000	1.675-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.468-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011
B 12	.000	3.304-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	4.130-006	4.130-006	4.130-006	4.130-006	4.130-006	4.129-006	4.129-006	4.129-006	4.128-006	4.126-006	4.125-006
C 15	.000	4.536-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	4.167-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	1.293-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	1.257-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	4.591-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	1.923-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.197-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	5.832-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	2.504-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	3.980-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	9.395-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	9.105-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	9.675-008	2.882-010	1.586-011	3.003-013	1.366-013	1.346-013	1.345-013	1.344-013	1.341-013	1.337-013	1.334-013
CA 45	.000	1.189-007	7.138-008	5.530-008	3.709-008	2.515-008	1.157-008	5.319-009	1.125-009	5.032-011	1.035-012	2.129-014
SC 46	.000	6.081-004	2.254-004	1.372-004	8.308-005	2.964-005	6.543-006	1.445-006	7.041-008	1.673-010	8.771-014	4.600-017
SC 47	.000	1.745-004	3.015-015	2.483-020	7.668-027	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	2.212-004	3.577-024	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	1.005-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	4.934-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.488-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.700-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017
V 52	.000	1.419+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.393-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	5.074-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	5.050-002	2.508-003	5.594-004	5.335-005	5.434-006	5.637-008	5.847-010	6.292-014	7.286-022	8.751-032	.000
CR 55	.000	2.140-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	7.097-003	5.439-003	4.761-003	3.866-003	3.157-003	2.105-003	1.404-003	6.245-004	1.236-004	1.630-005	2.151-006
MN 56	.000	4.426+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	9.463-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	1.061-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	2.336-002	2.140-002	2.048-002	1.913-002	1.789-002	1.566-002	1.371-002	1.050-002	6.160-003	3.163-003	1.624-003
FE 59	.000	1.412-002	2.224-003	8.826-004	2.077-004	5.088-005	3.054-006	1.833-007	6.604-010	8.572-015	6.679-021	5.204-027
CO 58	.000	9.439-002	2.914-002	1.619-002	6.453-003	2.639-003	4.412-004	7.377-005	2.062-006	1.612-009	2.106-013	2.752-017
CO 60	.000	1.914-001	1.833-001	1.794-001	1.734-001	1.678-001	1.571-001	1.471-001	1.290-001	9.915-002	7.137-002	5.137-002
CO 60M	.000	4.351-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	6.786-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	8.411-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	2.117-005	2.117-005	2.117-005	2.117-005	2.117-005	2.117-005	2.117-005	2.117-005	2.117-005	2.117-005	2.117-005
NI 63	.000	1.651-004	1.647-004	1.645-004	1.642-004	1.639-004	1.633-004	1.627-004	1.615-004	1.590-004	1.561-004	1.532-004
NI 65	.000	1.837-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.013-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	8.058-002	1.275-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	3.530-006	2.510-006	2.116-006	1.620-008	1.250-006	7.437-007	4.426-007	1.567-007	1.965-008	1.466-009	1.094-010
SR 89	.000	2.456-002	4.730-003	2.076-003	5.717-004	1.632-004	1.331-005	1.085-006	7.213-009	3.187-013	1.148-018	4.137-024
SR 90	.000	7.833-009	7.772-009	7.742-009	7.694-009	7.649-009	7.558-009	7.469-009	7.293-009	6.954-009	6.552-009	6.174-009
SR 91	.000	1.332-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 93	.000	8.696-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	8.276-007	7.343-018	2.187-023	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.755+000	3.712-008	3.698-008	3.675-008	3.653-008	3.610-008	3.567-008	3.484-008	3.322-008	3.130-008	2.949-008
Y 91	.000	6.248-002	1.508-002	7.408-003	2.434-003	8.252-004	9.482-005	1.090-005	1.439-007	2.508-011	5.026-016	1.007-020
Y 92	.000	1.883-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	4.294-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.982-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.752-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.137-006	1.009-017	3.006-023	6.704-032	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	4.248-007	4.248-007	4.248-007	4.248-007	4.248-007	4.248-007	4.248-007	4.248-007	4.248-007	4.248-007	4.248-007
ZR 95	.000	2.163+001	5.896+000	3.078+000	1.112+000	4.137-001	5.720-002	7.910-003	1.512-004	5.530-008	2.796-012	1.414-016
ZR 97	.000	5.745+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.606-004	1.004-007	1.674-009	2.759-012	5.437-015	2.110-020	8.191-026	.000	.000	.000	.000
NB 93M	.000	8.278-009	1.836-008	2.334-008	3.105-008	3.845-008	5.296-008	6.712-008	9.436-008	1.449-007	2.012-007	2.507-007
NB 94	.000	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.978-010	3.978-010
NB 95	.000	1.635+001	9.659+000	5.632+000	2.207+000	8.477-001	1.196-001	1.661-002	3.291-004	1.163-007	5.878-012	2.972-016
NB 95M	.000	4.210-002	1.200-002	6.264-003	2.264-003	8.418-004	1.164-004	1.610-005	3.078-007	1.125-010	5.689-015	2.876-019
NB 96	.000	3.864-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	7.339+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.593+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	7.875-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB100	.000	7.479-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.233-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.261-009	2.260-009	2.259-009	2.258-009
MO 99	.000	1.983-002	1.451-015	3.923-022	2.045-032	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.755-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	5.452-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010
TC100	.000	1.341-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	7.374-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	6.551-008	4.915-013	4.910-013	4.904-013	4.897-013	4.883-013	4.870-013	4.844-013	4.791-013	4.726-013	4.662-013
AG108M	.000	1.444-011	1.442-011	1.440-011	1.438-011	1.436-011	1.432-011	1.429-011	1.421-011	1.405-011	1.386-011	1.368-011
AG109M	.000	2.218-007	1.854-007	1.695-007	1.473-007	1.285-007	9.783-008	7.447-008	4.315-008	1.449-008	3.704-009	9.469-010
AG110	.000	2.117-007	1.632-011	1.382-011	1.065-011	8.268-012	4.982-012	3.002-012	1.090-012	1.437-013	1.141-014	9.064-016
AG110M	.000	3.979-009	2.853-009	2.415-009	1.861-009	1.445-009	8.706-010	5.246-010	1.905-010	2.511-011	1.994-012	1.584-013
CD107	.000	5.002-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	2.739-007	2.290-007	2.093-007	1.819-007	1.587-007	1.208-007	9.198-008	5.330-008	1.790-008	4.575-009	1.169-009
CD111M	.000	4.583-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	7.726-004	4.726-020	3.697-028	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	6.586-005	1.020-005	4.014-006	9.320-007	2.254-007	1.319-008	7.718-010	2.642-012	3.096-017	2.123-023	1.456-029
CD117	.000	8.836-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.244-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.565-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	7.193-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	2.737-001	1.329-001	9.261-002	5.260-002	3.035-002	1.011-002	3.365-003	3.730-004	4.584-006	1.876-008	7.676-011
IN114	.000	1.932-002	1.012-003	4.370-004	1.173-004	3.268-005	2.535-006	1.966-007	1.183-009	4.283-014	1.203-019	3.378-025
IN114M	.000	1.743-003	3.249-004	1.403-004	3.766-005	1.049-005	8.135-007	6.311-008	3.797-010	1.375-014	3.861-020	1.084-025
IN116	.000	5.123-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	7.236-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	2.729-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	4.354-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN118	.000	2.275-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.068-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN119M	.000	1.206-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	4.288-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	2.001-002	9.714-003	6.768-003	3.844-003	2.218-003	7.386-004	2.459-004	2.726-005	3.350-007	1.371-009	5.610-012
SN113M	.000	5.673-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.845+000	4.860-003	2.494-004	2.386-006	2.600-008	3.086-012	3.663-016	5.162-024	.000	.000	.000
SN119M	.000	1.216-001	8.661-002	7.309-002	5.603-002	4.328-002	2.582-002	1.540-002	5.480-003	6.939-004	5.242-005	3.959-006
SN121	.000	6.505-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	3.917-005	3.899-005	3.890-005	3.876-005	3.863-005	3.836-005	3.809-005	3.757-005	3.654-005	3.530-005	3.409-005
SN123	.000	9.532-002	5.006-002	3.628-002	2.191-002	1.343-002	5.039-003	1.891-003	2.664-004	5.284-006	3.935-008	2.930-010
SN123M	.000	7.713-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.319+000	2.361-004	3.159-006	3.683-009	5.185-012	1.028-017	2.038-023	.000	.000	.000	.000
SN125M	.000	1.061+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	4.486-002	1.879-015	3.845-022	1.296-032	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	6.267-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	1.112-003	2.794-004	1.400-004	4.747-005	1.659-005	2.025-006	2.473-007	3.687-009	8.196-013	2.225-017	6.039-022
SB124M	.000	1.313-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	1.124-001	1.090-001	1.046-001	9.811-002	9.216-002	8.133-002	7.176-002	5.587-002	3.387-002	1.812-002	9.693-003
SB126	.000	9.480-003	1.155-005	4.033-007	2.111-009	1.279-011	4.698-016	1.725-020	2.327-029	.000	.000	.000
SB126M	.000	7.426-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	2.951-006	1.473-006	1.040-006	6.038-007	3.558-007	1.236-007	4.290-008	5.173-009	7.521-011	3.797-013	1.917-015
TE125M	.000	4.154-003	6.292-003	6.444-003	6.300-003	6.000-003	5.330-003	4.707-003	3.665-003	2.223-003	1.189-003	6.359-004
TE127	.000	4.109-007	4.646-009	3.172-009	1.746-009	9.768-010	3.058-010	9.575-011	9.385-012	9.017-014	2.713-016	8.160-019
TE127M	.000	4.053-009	1.889-009	1.290-009	7.099-010	3.972-010	1.244-010	3.894-011	3.817-012	3.667-014	1.103-016	3.319-019
LU176M	.000	2.725-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	2.981-005	2.484-009	1.805-009	1.186-009	7.884-010	3.483-010	1.539-010	3.006-011	1.146-012	1.931-014	3.254-016
LU177M	.000	1.310-007	7.659-008	5.857-008	3.848-008	2.558-008	1.130-008	4.995-009	9.753-010	3.719-011	6.266-013	1.056-014
HF175	.000	3.849-002	1.173-002	6.476-003	2.554-003	1.034-003	1.695-004	2.779-005	7.467-007	5.391-010	6.381-014	7.552-018
HF178M	.000	1.092-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	5.415+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	3.772-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	6.571-001	9.238-002	3.464-002	7.457-003	1.676-003	8.462-005	4.273-006	1.090-008	7.088-014	2.327-020	7.643-027
HF182	.000	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011
TA182	.000	1.097-002	5.320-003	3.706-003	2.104-003	1.213-003	4.036-004	1.342-004	1.485-005	1.819-007	8.465-010	1.093-010
TA182M	.000	8.223-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	1.411-002	1.165-009	3.349-013	9.555-019	3.894-024	.000	.000	.000	.000	.000	.000
W181	.000	6.110-005	3.076-005	2.182-005	1.275-005	7.563-006	2.661-006	9.362-007	1.159-007	1.776-009	9.573-012	5.161-014
W183M	.000	1.001-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	1.577-002	5.209-003	2.994-003	1.258-003	5.416-004	1.004-004	1.860-005	6.391-007	7.544-010	1.650-013	3.608-017
W185M	.000	1.100-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	1.078+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	1.723-004	5.198-005	2.855-005	1.117-005	4.487-006	7.241-007	1.169-007	3.043-009	2.063-012	2.258-016	2.471-020
RE186	.000	3.500-003	9.530-013	1.573-017	5.118-025	2.696-032	.000	.000	.000	.000	.000	.000
RE187	.000	2.264-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011
RE188	.000	4.187-002	4.357-004	2.383-004	9.363-005	3.761-005	6.070-006	9.795-007	2.551-008	1.730-011	1.893-015	2.071-019
RE188M	.000	8.130-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	1.494-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017
PB209	.000	2.700-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	3.571-017	2.378+002	1.635+001	9.317+000	3.780+000	1.647+000	4.817-001	2.846-001	2.065-001	1.425-001	9.412-002	6.354-002
TOTAL	3.571-017	2.378+002	1.635+001	9.317+000	3.780+000	1.647+000	4.817-001	2.846-001	2.065-001	1.425-001	9.412-002	6.354-002

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	4.815-011	4.727-011	4.683-011	4.616-011	4.552-011	4.426-011	4.304-011	4.069-011	3.637-011	3.160-011	2.747-011
HE	.000	1.675-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.468-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	7.387-010	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011	1.053-011
B	.000	3.304-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	4.175-006	4.130-006	4.130-006	4.130-006	4.130-006	4.129-006	4.129-006	4.129-006	4.128-006	4.126-006	4.125-006
N	.000	4.167-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	1.293-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	1.257-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.784-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	5.832-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	2.508-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	9.105-004	1.655-014	1.655-014	1.654-014	1.654-014	1.653-014	1.652-014	1.650-014	1.647-014	1.642-014	1.638-014
P	.000	9.675-008	2.882-010	1.586-011	3.003-013	1.366-013	1.346-013	1.345-013	1.344-013	1.341-013	1.337-013	1.334-013
CA	.000	1.346-007	7.138-008	5.530-008	3.709-008	2.515-008	1.157-008	5.319-009	1.125-009	5.032-011	1.035-012	2.129-014
SC	.000	1.109-003	2.254-004	1.372-004	6.308-005	2.964-005	6.543-006	1.445-006	7.041-008	1.673-010	8.771-014	4.600-017
TI	.000	1.488-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.700-017	1.419+000	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017	1.680-017
CR	.000	7.190-002	2.509-003	5.594-004	5.335-005	5.434-006	5.637-008	5.847-010	6.292-014	7.286-022	8.751-032	.000
MN	.000	4.434+000	5.439-003	4.761-003	3.866-003	3.157-003	2.105-003	1.404-003	6.245-004	1.236-004	1.630-005	2.151-006
FE	.000	3.748-002	2.362-002	2.137-002	1.933-002	1.794-002	1.566-002	1.371-002	1.050-002	6.160-003	3.163-003	1.624-003
CO	.000	3.300-001	2.124-001	1.956-001	1.799-001	1.704-001	1.576-001	1.472-001	1.290-001	9.915-002	7.137-002	5.137-002
NI	.000	1.856-002	1.859-004	1.857-004	1.854-004	1.851-004	1.845-004	1.838-004	1.826-004	1.802-004	1.772-004	1.743-004
CU	.000	1.819-001	1.948-022	1.789-029	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	3.530-006	2.510-006	2.116-006	1.620-006	1.250-006	7.437-007	4.426-007	1.567-007	1.965-008	1.466-009	1.094-010
SR	.000	3.797-002	4.730-003	2.076-003	5.717-004	1.633-004	1.332-005	1.093-006	1.451-008	6.954-009	6.552-009	6.174-009
Y	.000	2.026+000	1.508-002	7.408-003	2.434-003	8.252-004	9.486-005	1.093-005	1.787-007	3.324-008	3.130-008	2.949-008
ZR	.000	7.909+001	5.896+000	3.078+000	1.112+000	4.137-001	5.720-002	7.910-003	1.517-004	4.801-007	4.248-007	4.248-007
NB	.000	1.358+002	9.671+000	5.638+000	2.209+000	8.486-001	1.197-001	1.662-002	3.295-004	2.616-007	2.016-007	2.511-007
MO	.000	3.751-002	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.261-009	2.260-009	2.259-009	2.258-009
TC	.000	7.508-003	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010
AG	.000	5.030-007	1.883-007	1.719-007	1.492-007	1.300-007	9.872-008	7.501-008	4.336-008	1.453-008	3.721-009	9.612-010
CD	.000	9.367-004	1.043-005	4.223-006	1.114-006	3.842-007	1.340-007	9.275-008	5.330-008	1.790-008	4.575-009	1.169-009
IN	.000	2.960-001	1.342-001	9.318-002	5.275-002	3.039-002	1.011-002	3.365-003	3.730-004	4.584-006	1.876-008	7.676-011
SN	.000	5.681+000	1.515-001	1.164-001	8.183-002	5.896-002	3.163-002	1.758-002	5.811-003	7.361-004	8.775-005	3.805-005
SB	.000	1.686-001	1.093-001	1.048-001	9.816-002	9.218-002	8.133-002	7.176-002	5.587-002	3.387-002	1.812-002	9.693-003
TE	.000	4.158-003	6.293-003	6.445-003	6.300-003	6.000-003	5.330-003	4.707-003	3.665-003	2.223-003	1.189-003	6.359-004
LU	.000	2.755-003	7.907-008	6.037-008	3.966-008	2.637-008	1.165-008	5.149-009	1.005-009	3.834-011	6.493-013	1.427-014
HF	.000	6.257+000	1.041-001	4.111-002	1.001-002	2.710-003	2.542-004	3.206-005	7.577-007	5.746-010	3.546-011	3.540-011
TA	.000	2.508-002	5.320-003	3.706-003	2.104-003	1.213-003	4.036-004	1.342-004	1.485-005	1.819-007	8.465-010	1.093-010
W	.000	1.095+000	5.292-003	3.044-003	1.282-003	5.537-004	1.038-004	1.966-005	7.580-007	2.532-009	9.738-012	5.164-014
RE	.000	5.350-002	4.357-004	2.393-004	9.363-005	3.761-005	6.070-006	9.795-007	2.553-008	4.013-011	2.284-011	2.283-011
PB	1.871-017	2.700-006	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013
SUMTOT	3.571-017	2.378+002	1.635+001	9.317+000	3.780+000	1.647+000	4.817-001	2.846-001	2.065-001	1.425-001	9.412-002	6.354-002
TOTAL	3.571-017	2.378+002	1.635+001	9.317+000	3.780+000	1.647+000	4.817-001	2.846-001	2.065-001	1.425-001	9.412-002	6.354-002

CUMULATIVE TABLE TOTALS

AP+FP	3.571-017	2.378+002	1.635+001	9.317+000	3.780+000	1.647+000	4.817-001	2.846-001	2.065-001	1.425-001	9.412-002	6.354-002
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	3.571-017	2.378+002	1.635+001	9.317+000	3.780+000	1.647+000	4.817-001	2.846-001	2.065-001	1.425-001	9.412-002	6.354-002

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC
BASIS-ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U234	2.430+002	2.312+002	2.313+002	2.313+002	2.313+002	2.313+002	2.313+002	2.313+002	2.313+002	2.314+002	2.315+002	2.316+002
U235	7.486+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000
U236	1.104+001	1.922+001	1.922+001	1.922+001	1.922+001	1.922+001	1.922+001	1.922+001	1.922+001	1.923+001	1.923+001	1.923+001
U238	1.047+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002
PU238	.000	2.014+004	2.100+004	2.101+004	2.101+004	2.099+004	2.094+004	2.087+004	2.072+004	2.040+004	2.000+004	1.961+004
PU239	.000	5.905+004	6.073+004	6.073+004	6.073+004	6.073+004	6.073+004	6.073+004	6.072+004	6.072+004	6.072+004	6.071+004
PU240	.000	2.416+004	2.416+004	2.416+004	2.416+004	2.416+004	2.416+004	2.416+004	2.415+004	2.415+004	2.414+004	2.414+004
AM241	.000	5.760+002	2.069+003	2.806+003	3.948+003	5.045+003	7.197+003	9.296+003	1.334+004	2.085+004	2.923+004	3.662+004
CM244	.000	9.730+002	9.625+002	9.565+002	9.471+002	9.381+002	9.203+002	9.029+002	8.690+002	8.049+002	7.315+002	6.647+002
TOTALS												
TABLE	3.663+002	1.053+005	1.093+005	1.100+005	1.112+005	1.122+005	1.143+005	1.163+005	1.202+005	1.273+005	1.352+005	1.421+005
ACTUAL	3.663+002	1.053+005	1.093+005	1.100+005	1.112+005	1.122+005	1.143+005	1.163+005	1.202+005	1.273+005	1.352+005	1.421+005

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U238	1.258+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004
PU238	.000	3.285+003	3.424+003	3.426+003	3.426+003	3.424+003	3.415+003	3.404+003	3.379+003	3.327+003	3.262+003	3.198+003
PU240	.000	1.274+005	1.274+005	1.274+005	1.273+005	1.273+005	1.273+005	1.273+005	1.273+005	1.273+005	1.273+005	1.272+005
PU242	.000	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003
CM242	.000	3.645+005	2.248+005	1.742+005	1.169+005	7.939+004	3.661+004	1.692+004	3.678+003	2.759+002	1.179+002	1.134+002
CM244	.000	1.172+005	1.159+005	1.152+005	1.140+005	1.129+005	1.108+005	1.087+005	1.046+005	9.691+004	8.807+004	8.003+004
TOTALS												
TABLE	1.257+004	6.273+005	4.865+005	4.352+005	3.768+005	3.381+005	2.932+005	2.714+005	2.540+005	2.428+005	2.337+005	2.256+005
ACTUAL	1.257+004	6.273+005	4.865+005	4.352+005	3.768+005	3.381+005	2.932+005	2.714+005	2.540+005	2.428+005	2.337+005	2.256+005
OVERALL TOTALS												
TABLE	1.293+004	7.326+005	5.958+005	5.452+005	4.880+005	4.504+005	4.075+005	3.877+005	3.742+005	3.701+005	3.689+005	3.677+005
ACTUAL	1.293+004	7.326+005	5.958+005	5.452+005	4.880+005	4.504+005	4.075+005	3.877+005	3.742+005	3.701+005	3.689+005	3.677+005

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	4.431+013	1.138+012	6.886+011	3.695+011	2.351+011	1.266+011	8.183+010	4.228+010	1.770+010	8.668+009	4.698+009
2.500-002	.000	3.868+013	5.180+012	4.191+012	3.137+012	2.432+012	1.566+012	1.087+012	6.168+011	2.890+011	1.446+011	7.663+010
3.750-002	.000	4.170+012	2.456+011	2.256+011	2.038+011	1.884+011	1.645+011	1.449+011	1.127+011	6.836+010	3.658+010	1.958+010
5.750-002	.000	1.031+013	3.245+011	1.380+011	4.154+010	1.610+010	4.539+009	2.076+009	8.006+008	3.301+008	1.807+008	1.102+008
8.500-002	.000	4.425+012	1.853+010	1.053+010	4.602+009	2.247+009	7.466+008	3.834+008	2.120+008	1.282+008	7.643+007	4.664+007
1.250-001	.000	6.409+012	4.323+011	1.677+011	4.138+010	1.347+010	4.623+009	3.489+009	2.600+009	1.569+009	8.424+008	4.529+008
2.250-001	3.763-013	3.557+013	2.880+011	1.659+011	1.100+011	8.518+010	6.308+010	5.257+010	3.984+010	2.405+010	1.287+010	6.884+009
3.750-001	.000	1.925+013	6.019+011	4.928+011	4.282+011	3.958+011	3.476+011	3.066+011	2.387+011	1.447+011	7.741+010	4.141+010
5.750-001	.000	5.014+014	1.204+012	8.105+011	5.945+011	5.206+011	4.478+011	3.941+011	3.067+011	1.860+011	9.947+010	5.321+010
8.500-001	1.500-013	6.047+014	1.047+014	5.879+013	2.246+013	8.554+012	1.212+012	1.763+011	7.839+009	9.202+008	1.316+008	2.481+007
1.250+000	8.532-014	3.313+013	9.046+011	8.780+011	8.419+011	8.108+011	7.558+011	7.066+011	6.190+011	4.758+011	3.424+011	2.465+011
1.750+000	4.275-014	1.120+013	1.273+009	6.851+008	2.619+008	1.033+008	1.628+007	2.600+006	6.841+004	7.214+001	1.432+001	1.301+001
2.250+000	2.142-014	1.643+012	7.559+007	2.642+007	1.169+007	6.813+006	4.307+006	3.779+006	3.281+006	2.522+006	1.815+006	1.306+006
2.750+000	1.073-014	8.205+011	4.571+004	2.979+004	1.896+004	1.506+004	1.259+004	1.160+004	1.015+004	7.802+003	5.616+003	4.042+003
3.500+000	7.904-015	1.821+010	3.035-008	2.247-008	1.404-008	8.888-009	3.562-009	1.427-009	2.293-010	5.958-012	1.069-013	4.477-014
5.000+000	2.353-015	5.578+006	9.036-009	6.691-009	4.180-009	2.646-009	1.060-009	4.250-010	6.825-011	1.764-012	2.244-014	4.446-015
7.000+000	1.527-016	4.343+005	5.863-010	4.342-010	2.712-010	1.717-010	6.881-011	2.757-011	4.428-012	1.145-013	1.456-015	2.882-016
1.100+001	9.655-018	4.131+004	3.708-011	2.745-011	1.715-011	1.086-011	4.351-012	1.744-012	2.800-013	7.238-015	9.208-017	1.824-017
TOTAL	6.970-013	1.316+015	1.151+014	6.656+013	2.823+013	1.325+013	4.694+012	2.956+012	1.987+012	1.209+012	7.233+011	4.495+011
MEV/SEC	5.120-013	8.882+014	9.138+013	5.192+013	2.077+013	8.826+012	2.425+012	1.421+012	1.076+012	7.724+011	5.225+011	3.586+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	6.646+005	1.707+004	1.033+004	5.543+003	3.527+003	1.899+003	1.227+003	6.342+002	2.656+002	1.300+002	7.047+001
2.500-002	.000	9.671+005	1.295+005	1.048+005	7.841+004	6.081+004	3.916+004	2.718+004	1.542+004	7.226+003	3.615+003	1.916+003
3.750-002	.000	1.564+005	9.210+003	8.460+003	7.643+003	7.065+003	6.171+003	5.433+003	4.227+003	2.564+003	1.372+003	7.344+002
5.750-002	.000	5.928+005	1.866+004	7.936+003	2.389+003	9.260+002	2.610+002	1.194+002	4.603+001	1.898+001	1.039+001	6.335+000
8.500-002	.000	3.761+005	1.575+003	8.951+002	3.911+002	1.910+002	6.346+001	3.259+001	1.802+001	1.090+001	6.496+000	3.965+000
1.250-001	.000	8.011+005	5.404+004	2.096+004	5.172+003	1.684+003	5.779+002	4.362+002	3.250+002	1.962+002	1.053+002	5.661+001
2.250-001	8.467-020	8.003+006	6.480+004	3.732+004	2.476+004	1.917+004	1.419+004	1.183+004	8.965+003	5.412+003	2.895+003	1.549+003
3.750-001	.000	7.219+006	2.257+005	1.848+005	1.606+005	1.484+005	1.303+005	1.150+005	8.950+004	5.426+004	2.903+004	1.553+004
5.750-001	.000	2.883+008	6.925+005	4.660+005	3.419+005	2.993+005	2.575+005	2.266+005	1.764+005	1.069+005	5.720+004	3.060+004
8.500-001	1.275-019	5.140+008	8.903+007	4.998+007	1.909+007	7.271+006	1.030+006	1.499+005	6.663+003	7.821+002	1.119+002	2.109+001
1.250+000	1.067-019	4.141+007	1.131+006	1.098+006	1.052+006	1.014+006	9.448+005	8.832+005	7.737+005	5.947+005	4.280+005	3.081+005
1.750+000	7.482-020	1.961+007	2.227+003	1.199+003	4.583+002	1.808+002	2.849+001	4.549+000	1.197-001	1.262-004	2.506-005	2.277-005
2.250+000	4.820-020	3.697+006	1.701+002	5.944+001	2.631+001	1.533+001	9.690+000	8.504+000	7.382+000	5.673+000	4.084+000	2.939+000
2.750+000	2.952-020	2.256+006	1.257-001	8.193-002	5.214-002	4.142-002	3.463-002	3.191-002	2.791-002	2.146-002	1.544-002	1.112-002
3.500+000	2.766-020	6.373+004	1.062-013	7.866-014	4.914-014	3.111-014	1.247-014	4.996-015	8.024-016	2.085-017	3.741-019	1.567-019
5.000+000	1.177-020	2.789+001	4.518-014	3.346-014	2.090-014	1.323-014	5.302-015	2.125-015	3.412-016	8.820-018	1.122-019	2.223-020
7.000+000	1.069-021	3.040+000	4.104-015	3.039-015	1.899-015	1.202-015	4.817-016	1.930-016	3.100-017	8.012-019	1.019-020	2.018-021
1.100+001	1.062-022	4.544-001	4.078-016	3.020-016	1.887-016	1.194-016	4.786-017	1.918-017	3.080-018	7.962-020	1.013-021	2.006-022
TOTAL	5.120-019	8.882+008	9.138+007	5.192+007	2.077+007	8.826+006	2.425+006	1.421+006	1.076+006	7.724+005	5.225+005	3.586+005
GAM POW	8.207-026	1.424+002	1.465+001	8.322+000	3.329+000	1.415+000	3.888-001	2.278-001	1.725-001	1.238-001	8.376-002	5.748-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	9.183+011	8.795+011	8.607+011	8.321+011	8.052+011	7.539+011	7.059+011	6.189+011	4.758+011	3.424+011	2.465+011

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	4.867+006	4.661+006	4.562+006	4.410+006	4.267+006	3.998+006	3.741+006	3.280+006	2.522+006	1.815+006	1.306+006
PB204	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	1.506+004	1.442+004	1.412+004	1.365+004	1.320+004	1.236+004	1.158+004	1.015+004	7.802+003	5.616+003	4.042+003

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	7.904-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.527-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	9.655-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	4.058+009	3.516+017	7.437+011	6.844+011	6.409+011	6.153+011	5.936+011	5.926+011	6.135+011	6.716+011	7.396+011	7.995+011
2.500-002	.000	1.796+015	3.038+009	3.151+009	4.265+009	5.334+009	7.434+009	9.483+009	1.343+010	2.075+010	2.893+010	3.614+010
3.750-002	6.916+005	1.776+016	1.431+009	1.342+009	1.309+009	1.315+009	1.393+009	1.516+009	1.807+009	2.393+009	3.054+009	3.636+009
5.750-002	2.520+007	7.850+015	4.071+010	4.216+010	5.853+010	7.426+010	1.051+011	1.352+011	1.933+011	3.010+011	4.212+011	5.272+011
8.500-002	5.908+007	1.922+017	5.969+009	1.730+009	1.732+009	1.743+009	1.762+009	1.782+009	1.819+009	1.887+009	1.964+009	2.031+009
1.250-001	1.231+008	1.526+017	8.298+009	8.595+008	8.471+008	8.523+008	8.660+008	8.819+008	9.154+008	9.800+008	1.052+009	1.116+009
2.250-001	4.129+008	1.061+017	6.272+009	6.600+008	6.452+008	6.433+008	6.415+008	6.410+008	6.415+008	6.434+008	6.455+008	6.472+008
3.750-001	1.030+006	1.056+016	8.635+008	5.355+008	5.360+008	5.366+008	5.377+008	5.387+008	5.407+008	5.445+008	5.489+008	5.528+008
5.750-001	5.804+004	1.632+015	6.025+007	5.974+007	5.926+007	5.905+007	5.911+007	5.947+007	6.053+007	6.273+007	6.514+007	6.719+007
8.500-001	3.326+004	3.041+015	8.084+007	8.077+007	8.071+007	8.070+007	8.078+007	8.092+007	8.126+007	8.193+007	8.263+007	8.322+007
1.250+000	1.207+004	1.468+014	7.038+007	7.034+007	7.028+007	7.025+007	7.021+007	7.019+007	7.018+007	7.017+007	7.016+007	7.014+007
1.750+000	5.908+003	5.215+011	1.177+007	1.175+007	1.174+007	1.173+007	1.172+007	1.172+007	1.173+007	1.175+007	1.176+007	1.177+007
2.250+000	3.422+003	1.398+005	1.099+005	9.902+004	8.665+004	7.848+004	6.902+004	6.446+004	6.093+004	5.885+004	5.729+004	5.593+004
2.750+000	1.988+003	1.438+005	2.089+005	2.422+005	2.940+005	3.438+005	4.389+005	5.271+005	6.789+005	8.971+005	1.054+006	1.131+006
3.500+000	1.778+003	7.225+004	5.674+004	5.110+004	4.468+004	4.044+004	3.552+004	3.315+004	3.129+004	3.016+004	2.928+004	2.849+004
5.000+000	7.638+002	3.083+004	2.419+004	2.178+004	1.903+004	1.721+004	1.511+004	1.409+004	1.329+004	1.281+004	1.242+004	1.208+004
7.000+000	8.793+001	3.532+003	2.769+003	2.492+003	2.177+003	1.968+003	1.726+003	1.609+003	1.517+003	1.460+003	1.415+003	1.374+003
1.100+001	1.011+001	4.062+002	3.181+002	2.861+002	2.496+002	2.256+002	1.976+002	1.841+002	1.734+002	1.668+002	1.616+002	1.569+002
TOTAL	4.680+009	8.453+017	8.105+011	7.350+011	7.090+011	7.002+011	7.116+011	7.429+011	8.261+011	1.000+012	1.197+012	1.371+012
MEV/SEC	1.762+008	7.339+016	1.712+010	1.364+010	1.395+010	1.450+010	1.600+010	1.778+010	2.155+010	2.884+010	3.702+010	4.423+010

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	6.088+001	5.274+009	1.116+004	1.027+004	9.614+003	9.230+003	8.903+003	8.889+003	9.202+003	1.007+004	1.109+004	1.199+004
2.500-002	.000	4.489+007	7.594+001	7.879+001	1.066+002	1.334+002	1.859+002	2.371+002	3.357+002	5.188+002	7.233+002	9.035+002
3.750-002	2.593-002	6.658+008	5.365+001	5.033+001	4.909+001	4.930+001	5.222+001	5.685+001	6.777+001	8.973+001	1.145+002	1.364+002
5.750-002	1.449+000	4.514+008	2.341+003	2.424+003	3.365+003	4.270+003	6.045+003	7.777+003	1.111+004	1.731+004	2.422+004	3.032+004
8.500-002	5.022+000	1.633+010	5.074+002	1.471+002	1.472+002	1.481+002	1.498+002	1.514+002	1.546+002	1.604+002	1.669+002	1.726+002
1.250-001	1.539+001	1.907+010	1.037+003	1.074+002	1.059+002	1.065+002	1.083+002	1.102+002	1.144+002	1.225+002	1.315+002	1.395+002
2.250-001	9.290+001	2.388+010	1.411+003	1.485+002	1.452+002	1.447+002	1.443+002	1.442+002	1.443+002	1.448+002	1.452+002	1.456+002
3.750-001	3.863-001	3.960+009	3.238+002	2.008+002	2.010+002	2.012+002	2.016+002	2.020+002	2.028+002	2.042+002	2.058+002	2.073+002
5.750-001	3.337-002	9.384+008	3.464+001	3.435+001	3.407+001	3.396+001	3.399+001	3.420+001	3.480+001	3.607+001	3.745+001	3.864+001
8.500-001	2.827-002	2.585+009	6.872+001	6.865+001	6.860+001	6.859+001	6.866+001	6.878+001	6.907+001	6.964+001	7.024+001	7.073+001
1.250+000	1.509-002	1.835+008	8.797+001	8.792+001	8.785+001	8.781+001	8.776+001	8.774+001	8.772+001	8.771+001	8.769+001	8.768+001
1.750+000	1.034-002	9.126+005	2.059+001	2.057+001	2.054+001	2.052+001	2.051+001	2.051+001	2.053+001	2.056+001	2.059+001	2.060+001
2.250+000	7.700-003	3.145-001	2.472-001	2.228-001	1.950-001	1.766-001	1.553-001	1.450-001	1.371-001	1.324-001	1.289-001	1.258-001
2.750+000	5.468-003	3.954-001	5.744-001	6.660-001	8.084-001	9.454-001	1.207+000	1.449+000	1.867+000	2.467+000	2.899+000	3.111+000
3.500+000	6.222-003	2.529-001	1.986-001	1.789-001	1.564-001	1.415-001	1.243-001	1.160-001	1.095-001	1.056-001	1.025-001	9.973-002
5.000+000	3.819-003	1.542-001	1.210-001	1.089-001	9.515-002	8.607-002	7.554-002	7.045-002	6.647-002	6.403-002	6.210-002	6.038-002
7.000+000	6.155-004	2.473-002	1.938-002	1.744-002	1.524-002	1.378-002	1.208-002	1.126-002	1.062-002	1.022-002	9.902-003	9.619-003
1.100+001	1.112-004	4.468-003	3.499-003	3.147-003	2.746-003	2.481-003	2.174-003	2.025-003	1.908-003	1.835-003	1.777-003	1.726-003
TOTAL	1.762+002	7.339+010	1.712+004	1.364+004	1.395+004	1.450+004	1.600+004	1.778+004	2.155+004	2.884+004	3.702+004	4.423+004
GAM POW	2.824-005	1.176+004	2.744-003	2.186-003	2.236-003	2.324-003	2.565-003	2.850-003	3.454-003	4.623-003	5.935-003	7.091-003

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U235	6.916+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.034+017	6.983+014	4.927+014	3.385+014	2.601+014	1.720+014	1.204+014	6.542+013	3.065+013	2.213+013	1.977+013
2.500-002	.000	4.947+016	2.759+014	1.602+014	9.724+013	7.372+013	5.134+013	3.862+013	2.431+013	1.296+013	8.106+012	5.955+012
3.750-002	.000	5.878+016	7.845+014	5.316+014	3.782+014	2.993+014	1.979+014	1.340+014	6.635+013	2.557+013	1.655+013	1.435+013
5.750-002	.000	2.209+016	1.359+014	9.949+013	7.055+013	5.499+013	3.663+013	2.558+013	1.374+013	6.247+012	4.438+012	3.954+012
8.500-002	.000	2.943+016	1.752+014	1.410+014	1.077+014	8.561+013	5.602+013	3.743+013	1.769+013	5.764+012	3.208+012	2.669+012
1.250-001	.000	5.961+016	1.282+015	6.586+014	3.824+014	2.873+014	1.827+014	1.183+014	5.063+013	1.100+013	3.450+012	2.360+012
2.250-001	.000	1.756+017	9.618+013	6.715+013	4.634+013	3.583+013	2.396+013	1.693+013	9.314+012	4.272+012	2.875+012	2.438+012
3.750-001	.000	1.344+017	7.271+013	4.713+013	3.495+013	2.886+013	2.137+013	1.648+013	1.058+013	5.509+012	3.158+012	2.093+012
5.750-001	.000	2.631+017	1.986+015	1.063+015	6.303+014	5.096+014	4.137+014	3.561+014	2.841+014	2.200+014	1.891+014	1.728+014
8.500-001	.000	3.030+017	1.043+016	5.860+015	2.264+015	8.873+014	1.556+014	4.750+013	2.201+013	1.110+013	5.185+012	2.636+012
1.250+000	.000	1.789+017	5.371+013	4.114+013	3.098+013	2.504+013	1.744+013	1.255+013	6.904+012	2.736+012	1.377+012	9.335+011
1.750+000	.000	6.483+016	3.391+013	4.327+012	2.593+012	2.150+012	1.500+012	1.055+012	5.339+011	1.580+011	5.552+010	3.388+010
2.250+000	.000	3.522+016	3.257+013	2.768+013	2.203+013	1.766+013	1.136+013	7.308+012	3.030+012	5.243+011	5.958+010	6.968+009
2.750+000	.000	1.549+016	1.306+012	1.853+011	1.178+011	9.850+010	6.926+010	4.874+010	2.418+010	5.993+009	1.057+009	1.876+008
3.500+000	.000	8.944+015	3.060+010	1.927+010	1.584+010	1.334+010	9.459+009	6.707+009	3.372+009	8.523+008	1.528+008	2.738+007
5.000+000	.000	5.212+015	3.147-006	3.184-006	3.238-006	3.288-006	3.378-006	3.457-006	3.587-006	3.763-006	3.886-006	3.949-006
7.000+000	.000	3.444+013	2.042-007	2.066-007	2.101-007	2.134-007	2.192-007	2.243-007	2.328-007	2.442-007	2.521-007	2.562-007
1.100+001	.000	3.389+009	1.291-008	1.306-008	1.329-008	1.349-008	1.386-008	1.419-008	1.472-008	1.544-008	1.594-008	1.620-008
TOTAL	.000	1.508+018	1.605+016	9.195+015	4.406+015	2.568+015	1.342+015	9.323+014	5.747+014	3.365+014	2.597+014	2.300+014
MEV/SEC	.000	1.032+018	1.049+016	5.878+015	2.486+015	1.205+015	4.747+014	3.165+014	2.173+014	1.478+014	1.191+014	1.059+014

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.551+009	1.047+007	7.390+006	5.078+006	3.902+006	2.580+006	1.806+006	9.814+005	4.598+005	3.319+005	2.966+005
2.500-002	.000	1.237+009	6.898+006	4.005+006	2.431+006	1.843+006	1.284+006	9.656+005	6.077+005	3.239+005	2.026+005	1.489+005
3.750-002	.000	2.204+009	2.942+007	1.994+007	1.418+007	1.122+007	7.420+006	5.026+006	2.488+006	9.587+005	6.205+005	5.380+005
5.750-002	.000	1.270+009	7.812+006	5.720+006	4.057+006	3.162+006	2.106+006	1.471+006	7.898+005	3.592+005	2.552+005	2.273+005
8.500-002	.000	2.501+009	1.489+007	1.198+007	9.154+006	7.277+006	4.761+006	3.181+006	1.504+006	4.900+005	2.727+005	2.268+005
1.250-001	.000	7.452+009	1.602+008	8.233+007	4.780+007	3.591+007	2.283+007	1.479+007	6.329+006	1.375+006	4.312+005	2.950+005
2.250-001	.000	3.952+010	2.164+007	1.511+007	1.043+007	8.062+006	5.392+006	3.809+006	2.096+006	9.612+005	6.468+005	5.485+005
3.750-001	.000	5.038+010	2.727+007	1.767+007	1.311+007	1.082+007	8.013+006	6.179+006	3.967+006	2.066+006	1.184+006	7.849+005
5.750-001	.000	1.513+011	1.142+009	6.113+008	3.624+008	2.930+008	2.379+008	2.048+008	1.634+008	1.265+008	1.087+008	9.935+007
8.500-001	.000	2.576+011	8.862+009	4.981+009	1.925+009	7.542+008	1.323+008	4.037+007	1.871+007	9.439+006	4.407+006	2.240+006
1.250+000	.000	2.237+011	6.713+007	5.142+007	3.872+007	3.130+007	2.180+007	1.568+007	8.630+006	3.419+006	1.721+006	1.167+006
1.750+000	.000	1.135+011	5.934+007	7.572+006	4.538+006	3.763+006	2.626+006	1.846+006	9.343+005	2.764+005	9.716+004	5.928+004
2.250+000	.000	7.925+010	7.328+007	6.228+007	4.956+007	3.974+007	2.556+007	1.644+007	6.817+006	1.180+006	1.340+005	1.568+004
2.750+000	.000	4.260+010	3.591+006	5.096+005	3.238+005	2.709+005	1.905+005	1.340+005	6.651+004	1.648+004	2.907+003	5.159+002
3.500+000	.000	3.130+010	1.071+005	6.745+004	5.546+004	4.669+004	3.311+004	2.347+004	1.180+004	2.983+003	5.346+002	9.582+001
5.000+000	.000	2.606+010	1.573-011	1.592-011	1.619-011	1.644-011	1.689-011	1.729-011	1.794-011	1.882-011	1.943-011	1.975-011
7.000+000	.000	2.411+008	1.429-012	1.446-012	1.471-012	1.494-012	1.534-012	1.570-012	1.629-012	1.709-012	1.765-012	1.794-012
1.100+001	.000	3.727+004	1.420-013	1.437-013	1.462-013	1.484-013	1.525-013	1.560-013	1.619-013	1.699-013	1.754-013	1.782-013
TOTAL	.000	1.032+012	1.049+010	5.878+009	2.486+009	1.205+009	4.747+008	3.165+008	2.173+008	1.478+008	1.191+008	1.059+008
GAM POW	.000	1.654+005	1.681+003	9.423+002	3.986+002	1.931+002	7.610+001	5.073+001	3.484+001	2.369+001	1.908+001	1.698+001

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	4.244+010	2.117+010	1.891+010	1.584+010	1.334+010	9.459+009	6.707+009	3.372+009	8.523+008	1.528+008	2.738+007

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

OUTPUT UNIT = 6

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RB 94	.000	3.389+009	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
NEUT PRODN	.00	.00	1.97-028	1.97-028	1.97-028	1.97-028	1.98-028	1.98-028	1.98-028	1.98-028	1.98-028	1.98-028
NEUT DESTN	.00	.00	7.91+000	7.91+000	7.91+000	7.91+000	7.91+000	7.91+000	7.91+000	7.91+000	7.91+000	7.91+000
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	1.999+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000
H 2	5.999-004	9.575-004	9.575-004	9.575-004	9.575-004	9.575-004	9.575-004	9.575-004	9.575-004	9.575-004	9.575-004	9.575-004
H 3	.000	4.135-005	4.060-005	4.022-005	3.965-005	3.909-005	3.801-005	3.696-005	3.494-005	3.123-005	2.714-005	2.359-005
HE 3	.000	2.810-007	1.037-006	1.409-006	1.986-006	2.538-006	3.620-006	4.672-006	6.690-006	1.040-005	1.449-005	1.804-005
HE 4	.000	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001
LI 6	.000	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004
LI 7	.000	1.876-001	1.876-001	1.876-001	1.876-001	1.876-001	1.876-001	1.876-001	1.876-001	1.876-001	1.876-001	1.876-001
BE 9	1.000+001	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000
BE 10	.000	3.615-005	3.615-005	3.615-005	3.615-005	3.615-005	3.615-005	3.615-005	3.615-005	3.615-005	3.615-005	3.615-005
B 10	4.167-001	1.486-001	1.486-001	1.486-001	1.486-001	1.486-001	1.486-001	1.486-001	1.486-001	1.486-001	1.486-001	1.486-001
B 11	1.833+000	1.837+000	1.837+000	1.837+000	1.837+000	1.837+000	1.837+000	1.837+000	1.837+000	1.837+000	1.837+000	1.837+000
C 12	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002
C 13	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000
C 14	.000	4.209-002	4.209-002	4.209-002	4.209-002	4.209-002	4.209-002	4.208-002	4.208-002	4.207-002	4.206-002	4.204-002
N 14	7.471+001	7.466+001	7.466+001	7.466+001	7.466+001	7.466+001	7.466+001	7.466+001	7.466+001	7.466+001	7.466+001	7.466+001
N 15	2.940-001	2.955-001	2.955-001	2.955-001	2.955-001	2.955-001	2.955-001	2.955-001	2.955-001	2.955-001	2.955-001	2.955-001
NE 21	.000	2.017-005	2.017-005	2.017-005	2.017-005	2.017-005	2.017-005	2.017-005	2.017-005	2.017-005	2.017-005	2.017-005
NE 22	.000	3.030-005	3.030-005	3.030-005	3.030-005	3.030-005	3.030-005	3.030-005	3.030-005	3.030-005	3.030-005	3.030-005
NA 23	.000	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006
NA 24	.000	2.104-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 24	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001
MG 25	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000
MG 26	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000
AL 27	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002
AL 28	.000	6.685-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 28	1.148+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002
SI 29	6.023+000	6.027+000	6.027+000	6.027+000	6.027+000	6.027+000	6.027+000	6.027+000	6.027+000	6.027+000	6.027+000	6.027+000
SI 30	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000
P 31	.000	1.236-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004
TI 47	.000	1.306-006	1.306-006	1.306-006	1.306-006	1.306-006	1.306-006	1.306-006	1.306-006	1.306-006	1.306-006	1.306-006
TI 49	.000	3.536-006	3.536-006	3.536-006	3.536-006	3.536-006	3.536-006	3.536-006	3.536-006	3.536-006	3.536-006	3.536-006
TI 50	.000	1.405-005	1.405-005	1.405-005	1.405-005	1.405-005	1.405-005	1.405-005	1.405-005	1.405-005	1.405-005	1.405-005
V 50	.000	5.366-005	5.366-005	5.366-005	5.366-005	5.366-005	5.366-005	5.366-005	5.366-005	5.366-005	5.366-005	5.366-005
V 51	.000	8.145-003	1.039-002	1.048-002	1.051-002	1.051-002	1.051-002	1.051-002	1.051-002	1.051-002	1.051-002	1.051-002
CR 50	2.716+000	2.706+000	2.706+000	2.706+000	2.706+000	2.706+000	2.706+000	2.706+000	2.706+000	2.706+000	2.706+000	2.706+000
CR 51	.000	2.365-003	1.175-004	2.619-005	2.498-006	2.545-007	2.640-009	2.738-011	2.946-015	3.412-023	4.098-033	.000
CR 52	5.441+001	5.436+001	5.436+001	5.436+001	5.436+001	5.436+001	5.436+001	5.436+001	5.436+001	5.436+001	5.436+001	5.436+001
CR 53	6.287+000	6.307+000	6.307+000	6.307+000	6.307+000	6.307+000	6.307+000	6.307+000	6.307+000	6.307+000	6.307+000	6.307+000
CR 54	1.591+000	1.619+000	1.619+000	1.619+000	1.620+000	1.620+000	1.620+000	1.620+000	1.620+000	1.620+000	1.620+000	1.620+000
MN 54	.000	6.786-004	5.200-004	4.552-004	3.696-004	3.018-004	2.013-004	1.342-004	5.971-005	1.181-005	1.559-006	2.057-007
MN 55	2.500+001	2.490+001	2.491+001	2.491+001	2.491+001	2.491+001	2.491+001	2.491+001	2.492+001	2.492+001	2.493+001	2.493+001
MN 56	.000	9.491-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	1.964+001	1.961+001	1.961+001	1.961+001	1.961+001	1.961+001	1.961+001	1.961+001	1.961+001	1.961+001	1.961+001	1.961+001
FE 55	.000	2.494-002	2.285-002	2.187-002	2.042-002	1.910-002	1.672-002	1.463-002	1.121-002	6.576-003	3.377-003	1.734-003
FE 56	3.216+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002
FE 57	7.672+000	7.893+000	7.893+000	7.893+000	7.893+000	7.893+000	7.893+000	7.893+000	7.893+000	7.893+000	7.893+000	7.893+000
FE 58	1.053+000	1.059+000	1.060+000	1.060+000	1.060+000	1.060+000	1.060+000	1.060+000	1.060+000	1.060+000	1.060+000	1.060+000
FE 59	.000	1.132-004	1.782-005	7.072-006	1.664-006	4.077-007	2.447-008	1.469-009	5.292-012	6.869-017	5.352-023	4.170-029
CO 58	.000	1.280-003	3.953-004	2.197-004	8.754-005	3.579-005	5.985-006	1.001-006	2.798-008	2.186-011	2.857-015	3.734-019
CO 59	.000	9.872-004	1.083-003	1.094-003	1.099-003	1.101-003	1.102-003	1.102-003	1.103-003	1.105-003	1.108-003	1.110-003
CO 60	.000	5.986-005	5.733-005	5.610-005	5.423-005	5.248-005	4.914-005	4.601-005	4.034-005	3.101-005	2.232-005	1.606-005
NI 58	6.740+001	6.728+001	6.728+001	6.728+001	6.728+001	6.728+001	6.728+001	6.728+001	6.728+001	6.728+001	6.728+001	6.728+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NI 59	.000	1.134-001	1.134-001	1.134-001	1.134-001	1.134-001	1.134-001	1.134-001	1.134-001	1.134-001	1.134-001	1.134-001
NI 60	2.665+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001
NI 61	1.173+000	1.191+000	1.191+000	1.191+000	1.191+000	1.191+000	1.191+000	1.191+000	1.191+000	1.191+000	1.191+000	1.191+000
NI 62	3.788+000	3.772+000	3.772+000	3.772+000	3.772+000	3.772+000	3.772+000	3.772+000	3.772+000	3.772+000	3.772+000	3.772+000
NI 63	.000	1.774-002	1.769-002	1.767-002	1.764-002	1.760-002	1.754-002	1.747-002	1.734-002	1.708-002	1.676-002	1.645-002
NI 64	9.912-001	1.032+000	1.032+000	1.032+000	1.032+000	1.032+000	1.032+000	1.032+000	1.032+000	1.032+000	1.032+000	1.032+000
NI 65	.000	3.726-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 63	5.140+001	5.133+001	5.133+001	5.133+001	5.133+001	5.133+001	5.133+001	5.133+001	5.133+001	5.133+001	5.133+001	5.133+001
CU 64	.000	3.018-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	2.360+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001
CU 66	.000	4.490-007	9.058-030	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 64	.000	2.408-002	2.419-002	2.419-002	2.419-002	2.419-002	2.419-002	2.419-002	2.419-002	2.419-002	2.419-002	2.419-002
ZN 65	.000	2.606-008	1.853-006	1.563-006	1.196-006	9.229-007	5.492-007	3.268-007	1.157-007	1.451-008	1.083-009	8.079-011
ZN 66	.000	1.445-002	1.445-002	1.445-002	1.445-002	1.445-002	1.445-002	1.445-002	1.445-002	1.445-002	1.445-002	1.445-002
ZN 67	.000	1.684-006	1.684-006	1.684-006	1.684-006	1.684-006	1.684-006	1.684-006	1.684-006	1.684-006	1.684-006	1.684-006
SR 88	.000	8.300-006	8.300-006	8.300-006	8.300-006	8.300-006	8.300-006	8.300-006	8.300-006	8.300-006	8.300-006	8.300-006
SR 89	.000	2.301-007	4.431-008	1.945-008	5.356-009	1.529-009	1.247-010	1.017-011	6.758-014	2.986-018	1.076-023	3.876-029
Y 89	.000	4.012-007	5.870-007	6.119-007	6.260-007	6.298-007	6.312-007	6.313-007	6.313-007	6.313-007	6.313-007	6.313-007
Y 90	.000	5.478-007	1.158-014	1.154-014	1.147-014	1.140-014	1.127-014	1.113-014	1.087-014	1.037-014	9.767-015	9.203-015
Y 91	.000	6.675-007	1.611-007	7.914-008	2.601-008	8.816-009	1.013-009	1.164-010	1.537-012	2.680-016	5.369-021	1.076-025
ZR 90	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001
ZR 91	7.255+000	7.252+000	7.252+000	7.252+000	7.252+000	7.252+000	7.252+000	7.252+000	7.252+000	7.252+000	7.252+000	7.252+000
ZR 92	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001
ZR 93	.000	1.369-003	1.369-003	1.369-003	1.369-003	1.369-003	1.369-003	1.369-003	1.369-003	1.369-003	1.369-003	1.369-003
ZR 94	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001
ZR 95	.000	1.871-004	5.099-005	2.662-005	9.621-006	3.578-006	4.947-007	6.841-008	1.308-009	4.782-013	2.418-017	1.222-021
ZR 96	1.913+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000
ZR 97	.000	5.427-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	8.205-005	4.846-005	2.826-005	1.107-005	4.253-006	6.002-007	8.332-008	1.651-009	5.833-013	2.949-017	1.491-021
NB 97	.000	3.859-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 95	.000	1.658-004	3.355-004	3.801-004	4.143-004	4.272-004	4.339-004	4.348-004	4.350-004	4.350-004	4.350-004	4.350-004
MO 96	.000	7.731-007	7.746-007	7.746-007	7.746-007	7.746-007	7.746-007	7.746-007	7.746-007	7.746-007	7.746-007	7.746-007
MO 97	.000	8.722-004	8.780-004	8.780-004	8.780-004	8.780-004	8.780-004	8.780-004	8.780-004	8.780-004	8.780-004	8.780-004
MO 98	.000	7.906-007	7.906-007	7.906-007	7.906-007	7.906-007	7.906-007	7.906-007	7.906-007	7.906-007	7.906-007	7.906-007
AG107	.000	7.230-007	7.248-007	7.248-007	7.248-007	7.248-007	7.248-007	7.248-007	7.248-007	7.248-007	7.248-007	7.248-007
AG109	.000	1.762-007	3.705-007	4.554-007	5.738-007	6.741-007	8.379-007	9.626-007	1.130-006	1.283-006	1.340-006	1.355-006
CD106	3.062-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003
CD108	2.136-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003
CD109	.000	1.184-006	9.896-007	9.048-007	7.863-007	6.861-007	5.223-007	3.976-007	2.304-007	7.736-008	1.977-008	5.055-009
CD110	3.055-002	3.038-002	3.038-002	3.038-002	3.038-002	3.038-002	3.038-002	3.038-002	3.038-002	3.038-002	3.038-002	3.038-002
CD111	3.157-002	3.146-002	3.146-002	3.146-002	3.146-002	3.146-002	3.146-002	3.146-002	3.146-002	3.146-002	3.146-002	3.146-002
CD112	6.001-002	6.015-002	6.015-002	6.015-002	6.015-002	6.015-002	6.015-002	6.015-002	6.015-002	6.015-002	6.015-002	6.015-002
CD113	3.063-002	6.440-006	6.440-006	6.440-006	6.440-006	6.440-006	6.440-006	6.440-006	6.440-006	6.440-006	6.440-006	6.440-006
CD114	7.270-002	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001
CD115	.000	3.385-006	2.071-022	1.620-030	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	4.925-006	7.626-007	3.001-007	6.969-008	1.686-008	9.863-010	5.771-011	1.975-013	2.315-018	1.587-024	1.088-030
CD116	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002
IN115	.000	7.847-006	1.201-005	1.247-005	1.270-005	1.275-005	1.277-005	1.277-005	1.277-005	1.277-005	1.277-005	1.277-005
SN116	.000	2.276-006	2.277-006	2.277-006	2.277-006	2.277-006	2.277-006	2.277-006	2.277-006	2.277-006	2.277-006	2.277-006
SN117	.000	5.826-006	5.835-006	5.835-006	5.835-006	5.835-006	5.835-006	5.835-006	5.835-006	5.835-006	5.835-006	5.835-006
SUMTOT	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
TOTAL	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	2.000+000	2.003+000	2.003+000	2.003+000	2.003+000	2.003+000	2.003+000	2.003+000	2.003+000	2.003+000	2.003+000	2.003+000
HE	.000	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001	1.110-001
LI	.000	1.882-001	1.882-001	1.882-001	1.882-001	1.882-001	1.882-001	1.882-001	1.882-001	1.882-001	1.882-001	1.882-001
BE	1.000+001	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000
B	2.250+000	1.986+000	1.986+000	1.986+000	1.986+000	1.986+000	1.986+000	1.986+000	1.986+000	1.986+000	1.986+000	1.986+000
C	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002
N	7.500+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001
NE	.000	5.047-005	5.047-005	5.047-005	5.047-005	5.047-005	5.047-005	5.047-005	5.047-005	5.047-005	5.047-005	5.047-005
NA	.000	8.257-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006	6.154-006
MG	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001
AL	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002
SI	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002
P	.000	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004	1.238-004
TI	.000	1.889-005	1.889-005	1.889-005	1.889-005	1.889-005	1.889-005	1.889-005	1.889-005	1.889-005	1.889-005	1.889-005
V	.000	8.198-003	1.045-002	1.054-002	1.056-002	1.056-002	1.056-002	1.056-002	1.056-002	1.056-002	1.056-002	1.056-002
CR	6.500+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001
MN	2.500+001	2.491+001	2.491+001	2.491+001	2.491+001	2.491+001	2.491+001	2.491+001	2.492+001	2.492+001	2.493+001	2.493+001
FE	3.500+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002
CO	.000	2.327-003	1.535-003	1.369-003	1.241-003	1.189-003	1.157-003	1.149-003	1.144-003	1.136-003	1.130-003	1.126-003
NI	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002
CU	7.500+001	7.492+001	7.492+001	7.492+001	7.492+001	7.492+001	7.492+001	7.492+001	7.492+001	7.492+001	7.492+001	7.492+001
ZN	.000	3.854-002	3.865-002	3.865-002	3.865-002	3.865-002	3.865-002	3.865-002	3.865-002	3.865-002	3.865-002	3.865-002
SR	.000	8.621-006	8.434-006	8.410-006	8.395-006	8.392-006	8.390-006	8.390-006	8.390-006	8.390-006	8.390-006	8.390-006
Y	.000	1.818-006	7.481-007	6.910-007	6.520-007	6.386-007	6.322-007	6.314-007	6.313-007	6.313-007	6.313-007	6.313-007
ZR	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001
NB	.000	8.251-005	4.848-005	2.827-005	1.108-005	4.256-006	6.015-007	8.476-008	3.678-009	3.268-009	4.819-009	6.370-009
MO	.000	1.040-003	1.215-003	1.260-003	1.294-003	1.307-003	1.313-003	1.314-003	1.315-003	1.315-003	1.315-003	1.315-003
AG	.000	9.000-007	1.098-006	1.181-006	1.299-006	1.399-006	1.563-006	1.688-006	1.855-006	2.008-006	2.066-006	2.080-006
CD	2.500-001	2.500-001	2.500-001	2.500-001	2.500-001	2.500-001	2.500-001	2.500-001	2.500-001	2.500-001	2.500-001	2.500-001
IN	.000	7.852-006	1.201-005	1.247-005	1.270-005	1.275-005	1.277-005	1.277-005	1.277-005	1.277-005	1.277-005	1.277-005
SN	.000	8.103-006	8.112-006	8.112-006	8.112-006	8.112-006	8.112-006	8.112-006	8.112-006	8.112-006	8.112-006	8.112-006
SUMTOT	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
TOTAL	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

CUMULATIVE TABLE TOTALS

AP+FP	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	3.992-001	3.919-001	3.883-001	3.828-001	3.774-001	3.670-001	3.568-001	3.373-001	3.015-001	2.620-001	2.277-001
H 4	.000	6.259-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.252+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	2.519-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007
BE 11	.000	9.834-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	2.636-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	1.877-001	1.877-001	1.877-001	1.877-001	1.877-001	1.877-001	1.877-001	1.876-001	1.876-001	1.875-001	1.875-001
C 15	.000	3.552-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	1.281-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	3.067-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	1.832+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	3.009-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.853-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.424+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	2.005+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	5.075-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	4.920-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	4.575+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	1.696-004	5.053-007	2.780-008	5.264-010	2.395-010	2.360-010	2.358-010	2.356-010	2.350-010	2.344-010	2.338-010
TI 51	.000	1.275-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 52	.000	1.712+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.066-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	1.084-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	2.186+002	1.086+001	2.421+000	2.309-001	2.352-002	2.440-004	2.531-006	2.724-010	3.154-018	.000	.000
CR 55	.000	3.459+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	5.253+000	4.025+000	3.524+000	2.861+000	2.336+000	1.558+000	1.039+000	4.622-001	9.145-002	1.207-002	1.592-003
MN 56	.000	2.061+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	5.024-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	1.649-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	6.237+001	5.714+001	5.469+001	5.107+001	4.778+001	4.181+001	3.660+001	2.803+001	1.645+001	8.446+000	4.337+000
FE 59	.000	5.568+000	8.768-001	3.480-001	8.187-002	2.006-002	1.204-003	7.227-005	2.604-007	3.380-012	2.633-018	2.052-024
CO 58	.000	4.075+001	1.258+001	6.990+000	2.786+000	1.139+000	1.905-001	3.184-002	8.902-004	6.958-007	9.092-011	1.188-014
CO 60	.000	6.771-002	6.484-002	6.346-002	6.135-002	5.936-002	5.558-002	5.205-002	4.563-002	3.508-002	2.525-002	1.817-002
CO 60M	.000	1.682-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	3.107-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	5.470-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	8.594-003	8.594-003	8.594-003	8.594-003	8.594-003	8.594-003	8.594-003	8.594-003	8.594-003	8.594-003	8.594-003
NI 63	.000	1.094+000	1.092+000	1.090+000	1.088+000	1.086+000	1.082+000	1.078+000	1.070+000	1.054+000	1.034+000	1.015+000
NI 65	.000	7.131+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	3.792-005	5.054-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.164+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	2.509+002	5.062-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	2.500-004	2.416-018	2.376-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	2.148-002	1.527-002	1.288-002	9.860-003	7.606-003	4.526-003	2.693-003	9.537-004	1.196-004	8.923-006	6.658-007
SR 89	.000	6.688-003	1.288-003	5.653-004	1.557-004	4.446-005	3.625-006	2.955-007	1.964-009	8.680-014	3.127-019	1.127-024
SR 90	.000	6.353-009	6.304-009	6.279-009	6.241-009	6.204-009	6.131-009	6.058-009	5.916-009	5.641-009	5.315-009	5.008-009
SR 91	.000	1.565-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.404-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	2.981-001	6.306-009	6.281-009	6.243-009	6.206-009	6.132-009	6.060-009	5.917-009	5.642-009	5.316-009	5.009-009
Y 91	.000	1.638-002	3.953-003	1.942-003	6.381-004	2.163-004	2.485-005	2.856-006	3.771-008	6.575-012	1.317-016	2.639-021
Y 92	.000	1.761-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
Y 93	.000	5.404-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.120-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	7.192-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	3.442-006	3.442-006	3.442-006	3.442-006	3.442-006	3.442-006	3.442-006	3.442-006	3.442-006	3.442-006	3.442-006
ZR 95	.000	4.021+000	1.096+000	5.721-001	2.068-001	7.689-002	1.063-002	1.470-003	2.811-005	1.028-008	5.196-013	2.627-017
ZR 97	.000	1.038+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	4.399-008	9.756-008	1.240-007	1.650-007	2.043-007	2.814-007	3.566-007	5.014-007	7.697-007	1.069-006	1.332-006
NB 95	.000	3.210+000	1.896+000	1.105+000	4.331-001	1.664-001	2.348-002	3.260-003	6.459-005	2.282-008	1.154-012	5.833-017
NB 95M	.000	2.852-002	8.129-003	4.244-003	1.534-003	5.704-004	7.887-005	1.091-005	2.085-007	7.625-011	3.855-015	1.949-019
NB 96	.000	2.187-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.038+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	9.822+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 99	.000	5.633-006	4.120-019	1.114-025	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	1.250-004	9.375-010	9.366-010	9.353-010	9.340-010	9.315-010	9.290-010	9.239-010	9.139-010	9.015-010	8.893-010
AG108M	.000	1.055-008	1.053-008	1.052-008	1.051-008	1.049-008	1.047-008	1.044-008	1.038-008	1.027-008	1.013-008	9.992-009
AG109M	.000	3.058-003	2.556-003	2.337-003	2.031-003	1.772-003	1.349-003	1.027-003	5.950-004	1.998-004	5.108-005	1.306-005
AG110	.000	2.095-004	1.815-008	1.367-008	1.054-008	8.179-009	4.928-009	2.970-009	1.078-009	1.421-010	1.129-011	8.968-013
AG110M	.000	1.694-006	1.214-006	1.028-006	7.922-007	6.150-007	3.705-007	2.233-007	8.106-008	1.069-008	8.488-010	6.742-011
CD107	.000	7.828-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	3.058-003	2.556-003	2.337-003	2.031-003	1.772-003	1.349-003	1.027-003	5.950-004	1.998-004	5.108-005	1.306-005
CD111M	.000	1.388-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	1.726+000	1.056-016	8.258-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.254-001	1.843-002	7.645-003	1.775-003	4.294-004	2.512-005	1.470-006	5.032-009	5.897-014	4.043-020	2.772-026
CD117	.000	5.146-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.962-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116	.000	2.462-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	1.941-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	2.760-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	4.872-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	8.068-006	2.125-008	1.091-009	1.044-011	1.137-013	1.350-017	1.602-021	.000	.000	.000	.000
SN125	.000	9.029-005	1.616-008	2.162-010	2.522-013	3.541-016	7.019-022	.000	.000	.000	.000	.000
SB125	.000	1.925-006	2.573-006	2.470-006	2.316-006	2.175-006	1.919-006	1.694-006	1.319-006	7.994-007	4.276-007	2.288-007
TE125M	.000	1.312-007	4.966-007	5.385-007	5.441-007	5.237-007	4.675-007	4.131-007	3.217-007	1.951-007	1.043-007	5.581-008
SUMTOT	.000	6.102+003	9.028+001	7.142+001	5,941+001	5.327+001	4.531+001	3.936+001	3.015+001	1.813+001	9.976+000	5.796+000
TOTAL	.000	6.102+003	9.028+001	7.142+001	5.941+001	5.327+001	4.531+001	3.936+001	3.015+001	1.813+001	9.976+000	5.796+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	1.025+000	3.919-001	3.883-001	3.828-001	3.774-001	3.670-001	3.568-001	3.373-001	3.015-001	2.620-001	2.277-001
HE	.000	1.252+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	2.519-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.791-006	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007	8.081-007
B	.000	2.636-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	1.877-001	1.877-001	1.877-001	1.877-001	1.877-001	1.877-001	1.877-001	1.876-001	1.876-001	1.875-001	1.875-001
N	.000	1.281-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	3.067-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	1.850+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.424+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	2.005+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	4.575+000	2.362-010	2.362-010	2.361-010	2.360-010	2.359-010	2.358-010	2.355-010	2.350-010	2.344-010	2.338-010
P	.000	1.696-004	5.053-007	2.780-008	5.264-010	2.395-010	2.360-010	2.358-010	2.356-010	2.350-010	2.344-010	2.338-010
SC	.000	1.229-006	1.361-017	5.017-022	.000	.000	.000	.000	.000	.000	.000	.000
TI	.000	1.275-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	.000	1.723+000	9.595-018	9.595-018	9.595-018	9.595-018	9.595-018	9.595-018	9.595-018	9.595-018	9.595-018	9.595-018
CR	.000	2.221+002	1.086+001	2.421+000	2.309-001	2.352-002	2.440-004	2.531-006	2.724-010	3.154-018	.000	.000
MN	.000	2.066+003	4.025+000	3.524+000	2.861+000	2.336+000	1.558+000	1.039+000	4.622-001	9.145-002	1.207-002	1.592-003
FE	.000	6.794+001	5.802+001	5.504+001	5.115+001	4.780+001	4.182+001	3.660+001	2.803+001	1.645+001	8.446+000	4.337+000
CO	.000	4.107+001	1.264+001	7.053+000	2.847+000	1.198+000	2.460-001	8.389-002	4.652-002	3.508-002	2.525-002	1.817-002
NI	.000	8.234+000	1.100+000	1.099+000	1.097+000	1.095+000	1.091+000	1.087+000	1.079+000	1.063+000	1.043+000	1.024+000
CU	.000	1.415+003	2.421-018	2.376-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	2.148-002	1.527-002	1.288-002	9.860-003	7.606-003	4.526-003	2.693-003	9.537-004	1.196-004	8.923-006	6.658-007
SR	.000	8.258-003	1.288-003	5.653-004	1.557-004	4.446-005	3.631-006	3.016-007	7.880-009	5.641-009	5.315-009	5.008-009
Y	.000	3.333-001	3.953-003	1.942-003	6.381-004	2.163-004	2.486-005	2.862-006	4.363-008	5.649-009	5.316-009	5.009-009
ZR	.000	1.440+001	1.096+000	5.721-001	2.068-001	7.689-002	1.064-002	1.474-003	3.155-005	3.453-006	3.442-006	3.442-006
NB	.000	2.344+001	1.904+000	1.110+000	4.347-001	1.670-001	2.356-002	3.271-003	6.530-005	7.926-007	1.069-006	1.332-006
MO	.000	5.633-006	4.120-019	1.114-025	.000	.000	.000	.000	.000	.000	.000	.000
AG	.000	3.394-003	2.557-003	2.338-003	2.032-003	1.773-003	1.349-003	1.027-003	5.951-004	1.998-004	5.109-005	1.307-005
CD	.000	1.929+000	2.198-002	9.982-003	3.806-003	2.201-003	1.374-003	1.028-003	5.950-004	1.998-004	5.108-005	1.306-005
IN	.000	1.203-001	7.474-017	7.761-017	7.905-017	7.938-017	7.948-017	7.948-017	7.948-017	7.948-017	7.948-017	7.948-017
SN	.000	9.836-005	3.741-008	1.307-009	1.069-011	1.141-013	1.350-017	1.602-021	.000	.000	.000	.000
SB	.000	1.967-006	2.573-006	2.470-006	2.316-006	2.175-006	1.919-006	1.694-006	1.319-006	7.994-007	4.276-007	2.288-007
TE	.000	1.312-007	4.966-007	5.385-007	5.441-007	5.237-007	4.675-007	4.131-007	3.217-007	1.951-007	1.043-007	5.581-008
SUMTOT	.000	6.102+003	9.028+001	7.142+001	5.941+001	5.327+001	4.531+001	3.936+001	3.015+001	1.813+001	9.976+000	5.796+000
TOTAL	.000	6.102+003	9.028+001	7.142+001	5.941+001	5.327+001	4.531+001	3.936+001	3.015+001	1.813+001	9.976+000	5.796+000

CUMULATIVE TABLE TOTALS

AP+FP	.000	6.102+003	9.028+001	7.142+001	5.941+001	5.327+001	4.531+001	3.936+001	3.015+001	1.813+001	9.976+000	5.796+000
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	.000	6.102+003	9.028+001	7.142+001	5.941+001	5.327+001	4.531+001	3.936+001	3.015+001	1.813+001	9.976+000	5.796+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	1.344-005	1.320-005	1.307-005	1.289-005	1.271-005	1.236-005	1.201-005	1.136-005	1.015-005	8.823-006	7.668-006
HE 6	.000	1.164+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	9.391-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010
BE 11	.000	6.709-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	2.089-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	5.504-005	5.504-005	5.504-005	5.504-005	5.503-005	5.503-005	5.503-005	5.502-005	5.501-005	5.499-005	5.497-005
C 15	.000	6.045-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	5.552-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	3.760-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	5.077-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	8.418-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	2.126-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	7.955-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	3.596+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	7.072-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	1.669-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	1.618-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	1.719-006	5.122-009	2.818-010	5.336-012	2.428-012	2.392-012	2.390-012	2.388-012	2.383-012	2.376-012	2.370-012
SC 48	.000	1.083-008	1.751-028	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	9.335-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 52	.000	2.551-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.287-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	4.689-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	4.678-002	2.324-003	5.182-004	4.942-005	5.033-006	5.221-008	5.416-010	5.828-014	6.748-022	8.106-032	.000
CR 55	.000	2.257-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	2.616-002	2.004-002	1.755-002	1.425-002	1.163-002	7.759-003	5.175-003	2.302-003	4.553-004	6.008-005	7.927-006
MN 56	.000	3.079+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	3.487-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	3.906-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	8.578-002	7.858-002	7.522-002	7.023-002	6.570-002	5.750-002	5.033-002	3.855-002	2.262-002	1.161-002	5.964-003
FE 59	.000	5.191-002	8.176-003	3.245-003	7.634-004	1.870-004	1.123-005	6.738-007	2.428-009	3.151-014	2.455-020	1.913-028
CO 58	.000	2.439-001	7.532-002	4.185-002	1.668-002	6.820-003	1.140-003	1.906-004	5.330-006	4.166-009	5.443-013	7.113-017
CO 60	.000	1.044-003	9.997-004	9.784-004	9.458-004	9.152-004	8.570-004	8.024-004	7.035-004	5.408-004	3.892-004	2.802-004
CO 60M	.000	6.285-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	1.005-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	1.038-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	5.472-005	5.471-005	5.471-005	5.471-005	5.471-005	5.471-005	5.471-005	5.471-005	5.471-005	5.471-005	5.471-005
NI 63	.000	4.346-004	4.338-004	4.330-004	4.322-004	4.314-004	4.298-004	4.281-004	4.249-004	4.186-004	4.108-004	4.031-004
NI 65	.000	4.992-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	1.506-008	2.007-024	2.317-032	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	2.160+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.718+000	3.466-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	4.014-007	3.880-021	3.815-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	7.526-005	5.351-005	4.512-005	3.455-005	2.665-005	1.586-005	9.437-006	3.342-006	4.190-007	3.126-008	2.333-009
SR 89	.000	2.312-005	4.453-006	1.954-006	5.382-007	1.537-007	1.253-008	1.022-009	6.791-012	3.001-016	1.081-021	3.895-027
SR 90	.000	7.374-012	7.317-012	7.288-012	7.244-012	7.201-012	7.115-012	7.031-012	6.866-012	6.547-012	6.168-012	5.812-012
SR 91	.000	1.254-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	8.187-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.652-003	3.495-011	3.481-011	3.460-011	3.439-011	3.399-011	3.358-011	3.279-011	3.127-011	2.946-011	2.776-011
Y 91	.000	5.882-005	1.420-005	6.974-006	2.292-006	7.768-007	8.927-008	1.026-008	1.354-010	2.362-014	4.731-019	9.479-024
Y 92	.000	1.773-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
Y 93	.000	4.042-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.866-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.649-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	3.999-010	3.999-010	3.999-010	3.999-010	3.999-010	3.999-010	3.999-010	3.999-010	3.999-010	3.999-010	3.999-010
ZR 95	.000	2.037-002	5.551-003	2.898-003	1.047-003	3.895-004	5.385-005	7.447-006	1.424-007	5.206-011	2.632-015	1.331-019
ZR 97	.000	5.409-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	7.793-012	1.728-011	2.197-011	2.923-011	3.620-011	4.986-011	6.319-011	8.884-011	1.364-010	1.894-010	2.360-010
NB 95	.000	1.540-002	9.094-003	5.302-003	2.078-003	7.981-004	1.126-004	1.564-005	3.098-007	1.095-010	5.534-015	2.798-019
NB 95M	.000	3.963-005	1.130-005	5.897-006	2.131-006	7.925-007	1.096-007	1.515-008	2.898-010	1.059-013	5.356-018	2.708-022
NB 96	.000	3.636-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	6.910-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.324-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 99	.000	1.809-008	1.323-021	3.578-028	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	4.656-007	3.493-012	3.490-012	3.485-012	3.480-012	3.471-012	3.461-012	3.443-012	3.405-012	3.359-012	3.314-012
AG108M	.000	1.026-010	1.025-010	1.024-010	1.022-010	1.021-010	1.018-010	1.015-010	1.010-010	9.988-011	9.853-011	9.719-011
AG109M	.000	1.576-006	1.318-006	1.205-006	1.047-006	9.134-007	6.953-007	5.293-007	3.067-007	1.030-007	2.633-008	6.730-009
AG110	.000	1.505-006	1.160-010	9.823-011	7.570-011	5.876-011	3.541-011	2.133-011	7.746-012	1.021-012	8.110-014	6.442-015
AG110M	.000	2.828-008	2.028-008	1.717-008	1.323-008	1.027-008	6.187-009	3.728-009	1.354-009	1.784-010	1.417-011	1.126-012
CD107	.000	3.555-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	1.947-006	1.627-006	1.488-006	1.293-006	1.128-006	8.588-007	6.537-007	3.788-007	1.272-007	3.252-008	8.312-009
CD111M	.000	3.257-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	5.478-003	3.351-019	2.621-027	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	4.678-004	7.245-005	2.851-005	6.621-006	1.602-006	9.371-008	5.483-009	1.877-011	2.199-016	1.508-022	1.034-028
CD117	.000	3.706-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.595-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116	.000	2.017-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	3.195-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	1.243-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	1.840-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.496-008	3.942-011	2.023-012	1.936-014	2.109-016	2.503-020	2.972-024	4.187-032	.000	.000	.000
SN125	.000	5.984-007	1.071-010	1.433-012	1.671-015	2.346-018	4.651-024	9.220-030	.000	.000	.000	.000
SB125	.000	6.018-009	8.044-009	7.720-009	7.239-009	6.800-009	6.000-009	5.295-009	4.122-009	2.499-009	1.337-009	7.151-010
TE125M	.000	1.103-010	4.174-010	4.526-010	4.574-010	4.402-010	3.930-010	3.473-010	2.704-010	1.640-010	8.770-011	4.691-011
SUMTOT	.000	7.393+001	2.008-001	1.482-001	1.066-001	8.704-002	6.801-002	5.708-002	4.211-002	2.415-002	1.259-002	6.773-003
TOTAL	.000	7.393+001	2.008-001	1.482-001	1.066-001	8.704-002	6.801-002	5.708-002	4.211-002	2.415-002	1.259-002	6.773-003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	1.344-005	1.320-005	1.307-005	1.289-005	1.271-005	1.236-005	1.201-005	1.136-005	1.015-005	8.823-006	7.668-006
HE	.000	1.164+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	9.391-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	6.806-008	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010	9.700-010
B	.000	2.089-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	5.564-005	5.504-005	5.504-005	5.504-005	5.503-005	5.503-005	5.503-005	5.502-005	5.501-005	5.499-005	5.497-005
N	.000	5.552-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	3.760-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	5.098-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	7.955-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	3.597+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	1.618-002	2.940-013	2.940-013	2.939-013	2.938-013	2.937-013	2.935-013	2.932-013	2.928-013	2.918-013	2.910-013
P	.000	1.719-006	5.122-009	2.818-010	5.336-012	2.428-012	2.392-012	2.390-012	2.388-012	2.383-012	2.376-012	2.370-012
SC	.000	1.387-008	2.185-020	8.054-025	2.928-033	.000	.000	.000	.000	.000	.000	.000
TI	.000	9.335-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	.000	2.565-002	1.058-019	1.058-019	1.058-019	1.058-019	1.058-019	1.058-019	1.058-019	1.058-019	1.058-019	1.058-019
CR	.000	6.935-002	2.324-003	5.182-004	4.942-005	5.033-006	5.221-008	5.416-010	5.828-014	6.748-022	8.106-032	.000
MN	.000	3.082+001	2.004-002	1.755-002	1.425-002	1.163-002	7.759-003	5.175-003	2.302-003	4.553-004	6.008-005	7.927-006
FE	.000	1.377-001	8.676-002	7.846-002	7.099-002	6.589-002	5.751-002	5.033-002	3.855-002	2.262-002	1.161-002	5.964-003
CO	.000	2.462-001	7.631-002	4.283-002	1.762-002	7.735-003	1.997-003	9.931-004	7.089-004	5.408-004	3.892-004	2.802-004
NI	.000	5.041-002	4.883-004	4.877-004	4.869-004	4.861-004	4.845-004	4.829-004	4.796-004	4.733-004	4.655-004	4.578-004
CU	.000	3.877+000	3.915-021	3.815-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	7.526-005	5.351-005	4.512-005	3.455-005	2.665-005	1.586-005	9.437-006	3.342-006	4.190-007	3.126-008	2.333-009
SR	.000	3.574-005	4.453-008	1.954-006	5.382-007	1.537-007	1.254-008	1.029-009	1.366-011	6.547-012	6.168-012	5.812-012
Y	.000	1.907-003	1.420-005	6.974-006	2.292-006	7.769-007	8.930-008	1.029-008	1.682-010	3.129-011	2.946-011	2.776-011
ZR	.000	7.446-002	5.551-003	2.898-003	1.047-003	3.895-004	5.385-005	7.447-006	1.428-007	4.520-010	3.999-010	3.999-010
NB	.000	1.278-001	9.105-003	5.308-003	2.080-003	7.989-004	1.127-004	1.565-005	3.102-007	2.459-010	1.894-010	2.360-010
MO	.000	1.809-008	1.323-021	3.578-028	.000	.000	.000	.000	.000	.000	.000	.000
AG	.000	3.575-006	1.338-006	1.222-006	1.060-006	9.238-007	7.016-007	5.332-007	3.082-007	1.033-007	2.644-008	6.832-009
CD	.000	6.370-003	7.408-005	3.000-005	7.914-006	2.730-006	9.525-007	6.592-007	3.788-007	1.272-007	3.252-008	8.312-009
IN	.000	8.295-004	1.072-019	1.113-019	1.134-019	1.139-019	1.140-019	1.140-019	1.140-019	1.140-019	1.140-019	1.140-019
SN	.000	6.134-007	1.465-010	3.456-012	2.103-014	2.132-016	2.504-020	2.972-024	4.187-032	.000	.000	.000
SB	.000	6.773-009	8.045-009	7.720-009	7.239-009	6.800-009	6.000-009	5.295-009	4.122-009	2.499-009	1.337-009	7.151-010
TE	.000	1.103-010	4.174-010	4.526-010	4.574-010	4.402-010	3.930-010	3.473-010	2.704-010	1.840-010	8.770-011	4.691-011
SUMTOT	.000	7.393+001	2.008-001	1.482-001	1.066-001	8.704-002	6.801-002	5.708-002	4.211-002	2.415-002	1.259-002	6.773-003
TOTAL	.000	7.393+001	2.008-001	1.482-001	1.066-001	8.704-002	6.801-002	5.708-002	4.211-002	2.415-002	1.259-002	6.773-003

CUMULATIVE TABLE TOTALS

AP+FP	.000	7.393+001	2.008-001	1.482-001	1.066-001	8.704-002	6.801-002	5.708-002	4.211-002	2.415-002	1.259-002	6.773-003
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	.000	7.393+001	2.008-001	1.482-001	1.066-001	8.704-002	6.801-002	5.708-002	4.211-002	2.415-002	1.259-002	6.773-003

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
AT217	.000	.000	1.784-018	1.784-018	1.784-018	1.784-018	.000	.000	.000	.000	.000	.000
FR221	.000	.000	1.383-018	1.383-018	1.383-018	1.383-018	.000	.000	.000	.000	.000	.000
AC225	.000	4.193-015	1.024-018	1.024-018	1.024-018	1.024-018	3.255-024	.000	.000	.000	.000	.000
TOTALS												
TABLE	.000	4.193-015	4.191-018	4.190-018	4.190-018	4.190-018	3.255-024	.000	.000	.000	.000	.000
ACTUAL	.000	4.193-015	4.191-018	4.190-018	4.190-018	4.190-018	3.255-024	.000	.000	.000	.000	.000

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TOTALS												
TABLE	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ACTUAL	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
OVERALL TOTALS												
TABLE	.000	4.193-015	4.191-018	4.190-018	4.190-018	4.190-018	3.255-024	.000	.000	.000	.000	.000
ACTUAL	.000	4.193-015	4.191-018	4.190-018	4.190-018	4.190-018	3.255-024	.000	.000	.000	.000	.000

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.622+013	1.479+011	7.382+010	3.387+010	1.957+010	9.284+009	5.579+009	2.410+009	4.997+008	9.114+007	3.815+007
2.500-002	.000	2.133+012	6.987+008	4.254+008	2.191+008	1.341+008	7.365+007	5.215+007	3.095+007	1.255+007	5.467+006	3.521+006
3.750-002	.000	1.434+012	3.752+008	2.053+008	8.106+007	3.371+007	7.015+006	2.607+006	1.667+006	1.475+006	1.320+006	1.208+006
5.750-002	.000	2.151+012	5.310+008	2.907+008	1.146+008	4.717+007	9.059+006	2.752+006	1.433+006	1.216+006	1.046+006	9.246+005
8.500-002	.000	1.379+012	3.231+008	1.799+008	7.406+007	3.297+007	8.845+006	4.126+006	2.120+006	9.006+005	4.105+005	2.546+005
1.250-001	.000	9.515+011	2.037+008	1.120+008	4.420+007	1.803+007	3.117+006	6.395+005	1.421+005	9.956+004	7.354+004	5.491+004
2.250-001	.000	1.454+012	3.495+008	1.905+008	7.392+007	2.958+007	4.812+006	8.263+005	6.790+004	3.496+004	2.470+004	1.759+004
3.750-001	.000	1.434+012	3.370+010	7.549+009	7.386+008	8.281+007	2.582+006	4.485+005	1.483+005	1.042+005	7.298+004	5.157+004
5.750-001	.000	1.503+013	1.243+011	6.905+010	2.752+010	1.126+010	1.885+009	3.171+008	9.737+006	1.373+005	1.689+004	5.331+003
8.500-001	.000	7.971+013	6.890+011	4.302+011	2.234+011	1.331+011	6.445+010	3.903+010	1.682+010	3.322+009	4.384+008	5.788+007
1.250+000	.000	2.716+012	5.059+009	4.913+009	4.704+009	4.519+009	4.188+009	3.895+009	3.392+009	2.597+009	1.868+009	1.344+009
1.750+000	.000	9.708+013	2.303+009	1.280+009	5.101+008	2.086+008	3.487+007	5.832+006	1.634+005	1.764+002	3.923+000	3.217-001
2.250+000	.000	1.029+013	2.544+004	2.488+004	2.405+004	2.328+004	2.179+004	2.041+004	1.789+004	1.375+004	9.899+003	7.125+003
2.750+000	.000	2.118+012	7.867+001	7.699+001	7.443+001	7.202+001	6.744+001	6.315+001	5.536+001	4.256+001	3.063+001	2.205+001
3.500+000	.000	1.241+011	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	5.942+007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	1.597+007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	2.630+006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	2.342+014	1.005+012	5.882+011	2.914+011	1.691+011	7.995+010	4.889+010	2.267+010	6.435+009	2.406+009	1.444+009
MEV/SEC	.000	2.807+014	6.825+011	4.178+011	2.133+011	1.260+011	6.131+010	3.832+010	1.858+010	6.078+009	2.709+009	1.730+009

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	2.433+005	2.219+003	1.107+003	5.081+002	2.935+002	1.393+002	8.369+001	3.616+001	7.495+000	1.367+000	5.422-001
2.500-002	.000	5.332+004	1.747+001	1.063+001	5.478+000	3.353+000	1.841+000	1.304+000	7.737-001	3.137-001	1.367-001	8.803-002
3.750-002	.000	5.377+004	1.407+001	7.698+000	3.040+000	1.264+000	2.631-001	9.775-002	6.250-002	5.530-002	4.948-002	4.528-002
5.750-002	.000	1.237+005	3.053+001	1.672+001	6.588+000	2.713+000	5.209-001	1.582-001	8.242-002	6.989-002	6.016-002	5.317-002
8.500-002	.000	1.172+005	2.746+001	1.529+001	6.295+000	2.802+000	7.518-001	3.507-001	1.802-001	7.655-002	3.490-002	2.164-002
1.250-001	.000	1.189+005	2.546+001	1.400+001	5.525+000	2.254+000	3.896-001	7.994-002	1.776-002	1.244-002	9.192-003	6.864-003
2.250-001	.000	3.272+005	7.864+001	4.285+001	1.663+001	6.656+000	1.083+000	1.859-001	1.528-002	7.866-003	5.557-003	3.959-003
3.750-001	.000	5.378+005	1.264+004	2.831+003	2.770+002	3.105+001	9.683-001	1.682-001	5.561-002	3.907-002	2.737-002	1.934-002
5.750-001	.000	8.644+006	7.145+004	3.970+004	1.583+004	6.473+003	1.084+003	1.824+002	5.599+000	7.893-002	9.709-003	3.065-003
8.500-001	.000	6.775+007	5.857+005	3.656+005	1.899+005	1.132+005	5.478+004	3.317+004	1.430+004	2.824+003	3.726+002	4.920+001
1.250+000	.000	3.395+006	6.324+003	6.141+003	5.880+003	5.649+003	5.235+003	4.869+003	4.240+003	3.246+003	2.335+003	1.680+003
1.750+000	.000	1.699+008	4.031+003	2.240+003	8.926+002	3.650+002	6.103+001	1.021+001	2.859-001	3.087-004	6.865-006	5.631-007
2.250+000	.000	2.316+007	5.723-002	5.598-002	5.412-002	5.237-002	4.904-002	4.592-002	4.026-002	3.094-002	2.227-002	1.603-002
2.750+000	.000	5.826+006	2.163-004	2.117-004	2.047-004	1.981-004	1.855-004	1.736-004	1.522-004	1.170-004	8.423-005	6.063-005
3.500+000	.000	4.343+005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	2.971+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	1.118+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	2.893+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	2.807+008	6.825+005	4.178+005	2.133+005	1.260+005	6.131+004	3.832+004	1.858+004	6.078+003	2.709+003	1.730+003
GAM POW	.000	4.499+001	1.094-001	6.697-002	3.420-002	2.020-002	9.828-003	6.143-003	2.979-003	9.743-004	4.343-004	2.774-004

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	2.655+004	2.542+004	2.488+004	2.405+004	2.328+004	2.179+004	2.041+004	1.789+004	1.375+004	9.899+003	7.125+003

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	8.215+001	7.867+001	7.699+001	7.443+001	7.202+001	6.744+001	6.315+001	5.536+001	4.256+001	3.063+001	2.205+001

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	2.784-008	9.411-012	9.092-012	9.092-012	9.092-012	2.699-017	.000	.000	.000	.000	.000
2.500-002	.000	5.228-013	2.190-013	1.568-013	1.568-013	1.568-013	6.795-019	.000	.000	.000	.000	.000
3.750-002	.000	3.522-011	1.495-013	1.109-013	1.109-013	1.109-013	4.640-019	.000	.000	.000	.000	.000
5.750-002	.000	7.016-010	3.681-013	3.172-013	3.172-013	3.172-013	1.154-018	.000	.000	.000	.000	.000
8.500-002	.000	1.260-008	5.505-012	5.474-012	5.474-012	5.474-012	1.424-017	.000	.000	.000	.000	.000
1.250-001	.000	2.634-009	1.267-012	1.250-012	1.250-012	1.250-012	2.261-018	.000	.000	.000	.000	.000
2.250-001	.000	2.320-009	4.941-012	4.925-012	4.925-012	4.925-012	2.741-018	.000	.000	.000	.000	.000
3.750-001	.000	3.849-011	1.086-011	1.082-011	1.082-011	1.082-011	3.428-017	.000	.000	.000	.000	.000
5.750-001	.000	2.020-010	6.575-013	6.553-013	6.553-013	6.553-013	2.506-019	.000	.000	.000	.000	.000
8.500-001	.000	4.559-016	1.132-013	1.128-013	1.128-013	1.128-013	3.594-019	.000	.000	.000	.000	.000
1.250+000	.000	2.593-016	1.151-013	1.147-013	1.147-013	1.147-013	3.658-019	.000	.000	.000	.000	.000
1.750+000	.000	1.299-016	6.444-013	6.421-013	6.421-013	6.421-013	1.031-025	.000	.000	.000	.000	.000
2.250+000	.000	6.511-017	4.804-020	4.803-020	4.803-020	4.803-020	5.164-026	.000	.000	.000	.000	.000
2.750+000	.000	3.262-017	2.407-020	2.407-020	2.407-020	2.407-020	2.588-026	.000	.000	.000	.000	.000
3.500+000	.000	2.402-017	1.773-020	1.772-020	1.772-020	1.772-020	1.906-026	.000	.000	.000	.000	.000
5.000+000	.000	7.152-018	5.277-021	5.276-021	5.276-021	5.276-021	5.673-027	.000	.000	.000	.000	.000
7.000+000	.000	4.641-019	3.424-022	3.424-022	3.423-022	3.423-022	3.681-028	.000	.000	.000	.000	.000
1.100+001	.000	2.935-020	2.165-023	2.165-023	2.165-023	2.165-023	2.328-029	.000	.000	.000	.000	.000
TOTAL	.000	4.638-008	3.425-011	3.367-011	3.367-011	3.367-011	8.378-017	.000	.000	.000	.000	.000
MEV/SEC	.000	2.512-009	7.729-012	7.689-012	7.689-012	7.689-012	1.638-017	.000	.000	.000	.000	.000

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	4.177-016	1.412-019	1.364-019	1.364-019	1.364-019	4.048-025	.000	.000	.000	.000	.000
2.500-002	.000	1.307-020	5.476-021	3.919-021	3.919-021	3.919-021	1.699-026	.000	.000	.000	.000	.000
3.750-002	.000	1.321-018	5.605-021	4.160-021	4.160-021	4.160-021	1.740-026	.000	.000	.000	.000	.000
5.750-002	.000	4.034-017	2.117-020	1.824-020	1.824-020	1.824-020	6.637-026	.000	.000	.000	.000	.000
8.500-002	.000	1.071-015	4.680-019	4.653-019	4.653-019	4.653-019	1.210-024	.000	.000	.000	.000	.000
1.250-001	.000	3.293-016	1.583-019	1.563-019	1.563-019	1.563-019	2.827-025	.000	.000	.000	.000	.000
2.250-001	.000	5.221-016	1.112-018	1.108-018	1.108-018	1.108-018	6.167-025	.000	.000	.000	.000	.000
3.750-001	.000	1.443-017	4.072-018	4.057-018	4.057-018	4.057-018	1.285-023	.000	.000	.000	.000	.000
5.750-001	.000	1.162-016	3.781-019	3.768-019	3.768-019	3.768-019	1.441-025	.000	.000	.000	.000	.000
8.500-001	.000	3.875-022	9.623-020	9.589-020	9.589-020	9.589-020	3.055-025	.000	.000	.000	.000	.000
1.250+000	.000	3.242-022	1.438-019	1.433-019	1.433-019	1.433-019	4.573-025	.000	.000	.000	.000	.000
1.750+000	.000	2.274-022	1.128-018	1.124-018	1.124-018	1.124-018	1.804-031	.000	.000	.000	.000	.000
2.250+000	.000	1.465-022	1.081-025	1.081-025	1.081-025	1.081-025	1.162-031	.000	.000	.000	.000	.000
2.750+000	.000	8.971-023	6.620-026	6.618-026	6.618-026	6.618-026	7.116-032	.000	.000	.000	.000	.000
3.500+000	.000	8.408-023	6.204-026	6.203-026	6.203-026	6.203-026	6.669-032	.000	.000	.000	.000	.000
5.000+000	.000	3.576-023	2.639-026	2.638-026	2.638-026	2.638-026	2.837-032	.000	.000	.000	.000	.000
7.000+000	.000	3.249-024	2.397-027	2.396-027	2.396-027	2.396-027	2.577-033	.000	.000	.000	.000	.000
1.100+001	.000	3.228-025	2.382-028	2.381-028	2.381-028	2.381-028	2.561-034	.000	.000	.000	.000	.000
TOTAL	.000	2.512-015	7.729-018	7.689-018	7.689-018	7.689-018	1.638-023	.000	.000	.000	.000	.000
GAM POW	.000	4.027-022	1.239-024	1.233-024	1.233-024	1.233-024	2.625-030	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
AC225	.000	2.784-008	6.798-012	6.798-012	6.798-012	6.798-012	2.162-017	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
AC225	.000	7.016-010	1.713-013	1.713-013	1.713-013	1.713-013	5.447-019	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
AC225	.000	1.260-008	3.076-012	3.076-012	3.076-012	3.076-012	9.781-018	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
AC225	.000	1.299-016	3.172-020	3.172-020	3.172-020	3.172-020	1.009-025	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
AC225	.000	6.511-017	1.590-020	1.590-020	1.590-020	1.590-020	5.055-026	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
AC225	.000	3.262-017	7.964-021	7.964-021	7.964-021	7.964-021	2.533-026	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
AC225	.000	2.402-017	5.865-021	5.865-021	5.865-021	5.865-021	1.865-026	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	8.544+007	9.260+004	9.772+003	6.163+003	5.753+003	5.043+003	4.420+003	3.395+003	2.003+003	1.036+003	5.356+002
2.500-002	.000	7.108+007	1.103+005	8.218+003	3.980+003	3.744+003	3.312+003	2.919+003	2.266+003	1.365+003	7.246+002	3.847+002
3.750-002	.000	1.370+008	8.977+004	3.719+003	1.271+003	1.191+003	1.052+003	9.257+002	7.170+002	4.302+002	2.272+002	1.200+002
5.750-002	.000	4.306+006	6.726+003	7.379+002	4.705+002	4.391+002	3.848+002	3.372+002	2.589+002	1.527+002	7.887+001	4.075+001
8.500-002	.000	7.970+007	4.543+004	1.245+003	1.359+002	1.240+002	1.086+002	9.518+001	7.309+001	4.310+001	2.227+001	1.151+001
1.250-001	.000	6.182+006	8.616+003	4.441+002	1.192+002	1.099+002	9.646+001	8.462+001	6.511+001	3.856+001	2.003+001	1.041+001
2.250-001	.000	2.527+007	3.565+004	1.639+003	2.874+002	2.624+002	2.315+002	2.043+002	1.590+002	9.638+001	5.154+001	2.756+001
3.750-001	.000	1.239+008	1.841+005	8.739+003	1.706+003	1.563+003	1.379+003	1.217+003	9.476+002	5.745+002	3.073+002	1.644+002
5.750-001	.000	2.630+008	3.760+005	1.645+004	2.224+003	2.010+003	1.773+003	1.564+003	1.218+003	7.384+002	3.950+002	2.113+002
8.500-001	.000	1.767+008	2.794+005	1.081+004	6.652+001	4.717-001	2.372-005	1.193-009	1.350-013	1.808-013	2.126-013	2.291-013
1.250+000	.000	9.155+004	3.439+001	9.654-001	4.904-003	3.294-005	1.594-009	1.359-013	7.679-014	1.029-013	1.210-013	1.303-013
1.750+000	.000	3.711+008	5.870+005	2.272+004	1.397+002	9.910-001	4.983-005	2.506-009	3.848-014	5.154-014	6.061-014	6.529-014
2.250+000	.000	3.911+006	6.168+003	2.387+002	1.468+000	1.041-002	5.235-007	2.634-011	1.928-014	2.582-014	3.037-014	3.271-014
2.750+000	.000	1.413+007	2.235+004	8.650+002	5.321+000	3.773-002	1.897-006	9.542-011	9.659-015	1.294-014	1.522-014	1.639-014
3.500+000	.000	1.162+005	1.838+002	7.113+000	4.375-002	3.102-004	1.560-008	7.899-013	7.113-015	9.528-015	1.120-014	1.207-014
5.000+000	.000	.000	3.215-016	4.722-016	6.954-016	8.982-016	1.266-015	1.588-015	2.118-015	2.837-015	3.336-015	3.594-015
7.000+000	.000	.000	2.086-017	3.064-017	4.512-017	5.828-017	8.214-017	1.030-016	1.374-016	1.841-016	2.165-016	2.332-016
1.100+001	.000	.000	1.319-018	1.937-018	2.853-018	3.686-018	5.194-018	6.516-018	8.689-018	1.164-017	1.369-017	1.475-017
TOTAL	.000	1.342+009	1.844+006	8.561+004	1.657+004	1.520+004	1.338+004	1.177+004	9.099+003	5.442+003	2.862+003	1.506+003
MEV/SEC	.000	1.067+009	1.647+006	6.569+004	2.596+003	2.077+003	1.830+003	1.614+003	1.255+003	7.592+002	4.050+002	2.161+002

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 9% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	9.816-001	1.389-003	1.466-004	9.244-005	8.630-005	7.564-005	6.630-005	5.092-005	3.004-005	1.554-005	8.034-006
2.500-002	.000	1.777+000	2.757-003	2.055-004	9.950-005	9.360-005	8.279-005	7.298-005	5.664-005	3.413-005	1.811-005	9.618-006
3.750-002	.000	5.136+000	3.366-003	1.395-004	4.768-005	4.467-005	3.943-005	3.471-005	2.689-005	1.613-005	8.520-006	4.501-006
5.750-002	.000	2.476-001	3.867-004	4.243-005	2.705-005	2.525-005	2.213-005	1.939-005	1.489-005	8.778-006	4.535-006	2.343-006
8.500-002	.000	6.775+000	3.861-003	1.058-004	1.155-005	1.054-005	9.233-006	8.091-006	6.213-006	3.663-006	1.893-006	9.781-007
1.250-001	.000	7.728-001	1.077-003	5.551-005	1.490-005	1.374-005	1.206-005	1.058-005	8.139-006	4.820-006	2.504-006	1.301-006
2.250-001	.000	5.686+000	8.021-003	3.688-004	6.468-005	5.905-005	5.209-005	4.596-005	3.578-005	2.169-005	1.160-005	6.201-006
3.750-001	.000	4.645+001	6.904-002	3.277-003	6.399-004	5.863-004	5.172-004	4.564-004	3.553-004	2.154-004	1.152-004	6.164-005
5.750-001	.000	1.512+002	2.162-001	9.458-003	1.279-003	1.156-003	1.019-003	8.995-004	7.003-004	4.246-004	2.271-004	1.215-004
8.500-001	.000	1.502+002	2.375-001	9.192-003	5.654-005	4.009-007	2.016-011	1.014-015	1.147-019	1.537-019	1.807-019	1.947-019
1.250+000	.000	1.144-001	4.299-005	1.207-006	6.130-009	4.118-011	1.992-015	1.699-019	9.599-020	1.286-019	1.512-019	1.629-019
1.750+000	.000	6.495+002	1.027+000	3.976-002	2.446-004	1.734-006	8.721-011	4.385-015	6.733-020	9.019-020	1.061-019	1.143-019
2.250+000	.000	8.799+000	1.388-002	5.370-004	3.303-006	2.342-008	1.178-012	5.926-017	4.338-020	5.810-020	6.833-020	7.361-020
2.750+000	.000	3.886+001	6.146-002	2.379-003	1.463-005	1.038-007	5.218-012	2.624-016	2.656-020	3.558-020	4.184-020	4.508-020
3.500+000	.000	4.067-001	6.432-004	2.489-005	1.531-007	1.086-009	5.461-014	2.765-018	2.490-020	3.335-020	3.922-020	4.225-020
5.000+000	.000	.000	1.608-021	2.361-021	3.477-021	4.491-021	6.330-021	7.941-021	1.059-020	1.418-020	1.668-020	1.797-020
7.000+000	.000	.000	1.460-022	2.145-022	3.158-022	4.080-022	5.750-022	7.213-022	9.619-022	1.288-021	1.515-021	1.632-021
1.100+001	.000	.000	1.451-023	2.131-023	3.138-023	4.054-023	5.714-023	7.168-023	9.558-023	1.280-022	1.506-022	1.622-022
TOTAL	.000	1.067+003	1.647+000	6.569-002	2.596-003	2.077-003	1.830-003	1.614-003	1.255-003	7.592-004	4.050-004	2.161-004
GAM POW	.000	1.710-004	2.640-007	1.053-008	4.161-010	3.330-010	2.933-010	2.587-010	2.012-010	1.217-010	6.493-011	3.464-011

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SB125	.000	.000	1.849+003	1.775+003	1.664+003	1.563+003	1.379+003	1.217+003	9.476+002	5.745+002	3.073+002	1.644+002

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SB125	.000	.000	2.376+003	2.281+003	2.139+003	2.009+003	1.773+003	1.564+003	1.218+003	7.384+002	3.950+002	2.113+002

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM147	.000	.000	2.049-014	3.010-014	4.432-014	5.725-014	8.069-014	1.012-013	1.350-013	1.808-013	2.126-013	2.291-013

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM147	.000	.000	1.166-014	1.712-014	2.521-014	3.257-014	4.590-014	5.758-014	7.679-014	1.029-013	1.210-013	1.303-013

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM147	.000	.000	5.842-015	8.579-015	1.263-014	1.632-014	2.300-014	2.885-014	3.848-014	5.154-014	6.061-014	6.529-014

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM147	.000	.000	2.927-015	4.298-015	6.330-015	8.177-015	1.152-014	1.446-014	1.928-014	2.582-014	3.037-014	3.271-014

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
LA140	.000	1.413+007	2.235+004	8.650+002	5.321+000	3.773-002	1.897-008	9.541-011	.000	.000	.000	.000
SM147	.000	.000	1.467-015	2.154-015	3.172-015	4.097-015	5.774-015	7.243-015	9.659-015	1.294-014	1.522-014	1.639-014

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
LA140	.000	1.162+005	1.838+002	7.113+000	4.375-002	3.102-004	1.560-008	7.845-013	.000	.000	.000	.000
SM147	.000	.000	1.080-015	1.586-015	2.336-015	3.017-015	4.252-015	5.334-015	7.113-015	9.528-015	1.120-014	1.207-014

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM147	.000	.000	3.215-016	4.722-016	6.954-016	8.982-016	1.266-015	1.588-015	2.118-015	2.837-015	3.336-015	3.594-015

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM147	.000	.000	2.086-017	3.064-017	4.512-017	5.828-017	8.214-017	1.030-016	1.374-016	1.841-016	2.165-016	2.332-016

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM147	.000	.000	1.319-018	1.937-018	2.853-018	3.686-018	5.194-018	6.516-018	8.689-018	1.164-017	1.369-017	1.475-017

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	1.14428	1.14429	1.14432	1.14435	1.14439	1.14441	1.14440	1.14422	1.14382	1.14336
NEUT PRODN	.00	.00	5.78+003	5.78+003	5.78+003	5.78+003	5.78+003	5.78+003	5.78+003	5.77+003	5.77+003	5.77+003
NEUT DESTN	.00	.00	5.05+003	5.05+003	5.05+003	5.05+003	5.05+003	5.05+003	5.05+003	5.04+003	5.04+003	5.04+003
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	3.758+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000	3.761+000
H 2	1.128-003	1.799-003	1.799-003	1.799-003	1.799-003	1.799-003	1.799-003	1.799-003	1.799-003	1.799-003	1.799-003	1.799-003
H 3	.000	4.135-005	4.060-005	4.022-005	3.965-005	3.910-005	3.801-005	3.696-005	3.494-005	3.123-005	2.714-005	2.359-005
HE 3	.000	2.810-007	1.037-006	1.409-006	1.986-006	2.538-006	3.620-006	4.672-006	6.690-006	1.040-005	1.449-005	1.804-005
HE 4	.000	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001
LI 6	.000	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004	5.724-004
LI 7	.000	1.905-001	1.905-001	1.905-001	1.905-001	1.905-001	1.905-001	1.905-001	1.905-001	1.905-001	1.905-001	1.905-001
BE 9	1.000+001	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000
BE 10	.000	3.654-005	3.654-005	3.654-005	3.654-005	3.654-005	3.654-005	3.654-005	3.654-005	3.654-005	3.654-005	3.654-005
B 10	4.232-001	1.510-001	1.510-001	1.510-001	1.510-001	1.510-001	1.510-001	1.510-001	1.510-001	1.510-001	1.510-001	1.510-001
B 11	1.862+000	1.866+000	1.866+000	1.866+000	1.866+000	1.866+000	1.866+000	1.866+000	1.866+000	1.866+000	1.866+000	1.866+000
C 12	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002
C 13	6.840+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000
C 14	.000	4.525-002	4.525-002	4.525-002	4.525-002	4.525-002	4.524-002	4.524-002	4.524-002	4.523-002	4.521-002	4.520-002
N 14	8.031+001	8.026+001	8.026+001	8.026+001	8.026+001	8.026+001	8.026+001	8.026+001	8.026+001	8.026+001	8.026+001	8.026+001
N 15	3.161-001	3.176-001	3.176-001	3.176-001	3.176-001	3.176-001	3.176-001	3.176-001	3.176-001	3.176-001	3.176-001	3.176-001
NE 21	.000	2.131-005	2.131-005	2.131-005	2.131-005	2.131-005	2.131-005	2.131-005	2.131-005	2.131-005	2.131-005	2.131-005
NE 22	.000	3.201-005	3.201-005	3.201-005	3.201-005	3.201-005	3.201-005	3.201-005	3.201-005	3.201-005	3.201-005	3.201-005
NA 23	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG 24	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001
MG 25	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000
MG 26	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000
AL 27	8.053+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002
SI 28	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002	1.213+002
SI 29	6.362+000	6.366+000	6.366+000	6.366+000	6.366+000	6.366+000	6.366+000	6.366+000	6.366+000	6.366+000	6.366+000	6.366+000
SI 30	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000
P 31	.000	1.306-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004
TI 46	2.786-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001
TI 47	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001	2.570-001
TI 48	2.597+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000	2.592+000
TI 49	1.942-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001	1.990-001
TI 50	1.909-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001
V 50	8.621-003	8.573-003	8.573-003	8.573-003	8.573-003	8.573-003	8.573-003	8.573-003	8.573-003	8.573-003	8.573-003	8.573-003
V 51	3.509+000	3.522+000	3.526+000	3.527+000	3.527+000	3.527+000	3.527+000	3.527+000	3.527+000	3.527+000	3.527+000	3.527+000
CR 50	5.655+000	5.634+000	5.634+000	5.634+000	5.634+000	5.634+000	5.634+000	5.634+000	5.634+000	5.634+000	5.634+000	5.634+000
CR 51	.000	4.918-003	2.444-004	5.447-005	5.195-006	5.292-007	5.489-009	5.694-011	6.127-015	7.095-023	8.522-033	.000
CR 52	1.133+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002
CR 53	1.309+001	1.313+001	1.313+001	1.313+001	1.313+001	1.313+001	1.313+001	1.313+001	1.313+001	1.313+001	1.313+001	1.313+001
CR 54	3.314+000	3.372+000	3.372+000	3.372+000	3.372+000	3.372+000	3.372+000	3.372+000	3.372+000	3.372+000	3.372+000	3.372+000
MN 54	.000	8.627-004	6.611-004	5.787-004	4.699-004	3.837-004	2.559-004	1.707-004	7.591-005	1.502-005	1.982-006	2.615-007
MN 55	2.852+001	2.841+001	2.841+001	2.841+001	2.841+001	2.842+001	2.842+001	2.842+001	2.843+001	2.843+001	2.844+001	2.844+001
MN 56	.000	1.086-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	2.497+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001
FE 55	.000	3.173-002	2.907-002	2.782-002	2.598-002	2.430-002	2.127-002	1.862-002	1.426-002	8.367-003	4.297-003	2.206-003
FE 56	4.089+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002
FE 57	9.753+000	1.003+001	1.003+001	1.003+001	1.003+001	1.003+001	1.003+001	1.003+001	1.003+001	1.003+001	1.003+001	1.003+001
FE 58	1.339+000	1.347+000	1.348+000	1.348+000	1.348+000	1.348+000	1.348+000	1.348+000	1.348+000	1.348+000	1.348+000	1.348+000
FE 59	.000	1.439-004	2.267-005	8.996-006	2.117-006	5.186-007	3.113-008	1.868-009	6.731-012	8.736-017	6.807-023	5.303-029
CO 58	.000	1.776-003	5.483-004	3.046-004	1.214-004	4.964-005	8.301-006	1.388-006	3.880-008	3.032-011	3.963-015	5.178-019
CO 59	7.035-001	6.935-001	6.936-001	6.937-001	6.937-001	6.937-001	6.937-001	6.937-001	6.937-001	6.937-001	6.937-001	6.937-001
CO 60	.000	1.103-002	1.057-002	1.034-002	9.998-003	9.674-003	9.059-003	8.482-003	7.437-003	5.716-003	4.114-003	2.961-003
NI 58	9.347+001	9.331+001	9.331+001	9.331+001	9.331+001	9.331+001	9.331+001	9.331+001	9.331+001	9.331+001	9.331+001	9.331+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NI 59	.000	1.573-001	1.573-001	1.573-001	1.573-001	1.573-001	1.573-001	1.573-001	1.573-001	1.573-001	1.573-001	1.573-001
NI 60	3.697+001	3.694+001	3.694+001	3.695+001	3.695+001	3.695+001	3.695+001	3.695+001	3.695+001	3.695+001	3.695+001	3.695+001
NI 61	1.627+000	1.652+000	1.652+000	1.652+000	1.652+000	1.652+000	1.652+000	1.652+000	1.652+000	1.652+000	1.652+000	1.652+000
NI 62	5.254+000	5.231+000	5.231+000	5.231+000	5.231+000	5.231+000	5.231+000	5.231+000	5.231+000	5.231+000	5.231+000	5.231+000
NI 63	.000	2.447-002	2.441-002	2.438-002	2.434-002	2.429-002	2.420-002	2.411-002	2.393-002	2.357-002	2.313-002	2.270-002
NI 64	1.375+000	1.417+000	1.417+000	1.417+000	1.417+000	1.417+000	1.417+000	1.417+000	1.417+000	1.417+000	1.417+000	1.417+000
CU 63	5.381+001	5.374+001	5.374+001	5.374+001	5.374+001	5.374+001	5.374+001	5.374+001	5.374+001	5.374+001	5.374+001	5.374+001
CU 64	.000	3.159-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	2.471+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001
ZN 64	.000	2.521-002	2.533-002	2.533-002	2.533-002	2.533-002	2.533-002	2.533-002	2.533-002	2.533-002	2.533-002	2.533-002
ZN 66	.000	1.513-002	1.513-002	1.513-002	1.513-002	1.513-002	1.513-002	1.513-002	1.513-002	1.513-002	1.513-002	1.513-002
SR 87	.000	9.608-005	9.608-005	9.608-005	9.608-005	9.608-005	9.608-005	9.608-005	9.608-005	9.608-005	9.608-005	9.608-005
SR 88	.000	8.824-003	8.824-003	8.824-003	8.824-003	8.824-003	8.824-003	8.824-003	8.824-003	8.824-003	8.824-003	8.824-003
SR 89	.000	2.446-004	4.711-005	2.068-005	5.695-006	1.626-006	1.326-007	1.081-008	7.186-011	3.175-015	1.144-020	4.121-026
Y 89	.000	4.266-004	6.241-004	6.506-004	6.655-004	6.696-004	6.711-004	6.712-004	6.712-004	6.712-004	6.712-004	6.712-004
Y 90	.000	5.824-004	1.232-011	1.227-011	1.219-011	1.212-011	1.198-011	1.184-011	1.156-011	1.102-011	1.038-011	9.785-012
Y 91	.000	7.096-004	1.713-004	8.414-005	2.765-005	9.373-006	1.077-006	1.238-007	1.634-009	2.849-013	5.709-018	1.144-022
ZR 90	3.508+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004
ZR 91	7.713+003	7.710+003	7.710+003	7.710+003	7.710+003	7.710+003	7.710+003	7.710+003	7.710+003	7.710+003	7.710+003	7.710+003
ZR 92	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004
ZR 93	.000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000
ZR 94	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004
ZR 95	.000	1.989-001	5.421-002	2.830-002	1.023-002	3.804-003	5.260-004	7.273-005	1.391-006	5.085-010	2.571-014	1.300-018
ZR 96	2.034+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003
ZR 97	.000	5.770-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	8.723-002	5.153-002	3.004-002	1.177-002	4.522-003	6.381-004	8.859-005	1.755-006	6.202-010	3.136-014	1.585-018
NB 95M	.000	7.959-005	2.268-005	1.184-005	4.280-006	1.592-006	2.201-007	3.043-008	5.819-010	2.128-013	1.076-017	5.438-022
NB 97	.000	4.103-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 92	4.988-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001
MO 93	.000	2.202-005	2.202-005	2.202-005	2.201-005	2.201-005	2.201-005	2.201-005	2.200-005	2.200-005	2.199-005	2.197-005
MO 94	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001
MO 95	5.533-001	7.234-001	9.038-001	9.513-001	9.876-001	1.001+000	1.008+000	1.009+000	1.010+000	1.010+000	1.010+000	1.010+000
MO 96	5.873-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001	5.933-001
MO 97	3.411-001	1.269+000	1.275+000	1.275+000	1.275+000	1.275+000	1.275+000	1.275+000	1.275+000	1.275+000	1.275+000	1.275+000
MO 98	8.652-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001	8.661-001
MO 99	.000	1.287-005	9.413-019	2.546-025	1.327-035	.000	.000	.000	.000	.000	.000	.000
MO100	3.517-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001
TC 99	.000	6.411-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005
RU101	.000	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004	1.350-004
CD106	3.493-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003
CD108	2.436-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003	2.435-003
CD110	3.485-002	3.465-002	3.465-002	3.465-002	3.465-002	3.465-002	3.465-002	3.465-002	3.465-002	3.465-002	3.465-002	3.465-002
CD111	3.601-002	3.589-002	3.589-002	3.589-002	3.589-002	3.589-002	3.589-002	3.589-002	3.589-002	3.589-002	3.589-002	3.589-002
CD112	6.845-002	6.861-002	6.861-002	6.861-002	6.861-002	6.861-002	6.861-002	6.861-002	6.861-002	6.861-002	6.861-002	6.861-002
CD113	3.494-002	7.361-006	7.361-006	7.361-006	7.361-006	7.361-006	7.361-006	7.361-006	7.361-006	7.361-006	7.361-006	7.361-006
CD114	8.293-002	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001
CD116	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002	2.205-002
IN113	.000	1.633-002	2.235-002	2.407-002	2.578-002	2.673-002	2.760-002	2.788-002	2.801-002	2.803-002	2.803-002	2.803-002
IN114M	.000	5.341-005	9.955-006	4.298-006	1.154-006	3.214-007	2.493-008	1.934-009	1.164-011	4.212-016	1.183-021	3.323-027
IN115	.000	9.625-006	1.437-005	1.490-005	1.516-005	1.522-005	1.524-005	1.524-005	1.524-005	1.524-005	1.524-005	1.524-005
SN112	9.618+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000	9.590+000
SN113	.000	1.169-002	5.677-003	3.956-003	2.247-003	1.296-003	4.317-004	1.437-004	1.593-005	1.958-007	8.013-010	3.279-012

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9XPU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SN114	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000
SN115	3.753+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000	3.710+000
SN116	1.464+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002
SN117	7.787+001	7.794+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001	7.795+001
SN117M	.000	1.248-002	3.286-005	1.687-006	1.614-008	1.758-010	2.087-014	2.477-018	3.491-026	.000	.000	.000
SN118	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002
SN119	8.789+001	8.792+001	8.794+001	8.794+001	8.795+001	8.796+001	8.796+001	8.797+001	8.797+001	8.797+001	8.797+001	8.797+001
SN119M	.000	5.252-002	3.740-002	3.156-002	2.420-002	1.869-002	1.115-002	6.650-003	2.366-003	2.997-004	2.263-005	1.710-006
SN120	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002
SN121	.000	5.564-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	3.305-004	3.290-004	3.282-004	3.271-004	3.259-004	3.237-004	3.214-004	3.170-004	3.083-004	2.978-004	2.877-004
SN122	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001	4.819+001
SN123	.000	3.712-003	1.949-003	1.413-003	8.534-004	5.228-004	1.962-004	7.364-005	1.037-005	2.058-007	1.532-009	1.141-011
SN124	5.963+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001	5.959+001
SN125	.000	1.837-003	3.287-007	4.397-009	5.129-012	7.216-015	1.430-020	2.835-026	.000	.000	.000	.000
SB121	.000	5.585-002	5.640-002	5.640-002	5.641-002	5.641-002	5.641-002	5.641-002	5.642-002	5.642-002	5.644-002	5.645-002
SB122	.000	1.891-005	7.922-019	1.621-025	5.463-036	.000	.000	.000	.000	.000	.000	.000
SB123	.000	2.235-003	3.997-003	4.533-003	5.093-003	5.423-003	5.750-003	5.873-003	5.936-003	5.946-003	5.946-003	5.946-003
SB125	.000	3.480-002	3.376-002	3.240-002	3.038-002	2.854-002	2.518-002	2.222-002	1.730-002	1.049-002	5.611-003	3.001-003
TE122	.000	3.800-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004	3.985-004
TE124	.000	2.861-006	6.446-006	7.046-006	7.444-006	7.577-006	7.640-006	7.647-006	7.648-006	7.648-006	7.648-006	7.648-006
TE125	.000	2.025-003	4.777-003	6.126-003	8.156-003	1.002-002	1.342-002	1.642-002	2.141-002	2.832-002	3.326-002	3.591-002
TE125M	.000	2.743-004	4.154-004	4.255-004	4.159-004	3.962-004	3.519-004	3.108-004	2.420-004	1.467-004	7.848-005	4.198-005
TE126	.000	2.949-005	3.562-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005	3.563-005
LU175	.000	1.246-003	1.963-003	2.104-003	2.209-003	2.250-003	2.273-003	2.277-003	2.278-003	2.278-003	2.278-003	2.278-003
LU176	.000	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006	8.258-006
HF174	2.194-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002	1.964-002
HF175	.000	1.032-003	3.145-004	1.736-004	6.850-005	2.773-005	4.546-006	7.452-007	2.002-008	1.446-011	1.711-015	2.025-019
HF176	7.212-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001	6.846-001
HF177	2.594+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000	1.548+000
HF178	3.801+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000	4.310+000
HF179	1.938+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000	2.419+000
HF180	4.993+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000	5.070+000
HF181	.000	8.637-003	1.214-003	4.553-004	9.801-005	2.202-005	1.112-006	5.616-008	1.432-010	9.315-016	3.059-022	1.005-028
HF182	.000	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005	5.470-005
TA181	.000	1.797-002	2.541-002	2.617-002	2.654-002	2.662-002	2.664-002	2.664-002	2.664-002	2.664-002	2.664-002	2.664-002
TA182	.000	1.973-004	9.574-005	6.669-005	3.786-005	2.183-005	7.263-006	2.416-006	2.673-007	3.273-009	1.523-011	1.968-012
TA183	.000	1.589-005	1.313-012	3.772-016	1.076-021	4.387-027	.000	.000	.000	.000	.000	.000
W180	4.476-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003	4.416-003
W181	.000	3.638-005	1.831-005	1.299-005	7.592-006	4.504-006	1.584-006	5.575-007	6.901-008	1.057-009	5.700-012	3.073-014
W182	9.156-001	8.782-001	8.783-001	8.783-001	8.783-001	8.784-001	8.784-001	8.784-001	8.784-001	8.784-001	8.784-001	8.784-001
W183	5.005-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001	5.260-001
W184	1.079+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000	1.090+000
W185	.000	6.541-004	2.161-004	1.242-004	5.219-005	2.247-005	4.164-006	7.718-007	2.651-008	3.130-011	6.845-015	1.497-018
W186	1.018+000	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001	9.781-001
W187	.000	3.389-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.878-005	8.680-006	4.767-006	1.865-006	7.494-007	1.209-007	1.951-008	5.081-010	3.446-013	3.770-017	4.126-021
RE185	.000	6.834-004	1.121-003	1.213-003	1.285-003	1.315-003	1.333-003	1.337-003	1.338-003	1.338-003	1.338-003	1.338-003
RE187	.000	3.854-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002	3.888-002
RE188	.000	8.591-006	8.940-008	4.910-008	1.921-008	7.718-009	1.246-009	2.010-010	5.234-012	3.549-015	3.884-019	4.250-023
OS186	.000	3.349-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005	3.633-005
OS188	.000	7.049-004	7.337-004	7.376-004	7.405-004	7.417-004	7.423-004	7.424-004	7.424-004	7.424-004	7.424-004	7.424-004

ACTIVATION PRODUCTS

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	9.695-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002	9.693-002
PB205	.000	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005	2.387-005
PB206	1.685+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000	1.675+000
PB207	1.553+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000	1.563+000
PB208	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000
SUMTOT	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004
TOTAL	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	3.759+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000
HE	.000	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001	1.132-001
LI	.000	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001
BE	1.000+001	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000	9.998+000
B	2.285+000	2.017+000	2.017+000	2.017+000	2.017+000	2.017+000	2.017+000	2.017+000	2.017+000	2.017+000	2.017+000	2.017+000
C	5.693+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002
N	8.063+001	8.058+001	8.058+001	8.058+001	8.058+001	8.058+001	8.058+001	8.058+001	8.058+001	8.058+001	8.058+001	8.058+001
NE	.000	5.386-005	5.386-005	5.386-005	5.386-005	5.386-005	5.386-005	5.386-005	5.386-005	5.386-005	5.386-005	5.386-005
NA	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001
AL	8.053+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002
SI	1.320+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002
P	.000	1.306-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004	1.307-004
TI	3.517+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000
V	3.518+000	3.530+000	3.535+000	3.535+000	3.535+000	3.535+000	3.535+000	3.535+000	3.535+000	3.535+000	3.535+000	3.535+000
CR	1.354+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002
MN	2.852+001	2.841+001	2.841+001	2.841+001	2.841+001	2.842+001	2.842+001	2.842+001	2.843+001	2.843+001	2.844+001	2.844+001
FE	4.450+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002
CO	7.035-001	7.063-001	7.048-001	7.043-001	7.038-001	7.034-001	7.027-001	7.022-001	7.011-001	6.994-001	6.978-001	6.966-001
NI	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002	1.387+002
CU	7.852+001	7.844+001	7.844+001	7.844+001	7.844+001	7.844+001	7.844+001	7.844+001	7.844+001	7.844+001	7.844+001	7.844+001
ZN	.000	4.035-002	4.046-002	4.046-002	4.046-002	4.046-002	4.046-002	4.046-002	4.046-002	4.046-002	4.046-002	4.046-002
SR	.000	9.165-003	8.967-003	8.941-003	8.926-003	8.922-003	8.920-003	8.920-003	8.920-003	8.920-003	8.920-003	8.920-003
Y	.000	1.721-003	7.954-004	7.347-004	6.932-004	6.790-004	6.722-004	6.713-004	6.712-004	6.712-004	6.712-004	6.712-004
ZR	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004	6.911+004
NB	.000	8.773-002	5.155-002	3.006-002	1.178-002	4.525-003	6.397-004	9.033-005	4.133-006	3.706-006	5.365-006	7.025-006
MO	3.518+000	4.622+000	4.809+000	4.856+000	4.893+000	4.906+000	4.913+000	4.914+000	4.915+000	4.915+000	4.915+000	4.915+000
TC	.000	6.412-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005	6.571-005
RU	.000	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004	1.361-004
CD	2.852-001	2.852-001	2.852-001	2.852-001	2.852-001	2.852-001	2.852-001	2.852-001	2.852-001	2.852-001	2.852-001	2.852-001
IN	.000	1.640-002	2.238-002	2.409-002	2.580-002	2.675-002	2.761-002	2.780-002	2.803-002	2.804-002	2.804-002	2.804-002
SN	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003
SB	.000	9.291-002	9.416-002	9.334-002	9.188-002	9.037-002	8.734-002	8.451-002	7.965-002	7.286-002	6.799-002	6.539-002
TE	.000	2.712-003	5.634-003	6.994-003	9.014-003	1.086-002	1.421-002	1.718-002	2.209-002	2.891-002	3.379-002	3.640-002
LU	.000	1.254-003	1.971-003	2.112-003	2.217-003	2.258-003	2.281-003	2.285-003	2.286-003	2.286-003	2.286-003	2.286-003
HF	1.407+001	1.406+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001	1.405+001
TA	.000	1.818-002	2.551-002	2.624-002	2.658-002	2.664-002	2.665-002	2.664-002	2.664-002	2.664-002	2.664-002	2.664-002
W	3.517+000	3.478+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000	3.477+000
RE	.000	3.924-002	4.001-002	4.010-002	4.017-002	4.020-002	4.022-002	4.022-002	4.022-002	4.022-002	4.022-002	4.022-002
OS	.000	7.407-004	7.723-004	7.762-004	7.792-004	7.803-004	7.809-004	7.810-004	7.810-004	7.810-004	7.810-004	7.810-004
PB	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000
SUMTOT	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004
TOTAL	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004

CUMULATIVE TABLE TOTALS

AP+FP	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	3.992-001	3.919-001	3.883-001	3.828-001	3.774-001	3.670-001	3.568-001	3.373-001	3.015-001	2.620-001	2.277-001
H 4	.000	6.357-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.252+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	2.558-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007
B 12	.000	2.678-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	2.018-001	2.018-001	2.018-001	2.018-001	2.018-001	2.017-001	2.017-001	2.017-001	2.017-001	2.016-001	2.015-001
C 15	.000	3.819-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	1.377-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	3.104-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	4.093-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	3.488+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	6.875+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.957-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.486+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	2.019+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	5.360-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	5.197-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	4.833+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	1.791-004	5.338-007	2.936-008	5.560-010	2.530-010	2.492-010	2.491-010	2.488-010	2.483-010	2.476-010	2.470-010
CA 45	.000	2.599-004	1.560-004	1.208-004	8.104-005	5.496-005	2.527-005	1.162-005	2.458-006	1.100-007	2.262-009	4.653-011
SC 46	.000	4.835-002	1.792-002	1.091-002	5.015-003	2.356-003	5.202-004	1.148-004	5.597-006	1.330-008	6.973-012	3.657-015
SC 47	.000	1.087-001	1.878-012	1.547-017	4.776-024	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	1.046-002	1.691-022	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	8.445-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	1.725-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	2.045-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.542-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015
V 52	.000	9.693+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	2.220-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	2.256-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	4.546+002	2.259+001	5.036+000	4.803-001	4.892-002	5.074-004	5.264-006	5.664-010	6.558-018	.000	.000
CR 55	.000	6.737+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	6.678+000	5.118+000	4.480+000	3.637+000	2.970+000	1.981+000	1.321+000	5.877-001	1.163-001	1.534-002	2.024-003
MN 56	.000	2.357+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	6.387-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	2.097-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	7.936+001	7.270+001	6.959+001	6.498+001	6.079+001	5.320+001	4.656+001	3.567+001	2.093+001	1.075+001	5.518+000
FE 59	.000	7.082+000	1.115+000	4.426-001	1.041-001	2.552-002	1.531-003	9.193-005	3.312-007	4.298-012	3.349-018	2.609-024
CO 58	.000	5.651+001	1.745+001	9.695+000	3.864+000	1.580+000	2.641-001	4.417-002	1.235-003	9.650-007	1.261-010	1.648-014
CO 60	.000	1.248+001	1.195+001	1.170+001	1.131+001	1.094+001	1.025+001	9.594+000	8.412+000	6.466+000	4.654+000	3.350+000
CO 60M	.000	1.166+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	2.407-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	5.914-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	1.192-002	1.192-002	1.192-002	1.192-002	1.192-002	1.192-002	1.192-002	1.192-002	1.192-002	1.192-002	1.192-002
NI 63	.000	1.510+000	1.506+000	1.505+000	1.502+000	1.499+000	1.493+000	1.488+000	1.476+000	1.454+000	1.427+000	1.401+000
NI 65	.000	9.756+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	5.188-005	6.914-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.219+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	2.627+002	6.925-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	2.617-004	2.530-018	2.487-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	2.249-002	1.599-002	1.348-002	1.032-002	7.963-003	4.738-003	2.820-003	9.984-004	1.252-004	9.341-006	6.970-007

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 89	.000	7.110+000	1.369+000	6.010-001	1.655-001	4.727-002	3.854-003	3.142-004	2.089-006	9.229-011	3.325-016	1.198-021
SR 90	.000	6.755-006	6.703-006	6.676-006	6.636-006	6.596-006	6.518-006	6.441-006	6.290-006	5.997-006	5.651-006	5.324-006
SR 91	.000	1.664+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.745-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	1.523-004	1.351-015	4.025-021	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	3.170+002	6.704-006	6.678-006	6.637-006	6.598-006	6.520-006	6.443-006	6.291-006	5.999-006	5.652-006	5.326-006
Y 91	.000	1.741+001	4.203+000	2.065+000	6.784-001	2.300-001	2.643-002	3.037-003	4.010-005	6.991-009	1.401-013	2.806-018
Y 92	.000	1.873+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.745-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.191+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	7.647-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.525-004	1.353-015	4.031-021	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	3.660-003	3.660-003	3.660-003	3.660-003	3.660-003	3.660-003	3.660-003	3.660-003	3.660-003	3.660-003	3.660-003
ZR 95	.000	4.275+003	1.165+003	6.082+002	2.198+002	8.175+001	1.130+001	1.563+000	2.989-002	1.093-005	5.525-010	2.793-014
ZR 97	.000	1.104+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.027-002	8.424-006	1.405-007	2.314-010	4.558-013	1.769-018	6.868-024	.000	.000	.000	.000
NB 93M	.000	4.677-005	1.037-004	1.318-004	1.754-004	2.172-004	2.992-004	3.792-004	5.331-004	8.183-004	1.136-003	1.416-003
NB 94	.000	3.905-008	3.905-008	3.905-008	3.905-008	3.905-008	3.905-008	3.905-008	3.905-008	3.904-008	3.904-008	3.904-008
NB 95	.000	3.412+003	2.016+003	1.175+003	4.605+002	1.769+002	2.496+001	3.466+000	6.867-002	2.426-005	1.227-009	6.201-014
NB 95M	.000	3.033+001	8.643+000	4.512+000	1.631+000	6.064-001	8.386-002	1.160-002	2.217-004	8.107-008	4.099-012	2.072-016
NB 96	.000	2.326+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.104+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	1.044+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	6.381-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	8.816-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	2.420-005	2.420-005	2.420-005	2.420-005	2.420-005	2.420-005	2.419-005	2.419-005	2.418-005	2.417-005	2.416-005
MO 99	.000	6.175+000	4.517-013	1.221-019	.000	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.536+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	1.087-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006
TC100	.000	1.523-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	1.536+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	1.425-004	1.069-009	1.068-009	1.067-009	1.065-009	1.063-009	1.060-009	1.054-009	1.042-009	1.028-009	1.014-009
AG108M	.000	1.204-008	1.202-008	1.200-008	1.199-008	1.197-008	1.194-008	1.191-008	1.184-008	1.171-008	1.155-008	1.140-008
AG109M	.000	3.488-003	2.916-003	2.666-003	2.317-003	2.021-003	1.539-003	1.171-003	6.787-004	2.279-004	5.826-005	1.489-005
AG110	.000	2.389-004	1.842-008	1.560-008	1.202-008	9.330-009	5.622-009	3.387-009	1.230-009	1.621-010	1.288-011	1.023-012
AG110M	.000	1.932-006	1.385-006	1.173-006	9.037-007	7.015-007	4.227-007	2.547-007	9.247-008	1.219-008	9.682-010	7.690-011
CD107	.000	8.930-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	3.488-003	2.916-003	2.666-003	2.317-003	2.021-003	1.539-003	1.171-003	6.787-004	2.279-004	5.826-005	1.489-005
CD111M	.000	1.583-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	1.969+000	1.205-018	9.422-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.431-001	2.216-002	8.721-003	2.025-003	4.899-004	2.866-005	1.677-006	5.741-009	6.727-014	4.613-020	3.163-026
CD117	.000	6.373-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.238-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.427-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	4.341-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	1.175+002	5.705+001	3.875+001	2.258+001	1.303+001	4.338+000	1.444+000	1.601-001	1.968-003	8.053-006	3.295-008
IN114	.000	4.207+000	2.205-001	9.519-002	2.556-002	7.117-003	5.521-004	4.283-005	2.577-007	9.330-012	2.620-017	7.359-023
IN114M	.000	1.236+000	2.304-001	9.947-002	2.670-002	7.437-003	5.769-004	4.475-005	2.693-007	9.749-012	2.738-017	7.689-023
IN116	.000	8.715-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	2.380-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	8.818-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	6.025-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV-9XPU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN118	.000	1.884-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.336-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.427-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	3.560-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.175+002	5.702+001	3.973+001	2.257+001	1.302+001	4.335+000	1.443+000	1.600-001	1.967-003	8.048-006	3.293-008
SN113M	.000	8.709+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	9.948+002	2.820+000	1.345-001	1.287-003	1.402-005	1.664-009	1.975-013	2.783-021	.000	.000	.000
SN119M	.000	2.353+002	1.676+002	1.414+002	1.084+002	8.373+001	4.995+001	2.979+001	1.060+001	1.342+000	1.014-001	7.860-003
SN121	.000	5.380+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	1.955-002	1.946-002	1.941-002	1.935-002	1.928-002	1.915-002	1.901-002	1.875-002	1.824-002	1.762-002	1.702-002
SN123	.000	3.052+001	1.603+001	1.162+001	7.017+000	4.299+000	1.613+000	6.055-001	8.528-002	1.892-003	1.260-005	9.380-008
SN123M	.000	2.117-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.991+002	3.563-002	4.767-004	5.560-007	7.823-010	1.551-015	3.074-021	.000	.000	.000	.000
SN125M	.000	1.577+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	7.500+000	3.141-013	6.429-020	.000	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	6.526-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	8.378-002	2.104-002	1.054-002	3.575-003	1.249-003	1.525-004	1.862-005	2.777-007	6.173-011	1.676-015	4.548-020
SB124M	.000	5.108-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	3.595+001	3.487+001	3.347+001	3.138+001	2.948+001	2.601+001	2.295+001	1.787+001	1.083+001	5.796+000	3.100+000
SB126	.000	5.131-001	6.258-004	2.185-005	1.143-007	6.928-010	2.544-014	9.345-019	.000	.000	.000	.000
SB126M	.000	5.833-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	2.026-003	1.011-003	7.143-004	4.146-004	2.443-004	8.483-005	2.946-005	3.552-006	5.164-008	2.607-010	1.316-012
TE125M	.000	4.942+000	7.485+000	7.667+000	7.495+000	7.138+000	6.341+000	5.600+000	4.361+000	2.644+000	1.414+000	7.565-001
TE127	.000	3.043-004	3.441-006	2.349-006	1.293-006	7.234-007	2.265-007	7.091-008	6.950-009	6.878-011	2.009-013	6.043-016
TE127M	.000	7.534-006	3.513-006	2.399-006	1.320-006	7.385-007	2.312-007	7.239-008	7.096-009	6.818-011	2.051-013	6.170-016
LU176M	.000	3.509-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	2.763-002	2.302-006	1.673-006	1.099-006	7.308-007	3.229-007	1.427-007	2.786-008	1.062-009	1.790-011	3.016-013
LU177M	.000	1.627-005	9.515-006	7.275-006	4.780-006	3.177-006	1.404-006	6.205-007	1.212-007	4.620-009	7.784-011	1.312-012
HF175	.000	1.101+001	3.354+000	1.852+000	7.304-001	2.957-001	4.848-002	7.946-003	2.135-004	1.542-007	1.824-011	2.159-015
HF178M	.000	1.607+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	2.417+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	5.573+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	1.470+002	2.067+001	7.750+000	1.668+000	3.749-001	1.893-002	9.561-004	2.439-006	1.586-011	5.208-018	1.710-024
HF182	.000	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008	1.194-008
TA182	.000	1.232+000	5.976-001	4.162-001	2.363-001	1.363-001	4.533-002	1.508-002	1.668-003	2.043-005	9.507-008	1.228-008
TA182M	.000	2.758-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	2.225+000	1.837-007	5.280-011	1.506-016	6.140-022	.000	.000	.000	.000	.000	.000
W181	.000	2.167-001	1.091-001	7.739-002	4.522-002	2.682-002	9.437-003	3.320-003	4.110-004	6.297-006	3.395-008	1.830-010
W183M	.000	6.497-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	6.150+000	2.032+000	1.168+000	4.907-001	2.113-001	3.916-002	7.257-003	2.493-004	2.943-007	6.436-011	1.407-014
W185M	.000	9.418-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	2.377+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.881-001	8.691-002	4.773-002	1.868-002	7.503-003	1.211-003	1.954-004	5.088-006	3.450-009	3.775-013	4.131-017
RE186	.000	5.650-001	1.539-010	2.539-015	8.262-023	.000	.000	.000	.000	.000	.000	.000
RE187	.000	1.474-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009	1.487-009
RE188	.000	8.437+000	8.780-002	4.822-002	1.887-002	7.580-003	1.223-003	1.974-004	5.140-006	3.485-009	3.814-013	4.173-017
RE188M	.000	7.974+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	2.495-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015
PB209	.000	2.348-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	2.756-015	5.297+004	3.698+003	2.179+003	9.720+002	4.898+002	1.969+002	1.265+002	8.006+001	4.433+001	2.465+001	1.460+001
TOTAL	2.756-015	5.297+004	3.698+003	2.179+003	9.720+002	4.898+002	1.969+002	1.265+002	8.006+001	4.433+001	2.465+001	1.460+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	1.035+000	3.919-001	3.883-001	3.828-001	3.774-001	3.670-001	3.568-001	3.373-001	3.015-001	2.620-001	2.277-001
HE	.000	1.252+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	2.558-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.811-006	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007	8.169-007
B	.000	2.678-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	2.018-001	2.018-001	2.018-001	2.018-001	2.018-001	2.017-001	2.017-001	2.017-001	2.017-001	2.016-001	2.015-001
N	.000	1.377-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	3.104-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	4.093-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.196+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.486+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	2.019+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	4.833+000	2.495-010	2.495-010	2.494-010	2.493-010	2.492-010	2.491-010	2.488-010	2.483-010	2.476-010	2.469-010
P	.000	1.791-004	5.338-007	2.936-008	5.560-010	2.530-010	2.492-010	2.491-010	2.488-010	2.483-010	2.476-010	2.470-010
CA	.000	2.617-004	1.560-004	1.208-004	8.104-005	5.496-005	2.527-005	1.162-005	2.458-006	1.100-007	2.262-009	4.653-011
SC	.000	1.761-001	1.792-002	1.091-002	5.015-003	2.356-003	5.202-004	1.148-004	5.597-006	1.330-008	6.973-012	3.657-015
TI	.000	2.045-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.542-015	9.696+001	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015	1.533-015
CR	.000	4.613+002	2.259+001	5.036+000	4.803-001	4.892-002	5.074-004	5.264-006	5.664-010	6.558-018	.000	.000
MN	.000	2.364+003	5.118+000	4.480+000	3.637+000	2.970+000	1.981+000	1.321+000	5.877-001	1.163-001	1.534-002	2.024-003
FE	.000	8.644+001	7.382+001	7.003+001	6.508+001	6.081+001	5.320+001	4.656+001	3.567+001	2.093+001	1.075+001	5.518+000
CO	.000	1.859+002	2.940+001	2.139+001	1.517+001	1.252+001	1.051+001	9.638+000	8.413+000	6.466+000	4.654+000	3.350+000
NI	.000	1.128+001	1.518+000	1.517+000	1.514+000	1.511+000	1.505+000	1.500+000	1.488+000	1.466+000	1.439+000	1.413+000
CU	.000	1.481+003	2.537-018	2.487-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	2.249-002	1.599-002	1.348-002	1.032-002	7.963-003	4.738-003	2.820-003	9.984-004	1.252-004	9.341-006	6.970-007
SR	.000	8.780+000	1.369+000	6.010-001	1.655-001	4.727-002	3.860-003	3.206-004	8.378-006	5.997-006	5.651-006	5.324-006
Y	.000	3.543+002	4.203+000	2.065+000	6.784-001	2.300-001	2.643-002	3.043-003	4.639-005	6.006-006	5.652-006	5.326-006
ZR	.000	1.531+004	1.165+003	6.082+002	2.198+002	8.175+001	1.131+001	1.567+000	3.355-002	3.671-003	3.660-003	3.660-003
NB	.000	2.492+004	2.024+003	1.180+003	4.621+002	1.775+002	2.505+001	3.478+000	6.942-002	8.427-004	1.136-003	1.416-003
MO	.000	7.721+000	2.420-005	2.420-005	2.420-005	2.420-005	2.420-005	2.419-005	2.419-005	2.418-005	2.417-005	2.416-005
TC	.000	1.552+000	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006	1.114-006
AG	.000	3.872-003	2.917-003	2.667-003	2.318-003	2.022-003	1.539-003	1.172-003	6.789-004	2.279-004	5.828-005	1.491-005
CD	.000	2.207+000	2.508-002	1.139-002	4.342-003	2.511-003	1.567-003	1.173-003	6.788-004	2.279-004	5.826-005	1.489-005
IN	.000	1.232+002	5.751+001	3.995+001	2.263+001	1.304+001	4.339+000	1.444+000	1.601-001	1.968-003	8.053-006	3.295-008
SN	.000	2.360+003	2.433+002	1.929+002	1.380+002	1.011+002	5.591+001	3.186+001	1.087+001	1.364+000	1.190-001	2.468-002
SB	.000	4.417+001	3.490+001	3.348+001	3.139+001	2.948+001	2.601+001	2.295+001	1.787+001	1.083+001	5.796+000	3.100+000
TE	.000	4.945+000	7.486+000	7.667+000	7.495+000	7.139+000	6.341+000	5.600+000	4.361+000	2.644+000	1.414+000	7.565-001
LU	.000	3.785-001	1.182-005	8.949-006	5.879-006	3.908-006	1.727-006	7.631-007	1.490-007	5.683-009	9.630-011	2.173-012
HF	.000	2.598+003	2.402+001	9.602+000	2.399+000	6.707-001	6.741-002	8.902-003	2.160-004	1.661-007	1.196-008	1.194-008
TA	.000	3.459+000	5.976-001	4.162-001	2.363-001	1.363-001	4.533-002	1.508-002	1.668-003	2.043-005	9.507-008	1.228-008
W	.000	2.450+002	2.228+000	1.293+000	5.546-001	2.456-001	4.980-002	1.077-002	6.653-004	6.595-006	3.401-008	1.830-010
RE	.000	1.698+001	8.780-002	4.822-002	1.887-002	7.580-003	1.223-003	1.974-004	5.142-006	4.973-009	1.488-009	1.487-009
PB	1.214-015	2.348-003	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009	1.388-009
SUMTOT	2.756-015	5.297+004	3.698+003	2.179+003	9.720+002	4.898+002	1.969+002	1.265+002	8.006+001	4.433+001	2.465+001	1.460+001
TOTAL	2.756-015	5.297+004	3.698+003	2.179+003	9.720+002	4.898+002	1.969+002	1.265+002	8.006+001	4.433+001	2.465+001	1.460+001

CUMULATIVE TABLE TOTALS

AP+FP	2.756-015	5.297+004	3.698+003	2.179+003	9.720+002	4.898+002	1.969+002	1.265+002	8.006+001	4.433+001	2.465+001	1.460+001
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.756-015	5.297+004	3.698+003	2.179+003	9.720+002	4.898+002	1.969+002	1.265+002	8.006+001	4.433+001	2.465+001	1.460+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	1.344-005	1.320-005	1.307-005	1.289-005	1.271-005	1.236-005	1.201-005	1.136-005	1.015-005	8.823-006	7.668-006
HE 6	.000	1.164+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	9.538-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010
BE 11	.000	6.782-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	2.123-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	5.917-005	5.917-005	5.917-005	5.917-005	5.916-005	5.916-005	5.916-005	5.915-005	5.913-005	5.912-005	5.910-005
C 15	.000	6.499-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	5.969-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	1.293-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	5.018-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	9.667-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	1.923-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	2.246-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.013-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	3.621+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	7.470-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	1.763-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	1.709-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	1.816-006	5.411-009	2.976-010	5.636-012	2.565-012	2.526-012	2.525-012	2.522-012	2.517-012	2.510-012	2.503-012
CA 45	.000	1.189-007	7.138-008	5.530-008	3.709-008	2.515-008	1.157-008	5.319-009	1.125-009	5.032-011	1.035-012	2.129-014
SC 46	.000	6.081-004	2.254-004	1.372-004	6.308-005	2.964-005	6.543-006	1.445-006	7.041-008	1.673-010	8.771-014	4.600-017
SC 47	.000	1.745-004	3.015-015	2.484-020	7.667-027	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	2.212-004	3.577-024	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	1.005-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	4.935-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.497-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.700-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017
V 52	.000	1.445+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	2.681-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	9.763-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	9.728-002	4.834-003	1.078-003	1.028-004	1.047-005	1.086-007	1.126-009	1.212-013	1.403-021	1.686-031	.000
CR 55	.000	4.397-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	3.325-002	2.548-002	2.231-002	1.811-002	1.479-002	9.864-003	6.579-003	2.926-003	5.789-004	7.638-005	1.008-005
MN 56	.000	3.522+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	4.434-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	4.966-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	1.091-001	9.998-002	9.570-002	8.936-002	8.360-002	7.316-002	6.403-002	4.905-002	2.878-002	1.478-002	7.588-003
FE 59	.000	6.603-002	1.040-002	4.127-003	9.711-004	2.379-004	1.428-005	8.571-007	3.088-009	4.008-014	3.123-020	2.433-026
CO 58	.000	3.383-001	1.045-001	5.804-002	2.313-002	9.458-003	1.581-003	2.644-004	7.392-006	5.777-009	7.550-013	9.865-017
CO 60	.000	1.924-001	1.843-001	1.804-001	1.744-001	1.687-001	1.580-001	1.479-001	1.297-001	9.969-002	7.178-002	5.165-002
CO 60M	.000	4.358-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	7.791-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	1.122-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	7.589-005	7.589-005	7.589-005	7.589-005	7.588-005	7.588-005	7.588-005	7.588-005	7.588-005	7.588-005	7.588-005
NI 63	.000	5.998-004	5.983-004	5.976-004	5.964-004	5.953-004	5.930-004	5.908-004	5.864-004	5.776-004	5.668-004	5.563-004
NI 65	.000	6.829-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	2.261+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.798+000	4.741-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	4.202-007	4.062-021	3.994-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	7.879-005	5.602-005	4.724-005	3.617-005	2.790-005	1.660-005	9.879-006	3.498-006	4.387-007	3.273-008	2.442-009
SR 89	.000	2.458-002	4.734-003	2.078-003	5.722-004	1.634-004	1.332-005	1.086-006	7.220-009	3.190-013	1.149-018	4.141-024

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 90	.000	7.840-009	7.779-009	7.749-009	7.702-009	7.656-009	7.565-009	7.476-009	7.300-009	6.961-009	6.559-009	6.180-009
SR 91	.000	1.334-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	8.704-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	8.276-007	7.343-018	2.187-023	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.757+000	3.716-008	3.701-008	3.679-008	3.657-008	3.614-008	3.571-008	3.487-008	3.325-008	3.133-008	2.952-008
Y 91	.000	6.253-002	1.509-002	7.415-003	2.437-003	8.260-004	9.491-005	1.091-005	1.440-007	2.511-011	5.030-016	1.008-020
Y 92	.000	1.885-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	4.298-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.984-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.754-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.137-006	1.009-017	3.006-023	6.704-032	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	4.252-007	4.252-007	4.252-007	4.252-007	4.252-007	4.252-007	4.252-007	4.252-007	4.252-007	4.252-007	4.252-007
ZR 95	.000	2.165+001	5.901+000	3.081+000	1.113+000	4.141-001	5.726-002	7.917-003	1.514-004	5.535-008	2.798-012	1.415-016
ZR 97	.000	5.751+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.606-004	1.004-007	1.674-009	2.757-012	5.431-015	2.108-020	8.182-026	.000	.000	.000	.000
NB 93M	.000	8.286-009	1.838-008	2.336-008	3.108-008	3.848-008	5.301-008	6.718-008	9.445-008	1.450-007	2.013-007	2.509-007
NB 94	.000	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.979-010	3.978-010	3.978-010
NB 95	.000	1.637+001	9.668+000	5.637+000	2.209+000	8.485-001	1.197-001	1.662-002	3.294-004	1.164-007	5.884-012	2.975-016
NB 95M	.000	4.214-002	1.201-002	6.269-003	2.266-003	8.426-004	1.165-004	1.611-005	3.081-007	1.126-010	5.695-015	2.879-019
NB 96	.000	3.867-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	7.346+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.598+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	7.875-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB100	.000	7.479-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.233-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.261-009	2.260-009	2.259-009	2.258-009
MO 99	.000	1.983-002	1.451-015	3.923-022	2.045-032	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.755-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	5.452-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010
TC100	.000	1.341-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	7.374-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	5.312-007	3.985-012	3.981-012	3.975-012	3.970-012	3.959-012	3.948-012	3.927-012	3.884-012	3.832-012	3.780-012
AG108M	.000	1.171-010	1.169-010	1.168-010	1.166-010	1.164-010	1.161-010	1.158-010	1.152-010	1.139-010	1.124-010	1.109-010
AG109M	.000	1.798-006	1.503-006	1.374-006	1.194-006	1.042-006	7.931-007	6.038-007	3.499-007	1.175-007	3.003-008	7.677-009
AG110	.000	1.717-006	1.323-010	1.121-010	8.635-011	6.703-011	4.039-011	2.434-011	8.836-012	1.165-012	9.251-014	7.348-015
AG110M	.000	3.226-008	2.313-008	1.958-008	1.509-008	1.171-008	7.058-009	4.253-009	1.544-009	2.035-010	1.617-011	1.284-012
CD107	.000	4.055-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	2.221-006	1.856-006	1.697-006	1.475-006	1.287-006	9.796-007	7.457-007	4.321-007	1.451-007	3.709-008	9.481-009
CD111M	.000	3.716-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	6.250-003	3.824-019	2.991-027	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	5.337-004	8.265-005	3.253-005	7.553-006	1.827-006	1.069-007	6.254-009	2.141-011	2.509-016	1.720-022	1.180-028
CD117	.000	4.590-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.819-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.565-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	7.193-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	2.737-001	1.329-001	9.261-002	5.260-002	3.035-002	1.011-002	3.365-003	3.730-004	4.584-006	1.876-008	7.676-011
IN114	.000	1.932-002	1.012-003	4.370-004	1.173-004	3.268-005	2.535-006	1.966-007	1.183-009	4.283-014	1.203-019	3.378-025
IN114M	.000	1.743-003	3.249-004	1.403-004	3.766-005	1.049-005	8.135-007	6.311-008	3.797-010	1.375-014	3.861-020	1.084-025
IN116	.000	7.140-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	3.919-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	3.973-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	2.275-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN118	.000	2.275-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.068-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.206-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	4.288-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	2.001-002	9.714-003	6.768-003	3.844-003	2.218-003	7.386-004	2.459-004	2.726-005	3.350-007	1.371-009	5.610-012
SN113M	.000	5.673-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.845+000	4.860-003	2.494-004	2.386-006	2.600-008	3.086-012	3.663-016	5.162-024	.000	.000	.000
SN119M	.000	1.216-001	8.661-002	7.309-002	5.603-002	4.328-002	2.582-002	1.540-002	5.480-003	6.939-004	5.242-005	3.959-006
SN121	.000	6.505-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	3.917-005	3.899-005	3.890-005	3.876-005	3.863-005	3.836-005	3.809-005	3.757-005	3.654-005	3.530-005	3.409-005
SN123	.000	9.532-002	5.006-002	3.628-002	2.191-002	1.343-002	5.039-003	1.891-003	2.664-004	5.284-006	3.935-008	2.930-010
SN123M	.000	7.713-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.319+000	2.361-004	3.159-006	3.685-009	5.184-012	1.028-017	2.037-023	.000	.000	.000	.000
SN125M	.000	1.061+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	4.486-002	1.879-015	3.845-022	1.296-032	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	6.267-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	1.112-003	2.794-004	1.400-004	4.747-005	1.659-005	2.025-006	2.473-007	3.687-009	8.196-013	2.225-017	6.039-022
SB124M	.000	1.313-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	1.124-001	1.090-001	1.046-001	9.811-002	9.216-002	8.133-002	7.176-002	5.587-002	3.387-002	1.812-002	9.693-003
SB126	.000	9.480-003	1.156-005	4.036-007	2.112-009	1.280-011	4.701-016	1.727-020	2.329-029	.000	.000	.000
SB126M	.000	7.426-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	2.951-006	1.473-006	1.040-006	6.038-007	3.558-007	1.236-007	4.290-008	5.173-009	7.521-011	3.797-013	1.917-015
TE125M	.000	4.154-003	6.292-003	6.444-003	6.300-003	6.000-003	5.330-003	4.707-003	3.665-003	2.223-003	1.189-003	6.359-004
TE127	.000	4.109-007	4.646-009	3.172-009	1.746-009	9.768-010	3.058-010	9.575-011	9.385-012	9.017-014	2.713-016	8.160-019
TE127M	.000	4.053-009	1.889-009	1.290-009	7.099-010	3.972-010	1.244-010	3.894-011	3.817-012	3.667-014	1.103-016	3.319-019
LU176M	.000	2.725-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	2.981-005	2.484-009	1.805-009	1.186-009	7.884-010	3.483-010	1.539-010	3.006-011	1.146-012	1.931-014	3.254-016
LU177M	.000	1.310-007	7.659-008	5.857-008	3.848-008	2.558-008	1.130-008	4.995-009	9.753-010	3.719-011	6.266-013	1.056-014
HF175	.000	3.849-002	1.173-002	6.476-003	2.554-003	1.034-003	1.695-004	2.779-005	7.467-007	5.391-010	6.381-014	7.552-018
HF178M	.000	1.092-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	5.415+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	3.772-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	6.571-001	9.238-002	3.464-002	7.457-003	1.676-003	8.462-005	4.273-006	1.090-008	7.088-014	2.327-020	7.643-027
HF182	.000	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011	3.540-011
TA182	.000	1.097-002	5.320-003	3.706-003	2.104-003	1.213-003	4.036-004	1.342-004	1.485-005	1.819-007	8.465-010	1.093-010
TA182M	.000	8.223-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	1.411-002	1.165-009	3.349-013	9.555-019	3.894-024	.000	.000	.000	.000	.000	.000
W181	.000	6.110-005	3.076-005	2.182-005	1.275-005	7.563-006	2.661-006	9.362-007	1.159-007	1.776-009	9.573-012	5.161-014
W183M	.000	1.001-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	1.577-002	5.209-003	2.994-003	1.258-003	5.416-004	1.004-004	1.860-005	6.391-007	7.544-010	1.650-013	3.608-017
W185M	.000	1.100-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	1.078+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	1.723-004	5.198-005	2.855-005	1.117-005	4.487-006	7.241-007	1.169-007	3.043-009	2.063-012	2.258-016	2.471-020
RE186	.000	3.500-003	9.530-013	1.573-017	5.118-025	2.696-032	.000	.000	.000	.000	.000	.000
RE187	.000	2.264-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011	2.283-011
RE188	.000	4.187-002	4.357-004	2.393-004	9.363-005	3.761-005	6.070-006	9.795-007	2.551-008	1.730-011	1.893-015	2.071-019
RE188M	.000	8.130-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	1.494-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017	1.871-017
PB209	.000	2.700-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	3.571-017	3.117+002	1.655+001	9.465+000	3.887+000	1.734+000	5.498-001	3.417-001	2.486-001	1.666-001	1.067-001	7.031-002
TOTAL	3.571-017	3.117+002	1.655+001	9.465+000	3.887+000	1.734+000	5.498-001	3.417-001	2.486-001	1.666-001	1.067-001	7.031-002

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	1.344-005	1.320-005	1.307-005	1.289-005	1.271-005	1.236-005	1.201-005	1.136-005	1.015-005	8.823-006	7.668-006
HE	.000	1.164+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	9.538-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	8.880-008	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010	9.805-010
B	.000	2.123-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	5.982-005	5.917-005	5.917-005	5.917-005	5.916-005	5.916-005	5.916-005	5.915-005	5.913-005	5.912-005	5.910-005
N	.000	5.969-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	1.293-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	5.018-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	9.882-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.013-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	3.622+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	1.709-002	3.106-013	3.105-013	3.104-013	3.104-013	3.102-013	3.100-013	3.097-013	3.090-013	3.082-013	3.074-013
P	.000	1.816-006	5.411-009	2.976-010	5.636-012	2.565-012	2.526-012	2.525-012	2.522-012	2.517-012	2.510-012	2.503-012
CA	.000	1.346-007	7.138-008	5.530-008	3.709-008	2.515-008	1.157-008	5.319-009	1.125-009	5.032-011	1.035-012	2.129-014
SC	.000	1.109-003	2.254-004	1.372-004	6.308-005	2.964-005	6.543-006	1.445-006	7.041-008	1.673-010	8.771-014	4.600-017
TI	.000	1.497-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.700-017	1.445+000	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017	1.690-017
CR	.000	1.412-001	4.834-003	1.078-003	1.028-004	1.047-005	1.086-007	1.126-009	1.212-013	1.403-021	1.686-031	.000
MN	.000	3.525+001	2.548-002	2.231-002	1.811-002	1.479-002	9.864-003	6.579-003	2.926-003	5.789-004	7.638-005	1.008-005
FE	.000	1.752-001	1.104-001	9.983-002	9.033-002	8.383-002	7.318-002	6.403-002	4.905-002	2.878-002	1.478-002	7.588-003
CO	.000	5.762-001	2.888-001	2.384-001	1.975-001	1.782-001	1.596-001	1.482-001	1.297-001	9.969-002	7.176-002	5.165-002
NI	.000	6.897-002	6.742-004	6.734-004	6.723-004	6.712-004	6.689-004	6.667-004	6.623-004	6.535-004	6.427-004	6.321-004
CU	.000	4.059+000	4.110-021	3.994-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	7.879-005	5.802-005	4.724-005	3.617-005	2.790-005	1.660-005	9.879-006	3.498-006	4.387-007	3.273-008	2.442-009
SR	.000	3.800-002	4.734-003	2.078-003	5.723-004	1.634-004	1.333-005	1.094-006	1.452-008	6.961-009	6.559-009	6.180-009
Y	.000	2.028+000	1.509-002	7.415-003	2.437-003	8.260-004	9.495-005	1.094-005	1.789-007	3.327-008	3.133-008	2.952-008
ZR	.000	7.916+001	5.901+000	3.081+000	1.114+000	4.141-001	5.726-002	7.918-003	1.518-004	4.806-007	4.252-007	4.252-007
NB	.000	1.359+002	9.680+000	5.644+000	2.211+000	8.494-001	1.199-001	1.664-002	3.298-004	2.619-007	2.017-007	2.513-007
MO	.000	3.751-002	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.262-009	2.261-009	2.260-009	2.259-009	2.258-009
TC	.000	7.508-003	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010	5.589-010
AG	.000	4.078-006	1.526-006	1.394-006	1.209-006	1.054-006	8.004-007	6.082-007	3.515-007	1.178-007	3.016-008	7.793-009
CD	.000	7.307-003	8.451-005	3.422-005	9.028-006	3.114-006	1.086-006	7.519-007	4.321-007	1.451-007	3.709-008	9.481-009
IN	.000	2.968-001	1.342-001	9.318-002	5.275-002	3.039-002	1.011-002	3.365-003	3.730-004	4.584-006	1.876-008	7.676-011
SN	.000	5.681+000	1.515-001	1.164-001	8.183-002	5.896-002	3.163-002	1.758-002	5.811-003	7.361-004	8.775-005	3.805-005
SB	.000	1.686-001	1.093-001	1.048-001	9.816-002	9.218-002	8.133-002	7.176-002	5.587-002	3.387-002	1.812-002	9.693-003
TE	.000	4.158-003	6.293-003	6.445-003	6.300-003	6.000-003	5.330-003	4.707-003	3.665-003	2.223-003	1.189-003	6.359-004
LU	.000	2.755-003	7.907-008	6.037-008	3.966-008	2.637-008	1.165-008	5.149-009	1.005-009	3.834-011	6.493-013	1.427-014
HF	.000	6.257+000	1.041-001	4.111-002	1.001-002	2.710-003	2.542-004	3.206-005	7.577-007	5.746-010	3.546-011	3.540-011
TA	.000	2.508-002	5.320-003	3.706-003	2.104-003	1.213-003	4.036-004	1.342-004	1.485-005	1.819-007	8.465-010	1.093-010
W	.000	1.095+000	5.292-003	3.044-003	1.282-003	5.537-004	1.038-004	1.966-005	7.580-007	2.532-009	9.738-012	5.164-014
RE	.000	5.350-002	4.357-004	2.393-004	9.363-005	3.761-005	6.070-006	9.795-007	2.553-008	4.013-011	2.284-011	2.283-011
PB	1.871-017	2.700-006	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013	2.880-013
SUMTOT	3.571-017	3.117+002	1.655+001	9.465+000	3.887+000	1.734+000	5.498-001	3.417-001	2.486-001	1.666-001	1.067-001	7.031-002
TOTAL	3.571-017	3.117+002	1.655+001	9.465+000	3.887+000	1.734+000	5.498-001	3.417-001	2.486-001	1.666-001	1.067-001	7.031-002

CUMULATIVE TABLE TOTALS

AP+FP	3.571-017	3.117+002	1.655+001	9.465+000	3.887+000	1.734+000	5.498-001	3.417-001	2.486-001	1.666-001	1.067-001	7.031-002
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	3.571-017	3.117+002	1.655+001	9.465+000	3.887+000	1.734+000	5.498-001	3.417-001	2.486-001	1.666-001	1.067-001	7.031-002

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0

(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC

BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U234	2.430+002	2.312+002	2.313+002	2.313+002	2.313+002	2.313+002	2.313+002	2.313+002	2.313+002	2.314+002	2.315+002	2.316+002
U235	7.486+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000	6.113+000
U236	1.104+001	1.922+001	1.922+001	1.922+001	1.922+001	1.922+001	1.922+001	1.922+001	1.922+001	1.923+001	1.923+001	1.923+001
U238	1.047+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002	1.045+002
PU238	.000	2.014+004	2.100+004	2.101+004	2.101+004	2.099+004	2.094+004	2.087+004	2.072+004	2.040+004	2.000+004	1.961+004
PU239	.000	5.905+004	6.073+004	6.073+004	6.073+004	6.073+004	6.073+004	6.073+004	6.072+004	6.072+004	6.072+004	6.071+004
PU240	.000	2.416+004	2.416+004	2.416+004	2.416+004	2.416+004	2.416+004	2.416+004	2.415+004	2.415+004	2.414+004	2.414+004
AM241	.000	5.760+002	2.069+003	2.806+003	3.948+003	5.045+003	7.197+003	9.296+003	1.334+004	2.085+004	2.923+004	3.662+004
CM244	.000	9.730+002	9.625+002	9.565+002	9.471+002	9.381+002	9.203+002	9.029+002	8.690+002	8.049+002	7.315+002	6.647+002
TOTALS												
TABLE	3.663+002	1.053+005	1.093+005	1.100+005	1.112+005	1.122+005	1.143+005	1.163+005	1.202+005	1.273+005	1.352+005	1.421+005
ACTUAL	3.663+002	1.053+005	1.093+005	1.100+005	1.112+005	1.122+005	1.143+005	1.163+005	1.202+005	1.273+005	1.352+005	1.421+005

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U238	1.256+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004	1.254+004
PU238	.000	3.285+003	3.424+003	3.426+003	3.426+003	3.424+003	3.415+003	3.404+003	3.379+003	3.327+003	3.262+003	3.198+003
PU240	.000	1.274+005	1.274+005	1.274+005	1.273+005	1.273+005	1.273+005	1.273+005	1.273+005	1.273+005	1.273+005	1.272+005
PU242	.000	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003	2.442+003
CM242	.000	3.645+005	2.248+005	1.742+005	1.169+005	7.939+004	3.661+004	1.692+004	3.678+003	2.759+002	1.179+002	1.134+002
CM244	.000	1.172+005	1.159+005	1.152+005	1.140+005	1.129+005	1.108+005	1.087+005	1.046+005	9.691+004	8.807+004	8.003+004
TOTALS												
TABLE	1.257+004	6.273+005	4.865+005	4.352+005	3.768+005	3.381+005	2.932+005	2.714+005	2.540+005	2.428+005	2.337+005	2.256+005
ACTUAL	1.257+004	6.273+005	4.865+005	4.352+005	3.768+005	3.381+005	2.932+005	2.714+005	2.540+005	2.428+005	2.337+005	2.256+005
OVERALL TOTALS												
TABLE	1.293+004	7.326+005	5.958+005	5.452+005	4.880+005	4.504+005	4.075+005	3.877+005	3.742+005	3.701+005	3.689+005	3.677+005
ACTUAL	1.293+004	7.326+005	5.958+005	5.452+005	4.880+005	4.504+005	4.075+005	3.877+005	3.742+005	3.701+005	3.689+005	3.677+005

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	6.053+013	1.286+012	7.624+011	4.034+011	2.547+011	1.359+011	8.741+010	4.469+010	1.820+010	8.759+009	4.734+009
2.500-002	.000	4.082+013	5.181+012	4.191+012	3.137+012	2.433+012	1.567+012	1.087+012	6.168+011	2.891+011	1.446+011	7.663+010
3.750-002	.000	5.603+012	2.460+011	2.258+011	2.039+011	1.884+011	1.646+011	1.449+011	1.127+011	6.836+010	3.658+010	1.958+010
5.750-002	.000	1.246+013	3.250+011	1.383+011	4.166+010	1.615+010	4.548+009	2.079+009	8.020+008	3.314+008	1.818+008	1.111+008
8.500-002	.000	5.804+012	1.885+010	1.071+010	4.676+009	2.280+009	7.555+008	3.876+008	2.142+008	1.291+008	7.684+007	4.690+007
1.250-001	.000	7.361+012	4.325+011	1.678+011	4.142+010	1.349+010	4.627+009	3.490+009	2.600+009	1.569+009	8.425+008	4.529+008
2.250-001	3.763-013	3.702+013	2.884+011	1.661+011	1.101+011	8.521+010	6.309+010	5.257+010	3.984+010	2.405+010	1.287+010	6.884+009
3.750-001	.000	2.068+013	6.356+011	5.003+011	4.290+011	3.959+011	3.476+011	3.066+011	2.387+011	1.447+011	7.741+010	4.141+010
5.750-001	.000	5.165+014	1.329+012	8.796+011	6.220+011	5.318+011	4.496+011	3.944+011	3.068+011	1.860+011	9.947+010	5.321+010
8.500-001	1.500-013	6.845+014	1.054+014	5.923+013	2.268+013	8.687+012	1.277+012	2.153+011	2.466+010	4.242+009	5.700+008	8.269+007
1.250+000	8.532-014	3.584+013	9.097+011	8.829+011	8.466+011	8.154+011	7.600+011	7.105+011	6.224+011	4.784+011	3.443+011	2.478+011
1.750+000	4.275-014	1.083+014	3.576+009	1.965+009	7.720+008	3.119+008	5.115+007	8.431+006	2.318+005	2.486+002	1.824+001	1.334+001
2.250+000	2.142-014	1.194+013	7.562+007	2.644+007	1.172+007	6.836+006	4.329+006	3.800+006	3.299+006	2.535+006	1.825+006	1.313+006
2.750+000	1.073-014	2.939+012	4.579+004	2.987+004	1.904+004	1.513+004	1.266+004	1.167+004	1.021+004	7.845+003	5.647+003	4.064+003
3.500+000	7.904-015	1.423+011	3.035-008	2.247-008	1.404-008	8.888-009	3.562-009	1.427-009	2.293-010	5.958-012	1.069-013	4.477-014
5.000+000	2.353-015	6.500+007	9.036-009	6.691-009	4.180-009	2.646-009	1.060-009	4.250-010	6.825-011	1.764-012	2.244-014	4.446-015
7.000+000	1.527-016	1.640+007	5.863-010	4.342-010	2.712-010	1.717-010	6.881-011	2.757-011	4.428-012	1.145-013	1.456-015	2.882-016
1.100+001	9.655-018	2.672+006	3.708-011	2.745-011	1.715-011	1.086-011	4.351-012	1.744-012	2.800-013	7.238-015	9.208-017	1.824-017
TOTAL	6.970-013	1.550+015	1.161+014	6.715+013	2.852+013	1.342+013	4.774+012	3.005+012	2.010+012	1.215+012	7.257+011	4.510+011
MEV/SEC	5.120-013	1.169+015	9.206+013	5.233+013	2.098+013	8.952+012	2.487+012	1.459+012	1.095+012	7.784+011	5.252+011	3.603+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	9.080+005	1.929+004	1.144+004	6.051+003	3.820+003	2.038+003	1.311+003	6.703+002	2.731+002	1.314+002	7.102+001
2.500-002	.000	1.020+006	1.295+005	1.048+005	7.842+004	6.081+004	3.916+004	2.718+004	1.542+004	7.226+003	3.616+003	1.916+003
3.750-002	.000	2.101+005	9.224+003	8.467+003	7.646+003	7.067+003	6.171+003	5.433+003	4.228+003	2.564+003	1.372+003	7.344+002
5.750-002	.000	7.165+005	1.869+004	7.952+003	2.395+003	9.287+002	2.615+002	1.195+002	4.612+001	1.905+001	1.045+001	6.388+000
8.500-002	.000	4.933+005	1.603+003	9.104+002	3.974+002	1.938+002	6.421+001	3.294+001	1.820+001	1.098+001	6.531+000	3.986+000
1.250-001	.000	9.201+005	5.407+004	2.097+004	5.177+003	1.686+003	5.783+002	4.363+002	3.251+002	1.962+002	1.053+002	5.662+001
2.250-001	8.467-020	8.330+006	6.488+004	3.736+004	2.477+004	1.917+004	1.420+004	1.183+004	8.965+003	5.412+003	2.895+003	1.549+003
3.750-001	.000	7.757+006	2.383+005	1.876+005	1.609+005	1.484+005	1.303+005	1.150+005	8.950+004	5.426+004	2.903+004	1.553+004
5.750-001	.000	2.970+008	7.639+005	5.058+005	3.577+005	3.058+005	2.585+005	2.268+005	1.764+005	1.069+005	5.720+004	3.060+004
8.500-001	1.275-019	5.818+008	8.962+007	5.034+007	1.928+007	7.384+006	1.085+006	1.830+005	2.096+004	3.606+003	4.845+002	7.029+001
1.250+000	1.067-019	4.480+007	1.137+006	1.104+006	1.058+006	1.019+006	9.500+005	8.881+005	7.780+005	5.979+005	4.304+005	3.098+005
1.750+000	7.482-020	1.895+008	6.258+003	3.439+003	1.351+003	5.458+002	8.951+001	1.475+001	4.056-001	4.350-004	3.192-005	2.334-005
2.250+000	4.820-020	2.686+007	1.701+002	5.949+001	2.637+001	1.538+001	9.739+000	8.550+000	7.422+000	5.704+000	4.106+000	2.955+000
2.750+000	2.952-020	8.082+006	1.259-001	8.215-002	5.235-002	4.162-002	3.481-002	3.209-002	2.807-002	2.157-002	1.553-002	1.118-002
3.500+000	2.766-020	4.980+005	1.062-013	7.866-014	4.914-014	3.111-014	1.247-014	4.996-015	8.024-016	2.085-017	3.741-019	1.567-019
5.000+000	1.177-020	3.250+002	4.518-014	3.346-014	2.090-014	1.323-014	5.302-015	2.125-015	3.412-016	8.820-018	1.122-019	2.223-020
7.000+000	1.069-021	1.148+002	4.104-015	3.039-015	1.899-015	1.202-015	4.817-016	1.930-016	3.100-017	8.012-019	1.019-020	2.018-021
1.100+001	1.062-022	2.939+001	4.078-016	3.020-016	1.887-016	1.194-016	4.786-017	1.918-017	3.080-018	7.962-020	1.013-021	2.006-022
TOTAL	5.120-019	1.169+009	9.206+007	5.233+007	2.098+007	8.952+006	2.487+006	1.459+006	1.095+006	7.784+005	5.252+005	3.603+005
GAM POW	8.207-026	1.874+002	1.476+001	8.389+000	3.364+000	1.435+000	3.986-001	2.339-001	1.755-001	1.248-001	8.419-002	5.776-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013	1.500-013

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014	2.142-014

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	1.514+004	1.450+004	1.419+004	1.372+004	1.328+004	1.243+004	1.164+004	1.021+004	7.845+003	5.647+003	4.064+003

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	7.904-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015	7.902-015

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015	2.353-015

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.527-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	9.655-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018	9.653-018

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9XPU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	4.058+009	3.516+017	7.437+011	6.844+011	6.409+011	6.153+011	5.936+011	5.926+011	6.135+011	6.716+011	7.396+011	7.995+011
2.500-002	.000	1.796+015	3.038+009	3.151+009	4.265+009	5.334+009	7.434+009	9.483+009	1.343+010	2.075+010	2.893+010	3.614+010
3.750-002	6.916+005	1.776+016	1.431+009	1.342+009	1.309+009	1.315+009	1.393+009	1.516+009	1.807+009	2.393+009	3.054+009	3.636+009
5.750-002	2.520+007	7.850+015	4.071+010	4.216+010	5.853+010	7.426+010	1.051+011	1.352+011	1.933+011	3.010+011	4.212+011	5.272+011
8.500-002	5.908+007	1.922+017	5.969+009	1.730+009	1.732+009	1.743+009	1.762+009	1.782+009	1.819+009	1.887+009	1.964+009	2.031+009
1.250-001	1.231+008	1.526+017	8.298+009	8.595+008	8.471+008	8.523+008	8.660+008	8.819+008	9.154+008	9.800+008	1.052+009	1.116+009
2.250-001	4.129+008	1.061+017	6.272+009	6.800+008	6.452+008	6.433+008	6.415+008	6.410+008	6.415+008	6.434+008	6.455+008	6.472+008
3.750-001	1.030+006	1.056+016	8.635+008	5.355+008	5.360+008	5.366+008	5.377+008	5.387+008	5.407+008	5.445+008	5.489+008	5.528+008
5.750-001	5.804+004	1.632+015	6.025+007	5.974+007	5.926+007	5.905+007	5.911+007	5.947+007	6.053+007	6.273+007	6.514+007	6.719+007
8.500-001	3.326+004	3.041+015	8.084+007	8.077+007	8.071+007	8.070+007	8.078+007	8.092+007	8.126+007	8.193+007	8.263+007	8.322+007
1.250+000	1.207+004	1.468+014	7.038+007	7.034+007	7.028+007	7.025+007	7.021+007	7.019+007	7.018+007	7.017+007	7.016+007	7.014+007
1.750+000	5.908+003	5.215+011	1.177+007	1.175+007	1.174+007	1.173+007	1.172+007	1.172+007	1.173+007	1.175+007	1.176+007	1.177+007
2.250+000	3.422+003	1.398+005	1.099+005	9.902+004	8.665+004	7.848+004	6.902+004	6.446+004	6.093+004	5.885+004	5.729+004	5.593+004
2.750+000	1.988+003	1.438+005	2.089+005	2.422+005	2.940+005	3.438+005	4.389+005	5.271+005	6.789+005	8.971+005	1.054+006	1.131+006
3.500+000	1.778+003	7.225+004	5.674+004	5.110+004	4.468+004	4.044+004	3.552+004	3.315+004	3.129+004	3.016+004	2.928+004	2.849+004
5.000+000	7.638+002	3.083+004	2.419+004	2.178+004	1.903+004	1.721+004	1.511+004	1.409+004	1.329+004	1.281+004	1.242+004	1.208+004
7.000+000	8.793+001	3.532+003	2.769+003	2.492+003	2.177+003	1.968+003	1.726+003	1.609+003	1.517+003	1.460+003	1.415+003	1.374+003
1.100+001	1.011+001	4.062+002	3.181+002	2.861+002	2.496+002	2.256+002	1.976+002	1.841+002	1.734+002	1.668+002	1.616+002	1.569+002
TOTAL	4.680+009	8.453+017	8.105+011	7.350+011	7.090+011	7.002+011	7.116+011	7.429+011	8.261+011	1.000+012	1.197+012	1.371+012
MEV/SEC	1.762+008	7.339+016	1.712+010	1.364+010	1.395+010	1.450+010	1.600+010	1.778+010	2.155+010	2.884+010	3.702+010	4.423+010

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9XPU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	6.088+001	5.274+009	1.116+004	1.027+004	9.614+003	9.230+003	8.903+003	8.889+003	9.202+003	1.007+004	1.109+004	1.199+004
2.500-002	.000	4.489+007	7.594+001	7.879+001	1.066+002	1.334+002	1.859+002	2.371+002	3.357+002	5.188+002	7.233+002	9.035+002
3.750-002	2.593-002	6.658+008	5.365+001	5.033+001	4.909+001	4.930+001	5.222+001	5.685+001	6.777+001	8.973+001	1.145+002	1.364+002
5.750-002	1.449+000	4.514+008	2.341+003	2.424+003	3.365+003	4.270+003	6.045+003	7.777+003	1.111+004	1.731+004	2.422+004	3.032+004
8.500-002	5.022+000	1.633+010	5.074+002	1.471+002	1.472+002	1.481+002	1.498+002	1.514+002	1.546+002	1.604+002	1.669+002	1.726+002
1.250-001	1.539+001	1.907+010	1.037+003	1.074+002	1.059+002	1.065+002	1.083+002	1.102+002	1.144+002	1.225+002	1.315+002	1.395+002
2.250-001	9.290+001	2.388+010	1.411+003	1.485+002	1.452+002	1.447+002	1.443+002	1.442+002	1.443+002	1.448+002	1.452+002	1.456+002
3.750-001	3.863-001	3.960+009	3.238+002	2.008+002	2.010+002	2.012+002	2.016+002	2.020+002	2.028+002	2.042+002	2.058+002	2.073+002
5.750-001	3.337-002	9.384+008	3.464+001	3.435+001	3.407+001	3.396+001	3.399+001	3.420+001	3.480+001	3.607+001	3.745+001	3.864+001
8.500-001	2.827-002	2.585+009	6.872+001	6.865+001	6.860+001	6.859+001	6.866+001	6.878+001	6.907+001	6.964+001	7.024+001	7.073+001
1.250+000	1.509-002	1.835+008	8.797+001	8.792+001	8.785+001	8.781+001	8.776+001	8.774+001	8.772+001	8.771+001	8.769+001	8.768+001
1.750+000	1.034-002	9.126+005	2.059+001	2.057+001	2.054+001	2.052+001	2.051+001	2.051+001	2.053+001	2.056+001	2.059+001	2.060+001
2.250+000	7.700-003	3.145-001	2.472-001	2.228-001	1.950-001	1.766-001	1.553-001	1.450-001	1.371-001	1.324-001	1.289-001	1.258-001
2.750+000	5.468-003	3.954-001	5.744-001	6.660-001	8.084-001	9.454-001	1.207+000	1.449+000	1.867+000	2.467+000	2.899+000	3.111+000
3.500+000	6.222-003	2.529-001	1.986-001	1.789-001	1.564-001	1.415-001	1.243-001	1.160-001	1.095-001	1.056-001	1.025-001	9.873-002
5.000+000	3.819-003	1.542-001	1.210-001	1.089-001	9.515-002	8.607-002	7.554-002	7.045-002	6.647-002	6.403-002	6.210-002	6.038-002
7.000+000	6.155-004	2.473-002	1.938-002	1.744-002	1.524-002	1.378-002	1.208-002	1.126-002	1.062-002	1.022-002	9.902-003	9.619-003
1.100+001	1.112-004	4.468-003	3.499-003	3.147-003	2.746-003	2.481-003	2.174-003	2.025-003	1.908-003	1.835-003	1.777-003	1.726-003
TOTAL	1.762+002	7.339+010	1.712+004	1.364+004	1.395+004	1.450+004	1.600+004	1.778+004	2.155+004	2.884+004	3.702+004	4.423+004
GAM POW	2.824-005	1.176+004	2.744-003	2.186-003	2.236-003	2.324-003	2.565-003	2.850-003	3.454-003	4.623-003	5.935-003	7.091-003

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U235	6.916+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005	5.648+005

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9XPU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.034+017	6.983+014	4.927+014	3.385+014	2.601+014	1.720+014	1.204+014	6.542+013	3.065+013	2.213+013	1.977+013
2.500-002	.000	4.947+016	2.759+014	1.602+014	9.724+013	7.372+013	5.134+013	3.862+013	2.431+013	1.296+013	8.106+012	5.955+012
3.750-002	.000	5.878+016	7.845+014	5.316+014	3.782+014	2.993+014	1.979+014	1.340+014	6.635+013	2.557+013	1.655+013	1.435+013
5.750-002	.000	2.209+016	1.359+014	9.949+013	7.055+013	5.499+013	3.663+013	2.558+013	1.374+013	6.247+012	4.438+012	3.954+012
8.500-002	.000	2.943+016	1.752+014	1.410+014	1.077+014	8.561+013	5.602+013	3.743+013	1.769+013	5.764+012	3.208+012	2.669+012
1.250-001	.000	5.961+016	1.282+015	6.586+014	3.824+014	2.873+014	1.827+014	1.183+014	5.063+013	1.100+013	3.450+012	2.360+012
2.250-001	.000	1.756+017	9.618+013	6.715+013	4.634+013	3.583+013	2.396+013	1.693+013	9.314+012	4.272+012	2.875+012	2.438+012
3.750-001	.000	1.344+017	7.271+013	4.713+013	3.495+013	2.886+013	2.137+013	1.648+013	1.058+013	5.509+012	3.158+012	2.093+012
5.750-001	.000	2.631+017	1.986+015	1.063+015	6.303+014	5.096+014	4.137+014	3.561+014	2.841+014	2.200+014	1.891+014	1.728+014
8.500-001	.000	3.030+017	1.043+016	5.860+015	2.264+015	8.873+014	1.556+014	4.750+013	2.201+013	1.110+013	5.185+012	2.636+012
1.250+000	.000	1.789+017	5.371+013	4.114+013	3.098+013	2.504+013	1.744+013	1.255+013	6.904+012	2.736+012	1.377+012	9.335+011
1.750+000	.000	6.483+016	3.391+013	4.327+012	2.593+012	2.150+012	1.500+012	1.055+012	5.339+011	1.580+011	5.552+010	3.388+010
2.250+000	.000	3.522+016	3.257+013	2.768+013	2.203+013	1.766+013	1.136+013	7.308+012	3.030+012	5.243+011	5.958+010	6.968+009
2.750+000	.000	1.549+016	1.306+012	1.853+011	1.178+011	9.850+010	6.926+010	4.874+010	2.418+010	5.993+009	1.057+009	1.876+008
3.500+000	.000	8.944+015	3.060+010	1.927+010	1.584+010	1.334+010	9.459+009	6.707+009	3.372+009	8.523+008	1.528+008	2.738+007
5.000+000	.000	5.212+015	3.147-006	3.184-006	3.238-006	3.288-006	3.378-006	3.457-006	3.587-006	3.763-006	3.886-006	3.949-006
7.000+000	.000	3.444+013	2.042-007	2.066-007	2.101-007	2.134-007	2.192-007	2.243-007	2.328-007	2.442-007	2.521-007	2.562-007
1.100+001	.000	3.389+009	1.291-008	1.306-008	1.329-008	1.349-008	1.386-008	1.419-008	1.472-008	1.544-008	1.594-008	1.620-008
TOTAL	.000	1.508+018	1.605+016	9.195+015	4.406+015	2.568+015	1.342+015	9.323+014	5.747+014	3.365+014	2.597+014	2.300+014
MEV/SEC	.000	1.032+018	1.049+016	5.878+015	2.486+015	1.205+015	4.747+014	3.165+014	2.173+014	1.478+014	1.191+014	1.059+014

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 9XPU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.551+009	1.047+007	7.390+006	5.078+006	3.902+006	2.580+006	1.806+006	9.814+005	4.598+005	3.319+005	2.966+005
2.500-002	.000	1.237+009	6.898+006	4.005+006	2.431+006	1.843+006	1.284+006	9.656+005	6.077+005	3.239+005	2.026+005	1.489+005
3.750-002	.000	2.204+009	2.942+007	1.994+007	1.418+007	1.122+007	7.420+006	5.026+006	2.488+006	9.587+005	6.205+005	5.380+005
5.750-002	.000	1.270+009	7.812+006	5.720+006	4.057+006	3.162+006	2.106+006	1.471+006	7.898+005	3.592+005	2.552+005	2.273+005
8.500-002	.000	2.501+009	1.489+007	1.198+007	9.154+006	7.277+006	4.761+006	3.181+006	1.504+006	4.900+005	2.727+005	2.268+005
1.250-001	.000	7.452+009	1.602+008	8.233+007	4.780+007	3.591+007	2.283+007	1.479+007	6.329+006	1.375+006	4.312+005	2.950+005
2.250-001	.000	3.952+010	2.164+007	1.511+007	1.043+007	8.062+006	5.392+006	3.809+006	2.096+006	9.612+005	6.468+005	5.485+005
3.750-001	.000	5.038+010	2.727+007	1.767+007	1.311+007	1.082+007	8.013+006	6.179+006	3.967+006	2.066+006	1.184+006	7.849+005
5.750-001	.000	1.513+011	1.142+009	6.113+008	3.624+008	2.930+008	2.379+008	2.048+008	1.634+008	1.265+008	1.087+008	9.935+007
8.500-001	.000	2.576+011	8.862+009	4.981+009	1.925+009	7.542+008	1.323+008	4.037+007	1.871+007	9.439+006	4.407+006	2.240+006
1.250+000	.000	2.237+011	6.713+007	5.142+007	3.872+007	3.130+007	2.180+007	1.568+007	8.630+006	3.419+006	1.721+006	1.167+006
1.750+000	.000	1.135+011	5.934+007	7.572+006	4.538+006	3.763+006	2.626+006	1.846+006	9.343+005	2.764+005	9.716+004	5.928+004
2.250+000	.000	7.925+010	7.328+007	6.228+007	4.956+007	3.974+007	2.556+007	1.644+007	6.817+006	1.180+006	1.340+005	1.568+004
2.750+000	.000	4.260+010	3.591+006	5.096+005	3.238+005	2.709+005	1.905+005	1.340+005	6.651+004	1.648+004	2.907+003	5.159+002
3.500+000	.000	3.130+010	1.071+005	6.745+004	5.546+004	4.669+004	3.311+004	2.347+004	1.180+004	2.983+003	5.346+002	9.582+001
5.000+000	.000	2.606+010	1.573-011	1.592-011	1.619-011	1.644-011	1.689-011	1.729-011	1.794-011	1.882-011	1.943-011	1.975-011
7.000+000	.000	2.411+008	1.429-012	1.446-012	1.471-012	1.494-012	1.534-012	1.570-012	1.629-012	1.709-012	1.765-012	1.794-012
1.100+001	.000	3.727+004	1.420-013	1.437-013	1.462-013	1.484-013	1.525-013	1.560-013	1.619-013	1.699-013	1.754-013	1.782-013
TOTAL	.000	1.032+012	1.049+010	5.878+009	2.486+009	1.205+009	4.747+008	3.165+008	2.173+008	1.478+008	1.191+008	1.059+008
GAM POW	.000	1.654+005	1.681+003	9.423+002	3.986+002	1.931+002	7.610+001	5.073+001	3.484+001	2.369+001	1.908+001	1.698+001

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	4.244+010	2.117+010	1.891+010	1.584+010	1.334+010	9.459+009	6.707+009	3.372+009	8.523+008	1.528+008	2.738+007

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RB 94	.000	3.389+009	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

STOP 100

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* WARNING - FLOATING UNDERFLOW FAULT-RERUN USING UNDSET NEG *
* * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WARNING - FLOATING OVERFLOW FAULT-RERUN USING OVFSET NEG  *
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********** ORIGEN2: A REVISED AND UPDATED VERSION OF THE ORIGEN COMPUTER CODE **********
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INTRODUCTION

THIS TEXT IS INTENDED TO BE A BRIEF OUTLINE OF THE ORIGEN2 COMPUTER CODE, WHICH IS A REVISED AND UPDATED VERSION OF THE ORIGEN DOCUMENTED IN REPORT ORNL-4628 (MAY 1973). INCLUDED HERE ARE A BRIEF DESCRIPTION OF THE FUNCTIONS OF ORIGEN2, A LISTING OF THE MAJOR DATA SOURCES, A LISTING OF THE PUBLISHED DOCUMENTATION CONCERNING ORIGEN2, AND AN OUTLINE OF THE ORIGEN2 OUTPUT ORGANIZATION. ORIGEN2 IS AVAILABLE FROM THE ORNL RADIATION SHIELDING INFORMATION CENTER (RSIC) AT THE FOLLOWING ADDRESS:

CODES COORDINATOR
RADIATION SHIELDING INFORMATION CENTER
BLDG. 6025
OAK RIDGE NATIONAL LABORATORY
OAK RIDGE, TENNESSEE 37830
PHONE: (615) 574-6176

QUESTIONS CONCERNING ORIGEN2 SHOULD BE ADDRESSED TO RSIC.

DESCRIPTION

ORIGEN2 IS A REVISION AND UPDATE OF THE ORIGEN COMPUTER CODE. SPECIFICALLY, THE INPUT, OUTPUT, CONTROL, AND DATA BASE ASPECTS OF ORIGEN HAVE BEEN SIGNIFICANTLY REVISED AND UPDATED TO REFLECT CURRENT INFORMATION AND NEEDS. IT SHOULD BE NOTED THAT THE MATHEMATICAL METHODS USED TO SOLVE THE NUCLIDE BUILDUP, DEPLETION, AND DECAY EQUATIONS ARE ESSENTIALLY UNCHANGED FROM THAT IN ORIGEN. ORIGEN2 IS A COMPUTER CODE DESIGNED TO CALCULATE THE COMPOSITION AND CHARACTERISTICS OF NUCLEAR MATERIALS AS A FUNCTION OF DECAY TIME AND THE CHANGES THE MATERIALS UNDERGO DURING VARIOUS FUEL CYCLE OPERATIONS. INPUT AND OUTPUT FEATURES HAVE BEEN DESIGNED TO FACILITATE FLEXIBILITY IN THE TYPE OF CASES THAT CAN BE CONSIDERED AND IN CONTROLLING THE DETAIL OF THE OUTPUT. FOR FURTHER INFORMATION, THE USER IS REFERRED TO THE DOCUMENTATION LISTED BELOW.

MAJOR DATA SOURCES

VIRTUALLY ALL ASPECTS OF THE DATA INPUT TO ORIGEN2 HAVE BEEN UPDATED OR REVISED TO REFLECT CURRENT INFORMATION. THE PRINCIPAL SOURCES OF CROSS SECTION DATA WERE THE ENDF/B-IV, ENDF/B-V, AND LENDL COMPILATIONS. DECAY AND PHOTON INFORMATION WERE PRIMARILY BASED ON THE EVALUATED NUCLEAR STRUCTURE DATA FILE (ENSDF) AT ORNL AND ENDF/B-IV. DATA CONCERNING REACTOR AND FUEL CHARACTERISTICS WERE OBTAINED FROM REFERENCE SAFETY ANALYSIS REPORTS AND, WHERE POSSIBLE, THE COMMERCIAL REACTOR VENDORS.

DOCUMENTATION

THE FOLLOWING ITEMS CONSTITUTE THE ORIGEN2 DOCUMENTATION PUBLISHED AS OF THE DATE OF THIS CODE PACKAGE:

A.G. CROFF, 'ORIGEN2 - A REVISED AND UPDATED VERSION OF THE OAK RIDGE ISOTOPE GENERATION AND DEPLETION CODE', ORNL-5621 (JULY 1980).
A.G. CROFF, 'A USER'S MANUAL FOR THE ORIGEN2 COMPUTER CODE', ORNL/TM-7175 (JULY 1980).
A.G. CROFF, M.A. BJERKE, G.W.MORRISON, AND L.M. PETRIE, 'REVISED URANIUM-PLUTONIUM CYCLE PWR AND BWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-6051 (SEPTEMBER 1978).
A.G. CROFF AND M.A. BJERKE, 'ALTERNATIVE FUEL CYCLE PWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-7005 (FEB 1980).
A.G. CROFF, R.L. HAESE, AND N.B. GOVE, 'UPDATED DECAY AND PHOTON LIBRARIES FOR THE ORIGEN CODE' ORNL/TM-6055 (FEB 1979)
A.G. CROFF, 'ORIGEN2: A REVISED AND UPDATED VERSION OF ORIGEN', TRANS. AM. NUCL. SOC., VOL. 34, P. 349-50 (JUNE 1980).

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***************************** ORIGEN2:  A REVISED AND UPDATED VERSION OF THE ORIGEN COMPUTER CODE ***************************
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ORGANIZATION OF ORIGEN2 OUTPUT

PAST EXPERIENCE HAS INDICATED THAT MANY USERS ENCOUNTER CONSIDERABLE DIFFICULTY IN FINDING THE DESIRED INFORMATION IN A ORIGEN2 OUT PUT WHICH IS SOMETIMES RATHER MASSIVE. THIS SECTION IS INTENDED AS A BRIEF OUTLINE OF THE ORGANIZATION OF ORIGEN2 OUTPUT. FOR DETAILS REFER TO THE USER'S MANUAL (ORNL/TM-7175, SECT. 8.2). THE ORIGEN2 OUTPUT IS EXTREMELY HIERARCHICAL, AND IS ORGANIZED AS FOLLOWS:

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CARD INPUT ECHO
MISCELLANEOUS INPUT DATA (NEUTRON YIELDS, REPROCESSING LOSSES,ELEMENT CHEMICAL TOXICITIES
LISTING OF ORIGEN2 COMMANDS CURRENTLY BEING EXECUTED
LISTING OF ORIGEN2 DATA LIBRARIES (IF SPECIFIED)
  DECAY LIBRARY
    ACTIVATION PRODUCTS
    ACTINIDES
    FISSION PRODUCTS
  CROSS SECTION/FISSION PRODUCT YIELD LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
  PHOTON LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
OUTPUT 1
  REACTIVITY AND BURNUP DATA
  ACTIVATION PRODUCT TABLES
    GRAM TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    CURIE TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    ETC. (DEPENDING ON THE OUTPUT OPTIONS SPECIFIED, MANY OF THESE TABLES MAY BE OMITTED
      .
  ACTINIDE TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  FISSION PRODUCT TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  NEUTRON PRODUCTION RATE TABLES: (ALPHA,N) AND SPONTANEOUS FISSION
  PHOTON TABLES
    ACTIVATION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    ACTINIDES (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    FISSION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
OUTPUT 2
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
  .
  .
OUTPUT N
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
TABLE OF CONTENTS (UNIT 12) FOR THE ABOVE (UNIT 6) OUTPUT
VARIABLE CROSS SECTION INFORMATION OUTPUT (UNIT 16)
DEBUGGING AND OTHER INTERNAL INFORMATION OUTPUT (UNIT 15)
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THE SCENARIO LISTED ABOVE CONSTITUTES A TYPICAL ORIGEN2 OUTPUT FOR MANY CASES. ONE POSSIBLE MODIFICATION IS THE USE OF AN STP COMMAND TO EXECUTE AN ADDITIONAL SET OF INSTRUCTIONS AFTER THE FIRST SET HAS BEEN EXECUTED. IF THIS IS DONE, THE OUTPUT WILL BEGIN WITH 'MISCELLANEOUS INPUT DATA' IF NSTP=1, 'ORIGEN2COMMANDS CURRENTLY BEING EXECUTED' IF NSTP=2, OR 'OUTPUT 1' FOR NSTP=3. ANOTHER OFTEN-USED OPTION IS TO EMPLOY BOTH THE PRIMARY (UNIT 6) AND ALTERNATE (UNIT 11) OUTPUT UNITS. IF BOTH ARE ROUTED TO PAPER, THE TABLE OF CONTENTS FOR UNIT 11, WHICH IS ON UNIT 13, WILL IMMEDIATELY FOLLOW THE DEBUGGING AND INTERNAL INFORMATION (UNIT 15) OUTPUT. THE 'OUTPUT N' TABLES FOR UNIT 11 WILL BE PRINTED FOLLOWING THE TABLE OF CONTENTS.

LISTING OF INPUT DATA ON UNIT = 5

```
INPUT   WRITE    CARD                                CARD IMAGE
UNIT    UNIT     NUMBER
   5      50        1     -1
   5      50        2     -1
   5      50        3     -1
   5      50        4     TIT     ORIGEN-2 CALCULATIONS OF N FUEL (MKIV)  SD-CP-TI-094 REV.0
   5      50        5     RDA     CALCULATED BY HARVEY GOLDBERG , SENIOR ENGINEER
   5      50        6     RDA     NUCLEAR & SAFETY ANALYSIS GROUP , R. H. O.
   5      50        7     LIP     0 0 0
   5      50        8     LIB     0 1 2 3 421 422 423 9 3 0 1 42
   5      50        9     RDA     TWO IRRADIATION RUNS WERE DONE PREVIOUSLY WITH RESULTS
   5      50       10     RDA      STORED ON FILES 12PCMKIVI, 12PCMKIVO,
   5      50       11     RDA     1 METRIC TON MK IV INNER FUEL IRRADIATED FOR AN AVERAGE
   5      50       12     RDA      BURNUP OF 2283 MWD/MTIHM
   5      50       13     RDA      THIS IS THE INITIAL PURE URANIUM AND HARDWARE
   5      50       14     INP     -8 -2  -1  -1  1  1
   5      50       15     RDA      THIS IS THE INITIAL IMPURITIES IN THE URANIUM
   5      50       16     INP     -7 -2  -1  -1  1  1
   5      50       17     RDA      THIS IS THE DISCHARGED PURE FUEL AND HARDWARE
   5      50       18     INP     -6 -2  -1  -1  1  1
   5      50       19     RDA      THIS IS THE DISCHARGED IMPURITIES
   5      50       20     INP     -5 -2  -1  -1  1  1
   5      50       21     RDA     1 METRIC TON MK IV OUTER FUEL IRRADIATED FOR AN AVERAGE
   5      50       22     RDA     BURNUP OF 2970 MWD/MTIHM
   5      50       23     RDA      THIS IS THE INITIAL PURE URANIUM AND HARDWARE
   5      50       24     INP     -4 -2  -1  -1  1  1
   5      50       25     RDA      THIS IS THE INITIAL IMPURITIES IN THE URANIUM
   5      50       26     INP     -3 -2  -1  -1  1  1
   5      50       27     RDA      THIS IS THE DISCHARGED PURE FUEL AND HARDWARE
   5      50       28     INP     -2 -2  -1  -1  1  1
   5      50       29     RDA      THIS IS THE DISCHARGED IMPURITIES
   5      50       30     INP     -1 -2  -1  -1  1  1
   5      50       31     RDA     COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF PURE FUEL
   5      50       32     MOV     -6 -9  0  0.317      31.7 PCT MK IV INNER
   5      50       33     ADD     -2 -9  0  0.683      68.3 PCT MK IV OUTER
   5      50       34     MOV     -9 -2  0  1.0        PURE FUEL DISCHARGED
   5      50       35     RDA     COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF IMPURITIES
   5      50       36     MOV     -5 -9  0  0.317      31.7 PCT MK IV INNER
   5      50       37     ADD     -1 -9  0  0.683      68.3 PCT MK IV OUTER
   5      50       38     MOV     -9 -1  0  1.0        DISCHARGED IMPURITIES
   5      50       39     RDA     COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF PURE FUEL
   5      50       40     MOV     -8 -9  0  0.317      31.7 PCT MK IV INNER
   5      50       41     ADD     -4 -9  0  0.683      68.3 PCT MK IV OUTER
   5      50       42     MOV     -9 -4  0  1.0        INITIAL CHARGE OF PURE FUEL
   5      50       43     RDA     COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF IMPURITIES
   5      50       44     MOV     -7 -9  0  0.317      31.7 PCT MK IV INNER
   5      50       45     ADD     -3 -9  0  0.683      68.3 PCT MK IV OUTER
   5      50       46     MOV     -9 -3  0  1.0        INITIAL CHARGE OF IMPURITIES
   5      50       47     BAS     ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240
   5      50       48     MOV     -4  1   0   1.0
   5      50       49     MOV     -2  2   0   1.0
```

LISTING OF INPUT DATA ON UNIT = 5

```
INPUT   WRITE    CARD                                    CARD IMAGE
UNIT    UNIT     NUMBER
   5      50        50    DEC     120.       2   3   4   2
   5      50        51    DEC     180.       3   4   4   0
   5      50        52    DEC     0.75       4   5   5   0
   5      50        53    DEC      1.0       5   6   5   0
   5      50        54    DEC      1.5       6   7   5   0
   5      50        55    DEC      2.0       7   8   5   0
   5      50        56    DEC      3.0       8   9   5   0
   5      50        57    DEC      5.0       9  10   5   0
   5      50        58    DEC      7.5      10  11   5   0
   5      50        59    DEC     10.0      11  12   5   0
   5      50        60    PHO     101  102  103  10
   5      50        61    CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
   5      50        62    RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        63    OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        64    RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        65    OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        66    RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
   5      50        67    OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        68    HED     1   CHARGE
   5      50        69    HED     2   DISCHARGE
   5      50        70    OUT     12  1  -1  0
   5      50        71    BAS     ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240
   5      50        72    MOV     -3  1   0   1.0
   5      50        73    MOV     -1  2   0   1.0
   5      50        74    DEC     120.       2   3   4   2
   5      50        75    DEC     180.       3   4   4   0
   5      50        76    DEC     0.75       4   5   5   0
   5      50        77    DEC      1.0       5   6   5   0
   5      50        78    DEC      1.5       6   7   5   0
   5      50        79    DEC      2.0       7   8   5   0
   5      50        80    DEC      3.0       8   9   5   0
   5      50        81    DEC      5.0       9  10   5   0
   5      50        82    DEC      7.5      10  11   5   0
   5      50        83    DEC     10.0      11  12.  5   0
   5      50        84    PHO     101  102  103  10
   5      50        85    CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
   5      50        86    RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        87    OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        88    RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        89    OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        90    RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
   5      50        91    OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        92    HED     1   CHARGE
   5      50        93    HED     2   DISCHARGE
   5      50        94    OUT     12  1  -1  0
   5      50        95    BAS     ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240
   5      50        96    MOV     -4  1   0   1.0
   5      50        97    ADD     -3  1   0   1.0
   5      50        98    MOV     -2  2   0   1.0
   5      50        99    ADD     -1  2   0   1.0
```

LISTING OF INPUT DATA ON UNIT = 5

```
INPUT   WRITE     CARD                                    CARD IMAGE
UNIT    UNIT      NUMBER
   5      50        100    DEC     120.      2   3  4  2
   5      50        101    DEC     180.      3   4  4  0
   5      50        102    DEC     0.75      4   5  5  0
   5      50        103    DEC      1.0      5   6  5  0
   5      50        104    DEC      1.5      6   7  5  0
   5      50        105    DEC      2.0      7   8  5  0
   5      50        106    DEC      3.0      8   9  5  0
   5      50        107    DEC      5.0      9  10  5  0
   5      50        108    DEC      7.5      10 11  5  0
   5      50        109    DEC     10.0      11 12  5  0
   5      50        110    PHO     101  102  103  10
   5      50        111    CUT      5 1.E-10     7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
   5      50        112    RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        113    OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        114    RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
   5      50        115    OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        116    RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
   5      50        117    OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50        118    HED     1   CHARGE
   5      50        119    HED     2   DISCHARGE
   5      50        120    OUT     12  1  -1  0
   5      50        121    STP 4
   5      50        122    2        922350  0.01249E+6    922380  0.98709E+6  0  0.0   PURE FUEL
   5      50        123    2        922340  0.00008E+6    922360  0.00033E+6  0  0.0   1.25 %
   5      50        124    0
   5      50        125    2        922350  0.00947E+6    922380  0.99041E+6  0  0.0   PURE FUEL
   5      50        126    2        922340  0.00009E+6    922360  0.00003E+6  0  0.0   0.947 %
   5      50        127    0
   5      50        128    4 130000  75.    500000 1.45E+4   260000 1350.   240000 1000.        ZIRCALOY
   5      50        129    4 280000 550.     60000 275.      920000    2.5  400000 0.9814E+6    ZIRCALOY
   5      50        130    4  50000   0.5  480000   0.5     270000   10.   290000   50.        ZIRCALOY
   5      50        131    4 720000 200.     10000  25.      820000  100.   120000   20.        ZIRCALOY
   5      50        132    4 250000  50.    420000  50.       70000   80.   140000  100.        ZIRCALOY
   5      50        133    4 110000  20.    220000  50.      740000   50.   230000   50.        ZIRCALOY
   5      50        134    0
   5      50        135    4 400000  65.    290000  75.      480000    0.25  40000    10.    IMPURITIES IN
   5      50        136    4 130000 800.     10000   2.      140000  125.   280000  100.    1 METRIC TON
   5      50        137    4 250000   25.   120000   25.     260000  350.   240000   65.          OF
   5      50        138    4  50000   2.25  70000   75.      60000  550.        0    0.0       URANIUM
   5      50        139    0
   5      50        140    END
```

NEUTRON YIELD PER NEUTRON-INDUCED FISSION

NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD
832090	.0000	882230	.0000	882260	.0000	882280	.0000	892270	.0000	902270	.0000
902280	.0000	902290	2.0490	902300	.0000	902320	2.4180	902330	.0000	902340	.0000
912310	.0000	912320	.0000	912330	2.6630	912341	.0000	912340	.0000	922300	.0000
922310	.0000	922320	.0000	922330	2.4990	922340	2.6310	922350	2.4210	922360	2.7340
922370	.0000	922380	2.8010	922390	.0000	922400	.0000	932360	.0000	932370	3.0050
932380	.0000	932390	.0000	942360	2.8700	942370	.0000	942380	2.8330	942390	2.8750
942400	3.1350	942410	2.9340	942420	3.2800	942430	.0000	952410	3.2770	952421	3.1620
952420	3.3600	952430	3.7320	952441	.0000	952440	.0000	962420	3.7460	962430	3.4340
962440	3.7250	962450	3.8320	962460	3.8580	962470	3.5920	962480	3.7960	962490	.0000
972490	3.7600	982490	4.0620	982500	3.9700	982510	4.1400	982520	4.1260	982530	4.1500
982540	.0000	992530	.0000	992541	.0000	992540	.0000	0	.0000	0	.0000

SPONTANEOUS FISSION NEUTRON YIELD, NEUT/FISSION

NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE	
922350	1.6950	922360	1.6500	922370	1.8720	922380	2.0000	922390	2.0480	932361	1.7900
932360	1.7830	932370	1.8730	932380	1.9630	932390	2.0530	942360	2.2200	942370	1.8860
942380	2.2800	942390	2.2400	942400	2.1600	942410	2.2500	942420	2.1500	942430	2.4300
942440	2.3000	952400	2.2900	952410	2.3830	952420	2.4750	952421	2.5900	952430	2.5200
952440	2.6570	952441	2.6650	962410	2.5000	962420	2.5900	962430	2.6870	962440	2.7600
962450	2.8720	962460	3.0000	962480	3.3200	962500	3.5600	972490	3.7200	982490	3.4400
982500	3.5800	982520	3.7250	982540	3.9000	992530	3.9200	992540	4.0400	992550	4.1600

THE REMAINING NEUTRON YIELDS ARE CALCULATED FROM THE EQUATION: NEUT/FISS=(2.84+0.1225*(AT WT-244)

INDIVIDUAL ELEMENT FRACTIONAL RECOVERIES

ELEMENT	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
1	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.9000000	1.0000000
2	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
3	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
4	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
5	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
6	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
7	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
8	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
9	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
10	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
11	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
12	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
13	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
14	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
15	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
16	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
17	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
18	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
19	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
20	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
21	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
22	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
23	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
24	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
25	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
26	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
27	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
28	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
29	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
30	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
31	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
32	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
33	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
34	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
35	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
36	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
37	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
38	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
39	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
40	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
41	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
42	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
43	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
44	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
45	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
46	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
47	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
48	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
49	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000

OUTPUT UNIT = 6

INDIVIDUAL ELEMENT FRACTIONAL RECOVERIES

ELEMENT	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
50	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
51	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
52	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
53	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
54	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
55	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
56	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
57	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
58	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
59	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
60	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
61	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
62	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
63	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
64	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
65	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
66	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
67	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
68	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
69	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
70	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
71	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
72	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
73	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
74	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
75	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
76	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
77	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
78	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
79	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
80	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
81	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
82	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
83	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
84	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
85	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
86	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
87	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
88	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
89	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
90	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
91	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
92	.9950000	1.0000000	.0005000	.9990000	1.0000000	.2000000	.6000000	1.0000000	.0000000	1.0000000
93	.0000000	1.0000000	.0005000	.0000000	.0500000	.0500000	.0000000	.0000000	.0000000	1.0000000
94	.9950000	1.0000000	.0005000	.9999000	1.0000000	.0200000	.0000000	.0000000	.0000000	1.0000000
95	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
96	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
97	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
98	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
99	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000

OUTPUT UNIT = 6 PAGE

GROUP FRACTIONAL RECOVERIES

GROUP	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
1	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000
2	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
3	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
4	.9950000	1.0000000	.0005000	.9990000	1.0000000	.2000000	.6000000	1.0000000	.0000000	.0000000
5	.0000000	1.0000000	.0005000	.0000000	.0500000	.0500000	.0000000	.0000000	.0000000	.0000000
6	.9950000	1.0000000	.0005000	.9999000	1.0000000	.0200000	.0000000	.0000000	.0000000	.0000000
7	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
8	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
9	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
10	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
11	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
12	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000
13	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
14	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.9000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
16	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
17	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
18	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
19	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

ELEMENT ASSIGNMENTS TO FRACTIONAL RECOVERY GROUPS

ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP
1	14	2	13	3	1	4	1	5	1	6	13	7	13	8	1	9	12
10	13	11	1	12	1	13	1	14	1	15	1	16	1	17	12	18	13
19	1	20	1	21	1	22	1	23	1	24	1	25	1	26	1	27	1
28	1	29	1	30	1	31	1	32	1	33	1	34	1	35	12	36	13
37	1	38	1	39	1	40	1	41	1	42	1	43	1	44	1	45	1
46	1	47	1	48	1	49	1	50	1	51	1	52	1	53	12	54	13
55	1	56	1	57	1	58	1	59	1	60	1	61	1	62	1	63	1
64	1	65	1	66	1	67	1	68	1	69	1	70	1	71	1	72	1
73	1	74	1	75	1	76	1	77	1	78	1	79	1	80	1	81	1
82	1	83	1	84	1	85	1	86	13	87	1	88	1	89	1	90	2
91	3	92	4	93	5	94	6	95	7	96	8	97	9	98	10	99	11

OUTPUT UNIT = 6

CHEMICAL TOXICITIES, GRAMS PER M**3 WATER

NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY
1	3.50+003	2	2.00-001	3	5.00+000	4	1.00+000	5	1.00+000	6	4.00+002
7	1.00-002	8	9.45+005	9	1.00+000	10	1.00+000	11	1.00+003	12	1.00+001
13	1.00-002	14	5.00+000	15	1.00-002	16	5.00+001	17	1.50-001	18	1.00+001
19	1.00+003	20	3.00+001	21	5.00-001	22	1.00-001	23	1.00-001	24	2.00-002
25	1.00-002	26	5.00-002	27	5.00-002	28	5.00-002	29	1.00-002	30	5.00-002
31	2.00-001	32	5.00-001	33	1.00-002	34	1.00-002	35	3.00+000	36	4.00+001
37	5.00+001	38	1.00+001	39	1.00-003	40	1.00+000	41	2.00-002	42	5.00-001
43	1.00+002	44	1.00+000	45	5.00-002	46	5.00-002	47	1.00-003	48	1.00-002
49	2.00-002	50	5.00-002	51	5.00-002	52	2.00-001	53	1.00+001	54	1.50+002
55	5.00+000	56	5.00-001	57	1.00+000	58	2.00+000	59	1.00+000	60	2.00-001
61	1.00+000	62	2.00-001	63	2.00-001	64	2.00-001	65	5.00-001	66	1.00+000
67	1.00+000	68	1.00-001	69	2.00-001	70	1.00-001	71	1.00-001	72	5.00-002
73	1.00+000	74	1.00+002	75	1.00+001	76	1.00+000	77	8.00-001	78	3.00-001
79	2.00-002	80	2.00-003	81	5.00-003	82	1.00-002	83	1.00-001	84	2.00-001
85	1.00+001	86	5.00+002	87	5.00+000	88	1.00-003	89	2.00-002	90	5.00-004
91	5.00-003	92	5.00-001	93	8.00-003	94	8.00-004	95	4.00-002	96	5.00-001
97	5.00-003	98	1.00-002	99	1.00-002						

```
                                                                                OUTPUT UNIT =  6
  1    0 TIT  *TIT     ORIGEN-2 CALCULATIONS OF N FUEL (MKIV)  SD-CP-TI-094 REV.0                *
  2    0 RDA  *RDA     CALCULATED BY HARVEY GOLDBERG , SENIOR ENGINEER                           *
  3    0 RDA  *RDA     NUCLEAR & SAFETY ANALYSIS GROUP , R. H. O.                                *
  4    0 LIP  *LIP     0 0 0                                                                     *
  5    0 LIB  *LIB     0 1 2 3 421 422 423 9 3 0 1 42                                            *
  6    0 RDA  *RDA     TWO IRRADIATION RUNS WERE DONE PREVIOUSLY WITH RESULTS                    *
  7    0 RDA  *RDA      STORED ON FILES 12PCMKIVI, 12PCMKIVO.                                    *
  8    0 RDA  *RDA     1 METRIC TON MK IV INNER FUEL IRRADIATED FOR AN AVERAGE                   *
  9    0 RDA  *RDA      BURNUP OF 2283 MWD/MTIHM                                                 *
 10    0 RDA  *RDA      THIS IS THE INITIAL PURE URANIUM AND HARDWARE                            *
 11    0 INP  *INP     -8 -2  -1  -1  1  1                                                       *
 12    0 RDA  *RDA      THIS IS THE INITIAL IMPURITIES IN THE URANIUM                            *
 13    0 INP  *INP     -7 -2  -1  -1  1  1                                                       *
 14    0 RDA  *RDA      THIS IS THE DISCHARGED PURE FUEL AND HARDWARE                            *
 15    0 INP  *INP     -6 -2  -1  -1  1  1                                                       *
 16    0 RDA  *RDA      THIS IS THE DISCHARGED IMPURITIES                                        *
 17    0 INP  *INP     -5 -2  -1  -1  1  1                                                       *
 18    0 RDA  *RDA     1 METRIC TON MK IV OUTER FUEL IRRADIATED FOR AN AVERAGE                   *
 19    0 RDA  *RDA     BURNUP OF 2970 MWD/MTIHM                                                  *
 20    0 RDA  *RDA      THIS IS THE INITIAL PURE URANIUM AND HARDWARE                            *
 21    0 INP  *INP     -4 -2  -1  -1  1  1                                                       *
 22    0 RDA  *RDA      THIS IS THE INITIAL IMPURITIES IN THE URANIUM                            *
 23    0 INP  *INP     -3 -2  -1  -1  1  1                                                       *
 24    0 RDA  *RDA      THIS IS THE DISCHARGED PURE FUEL AND HARDWARE                            *
 25    0 INP  *INP     -2 -2  -1  -1  1  1                                                       *
 26    0 RDA  *RDA      THIS IS THE DISCHARGED IMPURITIES                                        *
 27    0 INP  *INP     -1 -2  -1  -1  1  1                                                       *
 28    0 RDA  *RDA     COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF PURE FUEL               *
 29    0 MOV  *MOV     -6 -9  0  0.317      31.7 PCT MK IV INNER                                 *
 30    0 ADD  *ADD     -2 -9  0  0.683      68.3 PCT MK IV OUTER                                 *
 31    0 MOV  *MOV     -9 -2  0  1.0        PURE FUEL DISCHARGED                                 *
 32    0 RDA  *RDA     COMBINE MK IV INNER AND MK IV OUTER DISCHARGES OF IMPURITIES              *
 33    0 MOV  *MOV     -5 -9  0  0.317      31.7 PCT MK IV INNER                                 *
 34    0 ADD  *ADD     -1 -9  0  0.683      68.3 PCT MK IV OUTER                                 *
 35    0 MOV  *MOV     -9 -1  0  1.0        DISCHARGED IMPURITIES                                *
 36    0 RDA  *RDA     COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF PURE FUEL           *
 37    0 MOV  *MOV     -8 -9  0  0.317      31.7 PCT MK IV INNER                                 *
 38    0 ADD  *ADD     -4 -9  0  0.683      68.3 PCT MK IV OUTER                                 *
 39    0 MOV  *MOV     -9 -4  0  1.0        INITIAL CHARGE OF PURE FUEL                          *
 40    0 RDA  *RDA     COMBINE MK IV INNER AND MK IV OUTER INITIAL CHARGE OF IMPURITIES          *
 41    0 MOV  *MOV     -7 -9  0  0.317      31.7 PCT MK IV INNER                                 *
 42    0 ADD  *ADD     -3 -9  0  0.683      68.3 PCT MK IV OUTER                                 *
 43    0 MOV  *MOV     -9 -3  0  1.0        INITIAL CHARGE OF IMPURITIES                         *
 44    0 BAS  *BAS     ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240*
 45    0 MOV  *MOV     -4  1   0   1.0                                                            *
 46    0 MOV  *MOV     -2  2   0   1.0                                                            *
 47    0 DEC  *DEC     120.       2   3   4   2                                                   *
 48    0 DEC  *DEC     180.       3   4   4   0                                                   *
 49    0 DEC  *DEC     0.75       4   5   5   0
```

```
50    0 DEC  *DEC      1.0       5   6  5  0                                          *
51    0 DEC  *DEC      1.5       6   7  5  0                                          *
52    0 DEC  *DEC      2.0       7   8  5  0                                          *
53    0 DEC  *DEC      3.0       8   9  5  0                                          *
54    0 DEC  *DEC      5.0       9  10  5  0                                          *
55    0 DEC  *DEC      7.5      10  11  5  0                                          *
56    0 DEC  *DEC     10.0      11  12  5  0                                          *
57    0 PHO  *PHO     101  102  103  10                                               *
58    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1          *
59    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                        *
60    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
61    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                           *
62    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
63    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS                      *
64    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
65    0 HED  *HED     1   CHARGE                                                      *
66    0 HED  *HED     2   DISCHARGE                                                   *
67    0 OUT  *OUT     12  1  -1  0                                                    *
68    0 BAS  *BAS     ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240   *
69    0 MOV  *MOV     -3  1   0   1.0                                                 *
70    0 MOV  *MOV     -1  2   0   1.0                                                 *
71    0 DEC  *DEC     120.      2   3  4  2                                           *
72    0 DEC  *DEC     180.      3   4  4  0                                           *
73    0 DEC  *DEC     0.75      4   5  5  0                                           *
74    0 DEC  *DEC      1.0      5   6  5  0                                           *
75    0 DEC  *DEC      1.5      6   7  5  0                                           *
76    0 DEC  *DEC      2.0      7   8  5  0                                           *
77    0 DEC  *DEC      3.0      8   9  5  0                                           *
78    0 DEC  *DEC      5.0      9  10  5  0                                           *
79    0 DEC  *DEC      7.5      10  11  5  0                                          *
80    0 DEC  *DEC     10.0      11  12  5  0                                          *
81    0 PHO  *PHO     101  102  103  10                                               *
82    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1          *
83    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                        *
84    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
85    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                           *
86    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
87    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS                      *
88    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   *
89    0 HED  *HED     1   CHARGE                                                      *
90    0 HED  *HED     2   DISCHARGE                                                   *
91    0 OUT  *OUT     12  1  -1  0                                                    *
92    0 BAS  *BAS     ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240 *
93    0 MOV  *MOV     -4  1   0   1.0                                                 *
94    0 ADD  *ADD     -3  1   0   1.0                                                 *
95    0 MOV  *MOV     -2  2   0   1.0                                                 *
96    0 ADD  *ADD     -1  2   0   1.0                                                 *
97    0 DEC  *DEC     120.      2   3  4  2                                           *
98    0 DEC  *DEC     180.      3   4  4  0                                           *
99    0 DEC  *DEC     0.75      4   5  5  0                                           *
```

```
 100    0 DEC  *DEC      1.0      5   6  5  0                                                  *
 101    0 DEC  *DEC      1.5      6   7  5  0                                                  *
 102    0 DEC  *DEC      2.0      7   8  5  0                                                  *
 103    0 DEC  *DEC      3.0      8   9  5  0                                                  *
 104    0 DEC  *DEC      5.0      9  10  5  0                                                  *
 105    0 DEC  *DEC      7.5     10  11  5  0                                                  *
 106    0 DEC  *DEC     10.0     11  12  5  0                                                  *
 107    0 PHO  *PHO     101  102  103  10                                                      *
 108    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1                 *
 109    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                                *
 110    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                         *
 111    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                                   *
 112    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                         *
 113    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS                              *
 114    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                         *
 115    0 HED  *HED     1   CHARGE                                                              *
 116    0 HED  *HED     2   DISCHARGE                                                           *
 117    0 OUT  *OUT     12  1  -1  0                                                            *
 118    0 STP  *STP 4
OVERFLOW AT LINE 197 OF NUDAT1 FOR I =    11

SUM OF YIELDS FOR EACH FISSILE ISOTOPE:                          .0000      .0000     2.0001+000 2.0002+000 2.0006+000 2.0003+000

ISOTOPES FOR WHICH YIELDS ARE EXPLICITLY ACCOUNTED FOR: 922350 922380 942390 942410
```

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	1.14263	1.14261	1.14257	1.14252	1.14241	1.14228	1.14195	1.14113	1.13998	1.13882
NEUT PRODN	.00	.00	6.11+003	6.11+003	6.11+003	6.11+003	6.11+003	6.10+003	6.10+003	6.09+003	6.08+003	6.08+003
NEUT DESTN	.00	.00	5.35+003	5.35+003	5.35+003	5.35+003	5.35+003	5.34+003	5.34+003	5.34+003	5.34+003	5.34+003
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 48 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	1.758+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000	1.759+000
H 2	5.276-004	1.000-003	1.000-003	1.000-003	1.000-003	1.000-003	1.000-003	1.000-003	1.000-003	1.000-003	1.000-003	1.000-003
HE 4	.000	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003
LI 7	.000	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003
BE 9	.000	2.156-005	2.156-005	2.156-005	2.156-005	2.156-005	2.156-005	2.156-005	2.156-005	2.156-005	2.156-005	2.156-005
B 10	6.514-003	1.383-003	1.383-003	1.383-003	1.383-003	1.383-003	1.383-003	1.383-003	1.383-003	1.383-003	1.383-003	1.383-003
B 11	2.866-002	2.911-002	2.911-002	2.911-002	2.911-002	2.911-002	2.911-002	2.911-002	2.911-002	2.911-002	2.911-002	2.911-002
C 12	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001	1.911+001
C 13	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001
C 14	.000	4.748-003	4.748-003	4.748-003	4.748-003	4.748-003	4.747-003	4.747-003	4.747-003	4.745-003	4.744-003	4.743-003
N 14	5.606+000	5.600+000	5.600+000	5.600+000	5.600+000	5.600+000	5.600+000	5.600+000	5.600+000	5.600+000	5.600+000	5.600+000
N 15	2.206-002	2.223-002	2.223-002	2.223-002	2.223-002	2.223-002	2.223-002	2.223-002	2.223-002	2.223-002	2.223-002	2.223-002
NA 23	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG 24	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000	1.097+000
MG 25	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001	1.446-001
MG 26	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001	1.656-001
AL 27	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000
SI 28	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000	6.463+000
SI 29	3.390-001	3.393-001	3.393-001	3.393-001	3.393-001	3.393-001	3.393-001	3.393-001	3.393-001	3.393-001	3.393-001	3.393-001
SI 30	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001	2.328-001
P 31	.000	1.047-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005
TI 46	2.786-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001
TI 47	2.570-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001
TI 48	2.597+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000
TI 49	1.942-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001
TI 50	1.909-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001	1.910-001
V 50	8.621-003	8.468-003	8.468-003	8.468-003	8.468-003	8.468-003	8.468-003	8.468-003	8.468-003	8.468-003	8.468-003	8.468-003
V 51	3.509+000	3.517+000	3.520+000	3.520+000	3.520+000	3.520+000	3.520+000	3.520+000	3.520+000	3.520+000	3.520+000	3.520+000
CR 50	2.939+000	2.923+000	2.923+000	2.923+000	2.923+000	2.923+000	2.923+000	2.923+000	2.923+000	2.923+000	2.923+000	2.923+000
CR 51	.000	2.706-003	1.345-004	2.998-005	2.859-006	2.912-007	3.021-009	3.133-011	3.372-015	3.904-023	4.689-033	.000
CR 52	5.888+001	5.881+001	5.881+001	5.881+001	5.881+001	5.881+001	5.881+001	5.881+001	5.881+001	5.881+001	5.881+001	5.881+001
CR 53	6.805+000	6.838+000	6.838+000	6.838+000	6.838+000	6.838+000	6.838+000	6.838+000	6.838+000	6.838+000	6.838+000	6.838+000
CR 54	1.722+000	1.768+000	1.768+000	1.768+000	1.768+000	1.768+000	1.768+000	1.768+000	1.768+000	1.768+000	1.768+000	1.768+000
MN 54	.000	2.519-004	1.930-004	1.690-004	1.372-004	1.120-004	7.472-005	4.983-005	2.216-005	4.385-006	5.786-007	7.634-008
MN 55	3.518+000	3.498+000	3.499+000	3.499+000	3.500+000	3.500+000	3.501+000	3.502+000	3.504+000	3.505+000	3.507+000	3.507+000
MN 56	.000	1.382-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	5.329+000	5.318+000	5.318+000	5.318+000	5.318+000	5.318+000	5.318+000	5.318+000	5.318+000	5.318+000	5.318+000	5.318+000
FE 55	.000	9.872-003	9.044-003	8.656-003	8.083-003	7.561-003	6.618-003	5.792-003	4.437-003	2.603-003	1.337-003	6.864-004
FE 56	8.728+001	8.721+001	8.721+001	8.721+001	8.721+001	8.721+001	8.721+001	8.721+001	8.721+001	8.721+001	8.721+001	8.721+001
FE 57	2.082+000	2.172+000	2.172+000	2.172+000	2.172+000	2.172+000	2.172+000	2.172+000	2.172+000	2.172+000	2.172+000	2.172+000
FE 58	2.857-001	2.886-001	2.890-001	2.891-001	2.891-001	2.892-001	2.892-001	2.892-001	2.892-001	2.892-001	2.892-001	2.892-001
FE 59	.000	3.384-005	5.329-006	2.115-006	4.976-007	1.219-007	7.317-009	4.392-010	1.582-012	2.054-017	1.600-023	1.247-029
CO 58	.000	5.383-004	1.662-004	9.236-005	3.681-005	1.505-005	2.516-006	4.207-007	1.176-008	9.193-012	1.201-015	1.570-019
CO 59	7.035-001	6.872-001	6.872-001	6.872-001	6.872-001	6.872-001	6.872-001	6.872-001	6.872-001	6.872-001	6.872-001	6.872-001
CO 60	.000	1.616-002	1.547-002	1.514-002	1.464-002	1.416-002	1.326-002	1.242-002	1.089-002	8.370-003	6.024-003	4.336-003
NI 58	2.608+001	2.601+001	2.601+001	2.601+001	2.601+001	2.601+001	2.601+001	2.601+001	2.601+001	2.601+001	2.601+001	2.601+001
NI 59	.000	6.534-002	6.534-002	6.534-002	6.534-002	6.534-002	6.534-002	6.534-002	6.534-002	6.534-002	6.533-002	6.533-002
NI 60	1.031+001	1.030+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.031+001	1.032+001	1.032+001
NI 61	4.539-001	4.642-001	4.642-001	4.642-001	4.642-001	4.642-001	4.642-001	4.642-001	4.642-001	4.642-001	4.642-001	4.642-001
NI 62	1.466+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000	1.456+000
NI 63	.000	1.009-002	1.007-002	1.006-002	1.004-002	1.002-002	9.980-003	9.943-003	9.868-003	9.720-003	9.539-003	9.361-003
NI 64	3.835-001	3.862-001	3.863-001	3.863-001	3.863-001	3.863-001	3.863-001	3.863-001	3.863-001	3.863-001	3.863-001	3.863-001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CU 63	2.411+000	2.406+000	2.406+000	2.406+000	2.406+000	2.406+000	2.406+000	2.406+000	2.406+000	2.406+000	2.407+000	2.407+000
CU 64	.000	1.435-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	1.107+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000	1.106+000
ZN 64	.000	1.701-003	1.706-003	1.706-003	1.706-003	1.706-003	1.706-003	1.706-003	1.706-003	1.706-003	1.706-003	1.706-003
ZN 66	.000	1.019-003	1.019-003	1.019-003	1.019-003	1.019-003	1.019-003	1.019-003	1.019-003	1.019-003	1.019-003	1.019-003
SR 87	.000	1.440-004	1.440-004	1.440-004	1.440-004	1.440-004	1.440-004	1.440-004	1.440-004	1.440-004	1.440-004	1.440-004
SR 88	.000	1.326-002	1.326-002	1.326-002	1.326-002	1.326-002	1.326-002	1.326-002	1.326-002	1.326-002	1.326-002	1.326-002
SR 89	.000	2.705-004	5.209-005	2.286-005	6.296-006	1.798-006	1.466-007	1.195-008	7.944-011	3.510-015	1.265-020	4.556-026
Y 89	.000	7.382-004	9.565-004	9.858-004	1.002-003	1.007-003	1.008-003	1.009-003	1.009-003	1.009-003	1.009-003	1.009-003
Y 90	.000	5.905-004	2.504-011	2.494-011	2.479-011	2.464-011	2.435-011	2.406-011	2.350-011	2.240-011	2.111-011	1.989-011
Y 91	.000	7.958-004	1.921-004	9.435-005	3.100-005	1.051-005	1.208-006	1.388-007	1.832-009	3.195-013	6.401-018	1.282-022
ZR 90	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004	3.504+004
ZR 91	7.706+003	7.701+003	7.701+003	7.701+003	7.701+003	7.701+003	7.701+003	7.701+003	7.701+003	7.701+003	7.701+003	7.701+003
ZR 92	1.189+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004	1.190+004
ZR 93	.000	2.186+000	2.186+000	2.186+000	2.186+000	2.186+000	2.186+000	2.186+000	2.186+000	2.186+000	2.186+000	2.186+000
ZR 94	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004	1.237+004
ZR 95	.000	2.252-001	6.136-002	3.203-002	1.158-002	4.306-003	5.954-004	8.233-005	1.574-006	5.756-010	2.910-014	1.471-018
ZR 96	2.032+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003	2.031+003
ZR 97	.000	5.850-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	3.681-007	6.685-007	8.168-007	1.046-006	1.267-006	1.699-006	2.121-006	2.933-006	4.437-006	6.114-006	7.591-006
NB 95	.000	1.076-001	5.915-002	3.426-002	1.336-002	5.125-003	7.225-004	1.003-004	1.987-006	7.020-010	3.549-014	1.794-018
NB 95M	.000	8.961-005	2.568-005	1.340-005	4.845-006	1.802-006	2.491-007	3.445-008	6.587-010	2.408-013	1.218-017	6.156-022
NB 97	.000	4.159-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 92	4.988-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001
MO 93	.000	3.311-005	3.311-005	3.311-005	3.311-005	3.311-005	3.310-005	3.310-005	3.309-005	3.308-005	3.306-005	3.305-005
MO 94	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001
MO 95	5.533-001	9.045-001	1.117+000	1.171+000	1.212+000	1.228+000	1.236+000	1.237+000	1.237+000	1.237+000	1.237+000	1.237+000
MO 96	5.873-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001
MO 97	3.411-001	1.737+000	1.744+000	1.744+000	1.744+000	1.744+000	1.744+000	1.744+000	1.744+000	1.744+000	1.744+000	1.744+000
MO 98	8.652-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001
MO 99	.000	1.308-005	9.565-019	2.587-025	1.349-035	.000	.000	.000	.000	.000	.000	.000
MO100	3.517-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001
TC 99	.000	9.674-005	9.837-005	9.837-005	9.837-005	9.837-005	9.837-005	9.837-005	9.836-005	9.836-005	9.836-005	9.836-005
RU101	.000	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004
CD106	4.308-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004	4.307-004
CD108	3.005-004	3.002-004	3.002-004	3.002-004	3.002-004	3.002-004	3.002-004	3.002-004	3.002-004	3.002-004	3.002-004	3.002-004
CD110	4.299-003	4.262-003	4.262-003	4.262-003	4.262-003	4.262-003	4.262-003	4.262-003	4.262-003	4.262-003	4.262-003	4.262-003
CD111	4.442-003	4.419-003	4.419-003	4.419-003	4.419-003	4.419-003	4.419-003	4.419-003	4.419-003	4.419-003	4.419-003	4.419-003
CD112	8.443-003	8.474-003	8.474-003	8.474-003	8.474-003	8.474-003	8.474-003	8.474-003	8.474-003	8.474-003	8.474-003	8.474-003
CD113	4.310-003	9.173-007	9.173-007	9.173-007	9.173-007	9.173-007	9.173-007	9.173-007	9.173-007	9.173-007	9.173-007	9.173-007
CD114	1.023-002	1.459-002	1.459-002	1.459-002	1.459-002	1.460-002	1.460-002	1.460-002	1.460-002	1.460-002	1.460-002	1.460-002
CD116	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003	2.720-003
IN113	.000	2.758-002	3.494-002	3.704-002	3.913-002	4.029-002	4.135-002	4.170-002	4.186-002	4.188-002	4.188-002	4.188-002
IN113M	.000	8.578-006	4.166-006	2.903-006	1.649-006	9.514-007	3.168-007	1.055-007	1.169-008	1.437-010	5.880-013	2.406-015
IN114M	.000	1.102-004	2.054-005	8.866-006	2.380-006	6.629-007	5.142-008	3.989-009	2.400-011	8.690-016	2.441-021	6.854-027
SN112	9.618+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000
SN113	.000	1.429-002	6.937-003	4.834-003	2.745-003	1.584-003	5.274-004	1.756-004	1.947-005	2.393-007	9.791-010	4.006-012
SN114	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000
SN115	3.753+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000
SN116	1.464+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002
SN117	7.787+001	7.798+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001
SN117M	.000	1.279-002	3.371-005	1.730-006	1.655-008	1.803-010	2.141-014	2.541-018	3.580-026	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SN118	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002
SN119	8.789+001	8.795+001	8.797+001	8.798+001	8.799+001	8.799+001	8.800+001	8.801+001	8.802+001	8.802+001	8.802+001	8.802+001
SN119M	.000	7.032-002	5.008-002	4.226-002	3.240-002	2.502-002	1.493-002	8.905-003	3.169-003	4.013-004	3.031-005	2.289-006
SN120	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002
SN121	.000	5.646-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	4.961-004	4.939-004	4.928-004	4.910-004	4.893-004	4.859-004	4.826-004	4.759-004	4.629-004	4.471-004	4.319-004
SN122	4.819+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001
SN123	.000	4.610-003	2.421-003	1.755-003	1.060-003	6.493-004	2.437-004	9.146-005	1.288-005	2.556-007	1.903-009	1.417-011
SN124	5.963+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001
SN125	.000	1.867-003	3.341-007	4.470-009	5.214-012	7.337-015	1.454-020	2.883-026	.000	.000	.000	.000
SB121	.000	8.396-002	8.453-002	8.453-002	8.453-002	8.453-002	8.453-002	8.454-002	8.454-002	8.456-002	8.457-002	8.459-002
SB122	.000	2.883-005	1.208-018	2.472-025	8.328-036	.000	.000	.000	.000	.000	.000	.000
SB123	.000	4.320-003	6.509-003	7.175-003	7.870-003	8.281-003	8.686-003	8.838-003	8.917-003	8.930-003	8.930-003	8.930-003
SB124	.000	1.190-005	2.988-006	1.497-006	5.076-007	1.774-007	2.166-008	2.645-009	3.943-011	8.766-015	2.379-019	6.459-024
SB125	.000	5.139-002	4.907-002	4.709-002	4.416-002	4.148-002	3.660-002	3.229-002	2.514-002	1.524-002	8.154-003	4.362-003
SB126	.000	1.041-005	1.268-008	4.427-010	2.317-012	1.404-014	5.156-019	1.894-023	2.555-032	.000	.000	.000
TE122	.000	8.655-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004
TE124	.000	1.123-005	2.014-005	2.163-005	2.262-005	2.295-005	2.310-005	2.312-005	2.312-005	2.312-005	2.312-005	2.312-005
TE125	.000	4.777-003	8.843-003	1.081-002	1.377-002	1.648-002	2.142-002	2.579-002	3.304-002	4.308-002	5.027-002	5.411-002
TE125M	.000	4.849-004	6.243-004	6.284-004	6.078-004	5.768-004	5.115-004	4.517-004	3.517-004	2.133-004	1.141-004	6.101-005
TE126	.000	7.972-005	9.012-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005
LU175	.000	2.164-003	2.949-003	3.103-003	3.218-003	3.263-003	3.288-003	3.292-003	3.293-003	3.293-003	3.293-003	3.293-003
LU176	.000	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005
HF174	2.194-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002
HF175	.000	1.129-003	3.440-004	1.899-004	7.492-005	3.033-005	4.972-006	8.150-007	2.190-008	1.581-011	1.871-015	2.215-019
HF176	7.212-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001
HF177	2.594+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000
HF178	3.801+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000
HF179	1.938+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000
HF180	4.993+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000
HF181	.000	9.491-003	1.334-003	5.003-004	1.077-004	2.420-005	1.222-006	6.172-008	1.574-010	1.023-015	3.361-022	1.104-028
HF182	.000	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005
TA181	.000	3.027-002	3.845-002	3.929-002	3.969-002	3.977-002	3.980-002	3.980-002	3.980-002	3.980-002	3.980-002	3.980-002
TA182	.000	3.999-004	1.940-004	1.351-004	7.672-005	4.425-005	1.472-005	4.895-006	5.416-007	6.633-009	3.031-011	3.429-012
TA183	.000	3.256-005	2.689-012	7.727-016	2.205-021	8.986-027	.000	.000	.000	.000	.000	.000
W180	4.476-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003
W181	.000	4.460-005	2.245-005	1.593-005	9.307-006	5.521-006	1.942-006	6.834-007	8.459-008	1.296-009	6.988-012	3.767-014
W182	9.156-001	8.601-001	8.603-001	8.603-001	8.604-001	8.604-001	8.604-001	8.604-001	8.605-001	8.605-001	8.605-001	8.605-001
W183	5.005-001	5.382-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001
W184	1.079+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000
W185	.000	7.592-004	2.508-004	1.442-004	6.058-005	2.608-005	4.833-006	8.958-007	3.077-008	3.629-011	7.937-015	1.736-018
W186	1.018+000	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001
W187	.000	3.371-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	3.299-005	9.951-006	5.465-006	2.139-006	8.591-007	1.386-007	2.237-008	5.825-010	3.950-013	4.322-017	4.730-021
RE185	.000	1.210-003	1.718-003	1.825-003	1.909-003	1.943-003	1.964-003	1.968-003	1.969-003	1.969-003	1.969-003	1.969-003
RE187	.000	5.706-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002
RE188	.000	1.279-005	1.025-007	5.629-008	2.203-008	8.849-009	1.428-009	2.304-010	6.000-012	4.069-015	4.452-019	4.872-023
OS186	.000	9.507-005	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004
OS188	.000	1.564-003	1.600-003	1.604-003	1.608-003	1.609-003	1.610-003	1.610-003	1.610-003	1.610-003	1.610-003	1.610-003
OS189	.000	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006
PB204	9.695-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002
PB205	.000	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB206	1.685+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000
PB207	1.553+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000
PB208	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000
SUMTOT	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004
TOTAL	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	1.759+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000	1.760+000
HE	.000	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003	2.938-003
LI	.000	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003
BE	.000	2.215-005	2.215-005	2.215-005	2.215-005	2.215-005	2.215-005	2.215-005	2.215-005	2.215-005	2.215-005	2.215-005
B	3.518-002	3.049-002	3.049-002	3.049-002	3.049-002	3.049-002	3.049-002	3.049-002	3.049-002	3.049-002	3.049-002	3.049-002
C	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001	1.935+001
N	5.628+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000
NA	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG	1.407+000	1.408+000	1.408+000	1.408+000	1.408+000	1.408+000	1.408+000	1.408+000	1.408+000	1.408+000	1.408+000	1.408+000
AL	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000	5.276+000
SI	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000
P	.000	1.047-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005	1.048-005
TI	3.517+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000
V	3.518+000	3.526+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000	3.528+000
CR	7.035+001	7.034+001	7.034+001	7.034+001	7.034+001	7.034+001	7.034+001	7.034+001	7.034+001	7.034+001	7.034+001	7.034+001
MN	3.518+000	3.498+000	3.499+000	3.500+000	3.500+000	3.501+000	3.501+000	3.502+000	3.504+000	3.505+000	3.507+000	3.507+000
FE	9.497+001	9.500+001	9.500+001	9.499+001	9.499+001	9.499+001	9.499+001	9.499+001	9.499+001	9.499+001	9.499+001	9.499+001
CO	7.035-001	7.039-001	7.028-001	7.024-001	7.019-001	7.014-001	7.005-001	6.996-001	6.981-001	6.956-001	6.932-001	6.916-001
NI	3.869+001	3.869+001	3.870+001	3.870+001	3.870+001	3.870+001	3.870+001	3.870+001	3.870+001	3.870+001	3.870+001	3.871+001
CU	3.518+000	3.512+000	3.512+000	3.512+000	3.512+000	3.512+000	3.512+000	3.512+000	3.512+000	3.513+000	3.513+000	3.513+000
ZN	.000	2.720-003	2.726-003	2.726-003	2.726-003	2.726-003	2.726-003	2.725-003	2.725-003	2.725-003	2.725-003	2.725-003
SR	.000	1.367-002	1.345-002	1.342-002	1.341-002	1.340-002	1.340-002	1.340-002	1.340-002	1.340-002	1.340-002	1.340-002
Y	.000	2.126-003	1.149-003	1.080-003	1.033-003	1.017-003	1.010-003	1.009-003	1.009-003	1.009-003	1.009-003	1.009-003
ZR	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004	6.904+004
NB	.000	1.081-001	5.918-002	3.427-002	1.337-002	5.129-003	7.249-004	1.030-004	5.686-006	5.692-006	8.184-006	1.068-005
MO	3.518+000	5.277+000	5.496+000	5.550+000	5.591+000	5.607+000	5.615+000	5.616+000	5.616+000	5.616+000	5.616+000	5.616+000
TC	.000	9.675-005	9.837-005	9.837-005	9.837-005	9.837-005	9.837-005	9.837-005	9.836-005	9.836-005	9.836-005	9.836-005
RU	.000	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004
CD	3.518-002	3.519-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002	3.520-002
IN	.000	2.770-002	3.496-002	3.706-002	3.914-002	4.030-002	4.135-002	4.171-002	4.186-002	4.188-002	4.188-002	4.188-002
SN	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003
SB	.000	1.397-001	1.401-001	1.388-001	1.366-001	1.343-001	1.298-001	1.257-001	1.186-001	1.087-001	1.017-001	9.788-002
TE	.000	6.222-003	1.047-002	1.245-002	1.539-002	1.807-002	2.294-002	2.725-002	3.440-002	4.430-002	5.139-002	5.518-002
LU	.000	2.186-003	2.970-003	3.124-003	3.239-003	3.284-003	3.309-003	3.313-003	3.314-003	3.314-003	3.314-003	3.314-003
HF	1.407+001	1.405+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001
TA	.000	3.070-002	3.864-002	3.942-002	3.976-002	3.982-002	3.981-002	3.981-002	3.980-002	3.980-002	3.980-002	3.980-002
W	3.517+000	3.459+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000
RE	.000	5.829-002	5.912-002	5.922-002	5.931-002	5.934-002	5.936-002	5.937-002	5.937-002	5.937-002	5.937-002	5.937-002
OS	.000	1.667-003	1.708-003	1.712-003	1.716-003	1.717-003	1.718-003	1.718-003	1.718-003	1.718-003	1.718-003	1.718-003
PB	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000
SUMTOT	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004
TOTAL	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004

CUMULATIVE TABLE TOTALS

AP+FP	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004	7.035+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	2.711-006	2.862-006	2.837-006	2.600-006	2.563-006	2.492-006	2.423-006	2.291-006	2.048-006	1.780-006	1.547-006
H 4	.000	1.215-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	2.749-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	4.884-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008
B 12	.000	4.253-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	2.117-002	2.117-002	2.117-002	2.117-002	2.117-002	2.117-002	2.117-002	2.117-002	2.116-002	2.115-002	2.115-002
N 16	.000	9.781-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	3.150-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	1.041-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	1.681+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	6.976+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.058-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	6.268-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	1.417+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	2.900-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	2.811-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	2.613-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	1.532-005	4.563-008	2.509-009	4.626-011	2.035-011	2.003-011	2.002-011	1.999-011	1.995-011	1.990-011	1.985-011
CA 45	.000	3.338-004	2.004-004	1.552-004	1.041-004	7.059-005	3.248-005	1.493-005	3.158-006	1.412-007	2.905-009	5.977-011
SC 46	.000	5.665-002	2.100-002	1.278-002	5.877-003	2.761-003	6.096-004	1.346-004	6.559-006	1.558-008	8.171-012	4.285-015
SC 47	.000	1.103-001	1.917-012	1.680-017	5.489-024	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	1.061-002	1.715-022	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	8.675-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	1.751-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	2.064-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.542-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015
V 52	.000	9.674+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.173-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	1.200-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	2.502+002	1.243+001	2.771+000	2.643-001	2.692-002	2.792-004	2.897-006	3.117-010	3.609-018	.000	.000
CR 55	.000	3.355+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	1.950+000	1.494+000	1.308+000	1.062+000	8.672-001	5.784-001	3.857-001	1.716-001	3.394-002	4.479-003	5.909-004
MN 56	.000	3.001+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	1.403-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	4.562-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	2.469+001	2.262+001	2.165+001	2.021+001	1.891+001	1.655+001	1.449+001	1.110+001	6.510+000	3.343+000	1.717+000
FE 59	.000	1.665+000	2.622-001	1.041-001	2.448-002	5.998-003	3.600-004	2.161-005	7.786-008	1.011-012	7.874-019	6.134-025
CO 58	.000	1.713+001	5.289+000	2.939+000	1.171+000	4.789-001	8.008-002	1.339-002	3.743-004	2.925-007	3.823-011	4.996-015
CO 60	.000	1.827+001	1.750+001	1.713+001	1.656+001	1.602+001	1.500+001	1.405+001	1.232+001	9.467+000	6.814+000	4.905+000
CO 60M	.000	1.172+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	3.072-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	4.495-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	4.951-003	4.951-003	4.951-003	4.951-003	4.951-003	4.951-003	4.951-003	4.951-003	4.951-003	4.951-003	4.950-003
NI 63	.000	6.228-001	6.213-001	6.205-001	6.193-001	6.182-001	6.158-001	6.135-001	6.089-001	5.998-001	5.886-001	5.776-001
NI 65	.000	2.670+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	1.439-005	1.918-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	5.537+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.194+001	1.921-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	1.206-005	1.168-019	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	2.118-003	1.506-003	1.270-003	9.721-004	7.499-004	4.463-004	2.655-004	9.403-005	1.179-005	8.798-007	6.565-008
SR 89	.000	7.861+000	1.514+000	6.644-001	1.830-001	5.226-002	4.260-003	3.474-004	2.309-006	1.020-010	3.676-016	1.324-021

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 90	.000	1.373-005	1.362-005	1.357-005	1.349-005	1.341-005	1.325-005	1.309-005	1.279-005	1.219-005	1.149-005	1.082-005
SR 91	.000	1.687+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.824-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	1.546-004	1.371-015	4.084-021	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	3.214+002	1.363-005	1.357-005	1.349-005	1.341-005	1.325-005	1.310-005	1.279-005	1.219-005	1.149-005	1.083-005
Y 91	.000	1.952+001	4.713+000	2.315+000	7.607-001	2.579-001	2.963-002	3.405-003	4.496-005	7.839-009	1.571-013	3.147-018
Y 92	.000	1.899+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.824-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.207+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	7.751-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.548-004	1.373-015	4.091-021	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	5.494-003	5.494-003	5.494-003	5.494-003	5.494-003	5.494-003	5.494-003	5.494-003	5.494-003	5.494-003	5.494-003
ZR 95	.000	4.839+003	1.319+003	6.885+002	2.488+002	9.253+001	1.280+001	1.769+000	3.383-002	1.237-005	6.254-010	3.162-014
ZR 97	.000	1.119+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.081-002	8.574-006	1.430-007	2.357-010	4.643-013	1.802-018	6.996-024	.000	.000	.000	.000
NB 93M	.000	1.041-004	1.890-004	2.310-004	2.959-004	3.582-004	4.805-004	5.998-004	8.293-004	1.255-003	1.729-003	2.146-003
NB 94	.000	5.857-008	5.857-008	5.857-008	5.857-008	5.857-008	5.857-008	5.857-008	5.856-008	5.856-008	5.856-008	5.855-008
NB 95	.000	4.207+003	2.314+003	1.340+003	5.228+002	2.005+002	2.826+001	3.923+000	7.773-002	2.746-005	1.388-009	7.019-014
NB 95M	.000	3.414+001	9.784+000	5.107+000	1.846+000	6.864-001	9.492-002	1.313-002	2.510-004	9.176-008	4.639-012	2.346-016
NB 96	.000	2.901+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.119+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	1.059+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	6.485-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	8.947-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	3.640-005	3.640-005	3.640-005	3.640-005	3.639-005	3.639-005	3.639-005	3.638-005	3.636-005	3.635-005	3.633-005
MO 99	.000	6.275+000	4.590-013	1.241-019	.000	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.559+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	1.641-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006
TC100	.000	2.329-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	1.559+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RU103	.000	4.739-006	5.703-007	1.978-007	3.771-008	7.528-009	3.000-010	1.196-011	1.900-014	4.796-020	.000	.000
AG108	.000	2.672-005	2.975-010	2.972-010	2.968-010	2.964-010	2.956-010	2.948-010	2.932-010	2.900-010	2.860-010	2.822-010
AG108M	.000	3.348-009	3.342-009	3.339-009	3.335-009	3.330-009	3.321-009	3.312-009	3.294-009	3.258-009	3.214-009	3.170-009
AG109M	.000	5.863-004	4.901-004	4.481-004	3.894-004	3.398-004	2.586-004	1.969-004	1.141-004	3.831-005	9.793-006	2.503-006
AG110	.000	6.106-005	6.740-009	5.706-009	4.397-009	3.413-009	2.057-009	1.239-009	4.500-010	5.931-011	4.711-012	3.742-013
AG110M	.000	7.069-007	5.067-007	4.290-007	3.306-007	2.566-007	1.546-007	9.318-008	3.383-008	4.460-009	3.542-010	2.814-011
CD107	.000	1.118-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	5.863-004	4.901-004	4.481-004	3.894-004	3.398-004	2.586-004	1.969-004	1.141-004	3.831-005	9.793-006	2.503-006
CD111M	.000	1.976-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	2.472-001	1.512-017	1.183-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.934-002	2.996-003	1.179-003	2.738-004	6.622-005	3.875-006	2.267-007	7.760-010	9.094-015	6.236-021	.000
CD117	.000	1.245-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.802-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.448-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	4.404-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	1.435+002	6.971+001	4.857+001	2.759+001	1.592+001	5.300+000	1.765+000	1.956-001	2.404-003	9.839-006	4.026-008
IN114	.000	7.610+000	4.548-001	1.964-001	5.272-002	1.468-002	1.139-003	8.835-005	5.316-007	1.925-011	5.405-017	1.518-022
IN114M	.000	2.550+000	4.753-001	2.052-001	5.509-002	1.534-002	1.190-003	9.231-005	5.555-007	2.011-011	5.648-017	1.586-022
IN116	.000	6.595-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	6.450-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	6.151-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	1.170-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING,ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN118	.000	1.912-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.356-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.448-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	3.612-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.435+002	6.967+001	4.854+001	2.757+001	1.591+001	5.297+000	1.764+000	1.955-001	2.403-003	9.833-006	4.024-008
SN113M	.000	8.823+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.020+003	2.687+000	1.379-001	1.319-003	1.438-005	1.706-009	2.026-013	2.854-021	.000	.000	.000
SN119M	.000	3.151+002	2.244+002	1.893+002	1.452+002	1.121+002	6.688+001	3.990+001	1.420+001	1.798+000	1.358-001	1.026-002
SN121	.000	5.459+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	2.935-002	2.921-002	2.915-002	2.904-002	2.894-002	2.874-002	2.854-002	2.815-002	2.738-002	2.645-002	2.554-002
SN123	.000	3.790+001	1.891+001	1.443+001	8.715+000	5.339+000	2.004+000	7.520-001	1.059-001	2.101-003	1.565-005	1.165-007
SN123M	.000	2.147-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	2.024+002	3.622-002	4.845-004	5.652-007	7.953-010	1.577-015	3.125-021	.000	.000	.000	.000
SN125M	.000	1.599+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	1.143+001	4.789-013	9.801-020	.000	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	9.949-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	2.082-001	5.228-002	2.620-002	8.884-003	3.104-003	3.791-004	4.628-005	6.801-007	1.534-010	4.164-015	1.130-018
SB124M	.000	1.001-003	.000	.000	.000	.000	.000	.000	.000	000	.000	.000
SB125	.000	5.308+001	5.068+001	4.864+001	4.561+001	4.285+001	3.781+001	3.336+001	2.597+001	1.575+001	8.423+000	4.506+000
SB126	.000	8.705-001	1.061-003	3.702-005	1.938-007	1.174-009	4.313-014	1.584-018	.000	.000	.000	.000
SB126M	.000	8.733-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	6.265-003	3.127-003	2.209-003	1.282-003	7.555-004	2.623-004	9.109-005	1.098-005	1.597-007	8.061-010	4.069-012
TE125M	.000	8.738+000	1.125+001	1.132+001	1.095+001	1.039+001	9.217+000	8.139+000	6.337+000	3.843+000	2.055+000	1.099+000
TE127	.000	8.427-004	1.379-005	9.413-006	5.180-006	2.898-006	9.074-007	2.841-007	2.785-008	2.676-010	8.049-013	2.421-015
TE127M	.000	3.019-005	1.407-005	9.610-006	5.288-006	2.959-006	9.264-007	2.900-007	2.843-008	2.732-010	8.217-013	2.472-015
I128	.000	5.001-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU176M	.000	6.183-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	7.168-002	8.533-006	6.299-006	4.138-006	2.751-006	1.215-006	5.371-007	1.049-007	3.999-009	6.739-011	1.135-012
LU177M	.000	6.126-005	3.582-005	2.739-005	1.799-005	1.196-005	5.286-006	2.336-006	4.561-007	1.739-008	2.930-010	4.938-012
HF175	.000	1.204+001	3.669+000	2.025+000	7.989-001	3.235-001	5.302-002	8.691-003	2.335-004	1.686-007	1.996-011	2.362-015
HF178M	.000	1.262+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	2.487+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	6.242+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	000
HF181	.000	1.616+002	2.272+001	8.517+000	1.834+000	4.120-001	2.081-002	1.051-003	2.679-006	1.742-011	5.722-018	1.879-024
HF182	.000	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008
TA182	.000	2.496+000	1.211+000	8.435-001	4.788-001	2.762-001	9.185-002	3.055-002	3.380-003	4.140-005	1.892-007	2.140-008
TA182M	.000	4.711-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	4.557+000	3.763-007	1.082-010	3.086-016	1.258-021	.000	.000	.000	.000	.000	.000
W181	.000	2.656-001	1.337-001	9.487-002	5.543-002	3.288-002	1.157-002	4.070-003	5.038-004	7.720-006	4.162-008	2.244-010
W183M	.000	6.457-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	7.138+000	2.358+000	1.355+000	5.696-001	2.452-001	4.545-002	8.423-003	2.893-004	3.412-007	7.463-011	1.632-014
W185M	.000	9.609-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	2.365+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	3.303-001	9.963-002	5.472-002	2.141-002	8.601-003	1.388-003	2.240-004	5.833-006	3.955-009	4.328-013	4.736-017
RE186	.000	1.015+000	2.763-010	4.559-015	1.484-022	.000	.000	.000	.000	.000	.000	.000
RE187	.000	2.183-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009
RE188	.000	1.256+001	1.007-001	5.528-002	2.163-002	8.690-003	1.402-003	2.263-004	5.893-006	3.996-009	4.372-013	4.784-017
RE188M	.000	1.197+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	3.764-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015
PB205	.000	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009
PB209	.000	2.383-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	2.756-015	4.907+004	4.189+003	2.458+003	1.084+003	5.349+002	2.008+002	1.210+002	7.138+001	3.807+001	2.142+001	1.287+001
TOTAL	2.756-015	4.907+004	4.189+003	2.458+003	1.084+003	5.349+002	2.008+002	1.210+002	7.138+001	3.807+001	2.142+001	1.287+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	1.215-002	2.662-006	2.637-006	2.600-006	2.563-006	2.492-006	2.423-006	2.291-006	2.048-006	1.780-006	1.547-006
HE	.000	2.749-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	4.884-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	2.911-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008	1.303-008
B	.000	4.253-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	2.118-002	2.117-002	2.117-002	2.117-002	2.117-002	2.117-002	2.117-002	2.117-002	2.116-002	2.115-002	2.115-002
N	.000	9.781-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	3.150-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	1.041-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	2.380+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	6.268-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	1.420+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	2.613-001	2.005-011	2.005-011	2.004-011	2.004-011	2.003-011	2.001-011	1.999-011	1.995-011	1.990-011	1.984-011
P	.000	1.532-005	4.563-008	2.509-009	4.626-011	2.035-011	2.003-011	2.002-011	1.999-011	1.995-011	1.990-011	1.985-011
CA	.000	3.359-004	2.004-004	1.552-004	1.041-004	7.059-005	3.246-005	1.493-005	3.158-006	1.412-007	2.905-009	5.977-011
SC	.000	1.864-001	2.100-002	1.278-002	5.877-003	2.761-003	6.096-004	1.346-004	6.559-006	1.558-008	8.171-012	4.285-015
TI	.000	2.064-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.542-015	9.675+001	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015	1.514-015
CR	.000	2.535+002	1.243+001	2.771+000	2.643-001	2.692-002	2.792-004	2.897-006	3.117-010	3.609-018	.000	.000
MN	.000	3.021+002	1.494+000	1.308+000	1.062+000	8.672-001	5.784-001	3.857-001	1.716-001	3.394-002	4.479-003	5.909-004
FE	.000	2.635+001	2.288+001	2.175+001	2.024+001	1.892+001	1.655+001	1.449+001	1.110+001	6.510+000	3.343+000	1.717+000
CO	.000	1.529+002	2.279+001	2.007+001	1.773+001	1.650+001	1.508+001	1.406+001	1.232+001	9.467+000	6.814+000	4.905+000
NI	.000	3.298+000	6.262-001	6.255-001	6.243-001	6.231-001	6.208-001	6.185-001	6.139-001	6.048-001	5.936-001	5.826-001
CU	.000	6.731+001	1.185-019	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	2.118-003	1.506-003	1.270-003	9.721-004	7.499-004	4.463-004	2.655-004	9.403-005	1.179-005	8.798-007	6.565-008
SR	.000	9.554+000	1.514+000	6.645-001	1.830-001	5.227-002	4.274-003	3.605-004	1.509-005	1.219-005	1.149-005	1.082-005
Y	.000	3.611+002	4.713+000	2.315+000	7.607-001	2.579-001	2.964-002	3.418-003	5.775-005	1.220-005	1.149-005	1.083-005
ZR	.000	1.603+004	1.319+003	6.885+002	2.488+002	9.254+001	1.280+001	1.775+000	3.933-002	5.506-003	5.494-003	5.494-003
NB	.000	2.602+004	2.324+003	1.345+003	5.246+002	2.012+002	2.836+001	3.937+000	7.881-002	1.282-003	1.729-003	2.146-003
MO	.000	7.843+000	3.640-005	3.640-005	3.640-005	3.639-005	3.639-005	3.639-005	3.638-005	3.636-005	3.635-005	3.633-005
TC	.000	1.582+000	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006
RU	.000	4.739-008	5.703-007	1.978-007	3.771-008	7.528-009	3.000-010	1.196-011	1.900-014	4.796-020	.000	.000
AG	.000	6.748-004	4.906-004	4.485-004	3.898-004	3.400-004	2.588-004	1.970-004	1.141-004	3.832-005	9.797-006	2.507-006
CD	.000	2.831-001	3.486-003	1.627-003	6.632-004	4.060-004	2.625-004	1.971-004	1.141-004	3.831-005	9.793-006	2.503-006
IN	.000	1.539+002	7.064+001	4.898+001	2.770+001	1.595+001	5.303+000	1.765+000	1.956-001	2.404-003	9.839-006	4.026-008
SN	.000	2.513+003	3.167+002	2.525+002	1.815+002	1.334+002	7.421+001	4.244+001	1.453+001	1.830+000	1.623-001	3.580-002
SB	.000	6.578+001	5.074+001	4.867+001	4.562+001	4.285+001	3.781+001	3.336+001	2.597+001	1.575+001	8.423+000	4.506+000
TE	.000	8.745+000	1.125+001	1.133+001	1.095+001	1.039+001	9.218+000	8.139+000	6.337+000	3.843+000	2.055+000	1.099+000
I	.000	5.001-006	2.000-019	2.002-019	2.000-019	2.000-019	2.000-019	2.000-019	2.000-019	2.000-019	2.000-019	2.000-019
LU	.000	6.900-001	4.435-005	3.369-005	2.213-005	1.471-005	6.501-006	2.873-006	5.610-007	2.139-008	3.619-010	7.505-012
HF	.000	2.679+003	2.638+001	1.054+001	2.632+000	7.355-001	7.383-002	9.742-003	2.362-004	1.893-007	2.073-008	2.071-008
TA	.000	7.057+000	1.211+000	8.435-001	4.788-001	2.762-001	9.185-002	3.055-002	3.380-003	4.140-005	1.892-007	2.140-008
W	.000	2.449+002	2.592+000	1.505+000	6.464-001	2.867-001	5.840-002	1.272-002	7.990-004	8.065-006	4.169-008	2.244-010
RE	.000	2.555+001	1.007-001	5.528-002	2.163-002	8.690-003	1.402-003	2.263-004	5.895-006	6.191-009	2.196-009	2.196-009
OS	.000	6.048-006	1.427-008	9.590-010	1.400-011	2.301-013	8.755-017	2.402-017	2.139-017	1.697-017	1.271-017	9.518-018
PB	1.214-015	2.383-003	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009
SUMTOT	2.756-015	4.907+004	4.189+003	2.458+003	1.084+003	5.349+002	2.008+002	1.210+002	7.138+001	3.807+001	2.142+001	1.287+001
TOTAL	2.756-015	4.907+004	4.189+003	2.458+003	1.084+003	5.349+002	2.008+002	1.210+002	7.138+001	3.807+001	2.142+001	1.287+001

CUMULATIVE TABLE TOTALS

AP+FP	2.756-015	4.907+004	4.189+003	2.458+003	1.084+003	5.349+002	2.008+002	1.210+002	7.138+001	3.807+001	2.142+001	1.287+001
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.756-015	4.907+004	4.189+003	2.458+003	1.084+003	5.349+002	2.008+002	1.210+002	7.138+001	3.807+001	2.142+001	1.287+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	9.129-011	8.962-011	8.880-011	8.752-011	8.631-011	8.392-011	8.159-011	7.714-011	6.895-011	5.992-011	5.208-011
HE 6	.000	2.555-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.821-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011
B 12	.000	3.371-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	6.208-006	6.208-006	6.208-006	6.208-006	6.208-006	6.208-006	6.207-006	6.206-006	6.205-006	6.203-006	6.201-006
C 15	.000	4.668-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	4.239-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	1.313-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	1.276-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	4.659-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	1.952-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.214-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	5.919-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	2.541-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	4.041-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	9.535-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	9.241-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	1.552-007	4.625-010	2.543-011	4.689-013	2.063-013	2.030-013	2.029-013	2.027-013	2.022-013	2.017-013	2.012-013
CA 45	.000	1.527-007	9.168-008	7.103-008	4.764-008	3.230-008	1.486-008	6.832-009	1.445-009	6.463-011	1.330-012	2.735-014
SC 46	.000	7.126-004	2.641-004	1.608-004	7.392-005	3.473-005	7.668-006	1.693-006	8.251-008	1.960-010	1.028-013	5.390-017
SC 47	.000	1.771-004	3.077-015	2.697-020	8.811-027	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	2.243-004	3.627-024	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	1.033-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	5.009-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.511-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.700-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017
V 52	.000	1.442+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.417-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	5.195-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	5.353-002	2.660-003	5.930-004	5.656-005	5.760-006	5.975-008	6.198-010	6.670-014	7.723-022	9.276-032	.000
CR 55	.000	2.190-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	9.708-003	7.440-003	6.513-003	5.288-003	4.318-003	2.880-003	1.921-003	8.543-004	1.690-004	2.230-005	2.942-006
MN 56	.000	4.484+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	9.740-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	1.080-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	3.395-002	3.111-002	2.977-002	2.780-002	2.601-002	2.276-002	1.992-002	1.526-002	8.953-003	4.597-003	2.361-003
FE 59	.000	1.552-002	2.445-003	9.702-004	2.283-004	5.593-005	3.357-006	2.015-007	7.259-010	9.423-015	7.341-021	5.720-027
CO 58	.000	1.026-001	3.167-002	1.760-002	7.012-003	2.867-003	4.794-004	8.016-005	2.241-006	1.751-009	2.289-013	2.991-017
CO 60	.000	2.818-001	2.698-001	2.641-001	2.553-001	2.470-001	2.313-001	2.166-001	1.899-001	1.460-001	1.051-001	7.562-002
CO 60M	.000	4.379-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	9.942-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	8.527-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005
NI 63	.000	2.474-004	2.467-004	2.464-004	2.460-004	2.455-004	2.446-004	2.437-004	2.418-004	2.382-004	2.338-004	2.294-004
NI 65	.000	1.869-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.027-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	8.176-002	1.315-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	7.420-006	5.276-006	4.449-006	3.406-006	2.628-006	1.564-006	9.304-007	3.295-007	4.131-008	3.083-009	2.300-010
SR 89	.000	2.718-002	5.234-003	2.297-003	6.327-004	1.806-004	1.473-005	1.201-006	7.983-009	3.527-013	1.271-018	4.578-024
SR 90	.000	1.594-008	1.581-008	1.575-008	1.566-008	1.556-008	1.538-008	1.520-008	1.484-008	1.415-008	1.333-008	1.256-008
SR 91	.000	1.352-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 93	.000	8.824-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	8.399-007	7.452-018	2.220-023	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.781+000	7.553-008	7.524-008	7.478-008	7.433-008	7.345-008	7.258-008	7.088-008	6.758-008	6.368-008	6.000-008
Y 91	.000	7.012-002	1.693-002	8.314-003	2.732-003	9.261-004	1.064-004	1.223-005	1.615-007	2.815-011	5.641-016	1.130-020
Y 92	.000	1.911-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	4.357-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	2.011-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.778-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.154-006	1.024-017	3.051-023	8.804-032	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	6.383-007	6.383-007	6.383-007	6.383-007	6.383-007	6.383-007	6.383-007	6.383-007	6.383-007	6.383-007	6.383-007
ZR 95	.000	2.451+001	6.680+000	3.487+000	1.260+000	4.687-001	6.481-002	8.962-003	1.714-004	6.265-008	3.168-012	1.601-016
ZR 97	.000	5.830+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.671-004	1.022-007	1.704-009	2.808-012	5.532-015	2.147-020	8.335-026	.000	.000	.000	.000
NB 93M	.000	1.844-008	3.349-008	4.092-008	5.243-008	6.347-008	8.514-008	1.063-007	1.469-007	2.223-007	3.063-007	3.803-007
NB 94	.000	5.968-010	5.968-010	5.968-010	5.968-010	5.968-010	5.968-010	5.968-010	5.967-010	5.967-010	5.967-010	5.966-010
NB 95	.000	2.018+001	1.110+001	6.429+000	2.508+000	9.617-001	1.356-001	1.882-002	3.728-004	1.317-007	6.660-012	3.367-016
NB 95M	.000	4.744-002	1.359-002	7.097-003	2.565-003	9.538-004	1.319-004	1.824-005	3.487-007	1.275-010	6.446-015	3.259-019
NB 96	.000	4.824-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	7.447+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.661+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	8.003-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB100	.000	7.589-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.252-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	3.403-009	3.403-009	3.402-009	3.402-009	3.402-009	3.402-009	3.401-009	3.401-009	3.399-009	3.398-009	3.396-009
MO 99	.000	2.015-002	1.474-015	3.986-022	2.078-032	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.781-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	8.228-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010
TC100	.000	2.051-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	7.483-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RU103	.000	1.585-008	1.908-009	6.619-010	1.262-010	2.519-011	1.004-012	4.001-014	6.358-017	1.804-022	1.614-029	.000
AG108	.000	9.957-008	1.108-012	1.107-012	1.106-012	1.104-012	1.101-012	1.098-012	1.092-012	1.080-012	1.066-012	1.051-012
AG108M	.000	3.257-011	3.251-011	3.248-011	3.244-011	3.239-011	3.230-011	3.222-011	3.204-011	3.169-011	3.126-011	3.084-011
AG109M	.000	3.022-007	2.528-007	2.310-007	2.007-007	1.751-007	1.333-007	1.015-007	5.881-008	1.975-008	5.048-009	1.290-009
AG110	.000	4.386-007	4.842-011	4.100-011	3.159-011	2.452-011	1.478-011	8.904-012	3.233-012	4.261-013	3.385-014	2.688-015
AG110M	.000	1.180-008	8.462-009	7.164-009	5.521-009	4.286-009	2.582-009	1.556-009	5.649-010	7.447-011	5.915-012	4.698-013
CD107	.000	5.076-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	3.733-007	3.120-007	2.853-007	2.479-007	2.163-007	1.647-007	1.253-007	7.263-008	2.439-008	6.235-009	1.594-009
CD111M	.000	4.638-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	7.846-004	4.800-020	3.755-028	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	7.215-005	1.117-005	4.397-006	1.021-006	2.470-007	1.445-008	8.455-010	2.894-012	3.392-017	2.326-023	1.595-029
CD117	.000	8.968-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.278-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.588-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	7.297-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	3.344-001	1.624-001	1.132-001	6.427-002	3.708-002	1.235-002	4.111-003	4.558-004	5.601-006	2.292-008	9.379-011
IN114	.000	3.494-002	2.088-003	9.015-004	2.420-004	6.741-005	5.229-006	4.056-007	2.441-009	8.836-014	2.482-019	6.969-025
IN114M	.000	3.596-003	6.702-004	2.894-004	7.768-005	2.164-005	1.678-006	1.302-007	7.833-010	2.836-014	7.965-020	2.237-025
IN116	.000	5.403-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	1.062-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	2.771-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	4.419-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN118	.000	2.309-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	2.374-011	2.331-011	2.309-011	2.276-011	2.245-011	2.182-011	2.122-011	2.006-011	1.793-011	1.558-011	1.354-011
HE	.000	9.496-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.001-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	4.244-010	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012	6.315-012
B	.000	3.148-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	2.489-006	2.446-006	2.446-006	2.446-006	2.446-006	2.446-006	2.446-006	2.445-006	2.445-006	2.444-006	2.443-006
N	.000	3.978-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	1.238-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	1.203-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.578-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	5.580-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	2.399-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	8.710-004	9.657-015	9.656-015	9.653-015	9.650-015	9.645-015	9.640-015	9.630-015	9.609-015	9.584-015	9.558-015
P	.000	4.930-008	1.469-010	8.091-012	1.630-013	7.960-014	7.856-014	7.851-014	7.842-014	7.825-014	7.804-014	7.784-014
CA	.000	9.409-008	4.843-008	3.752-008	2.516-008	1.707-008	7.848-009	3.609-009	7.633-010	3.414-011	7.024-013	1.445-014
SC	.000	9.336-004	1.686-004	1.026-004	4.719-005	2.217-005	4.895-006	1.081-006	5.267-008	1.251-010	6.562-014	3.441-017
TI	.000	1.423-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.700-017	1.357+000	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017	1.688-017
CR	.000	6.465-002	2.202-003	4.909-004	4.682-005	4.769-006	4.947-008	5.131-010	5.522-014	6.394-022	7.680-032	.000
MN	.000	4.246+000	3.483-003	3.049-003	2.475-003	2.022-003	1.348-003	8.992-004	4.000-004	7.913-005	1.044-005	1.378-006
FE	.000	2.587-002	1.486-002	1.319-002	1.181-002	1.093-002	9.531-003	8.340-003	6.388-003	3.748-003	1.925-003	9.883-004
CO	.000	2.359-001	1.345-001	1.215-001	1.098-001	1.032-001	9.499-002	8.866-002	7.768-002	5.971-002	4.298-002	3.094-002
NI	.000	1.766-002	1.105-004	1.104-004	1.102-004	1.100-004	1.096-004	1.093-004	1.086-004	1.071-004	1.054-004	1.036-004
CU	.000	1.741-001	1.784-022	1.639-029	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	1.312-006	9.331-007	7.868-007	6.024-007	4.647-007	2.765-007	1.646-007	5.827-008	7.307-009	5.452-010	4.068-011
SR	.000	3.279-002	3.844-003	1.687-003	4.646-004	1.327-004	1.082-005	8.848-007	8.746-009	2.750-009	2.591-009	2.441-009
Y	.000	1.928+000	1.197-002	5.881-003	1.932-003	6.551-004	7.529-005	8.664-006	1.280-007	1.316-008	1.238-008	1.166-008
ZR	.000	7.191+001	4.613+000	2.408+000	8.704-001	3.237-001	4.476-002	6.189-003	1.186-004	2.950-007	2.517-007	2.517-007
NB	.000	1.249+002	7.368+000	4.351+000	1.719+000	6.624-001	9.365-002	1.301-002	2.578-004	1.757-007	1.181-007	1.477-007
MO	.000	3.587-002	1.340-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.339-009	1.338-009	1.338-009	1.337-009
TC	.000	7.131-003	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010	3.322-010
AG	.000	2.599-007	1.198-007	1.095-007	9.511-008	8.294-008	6.308-008	4.799-008	2.778-008	9.324-009	2.386-009	6.135-010
CD	.000	8.868-004	8.501-006	3.422-006	8.803-007	2.867-007	8.845-008	5.974-008	3.425-008	1.150-008	2.940-009	7.515-010
IN	.000	2.057-001	9.523-002	6.622-002	3.755-002	2.165-002	7.204-003	2.398-003	2.659-004	3.267-006	1.337-008	5.471-011
SN	.000	5.279+000	1.032-001	7.820-002	5.468-002	3.925-002	2.092-002	1.157-002	3.804-003	4.784-004	5.516-005	2.280-005
SB	.000	9.727-002	6.632-002	6.361-002	5.962-002	5.600-002	4.941-002	4.360-002	3.395-002	2.058-002	1.101-002	5.889-003
TE	.000	1.857-003	3.664-003	3.838-003	3.802-003	3.637-003	3.237-003	2.860-003	2.227-003	1.350-003	7.222-004	3.863-004
LU	.000	1.195-003	1.266-008	9.660-009	6.346-009	4.219-009	1.864-009	8.238-010	1.609-010	6.135-012	1.043-013	2.653-015
HF	.000	5.760+000	8.604-002	3.392-002	8.226-003	2.215-003	2.053-004	2.569-005	6.039-007	4.459-010	1.639-011	1.634-011
TA	.000	7.738-003	1.830-003	1.275-003	7.237-004	4.174-004	1.388-004	4.618-005	5.109-006	6.259-008	3.037-010	5.013-011
W	.000	1.061+000	4.015-003	2.310-003	9.726-004	4.199-004	7.864-005	1.488-005	5.697-007	1.834-009	6.917-012	3.664-014
RE	.000	3.037-002	3.278-004	1.801-004	7.046-005	2.830-005	4.567-006	7.371-007	1.921-008	2.674-011	1.373-011	1.373-011
PB	1.871-017	2.583-006	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013	1.706-013
SUMTOT	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002
TOTAL	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002

CUMULATIVE TABLE TOTALS

AP+FP	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	3.571-017	2.181+002	1.251+001	7.154+000	2.882+000	1.227+000	3.257-001	1.777-001	1.252-001	8.606-002	5.681-002	3.833-002

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	9.129-011	8.962-011	8.880-011	8.752-011	8.631-011	8.392-011	8.159-011	7.714-011	6.895-011	5.992-011	5.208-011
HE	.000	2.555-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.821-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.113-009	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011	1.564-011
B	.000	3.371-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	6.255-006	6.208-006	6.208-006	6.208-006	6.208-006	6.208-006	6.207-006	6.206-006	6.205-006	6.203-006	6.201-006
N	.000	4.239-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	1.313-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	1.276-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.855-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	5.919-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	2.545-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	9.241-004	2.496-014	2.495-014	2.495-014	2.494-014	2.493-014	2.491-014	2.489-014	2.484-014	2.477-014	2.470-014
P	.000	1.552-007	4.625-010	2.543-011	4.689-013	2.063-013	2.030-013	2.029-013	2.027-013	2.022-013	2.017-013	2.012-013
CA	.000	1.708-007	9.168-008	7.103-008	4.764-008	3.230-008	1.486-008	6.832-009	1.445-009	6.463-011	1.330-012	2.735-014
SC	.000	1.222-003	2.641-004	1.608-004	7.392-005	3.473-005	7.668-006	1.693-006	8.251-008	1.960-010	1.028-013	5.390-017
TI	.000	1.511-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.700-017	1.442+000	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017	1.670-017
CR	.000	7.543-002	2.660-003	5.930-004	5.656-005	5.760-006	5.975-008	6.198-010	6.670-014	7.723-022	9.276-032	.000
MN	.000	4.494+000	7.440-003	6.513-003	5.288-003	4.318-003	2.880-003	1.921-003	8.543-004	1.690-004	2.230-005	2.942-006
FE	.000	4.948-002	3.355-002	3.074-002	2.803-002	2.606-002	2.277-002	1.992-002	1.526-002	8.953-003	4.597-003	2.361-003
CO	.000	4.292-001	3.015-001	2.817-001	2.623-001	2.499-001	2.318-001	2.167-001	1.899-001	1.460-001	1.051-001	7.562-002
NI	.000	1.897-002	2.783-004	2.780-004	2.775-004	2.770-004	2.761-004	2.752-004	2.733-004	2.697-004	2.653-004	2.609-004
CU	.000	1.845-001	2.004-022	1.841-029	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	7.420-006	5.276-006	4.449-006	3.406-006	2.628-006	1.564-006	9.304-007	3.295-007	4.131-008	3.083-009	2.300-010
SR	.000	4.079-002	5.234-003	2.297-003	6.327-004	1.807-004	1.474-005	1.216-006	2.282-008	1.415-008	1.333-008	1.256-008
Y	.000	2.063+000	1.693-002	8.314-003	2.732-003	9.262-004	1.065-004	1.230-005	2.324-007	6.761-008	6.368-008	6.000-008
ZR	.000	8.281+001	6.680+000	3.487+000	1.260+000	4.687-001	6.481-002	8.963-003	1.720-004	7.009-007	6.383-007	6.383-007
NB	.000	1.414+002	1.111+001	6.436+000	2.510+000	9.627-001	1.357-001	1.884-002	3.733-004	3.548-007	3.069-007	3.809-007
MO	.000	3.809-002	3.403-009	3.402-009	3.402-009	3.402-009	3.402-009	3.401-009	3.401-009	3.399-009	3.398-009	3.396-009
TC	.000	7.688-003	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010
RU	.000	1.585-008	1.908-009	6.619-010	1.262-010	2.519-011	1.004-012	4.001-014	6.358-017	1.604-022	1.614-029	.000
AG	.000	8.523-007	2.612-007	2.382-007	2.063-007	1.795-007	1.360-007	1.031-007	5.941-008	1.986-008	5.086-009	1.323-009
CD	.000	9.565-004	1.149-005	4.682-006	1.269-006	4.633-007	1.791-007	1.262-007	7.264-008	2.439-008	6.235-009	1.594-009
IN	.000	3.742-001	1.652-001	1.143-001	6.459-002	3.717-002	1.235-002	4.112-003	4.558-004	5.601-006	2.292-008	9.379-011
SN	.000	5.851+000	1.953-001	1.515-001	1.070-001	7.739-002	4.179-002	2.333-002	7.759-003	9.910-004	1.232-004	5.648-005
SB	.000	2.544-001	1.592-001	1.524-001	1.427-001	1.340-001	1.182-001	1.043-001	8.120-002	4.923-002	2.633-002	1.409-002
TE	.000	7.355-003	9.460-003	9.521-003	9.207-003	8.738-003	7.748-003	6.841-003	5.327-003	3.230-003	1.727-003	9.241-004
LU	.000	4.879-003	2.975-007	2.273-007	1.493-007	9.926-008	4.386-008	1.938-008	3.785-009	1.443-010	2.440-012	4.963-014
HF	.000	6.464+000	1.144-001	4.515-002	1.099-002	2.973-003	2.784-004	3.509-005	8.288-007	6.512-010	6.146-011	6.139-011
TA	.000	5.114-002	1.078-002	7.510-003	4.263-003	2.459-003	8.178-004	2.720-004	3.010-005	3.686-007	1.684-009	1.905-010
W	.000	1.092+000	6.143-003	3.534-003	1.489-003	6.430-004	1.206-004	2.288-005	8.873-007	3.054-009	1.193-011	6.331-014
RE	.000	8.083-002	4.995-004	2.743-004	1.073-004	4.312-005	6.958-006	1.123-006	2.927-008	5.354-011	3.371-011	3.371-011
PB	1.871-017	2.741-006	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013
SUMTOT	3.571-017	2.479+002	1.882+001	1.074+001	4.410+000	1.976+000	6.397-001	4.055-001	3.016-001	2.088-001	1.381-001	9.332-002
TOTAL	3.571-017	2.479+002	1.882+001	1.074+001	4.410+000	1.976+000	6.397-001	4.055-001	3.016-001	2.088-001	1.381-001	9.332-002

CUMULATIVE TABLE TOTALS

AP+FP	3.571-017	2.479+002	1.882+001	1.074+001	4.410+000	1.976+000	6.397-001	4.055-001	3.016-001	2.088-001	1.381-001	9.332-002
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	3.571-017	2.479+002	1.882+001	1.074+001	4.410+000	1.976+000	6.397-001	4.055-001	3.016-001	2.088-001	1.381-001	9.332-002

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U234	2.430+002	2.255+002	2.255+002	2.256+002	2.256+002	2.256+002	2.256+002	2.257+002	2.258+002	2.259+002	2.261+002	2.263+002
U235	7.486+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000
U236	1.104+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.246+001
U238	1.047+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002
PU238	.000	4.686+004	4.860+004	4.874+004	4.888+004	4.893+004	4.891+004	4.880+004	4.847+004	4.772+004	4.679+004	4.588+004
PU239	.000	7.844+004	8.012+004	8.012+004	8.012+004	8.012+004	8.012+004	8.012+004	8.011+004	8.011+004	8.010+004	8.010+004
PU240	.000	4.379+004	4.379+004	4.379+004	4.379+004	4.379+004	4.379+004	4.379+004	4.378+004	4.377+004	4.376+004	4.375+004
AM241	.000	2.081+003	5.674+003	7.449+003	1.020+004	1.284+004	1.802+004	2.307+004	3.280+004	5.087+004	7.105+004	8.883+004
CM244	.000	7.586+003	7.499+003	7.452+003	7.379+003	7.309+003	7.170+003	7.034+003	6.770+003	6.271+003	5.699+003	5.179+003
TOTALS												
TABLE	3.663+002	1.792+005	1.861+005	1.880+005	1.908+005	1.934+005	1.984+005	2.032+005	2.124+005	2.292+005	2.478+005	2.642+005
ACTUAL	3.663+002	1.792+005	1.861+005	1.880+005	1.908+005	1.934+005	1.984+005	2.032+005	2.124+005	2.292+005	2.478+005	2.642+005

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U238	1.256+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004
PU238	.000	7.643+003	7.926+003	7.949+003	7.971+003	7.980+003	7.977+003	7.958+003	7.904+003	7.783+003	7.631+003	7.482+003
PU240	.000	2.309+005	2.309+005	2.308+005	2.308+005	2.308+005	2.308+005	2.308+005	2.308+005	2.307+005	2.307+005	2.306+005
PU242	.000	8.961+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003
CM242	.000	1.997+006	1.221+006	9.463+005	6.351+005	4.311+005	1.988+005	9.186+004	1.994+004	1.462+003	6.040+002	5.797+002
CM244	.000	8.133+005	8.029+005	8.972+005	8.884+005	8.800+005	8.633+005	8.469+005	8.151+005	7.550+005	6.861+005	6.235+005
TOTALS												
TABLE	1.257+004	3.170+006	2.384+006	2.104+006	1.784+006	1.572+006	1.323+006	1.199+006	1.095+006	1.017+006	9.467+005	8.839+005
ACTUAL	1.257+004	3.170+006	2.384+006	2.104+006	1.784+006	1.572+006	1.323+006	1.199+006	1.095+006	1.017+006	9.467+005	8.839+005
OVERALL TOTALS												
TABLE	1.293+004	3.350+006	2.570+006	2.292+006	1.975+006	1.765+006	1.521+006	1.402+006	1.308+006	1.246+006	1.195+006	1.148+006
ACTUAL	1.293+004	3.350+006	2.570+006	2.292+006	1.975+006	1.765+006	1.521+006	1.402+006	1.308+006	1.246+006	1.195+006	1.148+006

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	4.549+013	1.362+012	8.457+011	4.712+011	3.088+011	1.721+011	1.130+011	5.953+010	2.550+010	1.259+010	6.837+009
2.500-002	.000	4.185+013	6.837+012	5.580+012	4.218+012	3.299+012	2.157+012	1.516+012	8.757+011	4.176+011	2.100+011	1.114+011
3.750-002	.000	4.350+012	3.496+011	3.237+011	2.946+011	2.731+011	2.390+011	2.105+011	1.638+011	9.935+010	5.317+010	2.846+010
5.750-002	.000	1.064+013	3.784+011	1.669+011	5.443+010	2.294+010	6.996+009	3.156+009	1.161+009	4.783+008	2.639+008	1.612+008
8.500-002	.000	4.487+012	2.299+010	1.335+010	6.062+009	3.076+009	1.080+009	5.631+008	3.098+008	1.871+008	1.117+008	6.821+007
1.250-001	.000	6.750+012	4.810+011	1.888+011	4.866+010	1.722+010	6.712+009	5.110+009	3.784+009	2.281+009	1.225+009	6.583+008
2.250-001	3.763-013	3.647+013	3.556+011	2.187+011	1.510+011	1.198+011	9.073+010	7.613+010	5.788+010	3.496+010	1.870+010	1.000+010
3.750-001	.000	1.986+013	8.252+011	6.997+011	6.191+011	5.745+011	5.051+011	4.455+011	3.469+011	2.103+011	1.125+011	6.018+010
5.750-001	.000	5.095+014	1.537+012	1.095+012	8.444+011	7.514+011	6.503+011	5.727+011	4.458+011	2.703+011	1.446+011	7.733+010
8.500-001	1.500-013	6.549+014	1.198+014	6.695+013	2.550+013	9.705+012	1.377+012	2.022+011	9.959+009	1.260+009	1.813+008	3.490+007
1.250+000	8.532-014	3.412+013	1.342+012	1.300+012	1.244+012	1.196+012	1.113+012	1.040+012	9.113+011	7.004+011	5.041+011	3.628+011
1.750+000	4.275-014	1.137+013	1.904+009	1.005+009	3.731+008	1.432+008	2.147+007	3.287+006	8.134+004	1.067+002	2.964+001	2.652+001
2.250+000	2.142-014	1.665+012	1.418+008	6.044+007	2.458+007	1.260+007	6.654+006	5.602+006	4.831+006	3.712+006	2.672+006	1.923+006
2.750+000	1.073-014	8.323+011	9.899+004	5.974+004	3.330+004	2.406+004	1.877+004	1.711+004	1.494+004	1.149+004	8.267+003	5.951+003
3.500+000	7.904-015	1.845+010	6.014-008	4.453-008	2.782-008	1.761-008	7.058-009	2.828-009	4.543-010	1.182-011	2.149-013	9.138-014
5.000+000	2.353-015	5.834+006	1.790-008	1.326-008	8.283-009	5.243-009	2.101-009	8.420-010	1.352-010	3.493-012	4.269-014	7.032-015
7.000+000	1.527-016	4.867+005	1.162-009	8.602-010	5.374-010	3.402-010	1.363-010	5.463-011	8.774-012	2.267-013	2.769-015	4.557-016
1.100+001	9.655-018	5.119+004	7.346-011	5.440-011	3.399-011	2.151-011	8.621-012	3.455-012	5.548-013	1.433-014	1.752-016	2.884-017
TOTAL	6.970-013	1.382+015	1.332+014	7.738+013	3.345+013	1.627+013	6.320+012	4.185+012	2.876+012	1.763+012	1.057+012	6.579+011
MEV/SEC	5.120-013	9.376+014	1.050+014	5.967+013	2.412+013	1.052+013	3.213+012	2.034+012	1.577+012	1.134+012	7.674+011	5.269+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	6.824+005	2.044+004	1.268+004	7.069+003	4.633+003	2.582+003	1.695+003	8.929+002	3.826+002	1.889+002	1.026+002
2.500-002	.000	1.046+006	1.709+005	1.395+005	1.054+005	8.248+004	5.393+004	3.790+004	2.189+004	1.044+004	5.250+003	2.784+003
3.750-002	.000	1.631+005	1.311+004	1.214+004	1.105+004	1.024+004	8.963+003	7.895+003	6.144+003	3.726+003	1.994+003	1.067+003
5.750-002	.000	6.117+005	2.176+004	9.595+003	3.129+003	1.319+003	4.023+002	1.815+002	6.675+001	2.750+001	1.517+001	9.268+000
8.500-002	.000	3.814+005	1.955+003	1.135+003	5.152+002	2.615+002	9.181+001	4.786+001	2.633+001	1.591+001	9.491+000	5.798+000
1.250-001	.000	8.438+005	6.013+004	2.360+004	6.082+003	2.152+003	8.390+002	6.387+002	4.730+002	2.851+002	1.531+002	8.229+001
2.250-001	8.467-020	8.206+006	8.000+004	4.922+004	3.398+004	2.695+004	2.041+004	1.713+004	1.302+004	7.866+003	4.208+003	2.251+003
3.750-001	.000	7.449+006	3.095+005	2.624+005	2.322+005	2.154+005	1.894+005	1.671+005	1.301+005	7.886+004	4.219+004	2.257+004
5.750-001	.000	2.930+008	8.836+005	6.295+005	4.855+005	4.321+005	3.739+005	3.293+005	2.563+005	1.554+005	8.313+004	4.447+004
8.500-001	1.275-019	5.567+008	1.018+008	5.691+007	2.168+007	8.249+006	1.171+006	1.718+005	8.465+003	1.071+003	1.541+002	2.966+001
1.250+000	1.067-019	4.265+007	1.678+006	1.625+006	1.554+006	1.495+006	1.392+006	1.301+006	1.139+006	8.755+005	6.301+005	4.536+005
1.750+000	7.482-020	1.989+007	3.331+003	1.760+003	6.529+002	2.506+002	3.756+001	5.751+000	1.424-001	1.868-004	5.187-005	4.641-005
2.250+000	4.820-020	3.747+006	3.191+002	1.360+002	5.530+001	2.836+001	1.497+001	1.261+001	1.087+001	8.352+000	6.012+000	4.327+000
2.750+000	2.952-020	2.289+006	2.722-001	1.643-001	9.157-002	6.615-002	5.161-002	4.706-002	4.110-002	3.159-002	2.274-002	1.636-002
3.500+000	2.766-020	6.457+004	2.105-013	1.559-013	9.737-014	6.164-014	2.470-014	9.899-015	1.590-015	4.135-017	7.522-019	3.198-019
5.000+000	1.177-020	2.917+001	8.952-014	6.629-014	4.141-014	2.622-014	1.051-014	4.210-015	6.761-016	1.747-017	2.135-019	3.516-020
7.000+000	1.069-021	3.407+000	8.132-015	6.022-015	3.762-015	2.382-015	9.544-016	3.824-016	6.142-017	1.587-018	1.939-020	3.190-021
1.100+001	1.062-022	5.630-001	8.081-016	5.984-016	3.738-016	2.367-016	9.483-017	3.800-017	6.103-018	1.577-019	1.927-021	3.172-022
TOTAL	5.120-019	9.376+008	1.050+008	5.967+007	2.412+007	1.052+007	3.213+006	2.034+006	1.577+006	1.134+006	7.674+005	5.269+005
GAM POW	8.207-026	1.503+002	1.684+001	9.566+000	3.866+000	1.686+000	5.151-001	3.261-001	2.527-001	1.817-001	1.230-001	8.447-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.500-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	1.352+012	1.295+012	1.267+012	1.225+012	1.185+012	1.110+012	1.039+012	9.112+011	7.004+011	5.041+011	3.628+011

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	7.165+006	6.862+006	6.716+006	6.492+006	6.282+006	5.882+006	5.508+006	4.829+006	3.712+006	2.672+006	1.923+006
PB204	2.142-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	7.904-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	2.353-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.527-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	9.655-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	4.058+009	3.518+017	2.110+012	1.851+012	1.587+012	1.420+012	1.248+012	1.191+012	1.203+012	1.332+012	1.494+012	1.636+012
2.500-002	.000	1.809+015	6.660+009	7.721+009	1.040+010	1.298+010	1.803+010	2.296+010	3.246+010	5.009+010	6.977+010	8.712+010
3.750-002	6.916+005	1.773+016	4.532+009	4.038+009	3.584+009	3.353+009	3.261+009	3.429+009	4.041+009	5.425+009	7.012+009	8.411+009
5.750-002	2.520+007	8.063+015	9.400+010	1.093+011	1.488+011	1.866+011	2.609+011	3.334+011	4.731+011	7.323+011	1.022+012	1.277+012
8.500-002	5.908+007	1.920+017	7.397+009	2.712+009	2.728+009	2.752+009	2.799+009	2.844+009	2.930+009	3.090+009	3.267+009	3.423+009
1.250-001	1.231+008	1.526+017	1.013+010	1.875+009	1.844+009	1.842+009	1.858+009	1.887+009	1.958+009	2.103+009	2.266+009	2.409+009
2.250-001	4.129+008	1.061+017	7.348+009	1.121+009	1.089+009	1.077+009	1.062+009	1.055+009	1.049+009	1.044+009	1.039+009	1.033+009
3.750-001	1.030+006	1.056+016	1.125+009	7.623+008	7.636+008	7.649+008	7.675+008	7.700+008	7.748+008	7.839+008	7.944+008	8.039+008
5.750-001	5.804+004	1.632+015	7.877+007	7.523+007	7.145+007	6.922+007	6.735+007	6.729+007	6.914+007	7.416+007	7.989+007	8.482+007
8.500-001	3.326+004	3.130+015	9.199+007	9.129+007	9.056+007	9.015+007	8.987+007	8.997+007	9.058+007	9.199+007	9.355+007	9.484+007
1.250+000	1.207+004	2.041+014	7.542+007	7.516+007	7.486+007	7.467+007	7.443+007	7.432+007	7.422+007	7.414+007	7.405+007	7.396+007
1.750+000	5.908+003	5.279+011	1.245+007	1.236+007	1.225+007	1.218+007	1.211+007	1.207+007	1.207+007	1.209+007	1.210+007	1.210+007
2.250+000	3.422+003	6.731+005	5.063+005	4.470+005	3.792+005	3.343+005	2.817+005	2.559+005	2.346+005	2.192+005	2.058+005	1.939+005
2.750+000	1.988+003	5.342+005	5.747+005	6.072+005	6.687+005	7.372+005	8.845+005	1.034+006	1.308+006	1.727+006	2.046+006	2.209+006
3.500+000	1.778+003	3.493+005	2.627+005	2.319+005	1.967+005	1.734+005	1.461+005	1.327+005	1.216+005	1.135+005	1.064+005	1.001+005
5.000+000	7.638+002	1.493+005	1.123+005	9.908+004	8.404+004	7.406+004	6.238+004	5.663+004	5.186+004	4.838+004	4.535+004	4.262+004
7.000+000	8.793+001	1.715+004	1.289+004	1.138+004	9.652+003	8.505+003	7.164+003	6.503+003	5.953+003	5.551+003	5.199+003	4.883+003
1.100+001	1.011+001	1.975+003	1.484+003	1.309+003	1.110+003	9.772+002	8.224+002	7.461+002	6.827+002	6.363+002	5.957+002	5.593+002
TOTAL	4.680+009	8.456+017	2.242+012	1.979+012	1.756+012	1.630+012	1.537+012	1.557+012	1.720+012	2.127+012	2.600+012	3.016+012
MEV/SEC	1.762+008	7.353+016	4.161+010	3.564+010	3.398+010	3.371+010	3.553+010	3.897+010	4.747+010	6.484+010	8.450+010	1.018+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	6.088+001	5.277+009	3.165+004	2.776+004	2.380+004	2.130+004	1.872+004	1.786+004	1.805+004	1.998+004	2.240+004	2.454+004
2.500-002	.000	4.524+007	1.665+002	1.930+002	2.600+002	3.244+002	4.508+002	5.740+002	8.115+002	1 252+003	1.744+003	2.178+003
3.750-002	2.593-002	6.650+008	1.699+002	1.514+002	1.344+002	1.257+002	1.223+002	1.286+002	1.515+002	2 035+002	2.630+002	3.154+002
5.750-002	1.449+000	4.636+008	5.405+003	6.288+003	8.554+003	1.073+004	1.500+004	1.917+004	2.720+004	4.211+004	5.875+004	7.342+004
8.500-002	5.022+000	1.632+010	6.287+002	2.305+002	2.319+002	2.339+002	2.379+002	2.417+002	2.491+002	2.626+002	2.777+002	2.909+002
1.250-001	1.539+001	1.907+010	1.266+003	2.344+002	2.306+002	2.303+002	2.323+002	2.359+002	2.448+002	2.629+002	2.832+002	3.011+002
2.250-001	9.290+001	2.388+010	1.653+003	2.522+002	2.450+002	2.422+002	2.390+002	2.374+002	2.361+002	2.350+002	2.338+002	2.325+002
3.750-001	3.863-001	3.958+009	4.219+002	2.859+002	2.863+002	2.868+002	2.878+002	2.887+002	2.906+002	2.940+002	2.979+002	3.015+002
5.750-001	3.337-002	9.386+008	4.529+001	4.326+001	4.108+001	3.980+001	3.872+001	3.869+001	3.975+001	4.264+001	4.594+001	4.877+001
8.500-001	2.827-002	2.660+009	7.820+001	7.760+001	7.697+001	7.663+001	7.639+001	7.648+001	7.699+001	7.819+001	7.951+001	8.062+001
1.250+000	1.509-002	2.551+008	9.428+001	9.395+001	9.358+001	9.333+001	9.304+001	9.290+001	9.278+001	9.267+001	9.256+001	9.245+001
1.750+000	1.034-002	9.238+005	2.179+001	2.163+001	2.144+001	2.132+001	2.119+001	2.114+001	2.113+001	2.116+001	2.117+001	2.117+001
2.250+000	7.700-003	1.515+000	1.139+000	1.006+000	8.532-001	7.521-001	6.339-001	5.758-001	5.277-001	4.931-001	4.631-001	4.363-001
2.750+000	5.468-003	1.469+000	1.580+000	1.670+000	1.839+000	2.027+000	2.432+000	2.843+000	3.597+000	4.751+000	5.626+000	6.074+000
3.500+000	6.222-003	1.222+000	9.195-001	8.116-001	6.886-001	6.070-001	5.115-001	4.645-001	4.256-001	3.972-001	3.725-001	3.503-001
5.000+000	3.819-003	7.465-001	5.613-001	4.954-001	4.202-001	3.703-001	3.119-001	2.832-001	2.593-001	2.419-001	2.267-001	2.131-001
7.000+000	6.155-004	1.200-001	9.025-002	7.966-002	6.756-002	5.954-002	5.015-002	4.552-002	4.167-002	3.886-002	3.639-002	3.418-002
1.100+001	1.112-004	2.172-002	1.632-002	1.440-002	1.220-002	1.075-002	9.047-003	8.207-003	7.510-003	6.999-003	6.552-003	6.152-003
TOTAL	1.762+002	7.353+010	4.161+004	3.564+004	3.398+004	3.371+004	3.553+004	3.897+004	4.747+004	6.484+004	8.450+004	1.018+005
GAM POW	2.824-005	1.179+004	6.870-003	5.713-003	5.447-003	5.404-003	5.696-003	6.247-003	7.609-003	1.039-002	1.354-002	1.632-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U235	6.916+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.033+017	8.783+014	6.443+014	4.595+014	3.596+014	2.414+014	1.702+014	9.359+013	4.452+013	3.221+013	2.875+013
2.500-002	.000	5.025+016	3.430+014	2.098+014	1.347+014	1.048+014	7.446+013	5.658+013	3.609+013	1.943+013	1.210+013	8.813+012
3.750-002	.000	5.908+016	9.776+014	6.925+014	5.061+014	4.036+014	2.687+014	1.833+014	9.256+013	3.749+013	2.496+013	2.170+013
5.750-002	.000	2.209+016	1.739+014	1.318+014	9.653+013	7.641+013	5.156+013	3.626+013	1.971+013	9.110+012	6.487+012	5.770+012
8.500-002	.000	2.933+016	2.292+014	1.874+014	1.449+014	1.158+014	7.616+013	5.107+013	2.434+013	8.089+012	4.569+012	3.817+012
1.250-001	.000	6.026+016	1.490+015	8.174+014	5.024+014	3.830+014	2.449+014	1.592+014	6.880+013	1.573+013	5.464+012	3.868+012
2.250-001	.000	1.741+017	1.234+014	8.942+013	6.393+013	5.034+013	3.422+013	2.441+013	1.365+013	6.393+012	4.309+012	3.635+012
3.750-001	.000	1.366+017	9.590+013	6.614+013	5.047+013	4.219+013	3.161+013	2.456+013	1.594+013	8.376+012	4.784+012	3.145+012
5.750-001	.000	2.657+017	2.600+015	1.511+015	9.802+014	8.166+014	6.678+014	5.731+014	4.528+014	3.430+014	2.898+014	2.624+014
8.500-001	.000	3.051+017	1.160+016	6.513+015	2.538+015	1.020+015	2.099+014	8.503+013	4.760+013	2.445+013	1.144+013	5.784+012
1.250+000	.000	1.763+017	7.887+013	6.260+013	4.882+013	4.031+013	2.890+013	2.135+013	1.244+013	5.514+012	3.010+012	2.087+012
1.750+000	.000	6.439+016	3.625+013	6.274+012	4.188+012	3.480+012	2.439+012	1.725+012	8.864+011	2.773+011	1.073+011	6.876+010
2.250+000	.000	3.444+016	4.348+013	3.706+013	2.950+013	2.366+013	1.523+013	9.811+012	4.077+012	7.098+011	8.153+010	9.686+009
2.750+000	.000	1.514+016	1.406+012	2.725+011	1.905+011	1.596+011	1.124+011	7.921+010	3.940+010	9.800+009	1.734+009	3.083+008
3.500+000	.000	8.531+015	4.434+010	3.152+010	2.611+010	2.198+010	1.559+010	1.105+010	5.557+009	1.405+009	2.517+008	4.512+007
5.000+000	.000	4.849+015	4.733-006	4.782-006	4.855-006	4.921-006	5.040-006	5.145-006	5.317-006	5.550-006	5.712-006	5.796-006
7.000+000	.000	3.245+013	3.071-007	3.103-007	3.150-007	3.193-007	3.270-007	3.338-007	3.450-007	3.601-007	3.707-007	3.761-007
1.100+001	.000	3.203+009	1.942-008	1.962-008	1.992-008	2.019-008	2.068-008	2.111-008	2.181-008	2.277-008	2.344-008	2.378-008
TOTAL	.000	1.510+018	1.867+016	1.097+016	5.560+015	3.440+015	1.947+015	1.397+015	8.825+014	5.231+014	3.993+014	3.499+014
MEV/SEC	.000	1.025+018	1.195+016	6.790+015	3.000+015	1.559+015	7.126+014	5.057+014	3.538+014	2.373+014	1.864+014	1.632+014

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.550+009	1.317+007	9.664+006	6.893+006	5.394+006	3.620+006	2.552+006	1.404+006	6.677+005	4.831+005	4.313+005
2.500-002	.000	1.256+009	8.576+006	5.245+006	3.367+006	2.620+006	1.862+006	1.414+006	9.022+005	4.857+005	3.024+005	2.203+005
3.750-002	.000	2.215+009	3.666+007	2.597+007	1.898+007	1.513+007	1.008+007	6.873+006	3.471+006	1.406+006	9.360+005	8.139+005
5.750-002	.000	1.270+009	9.999+006	7.579+006	5.550+006	4.393+006	2.965+006	2.085+006	1.133+006	5.238+005	3.730+005	3.318+005
8.500-002	.000	2.493+009	1.948+007	1.593+007	1.231+007	9.843+006	6.474+006	4.341+006	2.069+006	6.876+005	3.883+005	3.244+005
1.250-001	.000	7.532+009	1.863+008	1.022+008	6.280+007	4.788+007	3.061+007	1.990+007	8.600+006	1.966+006	6.830+005	4.835+005
2.250-001	.000	3.917+010	2.776+007	2.012+007	1.438+007	1.133+007	7.700+006	5.492+006	3.070+006	1.438+006	9.695+005	8.178+005
3.750-001	.000	5.122+010	3.596+007	2.480+007	1.893+007	1.582+007	1.185+007	9.211+006	5.978+006	3.141+006	1.794+006	1.180+006
5.750-001	.000	1.528+011	1.495+009	8.688+008	5.636+008	4.695+008	3.840+008	3.295+008	2.604+008	1.972+008	1.666+008	1.509+008
8.500-001	.000	2.593+011	9.856+009	5.536+009	2.158+009	8.673+008	1.784+008	7.228+007	4.046+007	2.078+007	9.724+006	4.916+006
1.250+000	.000	2.204+011	9.859+007	7.825+007	6.103+007	5.038+007	3.613+007	2.669+007	1.554+007	6.892+006	3.762+006	2.609+006
1.750+000	.000	1.127+011	6.344+007	1.098+007	7.329+006	6.090+006	4.267+006	3.018+006	1.551+006	4.853+005	1.878+005	1.203+005
2.250+000	.000	7.749+010	9.784+007	8.337+007	6.638+007	5.324+007	3.428+007	2.208+007	9.173+006	1.597+006	1.834+005	2.179+004
2.750+000	.000	4.163+010	3.866+006	7.493+005	5.239+005	4.389+005	3.091+005	2.178+005	1.083+005	2.695+004	4.768+003	8.478+002
3.500+000	.000	2.986+010	1.552+005	1.103+005	9.138+004	7.694+004	5.456+004	3.868+004	1.945+004	4.916+003	8.810+002	1.579+002
5.000+000	.000	2.424+010	2.367-011	2.391-011	2.427-011	2.460-011	2.520-011	2.572-011	2.658-011	2.775-011	2.856-011	2.898-011
7.000+000	.000	2.271+008	2.150-012	2.172-012	2.205-012	2.235-012	2.289-012	2.337-012	2.415-012	2.521-012	2.595-012	2.633-012
1.100+001	.000	3.523+004	2.136-013	2.158-013	2.191-013	2.221-013	2.275-013	2.322-013	2.400-013	2.505-013	2.578-013	2.616-013
TOTAL	.000	1.025+012	1.195+010	6.790+009	3.000+009	1.559+009	7.126+008	5.057+008	3.538+008	2.373+008	1.864+008	1.632+008
GAM POW	.000	1.644+005	1.916+003	1.088+003	4.809+002	2.500+002	1.142+002	8.107+001	5.672+001	3.805+001	2.988+001	2.616+001

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	6.212+010	3.488+010	3.116+010	2.611+010	2.198+010	1.559+010	1.105+010	5.557+009	1.405+009	2.517+008	4.512+007

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RB 94	.000	3.203+009	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	.00003	.00003	.00003	.00003	.00003	.00003	.00003	.00003	.00003	.00003
NEUT PRODN	.00	.00	2.00-004	2.00-004	2.00-004	2.00-004	2.00-004	2.00-004	2.00-004	2.00-004	2.00-004	2.00-004
NEUT DESTN	.00	.00	6.47+000	6.47+000	6.47+000	6.47+000	6.47+000	6.47+000	6.47+000	6.47+000	6.47+000	6.47+000
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	1.999+000	2.004+000	2.004+000	2.004+000	2.004+000	2.004+000	2.004+000	2.004+000	2.004+000	2.004+000	2.004+000	2.004+000
H 2	5.999-004	1.138-003	1.138-003	1.138-003	1.138-003	1.138-003	1.138-003	1.138-003	1.138-003	1.138-003	1.138-003	1.138-003
H 3	.000	8.917-005	8.754-005	8.673-005	8.549-005	8.430-005	8.197-005	7.970-005	7.535-005	6.735-005	5.853-005	5.087-005
HE 3	.000	7.743-007	2.404-006	3.207-006	4.450-006	5.641-006	7.974-006	1.024-005	1.459-005	2.259-005	3.141-005	3.907-005
HE 4	.000	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001
LI 6	.000	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004
LI 7	.000	2.297-001	2.297-001	2.297-001	2.297-001	2.297-001	2.297-001	2.297-001	2.297-001	2.297-001	2.297-001	2.297-001
BE 9	1.000+001	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000
BE 10	.000	5.391-005	5.391-005	5.391-005	5.391-005	5.391-005	5.391-005	5.391-005	5.391-005	5.391-005	5.391-005	5.391-005
B 10	4.167-001	8.849-002	8.849-002	8.849-002	8.849-002	8.849-002	8.849-002	8.849-002	8.849-002	8.849-002	8.849-002	8.849-002
B 11	1.833+000	1.839+000	1.839+000	1.839+000	1.839+000	1.839+000	1.839+000	1.839+000	1.839+000	1.839+000	1.839+000	1.839+000
C 12	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002
C 13	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000
C 14	.000	6.328-002	6.328-002	6.328-002	6.327-002	6.327-002	6.327-002	6.326-002	6.326-002	6.324-002	6.322-002	6.320-002
N 14	7.471+001	7.463+001	7.463+001	7.463+001	7.463+001	7.463+001	7.463+001	7.463+001	7.463+001	7.463+001	7.463+001	7.463+001
N 15	2.940-001	2.962-001	2.962-001	2.962-001	2.962-001	2.962-001	2.962-001	2.962-001	2.962-001	2.962-001	2.962-001	2.962-001
NE 21	.000	3.033-005	3.033-005	3.033-005	3.033-005	3.033-005	3.033-005	3.033-005	3.033-005	3.033-005	3.033-005	3.033-005
NE 22	.000	4.558-005	4.558-005	4.558-005	4.558-005	4.558-005	4.558-005	4.558-005	4.558-005	4.558-005	4.558-005	4.558-005
NA 23	.000	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006
NA 24	.000	2.135-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 24	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001
MG 25	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000
MG 26	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000
AL 27	8.000+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002
AL 28	.000	6.784-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 28	1.148+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002
SI 29	6.023+000	6.029+000	6.029+000	6.029+000	6.029+000	6.029+000	6.029+000	6.029+000	6.029+000	6.029+000	6.029+000	6.029+000
SI 30	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000
P 31	.000	1.860-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004
TI 47	.000	1.959-006	1.959-006	1.959-006	1.959-006	1.959-006	1.959-006	1.959-006	1.959-006	1.959-006	1.959-006	1.959-006
TI 49	.000	5.318-006	5.318-006	5.318-006	5.318-006	5.318-006	5.318-006	5.318-006	5.318-006	5.318-006	5.318-006	5.318-006
TI 50	.000	2.115-005	2.115-005	2.115-005	2.115-005	2.115-005	2.115-005	2.115-005	2.115-005	2.115-005	2.115-005	2.115-005
V 50	.000	8.024-005	8.024-005	8.024-005	8.024-005	8.024-005	8.024-005	8.024-005	8.024-005	8.024-005	8.024-005	8.024-005
V 51	.000	1.328-002	1.566-002	1.576-002	1.578-002	1.579-002	1.579-002	1.579-002	1.579-002	1.579-002	1.579-002	1.579-002
CR 50	2.716+000	2.700+000	2.700+000	2.700+000	2.700+000	2.700+000	2.700+000	2.700+000	2.700+000	2.700+000	2.700+000	2.700+000
CR 51	.000	2.507-003	1.246-004	2.777-005	2.648-006	2.697-007	2.798-009	2.902-011	3.123-015	3.616-023	4.344-033	.000
CR 52	5.441+001	5.434+001	5.434+001	5.434+001	5.434+001	5.434+001	5.434+001	5.434+001	5.434+001	5.434+001	5.434+001	5.434+001
CR 53	6.287+000	6.318+000	6.318+000	6.318+000	6.318+000	6.318+000	6.318+000	6.318+000	6.318+000	6.318+000	6.318+000	6.318+000
CR 54	1.591+000	1.633+000	1.634+000	1.634+000	1.634+000	1.634+000	1.634+000	1.634+000	1.634+000	1.634+000	1.634+000	1.634+000
MN 54	.000	9.282-004	7.113-004	6.227-004	5.056-004	4.129-004	2.754-004	1.836-004	8.168-005	1.616-005	2.132-006	2.813-007
MN 55	2.500+001	2.486+001	2.486+001	2.486+001	2.486+001	2.487+001	2.487+001	2.487+001	2.488+001	2.488+001	2.489+001	2.489+001
MN 56	.000	9.615-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	1.964+001	1.960+001	1.960+001	1.960+001	1.960+001	1.960+001	1.960+001	1.960+001	1.960+001	1.960+001	1.960+001	1.960+001
FE 55	.000	3.625-002	3.321-002	3.179-002	2.968-002	2.777-002	2.430-002	2.127-002	1.629-002	9.559-003	4.908-003	2.520-003
FE 56	3.216+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002	3.215+002
FE 57	7.672+000	8.004+000	8.004+000	8.004+000	8.004+000	8.004+000	8.004+000	8.004+000	8.004+000	8.004+000	8.004+000	8.004+000
FE 58	1.053+000	1.062+000	1.063+000	1.064+000	1.064+000	1.064+000	1.064+000	1.064+000	1.064+000	1.064+000	1.064+000	1.064+000
FE 59	.000	1.243-004	1.958-005	7.771-006	1.828-006	4.480-007	2.689-008	1.614-009	5.815-012	7.547-017	5.880-023	4.581-029
CO 58	.000	1.391-003	4.296-004	2.387-004	9.512-005	3.890-005	6.504-006	1.087-006	3.040-008	2.376-011	3.105-015	4.057-019
CO 59	.000	1.733-003	1.838-003	1.850-003	1.856-003	1.858-003	1.859-003	1.860-003	1.861-003	1.864-003	1.868-003	1.872-003
CO 60	.000	9.641-005	9.234-005	9.036-005	8.736-005	8.453-005	7.915-005	7.411-005	6.498-005	4.995-005	3.595-005	2.588-005
NI 58	6.740+001	6.722+001	6.722+001	6.722+001	6.722+001	6.722+001	6.722+001	6.722+001	6.722+001	6.722+001	6.722+001	6.722+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NI 59	.000	1.689-001	1.689-001	1.689-001	1.689-001	1.689-001	1.689-001	1.689-001	1.689-001	1.689-001	1.689-001	1.689-001
NI 60	2.665+001	2.663+001	2.663+001	2.663+001	2.663+001	2.663+001	2.663+001	2.663+001	2.663+001	2.663+001	2.663+001	2.663+001
NI 61	1.173+000	1.200+000	1.200+000	1.200+000	1.200+000	1.200+000	1.200+000	1.200+000	1.200+000	1.200+000	1.200+000	1.200+000
NI 62	3.788+000	3.764+000	3.764+000	3.764+000	3.764+000	3.764+000	3.764+000	3.764+000	3.764+000	3.764+000	3.764+000	3.764+000
NI 63	.000	2.656-002	2.650-002	2.647-002	2.641-002	2.636-002	2.627-002	2.617-002	2.597-002	2.558-002	2.510-002	2.464-002
NI 64	9.912-001	1.052+000	1.052+000	1.052+000	1.052+000	1.052+000	1.052+000	1.052+000	1.052+000	1.052+000	1.052+000	1.052+000
NI 65	.000	3.855-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 63	5.140+001	5.130+001	5.130+001	5.130+001	5.130+001	5.130+001	5.130+001	5.130+001	5.130+001	5.130+001	5.130+001	5.130+001
CU 64	.000	3.061-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	2.360+001	2.358+001	2.358+001	2.358+001	2.358+001	2.358+001	2.358+001	2.358+001	2.358+001	2.358+001	2.358+001	2.358+001
CU 66	.000	4.555-007	9.502-030	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 64	.000	3.626-002	3.637-002	3.637-002	3.637-002	3.637-002	3.637-002	3.637-002	3.637-002	3.637-002	3.637-002	3.637-002
ZN 65	.000	5.479-006	3.896-006	3.285-006	2.515-006	1.940-006	1.155-006	6.870-007	2.433-007	3.051-008	2.276-009	1.698-010
ZN 66	.000	2.173-002	2.173-002	2.173-002	2.173-002	2.173-002	2.173-002	2.173-002	2.173-002	2.173-002	2.173-002	2.173-002
ZN 67	.000	3.789-006	3.790-006	3.790-006	3.790-006	3.790-006	3.790-006	3.790-006	3.790-006	3.790-006	3.790-006	3.790-006
SR 88	.000	1.248-005	1.248-005	1.248-005	1.248-005	1.248-005	1.248-005	1.248-005	1.248-005	1.248-005	1.248-005	1.248-005
SR 89	.000	2.546-007	4.904-008	2.152-008	5.928-009	1.693-009	1.380-010	1.125-011	7.479-014	3.305-018	1.191-023	4.289-029
Y 89	.000	6.949-007	9.005-007	9.280-007	9.436-007	9.478-007	9.494-007	9.495-007	9.495-007	9.495-007	9.495-007	9.495-007
Y 90	.000	5.559-007	2.357-014	2.348-014	2.334-014	2.320-014	2.292-014	2.265-014	2.212-014	2.109-014	1.987-014	1.873-014
Y 91	.000	7.492-007	1.808-007	8.883-008	2.919-008	9.895-009	1.137-009	1.307-010	1.725-012	3.008-016	6.026-021	1.207-025
ZR 90	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001
ZR 91	7.255+000	7.250+000	7.250+000	7.250+000	7.250+000	7.250+000	7.250+000	7.250+000	7.250+000	7.250+000	7.250+000	7.250+000
ZR 92	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001
ZR 93	.000	2.058-003	2.058-003	2.058-003	2.058-003	2.058-003	2.058-003	2.058-003	2.058-003	2.058-003	2.058-003	2.058-003
ZR 94	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001
ZR 95	.000	2.120-004	5.777-005	3.016-005	1.090-005	4.053-006	5.605-007	7.751-008	1.482-009	5.419-013	2.740-017	1.385-021
ZR 96	1.913+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000	1.912+000
ZR 97	.000	5.507-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	1.013-004	5.569-005	3.225-005	1.258-005	4.825-006	6.802-007	9.441-008	1.871-009	6.609-013	3.341-017	1.689-021
NB 97	.000	3.916-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 95	.000	3.394-004	5.393-004	5.903-004	6.293-004	6.439-004	6.515-004	6.526-004	6.527-004	6.527-004	6.527-004	6.527-004
MO 96	.000	2.448-006	2.450-006	2.450-006	2.450-006	2.450-006	2.450-006	2.450-006	2.450-006	2.450-006	2.450-006	2.450-006
MO 97	.000	1.314-003	1.320-003	1.320-003	1.320-003	1.320-003	1.320-003	1.320-003	1.320-003	1.320-003	1.320-003	1.320-003
MO 98	.000	1.786-006	1.786-006	1.786-006	1.786-006	1.786-006	1.786-006	1.786-006	1.786-006	1.786-006	1.786-006	1.786-006
AG107	.000	1.084-006	1.085-006	1.085-006	1.085-006	1.085-006	1.085-006	1.085-006	1.085-006	1.085-006	1.085-006	1.085-006
AG109	.000	3.602-007	6.250-007	7.406-007	9.020-007	1.039-006	1.262-006	1.432-006	1.660-006	1.868-006	1.947-006	1.967-006
CD106	3.062-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003	3.061-003
CD108	2.136-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003	2.134-003
CD109	.000	1.613-006	1.349-006	1.233-006	1.072-006	9.350-007	7.117-007	5.418-007	3.140-007	1.054-007	2.695-008	6.889-009
CD110	3.055-002	3.029-002	3.029-002	3.029-002	3.029-002	3.029-002	3.029-002	3.029-002	3.029-002	3.029-002	3.029-002	3.029-002
CD111	3.157-002	3.141-002	3.141-002	3.141-002	3.141-002	3.141-002	3.141-002	3.141-002	3.141-002	3.141-002	3.141-002	3.141-002
CD112	6.001-002	6.022-002	6.022-002	6.022-002	6.022-002	6.022-002	6.022-002	6.022-002	6.022-002	6.022-002	6.022-002	6.022-002
CD113	3.063-002	6.411-006	6.411-006	6.411-006	6.411-006	6.411-006	6.411-006	6.411-006	6.411-006	6.411-006	6.411-006	6.411-006
CD114	7.270-002	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001	1.035-001
CD115	.000	3.434-006	2.101-022	1.643-030	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	5.391-006	8.349-007	3.286-007	7.630-008	1.845-008	1.080-009	6.318-011	2.163-013	2.534-018	1.738-024	1.192-030
CD116	1.933-002	1.932-002	1.932-002	1.932-002	1.932-002	1.932-002	1.932-002	1.932-002	1.932-002	1.932-002	1.932-002	1.932-002
IN115	.000	1.197-005	1.653-005	1.704-005	1.729-005	1.735-005	1.736-005	1.736-005	1.736-005	1.736-005	1.736-005	1.736-005
SN116	.000	5.186-006	5.187-006	5.187-006	5.187-006	5.187-006	5.187-006	5.187-006	5.187-006	5.187-006	5.187-006	5.187-006
SN117	.000	8.441-006	8.453-006	8.453-006	8.453-006	8.453-006	8.453-006	8.453-006	8.453-006	8.453-006	8.453-006	8.453-006
SUMTOT	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
TOTAL	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	2.000+000	2.005+000	2.005+000	2.005+000	2.005+000	2.005+000	2.005+000	2.005+000	2.005+000	2.005+000	2.005+000	2.005+000
HE	.000	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001	1.370-001
LI	.000	2.305-001	2.305-001	2.305-001	2.305-001	2.305-001	2.305-001	2.305-001	2.305-001	2.305-001	2.305-001	2.305-001
BE	1.000+001	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000
B	2.250+000	1.928+000	1.928+000	1.928+000	1.928+000	1.928+000	1.928+000	1.928+000	1.928+000	1.928+000	1.928+000	1.928+000
C	5.500+002	5.501+002	5.501+002	5.501+002	5.501+002	5.501+002	5.501+002	5.501+002	5.501+002	5.501+002	5.501+002	5.501+002
N	7.500+001	7.493+001	7.493+001	7.493+001	7.493+001	7.493+001	7.493+001	7.493+001	7.493+001	7.493+001	7.493+001	7.493+001
NE	.000	7.591-005	7.591-005	7.591-005	7.591-005	7.591-005	7.591-005	7.591-005	7.591-005	7.591-005	7.591-005	7.591-005
NA	.000	1.140-005	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006	9.265-006
MG	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001
AL	8.000+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002	7.999+002
SI	1.250+002	1.251+002	1.251+002	1.251+002	1.251+002	1.251+002	1.251+002	1.251+002	1.251+002	1.251+002	1.251+002	1.251+002
P	.000	1.860-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004	1.861-004
TI	.000	2.843-005	2.843-005	2.843-005	2.843-005	2.843-005	2.843-005	2.843-005	2.843-005	2.843-005	2.843-005	2.843-005
V	.000	1.336-002	1.574-002	1.584-002	1.586-002	1.587-002	1.587-002	1.587-002	1.587-002	1.587-002	1.587-002	1.587-002
CR	6.500+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001
MN	2.500+001	2.486+001	2.486+001	2.486+001	2.486+001	2.487+001	2.487+001	2.487+001	2.488+001	2.488+001	2.489+001	2.489+001
FE	3.500+002	3.502+002	3.502+002	3.502+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002
CO	.000	3.220-003	2.360-003	2.179-003	2.039-003	1.981-003	1.945-003	1.935-003	1.926-003	1.914-003	1.904-003	1.898-003
NI	1.000+002	1.001+002	1.001+002	1.001+002	1.001+002	1.001+002	1.001+002	1.001+002	1.001+002	1.001+002	1.001+002	1.001+002
CU	7.500+001	7.488+001	7.488+001	7.488+001	7.488+001	7.488+001	7.488+001	7.488+001	7.488+001	7.488+001	7.488+001	7.488+001
ZN	.000	5.800-002	5.811-002	5.811-002	5.811-002	5.811-002	5.811-002	5.811-002	5.811-002	5.811-002	5.811-002	5.811-002
SR	.000	1.287-005	1.267-005	1.264-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005	1.262-005
Y	.000	2.002-006	1.081-006	1.017-006	9.728-007	9.577-007	9.505-007	9.497-007	9.495-007	9.495-007	9.495-007	9.495-007
ZR	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001
NB	.000	1.017-004	5.571-005	3.227-005	1.259-005	4.828-006	6.822-007	9.668-008	5.038-009	5.032-009	7.362-009	9.692-009
MO	.000	1.657-003	1.863-003	1.914-003	1.953-003	1.968-003	1.976-003	1.977-003	1.977-003	1.977-003	1.977-003	1.977-003
AG	.000	1.446-006	1.712-006	1.827-006	1.989-006	2.125-006	2.348-006	2.518-006	2.746-006	2.954-006	3.033-006	3.053-006
CD	2.500-001	2.499-001	2.499-001	2.499-001	2.499-001	2.499-001	2.499-001	2.499-001	2.499-001	2.499-001	2.499-001	2.499-001
IN	.000	1.198-005	1.653-005	1.704-005	1.729-005	1.735-005	1.736-005	1.736-005	1.736-005	1.736-005	1.736-005	1.736-005
SN	.000	1.363-005	1.364-005	1.364-005	1.364-005	1.364-005	1.364-005	1.364-005	1.364-005	1.364-005	1.364-005	1.364-005
SUMTOT	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
TOTAL	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

CUMULATIVE TABLE TOTALS

AP+FP	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	8.608-001	8.451-001	8.373-001	8.253-001	8.138-001	7.913-001	7.694-001	7.274-001	6.502-001	5.650-001	4.911-001
H 4	.000	7.771-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.271+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	3.124-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006
BE 11	.000	1.487-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	2.679-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	2.822-001	2.822-001	2.821-001	2.821-001	2.821-001	2.821-001	2.821-001	2.821-001	2.820-001	2.819-001	2.818-001
C 15	.000	3.655-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	1.303-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	3.113-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	1.859+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	4.599-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.880-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.550+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	2.035+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	5.152-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	4.994-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	4.644+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	2.721-004	8.107-007	4.458-008	8.219-010	3.616-010	3.559-010	3.557-010	3.553-010	3.545-010	3.536-010	3.526-010
SC 47	.000	8.436-007	2.090-017	7.806-022	.000	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	8.468-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.322-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 52	.000	1.876+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.084-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	1.109-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	2.317+002	1.151+001	2.567+000	2.448-001	2.493-002	2.586-004	2.683-006	2.887-010	3.343-018	.000	.000
CR 55	.000	3.536+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	7.186+000	5.506+000	4.820+000	3.914+000	3.196+000	2.132+000	1.422+000	6.323-001	1.251-001	1.651-002	2.178-003
MN 56	.000	2.087+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	5.171-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	1.679-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	9.066+001	8.306+001	7.950+001	7.423+001	6.944+001	6.078+001	5.319+001	4.074+001	2.391+001	1.228+001	6.304+000
FE 59	.000	6.118+000	9.635-001	3.823-001	8.996-002	2.204-002	1.323-003	7.941-005	2.861-007	3.713-012	2.893-018	2.254-024
CO 58	.000	4.428+001	1.367+001	7.596+000	3.027+000	1.238+000	2.070-001	3.460-002	9.674-004	7.561-007	9.880-011	1.291-014
CO 60	.000	1.091-001	1.044-001	1.022-001	9.881-002	9.562-002	8.953-002	8.383-002	7.350-002	5.650-002	4.067-002	2.927-002
CO 60M	.000	2.990-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	3.242-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	5.549-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	1.280-002	1.280-002	1.280-002	1.280-002	1.280-002	1.280-002	1.280-002	1.280-002	1.280-002	1.279-002	1.279-002
NI 63	.000	1.639+000	1.635+000	1.633+000	1.630+000	1.627+000	1.621+000	1.615+000	1.603+000	1.579+000	1.549+000	1.520+000
NI 65	.000	7.379+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	3.978-005	5.302-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.181+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	2.546+002	5.310-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	2.571-004	2.486-018	2.444-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	4.515-002	3.211-002	2.707-002	2.073-002	1.599-002	9.515-003	5.662-003	2.005-003	2.514-004	1.876-005	1.400-006
SR 89	.000	7.401-003	1.425-003	6.255-004	1.723-004	4.920-005	4.011-006	3.270-007	2.174-009	9.606-014	3.461-019	1.247-024
SR 90	.000	1.293-008	1.283-008	1.278-008	1.270-008	1.262-008	1.247-008	1.233-008	1.204-008	1.148-008	1.081-008	1.019-008
SR 91	.000	1.588-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.483-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	3.026-001	1.283-008	1.278-008	1.270-008	1.263-008	1.248-008	1.233-008	1.204-008	1.148-008	1.082-008	1.019-008

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
Y 91	.000	1.838-002	4.437-003	2.179-003	7.162-004	2.428-004	2.790-005	3.206-006	4.233-008	7.380-012	1.479-016	2.962-021
Y 92	.000	1.788-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.483-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.136-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	7.298-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	5.172-006	5.172-006	5.172-006	5.172-006	5.172-006	5.172-006	5.172-006	5.172-006	5.172-006	5.172-006	5.172-006
ZR 95	.000	4.556+000	1.242+000	6.482-001	2.343-001	8.712-002	1.205-002	1.668-003	3.185-005	1.165-008	5.888-013	2.977-017
ZR 97	.000	1.053+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	9.799-008	1.779-007	2.174-007	2.786-007	3.373-007	4.524-007	5.646-007	7.807-007	1.181-006	1.628-006	2.021-006
NB 95	.000	3.961+000	2.178+000	1.262+000	4.922-001	1.888-001	2.661-002	3.693-003	7.318-005	2.586-008	1.307-012	6.609-017
NB 95M	.000	3.214-002	9.211-003	4.808-003	1.738-003	6.463-004	8.936-005	1.236-005	2.363-007	8.639-011	4.368-015	2.208-019
NB 96	.000	2.730-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.053+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	9.967+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 99	.000	1.295-005	9.474-019	2.562-025	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	1.899-004	2.114-009	2.112-009	2.109-009	2.106-009	2.101-009	2.095-009	2.084-009	2.061-009	2.033-009	2.005-009
AG108M	.000	2.380-008	2.375-008	2.373-008	2.370-008	2.367-008	2.360-008	2.354-008	2.341-008	2.316-008	2.284-008	2.253-008
AG109M	.000	4.167-003	3.483-003	3.185-003	2.768-003	2.415-003	1.838-003	1.399-003	8.109-004	2.723-004	6.960-005	1.779-005
AG110	.000	4.339-004	4.790-008	4.056-008	3.125-008	2.426-008	1.462-008	8.808-009	3.198-009	4.216-010	3.348-011	2.660-012
AG110M	.000	5.024-006	3.602-006	3.049-006	2.350-006	1.824-006	1.099-006	6.623-007	2.404-007	3.170-008	2.518-009	2.000-010
CD107	.000	7.944-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	4.167-003	3.483-003	3.185-003	2.768-003	2.415-003	1.838-003	1.399-003	8.109-004	2.723-004	6.960-005	1.779-005
CD111M	.000	1.404-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	1.751+000	1.071-016	8.377-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.373-001	2.127-002	8.369-003	1.943-003	4.701-004	2.750-005	1.609-006	5.509-009	6.456-014	4.426-020	3.035-028
CD117	.000	5.222-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.991-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116	.000	3.802-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	2.998-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	2.801-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	4.944-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	2.259-004	5.850-007	3.053-008	2.921-010	3.183-012	3.778-016	4.485-020	.000	.000	.000	.000
SUMTOT	.000	6.234+003	1.211+002	9.969+001	8.511+001	7.705+001	6.597+001	5.743+001	4.408+001	2.661+001	1.474+001	8.641+000
TOTAL	.000	6.234+003	1.211+002	9.969+001	8.511+001	7.705+001	6.597+001	5.743+001	4.408+001	2.661+001	1.474+001	8.641+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	1.638+000	8.451-001	8.373-001	8.253-001	8.138-001	7.913-001	7.694-001	7.274-001	6.502-001	5.650-001	4.911-001
HE	.000	1.271+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	3.124-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	2.692-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006	1.205-006
B	.000	2.679-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	2.822-001	2.822-001	2.821-001	2.821-001	2.821-001	2.821-001	2.821-001	2.821-001	2.820-001	2.819-001	2.818-001
N	.000	1.303-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	3.113-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	1.878+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.550+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	2.035+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	4.644+000	3.563-010	3.562-010	3.561-010	3.560-010	3.558-010	3.556-010	3.553-010	3.545-010	3.536-010	3.526-010
P	.000	2.721-004	8.107-007	4.458-008	8.219-010	3.616-010	3.559-010	3.557-010	3.553-010	3.545-010	3.536-010	3.526-010
SC	.000	1.939-006	2.090-017	7.806-022	.000	.000	.000	.000	.000	.000	.000	.000
TI	.000	1.322-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	.000	1.887+000	1.435-017	1.435-017	1.435-017	1.435-017	1.435-017	1.435-017	1.435-017	1.435-017	1.435-017	1.435-017
CR	.000	2.352+002	1.151+001	2.567+000	2.448-001	2.493-002	2.586-004	2.683-006	2.887-010	3.343-018	.000	.000
MN	.000	2.095+003	5.506+000	4.820+000	3.914+000	3.196+000	2.132+000	1.422+000	6.323-001	1.251-001	1.651-002	2.178-003
FE	.000	9.678+001	8.402+001	7.988+001	7.432+001	6.947+001	6.078+001	5.319+001	4.074+001	2.391+001	1.228+001	6.304+000
CO	.000	4.477+001	1.377+001	7.698+000	3.126+000	1.333+000	2.965-001	1.184-001	7.447-002	5.650-002	4.067-002	2.927-002
NI	.000	9.031+000	1.648+000	1.646+000	1.643+000	1.640+000	1.634+000	1.627+000	1.615+000	1.591+000	1.562+000	1.533+000
CU	.000	1.435+003	2.491-018	2.444-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	4.515-002	3.211-002	2.707-002	2.073-002	1.599-002	9.515-003	5.662-003	2.005-003	2.514-004	1.876-005	1.400-006
SR	.000	8.995-003	1.425-003	6.256-004	1.723-004	4.921-005	4.023-006	3.393-007	1.421-008	1.148-008	1.081-008	1.019-008
Y	.000	3.400-001	4.437-003	2.179-003	7.162-004	2.428-004	2.791-005	3.218-006	5.437-008	1.149-008	1.082-008	1.019-008
ZR	.000	1.509+001	1.242+000	6.482-001	2.343-001	8.712-002	1.205-002	1.671-003	3.702-005	5.184-006	5.172-006	5.172-006
NB	.000	2.450+001	2.188+000	1.267+000	4.939-001	1.894-001	2.670-002	3.706-003	7.419-005	1.207-006	1.628-006	2.021-006
MO	.000	1.295-005	9.474-019	2.562-025	.000	.000	.000	.000	.000	.000	.000	.000
AG	.000	4.796-003	3.487-003	3.188-003	2.770-003	2.417-003	1.839-003	1.400-003	8.112-004	2.724-004	6.963-005	1.782-005
CD	.000	1.968+000	2.475-002	1.155-002	4.711-003	2.885-003	1.866-003	1.401-003	8.109-004	2.723-004	6.960-005	1.779-005
IN	.000	1.454-001	1.029-016	1.060-016	1.076-016	1.079-016	1.081-016	1.081-016	1.081-016	1.081-016	1.081-016	1.081-016
SN	.000	2.259-004	5.950-007	3.053-008	2.921-010	3.183-012	3.778-016	4.485-020	.000	.000	.000	.000
SUMTOT	.000	6.234+003	1.211+002	9.969+001	8.511+001	7.705+001	6.597+001	5.743+001	4.408+001	2.661+001	1.474+001	8.641+000
TOTAL	.000	6.234+003	1.211+002	9.969+001	8.511+001	7.705+001	6.597+001	5.743+001	4.408+001	2.661+001	1.474+001	8.641+000

CUMULATIVE TABLE TOTALS

AP+FP	.000	6.234+003	1.211+002	9.969+001	8.511+001	7.705+001	6.597+001	5.743+001	4.408+001	2.661+001	1.474+001	8.641+000
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	.000	6.234+003	1.211+002	9.969+001	8.511+001	7.705+001	6.597+001	5.743+001	4.408+001	2.661+001	1.474+001	8.641+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	2.898-005	2.845-005	2.819-005	2.779-005	2.740-005	2.664-005	2.590-005	2.449-005	2.189-005	1.902-005	1.653-005
HE 6	.000	1.181+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.165-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009
BE 11	.000	1.015-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	2.123-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	8.274-005	8.274-005	8.274-005	8.273-005	8.273-005	8.273-005	8.272-005	8.271-005	8.269-005	8.267-005	8.264-005
C 15	.000	6.221-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	5.649-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	8.670-009	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	3.816-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	5.152-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	1.287-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	2.158-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.073-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	3.650+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	7.180-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	1.694-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	1.642-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	2.758-006	8.218-009	4.518-010	8.331-012	3.665-012	3.607-012	3.606-012	3.601-012	3.594-012	3.584-012	3.574-012
SC 48	.000	1.791-008	2.896-028	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	9.678-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 52	.000	2.796-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.309-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	4.800-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	4.958-002	2.464-003	5.493-004	5.239-005	5.336-006	5.535-008	5.741-010	6.178-014	7.154-022	8.592-032	.000
CR 55	.000	2.308-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	3.578-002	2.742-002	2.400-002	1.949-002	1.591-002	1.061-002	7.078-003	3.148-003	6.229-004	8.219-005	1.084-005
MN 56	.000	3.119+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	3.589-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	3.977-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	1.247-001	1.142-001	1.093-001	1.021-001	9.550-002	8.358-002	7.315-002	5.603-002	3.288-002	1.688-002	8.669-003
FE 59	.000	5.704-002	8.983-003	3.565-003	8.388-004	2.055-004	1.234-005	7.404-007	2.668-009	3.462-014	2.698-020	2.102-026
CO 58	.000	2.651-001	8.184-002	4.548-002	1.812-002	7.411-003	1.239-003	2.072-004	5.792-006	4.527-009	5.915-013	7.730-017
CO 60	.000	1.681-003	1.610-003	1.576-003	1.523-003	1.474-003	1.380-003	1.293-003	1.133-003	8.711-004	6.270-004	4.513-004
CO 60M	.000	1.117-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	1.049-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	1.053-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	8.146-005	8.146-005	8.146-005	8.146-005	8.146-005	8.146-005	8.146-005	8.146-005	8.146-005	8.146-005	8.145-005
NI 63	.000	6.510-004	6.494-004	6.486-004	6.473-004	6.461-004	6.437-004	6.413-004	6.364-004	6.269-004	6.152-004	6.037-004
NI 65	.000	5.165-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	1.580-008	2.106-024	2.431-032	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	2.190+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.743+000	3.636-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	4.129-007	3.991-021	3.924-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	1.582-004	1.125-004	9.485-005	7.263-005	5.602-005	3.334-005	1.984-005	7.025-006	8.809-007	6.573-008	4.904-009
SR 89	.000	2.558-005	4.928-006	2.162-006	5.956-007	1.701-007	1.387-008	1.131-009	7.515-012	3.321-016	1.196-021	4.310-027
SR 90	.000	1.500-011	1.489-011	1.483-011	1.474-011	1.465-011	1.448-011	1.431-011	1.397-011	1.332-011	1.255-011	1.183-011
SR 91	.000	1.273-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	8.307-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.677-003	7.111-011	7.083-011	7.040-011	6.998-011	6.915-011	6.834-011	6.673-011	6.363-011	5.995-011	5.649-011
Y 91	.000	6.602-005	1.593-005	7.828-006	2.572-006	8.719-007	1.002-007	1.151-008	1.520-010	2.651-014	5.310-019	1.064-023

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
Y 92	.000	1.799-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	4.102-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.894-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.674-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	6.009-010	6.009-010	6.009-010	6.009-010	6.009-010	6.009-010	6.009-010	6.009-010	6.009-010	6.009-010	6.009-010
ZR 95	.000	2.308-002	6.289-003	3.283-003	1.187-003	4.413-004	6.102-005	8.437-006	1.613-007	5.899-011	2.882-015	1.508-019
ZR 97	.000	5.488-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	1.736-011	3.153-011	3.852-011	4.936-011	5.975-011	8.015-011	1.000-010	1.383-010	2.093-010	2.884-010	3.580-010
NB 95	.000	1.900-002	1.045-002	6.052-003	2.361-003	9.054-004	1.276-004	1.772-005	3.510-007	1.240-010	6.270-015	3.170-019
NB 95M	.000	4.466-005	1.280-005	6.681-006	2.415-006	8.979-007	1.242-007	1.717-008	3.283-010	1.200-013	6.069-018	3.068-022
NB 96	.000	4.540-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	7.011-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.388-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 99	.000	4.160-008	3.043-021	8.229-028	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	7.077-007	7.878-012	7.871-012	7.860-012	7.849-012	7.827-012	7.806-012	7.764-012	7.679-012	7.575-012	7.473-012
AG108M	.000	2.315-010	2.311-010	2.309-010	2.305-010	2.302-010	2.296-010	2.290-010	2.277-010	2.253-010	2.222-010	2.192-010
AG109M	.000	2.148-006	1.796-006	1.642-006	1.427-006	1.245-006	9.476-007	7.213-007	4.180-007	1.404-007	3.588-008	9.171-009
AG110	.000	3.118-006	3.441-010	2.914-010	2.245-010	1.743-010	1.050-010	6.328-011	2.298-011	3.029-012	2.406-013	1.911-014
AG110M	.000	8.389-008	6.014-008	5.092-008	3.924-008	3.046-008	1.835-008	1.106-008	4.015-009	5.293-010	4.204-011	3.339-012
CD107	.000	3.607-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	2.653-006	2.218-006	2.027-006	1.762-006	1.537-006	1.170-006	8.909-007	5.162-007	1.734-007	4.431-008	1.133-008
CD111M	.000	3.296-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	5.557-003	3.400-019	2.659-027	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	5.122-004	7.932-005	3.121-005	7.248-006	1.753-006	1.026-007	6.002-009	2.055-011	2.408-016	1.651-022	1.132-028
CD117	.000	3.761-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.618-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116	.000	3.115-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	4.934-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	1.262-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	1.867-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	4.190-007	1.104-009	5.663-011	5.419-013	5.904-015	7.008-019	8.319-023	1.172-030	.000	.000	.000
SUMTOT	.000	7.505+001	2.543-001	1.948-001	1.466-001	1.228-001	9.789-002	8.261-002	6.115-002	3.518-002	1.839-002	9.916-003
TOTAL	.000	7.505+001	2.543-001	1.948-001	1.466-001	1.228-001	9.789-002	8.261-002	6.115-002	3.518-002	1.839-002	9.916-003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	2.898-005	2.845-005	2.819-005	2.779-005	2.740-005	2.664-005	2.590-005	2.449-005	2.189-005	1.902-005	1.653-005
HE	.000	1.181+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.165-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.029-007	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009	1.446-009
B	.000	2.123-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	8.336-005	8.274-005	8.274-005	8.273-005	8.273-005	8.273-005	8.272-005	8.271-005	8.269-005	8.267-005	8.264-005
N	.000	5.649-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	8.670-009	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	3.816-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	5.174-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.073-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	3.650+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	1.642-002	4.435-013	4.434-013	4.433-013	4.432-013	4.429-013	4.427-013	4.422-013	4.413-013	4.401-013	4.389-013
P	.000	2.758-006	8.218-009	4.518-010	8.331-012	3.665-012	3.607-012	3.606-012	3.601-012	3.594-012	3.584-012	3.574-012
SC	.000	2.255-008	3.355-020	1.253-024	4.555-033	.000	.000	.000	.000	.000	.000	.000
TI	.000	9.678-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	.000	2.809-002	1.582-019	1.582-019	1.582-019	1.582-019	1.582-019	1.582-019	1.582-019	1.582-019	1.582-019	1.582-019
CR	.000	7.266-002	2.464-003	5.493-004	5.239-005	5.336-006	5.535-008	5.741-010	6.178-014	7.154-022	8.592-032	.000
MN	.000	3.123+001	2.742-002	2.400-002	1.949-002	1.591-002	1.061-002	7.078-003	3.148-003	6.229-004	8.219-005	1.084-005
FE	.000	1.817-001	1.232-001	1.129-001	1.029-001	9.571-002	8.359-002	7.315-002	5.603-002	3.288-002	1.688-002	8.669-003
CO	.000	2.680-001	8.345-002	4.705-002	1.965-002	8.885-003	2.619-003	1.500-003	1.139-003	8.711-004	6.270-004	4.513-004
NI	.000	5.239-002	7.308-004	7.300-004	7.288-004	7.276-004	7.251-004	7.227-004	7.179-004	7.084-004	6.967-004	6.852-004
CU	.000	3.933+000	4.028-021	3.924-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	1.582-004	1.125-004	9.485-005	7.263-005	5.602-005	3.334-005	1.984-005	7.025-006	8.809-007	6.573-008	4.904-009
SR	.000	3.840-005	4.928-006	2.163-006	5.956-007	1.701-007	1.388-008	1.145-009	2.149-011	1.332-011	1.255-011	1.183-011
Y	.000	1.942-003	1.593-005	7.828-008	2.572-006	8.720-007	1.003-007	1.158-008	2.188-010	6.365-011	5.995-011	5.649-011
ZR	.000	7.796-002	6.289-003	3.283-003	1.187-003	4.413-004	6.102-005	8.438-006	1.619-007	6.599-010	6.009-010	6.009-010
NB	.000	1.331-001	1.046-002	6.059-003	2.363-003	9.063-004	1.278-004	1.773-005	3.515-007	3.334-010	2.884-010	3.580-010
MO	.000	4.160-008	3.043-021	8.229-028	.000	.000	.000	.000	.000	.000	.000	.000
AG	.000	6.058-006	1.856-006	1.693-006	1.466-006	1.276-006	9.663-007	7.327-007	4.223-007	1.411-007	3.615-008	9.401-009
CD	.000	6.501-003	8.153-005	3.324-005	9.010-006	3.291-006	1.273-006	8.969-007	5.163-007	1.734-007	4.431-008	1.133-008
IN	.000	1.118-003	1.476-019	1.521-019	1.543-019	1.548-019	1.550-019	1.550-019	1.550-019	1.550-019	1.550-019	1.550-019
SN	.000	4.190-007	1.104-009	5.663-011	5.419-013	5.904-015	7.008-019	8.319-023	1.172-030	.000	.000	.000
SUMTOT	.000	7.505+001	2.543-001	1.948-001	1.466-001	1.228-001	9.789-002	8.261-002	6.115-002	3.518-002	1.839-002	9.916-003
TOTAL	.000	7.505+001	2.543-001	1.948-001	1.466-001	1.228-001	9.789-002	8.261-002	6.115-002	3.518-002	1.839-002	9.916-003

CUMULATIVE TABLE TOTALS

AP+FP	.000	7.505+001	2.543-001	1.948-001	1.466-001	1.228-001	9.789-002	8.261-002	6.115-002	3.518-002	1.839-002	9.916-003
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	.000	7.505+001	2.543-001	1.948-001	1.466-001	1.228-001	9.789-002	8.261-002	6.115-002	3.518-002	1.839-002	9.916-003

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0

(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC

BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PU238	.000	1.542-003	1.672-003	1.670-003	1.667-003	1.663-003	1.657-003	1.650-003	1.637-003	1.612-003	1.580-003	1.549-003
PU239	.000	6.611-003	6.611-003	6.611-003	6.610-003	6.610-003	6.610-003	6.610-003	6.610-003	6.610-003	6.609-003	6.609-003
TOTALS												
TABLE	.000	8.155-003	8.285-003	8.283-003	8.279-003	8.276-003	8.269-003	8.263-003	8.250-003	8.224-003	8.192-003	8.160-003
ACTUAL	.000	8.155-003	8.285-003	8.283-003	8.279-003	8.276-003	8.269-003	8.263-003	8.250-003	8.224-003	8.192-003	8.160-003

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PU238	.000	2.514-004	2.727-004	2.724-004	2.718-004	2.713-004	2.702-004	2.691-004	2.670-004	2.628-004	2.577-004	2.527-004
PU239	.000	3.308-006	3.308-006	3.308-006	3.308-006	3.308-006	3.308-006	3.308-006	3.308-006	3.308-006	3.308-006	3.307-006
TOTALS												
TABLE	.000	2.547-004	2.760-004	2.757-004	2.751-004	2.746-004	2.735-004	2.725-004	2.703-004	2.661-004	2.610-004	2.560-004
ACTUAL	.000	2.547-004	2.760-004	2.757-004	2.751-004	2.746-004	2.735-004	2.725-004	2.703-004	2.661-004	2.610-004	2.560-004
OVERALL TOTALS												
TABLE	.000	8.409-003	8.561-003	8.559-003	8.555-003	8.551-003	8.543-003	8.535-003	8.520-003	8.490-003	8.453-003	8.416-003
ACTUAL	.000	8.409-003	8.561-003	8.559-003	8.555-003	8.551-003	8.543-003	8.535-003	8.520-003	8.490-003	8.453-003	8.416-003

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.653+013	1.656+011	8.520+010	4.103+010	2.473+010	1.240+010	7.602+009	3.309+009	6.894+008	1.292+008	5.358+007
2.500-002	.000	2.163+012	7.966+008	4.952+008	2.661+008	1.701+008	9.885+007	7.134+007	4.277+007	1.765+007	7.943+006	5.249+006
3.750-002	.000	1.454+012	4.103+008	2.248+008	8.927+007	3.760+007	8.469+006	3.634+006	2.558+006	2.266+006	2.020+006	1.842+006
5.750-002	.000	2.183+012	5.798+008	3.177+008	1.257+008	5.219+007	1.063+007	3.724+006	2.226+006	1.892+006	1.619+006	1.423+006
8.500-002	.000	1.399+012	3.541+008	1.980+008	8.248+007	3.753+007	1.092+007	5.521+006	2.974+006	1.299+006	6.150+005	3.906+005
1.250-001	.000	9.652+011	2.218+008	1.220+008	4.819+007	1.971+007	3.475+006	7.731+005	2.212+005	1.595+005	1.176+005	8.763+004
2.250-001	.000	1.475+012	3.838+008	2.091+008	8.112+007	3.246+007	5.297+006	9.293+005	9.482+004	5.355+004	3.826+004	2.752+004
3.750-001	.000	1.486+012	3.573+010	8.004+009	7.836+008	8.812+007	2.845+006	5.406+005	2.077+005	1.510+005	1.086+005	7.839+004
5.750-001	.000	1.528+013	1.350+011	7.504+010	2.992+010	1.224+010	2.053+009	3.472+008	1.150+007	2.529+005	1.988+004	2.813+003
8.500-001	.000	8.096+013	7.954+011	5.063+011	2.730+011	1.689+011	8.601+010	5.304+010	2.301+010	4.544+009	5.997+008	7.919+007
1.250+000	.000	2.768+012	8.272+009	8.018+009	7.658+009	7.342+009	6.783+009	6.297+009	5.471+009	4.184+009	3.009+009	2.165+009
1.750+000	.000	9.848+013	2.503+009	1.391+009	5.543+008	2.266+008	3.790+007	6.339+006	1.782+005	2.838+002	1.159+001	9.428-001
2.250+000	.000	1.043+013	4.095+004	4.008+004	3.874+004	3.749+004	3.510+004	3.287+004	2.882+004	2.215+004	1.594+004	1.148+004
2.750+000	.000	2.147+012	1.267+002	1.240+002	1.199+002	1.160+002	1.086+002	1.017+002	8.917+001	6.855+001	4.934+001	3.551+001
3.500+000	.000	1.257+011	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	7.141+007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	1.911+007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	3.262+006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	2.378+014	1.145+012	6.855+011	3.537+011	2.139+011	1.074+011	6.738+010	3.185+010	9.441+009	3.750+009	2.307+009
MEV/SEC	.000	2.848+014	7.846+011	4.904+011	2.608+011	1.606+011	8.303+010	5.328+010	2.645+010	9.104+009	4.273+009	2.775+009

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	2.479+005	2.483+003	1.278+003	6.154+002	3.709+002	1.859+002	1.140+002	4.964+001	1.034+001	1.938+000	8.036-001
2.500-002	.000	5.409+004	1.991+001	1.238+001	6.653+000	4.253+000	2.471+000	1.784+000	1.069+000	4.412-001	1.986-001	1.312-001
3.750-002	.000	5.454+004	1.539+001	8.431+000	3.348+000	1.410+000	3.176-001	1.363-001	9.592-002	8.498-002	7.575-002	6.908-002
5.750-002	.000	1.255+005	3.334+001	1.827+001	7.225+000	3.001+000	6.111-001	2.141-001	1.280-001	1.088-001	9.311-002	8.184-002
8.500-002	.000	1.189+005	3.010+001	1.683+001	7.010+000	3.190+000	9.285-001	4.693-001	2.528-001	1.104-001	5.228-002	3.320-002
1.250-001	.000	1.206+005	2.773+001	1.525+001	6.023+000	2.463+000	4.343-001	9.664-002	2.765-002	1.993-002	1.470-002	1.095-002
2.250-001	.000	3.319+005	8.636+001	4.704+001	1.825+001	7.304+000	1.192+000	2.091-001	2.134-002	1.205-002	8.609-003	6.193-003
3.750-001	.000	5.573+005	1.340+004	3.001+003	2.939+002	3.304+001	1.067+000	2.027-001	7.789-002	5.663-002	4.073-002	2.940-002
5.750-001	.000	8.784+006	7.765+004	4.315+004	1.720+004	7.038+003	1.181+003	1.997+002	6.611+000	1.454-001	1.143-002	1.618-003
8.500-001	.000	6.882+007	6.761+005	4.304+005	2.321+005	1.436+005	7.311+004	4.508+004	1.955+004	3.863+003	5.097+002	6.731+001
1.250+000	.000	3.460+006	1.034+004	1.002+004	9.573+003	9.177+003	8.479+003	7.871+003	6.839+003	5.230+003	3.761+003	2.707+003
1.750+000	.000	1.723+008	4.380+003	2.434+003	9.700+002	3.966+002	6.632+001	1.109+001	3.119-001	4.967-004	2.029-005	1.650-006
2.250+000	.000	2.346+007	9.215-002	9.018-002	8.718-002	8.436-002	7.899-002	7.396-002	6.484-002	4.984-002	3.588-002	2.582-002
2.750+000	.000	5.905+006	3.485-004	3.410-004	3.297-004	3.190-004	2.987-004	2.797-004	2.452-004	1.885-004	1.357-004	9.766-005
3.500+000	.000	4.400+005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	3.571+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	1.338+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	3.588+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	2.848+008	7.846+005	4.904+005	2.608+005	1.606+005	8.303+004	5.328+004	2.645+004	9.104+003	4.273+003	2.775+003
GAM POW	.000	4.566+001	1.258-001	7.860-002	4.180-002	2.575-002	1.331-002	8.541-003	4.240-003	1.459-003	6.850-004	4.449-004

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	4.276+004	4.095+004	4.008+004	3.874+004	3.749+004	3.510+004	3.287+004	2.882+004	2.215+004	1.594+004	1.148+004

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	4.442+007	2.954+004	2.952+004	2.950+004	2.948+004	2.944+004	2.940+004	2.932+004	2.917+004	2.897+004	2.878+004
2.500-002	.000	3.549+005	1.283+001	1.283+001	1.284+001	1.284+001	1.284+001	1.284+001	1.284+001	1.284+001	1.284+001	1.284+001
3.750-002	.000	3.224+005	5.041+001	5.037+001	5.031+001	5.025+001	5.014+001	5.002+001	4.980+001	4.934+001	4.879+001	4.824+001
5.750-002	.000	3.129+005	7.169+001	7.169+001	7.169+001	7.169+001	7.169+001	7.169+001	7.168+001	7.168+001	7.168+001	7.167+001
8.500-002	.000	2.824+005	6.908+001	6.947+001	6.956+001	6.956+001	6.954+001	6.952+001	6.948+001	6.940+001	6.930+001	6.920+001
1.250-001	.000	5.075+005	3.835+001	3.844+001	3.846+001	3.846+001	3.846+001	3.846+001	3.846+001	3.846+001	3.846+001	3.846+001
2.250-001	.000	1.517+005	6.884+000	6.897+000	6.900+000	6.901+000	6.902+000	6.903+000	6.906+000	6.913+000	6.917+000	6.917+000
3.750-001	.000	1.366+005	6.470+001	6.521+001	6.534+001	6.535+001	6.535+001	6.535+001	6.536+001	6.535+001	6.535+001	6.535+001
5.750-001	.000	2.398+005	7.918-001	7.920-001	7.925-001	7.932-001	7.948-001	7.968-001	8.013-001	8.104-001	8.193-001	8.249-001
8.500-001	.000	2.644+007	1.037-001	1.037-001	1.039-001	1.042-001	1.048-001	1.056-001	1.075-001	1.113-001	1.149-001	1.170-001
1.250+000	.000	1.660+007	2.098-003	2.103-003	2.114-003	2.129-003	2.167-003	2.215-003	2.325-003	2.545-003	2.755-003	2.880-003
1.750+000	.000	2.208-002	5.121-004	5.325-004	5.778-004	6.354-004	7.816-004	9.578-004	1.355-003	2.153-003	2.934-003	3.430-003
2.250+000	.000	2.499-004	2.574-004	2.573-004	2.571-004	2.569-004	2.565-004	2.561-004	2.554-004	2.539-004	2.521-004	2.503-004
2.750+000	.000	1.300-004	3.102-004	5.182-004	9.786-004	1.563-003	3.044-003	4.828-003	8.851-003	1.692-002	2.483-002	2.986-002
3.500+000	.000	1.012-004	1.047-004	1.046-004	1.045-004	1.045-004	1.043-004	1.041-004	1.037-004	1.030-004	1.022-004	1.013-004
5.000+000	.000	3.434-005	3.574-005	3.572-005	3.568-005	3.565-005	3.558-005	3.551-005	3.537-005	3.509-005	3.475-005	3.442-005
7.000+000	.000	2.906-006	3.054-006	3.051-006	3.048-006	3.044-006	3.036-006	3.029-006	3.014-006	2.985-006	2.949-006	2.914-006
1.100+001	.000	2.646-007	2.807-007	2.804-007	2.800-007	2.796-007	2.788-007	2.779-007	2.763-007	2.732-007	2.693-007	2.655-007
TOTAL	.000	8.976+007	2.985+004	2.984+004	2.982+004	2.980+004	2.976+004	2.972+004	2.964+004	2.948+004	2.929+004	2.910+004
MEV/SEC	.000	4.423+007	4.864+002	4.865+002	4.862+002	4.859+002	4.853+002	4.847+002	4.835+002	4.812+002	4.783+002	4.754+002

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	6.662-001	4.431-004	4.429-004	4.426-004	4.423-004	4.416-004	4.410-004	4.398-004	4.375-004	4.346-004	4.317-004
2.500-002	.000	8.874-003	3.208-007	3.209-007	3.209-007	3.209-007	3.209-007	3.209-007	3.209-007	3.209-007	3.209-007	3.209-007
3.750-002	.000	1.209-002	1.890-006	1.889-006	1.887-006	1.885-006	1.880-006	1.876-006	1.867-006	1.850-006	1.830-006	1.809-006
5.750-002	.000	1.799-002	4.122-006	4.122-006	4.122-006	4.122-006	4.122-006	4.122-006	4.122-006	4.122-006	4.121-006	4.121-006
8.500-002	.000	2.401-002	5.872-006	5.905-006	5.913-006	5.912-006	5.911-006	5.909-006	5.906-006	5.899-006	5.890-006	5.882-006
1.250-001	.000	6.344-002	4.794-006	4.805-006	4.808-006	4.808-006	4.808-006	4.808-006	4.808-006	4.808-006	4.807-006	4.807-006
2.250-001	.000	3.412-002	1.549-006	1.552-006	1.553-006	1.553-006	1.553-006	1.553-006	1.554-006	1.555-006	1.556-006	1.556-006
3.750-001	.000	5.123-002	2.426-005	2.446-005	2.450-005	2.451-005	2.451-005	2.451-005	2.451-005	2.451-005	2.451-005	2.451-005
5.750-001	.000	1.379-001	4.553-007	4.554-007	4.557-007	4.561-007	4.570-007	4.582-007	4.608-007	4.660-007	4.711-007	4.743-007
8.500-001	.000	2.247+001	8.811-008	8.817-008	8.833-008	8.854-008	8.910-008	8.980-008	9.141-008	9.464-008	9.770-008	9.948-008
1.250+000	.000	2.074+001	2.623-009	2.628-009	2.642-009	2.661-009	2.709-009	2.769-009	2.906-009	3.181-009	3.444-009	3.601-009
1.750+000	.000	3.864-008	8.962-010	9.319-010	1.011-009	1.112-009	1.368-009	1.676-009	2.372-009	3.768-009	5.134-009	6.002-009
2.250+000	.000	5.623-010	5.792-010	5.789-010	5.785-010	5.780-010	5.772-010	5.763-010	5.746-010	5.713-010	5.672-010	5.632-010
2.750+000	.000	3.574-010	8.531-010	1.425-009	2.691-009	4.299-009	8.371-009	1.328-008	2.434-008	4.653-008	6.827-008	8.212-008
3.500+000	.000	3.541-010	3.664-010	3.662-010	3.659-010	3.656-010	3.650-010	3.643-010	3.631-010	3.607-010	3.577-010	3.547-010
5.000+000	.000	1.717-010	1.787-010	1.786-010	1.784-010	1.782-010	1.779-010	1.775-010	1.768-010	1.755-010	1.738-010	1.721-010
7.000+000	.000	2.034-011	2.138-011	2.136-011	2.133-011	2.131-011	2.126-011	2.120-011	2.110-011	2.090-011	2.065-011	2.040-011
1.100+001	.000	2.910-012	3.087-012	3.084-012	3.080-012	3.075-012	3.066-012	3.057-012	3.040-012	3.005-012	2.962-012	2.920-012
TOTAL	.000	4.423+001	4.864-004	4.865-004	4.862-004	4.859-004	4.853-004	4.847-004	4.835-004	4.812-004	4.783-004	4.754-004
GAM POW	.000	7.091-006	7.797-011	7.798-011	7.794-011	7.789-011	7.780-011	7.770-011	7.751-011	7.713-011	7.666-011	7.621-011

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NP238	.000	1.660+007	1.431-010	4.201-019	.000	.000	.000	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	2.071+009	3.225+006	2.477+005	9.915+004	8.107+004	6.207+004	5.178+004	3.919+004	2.366+004	1.266+004	6.771+003
2.500-002	.000	2.912+009	6.219+006	1.953+006	1.507+006	1.323+006	1.088+006	9.346+005	7.180+005	4.345+005	2.324+005	1.243+005
3.750-002	.000	5.866+008	1.339+006	4.510+005	3.638+005	3.262+005	2.744+005	2.377+005	1.834+005	1.111+005	5.941+004	3.178+004
5.750-002	.000	1.663+008	2.513+005	1.392+004	2.709+003	1.799+003	1.030+003	7.368+002	5.091+002	3.033+002	1.625+002	8.723+001
8.500-002	.000	1.014+008	1.395+005	8.608+003	1.939+003	1.216+003	6.069+002	3.911+002	2.517+002	1.502+002	8.238+001	4.555+001
1.250-001	.000	2.181+008	3.176+005	2.064+004	7.846+003	7.129+003	6.152+003	5.385+003	4.177+003	2.532+003	1.356+003	7.259+002
2.250-001	.000	1.094+009	1.475+006	1.758+005	1.149+005	1.071+005	9.412+004	8.294+004	6.454+004	3.912+004	2.093+004	1.119+004
3.750-001	.000	4.659+009	7.712+006	1.013+006	6.931+005	6.459+005	5.668+005	4.992+005	3.883+005	2.354+005	1.259+005	6.735+004
5.750-001	.000	8.833+009	1.486+007	1.478+006	8.806+005	8.234+005	7.264+005	6.410+005	4.991+005	3.025+005	1.618+005	8.657+004
8.500-001	.000	6.980+009	1.101+007	4.272+005	2.732+003	3.509+001	1.151+000	5.741-001	2.845-001	7.192-002	1.289-002	2.311-003
1.250+000	.000	1.621+008	8.966+004	4.437+003	8.425+001	1.025+001	2.424+000	1.613+000	8.092-001	2.045-001	3.666-002	6.570-003
1.750+000	.000	1.346+010	2.295+007	8.882+005	5.466+003	3.928+001	3.510-001	2.475-001	1.244-001	3.145-002	5.637-003	1.010-003
2.250+000	.000	1.538+008	2.479+005	9.775+003	6.376+001	7.034-001	1.428-001	1.012-001	5.090-002	1.287-002	2.306-003	4.133-004
2.750+000	.000	5.207+008	8.735+005	3.381+004	2.080+002	1.502+000	1.960-002	1.385-002	6.961-003	1.759-003	3.153-004	5.652-005
3.500+000	.000	8.463+006	7.183+003	2.780+002	1.715+000	1.620-002	2.893-003	2.051-003	1.031-003	2.606-004	4.671-005	8.371-006
5.000+000	.000	6.078+002	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021
7.000+000	.000	.000	9.226-023	9.226-023	9.226-023	9.226-023	9.226-023	9.226-023	9.226-023	9.226-023	9.226-023	9.226-023
1.100+001	.000	.000	5.834-024	5.834-024	5.834-024	5.834-024	5.834-024	5.834-024	5.834-024	5.834-024	5.834-024	5.834-024
TOTAL	.000	4.193+010	7.071+007	6.725+006	3.680+006	3.317+006	2.820+006	2.454+006	1.897+006	1.149+006	6.147+005	3.288+005
MEV/SEC	.000	3.875+010	6.470+007	3.382+006	8.590+005	7.875+005	6.907+005	6.082+005	4.731+005	2.868+005	1.534+005	8.206+004

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK IV 12% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	3.107+001	4.838-002	3.716-003	1.487-003	1.216-003	9.310-004	7.767-004	5.879-004	3.550-004	1.898-004	1.016-004
2.500-002	.000	7.279+001	1.555-001	4.882-002	3.769-002	3.307-002	2.720-002	2.336-002	1.795-002	1.086-002	5.810-003	3.108-003
3.750-002	.000	2.200+001	5.021-002	1.691-002	1.364-002	1.223-002	1.029-002	8.915-003	6.879-003	4.165-003	2.228-003	1.192-003
5.750-002	.000	9.560+000	1.445-002	8.001-004	1.558-004	1.034-004	5.925-005	4.236-005	2.927-005	1.744-005	9.346-006	5.016-006
8.500-002	.000	8.618+000	1.186-002	7.317-004	1.649-004	1.034-004	5.159-005	3.325-005	2.139-005	1.277-005	7.002-006	3.872-006
1.250-001	.000	2.726+001	3.970-002	2.580-003	9.807-004	8.911-004	7.690-004	6.731-004	5.221-004	3.165-004	1.694-004	9.074-005
2.250-001	.000	2.462+002	3.318-001	3.955-002	2.584-002	2.409-002	2.118-002	1.866-002	1.452-002	8.802-003	4.709-003	2.519-003
3.750-001	.000	1.747+003	2.892+000	3.799-001	2.599-001	2.422-001	2.126-001	1.872-001	1.456-001	8.827-002	4.722-002	2.526-002
5.750-001	.000	5.079+003	8.543+000	8.497-001	5.064-001	4.735-001	4.177-001	3.686-001	2.870-001	1.740-001	9.306-002	4.978-002
8.500-001	.000	5.933+003	9.357+000	3.631-001	2.322-003	2.982-005	9.780-007	4.879-007	2.418-007	6.113-008	1.096-008	1.964-009
1.250+000	.000	2.026+002	1.121-001	5.547-003	1.053-004	1.281-005	3.030-006	2.017-006	1.012-006	2.557-007	4.582-008	8.212-009
1.750+000	.000	2.356+004	4.016+001	1.554+000	9.566-003	6.874-005	6.143-007	4.331-007	2.177-007	5.504-008	9.864-009	1.768-009
2.250+000	.000	3.461+002	5.578-001	2.199-002	1.435-004	1.583-006	3.214-007	2.278-007	1.145-007	2.895-008	5.188-009	9.299-010
2.750+000	.000	1.432+003	2.402+000	9.297-002	5.719-004	4.131-006	5.390-008	3.807-008	1.914-008	4.838-009	8.672-010	1.554-010
3.500+000	.000	2.962+001	2.514-002	9.730-004	6.002-006	5.672-008	1.013-008	7.178-009	3.609-009	9.122-010	1.635-010	2.930-011
5.000+000	.000	3.039-003	7.109-027	7.109-027	7.109-027	7.109-027	7.109-027	7.109-027	7.109-027	7.109-027	7.109-027	7.109-027
7.000+000	.000	.000	6.458-028	6.458-028	6.458-028	6.458-028	6.458-028	6.458-028	6.458-028	6.458-028	6.458-028	6.458-028
1.100+001	.000	.000	6.417-029	6.417-029	6.417-029	6.417-029	6.417-029	6.417-029	6.417-029	6.417-029	6.417-029	6.417-029
TOTAL	.000	3.875+004	6.470+001	3.382+000	8.590-001	7.875-001	6.907-001	6.082-001	4.731-001	2.868-001	1.534-001	8.206-002
GAM POW	.000	6.212-003	1.037-005	5.421-007	1.377-007	1.262-007	1.107-007	9.750-008	7.584-008	4.597-008	2.459-008	1.315-008

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	.000	3.195-001	2.854-001	2.391-001	2.014-001	1.428-001	1.012-001	5.090-002	1.287-002	2.306-003	4.133-004

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	.000	4.370-002	3.903-002	3.270-002	2.754-002	1.953-002	1.385-002	6.961-003	1.759-003	3.153-004	5.652-005

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	.000	6.473-003	5.781-003	4.844-003	4.079-003	2.892-003	2.051-003	1.031-003	2.606-004	4.671-005	8.371-006

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SM149	.000	.000	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021	1.422-021

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	00	.00	.00	.00	.00
K INFINITY	.00000	.00000	1.14125	1.14123	1.14119	1.14114	1.14103	1.14090	1.14057	1.13975	1.13860	1.13744
NEUT PRODN	.00	.00	6.11+003	6.11+003	6.11+003	6.11+003	6.11+003	6.10+003	6.10+003	6.09+003	6.08+003	6.08+003
NEUT DESTN	.00	.00	5.36+003	5.35+003	5.35+003	5.35+003	5.35+003	5.35+003	5.35+003	5.35+003	5.34+003	5.34+003
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 858 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	3.758+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000	3.763+000
H 2	1.128-003	2.138-003	2.138-003	2.138-003	2.138-003	2.138-003	2.138-003	2.138-003	2.138-003	2.138-003	2.138-003	2.138-003
H 3	.000	8.917-005	8.754-005	8.673-005	8.549-005	8.430-005	8.197-005	7.970-005	7.535-005	6.735-005	5.853-005	5.087-005
HE 3	.000	7.743-007	2.404-006	3.207-006	4.450-006	5.641-006	7.974-006	1.024-005	1.459-005	2.259-005	3.141-005	3.907-005
HE 4	.000	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001
LI 6	.000	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004	8.061-004
LI 7	.000	2.333-001	2.333-001	2.333-001	2.333-001	2.333-001	2.333-001	2.333-001	2.333-001	2.333-001	2.333-001	2.333-001
BE 9	1.000+001	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000
BE 10	.000	5.449-005	5.449-005	5.449-005	5.449-005	5.449-005	5.449-005	5.449-005	5.449-005	5.449-005	5.449-005	5.449-005
B 10	4.232-001	8.988-002	8.988-002	8.988-002	8.988-002	8.988-002	8.988-002	8.988-002	8.988-002	8.988-002	8.988-002	8.988-002
B 11	1.862+000	1.868+000	1.868+000	1.868+000	1.868+000	1.868+000	1.868+000	1.868+000	1.868+000	1.868+000	1.868+000	1.868+000
C 12	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002	5.625+002
C 13	6.840+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000	6.841+000
C 14	.000	6.803-002	6.803-002	6.802-002	6.802-002	6.802-002	6.802-002	6.801-002	6.800-002	6.799-002	6.797-002	6.795-002
N 14	8.031+001	8.023+001	8.023+001	8.023+001	8.023+001	8.023+001	8.023+001	8.023+001	8.023+001	8.023+001	8.023+001	8.023+001
N 15	3.161-001	3.184-001	3.184-001	3.184-001	3.184-001	3.184-001	3.184-001	3.184-001	3.184-001	3.184-001	3.184-001	3.184-001
NE 21	.000	3.204-005	3.204-005	3.204-005	3.204-005	3.204-005	3.204-005	3.204-005	3.204-005	3.204-005	3.204-005	3.204-005
NE 22	.000	4.814-005	4.814-005	4.814-005	4.814-005	4.814-005	4.814-005	4.814-005	4.814-005	4.814-005	4.814-005	4.814-005
NA 23	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG 24	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001	2.058+001
MG 25	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000	2.715+000
MG 26	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000	3.108+000
AL 27	8.053+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002
SI 28	1.213+002	1.214+002	1.214+002	1.214+002	1.214+002	1.214+002	1.214+002	1.214+002	1.214+002	1.214+002	1.214+002	1.214+002
SI 29	6.362+000	6.368+000	6.368+000	6.368+000	6.368+000	6.368+000	6.368+000	6.368+000	6.368+000	6.368+000	6.368+000	6.368+000
SI 30	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000	4.369+000
P 31	.000	1.965-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004
TI 46	2.786-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001	2.785-001
TI 47	2.570-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001	2.569-001
TI 48	2.597+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000	2.590+000
TI 49	1.942-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001	2.015-001
TI 50	1.909-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001	1.911-001
V 50	8.621-003	8.548-003	8.548-003	8.548-003	8.548-003	8.548-003	8.548-003	8.548-003	8.548-003	8.548-003	8.548-003	8.548-003
V 51	3.509+000	3.530+000	3.535+000	3.536+000	3.536+000	3.536+000	3.536+000	3.536+000	3.536+000	3.536+000	3.536+000	3.536+000
CR 50	5.655+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000	5.623+000
CR 51	.000	5.213-003	2.590-004	5.774-005	5.507-006	5.609-007	5.819-009	6.036-011	6.495-015	7.521-023	9.033-033	.000
CR 52	1.133+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002	1.132+002
CR 53	1.309+001	1.316+001	1.316+001	1.316+001	1.316+001	1.316+001	1.316+001	1.316+001	1.316+001	1.316+001	1.316+001	1.316+001
CR 54	3.314+000	3.401+000	3.401+000	3.401+000	3.402+000	3.402+000	3.402+000	3.402+000	3.402+000	3.402+000	3.402+000	3.402+000
MN 54	.000	1.180-003	9.043-004	7.916-004	6.427-004	5.249-004	3.501-004	2.335-004	1.038-004	2.054-005	2.711-006	3.577-007
MN 55	2.852+001	2.836+001	2.836+001	2.836+001	2.836+001	2.837+001	2.837+001	2.837+001	2.838+001	2.839+001	2.840+001	2.840+001
MN 56	.000	1.100-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	2.497+001	2.492+001	2.492+001	2.492+001	2.492+001	2.492+001	2.492+001	2.492+001	2.492+001	2.492+001	2.492+001	2.492+001
FE 55	.000	4.612-002	4.225-002	4.044-002	3.776-002	3.533-002	3.092-002	2.706-002	2.073-002	1.216-002	6.245-003	3.207-003
FE 56	4.089+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002	4.087+002
FE 57	9.753+000	1.018+001	1.018+001	1.018+001	1.018+001	1.018+001	1.018+001	1.018+001	1.018+001	1.018+001	1.018+001	1.018+001
FE 58	1.339+000	1.351+000	1.352+000	1.353+000	1.353+000	1.353+000	1.353+000	1.353+000	1.353+000	1.353+000	1.353+000	1.353+000
FE 59	.000	1.582-004	2.491-005	9.886-006	2.326-006	5.699-007	3.421-008	2.053-009	7.397-012	9.601-017	7.480-023	5.828-029
CO 58	.000	1.930-003	5.958-004	3.310-004	1.319-004	5.395-005	9.020-006	1.508-006	4.216-008	3.295-011	4.306-015	5.627-019
CO 59	7.035-001	6.889-001	6.890-001	6.891-001	6.891-001	6.891-001	6.891-001	6.891-001	6.891-001	6.891-001	6.891-001	6.891-001
CO 60	.000	1.625-002	1.557-002	1.523-002	1.473-002	1.425-002	1.334-002	1.249-002	1.095-002	8.420-003	6.060-003	4.362-003
NI 58	9.347+001	9.322+001	9.322+001	9.322+001	9.322+001	9.322+001	9.322+001	9.322+001	9.322+001	9.322+001	9.322+001	9.322+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NI 59	.000	2.342-001	2.342-001	2.342-001	2.342-001	2.342-001	2.342-001	2.342-001	2.342-001	2.342-001	2.342-001	2.342-001
NI 60	3.697+001	3.694+001	3.694+001	3.694+001	3.694+001	3.694+001	3.694+001	3.694+001	3.694+001	3.694+001	3.695+001	3.695+001
NI 61	1.627+000	1.664+000	1.664+000	1.664+000	1.664+000	1.664+000	1.664+000	1.664+000	1.664+000	1.664+000	1.664+000	1.664+000
NI 62	5.254+000	5.220+000	5.220+000	5.220+000	5.220+000	5.220+000	5.220+000	5.220+000	5.220+000	5.220+000	5.220+000	5.220+000
NI 63	.000	3.666-002	3.657-002	3.652-002	3.645-002	3.638-002	3.625-002	3.611-002	3.584-002	3.530-002	3.464-002	3.400-002
NI 64	1.375+000	1.438+000	1.438+000	1.438+000	1.438+000	1.438+000	1.438+000	1.438+000	1.438+000	1.438+000	1.438+000	1.438+000
CU 63	5.381+001	5.371+001	5.371+001	5.371+001	5.371+001	5.371+001	5.371+001	5.371+001	5.371+001	5.371+001	5.371+001	5.371+001
CU 64	.000	3.204-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	2.471+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001	2.469+001
ZN 64	.000	3.796-002	3.808-002	3.808-002	3.808-002	3.808-002	3.808-002	3.808-002	3.808-002	3.808-002	3.808-002	3.808-002
ZN 66	.000	2.275-002	2.275-002	2.275-002	2.275-002	2.275-002	2.275-002	2.275-002	2.275-002	2.275-002	2.275-002	2.275-002
SR 87	.000	1.441-004	1.441-004	1.441-004	1.441-004	1.441-004	1.441-004	1.441-004	1.441-004	1.441-004	1.441-004	1.441-004
SR 88	.000	1.327-002	1.327-002	1.327-002	1.327-002	1.327-002	1.327-002	1.327-002	1.327-002	1.327-002	1.327-002	1.327-002
SR 89	.000	2.707-004	5.214-005	2.288-005	6.302-006	1.800-006	1.467-007	1.196-008	7.952-011	3.514-015	1.266-020	4.560-026
Y 89	.000	7.389-004	9.574-004	9.867-004	1.003-003	1.008-003	1.009-003	1.010-003	1.010-003	1.010-003	1.010-003	1.010-003
Y 90	.000	5.910-004	2.506-011	2.496-011	2.481-011	2.466-011	2.437-011	2.408-011	2.352-011	2.242-011	2.113-011	1.991-011
Y 91	.000	7.965-004	1.923-004	9.444-005	3.103-005	1.052-005	1.209-006	1.389-007	1.834-009	3.198-013	6.407-018	1.284-022
ZR 90	3.508+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004	3.507+004
ZR 91	7.713+003	7.708+003	7.708+003	7.708+003	7.708+003	7.708+003	7.708+003	7.708+003	7.708+003	7.708+003	7.708+003	7.708+003
ZR 92	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004	1.191+004
ZR 93	.000	2.188+000	2.188+000	2.188+000	2.188+000	2.188+000	2.188+000	2.188+000	2.188+000	2.188+000	2.188+000	2.188+000
ZR 94	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004	1.238+004
ZR 95	.000	2.254-001	6.142-002	3.206-002	1.159-002	4.310-003	5.959-004	8.240-005	1.576-006	5.761-010	2.913-014	1.473-018
ZR 96	2.034+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003	2.033+003
ZR 97	.000	5.855-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	3.684-007	6.691-007	8.175-007	1.047-006	1.268-006	1.701-006	2.123-006	2.936-006	4.441-006	6.120-006	7.598-006
NB 95	.000	1.077-001	5.921-002	3.429-002	1.338-002	5.130-003	7.232-004	1.004-004	1.989-006	7.027-010	3.553-014	1.796-018
NB 95M	.000	8.969-005	2.570-005	1.342-005	4.849-006	1.803-006	2.494-007	3.448-008	6.593-010	2.411-013	1.219-017	6.162-022
NB 97	.000	4.163-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 92	4.988-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001	4.987-001
MO 93	.000	3.311-005	3.311-005	3.311-005	3.311-005	3.311-005	3.310-005	3.310-005	3.309-005	3.308-005	3.306-005	3.305-005
MO 94	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001	3.202-001
MO 95	5.533-001	9.049-001	1.117+000	1.172+000	1.213+000	1.229+000	1.237+000	1.238+000	1.238+000	1.238+000	1.238+000	1.238+000
MO 96	5.873-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001	5.977-001
MO 97	3.411-001	1.739+000	1.745+000	1.745+000	1.745+000	1.745+000	1.745+000	1.745+000	1.745+000	1.745+000	1.745+000	1.745+000
MO 98	8.652-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001	8.672-001
MO 99	.000	1.308-005	9.565-019	2.587-025	1.349-035	.000	.000	.000	.000	.000	.000	.000
MO100	3.517-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001	3.515-001
TC 99	.000	9.674-005	9.837-005	9.837-005	9.837-005	9.837-005	9.837-005	9.837-005	9.836-005	9.836-005	9.836-005	9.836-005
RU101	.000	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004	2.027-004
CD106	3.493-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003	3.492-003
CD108	2.436-003	2.434-003	2.434-003	2.434-003	2.434-003	2.434-003	2.434-003	2.434-003	2.434-003	2.434-003	2.434-003	2.434-003
CD110	3.485-002	3.455-002	3.455-002	3.455-002	3.455-002	3.455-002	3.455-002	3.455-002	3.455-002	3.455-002	3.455-002	3.455-002
CD111	3.601-002	3.583-002	3.583-002	3.583-002	3.583-002	3.583-002	3.583-002	3.583-002	3.583-002	3.583-002	3.583-002	3.583-002
CD112	6.845-002	6.869-002	6.869-002	6.869-002	6.869-002	6.869-002	6.869-002	6.869-002	6.869-002	6.869-002	6.869-002	6.869-002
CD113	3.494-002	7.328-006	7.328-006	7.328-006	7.328-006	7.328-006	7.328-006	7.328-006	7.328-006	7.328-006	7.328-006	7.328-006
CD114	8.293-002	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001	1.181-001
CD116	2.205-002	2.204-002	2.204-002	2.204-002	2.204-002	2.204-002	2.204-002	2.204-002	2.204-002	2.204-002	2.204-002	2.204-002
IN113	.000	2.758-002	3.494-002	3.704-002	3.913-002	4.029-002	4.135-002	4.170-002	4.186-002	4.188-002	4.188-002	4.188-002
IN113M	.000	8.578-006	4.166-006	2.903-006	1.649-006	9.514-007	3.168-007	1.055-007	1.169-008	1.437-010	5.880-013	2.406-015
IN114M	.000	1.102-004	2.054-005	8.866-006	2.380-006	6.629-007	5.142-008	3.989-009	2.400-011	8.690-016	2.441-021	6.854-027
IN115	.000	1.455-005	1.975-005	2.033-005	2.061-005	2.068-005	2.070-005	2.070-005	2.070-005	2.070-005	2.070-005	2.070-005

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5 0YR	7.5YR	10.0YR
SN112	9.618+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000	9.576+000
SN113	.000	1.429-002	6.937-003	4.834-003	2.745-003	1.584-003	5.274-004	1.756-004	1.947-005	2.393-007	9.791-010	4.006-012
SN114	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000	6.559+000
SN115	3.753+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000	3.688+000
SN116	1.464+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002	1.462+002
SN117	7.787+001	7.798+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001	7.799+001
SN117M	.000	1.279-002	3.370-005	1.730-006	1.655-008	1.803-010	2.140-014	2.541-018	3.580-026	.000	.000	.000
SN118	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002	2.462+002
SN119	8.789+001	8.795+001	8.797+001	8.798+001	8.799+001	8.799+001	8.800+001	8.801+001	8.802+001	8.802+001	8.802+001	8.802+001
SN119M	.000	7.032-002	5.008-002	4.226-002	3.240-002	2.502-002	1.493-002	8.905-003	3.169-003	4.013-004	3.031-005	2.289-006
SN120	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002	3.339+002
SN121	.000	5.846-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	4.961-004	4.939-004	4.928-004	4.910-004	4.893-004	4.859-004	4.826-004	4.759-004	4.629-004	4.471-004	4.319-004
SN122	4.819+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001	4.818+001
SN123	.000	4.610-003	2.421-003	1.755-003	1.060-003	6.493-004	2.437-004	9.146-005	1.288-005	2.556-007	1.903-009	1.417-011
SN124	5.963+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001	5.957+001
SN125	.000	1.867-003	3.341-007	4.470-008	5.214-012	7.337-015	1.454-020	2.883-026	.000	.000	.000	.000
SB121	.000	8.396-002	8.453-002	8.453-002	8.453-002	8.453-002	8.453-002	8.454-002	8.454-002	8.456-002	8.457-002	8.459-002
SB122	.000	2.883-005	1.208-018	2.472-025	8.328-036	.000	.000	.000	.000	.000	.000	.000
SB123	.000	4.320-003	6.509-003	7.175-003	7.870-003	8.281-003	8.686-003	8.838-003	8.917-003	8.930-003	8.930-003	8.930-003
SB124	.000	1.190-005	2.988-006	1.497-006	5.076-007	1.774-007	2.166-008	2.645-009	3.943-011	8.766-015	2.379-019	6.459-024
SB125	.000	5.139-002	4.907-002	4.709-002	4.416-002	4.148-002	3.660-002	3.229-002	2.514-002	1.524-002	8.154-003	4.362-003
SB126	.000	1.041-005	1.268-008	4.427-010	2.317-012	1.404-014	5.156-019	1.894-023	2.555-032	.000	.000	.000
TE122	.000	8.655-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004	8.936-004
TE124	.000	1.123-005	2.014-005	2.163-005	2.262-005	2.295-005	2.310-005	2.312-005	2.312-005	2.312-005	2.312-005	2.312-005
TE125	.000	4.777-003	8.843-003	1.081-002	1.377-002	1.648-002	2.142-002	2.579-002	3.304-002	4.308-002	5.027-002	5.411-002
TE125M	.000	4.849-004	6.243-004	6.284-004	6.078-004	5.768-004	5.115-004	4.517-004	3.517-004	2.133-004	1.141-004	6.101-005
TE126	.000	7.972-005	9.012-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005	9.013-005
LU175	.000	2.164-003	2.949-003	3.103-003	3.218-003	3.263-003	3.288-003	3.292-003	3.293-003	3.293-003	3.293-003	3.293-003
LU176	.000	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005	2.114-005
HF174	2.194-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002	1.858-002
HF175	.000	1.129-003	3.440-004	1.899-004	7.492-005	3.033-005	4.972-006	8.150-007	2.190-008	1.581-011	1.871-015	2.215-019
HF176	7.212-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001	6.668-001
HF177	2.594+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000	1.198+000
HF178	3.801+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000	4.370+000
HF179	1.938+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000	2.670+000
HF180	4.993+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000	5.117+000
HF181	.000	9.491-003	1.334-003	5.003-004	1.077-004	2.420-005	1.222-006	6.172-008	1.574-010	1.023-015	3.361-022	1.104-028
HF182	.000	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005	9.487-005
TA181	.000	3.027-002	3.845-002	3.929-002	3.969-002	3.977-002	3.980-002	3.980-002	3.980-002	3.980-002	3.980-002	3.980-002
TA182	.000	3.999-004	1.940-004	1.351-004	7.672-005	4.425-005	1.472-005	4.895-006	5.416-007	6.633-009	3.031-011	3.429-012
TA183	.000	3.256-005	2.689-012	7.727-016	2.205-021	8.986-027	.000	.000	.000	.000	.000	.000
W180	4.476-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003	4.387-003
W181	.000	4.460-005	2.245-005	1.593-005	9.307-006	5.521-006	1.942-006	6.834-007	8.459-008	1.296-009	6.888-012	3.767-014
W182	9.156-001	8.601-001	8.603-001	8.603-001	8.604-001	8.604-001	8.604-001	8.604-001	8.605-001	8.605-001	8.605-001	8.605-001
W183	5.005-001	5.382-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001	5.383-001
W184	1.079+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000	1.096+000
W185	.000	7.592-004	2.508-004	1.442-004	6.058-005	2.608-005	4.833-006	8.958-007	3.077-008	3.629-011	7.937-015	1.736-018
W186	1.018+000	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001	9.588-001
W187	.000	3.371-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	3.299-005	9.951-006	5.465-006	2.139-006	8.591-007	1.386-007	2.237-008	5.825-010	3.950-013	4.322-017	4.730-021
RE185	.000	1.210-003	1.718-003	1.825-003	1.909-003	1.943-003	1.964-003	1.968-003	1.969-003	1.969-003	1.969-003	1.969-003

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RE187	.000	5.706-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002	5.740-002
RE188	.000	1.279-005	1.025-007	5.629-008	2.203-008	8.849-009	1.428-009	2.304-010	6.000-012	4.069-015	4.452-019	4.872-023
OS186	.000	9.507-005	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004	1.002-004
OS188	.000	1.564-003	1.600-003	1.604-003	1.608-003	1.609-003	1.610-003	1.610-003	1.610-003	1.610-003	1.610-003	1.610-003
OS189	.000	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006	7.495-006
PB204	9.695-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002	9.691-002
PB205	.000	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005	3.590-005
PB206	1.685+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000	1.669+000
PB207	1.553+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000	1.569+000
PB208	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000	3.700+000
SUMTOT	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004
TOTAL	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	3.759+000	3.765+000	3.765+000	3.765+000	3.765+000	3.765+000	3.765+000	3.765+000	3.765+000	3.765+000	3.765+000	3.765+000
HE	.000	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001	1.399-001
LI	.000	2.341-001	2.341-001	2.341-001	2.341-001	2.341-001	2.341-001	2.341-001	2.341-001	2.341-001	2.341-001	2.341-001
BE	1.000+001	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000	9.997+000
B	2.285+000	1.958+000	1.958+000	1.958+000	1.958+000	1.958+000	1.958+000	1.958+000	1.958+000	1.958+000	1.958+000	1.958+000
C	5.693+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002	5.694+002
N	8.063+001	8.055+001	8.055+001	8.055+001	8.055+001	8.055+001	8.055+001	8.055+001	8.055+001	8.055+001	8.055+001	8.055+001
NE	.000	8.100-005	8.100-005	8.100-005	8.100-005	8.100-005	8.100-005	8.100-005	8.100-005	8.100-005	8.100-005	8.100-005
NA	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
MG	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001	2.641+001
AL	8.053+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002	8.052+002
SI	1.320+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002	1.321+002
P	.000	1.965-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004	1.966-004
TI	3.517+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000	3.518+000
V	3.518+000	3.539+000	3.544+000	3.544+000	3.544+000	3.544+000	3.544+000	3.544+000	3.544+000	3.544+000	3.544+000	3.544+000
CR	1.354+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002	1.353+002
MN	2.852+001	2.836+001	2.836+001	2.836+001	2.836+001	2.837+001	2.837+001	2.837+001	2.838+001	2.839+001	2.840+001	2.840+001
FE	4.450+002	4.452+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002	4.451+002
CO	7.035-001	7.071-001	7.052-001	7.046-001	7.039-001	7.034-001	7.024-001	7.016-001	7.000-001	6.975-001	6.951-001	6.935-001
NI	1.387+002	1.388+002	1.388+002	1.388+002	1.388+002	1.388+002	1.388+002	1.388+002	1.388+002	1.388+002	1.388+002	1.388+002
CU	7.852+001	7.839+001	7.839+001	7.839+001	7.839+001	7.839+001	7.839+001	7.840+001	7.840+001	7.840+001	7.840+001	7.840+001
ZN	.000	6.072-002	6.084-002	6.084-002	6.084-002	6.084-002	6.084-002	6.084-002	6.084-002	6.084-002	6.084-002	6.084-002
SR	.000	1.369-002	1.347-002	1.344-002	1.342-002	1.342-002	1.341-002	1.341-002	1.341-002	1.341-002	1.341-002	1.341-002
Y	.000	2.128-003	1.150-003	1.081-003	1.034-003	1.018-003	1.011-003	1.010-003	1.010-003	1.010-003	1.010-003	1.010-003
ZR	6.911+004	6.910+004	6.910+004	6.910+004	6.910+004	6.910+004	6.910+004	6.910+004	6.910+004	6.910+004	6.910+004	6.910+004
NB	.000	1.082-001	5.923-002	3.431-002	1.338-002	5.134-003	7.256-004	1.031-004	5.691-006	5.697-006	8.191-006	1.069-005
MO	3.518+000	5.279+000	5.498+000	5.552+000	5.593+000	5.609+000	5.617+000	5.618+000	5.618+000	5.618+000	5.618+000	5.618+000
TC	.000	9.675-005	9.837-005	9.837-005	9.837-005	9.837-005	9.837-005	9.837-005	9.836-005	9.836-005	9.836-005	9.836-005
RU	.000	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004	2.052-004
CD	2.852-001	2.851-001	2.851-001	2.851-001	2.851-001	2.851-001	2.851-001	2.851-001	2.851-001	2.851-001	2.851-001	2.851-001
IN	.000	2.771-002	3.498-002	3.707-002	3.816-002	4.032-002	4.137-002	4.172-002	4.188-002	4.190-002	4.190-002	4.190-002
SN	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003	1.020+003
SB	.000	1.397-001	1.401-001	1.388-001	1.366-001	1.343-001	1.298-001	1.257-001	1.186-001	1.087-001	1.017-001	9.788-002
TE	.000	6.222-003	1.047-002	1.245-002	1.539-002	1.807-002	2.294-002	2.725-002	3.440-002	4.430-002	5.139-002	5.518-002
LU	.000	2.186-003	2.970-003	3.124-003	3.239-003	3.284-003	3.309-003	3.313-003	3.314-003	3.314-003	3.314-003	3.314-003
HF	1.407+001	1.405+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001	1.404+001
TA	.000	3.070-002	3.864-002	3.942-002	3.976-002	3.982-002	3.981-002	3.981-002	3.980-002	3.980-002	3.980-002	3.980-002
W	3.517+000	3.459+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000	3.458+000
RE	.000	5.829-002	5.912-002	5.922-002	5.931-002	5.934-002	5.936-002	5.937-002	5.937-002	5.937-002	5.937-002	5.937-002
OS	.000	1.667-003	1.708-003	1.712-003	1.716-003	1.717-003	1.718-003	1.718-003	1.718-003	1.718-003	1.718-003	1.718-003
PB	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000	7.035+000
SUMTOT	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004
TOTAL	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004

CUMULATIVE TABLE TOTALS

AP+FP	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004	7.262+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	8.608-001	8.451-001	8.373-001	8.253-001	8.138-001	7.913-001	7.694-001	7.274-001	6.502-001	5.650-001	4.911-001
H 4	.000	7.893-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.271+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	3.173-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006
B 12	.000	2.721-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	3.033-001	3.033-001	3.033-001	3.033-001	3.033-001	3.033-001	3.033-001	3.032-001	3.032-001	3.031-001	3.030-001
C 15	.000	3.930-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	1.401-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	3.150-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	4.154-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	3.540+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	6.976+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.986-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.612+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	2.049+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	5.442-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	5.275-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	4.905+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	2.874-004	8.563-007	4.708-008	8.681-010	3.820-010	3.759-010	3.757-010	3.753-010	3.745-010	3.735-010	3.725-010
CA 45	.000	3.338-004	2.004-004	1.552-004	1.041-004	7.059-005	3.246-005	1.493-005	3.158-006	1.412-007	2.905-009	5.977-011
SC 46	.000	5.865-002	2.100-002	1.278-002	5.877-003	2.761-003	6.096-004	1.346-004	6.559-006	1.558-008	8.171-012	4.285-015
SC 47	.000	1.103-001	1.917-012	1.680-017	5.489-024	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	1.061-002	1.715-022	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	8.675-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	1.751-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	2.077-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.542-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015
V 52	.000	9.861+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	2.257-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	2.310-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	4.819+002	2.395+001	5.338+000	5.091-001	5.185-002	5.379-004	5.580-006	6.004-010	6.952-018	.000	.000
CR 55	.000	6.891+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	9.135+000	7.001+000	6.128+000	4.976+000	4.063+000	2.710+000	1.807+000	8.039-001	1.590-001	2.098-002	2.769-003
MN 56	.000	2.388+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	6.574-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	2.136-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	1.153+002	1.057+002	1.011+002	9.444+001	8.836+001	7.733+001	6.768+001	5.184+001	3.042+001	1.562+001	8.021+000
FE 59	.000	7.782+000	1.228+000	4.864-001	1.144-001	2.804-002	1.683-003	1.010-004	3.639-007	4.724-012	3.681-018	2.868-024
CO 58	.000	6.141+001	1.896+001	1.053+001	4.198+000	1.717+000	2.870-001	4.799-002	1.342-003	1.049-006	1.370-010	1.791-014
CO 60	.000	1.838+001	1.761+001	1.723+001	1.666+001	1.612+001	1.509+001	1.413+001	1.239+001	9.524+000	6.855+000	4.934+000
CO 60M	.000	1.175+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	3.396-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	5.999-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002
NI 63	.000	2.262+000	2.256+000	2.254+000	2.249+000	2.245+000	2.237+000	2.228+000	2.211+000	2.178+000	2.138+000	2.098+000
NI 65	.000	1.005+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	5.418-005	7.220-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.236+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	2.665+002	7.231-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	2.692-004	2.602-018	2.558-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	4.727-002	3.361-002	2.834-002	2.170-002	1.674-002	9.861-003	5.928-003	2.099-003	2.632-004	1.964-005	1.465-006

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 89	.000	7.869+000	1.515+000	8.651-001	1.832-001	5.230-002	4.264-003	3.477-004	2.311-006	1.021-010	3.679-016	1.326-021
SR 90	.000	1.374-005	1.364-005	1.358-005	1.350-005	1.342-005	1.326-005	1.311-005	1.280-005	1.220-005	1.150-005	1.083-005
SR 91	.000	1.689+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.830-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	1.546-004	1.371-015	4.084-021	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	3.217+002	1.364-005	1.359-005	1.350-005	1.342-005	1.327-005	1.311-005	1.280-005	1.221-005	1.150-005	1.084-005
Y 91	.000	1.954+001	4.717+000	2.317+000	7.614-001	2.581-001	2.966-002	3.408-003	4.500-005	7.846-009	1.572-013	3.149-018
Y 92	.000	1.901+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.830-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.208+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	7.759-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.548-004	1.373-015	4.091-021	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	5.499-003	5.499-003	5.499-003	5.499-003	5.499-003	5.499-003	5.499-003	5.499-003	5.499-003	5.499-003	5.499-003
ZR 95	.000	4.844+003	1.320+003	6.891+002	2.491+002	9.262+001	1.281+001	1.771+000	3.386-002	1.238-005	6.260-010	3.165-014
ZR 97	.000	1.120+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.081-002	8.574-006	1.430-007	2.357-010	4.643-013	1.802-018	6.996-024	.000	.000	.000	.000
NB 93M	.000	1.042-004	1.892-004	2.312-004	2.962-004	3.586-004	4.810-004	6.003-004	8.301-004	1.256-003	1.731-003	2.148-003
NB 94	.000	5.857-008	5.857-008	5.857-008	5.857-008	5.857-008	5.857-008	5.857-008	5.856-008	5.856-008	5.856-008	5.855-008
NB 95	.000	4.211+003	2.316+003	1.341+003	5.233+002	2.007+002	2.829+001	3.927+000	7.780-002	2.749-005	1.390-009	7.026-014
NB 95M	.000	3.418+001	9.793+000	5.112+000	1.848+000	6.871-001	9.501-002	1.314-002	2.512-004	9.185-008	4.644-012	2.348-016
NB 96	.000	2.904+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.120+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	1.060+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	6.485-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	8.947-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	3.640-005	3.640-005	3.640-005	3.640-005	3.639-005	3.639-005	3.639-005	3.638-005	3.636-005	3.635-005	3.633-005
MO 99	.000	6.275+000	4.590-013	1.241-019	.000	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.559+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	1.641-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006
TC100	.000	2.329-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	1.559+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RU103	.000	4.739-006	5.703-007	1.978-007	3.771-008	7.528-009	3.000-010	1.196-011	1.900-014	4.796-020	.000	.000
AG108	.000	2.166-004	2.412-009	2.409-009	2.406-009	2.403-009	2.396-009	2.390-009	2.377-009	2.351-009	2.319-009	2.288-009
AG108M	.000	2.715-008	2.710-008	2.707-008	2.703-008	2.700-008	2.692-008	2.685-008	2.670-008	2.641-008	2.606-008	2.570-008
AG109M	.000	4.754-003	3.973-003	3.633-003	3.157-003	2.755-003	2.097-003	1.596-003	9.250-004	3.106-004	7.940-005	2.030-005
AG110	.000	4.950-004	5.464-008	4.626-008	3.565-008	2.767-008	1.667-008	1.005-008	3.848-009	4.809-010	3.820-011	3.034-012
AG110M	.000	5.731-006	4.108-006	3.478-006	2.680-006	2.081-006	1.254-006	7.554-007	2.743-007	3.616-008	2.872-009	2.281-010
CD107	.000	9.062-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	4.754-003	3.973-003	3.633-003	3.157-003	2.755-003	2.097-003	1.596-003	9.250-004	3.106-004	7.940-005	2.030-005
CD111M	.000	1.602-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	1.998+000	1.222-016	9.560-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.567-001	2.426-002	9.548-003	2.217-003	5.363-004	3.138-005	1.836-006	6.285-009	7.366-014	5.050-020	3.463-026
CD117	.000	6.467-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.271-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.448-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	4.404-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	1.435+002	6.971+001	4.857+001	2.759+001	1.592+001	5.300+000	1.765+000	1.856-001	2.404-003	9.839-008	4.026-008
IN114	.000	7.610+000	4.548-001	1.964-001	5.272-002	1.468-002	1.139-003	8.835-005	5.316-007	1.925-011	5.405-017	1.518-022
IN114M	.000	2.550+000	4.753-001	2.052-001	5.509-002	1.534-002	1.190-003	9.231-005	5.555-007	2.011-011	5.648-017	1.586-022
IN116	.000	1.040-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	3.643-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	8.952-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN117M	.000	6.114-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN118	.000	1.912-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.356-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.448-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	3.612-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.435+002	6.967+001	4.854+001	2.757+001	1.591+001	5.297+000	1.764+000	1.955-001	2.403-003	9.833-006	4.024-008
SN113M	.000	8.823+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.020+003	2.687+000	1.379-001	1.319-003	1.437-005	1.706-009	2.026-013	2.854-021	.000	.000	.000
SN119M	.000	3.151+002	2.244+002	1.893+002	1.452+002	1.121+002	6.688+001	3.990+001	1.420+001	1.798+000	1.358-001	1.026-002
SN121	.000	5.459+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	2.935-002	2.921-002	2.915-002	2.904-002	2.894-002	2.874-002	2.854-002	2.815-002	2.738-002	2.645-002	2.554-002
SN123	.000	3.790+001	1.991+001	1.443+001	8.715+000	5.339+000	2.004+000	7.520-001	1.059-001	2.101-003	1.565-005	1.165-007
SN123M	.000	2.147-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	2.024+002	3.622-002	4.845-004	5.652-007	7.953-010	1.577-015	3.125-021	.000	.000	.000	.000
SN125M	.000	1.599+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	1.143+001	4.789-013	9.801-020	.000	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	9.949-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	2.082-001	5.229-002	2.620-002	8.884-003	3.104-003	3.791-004	4.628-005	6.901-007	1.534-010	4.164-015	1.130-019
SB124M	.000	1.001-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	5.308+001	5.068+001	4.864+001	4.561+001	4.285+001	3.781+001	3.336+001	2.597+001	1.575+001	8.423+000	4.506+000
SB126	.000	8.705-001	1.061-003	3.702-005	1.938-007	1.174-009	4.313-014	1.584-018	.000	.000	.000	.000
SB126M	.000	8.733-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	6.265-003	3.127-003	2.209-003	1.282-003	7.555-004	2.623-004	9.109-005	1.098-005	1.597-007	8.061-010	4.069-012
TE125M	.000	8.738+000	1.125+001	1.132+001	1.095+001	1.039+001	9.217+000	8.139+000	6.337+000	3.843+000	2.055+000	1.099+000
TE127	.000	8.427-004	1.379-005	9.413-006	5.180-006	2.898-006	9.074-007	2.841-007	2.785-008	2.676-010	8.049-013	2.421-015
TE127M	.000	3.019-005	1.407-005	9.610-006	5.288-006	2.959-006	9.264-007	2.900-007	2.843-008	2.732-010	8.217-013	2.472-015
LU176M	.000	6.183-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	7.168-002	8.533-006	6.299-006	4.138-006	2.751-006	1.215-006	5.371-007	1.049-007	3.999-009	6.739-011	1.135-012
LU177M	.000	6.126-005	3.582-005	2.739-005	1.799-005	1.196-005	5.286-006	2.336-006	4.561-007	1.739-008	2.830-010	4.938-012
HF175	.000	1.204+001	3.669+000	2.025+000	7.989-001	3.235-001	5.302-002	8.691-003	2.335-004	1.686-007	1.996-011	2.362-015
HF178M	.000	1.262+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	2.487+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	6.242+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	1.616+002	2.272+001	8.517+000	1.834+000	4.120-001	2.081-002	1.051-003	2.679-006	1.742-011	5.722-018	1.879-024
HF182	.000	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008	2.071-008
TA182	.000	2.496+000	1.211+000	8.435-001	4.788-001	2.762-001	9.185-002	3.055-002	3.380-003	4.140-005	1.892-007	2.140-008
TA182M	.000	4.711-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	4.557+000	3.763-007	1.082-010	3.086-016	1.258-021	.000	.000	.000	.000	.000	.000
W181	.000	2.656-001	1.337-001	9.487-002	5.543-002	3.288-002	1.157-002	4.070-003	5.038-004	7.720-006	4.162-008	2.244-010
W183M	.000	6.457-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	7.138+000	2.358+000	1.355+000	5.696-001	2.452-001	4.545-002	8.423-003	2.893-004	3.412-007	7.463-011	1.632-014
W185M	.000	9.609-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	2.365+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	3.303-001	9.963-002	5.472-002	2.141-002	8.601-003	1.388-003	2.240-004	5.833-006	3.955-009	4.328-013	4.736-017
RE186	.000	1.015+000	2.763-010	4.559-015	1.484-022	.000	.000	.000	.000	.000	.000	.000
RE187	.000	2.183-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009	2.196-009
RE188	.000	1.256+001	1.007-001	5.528-002	2.163-002	8.690-003	1.402-003	2.263-004	5.893-006	3.996-009	4.372-013	4.784-017
RE188M	.000	1.197+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	3.764-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015	1.214-015
PB209	.000	2.383-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	2.756-015	5.530+004	4.310+003	2.557+003	1.169+003	6.119+002	2.668+002	1.785+002	1.155+002	6.468+001	3.617+001	2.152+001
TOTAL	2.756-015	5.530+004	4.310+003	2.557+003	1.169+003	6.119+002	2.668+002	1.785+002	1.155+002	6.468+001	3.617+001	2.152+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	1.650+000	8.451-001	8.373-001	8.253-001	8.138-001	7.913-001	7.694-001	7.274-001	6.502-001	5.650-001	4.911-001
HE	.000	1.271+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	3.173-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	2.721-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006	1.218-006
B	.000	2.721-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	3.034-001	3.033-001	3.033-001	3.033-001	3.033-001	3.033-001	3.033-001	3.032-001	3.032-001	3.031-001	3.030-001
N	.000	1.401-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	3.150-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	4.154-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.258+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.612+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	2.049+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	4.905+000	3.763-010	3.763-010	3.761-010	3.760-010	3.758-010	3.756-010	3.752-010	3.744-010	3.735-010	3.725-010
P	.000	2.874-004	8.563-007	4.708-008	8.681-010	3.820-010	3.759-010	3.757-010	3.753-010	3.745-010	3.735-010	3.725-010
CA	.000	3.359-004	2.004-004	1.552-004	1.041-004	7.059-005	3.246-005	1.493-005	3.158-006	1.412-007	2.905-009	5.977-011
SC	.000	1.864-001	2.100-002	1.278-002	5.877-003	2.761-003	6.096-004	1.346-004	6.559-006	1.558-008	8.171-012	4.285-015
TI	.000	2.077-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.542-015	9.864+001	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015	1.529-015
CR	.000	4.888+002	2.395+001	5.338+000	5.091-001	5.185-002	5.379-004	5.580-006	6.004-010	6.952-018	.000	.000
MN	.000	2.397+003	7.001+000	6.128+000	4.976+000	4.063+000	2.710+000	1.807+000	8.039-001	1.590-001	2.098-002	2.769-003
FE	.000	1.231+002	1.069+002	1.016+002	9.456+001	8.838+001	7.733+001	6.768+001	5.184+001	3.042+001	1.562+001	8.021+000
CO	.000	1.977+002	3.657+001	2.776+001	2.086+001	1.783+001	1.538+001	1.418+001	1.239+001	9.524+000	6.855+000	4.934+000
NI	.000	1.233+001	2.274+000	2.271+000	2.267+000	2.263+000	2.254+000	2.246+000	2.229+000	2.196+000	2.155+000	2.116+000
CU	.000	1.502+003	2.609-018	2.558-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	4.727-002	3.361-002	2.834-002	2.170-002	1.674-002	9.961-003	5.928-003	2.099-003	2.632-004	1.964-005	1.465-006
SR	.000	9.563+000	1.515+000	6.651-001	1.832-001	5.232-002	4.278-003	3.608-004	1.511-005	1.220-005	1.150-005	1.083-005
Y	.000	3.615+002	4.717+000	2.317+000	7.614-001	2.581-001	2.967-002	3.421-003	5.780-005	1.221-005	1.150-005	1.084-005
ZR	.000	1.604+004	1.320+003	6.891+002	2.491+002	9.262+001	1.281+001	1.776+000	3.936-002	5.511-003	5.499-003	5.499-003
NB	.000	2.604+004	2.326+003	1.347+003	5.251+002	2.014+002	2.839+001	3.940+000	7.888-002	1.283-003	1.731-003	2.149-003
MO	.000	7.843+000	3.640-005	3.640-005	3.640-005	3.639-005	3.639-005	3.639-005	3.638-005	3.636-005	3.635-005	3.633-005
TC	.000	1.582+000	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006	1.668-006
RU	.000	4.739-006	5.703-007	1.978-007	3.771-008	7.528-009	3.000-010	1.196-011	1.900-014	4.796-020	.000	.000
AG	.000	5.471-003	3.978-003	3.636-003	3.160-003	2.757-003	2.098-003	1.597-003	9.253-004	3.107-004	7.943-005	2.032-005
CD	.000	2.251+000	2.824-002	1.318-002	5.374-003	3.291-003	2.128-003	1.598-003	9.250-004	3.106-004	7.940-005	2.030-005
IN	.000	1.540+002	7.064+001	4.898+001	2.770+001	1.595+001	5.303+000	1.765+000	1.956-001	2 404-003	9.839-006	4.026-008
SN	.000	2.513+003	3.167+002	2.525+002	1.815+002	1.334+002	7.421+001	4.244+001	1.453+001	1.830+000	1.623-001	3.580-002
SB	.000	6.578+001	5.074+001	4.867+001	4.562+001	4.285+001	3.781+001	3.336+001	2.597+001	1.575+001	8.423+000	4.506+000
TE	.000	8.745+000	1.125+001	1.133+001	1.095+001	1.039+001	9.218+000	8.139+000	6.337+000	3.843+000	2.055+000	1.099+000
LU	.000	6.900-001	4.435-005	3.369-005	2.213-005	1.471-005	6.501-006	2.873-006	5.610-007	2.139-008	3.619-010	7.505-012
HF	.000	2.679+003	2.638+001	1.054+001	2.632+000	7.355-001	7.383-002	9.742-003	2.362-004	1.893-007	2.073-008	2.071-008
TA	.000	7.057+000	1.211+000	8.435-001	4.788-001	2.762-001	9.185-002	3.055-002	3.380-003	4.140-005	1.892-007	2.140-008
W	.000	2.449+002	2.592+000	1.505+000	6.464-001	2.867-001	5.840-002	1.272-002	7.990-004	8.065-006	4.169-008	2.244-010
RE	.000	2.555+001	1.007-001	5.528-002	2.163-002	8.690-003	1.402-003	2.263-004	5.895-006	6.191-009	2.196-009	2.196-009
OS	.000	6.048-006	1.427-008	9.590-010	1.400-011	2.301-013	8.755-017	2.402-017	2.139-017	1.697-017	1.271-017	9.518-018
PB	1.214-015	2.383-003	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009	2.088-009
SUMTOT	2.756-015	5.530+004	4.310+003	2.557+003	1.169+003	6.119+002	2.668+002	1.785+002	1.155+002	6.468+001	3.617+001	2.152+001
TOTAL	2.756-015	5.530+004	4.310+003	2.557+003	1.169+003	6.119+002	2.668+002	1.785+002	1.155+002	6.468+001	3.617+001	2.152+001

CUMULATIVE TABLE TOTALS

AP+FP	2.756-015	5.530+004	4.310+003	2.557+003	1.169+003	6.119+002	2.668+002	1.785+002	1.155+002	6.468+001	3.617+001	2.152+001
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.756-015	5.530+004	4.310+003	2.557+003	1.169+003	6.119+002	2.668+002	1.785+002	1.155+002	6.468+001	3.617+001	2.152+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	2.898-005	2.845-005	2.819-005	2.779-005	2.740-005	2.684-005	2.590-005	2.449-005	2.189-005	1.902-005	1.653-005
HE 6	.000	1.181+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.183-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009
BE 11	.000	1.026-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	2.157-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	8.895-005	8.895-005	8.895-005	8.894-005	8.894-005	8.893-005	8.893-005	8.892-005	8.890-005	8.887-005	8.884-005
C 15	.000	6.688-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	6.073-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	1.313-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	5.092-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	9.811-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	1.952-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	2.279-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.133-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	3.675+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	7.584-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	1.790-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	1.734-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	2.914-006	8.680-009	4.773-010	8.799-012	3.872-012	3.810-012	3.808-012	3.804-012	3.796-012	3.786-012	3.776-012
CA 45	.000	1.527-007	9.168-008	7.103-008	4.764-008	3.230-008	1.486-008	6.832-009	1.445-009	6.463-011	1.330-012	2.735-014
SC 46	.000	7.126-004	2.641-004	1.808-004	7.392-005	3.473-005	7.668-006	1.693-006	8.251-008	1.960-010	1.028-013	5.390-017
SC 47	.000	1.771-004	3.077-015	2.697-020	8.812-027	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	2.243-004	3.628-024	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	1.033-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	5.010-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.520-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.700-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017
V 52	.000	1.470+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	2.725-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	9.995-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	1.031-001	5.124-003	1.142-003	1.089-004	1.110-005	1.151-007	1.194-009	1.285-013	1.488-021	1.787-031	.000
CR 55	.000	4.498-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	4.549-002	3.486-002	3.051-002	2.477-002	2.023-002	1.349-002	8.999-003	4.003-003	7.919-004	1.045-004	1.379-005
MN 56	.000	3.568+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	4.563-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	5.058-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	1.586-001	1.453-001	1.391-001	1.299-001	1.215-001	1.063-001	9.307-002	7.129-002	4.183-002	2.148-002	1.103-002
FE 59	.000	7.256-002	1.143-002	4.535-003	1.067-003	2.614-004	1.569-005	9.419-007	3.393-009	4.405-014	3.432-020	2.674-026
CO 58	.000	3.676-001	1.135-001	6.307-002	2.514-002	1.028-002	1.718-003	2.873-004	8.033-006	6.278-009	8.204-013	1.072-016
CO 60	.000	2.834-001	2.715-001	2.657-001	2.568-001	2.485-001	2.327-001	2.179-001	1.910-001	1.468-001	1.057-001	7.607-002
CO 60M	.000	4.390-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	1.099-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	1.138-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	1.130-004	1.130-004	1.130-004	1.130-004	1.130-004	1.130-004	1.130-004	1.130-004	1.130-004	1.130-004	1.130-004
NI 63	.000	8.983-004	8.961-004	8.950-004	8.933-004	8.916-004	8.882-004	8.849-004	8.783-004	8.651-004	8.490-004	8.331-004
NI 65	.000	7.035-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	2.293+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.825+000	4.951-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	4.323-007	4.179-021	4.108-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	1.656-004	1.178-004	9.930-005	7.603-005	5.865-005	3.490-005	2.077-005	7.354-008	9.222-007	6.881-008	5.134-009
SR 89	.000	2.720-002	5.239-003	2.299-003	6.333-004	1.808-004	1.474-005	1.202-006	7.990-009	3.531-013	1.272-018	4.582-024

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 90	.000	1.595-008	1.583-008	1.577-008	1.567-008	1.558-008	1.539-008	1.521-008	1.485-008	1.416-008	1.334-008	1.257-008
SR 91	.000	1.353-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	8.832-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	8.399-007	7.452-018	2.220-023	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.783+000	7.560-008	7.531-008	7.485-008	7.440-008	7.352-008	7.265-008	7.094-008	6.765-008	6.374-008	6.006-008
Y 91	.000	7.019-002	1.694-002	8.322-003	2.735-003	9.270-004	1.065-004	1.224-005	1.616-007	2.818-011	5.646-016	1.131-020
Y 92	.000	1.913-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	4.361-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	2.013-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.779-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.154-006	1.024-017	3.051-023	6.804-032	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	6.389-007	6.389-007	6.389-007	6.389-007	6.389-007	6.389-007	6.389-007	6.389-007	6.389-007	6.389-007	6.389-007
ZR 95	.000	2.453+001	6.686+000	3.491+000	1.262+000	4.691-001	6.487-002	8.970-003	1.715-004	6.271-008	3.171-012	1.603-016
ZR 97	.000	5.835+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.671-004	1.022-007	1.704-009	2.808-012	5.532-015	2.147-020	8.335-026	.000	.000	.000	.000
NB 93M	.000	1.846-008	3.352-008	4.096-008	5.248-008	6.353-008	8.522-008	1.064-007	1.471-007	2.225-007	3.066-007	3.807-007
NB 94	.000	5.968-010	5.968-010	5.968-010	5.968-010	5.968-010	5.968-010	5.968-010	5.967-010	5.967-010	5.967-010	5.966-010
NB 95	.000	2.020+001	1.111+001	6.435+000	2.510+000	9.626-001	1.357-001	1.883-002	3.732-004	1.319-007	6.666-012	3.370-016
NB 95M	.000	4.748-002	1.361-002	7.103-003	2.567-003	9.547-004	1.320-004	1.825-005	3.490-007	1.276-010	6.452-015	3.262-019
NB 96	.000	4.829-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	7.454+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.665+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	8.003-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB100	.000	7.589-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.252-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	3.403-009	3.403-009	3.402-009	3.402-009	3.402-009	3.402-009	3.401-009	3.401-009	3.399-009	3.398-009	3.396-009
MO 99	.000	2.015-002	1.474-015	3.986-022	2.078-032	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.781-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	8.228-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010
TC100	.000	2.051-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	7.483-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RU103	.000	1.585-008	1.908-009	6.619-010	1.262-010	2.519-011	1.004-012	4.001-014	6.358-017	1.604-022	1.614-029	.000
AG108	.000	8.072-007	8.986-012	8.978-012	8.965-012	8.953-012	8.929-012	8.904-012	8.856-012	8.760-012	8.641-012	8.524-012
AG108M	.000	2.641-010	2.636-010	2.633-010	2.630-010	2.626-010	2.619-010	2.612-010	2.598-010	2.569-010	2.535-010	2.500-010
AG109M	.000	2.450-006	2.048-006	1.873-006	1.627-006	1.420-006	1.081-006	8.228-007	4.768-007	1.601-007	4.093-008	1.046-008
AG110	.000	3.556-006	3.926-010	3.324-010	2.561-010	1.988-010	1.198-010	7.218-011	2.621-011	3.455-012	2.744-013	2.180-014
AG110M	.000	9.569-008	6.860-008	5.808-008	4.476-008	3.474-008	2.094-008	1.261-008	4.580-009	6.037-010	4.795-011	3.809-012
CD107	.000	4.115-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	3.026-006	2.530-006	2.313-006	2.010-006	1.754-006	1.335-006	1.016-006	5.889-007	1.977-007	5.055-008	1.292-008
CD111M	.000	3.760-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	6.342-003	3.880-019	3.035-027	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	5.843-004	9.049-005	3.561-005	8.269-006	2.000-006	1.170-007	6.847-009	2.344-011	2.747-016	1.884-022	1.292-028
CD117	.000	4.658-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.846-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.588-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	7.297-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	3.344-001	1.624-001	1.132-001	6.427-002	3.708-002	1.235-002	4.111-003	4.558-004	5.601-006	2.292-008	9.379-011
IN114	.000	3.494-002	2.088-003	9.015-004	2.420-004	6.741-005	5.229-006	4.056-007	2.441-009	8.836-014	2.482-019	6.969-025
IN114M	.000	3.596-003	6.702-004	2.894-004	7.768-005	2.164-005	1.678-006	1.302-007	7.833-010	2.836-014	7.965-020	2.237-025
IN116	.000	8.518-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	5.996-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	4.033-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN117M	.000	2.309-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN118	.000	2.309-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.084-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.223-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	4.350-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	2.445-002	1.187-002	8.270-003	4.697-003	2.710-003	9.024-004	3.005-004	3.331-005	4.094-007	1.675-009	6.855-012
SN113M	.000	5.748-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.892+000	4.984-003	2.558-004	2.447-006	2.666-008	3.165-012	3.757-016	5.294-024	.000	.000	.000
SN119M	.000	1.629-001	1.160-001	9.787-002	7.503-002	5.795-002	3.457-002	2.062-002	7.338-003	9.292-004	7.019-005	5.302-006
SN121	.000	6.801-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	5.880-005	5.853-005	5.840-005	5.819-005	5.799-005	5.758-005	5.719-005	5.640-005	5.486-005	5.299-005	5.118-005
SN123	.000	1.184-001	6.218-002	4.506-002	2.722-002	1.668-002	6.258-003	2.349-003	3.308-004	6.563-006	4.887-008	3.639-010
SN123M	.000	7.825-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.341+000	2.400-004	3.211-006	3.746-009	5.271-012	1.045-017	2.071-023	.000	.000	.000	.000
SN125M	.000	1.076+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	6.839-002	2.864-015	5.862-022	1.975-032	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	9.554-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	2.765-003	6.943-004	3.479-004	1.180-004	4.122-005	5.033-006	6.146-007	9.163-009	2.037-012	5.529-017	1.501-021
SB124M	.000	2.574-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	1.659-001	1.585-001	1.521-001	1.426-001	1.339-001	1.182-001	1.043-001	8.120-002	4.923-002	2.633-002	1.409-002
SB126	.000	1.608-002	1.960-005	6.841-007	3.580-009	2.170-011	7.968-016	2.927-020	3.848-029	.000	.000	.000
SB126M	.000	1.112-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	9.125-006	4.554-006	3.217-006	1.867-006	1.100-006	3.821-007	1.327-007	1.600-008	2.326-010	1.174-012	5.927-015
TE125M	.000	7.344-003	9.455-003	9.517-003	9.205-003	8.737-003	7.748-003	6.841-003	5.327-003	3.230-003	1.727-003	9.241-004
TE127	.000	1.138-006	1.862-008	1.271-008	6.995-009	3.914-009	1.225-009	3.836-010	3.760-011	3.613-013	1.087-015	3.269-018
TE127M	.000	1.624-008	7.570-009	5.169-009	2.844-009	1.592-009	4.983-010	1.560-010	1.529-011	1.469-013	4.420-016	1.329-018
LU176M	.000	4.801-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	7.734-005	9.205-009	6.795-009	4.464-009	2.968-009	1.311-009	5.795-010	1.132-010	4.315-012	7.270-014	1.225-015
LU177M	.000	4.931-007	2.883-007	2.205-007	1.448-007	9.629-008	4.255-008	1.880-008	3.672-009	1.400-010	2.359-012	3.975-014
HF175	.000	4.210-002	1.283-002	7.083-003	2.794-003	1.131-003	1.854-004	3.040-005	8.167-007	5.897-010	6.979-014	8.260-018
HF178M	.000	8.578-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	5.571+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	4.226-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	7.222-001	1.015-001	3.807-002	8.195-003	1.842-003	9.300-005	4.696-006	1.197-008	7.787-014	2.557-020	8.398-027
HF182	.000	6.139-011	6.139-011	6.139-011	6.139-011	6.139-011	6.139-011	6.139-011	6.139-011	6.139-011	6.139-011	6.139-011
TA182	.000	2.222-002	1.078-002	7.510-003	4.263-003	2.459-003	8.178-004	2.720-004	3.010-005	3.686-007	1.684-009	1.905-010
TA182M	.000	1.405-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	2.890-002	2.387-009	6.860-013	1.957-018	7.977-024	.000	.000	.000	.000	.000	.000
W181	.000	7.490-005	3.770-005	2.675-005	1.563-005	9.271-006	3.262-006	1.148-006	1.421-007	2.177-009	1.173-011	6.327-014
W183M	.000	9.952-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	1.830-002	6.046-003	3.475-003	1.460-003	6.286-004	1.165-004	2.159-005	7.418-007	8.748-010	1.913-013	4.184-017
W185M	.000	1.122-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	1.073+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	1.976-004	5.959-005	3.273-005	1.281-005	5.144-006	8.302-007	1.340-007	3.488-009	2.366-012	2.588-016	2.832-020
RE186	.000	6.285-003	1.711-012	2.824-017	9.190-025	4.842-032	.000	.000	.000	.000	.000	.000
RE187	.000	3.351-011	3.371-011	3.371-011	3.371-011	3.371-011	3.371-011	3.371-011	3.371-011	3.371-011	3.371-011	3.371-011
RE188	.000	6.234-002	4.995-004	2.743-004	1.073-004	4.312-005	6.958-006	1.123-006	2.924-008	1.983-011	2.170-015	2.374-019
RE188M	.000	1.221-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	2.253-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.871-017	1.870-017	1.870-017	1.870-017	1.870-017	1.870-017	1.870-017	1.870-017	1.870-017	1.870-017	1.870-017	1.870-017
PB209	.000	2.741-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	3.571-017	3.230+002	1.908+001	1.093+001	4.557+000	2.099+000	7.376-001	4.881-001	3.628-001	2.440-001	1.565-001	1.032-001
TOTAL	3.571-017	3.230+002	1.908+001	1.093+001	4.557+000	2.099+000	7.376-001	4.881-001	3.628-001	2.440-001	1.565-001	1.032-001

*ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	2.898-005	2.845-005	2.819-005	2.779-005	2.740-005	2.664-005	2.590-005	2.449-005	2.189-005	1.902-005	1.653-005
HE	.000	1.181+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.183-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.040-007	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009	1.462-009
B	.000	2.157-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	8.962-005	8.895-005	8.895-005	8.894-005	8.894-005	8.893-005	8.893-005	8.892-005	8.890-005	8.887-005	8.884-005
N	.000	6.073-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	1.313-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	5.092-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	1.003+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.133-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	3.676+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	1.734-002	4.684-013	4.684-013	4.682-013	4.681-013	4.679-013	4.676-013	4.671-013	4.661-013	4.649-013	4.636-013
P	.000	2.914-006	8.680-009	4.773-010	8.799-012	3.872-012	3.810-012	3.808-012	3.804-012	3.796-012	3.786-012	3.776-012
CA	.000	1.708-007	9.168-008	7.103-008	4.764-008	3.230-008	1.486-008	6.832-009	1.445-009	6.463-011	1.330-012	2.735-014
SC	.000	1.222-003	2.641-004	1.608-004	7.392-005	3.473-005	7.668-006	1.693-006	8.251-008	1.960-010	1.028-013	5.390-017
TI	.000	1.520-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.700-017	1.470+000	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017	1.685-017
CR	.000	1.481-001	5.124-003	1.142-003	1.089-004	1.110-005	1.151-007	1.194-009	1.285-013	1.488-021	1.787-031	.000
MN	.000	3.572+001	3.486-002	3.051-002	2.477-002	2.023-002	1.349-002	8.999-003	4.003-003	7.919-004	1.045-004	1.379-005
FE	.000	2.312-001	1.568-001	1.436-001	1.309-001	1.218-001	1.064-001	9.307-002	7.129-002	4.183-002	2.148-002	1.103-002
CO	.000	6.972-001	3.850-001	3.287-001	2.819-001	2.588-001	2.344-001	2.182-001	1.910-001	1.468-001	1.057-001	7.607-002
NI	.000	7.136-002	1.009-003	1.008-003	1.006-003	1.005-003	1.001-003	9.979-004	9.912-004	9.781-004	9.620-004	9.461-004
CU	.000	4.118+000	4.228-021	4.108-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	1.656-004	1.178-004	9.930-005	7.603-005	5.865-005	3.490-005	2.077-005	7.354-006	9.222-007	6.881-008	5.134-009
SR	.000	4.082-002	5.239-003	2.299-003	6.333-004	1.808-004	1.476-005	1.217-006	2.284-008	1.416-008	1.334-008	1.257-008
Y	.000	2.065+000	1.694-002	8.322-003	2.735-003	9.271-004	1.066-004	1.231-005	2.326-007	6.767-008	6.374-008	6.006-008
ZR	.000	8.289+001	6.686+000	3.491+000	1.262+000	4.691-001	6.487-002	8.971-003	1.722-004	7.016-007	6.389-007	6.389-007
NB	.000	1.415+002	1.112+001	6.442+000	2.513+000	9.636-001	1.358-001	1.885-002	3.737-004	3.551-007	3.072-007	3.813-007
MO	.000	3.809-002	3.403-009	3.402-009	3.402-009	3.402-009	3.402-009	3.401-009	3.401-009	3.399-009	3.398-009	3.396-009
TC	.000	7.688-003	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010	8.366-010
RU	.000	1.585-008	1.908-009	6.619-010	1.262-010	2.519-011	1.004-012	4.001-014	6.358-017	1.604-022	1.614-029	.000
AG	.000	6.910-006	2.117-006	1.931-006	1.673-006	1.455-006	1.102-006	8.358-007	4.817-007	1.610-007	4.124-008	1.072-008
CD	.000	7.457-003	9.302-005	3.792-005	1.028-005	3.754-006	1.452-006	1.023-006	5.889-007	1.977-007	5.055-008	1.292-008
IN	.000	3.753-001	1.652-001	1.143-001	6.459-002	3.717-002	1.235-002	4.112-003	4.558-004	5 601-006	2.292-008	9.379-011
SN	.000	5.851+000	1.953-001	1.515-001	1.070-001	7.739-002	4.179-002	2.333-002	7.759-003	9.910-004	1.232-004	5.648-005
SB	.000	2.544-001	1.592-001	1.524-001	1.427-001	1.340-001	1.182-001	1.043-001	8.120-002	4.923-002	2.633-002	1.409-002
TE	.000	7.355-003	9.460-003	9.521-003	9.207-003	8.738-003	7.748-003	6.841-003	5.327-003	3.230-003	1.727-003	9.241-004
LU	.000	4.879-003	2.975-007	2.273-007	1.493-007	9.926-008	4.386-008	1.938-008	3.785-009	1.443-010	2.440-012	4.963-014
HF	.000	6.464+000	1.144-001	4.515-002	1.099-002	2.973-003	2.784-004	3.509-005	8.288-007	6.512-010	6.146-011	6.139-011
TA	.000	5.114-002	1.078-002	7.510-003	4.263-003	2.459-003	8.178-004	2.720-004	3.010-005	3.686-007	1.684-009	1.905-010
W	.000	1.092+000	6.143-003	3.534-003	1.489-003	6.430-004	1.206-004	2.288-005	8.873-007	3.054-009	1.193-011	6.331-014
RE	.000	8.083-002	4.995-004	2.743-004	1.073-004	4.312-005	6.958-006	1.123-006	2.927-008	5.354-011	3.371-011	3.371-011
PB	1.871-017	2.741-006	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013	4.332-013
SUMTOT	3.571-017	3.230+002	1.908+001	1.093+001	4.557+000	2.099+000	7.376-001	4.881-001	3.628-001	2.440-001	1.565-001	1.032-001
TOTAL	3.571-017	3.230+002	1.908+001	1.093+001	4.557+000	2.099+000	7.376-001	4.881-001	3.628-001	2.440-001	1.565-001	1.032-001

CUMULATIVE TABLE TOTALS

AP+FP	3.571-017	3.230+002	1.908+001	1.093+001	4.557+000	2.099+000	7.376-001	4.881-001	3.628-001	2.440-001	1.565-001	1.032-001
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	3.571-017	3.230+002	1.908+001	1.093+001	4.557+000	2.099+000	7.376-001	4.881-001	3.628-001	2.440-001	1.565-001	1.032-001

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) ·SD-CP-TI-094 REV.0

(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC

BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U234	2.430+002	2.255+002	2.255+002	2.256+002	2.256+002	2.256+002	2.256+002	2.257+002	2.258+002	2.259+002	2.261+002	2.263+002
U235	7.486+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000	5.562+000
U236	1.104+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.245+001	2.246+001
U238	1.047+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002
RU238	.000	4.686+004	4.860+004	4.874+004	4.888+004	4.893+004	4.891+004	4.880+004	4.847+004	4.772+004	4.679+004	4.588+004
PU239	.000	7.844+004	8.012+004	8.012+004	8.012+004	8.012+004	8.012+004	8.012+004	8.011+004	8.011+004	8.010+004	8.010+004
PU240	.000	4.379+004	4.379+004	4.379+004	4.379+004	4.379+004	4.379+004	4.379+004	4.378+004	4.377+004	4.376+004	4.375+004
AM241	.000	2.081+003	5.674+003	7.449+003	1.020+004	1.284+004	1.802+004	2.307+004	3.280+004	5.087+004	7.105+004	8.883+004
CM244	.000	7.586+003	7.499+003	7.452+003	7.379+003	7.309+003	7.170+003	7.034+003	6.770+003	6.271+003	5.699+003	5.179+003
TOTALS												
TABLE	3.663+002	1.792+005	1.861+005	1.880+005	1.908+005	1.934+005	1.984+005	2.032+005	2.124+005	2.292+005	2.478+005	2.642+005
ACTUAL	3.663+002	1.792+005	1.861+005	1.880+005	1.908+005	1.934+005	1.984+005	2.032+005	2.124+005	2.292+005	2.478+005	2.642+005

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U238	1.256+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004
PU238	.000	7.643+003	7.926+003	7.949+003	7.971+003	7.980+003	7.977+003	7.958+003	7.904+003	7.783+003	7.631+003	7.482+003
PU240	.000	2.309+005	2.309+005	2.308+005	2.308+005	2.308+005	2.308+005	2,308+005	2.308+005	2.307+005	2.307+005	2.306+005
PU242	.000	8.961+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003	8.962+003
CM242	.000	1.997+006	1.221+006	9.463+005	6.351+005	4.311+005	1.988+005	9.186+004	1.994+004	1.462+003	6.040+002	5.797+002
CM244	.000	9.133+005	9.029+005	8.972+005	8.894+005	8.800+005	8.633+005	8.469+005	8.151+005	7.550+005	6.861+005	6.235+005
TOTALS												
TABLE	1.257+004	3.170+006	2.384+006	2.104+006	1.784+006	1.572+006	1.323+006	1.199+006	1.095+006	1.017+006	9.467+005	8.839+005
ACTUAL	1.257+004	3.170+006	2.384+006	2.104+006	1.784+006	1.572+006	1.323+006	1.199+006	1.095+006	1.017+006	9.467+005	8.839+005
OVERALL TOTALS												
TABLE	1.293+004	3.350+006	2.570+006	2.292+006	1.975+006	1.765+006	1.521+006	1.402+006	1.308+006	1.246+006	1.195+006	1.148+006
ACTUAL	1.293+004	3.350+006	2.570+006	2.292+006	1.975+006	1.765+006	1.521+006	1.402+006	1.308+006	1.246+006	1.195+006	1.148+006

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	6.202+013	1.528+012	9.309+011	5.123+011	3.336+011	1.845+011	1.206+011	6.283+010	2.619+010	1.272+010	6.891+009
2.500-002	.000	4.401+013	6.838+012	5.581+012	4.218+012	3.299+012	2.157+012	1.516+012	8.758+011	4.176+011	2.100+011	1.114+011
3.750-002	.000	5.804+012	3.500+011	3.239+011	2.946+011	2.732+011	2.390+011	2.105+011	1.638+011	9.935+010	5.317+010	2.848+010
5.750-002	.000	1.282+013	3.790+011	1.672+011	5.455+010	2.299+010	7.007+009	3.160+009	1.163+009	4.802+008	2.655+008	1.626+008
8.500-002	.000	5.886+012	2.335+010	1.355+010	6.144+009	3.114+009	1.091+009	5.686+008	3.128+008	1.884+008	1.123+008	6.860+007
1.250-001	.000	7.715+012	4.812+011	1.889+011	4.870+010	1.724+010	6.715+009	5.110+009	3.785+009	2.281+009	1.225+009	6.584+008
2.250-001	3.763-013	3.794+013	3.559+011	2.189+011	1.511+011	1.198+011	9.073+010	7.613+010	5.788+010	3.496+010	1.870+010	1.000+010
3.750-001	.000	2.135+013	8.609+011	7.077+011	6.199+011	5.746+011	5.051+011	4.455+011	3.469+011	2.103+011	1.125+011	6.018+010
5.750-001	.000	5.248+014	1.672+012	1.170+012	8.743+011	7.637+011	6.523+011	5.731+011	4.458+011	2.703+011	1.446+011	7.733+010
8.500-001	1.500-013	7.359+014	1.205+014	6.746+013	2.578+013	9.874+012	1.463+012	2.552+011	3.296+010	5.804+009	7.810+008	1.141+008
1.250+000	8.532-014	3.688+013	1.350+012	1.308+012	1.251+012	1.203+012	1.120+012	1.047+012	9.168+011	7.046+011	5.071+011	3.650+011
1.750+000	4.275-014	1.099+014	4.407+009	2.396+009	9.273+008	3.698+008	5.936+007	9.625+006	2.596+005	3.906+002	4.123+001	2.746+001
2.250+000	2.142-014	1.209+013	1.419+008	6.048+007	2.462+007	1.264+007	6.689+006	5.635+006	4.859+006	3.734+006	2.688+006	1.935+006
2.750+000	1.073-014	2.980+012	9.911+004	5.987+004	3.342+004	2.417+004	1.887+004	1.721+004	1.503+004	1.155+004	8.317+003	5.986+003
3.500+000	7.904-015	1.442+011	6.014-008	4.453-008	2.782-008	1.761-008	7.058-009	2.828-009	4.543-010	1.182-011	2.149-013	9.138-014
5.000+000	2.353-015	7.725+007	1.790-008	1.326-008	8.283-009	5.243-009	2.101-009	8.420-010	1.352-010	3.493-012	4.269-014	7.032-015
7.000+000	1.527-016	1.960+007	1.162-009	8.602-010	5.374-010	3.402-010	1.363-010	5.463-011	8.774-012	2.267-013	2.769-015	4.557-016
1.100+001	9.655-018	3.313+006	7.346-011	5.440-011	3.399-011	2.151-011	8.621-012	3.455-012	5.548-013	1.433-014	1.752-016	2.884-017
TOTAL	6.970-013	1.620+015	1.344+014	7.807+013	3.381+013	1.649+013	6.427+012	4.253+012	2.908+012	1.772+012	1.061+012	6.602+011
MEV/SEC	5.120-013	1.222+015	1.058+014	6.016+013	2.438+013	1.068+013	3.296+012	2.088+012	1.603+012	1.143+012	7.717+011	5.297+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	9.303+005	2.292+004	1.396+004	7.684+003	5.004+003	2.767+003	1.809+003	9.425+002	3.929+002	1.908+002	1.034+002
2.500-002	.000	1.100+006	1.709+005	1.395+005	1.054+005	8.249+004	5.393+004	3.790+004	2.189+004	1.044+004	5.250+003	2.784+003
3.750-002	.000	2.177+005	1.313+004	1.215+004	1.105+004	1.024+004	8.964+003	7.895+003	6.144+003	3.726+003	1.994+003	1.067+003
5.750-002	.000	7.372+005	2.179+004	9.613+003	3.137+003	1.322+003	4.029+002	1.817+002	6.688+001	2.761+001	1.527+001	9.350+000
8.500-002	.000	5.003+005	1.985+003	1.152+003	5.222+002	2.647+002	9.273+001	4.833+001	2.658+001	1.602+001	9.544+000	5.831+000
1.250-001	.000	9.644+005	6.015+004	2.361+004	6.088+003	2.155+003	8.394+002	6.388+002	4.731+002	2.851+002	1.531+002	8.230+001
2.250-001	8.467-020	8.537+006	8.008+004	4.926+004	3.399+004	2.695+004	2.041+004	1.713+004	1.302+004	7.866+003	4.208+003	2.251+003
3.750-001	.000	8.006+006	3.229+005	2.654+005	2.325+005	2.155+005	1.894+005	1.671+005	1.301+005	7.886+004	4.219+004	2.257+004
5.750-001	.000	3.017+008	9.612+005	6.726+005	5.027+005	4.391+005	3.751+005	3.295+005	2.563+005	1.554+005	8.313+004	4.447+004
8.500-001	1.275-019	6.255+008	1.025+008	5.734+007	2.191+007	8.393+006	1.244+006	2.169+005	2.802+004	4.934+003	6.639+002	9.697+001
1.250+000	1.067-019	4.611+007	1.688+006	1.635+006	1.564+006	1.504+006	1.400+006	1.308+006	1.146+006	8.807+005	6.339+005	4.563+005
1.750+000	7.482-020	1.922+008	7.711+003	4.193+003	1.623+003	6.472+002	1.039+002	1.684+001	4.543-001	6.835-004	7.216-005	4.806-005
2.250+000	4.820-020	2.721+007	3.192+002	1.361+002	5.539+001	2.844+001	1.505+001	1.268+001	1.093+001	8.402+000	6.047+000	4.353+000
2.750+000	2.952-020	8.194+006	2.726-001	1.646-001	9.190-002	6.647-002	5.190-002	4.734-002	4.134-002	3.178-002	2.287-002	1.646-002
3.500+000	2.766-020	5.046+005	2.105-013	1.559-013	9.737-014	6.164-014	2.470-014	9.899-015	1.590-015	4.135-017	7.522-019	3.198-019
5.000+000	1.177-020	3.862+002	8.952-014	6.629-014	4.141-014	2.622-014	1.051-014	4.210-015	6.761-016	1.747-017	2.135-019	3.516-020
7.000+000	1.069-021	1.372+002	8.132-015	6.022-015	3.762-015	2.382-015	9.544-016	3.824-016	6.142-017	1.587-018	1.939-020	3.190-021
1.100+001	1.062-022	3.644+001	8.081-016	5.984-016	3.738-016	2.367-016	9.483-017	3.800-017	6.103-018	1.577-019	1.927-021	3.172-022
TOTAL	5.120-019	1.222+009	1.058+008	6.016+007	2.438+007	1.068+007	3.296+006	2.088+006	1.603+006	1.143+006	7.717+005	5.297+005
GAM POW	8.207-026	1.960+002	1.696+001	9.644+000	3.908+000	1.712+000	5.284-001	3.346-001	2.570-001	1.832-001	1.237-001	8.491-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.500-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013	1.499-013

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	7.208+006	6.903+006	6.756+006	6.531+006	6.320+006	5.917+006	5.541+006	4.858+006	3.734+006	2.688+006	1.935+006
PB204	2.142-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014	2.141-014

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	7.904-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015	7.901-015

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	2.353-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015	2.352-015

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.527-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016	1.526-016

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	9.655-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018	9.652-018

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	4.058+009	3.518+017	2.110+012	1.851+012	1.587+012	1.420+012	1.248+012	1.191+012	1.203+012	1.332+012	1.494+012	1.636+012
2.500-002	.000	1.809+015	8.660+009	7.721+009	1.040+010	1.298+010	1.803+010	2.296+010	3.246+010	5.009+010	6.977+010	8.712+010
3.750-002	6.916+005	1.773+016	4.532+009	4.038+009	3.584+009	3.353+009	3.261+009	3.429+009	4.041+009	5.425+009	7.012+009	8.411+009
5.750-002	2.520+007	8.063+015	9.400+010	1.093+011	1.488+011	1.866+011	2.609+011	3.334+011	4.731+011	7.323+011	1.022+012	1.277+012
8.500-002	5.908+007	1.920+017	7.397+009	2.712+009	2.728+009	2.752+009	2.799+009	2.844+009	2.930+009	3.090+009	3.267+009	3.423+009
1.250-001	1.231+008	1.526+017	1.013+010	1.875+009	1.844+009	1.842+009	1.858+009	1.887+009	1.958+009	2.103+009	2.266+009	2.409+009
2.250-001	4.129+008	1.061+017	7.348+009	1.121+009	1.089+009	1.077+009	1.062+009	1.055+009	1.049+009	1.044+009	1.039+009	1.033+009
3.750-001	1.030+006	1.056+016	1.125+009	7.623+008	7.636+008	7.649+008	7.675+008	7.700+008	7.748+008	7.839+008	7.944+008	8.039+008
5.750-001	5.804+004	1.632+015	7.877+007	7.523+007	7.145+007	6.922+007	6.735+007	6.729+007	6.914+007	7.416+007	7.989+007	8.482+007
8.500-001	3.326+004	3.130+015	9.199+007	9.129+007	9.056+007	9.015+007	8.987+007	8.997+007	9.058+007	9.199+007	9.355+007	9.484+007
1.250+000	1.207+004	2.041+014	7.542+007	7.516+007	7.486+007	7.467+007	7.443+007	7.432+007	7.422+007	7.414+007	7.405+007	7.396+007
1.750+000	5.908+003	5.279+011	1.245+007	1.236+007	1.225+007	1.218+007	1.211+007	1.208+007	1.207+007	1.209+007	1.210+007	1.210+007
2.250+000	3.422+003	6.731+005	5.063+005	4.470+005	3.792+005	3.343+005	2.817+005	2.559+005	2.346+005	2.192+005	2.058+005	1.939+005
2.750+000	1.988+003	5.342+005	5.747+005	6.072+005	6.687+005	7.372+005	8.845+005	1.034+006	1.308+006	1.727+006	2.046+006	2.209+006
3.500+000	1.778+003	3.493+005	2.627+005	2.319+005	1.967+005	1.734+005	1.461+005	1.327+005	1.216+005	1.135+005	1.064+005	1.001+005
5.000+000	7.638+002	1.493+005	1.123+005	9.908+004	8.404+004	7.406+004	6.238+004	5.663+004	5.186+004	4.838+004	4.535+004	4.262+004
7.000+000	8.793+001	1.715+004	1.289+004	1.138+004	9.652+003	8.505+003	7.164+003	6.503+003	5.953+003	5.551+003	5.199+003	4.883+003
1.100+001	1.011+001	1.975+003	1.484+003	1.309+003	1.110+003	9.772+002	8.224+002	7.461+002	6.827+002	6.363+002	5.957+002	5.593+002
TOTAL	4.680+009	8.456+017	2.242+012	1.979+012	1.756+012	1.630+012	1.537+012	1.557+012	1.720+012	2.127+012	2.600+012	3.016+012
MEV/SEC	1.762+008	7.353+016	4.161+010	3.564+010	3.398+010	3.371+010	3.553+010	3.897+010	4.747+010	6.484+010	8.450+010	1.018+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	6.088+001	5.277+009	3.165+004	2.776+004	2.380+004	2.130+004	1.872+004	1.786+004	1.805+004	1.998+004	2.240+004	2.454+004
2.500-002	.000	4.524+007	1.665+002	1.930+002	2.600+002	3.244+002	4.508+002	5.740+002	8.115+002	1.252+003	1.744+003	2.178+003
3.750-002	2.593-002	6.650+008	1.699+002	1.514+002	1.344+002	1.257+002	1.223+002	1.286+002	1.515+002	2.035+002	2.630+002	3.154+002
5.750-002	1.449+000	4.636+008	5.405+003	6.288+003	8.554+003	1.073+004	1.500+004	1.917+004	2.720+004	4.211+004	5.875+004	7.342+004
8.500-002	5.022+000	1.632+010	6.287+002	2.305+002	2.319+002	2.339+002	2.379+002	2.417+002	2.491+002	2.628+002	2.777+002	2.909+002
1.250-001	1.539+001	1.907+010	1.266+003	2.344+002	2.306+002	2.303+002	2.323+002	2.359+002	2.448+002	2.629+002	2.832+002	3.011+002
2.250-001	9.290+001	2.388+010	1.653+003	2.522+002	2.450+002	2.422+002	2.390+002	2.374+002	2.361+002	2.350+002	2.338+002	2.325+002
3.750-001	3.863-001	3.958+009	4.219+002	2.859+002	2.863+002	2.868+002	2.878+002	2.887+002	2.906+002	2.940+002	2.979+002	3.015+002
5.750-001	3.337-002	9.386+008	4.529+001	4.326+001	4.108+001	3.980+001	3.872+001	3.869+001	3.975+001	4.264+001	4.594+001	4.877+001
8.500-001	2.827-002	2.660+009	7.820+001	7.760+001	7.697+001	7.663+001	7.639+001	7.648+001	7.699+001	7.819+001	7.951+001	8.062+001
1.250+000	1.509-002	2.551+008	9.428+001	9.395+001	9.358+001	9.333+001	9.304+001	9.290+001	9.278+001	9.267+001	9.256+001	9.245+001
1.750+000	1.034-002	9.238+005	2.179+001	2.163+001	2.144+001	2.132+001	2.119+001	2.114+001	2.113+001	2.116+001	2.117+001	2.117+001
2.250+000	7.700-003	1.515+000	1.139+000	1.006+000	8.532-001	7.521-001	6.339-001	5.758-001	5.277-001	4.931-001	4.631-001	4.363-001
2.750+000	5.468-003	1.469+000	1.580+000	1.670+000	1.839+000	2.027+000	2.432+000	2.843+000	3.597+000	4.751+000	5.626+000	6.074+000
3.500+000	6.222-003	1.222+000	9.195-001	8.116-001	6.886-001	6.070-001	5.115-001	4.645-001	4.256-001	3.972-001	3.725-001	3.503-001
5.000+000	3.819-003	7.465-001	5.613-001	4.954-001	4.202-001	3.703-001	3.119-001	2.832-001	2.593-001	2.419-001	2.267-001	2.131-001
7.000+000	6.155-004	1.200-001	9.025-002	7.966-002	6.756-002	5.954-002	5.015-002	4.552-002	4.167-002	3.886-002	3.639-002	3.418-002
1.100+001	1.112-004	2.172-002	1.632-002	1.440-002	1.220-002	1.075-002	9.047-003	8.207-003	7.510-003	6.999-003	6.552-003	6.152-003
TOTAL	1.762+002	7.353+010	4.161+004	3.564+004	3.398+004	3.371+004	3.553+004	3.897+004	4.747+004	6.484+004	8.450+004	1.018+005
GAM POW	2.824-005	1.179+004	6.670-003	5.713-003	5.447-003	5.404-003	5.696-003	6.247-003	7.609-003	1.039-002	1.354-002	1.632-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U235	6.916+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005	5.138+005

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MKIV) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.033+017	8.783+014	6.443+014	4.595+014	3.596+014	2.414+014	1.702+014	9.359+013	4.452+013	3.221+013	2.875+013
2.500-002	.000	5.025+016	3.430+014	2.098+014	1.347+014	1.048+014	7.446+013	5.658+013	3.609+013	1.943+013	1.210+013	8.813+012
3.750-002	.000	5.908+016	9.776+014	6.925+014	5.061+014	4.036+014	2.687+014	1.833+014	9.256+013	3.749+013	2.496+013	2.170+013
5.750-002	.000	2.209+016	1.739+014	1.318+014	9.653+013	7.641+013	5.156+013	3.626+013	1.971+013	9.110+012	6.487+012	5.770+012
8.500-002	.000	2.933+016	2.292+014	1.874+014	1.449+014	1.158+014	7.616+013	5.107+013	2.434+013	8.089+012	4.569+012	3.817+012
1.250-001	.000	6.026+016	1.490+015	8.174+014	5.024+014	3.830+014	2.449+014	1.592+014	6.880+013	1.573+013	5.464+012	3.868+012
2.250-001	.000	1.741+017	1.234+014	8.942+013	6.393+013	5.034+013	3.422+013	2.441+013	1.365+013	6.393+012	4.309+012	3.635+012
3.750-001	.000	1.366+017	9.590+013	6.614+013	5.047+013	4.219+013	3.161+013	2.456+013	1.594+013	8.376+012	4.784+012	3.145+012
5.750-001	.000	2.657+017	2.600+015	1.511+015	9.802+014	8.166+014	6.678+014	5.731+014	4.528+014	3.430+014	2.898+014	2.624+014
8.500-001	.000	3.051+017	1.160+016	6.513+015	2.538+015	1.020+015	2.099+014	8.503+013	4.760+013	2.445+013	1.144+013	5.784+012
1.250+000	.000	1.763+017	7.887+013	6.260+013	4.882+013	4.031+013	2.890+013	2.135+013	1.244+013	5.514+012	3.010+012	2.087+012
1.750+000	.000	6.439+016	3.625+013	6.274+012	4.188+012	3.480+012	2.439+012	1.725+012	8.864+011	2.773+011	1.073+011	6.876+010
2.250+000	.000	3.444+016	4.348+013	3.706+013	2.950+013	2.366+013	1.523+013	9.811+012	4.077+012	7.098+011	8.153+010	9.686+009
2.750+000	.000	1.514+016	1.406+012	2.725+011	1.905+011	1.596+011	1.124+011	7.921+010	3.940+010	9.800+009	1.734+009	3.083+008
3.500+000	.000	8.531+015	4.434+010	3.152+010	2.611+010	2.198+010	1.559+010	1.105+010	5.557+009	1.405+009	2.517+008	4.512+007
5.000+000	.000	4.849+015	4.733-006	4.782-006	4.855-006	4.921-006	5.040-006	5.145-006	5.317-006	5.550-006	5.712-006	5.796-006
7.000+000	.000	3.245+013	3.071-007	3.103-007	3.150-007	3.193-007	3.270-007	3.338-007	3.450-007	3.601-007	3.707-007	3.761-007
1.100+001	.000	3.203+009	1.942-008	1.962-008	1.992-008	2.019-008	2.068-008	2.111-008	2.181-008	2.277-008	2.344-008	2.378-008
TOTAL	.000	1.510+018	1.867+016	1.097+016	5.560+015	3.440+015	1.947+015	1.397+015	8.825+014	5.231+014	3.993+014	3.499+014
MEV/SEC	.000	1.025+018	1.195+016	6.790+015	3.000+015	1.559+015	7.126+014	5.057+014	3.538+014	2.373+014	1.864+014	1.632+014

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK IV 12%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.550+009	1.317+007	9.664+006	6.893+006	5.394+006	3.620+006	2.552+006	1.404+006	6.677+005	4.831+005	4.313+005
2.500-002	.000	1.256+009	8.576+006	5.245+006	3.367+006	2.620+006	1.862+006	1.414+006	9.022+005	4.857+005	3.024+005	2.203+005
3.750-002	.000	2.215+009	3.666+007	2.597+007	1.898+007	1.513+007	1.008+007	6.873+006	3.471+006	1.406+006	9.360+005	8.139+005
5.750-002	.000	1.270+009	9.999+006	7.579+006	5.550+006	4.393+006	2.965+006	2.085+006	1.133+006	5.238+005	3.730+005	3.318+005
8.500-002	.000	2.493+009	1.948+007	1.593+007	1.231+007	9.843+006	6.474+006	4.341+006	2.069+006	6.876+005	3.883+005	3.244+005
1.250-001	.000	7.532+009	1.863+008	1.022+008	6.280+007	4.788+007	3.061+007	1.990+007	8.600+006	1.966+006	6.830+005	4.835+005
2.250-001	.000	3.917+010	2.776+007	2.012+007	1.438+007	1.133+007	7.700+006	5.492+006	3.070+006	1.438+006	9.695+005	8.178+005
3.750-001	.000	5.122+010	3.596+007	2.480+007	1.893+007	1.582+007	1.185+007	9.211+006	5.978+006	3.141+006	1.794+006	1.180+006
5.750-001	.000	1.528+011	1.495+009	8.688+008	5.636+008	4.695+008	3.840+008	3.295+008	2.604+008	1.972+008	1.666+008	1.509+008
8.500-001	.000	2.593+011	9.856+009	5.536+009	2.158+009	8.673+008	1.784+008	7.228+007	4.046+007	2.078+007	9.724+006	4.916+006
1.250+000	.000	2.204+011	9.859+007	7.825+007	6.103+007	5.038+007	3.613+007	2.669+007	1.554+007	6.892+006	3.762+006	2.609+006
1.750+000	.000	1.127+011	6.344+007	1.098+007	7.329+006	6.090+006	4.267+006	3.018+006	1.551+006	4.853+005	1.878+005	1.203+005
2.250+000	.000	7.749+010	9.784+007	8.337+007	6.638+007	5.324+007	3.428+007	2.208+007	9.173+006	1.597+006	1.834+005	2.179+004
2.750+000	.000	4.163+010	3.867+006	7.493+005	5.239+005	4.389+005	3.091+005	2.178+005	1.083+005	2.695+004	4.768+003	8.478+002
3.500+000	.000	2.986+010	1.552+005	1.103+005	9.138+004	7.694+004	5.456+004	3.868+004	1.945+004	4.916+003	8.810+002	1.579+002
5.000+000	.000	2.424+010	2.367-011	2.391-011	2.427-011	2.460-011	2.520-011	2.572-011	2.658-011	2.775-011	2.856-011	2.898-011
7.000+000	.000	2.271+008	2.150-012	2.172-012	2.205-012	2.235-012	2.289-012	2.337-012	2.415-012	2.521-012	2.595-012	2.633-012
1.100+001	.000	3.523+004	2.136-013	2.158-013	2.191-013	2.221-013	2.275-013	2.322-013	2.400-013	2.505-013	2.578-013	2.616-013
TOTAL	.000	1.025+012	1.195+010	6.790+009	3.000+009	1.559+009	7.126+008	5.057+008	3.538+008	2.373+008	1.864+008	1.632+008
GAM POW	.000	1.644+005	1.916+003	1.088+003	4.809+002	2.500+002	1.142+002	8.107+001	5.672+001	3.805+001	2.988+001	2.616+001

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7 5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SE
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	6.212+010	3.488+010	3.116+010	2.611+010	2.198+010	1.559+010	1.105+010	5.557+009	1.405+009	2.517+008	4.512+007

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

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********** ORIGEN2: A REVISED AND UPDATED VERSION OF THE ORIGEN COMPUTER CODE **********
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INTRODUCTION

THIS TEXT IS INTENDED TO BE A BRIEF OUTLINE OF THE ORIGEN2 COMPUTER CODE, WHICH IS A REVISED AND UPDATED VERSION OF THE ORIGEN DOCUMENTED IN REPORT ORNL-4628 (MAY 1973). INCLUDED HERE ARE A BRIEF DESCRIPTION OF THE FUNCTIONS OF ORIGEN2, A LISTING OF THE MAJOR DATA SOURCES, A LISTING OF THE PUBLISHED DOCUMENTATION CONCERNING ORIGEN2, AND AN OUTLINE OF THE ORIGEN2 OUTPUT ORGANIZATION. ORIGEN2 IS AVAILABLE FROM THE ORNL RADIATION SHIELDING INFORMATION CENTER (RSIC) AT THE FOLLOWING ADDRESS:

CODES COORDINATOR
RADIATION SHIELDING INFORMATION CENTER
BLDG. 6025
OAK RIDGE NATIONAL LABORATORY
OAK RIDGE, TENNESSEE 37830
PHONE: (615) 574-6176

QUESTIONS CONCERNING ORIGEN2 SHOULD BE ADDRESSED TO RSIC.

DESCRIPTION

ORIGEN2 IS A REVISION AND UPDATE OF THE ORIGEN COMPUTER CODE. SPECIFICALLY, THE INPUT, OUTPUT, CONTROL, AND DATA BASE ASPECTS OF ORIGEN HAVE BEEN SIGNIFICANTLY REVISED AND UPDATED TO REFLECT CURRENT INFORMATION AND NEEDS. IT SHOULD BE NOTED THAT THE MATHEMATICAL METHODS USED TO SOLVE THE NUCLIDE BUILDUP, DEPLETION, AND DECAY EQUATIONS ARE ESSENTIALLY UNCHANGED FROM THAT IN ORIGEN. ORIGEN2 IS A COMPUTER CODE DESIGNED TO CALCULATE THE COMPOSITION AND CHARACTERISTICS OF NUCLEAR MATERIALS AS A FUNCTION OF DECAY TIME AND THE CHANGES THE MATERIALS UNDERGO DURING VARIOUS FUEL CYCLE OPERATIONS. INPUT AND OUTPUT FEATURES HAVE BEEN DESIGNED TO FACILITATE FLEXIBILITY IN THE TYPE OF CASES THAT CAN BE CONSIDERED AND IN CONTROLLING THE DETAIL OF THE OUTPUT. FOR FURTHER INFORMATION, THE USER IS REFERRED TO THE DOCUMENTATION LISTED BELOW.

MAJOR DATA SOURCES

VIRTUALLY ALL ASPECTS OF THE DATA INPUT TO ORIGEN2 HAVE BEEN UPDATED OR REVISED TO REFLECT CURRENT INFORMATION. THE PRINCIPAL SOURCES OF CROSS SECTION DATA WERE THE ENDF/B-IV, ENDF/B-V, AND LENDL COMPILATIONS. DECAY AND PHOTON INFORMATION WERE PRIMARILY BASED ON THE EVALUATED NUCLEAR STRUCTURE DATA FILE (ENSDF) AT ORNL AND ENDF/B-IV. DATA CONCERNING REACTOR AND FUEL CHARACTERISTICS WERE OBTAINED FROM REFERENCE SAFETY ANALYSIS REPORTS AND, WHERE POSSIBLE, THE COMMERCIAL REACTOR VENDORS.

DOCUMENTATION

THE FOLLOWING ITEMS CONSTITUTE THE ORIGEN2 DOCUMENTATION PUBLISHED AS OF THE DATE OF THIS CODE PACKAGE:

A.G. CROFF, 'ORIGEN2 - A REVISED AND UPDATED VERSION OF THE OAK RIDGE ISOTOPE GENERATION AND DEPLETION CODE', ORNL-5621 (JULY 1980).

A.G. CROFF, 'A USER'S MANUAL FOR THE ORIGEN2 COMPUTER CODE', ORNL/TM-7175 (JULY 1980).

A.G. CROFF, M.A. BJERKE, G.W.MORRISON, AND L.M. PETRIE, 'REVISED URANIUM-PLUTONIUM CYCLE PWR AND BWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-6051 (SEPTEMBER 1978).

A.G. CROFF AND M.A. BJERKE, 'ALTERNATIVE FUEL CYCLE PWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-7005 (FEB 1980).

A.G. CROFF, R.L. HAESE, AND N.B. GOVE, 'UPDATED DECAY AND PHOTON LIBRARIES FOR THE ORIGEN CODE', ORNL/TM-6055 (FEB 1979)

A.G. CROFF, 'ORIGEN2: A REVISED AND UPDATED VERSION OF ORIGEN', TRANS. AM. NUCL. SOC., VOL. 34, P. 349-50 (JUNE 1980).

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****************************** ORIGEN2:  A REVISED AND UPDATED VERSION OF THE ORIGEN COMPUTER CODE ******************************
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ORGANIZATION OF ORIGEN2 OUTPUT

PAST EXPERIENCE HAS INDICATED THAT MANY USERS ENCOUNTER CONSIDERABLE DIFFICULTY IN FINDING THE DESIRED INFORMATION IN A ORIGEN2 OUT PUT WHICH IS SOMETIMES RATHER MASSIVE. THIS SECTION IS INTENDED AS A BRIEF OUTLINE OF THE ORGANIZATION OF ORIGEN2 OUTPUT. FOR DETAILS REFER TO THE USER'S MANUAL (ORNL/TM-7175, SECT. 8.2). THE ORIGEN2 OUTPUT IS EXTREMELY HIERARCHICAL, AND IS ORGANIZED AS FOLLOWS:

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CARD INPUT ECHO
MISCELLANEOUS INPUT DATA (NEUTRON YIELDS, REPROCESSING LOSSES,ELEMENT CHEMICAL TOXICITIES
LISTING OF ORIGEN2 COMMANDS CURRENTLY BEING EXECUTED
LISTING OF ORIGEN2 DATA LIBRARIES (IF SPECIFIED)
  DECAY LIBRARY
    ACTIVATION PRODUCTS
    ACTINIDES
    FISSION PRODUCTS
  CROSS SECTION/FISSION PRODUCT YIELD LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
  PHOTON LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
OUTPUT 1
  REACTIVITY AND BURNUP DATA
  ACTIVATION PRODUCT TABLES
    GRAM TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    CURIE TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    ETC. (DEPENDING ON THE OUTPUT OPTIONS SPECIFIED, MANY OF THESE TABLES MAY BE OMITTED
      .
  ACTINIDE TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  FISSION PRODUCT TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  NEUTRON PRODUCTION RATE TABLES: (ALPHA,N) AND SPONTANEOUS FISSION
  PHOTON TABLES
    ACTIVATION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    ACTINIDES (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    FISSION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
OUTPUT 2
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
  .
  .
  .
OUTPUT N
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
TABLE OF CONTENTS (UNIT 12) FOR THE ABOVE (UNIT 6) OUTPUT
VARIABLE CROSS SECTION INFORMATION OUTPUT (UNIT 16)
DEBUGGING AND OTHER INTERNAL INFORMATION OUTPUT (UNIT 15)
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THE SCENARIO LISTED ABOVE CONSTITUTES A TYPICAL ORIGEN2 OUTPUT FOR MANY CASES. ONE POSSIBLE MODIFICATION IS THE USE OF AN STP COMMAND TO EXECUTE AN ADDITIONAL SET OF INSTRUCTIONS AFTER THE FIRST SET HAS BEEN EXECUTED. IF THIS IS DONE, THE OUTPUT WILL BEGIN WITH 'MISCELLANEOUS INPUT DATA' IF NSTP=1, 'ORIGEN2COMMANDS CURRENTLY BEING EXECUTED' IF NSTP=2, OR 'OUTPUT 1' FOR NSTP=3. ANOTHER OFTEN-USED OPTION IS TO EMPLOY BOTH THE PRIMARY (UNIT 6) AND ALTERNATE (UNIT 11) OUTPUT UNITS. IF BOTH ARE ROUTED TO PAPER, THE TABLE OF CONTENTS FOR UNIT 11, WHICH IS ON UNIT 13, WILL IMMEDIATELY FOLLOW THE DEBUGGING AND INTERNAL INFORMATION (UNIT 15) OUTPUT. THE 'OUTPUT N' TABLES FOR UNIT 11 WILL BE PRINTED FOLLOWING THE TABLE OF CONTENTS.

LISTING OF INPUT DATA ON UNIT = 5

INPUT UNIT	WRITE UNIT	CARD NUMBER	CARD IMAGE
5	50	1	-1
5	50	2	-1
5	50	3	-1
5	50	4	TIT ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
5	50	5	RDA CALCULATED BY HARVEY GOLDBERG , SENIOR ENGINEER
5	50	6	RDA NUCLEAR & SAFETY ANALYSIS GROUP , R. H. O.
5	50	7	LIP 0 0 0
5	50	8	LIB 0 1 2 3 421 422 423 9 3 0 1 42
5	50	9	RDA TWO IRRADIATION RUNS WERE DONE PREVIOUSLY WITH RESULTS
5	50	10	RDA STORED ON FILES 6PCMKIAI, 6PCMKIAO,
5	50	11	RDA 1 METRIC TON MK 1A INNER FUEL IRRADIATED FOR AN AVERAGE
5	50	12	RDA BURNUP OF 946 MWD/MTIHM
5	50	13	RDA THIS IS THE INITIAL PURE URANIUM AND HARDWARE
5	50	14	INP -8 -2 -1 -1 1 1
5	50	15	RDA THIS IS THE INITIAL IMPURITIES IN THE URANIUM
5	50	16	INP -7 -2 -1 -1 1 1
5	50	17	RDA THIS IS THE DISCHARGED PURE FUEL AND HARDWARE
5	50	18	INP -6 -2 -1 -1 1 1
5	50	19	RDA THIS IS THE DISCHARGED IMPURITIES
5	50	20	INP -5 -2 -1 -1 1 1
5	50	21	RDA 1 METRIC TON MK 1A OUTER FUEL IRRADIATED FOR AN AVERAGE
5	50	22	RDA BURNUP OF 1507 MWD/MTIHM
5	50	23	RDA THIS IS THE INITIAL PURE URANIUM AND HARDWARE
5	50	24	INP -4 -2 -1 -1 1 1
5	50	25	RDA THIS IS THE INITIAL IMPURITIES IN THE URANIUM
5	50	26	INP -3 -2 -1 -1 1 1
5	50	27	RDA THIS IS THE DISCHARGED PURE FUEL AND HARDWARE
5	50	28	INP -2 -2 -1 -1 1 1
5	50	29	RDA THIS IS THE DISCHARGED IMPURITIES
5	50	30	INP -1 -2 -1 -1 1 1
5	50	31	RDA COMBINE MK 1A INNER AND MK 1A OUTER DISCHARGES OF PURE FUEL
5	50	32	MOV -6 -9 0 0.333 33.3 PCT MK 1A INNER
5	50	33	ADD -2 -9 0 0.667 66.7 PCT MK 1A OUTER
5	50	34	MOV -9 -2 0 1.0 PURE FUEL DISCHARGED
5	50	35	RDA COMBINE MK 1A INNER AND MK 1A OUTER DISCHARGES OF IMPURITIES
5	50	36	MOV -5 -9 0 0.333 33.3 PCT MK 1A INNER
5	50	37	ADD -1 -9 0 0.667 66.7 PCT MK 1A OUTER
5	50	38	MOV -9 -1 0 1.0 DISCHARGED IMPURITIES
5	50	39	RDA COMBINE MK 1A INNER AND MK 1A OUTER INITIAL CHARGE OF PURE FUEL
5	50	40	MOV -8 -9 0 0.333 33.3 PCT MK 1A INNER
5	50	41	ADD -4 -9 0 0.667 66.7 PCT MK 1A OUTER
5	50	42	MOV -9 -4 0 1.0 INITIAL CHARGE OF PURE FUEL
5	50	43	RDA COMBINE MK 1A INNER AND MK 1A OUTER INITIAL CHARGE OF IMPURITIES
5	50	44	MOV -7 -9 0 0.333 33.3 PCT MK 1A INNER
5	50	45	ADD -3 -9 0 0.667 66.7 PCT MK 1A OUTER
5	50	46	MOV -9 -3 0 1.0 INITIAL CHARGE OF IMPURITIES
5	50	47	BAS ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240
5	50	48	MOV -4 1 0 1.0
5	50	49	MOV -2 2 0 1.0

LISTING OF INPUT DATA ON UNIT = 5

```
INPUT   WRITE     CARD                                        CARD IMAGE
UNIT    UNIT      NUMBER
   5      50         50     DEC     120.      2   3  4  2
   5      50         51     DEC     180.      3   4  4  0
   5      50         52     DEC     0.75      4   5  5  0
   5      50         53     DEC      1.0      5   6  5  0
   5      50         54     DEC      1.5      6   7  5  0
   5      50         55     DEC      2.0      7   8  5  0
   5      50         56     DEC      3.0      8   9  5  0
   5      50         57     DEC      5.0      9  10  5  0
   5      50         58     DEC      7.5      10 11  5  0
   5      50         59     DEC     10.0      11 12  5  0
   5      50         60     PHO     101  102  103  10
   5      50         61     CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
   5      50         62     RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
   5      50         63     OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50         64     RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
   5      50         65     OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50         66     RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
   5      50         67     OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50         68     HED     1   CHARGE
   5      50         69     HED     2   DISCHARGE
   5      50         70     OUT     12  1  -1  0
   5      50         71     BAS     ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240
   5      50         72     MOV     -3  1   0   1.0
   5      50         73     MOV     -1  2   0   1.0
   5      50         74     DEC     120.      2   3  4  2
   5      50         75     DEC     180.      3   4  4  0
   5      50         76     DEC     0.75      4   5  5  0
   5      50         77     DEC      1.0      5   6  5  0
   5      50         78     DEC      1.5      6   7  5  0
   5      50         79     DEC      2.0      7   8  5  0
   5      50         80     DEC      3.0      8   9  5  0
   5      50         81     DEC      5.0      9  10  5  0
   5      50         82     DEC      7.5      10 11  5  0
   5      50         83     DEC     10.0      11 12  5  0
   5      50         84     PHO     101  102  103  10
   5      50         85     CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
   5      50         86     RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
   5      50         87     OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50         88     RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
   5      50         89     OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50         90     RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
   5      50         91     OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
   5      50         92     HED     1   CHARGE
   5      50         93     HED     2   DISCHARGE
   5      50         94     OUT     12  1  -1  0
   5      50         95     BAS     ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240
   5      50         96     MOV     -4  1   0   1.0
   5      50         97     ADD     -3  1   0   1.0
   5      50         98     MOV     -2  2   0   1.0
   5      50         99     ADD     -1  2   0   1.0
```

LISTING OF INPUT DATA ON UNIT = 5

```
INPUT   WRITE     CARD                                        CARD IMAGE
UNIT    UNIT      NUMBER
  5      50         100    DEC     120.      2   3  4  2
  5      50         101    DEC     180.      3   4  4  0
  5      50         102    DEC     0.75      4   5  5  0
  5      50         103    DEC      1.0      5   6  5  0
  5      50         104    DEC      1.5      6   7  5  0
  5      50         105    DEC      2.0      7   8  5  0
  5      50         106    DEC      3.0      8   9  5  0
  5      50         107    DEC      5.0      9  10  5  0
  5      50         108    DEC      7.5     10  11  5  0
  5      50         109    DEC     10.0     11  12  5  0
  5      50         110    PHO     101  102  103  10
  5      50         111    CUT      5 1.E-10 .   7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1
  5      50         112    RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS
  5      50         113    OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8
  5      50         114    RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS
  5      50         115    OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
  5      50         116    RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS
  5      50         117    OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
  5      50         118    HED     1   CHARGE
  5      50         119    HED     2   DISCHARGE
  5      50         120    OUT     12  1  -1  0
  5      50         121    STP 4
  5      50         122    2        922350  0.01249E+6    922380  0.98709E+6  0  0.0   PURE FUEL
  5      50         123    2        922340  0.00008E+6    922360  0.00033E+6  0  0.0   1.25 %
  5      50         124    0
  5      50         125    2        922350  0.00947E+6    922380  0.99041E+6  0  0.0   PURE FUEL
  5      50         126    2        922340  0.00009E+6    922360  0.00003E+6  0  0.0   0.947 %
  5      50         127    0
  5      50         128    4 130000  75.    500000 1.45E+4   260000 1350.   240000 1000.        ZIRCALOY
  5      50         129    4 280000 550.     60000 275.      920000    2.5  400000 0.9814E+6    ZIRCALOY
  5      50         130    4  50000   0.5  480000   0.5     270000   10.   290000   50.        ZIRCALOY
  5      50         131    4 720000 200.     10000  25.      820000  100.   120000   20.        ZIRCALOY
  5      50         132    4 250000  50.    420000  50.       70000   80.   140000  100.        ZIRCALOY
  5      50         133    4 110000  20.    220000  50.      740000   50.   230000   50.        ZIRCALOY
  5      50         134    0
  5      50         135    4 400000  65.    290000  75.      480000    0.25  40000    10.    IMPURITIES IN
  5      50         136    4 130000 800.     10000   2.      140000  125.   280000  100.     1 METRIC TON
  5      50         137    4 250000   25.   120000   25.     280000  350.   240000   65.          OF
  5      50         138    4  50000   2.25  70000   75.      60000  550.        0    0.0       URANIUM
  5      50         139    0
```

NEUTRON YIELD PER NEUTRON-INDUCED FISSION

NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD	NUCLIDE	YIELD
832090	.0000	882230	.0000	882260	.0000	882280	.0000	892270	.0000	902270	.0000
902280	.0000	902290	2.0490	902300	.0000	902320	2.4180	902330	.0000	902340	.0000
912310	.0000	912320	.0000	912330	2.6630	912341	.0000	912340	.0000	922300	.0000
922310	.0000	922320	.0000	922330	2.4990	922340	2.6310	922350	2.4210	922360	2.7340
922370	.0000	922380	2.8010	922390	.0000	922400	.0000	932360	.0000	932370	3.0050
932380	.0000	932390	.0000	942360	2.8700	942370	.0000	942380	2.8330	942390	2.8750
942400	3.1350	942410	2.9340	942420	3.2800	942430	.0000	952410	3.2770	952421	3.1620
952420	3.3600	952430	3.7320	952441	.0000	952440	.0000	962420	3.7460	962430	3.4340
962440	3.7250	962450	3.8320	962460	3.8580	962470	3.5920	962480	3.7960	962490	.0000
972490	3.7600	982490	4.0620	982500	3.9700	982510	4.1400	982520	4.1260	982530	4.1500
982540	.0000	992530	.0000	992541	.0000	992540	.0000	0	.0000	0	.0000

OUTPUT UNIT = 6 PAGE

SPONTANEOUS FISSION NEUTRON YIELD, NEUT/FISSION

NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE		NUCLIDE	
922350	1.6950	922360	1.6500	922370	1.8720	922380	2.0000	922390	2.0480	932361	1.7900
932360	1.7830	932370	1.8730	932380	1.9630	932390	2.0530	942360	2.2200	942370	1.8860
942380	2.2800	942390	2.2400	942400	2.1600	942410	2.2500	942420	2.1500	942430	2.4300
942440	2.3000	952400	2.2900	952410	2.3830	952420	2.4750	952421	2.5900	952430	2.5200
952440	2.6570	952441	2.6650	962410	2.5000	962420	2.5900	962430	2.6870	962440	2.7600
962450	2.8720	962460	3.0000	962480	3.3200	962500	3.5600	972490	3.7200	982490	3.4400
982500	3.5600	982520	3.7250	982540	3.9000	992530	3.9200	992540	4.0400	992550	4.1600

THE REMAINING NEUTRON YIELDS ARE CALCULATED FROM THE EQUATION: NEUT/FISS=(2.84+0.1225*(AT WT-244)

OUTPUT UNIT = 6

INDIVIDUAL ELEMENT FRACTIONAL RECOVERIES

ELEMENT	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
1	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
2	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
3	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
4	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
5	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
6	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
7	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
8	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
9	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
10	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
11	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
12	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
13	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
14	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
15	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
16	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
17	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
18	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
19	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
20	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
21	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
22	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
23	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
24	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
25	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
26	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
27	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
28	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
29	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
30	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
31	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
32	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
33	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
34	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
35	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
36	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
37	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
38	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
39	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
40	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
41	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
42	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
43	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
44	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
45	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
46	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
47	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
48	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
49	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000

OUTPUT UNIT = 8

INDIVIDUAL ELEMENT FRACTIONAL RECOVERIES

ELEMENT	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
50	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
51	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
52	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
53	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
54	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
55	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
56	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
57	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
58	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
59	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
60	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
61	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
62	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
63	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
64	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
65	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
66	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
67	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
68	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
69	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
70	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
71	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
72	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
73	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
74	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
75	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
76	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
77	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
78	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
79	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
80	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
81	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
82	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
83	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
84	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
85	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
86	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	1.0000000
87	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
88	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
89	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
90	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
91	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	1.0000000
92	.9950000	1.0000000	.0005000	.9990000	1.0000000	.2000000	.6000000	1.0000000	.0000000	1.0000000
93	.0000000	1.0000000	.0005000	.0000000	.0500000	.0500000	.0000000	.0000000	.0000000	1.0000000
94	.9950000	1.0000000	.0005000	.9999000	1.0000000	.0200000	.0000000	.0000000	.0000000	1.0000000
95	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
96	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
97	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
98	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000
99	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	1.0000000

GROUP FRACTIONAL RECOVERIES

GROUP	SET NUMBER 1	SET NUMBER 2	SET NUMBER 3	SET NUMBER 4	SET NUMBER 5	SET NUMBER 6	SET NUMBER 7	SET NUMBER 8	SET NUMBER 9	SET NUMBER 10
1	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000
2	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
3	.0000000	1.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
4	.9950000	1.0000000	.0005000	.9990000	1.0000000	.2000000	.6000000	1.0000000	.0000000	.0000000
5	.0000000	1.0000000	.0005000	.0000000	.0500000	.0500000	.0000000	.0000000	.0000000	.0000000
6	.9950000	1.0000000	.0005000	.9999000	1.0000000	.0200000	.0000000	.0000000	.0000000	.0000000
7	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
8	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
9	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
10	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
11	.0000000	1.0000000	.0005000	.0000000	.0010000	.0010000	.0000000	.0000000	.0000000	.0000000
12	.0000000	.0010000	.0005000	.0000000	1.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000
13	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.0000000	.0000000
14	.0000000	.0000000	.0005000	.0000000	1.0000000	1.0000000	.0000000	.0000000	.9000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
16	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
17	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
18	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
19	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

OUTPUT UNIT = 8

ELEMENT ASSIGNMENTS TO FRACTIONAL RECOVERY GROUPS

ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP	ELEM	GROUP
1	14	2	13	3	1	4	1	5	1	6	13	7	13	8	1	9	12
10	13	11	1	12	1	13	1	14	1	15	1	16	1	17	12	18	13
19	1	20	1	21	1	22	1	23	1	24	1	25	1	26	1	27	1
28	1	29	1	30	1	31	1	32	1	33	1	34	1	35	12	36	13
37	1	38	1	39	1	40	1	41	1	42	1	43	1	44	1	45	1
46	1	47	1	48	1	49	1	50	1	51	1	52	1	53	12	54	13
55	1	56	1	57	1	58	1	59	1	60	1	61	1	62	1	63	1
64	1	65	1	66	1	67	1	68	1	69	1	70	1	71	1	72	1
73	1	74	1	75	1	76	1	77	1	78	1	79	1	80	1	81	1
82	1	83	1	84	1	85	1	86	13	87	1	88	1	89	1	90	2
91	3	92	4	93	5	94	6	95	7	96	8	97	9	98	10	99	11

OUTPUT UNIT = 6

CHEMICAL TOXICITIES, GRAMS PER M**3 WATER

NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY	NUCLIDE	TOXICITY
1	3.50+003	2	2.00-001	3	5.00+000	4	1.00+000	5	1.00+000	6	4.00+002
7	1.00-002	8	9.45+005	9	1.00+000	10	1.00+000	11	1.00+003	12	1.00+001
13	1.00-002	14	5.00+000	15	1.00-002	16	5.00+001	17	1.50-001	18	1.00+001
19	1.00+003	20	3.00+001	21	5.00-001	22	1.00-001	23	1.00-001	24	2.00-002
25	1.00-002	26	5.00-002	27	5.00-002	28	5.00-002	29	1.00-002	30	5.00-002
31	2.00-001	32	5.00-001	33	1.00-002	34	1.00-002	35	3.00+000	36	4.00+001
37	5.00+001	38	1.00+001	39	1.00-003	40	1.00+000	41	2.00-002	42	5.00-001
43	1.00+002	44	1.00+000	45	5.00-002	46	5.00-002	47	1.00-003	48	1.00-002
49	2.00-002	50	5.00-002	51	5.00-002	52	2.00-001	53	1.00+001	54	1.50+002
55	5.00+000	56	5.00-001	57	1.00+000	58	2.00+000	59	1.00+000	60	2.00-001
61	1.00+000	62	2.00-001	63	2.00-001	64	2.00-001	65	5.00-001	66	1.00+000
67	1.00+000	68	1.00-001	69	2.00-001	70	1.00-001	71	1.00-001	72	5.00-002
73	1.00+000	74	1.00+002	75	1.00+001	76	1.00+000	77	8.00-001	78	3.00-001
79	2.00-002	80	2.00-003	81	5.00-003	82	1.00-002	83	1.00-001	84	2.00-001
85	1.00+001	86	5.00+002	87	5.00+000	88	1.00-003	89	2.00-002	90	5.00-004
91	5.00-003	92	5.00-001	93	8.00-003	94	8.00-004	95	4.00-002	96	5.00-001
97	5.00-003	98	1.00-002	99	1.00-002						

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 1    0 TIT  *TIT     ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0          *
 2    0 RDA  *RDA     CALCULATED BY HARVEY GOLDBERG , SENIOR ENGINEER                   *
 3    0 RDA  *RDA     NUCLEAR & SAFETY ANALYSIS GROUP , R. H. O.                        *
 4    0 LIP  *LIP     0 0 0                                                             *
 5    0 LIB  *LIB     0 1 2 3 421 422 423 9 3 0 1 42                                    *
 6    0 RDA  *RDA     TWO IRRADIATION RUNS WERE DONE PREVIOUSLY WITH RESULTS            *
 7    0 RDA  *RDA      STORED ON FILES 6PCMKIAI, 6PCMKIAO,                              *
 8    0 RDA  *RDA     1 METRIC TON MK 1A INNER FUEL IRRADIATED FOR AN AVERAGE           *
 9    0 RDA  *RDA      BURNUP OF 946 MWD/MTIHM                                          *
10    0 RDA  *RDA      THIS IS THE INITIAL PURE URANIUM AND HARDWARE                    *
11    0 INP  *INP     -8 -2  -1  -1  1  1                                               *
12    0 RDA  *RDA      THIS IS THE INITIAL IMPURITIES IN THE URANIUM                    *
13    0 INP  *INP     -7 -2  -1  -1  1  1                                               *
14    0 RDA  *RDA      THIS IS THE DISCHARGED PURE FUEL AND HARDWARE                    *
15    0 INP  *INP     -6 -2  -1  -1  1  1                                               *
16    0 RDA  *RDA      THIS IS THE DISCHARGED IMPURITIES                                *
17    0 INP  *INP     -5 -2  -1  -1  1  1                                               *
18    0 RDA  *RDA     1 METRIC TON MK 1A OUTER FUEL IRRADIATED FOR AN AVERAGE           *
19    0 RDA  *RDA     BURNUP OF 1507 MWD/MTIHM                                          *
20    0 RDA  *RDA      THIS IS THE INITIAL PURE URANIUM AND HARDWARE                    *
21    0 INP  *INP     -4 -2  -1  -1  1  1                                               *
22    0 RDA  *RDA      THIS IS THE INITIAL IMPURITIES IN THE URANIUM                    *
23    0 INP  *INP     -3 -2  -1  -1  1  1                                               *
24    0 RDA  *RDA      THIS IS THE DISCHARGED PURE FUEL AND HARDWARE                    *
25    0 INP  *INP     -2 -2  -1  -1  1  1                                               *
26    0 RDA  *RDA      THIS IS THE DISCHARGED IMPURITIES                                *
27    0 INP  *INP     -1 -2  -1  -1  1  1                                               *
28    0 RDA  *RDA     COMBINE MK 1A INNER AND MK 1A OUTER DISCHARGES OF PURE FUEL       *
29    0 MOV  *MOV     -6 -9  0  0.333      33.3 PCT MK 1A INNER                         *
30    0 ADD  *ADD     -2 -9  0  0.667      66.7 PCT MK 1A OUTER                         *
31    0 MOV  *MOV     -9 -2  0  1.0        PURE FUEL DISCHARGED                         *
32    0 RDA  *RDA     COMBINE MK 1A INNER AND MK 1A OUTER DISCHARGES OF IMPURITIES      *
33    0 MOV  *MOV     -5 -9  0  0.333      33.3 PCT MK 1A INNER                         *
34    0 ADD  *ADD     -1 -9  0  0.667      66.7 PCT MK 1A OUTER                         *
35    0 MOV  *MOV     -9 -1  0  1.0        DISCHARGED IMPURITIES                        *
36    0 RDA  *RDA     COMBINE MK 1A INNER AND MK 1A OUTER INITIAL CHARGE OF PURE FUEL   *
37    0 MOV  *MOV     -8 -9  0  0.333      33.3 PCT MK 1A INNER                         *
38    0 ADD  *ADD     -4 -9  0  0.667      66.7 PCT MK 1A OUTER                         *
39    0 MOV  *MOV     -9 -4  0  1.0        INITIAL CHARGE OF PURE FUEL                  *
40    0 RDA  *RDA     COMBINE MK 1A INNER AND MK 1A OUTER INITIAL CHARGE OF IMPURITIES  *
41    0 MOV  *MOV     -7 -9  0  0.333      33.3 PCT MK 1A INNER                         *
42    0 ADD  *ADD     -3 -9  0  0.667      66.7 PCT MK 1A OUTER                         *
43    0 MOV  *MOV     -9 -3  0  1.0        INITIAL CHARGE OF IMPURITIES                 *
44    0 BAS  *BAS     ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240 *
45    0 MOV  *MOV     -4  1   0   1.0                                                  *
46    0 MOV  *MOV     -2  2   0   1.0                                                  *
47    0 DEC  *DEC     120.      2   3  4  2                                            *
48    0 DEC  *DEC     180.      3   4  4  0                                            *
49    0 DEC  *DEC     0.75      4   5  5  0                                            *
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50    0 DEC  *DEC      1.0       5   6  5  0                                  *
51    0 DEC  *DEC      1.5       6   7  5  0                                  *
52    0 DEC  *DEC      2.0       7   8  5  0                                  *
53    0 DEC  *DEC      3.0       8   9  5  0                                  *
54    0 DEC  *DEC      5.0       9  10  5  0                                  *
55    0 DEC  *DEC      7.5      10  11  5  0                                  *
56    0 DEC  *DEC     10.0      11  12  5  0                                  *
57    0 PHO  *PHO     101  102  103  10                                       *
58    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1  *
59    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                *
60    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8  *
61    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                   *
62    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8  *
63    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS              *
64    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8  *
65    0 HED  *HED     1   CHARGE                                              *
66    0 HED  *HED     2   DISCHARGE                                           *
67    0 OUT  *OUT     12  1  -1  0                                            *
68    0 BAS  *BAS     ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240  *
69    0 MOV  *MOV     -3  1   0   1.0                                         *
70    0 MOV  *MOV     -1  2   0   1.0                                         *
71    0 DEC  *DEC     120.      2   3  4  2                                   *
72    0 DEC  *DEC     180.      3   4  4  0                                   *
73    0 DEC  *DEC     0.75      4   5  5  0                                   *
74    0 DEC  *DEC      1.0      5   6  5  0                                   *
75    0 DEC  *DEC      1.5      6   7  5  0                                   *
76    0 DEC  *DEC      2.0      7   8  5  0                                   *
77    0 DEC  *DEC      3.0      8   9  5  0                                   *
78    0 DEC  *DEC      5.0      9  10  5  0                                   *
79    0 DEC  *DEC      7.5     10  11  5  0                                   *
80    0 DEC  *DEC     10.0     11  12  5  0                                   *
81    0 PHO  *PHO     101  102  103  10                                       *
82    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1  *
83    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                *
84    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8  *
85    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                   *
86    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8  *
87    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS              *
88    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8  *
89    0 HED  *HED     1   CHARGE                                              *
90    0 HED  *HED     2   DISCHARGE                                           *
91    0 OUT  *OUT     12  1  -1  0                                            *
92    0 BAS  *BAS     ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240  *
93    0 MOV  *MOV     -4  1   0   1.0                                         *
94    0 ADD  *ADD     -3  1   0   1.0                                         *
95    0 MOV  *MOV     -2  2   0   1.0                                         *
96    0 ADD  *ADD     -1  2   0   1.0                                         *
97    0 DEC  *DEC     120.      2   3  4  2                                   *
98    0 DEC  *DEC     180.      3   4  4  0                                   *
99    0 DEC  *DEC     0.75      4   5  5  0                                   *
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100    0 DEC  *DEC      1.0      5   6  5  0                                    *
101    0 DEC  *DEC      1.5      6   7  5  0                                    *
102    0 DEC  *DEC      2.0      7   8  5  0                                    *
103    0 DEC  *DEC      3.0      8   9  5  0                                    *
104    0 DEC  *DEC      5.0      9  10  5  0                                    *
105    0 DEC  *DEC      7.5     10  11  5  0                                    *
106    0 DEC  *DEC     10.0     11  12  5  0                                    *
107    0 PHO  *PHO     101  102  103  10                                        *
108    0 CUT  *CUT      5 1.E-10    7 1.E-10  9 1.E-10  23 1.E-10  27 1.0  -1   *
109    0 RDA  *RDA     ACTIVATION PRODUCTS OUTPUT TABLE OPTIONS                 *
110    0 OPTL *OPTL     8 8 8 8 7 8 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8      *
111    0 RDA  *RDA     FISSION PRODUCTS OUTPUT TABLE OPTIONS                    *
112    0 OPTF *OPTF     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8      *
113    0 RDA  *RDA     ACTINIDE AND DAUGHTER OUTPUT TABLE OPTIONS               *
114    0 OPTA *OPTA     8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8      *
115    0 HED  *HED     1   CHARGE                                               *
116    0 HED  *HED     2   DISCHARGE                                            *
117    0 OUT  *OUT     12  1  -1  0                                             *
118    0 STP  *STP 4                                                            *
OVERFLOW AT LINE 197 OF NUDAT1 FOR I =    11

SUM OF YIELDS FOR EACH FISSILE ISOTOPE:                    .0000      .0000     2.0001+000 2.0002+000 2.0006+000 2.0003+000

ISOTOPES FOR WHICH YIELDS ARE EXPLICITLY ACCOUNTED FOR: 922350 922380 942390 942410
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*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	1.20205	1.20207	1.20213	1.20220	1.20232	1.20242	1.20258	1.20275	1.20277	1.20271
NEUT PRODN	.00	.00	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003
NEUT DESTN	.00	.00	5.16+003	5.16+003	5.16+003	5.16+003	5.16+003	5.16+003	5.16+003	5.16+003	5.16+003	5.16+003
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	2.141+000	2.141+000	2.141+000	2.141+000	2.141+000	2.141+000	2.141+000	2.141+000	2.141+000	2.141+000	2.141+000	2.141+000
H 2	8.660-004	8.660-004	8.660-004	8.660-004	8.660-004	8.660-004	8.660-004	8.660-004	8.660-004	8.660-004	8.660-004	8.660-004
HE 4	.000	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003
LI 7	.000	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003
BE 9	.000	1.021-005	1.021-005	1.021-005	1.021-005	1.021-005	1.021-005	1.021-005	1.021-005	1.021-005	1.021-005	1.021-005
B 10	7.931-003	4.339-003	4.339-003	4.339-003	4.339-003	4.339-003	4.339-003	4.339-003	4.339-003	4.339-003	4.339-003	4.339-003
B 11	3.489-002	3.511-002	3.511-002	3.511-002	3.511-002	3.511-002	3.511-002	3.511-002	3.511-002	3.511-002	3.511-002	3.511-002
C 12	2.327+001	2.327+001	2.327+001	2.327+001	2.327+001	2.327+001	2.327+001	2.327+001	2.327+001	2.327+001	2.327+001	2.327+001
C 13	2.830-001	2.830-001	2.830-001	2.830-001	2.830-001	2.830-001	2.830-001	2.830-001	2.830-001	2.830-001	2.830-001	2.830-001
C 14	.000	2.377-003	2.377-003	2.377-003	2.377-003	2.376-003	2.376-003	2.376-003	2.376-003	2.375-003	2.375-003	2.374-003
N 14	6.825+000	6.822+000	6.822+000	6.822+000	6.822+000	6.822+000	6.822+000	6.822+000	6.822+000	6.822+000	6.822+000	6.822+000
N 15	2.686-002	2.694-002	2.694-002	2.694-002	2.694-002	2.694-002	2.694-002	2.694-002	2.694-002	2.694-002	2.694-002	2.694-002
NA 23	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000
MG 24	1.335+000	1.336+000	1.336+000	1.336+000	1.336+000	1.336+000	1.336+000	1.336+000	1.336+000	1.336+000	1.336+000	1.336+000
MG 25	1.761-001	1.761-001	1.761-001	1.761-001	1.761-001	1.761-001	1.761-001	1.761-001	1.761-001	1.761-001	1.761-001	1.761-001
MG 26	2.016-001	2.016-001	2.016-001	2.016-001	2.016-001	2.016-001	2.016-001	2.016-001	2.016-001	2.016-001	2.016-001	2.016-001
AL 27	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000
SI 28	7.869+000	7.869+000	7.869+000	7.869+000	7.869+000	7.869+000	7.869+000	7.869+000	7.869+000	7.869+000	7.869+000	7.869+000
SI 29	4.127-001	4.128-001	4.128-001	4.128-001	4.128-001	4.128-001	4.128-001	4.128-001	4.128-001	4.128-001	4.128-001	4.128-001
SI 30	2.834-001	2.834-001	2.834-001	2.834-001	2.834-001	2.834-001	2.834-001	2.834-001	2.834-001	2.834-001	2.834-001	2.834-001
TI 46	3.392-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001
TI 47	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001
TI 48	3.162+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000
TI 49	2.365-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001
TI 50	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001	2.324-001
V 50	1.050-002	1.042-002	1.042-002	1.042-002	1.042-002	1.042-002	1.042-002	1.042-002	1.042-002	1.042-002	1.042-002	1.042-002
V 51	4.272+000	4.275+000	4.277+000	4.277+000	4.277+000	4.277+000	4.277+000	4.277+000	4.277+000	4.277+000	4.277+000	4.277+000
CR 50	3.579+000	3.571+000	3.571+000	3.571+000	3.571+000	3.571+000	3.571+000	3.571+000	3.571+000	3.571+000	3.571+000	3.571+000
CR 51	.000	2.725-003	1.354-004	3.018-005	2.879-006	2.933-007	3.042-009	3.156-011	3.396-015	3.932-023	4.723-033	.000
CR 52	7.169+001	7.166+001	7.166+001	7.166+001	7.166+001	7.166+001	7.166+001	7.166+001	7.166+001	7.166+001	7.166+001	7.166+001
CR 53	8.284+000	8.300+000	8.300+000	8.300+000	8.300+000	8.300+000	8.300+000	8.300+000	8.300+000	8.300+000	8.300+000	8.300+000
CR 54	2.097+000	2.118+000	2.118+000	2.118+000	2.118+000	2.118+000	2.118+000	2.118+000	2.118+000	2.118+000	2.118+000	2.118+000
MN 54	.000	1.455-004	1.115-004	9.762-005	7.928-005	8.473-005	4.317-005	2.879-005	1.281-005	2.534-006	3.343-007	4.411-008
MN 55	4.283+000	4.273+000	4.273+000	4.274+000	4.274+000	4.274+000	4.275+000	4.275+000	4.276+000	4.277+000	4.278+000	4.278+000
MN 56	.000	1.599-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	6.488+000	6.483+000	6.483+000	6.483+000	6.483+000	6.483+000	6.483+000	6.483+000	6.483+000	6.483+000	6.483+000	6.483+000
FE 55	.000	5.189-003	4.754-003	4.551-003	4.249-003	3.975-003	3.479-003	3.045-003	2.332-003	1.368-003	7.027-004	3.608-004
FE 56	1.063+002	1.062+002	1.062+002	1.062+002	1.062+002	1.062+002	1.062+002	1.062+002	1.062+002	1.062+002	1.062+002	1.062+002
FE 57	2.534+000	2.577+000	2.577+000	2.577+000	2.577+000	2.577+000	2.577+000	2.577+000	2.577+000	2.577+000	2.577+000	2.577+000
FE 58	3.478-001	3.491-001	3.494-001	3.495-001	3.495-001	3.495-001	3.495-001	3.496-001	3.496-001	3.496-001	3.496-001	3.496-001
FE 59	.000	3.079-005	4.849-006	1.924-006	4.527-007	1.109-007	6.658-009	3.996-010	1.440-012	1.869-017	1.456-023	1.135-029
CO 58	.000	4.974-004	1.536-004	8.533-005	3.401-005	1.391-005	2.325-006	3.888-007	1.087-008	8.494-012	1.110-015	1.450-019
CO 59	8.565-001	8.483-001	8.483-001	8.483-001	8.483-001	8.483-001	8.483-001	8.483-001	8.483-001	8.483-001	8.483-001	8.483-001
CO 60	.000	8.254-003	7.905-003	7.736-003	7.479-003	7.237-003	6.776-003	6.345-003	5.563-003	4.276-003	3.078-003	2.215-003
NI 58	3.175+001	3.171+001	3.171+001	3.171+001	3.171+001	3.171+001	3.171+001	3.171+001	3.171+001	3.171+001	3.171+001	3.171+001
NI 59	.000	3.333-002	3.333-002	3.333-002	3.333-002	3.333-002	3.333-002	3.333-002	3.333-002	3.333-002	3.333-002	3.333-002
NI 60	1.256+001	1.255+001	1.255+001	1.255+001	1.255+001	1.255+001	1.255+001	1.255+001	1.255+001	1.256+001	1.256+001	1.256+001
NI 61	5.527-001	5.575-001	5.575-001	5.575-001	5.575-001	5.575-001	5.575-001	5.575-001	5.575-001	5.575-001	5.575-001	5.575-001
NI 62	1.785+000	1.780+000	1.780+000	1.780+000	1.780+000	1.780+000	1.780+000	1.780+000	1.780+000	1.780+000	1.780+000	1.780+000
NI 63	.000	5.090-003	5.078-003	5.071-003	5.062-003	5.052-003	5.033-003	5.014-003	4.976-003	4.902-003	4.811-003	4.721-003
NI 64	4.670-001	4.682-001	4.682-001	4.682-001	4.682-001	4.682-001	4.682-001	4.682-001	4.682-001	4.682-001	4.682-001	4.682-001
CU 63	2.935+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000	2.933+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CU 64	.000	1.657-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	1.348+000	1.347+000	1.347+000	1.347+000	1.347+000	1.347+000	1.347+000	1.347+000	1.347+000	1.347+000	1.347+000	1.347+000
ZN 64	.000	8.018-004	8.079-004	8.079-004	8.079-004	8.079-004	8.079-004	8.079-004	8.079-004	8.079-004	8.079-004	8.079-004
ZN 66	.000	4.826-004	4.826-004	4.826-004	4.826-004	4.826-004	4.826-004	4.826-004	4.826-004	4.826-004	4.826-004	4.826-004
SR 87	.000	6.849-005	6.849-005	6.849-005	6.849-005	6.849-005	6.849-005	6.849-005	6.849-005	6.849-005	6.849-005	6.849-005
SR 88	.000	6.276-003	6.276-003	6.276-003	6.276-003	6.276-003	6.276-003	6.276-003	6.276-003	6.276-003	6.276-003	6.276-003
SR 89	.000	2.406-004	4.633-005	2.033-005	5.600-006	1.599-006	1.304-007	1.063-008	7.066-011	3.122-015	1.125-020	4.052-026
Y 89	.000	2.368-004	4.310-004	4.570-004	4.718-004	4.758-004	4.772-004	4.773-004	4.774-004	4.774-004	4.774-004	4.774-004
Y 90	.000	6.808-004	5.862-012	5.839-012	5.803-012	5.769-012	5.700-012	5.633-012	5.500-012	5.245-012	4.942-012	4.656-012
Y 91	.000	6.810-004	1.644-004	8.075-005	2.654-005	8.995-006	1.034-006	1.188-007	1.568-009	2.734-013	5.478-018	1.098-022
ZR 90	4.266+004	4.266+004	4.266+004	4.266+004	4.266+004	4.266+004	4.266+004	4.266+004	4.266+004	4.266+004	4.266+004	4.266+004
ZR 91	9.381+003	9.379+003	9.379+003	9.379+003	9.379+003	9.379+003	9.379+003	9.379+003	9.379+003	9.379+003	9.379+003	9.379+003
ZR 92	1.448+004	1.448+004	1.448+004	1.448+004	1.448+004	1.448+004	1.448+004	1.448+004	1.448+004	1.448+004	1.448+004	1.448+004
ZR 93	.000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000
ZR 94	1.506+004	1.506+004	1.506+004	1.506+004	1.506+004	1.506+004	1.506+004	1.506+004	1.506+004	1.506+004	1.506+004	1.506+004
ZR 95	.000	1.902-001	5.185-002	2.707-002	9.782-003	3.638-003	5.030-004	6.956-005	1.330-006	4.863-010	2.458-014	1.243-018
ZR 96	2.474+003	2.474+003	2.474+003	2.474+003	2.474+003	2.474+003	2.474+003	2.474+003	2.474+003	2.474+003	2.474+003	2.474+003
ZR 97	.000	6.747-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	6.895-002	4.792-002	2.832-002	1.119-002	4.314-003	6.100-004	8.471-005	1.679-006	5.931-010	2.999-014	1.516-018
NB 95M	.000	7.657-005	2.169-005	1.133-005	4.093-006	1.522-006	2.105-007	2.910-008	5.565-010	2.035-013	1.029-017	5.201-022
NB 97	.000	4.797-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 92	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001
MO 93	.000	1.567-005	1.567-005	1.567-005	1.567-005	1.567-005	1.567-005	1.567-005	1.566-005	1.566-005	1.565-005	1.564-005
MO 94	3.899-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001
MO 95	6.736-001	7.430-001	9.025-001	9.469-001	9.813-001	9.943-001	1.001+000	1.002+000	1.002+000	1.002+000	1.002+000	1.002+000
MO 96	7.150-001	7.190-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001
MO 97	4.153-001	1.073+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000
MO 98	1.053+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000
MO 99	.000	1.505-005	1.101-018	2.976-025	1.552-035	.000	.000	.000	.000	.000	.000	.000
MO100	4.281-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001
TC 99	.000	4.508-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4 696-005
RU101	.000	9.621-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005
CD106	5.245-004	5.245-004	5.245-004	5.245-004	5.245-004	5.245-004	5.245-004	5.245-004	5.245-004	5.245-004	5.245-004	5.245-004
CD108	3.659-004	3.657-004	3.657-004	3.657-004	3.657-004	3.657-004	3 657-004	3.657-004	3.657-004	3.657-004	3.657-004	3.657-004
CD110	5.234-003	5.216-003	5.216-003	5.216-003	5.216-003	5.216-003	5.216-003	5.216-003	5.216-003	5.216-003	5.216-003	5.216-003
CD111	5.408-003	5.397-003	5.397-003	5.397-003	5.397-003	5.397-003	5.397-003	5.397-003	5.397-003	5.397-003	5.397-003	5.397-003
CD112	1.028-002	1.029-002	1.029-002	1.029-002	1.029-002	1.029-002	1.029-002	1.029-002	1.029-002	1.029-002	1.029-002	1.029-002
CD113	5.248-003	1.998-006	1.998-006	1.998-006	1.998-006	1.998-006	1.998-006	1.998-006	1.998-006	1.998-006	1.998-006	1.998-006
CD114	1.245-002	1.774-002	1.774-002	1.774-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002	1.775-002
CD116	3.312-003	3.312-003	3.312-003	3.312-003	3.312-003	3.312-003	3.312-003	3.312-003	3.312-003	3.312-003	3.312-003	3.312-003
IN113	.000	9.943-003	1.510-002	1.658-002	1.804-002	1.886-002	1.960-002	1.984-002	1.995-002	1.997-002	1.997-002	1.997-002
IN114M	.000	2.348-005	4.376-006	1.889-006	5.072-007	1.413-007	1.096-008	8.500-010	5.115-012	1.852-016	5.201-022	1.461-027
SN112	1.171+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001
SN113	.000	1.002-002	4.863-003	3.388-003	1.925-003	1.111-003	3.697-004	1.231-004	1.365-005	1.677-007	6.863-010	2.808-012
SN114	7.986+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000
SN115	4.569+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000
SN116	1.783+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002
SN117	9.480+001	9.485+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001
SN117M	.000	1.402-002	3.693-005	1.895-006	1.813-008	1.976-010	2.345-014	2.784-018	3.923-026	.000	.000	.000
SN118	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002
SN119	1.070+002	1.070+002	1.070+002	1.070+002	1.070+002	1.070+002	1.071+002	1.071+002	1.071+002	1.071+002	1.071+002	1.071+002
SN119M	.000	4.077-002	2.903-002	2.450-002	1.878-002	1.451-002	8.654-003	5.162-003	1.837-003	2.326-004	1.757-005	1.327-006

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SN120	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002
SN121	.000	6.489-004	.000	.000	.000	.000	.000	.000	.000	000	.000	.000
SN121M	.000	2.348-004	2.337-004	2.332-004	2.323-004	2.315-004	2.299-004	2.283-004	2.252-004	2.190-004	2.116-004	2.044-004
SN122	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001
SN123	.000	3.186-003	1.673-003	1.213-003	7.326-004	4.488-004	1.684-004	6.322-005	8.904-006	1.767-007	1.315-009	9.794-012
SN124	7.260+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001
SN125	.000	2.096-003	3.752-007	5.018-009	5.853-012	8.244-015	1.634-020	3.239-026	.000	.000	.000	.000
SB121	.000	3.948-002	4.013-002	4.013-002	4.013-002	4.013-002	4.013-002	4.013-002	4.013-002	4.014-002	4.015-002	4.016-002
SB122	.000	1.287-005	5.392-018	1.103-025	3.718-036	.000	.000	.000	.000	.000	.000	.000
SB123	.000	1.116-003	2.629-003	3.090-003	3.570-003	3.854-003	4.134-003	4.240-003	4.294-003	4.303-003	4.303-003	4.303-003
SB125	.000	2.448-002	2.450-002	2.351-002	2.205-002	2.071-002	1.827-002	1.612-002	1.255-002	7.611-003	4.071-003	2.178-003
TE122	.000	1.547-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004
TE125	.000	8.154-004	2.771-003	3.744-003	5.212-003	6.562-003	9.029-003	1.121-002	1.483-002	1.984-002	2.343-002	2.535-002
TE125M	.000	1.450-004	2.885-004	3.024-004	2.998-004	2.868-004	2.553-004	2.255-004	1.756-004	1.065-004	5.695-005	3.046-005
TE126	.000	1.031-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005
LU175	.000	6.774-004	1.369-003	1.505-003	1.606-003	1.645-003	1.667-003	1.671-003	1.672-003	1.672-003	1.672-003	1.672-003
HF174	2.671-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002
HF175	.000	9.944-004	3.031-004	1.673-004	6.600-005	2.672-005	4.380-006	7.180-007	1.929-008	1.393-011	1.648-015	1.951-019
HF176	8.781-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001
HF177	3.159+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000
HF178	4.628+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000
HF179	2.360+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000
HF180	6.079+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000
HF181	.000	8.695-003	1.222-003	4.583-004	9.867-005	2.217-005	1.120-006	5.654-008	1.442-010	9.377-016	3.079-022	1.011-028
HF182	.000	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005
TA181	.000	1.034-002	1.782-002	1.859-002	1.896-002	1.904-002	1.906-002	1.906-002	1.906-002	1.906-002	1.906-002	1.906-002
TA182	.000	8.083-005	3.921-005	2.731-005	1.551-005	8.942-006	2.974-006	9.894-007	1.095-007	1.341-009	6.505-012	1.072-012
W180	5.449-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003
W181	.000	3.114-005	1.567-005	1.112-005	6.498-006	3.854-006	1.356-006	4.771-007	5.905-008	9.049-010	4.878-012	2.630-014
W182	1.115+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000
W183	6.094-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001
W184	1.314+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000
W185	.000	6.001-004	1.983-004	1.140-004	4.788-005	2.061-005	3.821-006	7.081-007	2.432-008	2.871-011	6.280-015	1.373-018
W186	1.239+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000
W187	.000	4.031-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.602-005	7.850-006	4.311-006	1.687-006	6.777-007	1.094-007	1.765-008	4.595-010	3.116-013	3.410-017	3.731-021
RE185	.000	3.653-004	7.672-004	8.515-004	9.175-004	9.448-004	9.616-004	9.647-004	9.654-004	9.654-004	9.654-004	9.654-004
RE187	.000	2.771-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002
OS186	.000	9.665-006	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005
OS188	.000	2.975-004	3.217-004	3.253-004	3.279-004	3.289-004	3.295-004	3.296-004	3.296-004	3.296-004	3.296-004	3.296-004
PB204	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001
PB205	.000	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005
PB206	2.052+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000
PB207	1.891+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000
PB208	4.504+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000
SUMTOT	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004
TOTAL	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	2.141+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000	2.142+000
HE	.000	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003	1.852-003
LI	.000	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003	2.513-003
BE	.000	1.049-005	1.049-005	1.049-005	1.049-005	1.049-005	1.049-005	1.049-005	1.049-005	1.049-005	1.049-005	1.049-005
B	4.282-002	3.945-002	3.945-002	3.945-002	3.945-002	3.945-002	3.945-002	3.945-002	3.945-002	3.945-002	3.945-002	3.945-002
C	2.355+001	2.356+001	2.356+001	2.356+001	2.356+001	2.356+001	2.356+001	2.356+001	2.356+001	2.356+001	2.356+001	2.356+001
N	6.852+000	6.849+000	6.849+000	6.849+000	6.849+000	6.849+000	6.849+000	6.849+000	6.849+000	6.849+000	6.849+000	6.849+000
NA	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000
MG	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000
AL	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000	6.424+000
SI	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000
TI	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000
V	4.283+000	4.285+000	4.288+000	4.288+000	4.288+000	4.288+000	4.288+000	4.288+000	4.288+000	4.288+000	4.288+000	4.288+000
CR	8.565+001	8.565+001	8.565+001	8.565+001	8.565+001	8.565+001	8.565+001	8.565+001	8.565+001	8.565+001	8.565+001	8.565+001
MN	4.283+000	4.273+000	4.274+000	4.274+000	4.274+000	4.274+000	4.275+000	4.275+000	4.276+000	4.277+000	4.278+000	4.278+000
FE	1.156+002	1.156+002	1.156+002	1.156+002	1.156+002	1.156+002	1.156+002	1.156+002	1.156+002	1.156+002	1.156+002	1.156+002
CO	8.565-001	8.571-001	8.564-001	8.562-001	8.558-001	8.556-001	8.551-001	8.547-001	8.539-001	8.526-001	8.514-001	8.506-001
NI	4.711+001	4.711+001	4.711+001	4.711+001	4.711+001	4.711+001	4.711+001	4.711+001	4.711+001	4.711+001	4.711+001	4.711+001
CU	4.283+000	4.280+000	4.280+000	4.280+000	4.280+000	4.280+000	4.280+000	4.280+000	4.280+000	4.280+000	4.280+000	4.280+000
ZN	.000	1.284-003	1.291-003	1.291-003	1.291-003	1.291-003	1.291-003	1.291-003	1.291-003	1.291-003	1.291-003	1.291-003
SR	.000	6.586-003	6.391-003	6.365-003	6.350-003	6.346-003	6.345-003	6.344-003	6.344-003	6.344-003	6.344-003	6.344-003
Y	.000	1.601-003	5.954-004	5.378-004	4.983-004	4.847-004	4.783-004	4.775-004	4.774-004	4.774-004	4.774-004	4.774-004
ZR	8.406+004	8.406+004	8.406+004	8.406+004	8.406+004	8.406+004	8.406+004	8.406+004	8.406+004	8.406+004	8.406+004	8.406+004
NB	.000	6.951-002	4.794-002	2.833-002	1.120-002	4.316-003	6.111-004	8.594-005	3.364-006	2.657-006	3.871-006	5.086-006
MO	4.282+000	5.014+000	5.180+000	5.225+000	5.259+000	5.272+000	5.279+000	5.280+000	5.280+000	5.280+000	5.280+000	5.280+000
TC	.000	4.510-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005
RU	.000	9.667-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005
CD	4.283-002	4.286-002	4.286-002	4.286-002	4.286-002	4.286-002	4.286-002	4.286-002	4.286-002	4.286-002	4.286-002	4.286-002
IN	.000	9.973-003	1.511-002	1.658-002	1.805-002	1.886-002	1.960-002	1.985-002	1.996-002	1.997-002	1.997-002	1.997-002
SN	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003
SB	.000	6.509-002	6.725-002	6.673-002	6.574-002	6.469-002	6.254-002	6.050-002	5.698-002	5.205-002	4.852-002	4.664-002
TE	.000	1.126-003	3.243-003	4.230-003	5.695-003	7.032-003	9.468-003	1.162-002	1.519-002	2.013-002	2.367-002	2.556-002
LU	.000	6.802-004	1.371-003	1.507-003	1.608-003	1.648-003	1.670-003	1.674-003	1.674-003	1.674-003	1.674-003	1.674-003
HF	1.713+001	1.713+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001
TA	.000	1.042-002	1.786-002	1.862-002	1.897-002	1.904-002	1.906-002	1.906-002	1.906-002	1.906-002	1.906-002	1.906-002
W	4.282+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000
RE	.000	2.808-002	2.888-002	2.896-002	2.903-002	2.905-002	2.907-002	2.907-002	2.907-002	2.907-002	2.907-002	2.907-002
OS	.000	3.077-004	3.334-004	3.370-004	3.396-004	3.406-004	3.412-004	3.413-004	3.413-004	3.413-004	3.413-004	3.413-004
PB	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000
SUMTOT	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004
TOTAL	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004

CUMULATIVE TABLE TOTALS

AP+FP	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004	8.565+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	8.480-007	8.325-007	8.249-007	8.131-007	8.017-007	7.796-007	7.580-007	7.166-007	6.405-007	5.567-007	4.838-007
H 4	.000	8.075-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.235-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	3.257-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009
B 12	.000	4.857-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	1.060-002	1.060-002	1.060-002	1.060-002	1.060-002	1.060-002	1.060-002	1.059-002	1.059-002	1.059-002	1.058-002
N 16	.000	1.123-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	3.632-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	1.200-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	1.938+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	8.044+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.220-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	7.227-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	1.633+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	3.341-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	3.240-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	3.013-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	5.858-006	1.745-008	9.611-010	1.924-011	9.329-012	9.206-012	9.201-012	9.190-012	9.170-012	9.146-012	9.121-012
CA 45	.000	2.125-004	1.276-004	9.882-005	8.627-005	4.494-005	2.067-005	9.505-008	2.010-006	8.992-008	1.850-009	3.805-011
SC 46	.000	4.369-002	1.619-002	9.857-003	4.532-003	2.129-003	4.701-004	1.038-004	5.058-008	1.202-008	6.302-012	3.305-015
SC 47	.000	1.272-001	2.188-012	1.707-017	4.985-024	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	1.225-002	1.980-022	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	9.781-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	2.017-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	2.377-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.877-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015
V 52	.000	1.113+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.348-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	1.362-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	2.519+002	1.252+001	2.791+000	2.662-001	2.711-002	2.812-004	2.917-006	3.139-010	3.635-018	.000	.000
CR 55	.000	3.809+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	1.127+000	8.633-001	7.557-001	6.136-001	5.011-001	3.342-001	2.229-001	9.913-002	1.961-002	2.588-003	3.414-004
MN 56	.000	3.471+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	1.576-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	5.224-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	1.298+001	1.189+001	1.138+001	1.063+001	9.942+000	8.701+000	7.615+000	5.833+000	3.422+000	1.757+000	9.025-001
FE 59	.000	1.515+000	2.386-001	9.467-002	2.228-002	5.457-003	3.276-004	1.966-005	7.085-008	9.196-013	7.165-018	5.582-025
CO 58	.000	1.583+001	4.887+000	2.716+000	1.082+000	4.425-001	7.399-002	1.237-002	3.459-004	2.703-007	3.532-011	4.816-015
CO 60	.000	9.336+000	8.942+000	8.750+000	8.459+000	8.186+000	7.665+000	7.177+000	6.292+000	4.837+000	3.481+000	2.506+000
CO 60M	.000	1.425+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	1.611-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	5.193-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	2.526-003	2.526-003	2.526-003	2.526-003	2.526-003	2.526-003	2.526-003	2.526-003	2.525-003	2.525-003	2.525-003
NI 63	.000	3.141-001	3.133-001	3.129-001	3.123-001	3.117-001	3.106-001	3.094-001	3.071-001	3.025-001	2.968-001	2.913-001
NI 65	.000	3.065+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	1.571-005	2.093-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	6.390+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.377+001	2.097-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	1.322-005	1.278-019	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	4.457-004	3.169-004	2.672-004	2.046-004	1.578-004	9.391-005	5.588-005	1.979-005	2.481-006	1.851-007	1.381-008
SR 89	.000	6.992+000	1.347+000	5.910-001	1.628-001	4.648-002	3.789-003	3.090-004	2.054-006	9.075-011	3.269-016	1.178-021

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 90	.000	3.215-006	3.190-006	3.177-006	3.158-006	3.139-006	3.102-006	3.065-006	2.993-006	2.854-006	2.689-006	2.534-006
SR 91	.000	1.945+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	6.717-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	1.782-004	1.581-015	4.709-021	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	3.705+002	3.190-006	3.178-006	3.159-006	3.140-006	3.103-006	3.066-006	2.994-006	2.855-006	2.690-006	2.534-006
Y 91	.000	1.671+001	4.033+000	1.981+000	6.511-001	2.207-001	2.536-002	2.914-003	3.848-005	6.709-009	1.344-013	2.693-018
Y 92	.000	2.188+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	6.717-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.392+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	8.940-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.785-004	1.583-015	4.716-021	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.678-003	2.678-003	2.678-003	2.678-003	2.678-003	2.678-003	2.678-003	2.678-003	2.678-003	2.678-003	2.678-003
ZR 95	.000	4.089+003	1.114+003	5.817+002	2.102+002	7.818+001	1.081+001	1.495+000	2.858-002	1.045-005	5.284-010	2.671-014
ZR 97	.000	1.290+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.468-002	9.651-008	1.610-007	2.651-010	5.223-013	2.028-018	7.870-024	.000	.000	.000	.000
NB 93M	.000	2.083-005	6.274-005	8.343-005	1.155-004	1.462-004	2.068-004	2.654-004	3.786-004	5.885-004	8.225-004	1.028-003
NB 94	.000	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.785-008
NB 95	.000	2.697+003	1.875+003	1.108+003	4.378+002	1.688+002	2.386+001	3.314+000	6.567-002	2.320-005	1.173-009	5.931-014
NB 95M	.000	2.918+001	8.266+000	4.315+000	1.560+000	5.800-001	8.020-002	1.109-002	2.120-004	7.753-008	3.920-012	1.982-016
NB 96	.000	1.774+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.290+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	1.221+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	7.461-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.032-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	1.723-005	1.723-005	1.723-005	1.723-005	1.723-005	1.722-005	1.722-005	1.722-005	1.721-005	1.720-005	1.720-005
MO 99	.000	7.220+000	5.281-013	1.428-019	.000	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.798+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	7.646-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007
TC100	.000	1.051-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	1.798+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	1.207-005	5.501-011	5.496-011	5.488-011	5.481-011	5.466-011	5.451-011	5.421-011	5.362-011	5.290-011	5.218-011
AG109M	.000	3.329-004	2.783-004	2.544-004	2.211-004	1.929-004	1.468-004	1.118-004	6.478-005	2.175-005	5.560-006	1.421-006
AG110	.000	1.351-005	6.510-010	5.512-010	4.247-010	3.297-010	1.987-010	1.197-010	4.346-011	5.729-012	4.551-013	3.614-014
AG110M	.000	6.828-008	4.895-008	4.144-008	3.194-008	2.479-008	1.494-008	9.000-009	3.268-009	4.308-010	3.421-011	2.718-012
CD107	.000	1.289-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	3.329-004	2.783-004	2.544-004	2.211-004	1.929-004	1.468-004	1.118-004	6.478-005	2.175-005	5.560-006	1.421-006
CD111M	.000	2.290-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	2.847-001	1.742-017	1.362-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.754-002	2.717-003	1.069-003	2.483-004	6.005-005	3.513-006	2.056-007	7.038-010	8.248-015	5.655-021	.000
CD117	.000	1.435-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	3.231-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.670-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	5.081-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	1.006+002	4.887+001	3.405+001	1.934+001	1.116+001	3.716+000	1.237+000	1.371-001	1.686-003	6.897-006	2.822-008
IN114	.000	2.302+000	9.692-002	4.184-002	1.123-002	3.129-003	2.427-004	1.883-005	1.133-007	4.101-012	1.152-017	3.235-023
IN114M	.000	5.433-001	1.013-001	4.372-002	1.174-002	3.269-003	2.536-004	1.967-005	1.184-007	4.285-012	1.204-017	3.380-023
IN116	.000	7.034-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	2.883-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	7.085-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	1.349-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN118	.000	2.205-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.562-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN119M	.000	1.670-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	4.166-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.006+002	4.884+001	3.403+001	1.933+001	1.115+001	3.713+000	1.236+000	1.371-001	1.684-003	6.893-006	2.820-008
SN113M	.000	1.016+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.117+003	2.944+000	1.511-001	1.446-003	1.575-005	1.870-009	2.219-013	3.127-021	.000	.000	.000
SN119M	.000	1.826+002	1.301+002	1.098+002	8.415+001	6.499+001	3.877+001	2.313+001	8.230+000	1.042+000	7.872-002	5.946-003
SN121	.000	8.274+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	1.389-002	1.382-002	1.379-002	1.374-002	1.369-002	1.360-002	1.351-002	1.332-002	1.296-002	1.251-002	1.209-002
SN123	.000	2.620+001	1.376+001	8.972+000	8.024+000	3.690+000	1.385+000	5.198-001	7.321-002	1.452-003	1.082-005	8.053-008
SN123M	.000	2.516-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	2.273+002	4.067-002	5.441-004	6.345-007	8.937-010	1.772-015	3.512-021	.000	.000	.000	.000
SN125M	.000	1.833+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	5.105+000	2.138-013	4.375-020	.000	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	4.442-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	2.813-002	7.064-003	3.540-003	1.200-003	4.194-004	5.121-005	6.253-006	9.323-008	2.072-011	5.625-016	1.527-020
SB124M	.000	2.456-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	2.529+001	2.530+001	2.429+001	2.277+001	2.139+001	1.888+001	1.666+001	1.297+001	7.862+000	4.205+000	2.250+000
SB126	.000	3.152-001	3.844-004	1.342-005	7.022-008	4.256-010	1.563-014	5.741-019	.000	.000	.000	.000
SB126M	.000	3.950-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	5.299-004	2.645-004	1.868-004	1.084-004	6.389-005	2.219-005	7.704-006	9.289-007	1.350-008	6.818-011	3.442-013
TE125M	.000	2.613+000	5.199+000	5.450+000	5.401+000	5.167+000	4.599+000	4.063+000	3.164+000	1.919+000	1.026+000	5.489-001
TE127	.000	1.017-004	7.494-007	5.117-007	2.816-007	1.576-007	4.933-008	1.544-008	1.514-009	1.454-011	4.375-014	1.316-016
TE127M	.000	1.641-006	7.651-007	5.224-007	2.875-007	1.608-007	5.036-008	1.577-008	1.545-009	1.485-011	4.467-014	1.344-016
LU176M	.000	1.836-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	6.712-003	4.429-007	3.175-007	2.086-007	1.387-007	6.127-008	2.708-008	5.287-009	2.016-010	3.397-012	5.724-014
LU177M	.000	3.088-006	1.806-006	1.381-006	9.071-007	6.030-007	2.665-007	1.177-007	2.299-008	8.767-010	1.477-011	2.489-013
HF175	.000	1.060+001	3.232+000	1.784+000	7.038-001	2.849-001	4.671-002	7.656-003	2.057-004	1.485-007	1.758-011	2.080-015
HF178M	.000	2.327+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	2.739+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	5.967+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	1.480+002	2.081+001	7.802+000	1.680+000	3.774-001	1.906-002	9.625-004	2.455-006	1.596-011	5.242-018	1.721-024
HF182	.000	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009
TA182	.000	5.045-001	2.447-001	1.705-001	9.677-002	5.581-002	1.856-002	6.175-003	6.832-004	8.369-006	4.060-008	6.688-009
TA182M	.000	1.526-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	7.475-001	6.174-008	1.774-011	5.062-017	2.063-022	.000	.000	.000	.000	.000	.000
W181	.000	1.854-001	9.334-002	6.623-002	3.870-002	2.295-002	8.076-003	2.841-003	3.517-004	5.389-006	2.905-008	1.566-010
W183M	.000	7.734-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	5.642+000	1.864+000	1.071+000	4.502-001	1.938-001	3.592-002	6.658-003	2.287-004	2.700-007	5.904-011	1.291-014
W185M	.000	1.097-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	2.827+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.606-001	7.859-002	4.316-002	1.689-002	6.785-003	1.095-003	1.767-004	4.601-006	3.120-009	3.414-013	3.736-017
RE186	.000	2.905-001	7.911-011	1.306-015	4.248-023	.000	.000	.000	.000	.000	.000	.000
RE187	.000	1.060-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009
RE188	.000	5.900+000	7.940-002	4.361-002	1.706-002	6.855-003	1.106-003	1.785-004	4.648-006	3.152-009	3.449-013	3.774-017
RE188M	.000	5.518+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	1.684-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015
PB205	.000	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010
PB209	.000	2.747-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	3.355-015	5.222+004	3.344+003	1.952+003	8.319+002	3.857+002	1.231+002	6.705+001	3.737+001	1.944+001	1.088+001	6.533+000
TOTAL	3.355-015	5.222+004	3.344+003	1.952+003	8.319+002	3.857+002	1.231+002	6.705+001	3.737+001	1.944+001	1.088+001	6.533+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	8.075-003	8.325-007	8.249-007	8.131-007	8.017-007	7.798-007	7.580-007	7.166-007	6.405-007	5.567-007	4.838-007
HE	.000	1.235-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	3.257-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.374-008	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009	6.327-009
B	.000	4.857-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	1.060-002	1.060-002	1.060-002	1.060-002	1.060-002	1.060-002	1.060-002	1.059-002	1.059-002	1.059-002	1.058-002
N	.000	1.123-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	3.632-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	1.200-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	2.744+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	7.227-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	1.637+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	3.013-001	9.215-012	9.214-012	9.211-012	9.209-012	9.204-012	9.199-012	9.189-012	9.169-012	9.145-012	9.121-012
P	.000	5.858-006	1.745-008	9.611-010	1.924-011	9.329-012	9.206-012	9.201-012	9.190-012	9.170-012	9.146-012	9.121-012
CA	.000	2.145-004	1.276-004	9.882-005	6.627-005	4.494-005	2.067-005	9.505-006	2.010-006	8.992-008	1.850-009	3.805-011
SC	.000	1.931-001	1.619-002	9.857-003	4.532-003	2.129-003	4.701-004	1.038-004	5.058-006	1.202-008	6.302-012	3.305-015
TI	.000	2.377-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.877-015	1.113+002	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015	1.864-015
CR	.000	2.558+002	1.252+001	2.791+000	2.662-001	2.711-002	2.812-004	2.917-006	3.139-010	3.635-018	.000	.000
MN	.000	3.482+002	8.633-001	7.557-001	6.136-001	5.011-001	3.342-001	2.229-001	9.913-002	1.961-002	2.588-003	3.414-004
FE	.000	1.449+001	1.213+001	1.148+001	1.065+001	9.947+000	8.701+000	7.615+000	5.833+000	3.422+000	1.757+000	9.025-001
CO	.000	1.679+002	1.383+001	1.147+001	9.542+000	8.628+000	7.739+000	7.189+000	6.293+000	4.837+000	3.481+000	2.506+000
NI	.000	3.382+000	3.158-001	3.155-001	3.149-001	3.143-001	3.131-001	3.119-001	3.096-001	3.050-001	2.994-001	2.938-001
CU	.000	7.768+001	1.299-019	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	4.457-004	3.169-004	2.672-004	2.046-004	1.578-004	9.391-005	5.588-005	1.979-005	2.481-006	1.851-007	1.381-008
SR	.000	8.944+000	1.347+000	5.910-001	1.628-001	4.648-002	3.792-003	3.120-004	5.047-006	2.854-006	2.689-006	2.534-006
Y	.000	4.105+002	4.033+000	1.981+000	6.511-001	2.207-001	2.536-002	2.917-003	4.147-005	2.861-006	2.690-006	2.534-006
ZR	.000	1.699+004	1.114+003	5.817+002	2.102+002	7.818+001	1.081+001	1.498+000	3.126-002	2.689-003	2.678-003	2.678-003
NB	.000	2.784+004	1.883+003	1.112+003	4.394+002	1.693+002	2.394+001	3.325+000	6.626-002	6.118-004	8.225-004	1.029-003
MO	.000	9.029+000	1.723-005	1.723-005	1.723-005	1.723-005	1.722-005	1.722-005	1.722-005	1.721-005	1.720-005	1.720-005
TC	.000	1.808+000	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007
AG	.000	3.585-004	2.783-004	2.545-004	2.211-004	1.929-004	1.469-004	1.118-004	6.478-005	2.175-005	5.561-006	1.422-006
CD	.000	3.211-001	2.995-003	1.323-003	4.694-004	2.530-004	1.504-004	1.120-004	6.478-005	2.175-005	5.560-006	1.421-006
IN	.000	1.037+002	4.907+001	3.414+001	1.936+001	1.117+001	3.716+000	1.237+000	1.371-001	1.686-003	6.897-006	2.822-008
SN	.000	2.567+003	1.957+002	1.539+002	1.095+002	7.985+001	4.388+001	2.490+001	8.454+000	1.058+000	9.125-002	1.803-002
SB	.000	3.082+001	2.531+001	2.429+001	2.277+001	2.139+001	1.888+001	1.666+001	1.297+001	7.862+000	4.205+000	2.250+000
TE	.000	2.614+000	5.200+000	5.450+000	5.401+000	5.167+000	4.599+000	4.063+000	3.164+000	1.919+000	1.026+000	5.489-001
LU	.000	1.903-001	2.248-006	1.698-006	1.116-006	7.417-007	3.277-007	1.448-007	2.828-008	1.078-009	1.835-011	4.853-013
HF	.000	2.927+003	2.404+001	9.586+000	2.383+000	6.624-001	6.577-002	8.619-003	2.082-004	1.551-007	6.567-009	6.550-009
TA	.000	1.253+000	2.447-001	1.705-001	9.677-002	5.581-002	1.856-002	6.175-003	6.832-004	8.369-006	4.060-008	6.688-009
W	.000	2.896+002	2.036+000	1.181+000	5.058-001	2.236-001	4.509-002	9.676-003	5.850-004	5.662-006	2.911-008	1.566-010
RE	.000	1.171+001	7.940-002	4.361-002	1.706-002	6.855-003	1.106-003	1.785-004	4.650-006	4.227-009	1.076-009	1.075-009
PB	1.478-015	2.747-003	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010
SUMTOT	3.355-015	5.222+004	3.344+003	1.952+003	8.319+002	3.857+002	1.231+002	6.705+001	3.737+001	1.944+001	1.088+001	6.533+000
TOTAL	3.355-015	5.222+004	3.344+003	1.952+003	8.319+002	3.857+002	1.231+002	6.705+001	3.737+001	1.944+001	1.088+001	6.533+000

CUMULATIVE TABLE TOTALS

AP+FP	3.355-015	5.222+004	3.344+003	1.952+003	8.319+002	3.857+002	1.231+002	6.705+001	3.737+001	1.944+001	1.088+001	6.533+000
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	3.355-015	5.222+004	3.344+003	1.952+003	8.319+002	3.857+002	1.231+002	6.705+001	3.737+001	1.944+001	1.088+001	6.533+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	2.855-011	2.803-011	2.777-011	2.738-011	2.699-011	2.625-011	2.552-011	2.413-011	2.157-011	1.874-011	1.629-011
HE 6	.000	1.148-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.214-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012
B 12	.000	3.850-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	3.108-006	3.108-006	3.107-006	3.107-006	3.107-006	3.107-006	3.107-006	3.107-006	3.106-006	3.105-006	3.104-006
C 15	.000	5.250-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	4.865-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	1.513-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	1.471-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	5.372-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	2.251-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.400-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	6.824-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	2.930-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	4.655-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	1.099-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	1.065-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	5.937-008	1.769-010	9.742-012	1.950-013	9.456-014	9.331-014	9.326-014	9.315-014	9.295-014	9.270-014	9.246-014
CA 45	.000	9.724-008	5.837-008	4.522-008	3.033-008	2.057-008	9.458-009	4.350-009	9.199-010	4.115-011	8.464-013	1.741-014
SC 46	.000	5.495-004	2.037-004	1.240-004	5.700-005	2.878-005	5.913-006	1.305-006	6.362-008	1.511-010	7.928-014	4.157-017
SC 47	.000	2.042-004	3.512-015	2.740-020	8.002-027	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	2.590-004	4.188-024	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	1.164-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	5.772-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.740-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	2.070-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017
V 52	.000	1.659+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.628-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	5.894-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	5.391-002	2.679-003	5.972-004	5.696-005	5.801-006	6.018-008	6.243-010	6.717-014	7.778-022	9.343-032	.000
CR 55	.000	2.486-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	5.609-003	4.298-003	3.763-003	3.055-003	2.495-003	1.664-003	1.110-003	4.936-004	9.765-005	1.288-005	1.700-006
MN 56	.000	5.187+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	1.094-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	1.237-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	1.785-002	1.635-002	1.565-002	1.461-002	1.367-002	1.197-002	1.047-002	8.022-003	4.707-003	2.417-003	1.241-003
FE 59	.000	1.412-002	2.224-003	8.827-004	2.077-004	5.088-005	3.054-006	1.833-007	6.608-010	8.574-015	6.680-021	5.205-027
CO 58	.000	9.477-002	2.926-002	1.626-002	6.479-003	2.649-003	4.430-004	7.407-005	2.071-006	1.618-009	2.115-013	2.763-017
CO 60	.000	1.439-001	1.379-001	1.349-001	1.304-001	1.262-001	1.182-001	1.107-001	9.701-002	7.457-002	5.367-002	3.863-002
CO 60M	.000	5.325-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	5.215-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	9.850-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	1.608-005	1.608-005	1.608-005	1.608-005	1.608-005	1.608-005	1.608-005	1.608-005	1.608-005	1.608-005	1.608-005
NI 63	.000	1.247-004	1.244-004	1.243-004	1.240-004	1.238-004	1.233-004	1.229-004	1.220-004	1.201-004	1.179-004	1.157-004
NI 65	.000	2.146-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.186-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	9.430-002	1.435-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	1.562-006	1.110-006	9.362-007	7.168-007	5.530-007	3.290-007	1.958-007	6.933-008	8.694-009	6.487-010	4.840-011
SR 89	.000	2.417-002	4.655-003	2.043-003	5.627-004	1.607-004	1.310-005	1.068-006	7.100-009	3.137-013	1.130-018	4.072-024
SR 90	.000	3.731-009	3.702-009	3.688-009	3.665-009	3.643-009	3.600-009	3.558-009	3.474-009	3.312-009	3.121-009	2.941-009
SR 91	.000	1.559-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 93	.000	1.018-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	9.683-007	8.592-018	2.559-023	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	2.054+000	1.768-008	1.761-008	1.751-008	1.740-008	1.720-008	1.699-008	1.659-008	1.582-008	1.491-008	1.405-008
Y 91	.000	6.001-002	1.449-002	7.116-003	2.338-003	7.927-004	9.109-005	1.047-005	1.382-007	2.410-011	4.828-016	9.672-021
Y 92	.000	2.203-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.025-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	2.319-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	2.050-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.331-006	1.181-017	3.517-023	7.844-032	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	3.112-007	3.112-007	3.112-007	3.112-007	3.112-007	3.112-007	3.112-007	3.112-007	3.112-007	3.112-007	3.112-007
ZR 95	.000	2.071+001	5.644+000	2.946+000	1.065+000	3.960-001	5.476-002	7.572-003	1.448-004	5.294-008	2.676-012	1.353-016
ZR 97	.000	6.724+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	4.132-004	1.150-007	1.918-009	3.159-012	6.223-015	2.416-020	9.377-026	.000	.000	.000	.000
NB 93M	.000	3.691-009	1.112-008	1.478-008	2.046-008	2.591-008	3.660-008	4.702-008	6.708-008	1.043-007	1.457-007	1.822-007
NB 94	.000	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.838-010	2.838-010
NB 95	.000	1.294+001	8.991+000	5.313+000	2.100+000	8.095-001	1.145-001	1.590-002	3.150-004	1.113-007	5.627-012	2.845-016
NB 95M	.000	4.054-002	1.149-002	5.996-003	2.167-003	8.058-004	1.114-004	1.541-005	2.946-007	1.077-010	5.446-015	2.753-019
NB 96	.000	2.950-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	8.589+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	5.375+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	9.208-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB100	.000	8.752-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.443-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.609-009	1.608-009	1.607-009
MO 99	.000	2.319-002	1.696-015	4.587-022	2.391-032	.000	.000	.000	.000	.000	.000	.000
MO101	.000	2.054-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	3.834-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.894-010	3.994-010	3.994-010	3.994-010
TC100	.000	9.249-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	8.629-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	4.499-008	2.050-013	2.048-013	2.045-013	2.042-013	2.037-013	2.031-013	2.020-013	1.998-013	1.971-013	1.944-013
AG108M	.000	6.023-012	6.012-012	6.007-012	5.998-012	5.990-012	5.974-012	5.958-012	5.925-012	5.861-012	5.781-012	5.703-012
AG109M	.000	1.716-007	1.434-007	1.311-007	1.140-007	9.944-008	7.570-008	5.762-008	3.339-008	1.121-008	2.866-009	7.326-010
AG110	.000	9.708-008	4.677-012	3.960-012	3.051-012	2.369-012	1.427-012	8.600-013	3.122-013	4.116-014	3.269-015	2.597-016
AG110M	.000	1.140-009	8.173-010	6.920-010	5.333-010	4.139-010	2.494-010	1.503-010	5.457-011	7.193-012	5.713-013	4.538-014
CD107	.000	5.853-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	2.119-007	1.772-007	1.620-007	1.408-007	1.228-007	9.349-008	7.117-008	4.124-008	1.385-008	3.540-009	9.049-010
CD111M	.000	5.375-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	9.037-004	5.529-020	4.325-028	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	6.542-005	1.013-005	3.987-006	9.259-007	2.240-007	1.310-008	7.667-010	2.625-012	3.076-017	2.109-023	1.446-029
CD117	.000	1.034-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.826-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.831-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	8.418-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	2.344-001	1.138-001	7.933-002	4.505-002	2.600-002	8.656-003	2.882-003	3.195-004	3.927-006	1.607-008	6.574-011
IN114	.000	1.057-002	4.450-004	1.921-004	5.157-005	1.436-005	1.114-006	8.643-008	5.201-010	1.883-014	5.288-020	1.485-025
IN114M	.000	7.662-004	1.428-004	6.166-005	1.655-005	4.610-006	3.576-007	2.774-008	1.669-010	6.043-015	1.697-020	4.767-026
IN116	.000	5.762-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	4.746-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	3.192-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	5.095-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN118	.000	2.662-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.249-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN119M	.000	1.411-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	5.018-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.714-002	8.321-003	5.798-003	3.293-003	1.900-003	6.326-004	2.106-004	2.335-005	2.870-007	1.174-009	4.805-012
SN113M	.000	6.622-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	2.073+000	5.461-003	2.802-004	2.681-006	2.921-008	3.468-012	4.116-016	5.800-024	.000	.000	.000
SN119M	.000	9.441-002	6.723-002	5.674-002	4.350-002	3.359-002	2.004-002	1.195-002	4.254-003	5.387-004	4.069-005	3.073-006
SN121	.000	7.586-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	2.782-005	2.769-005	2.763-005	2.753-005	2.744-005	2.725-005	2.706-005	2.669-005	2.596-005	2.507-005	2.422-005
SN123	.000	8.183-002	4.298-002	3.115-002	1.881-002	1.153-002	4.328-003	1.623-003	2.287-004	4.536-006	3.378-008	2.515-010
SN123M	.000	9.170-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.506+000	2.695-004	3.606-006	4.205-009	5.923-012	1.174-017	2.327-023	.000	.000	.000	.000
SN125M	.000	1.233+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	3.053-002	1.279-015	2.617-022	8.818-033	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	4.265-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	3.735-004	9.379-005	4.700-005	1.594-005	5.568-006	6.799-007	8.302-008	1.238-009	2.752-013	7.469-018	2.027-022
SB124M	.000	6.315-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	7.905-002	7.911-002	7.592-002	7.119-002	6.687-002	5.901-002	5.207-002	4.054-002	2.458-002	1.315-002	7.033-003
SB126	.000	5.823-003	7.103-006	2.479-007	1.297-009	7.863-012	2.888-016	1.061-020	1.431-029	.000	.000	.000
SB126M	.000	5.029-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	7.718-007	3.852-007	2.721-007	1.579-007	9.305-008	3.231-008	1.122-008	1.353-009	1.967-011	9.929-014	5.013-016
TE125M	.000	2.196-003	4.370-003	4.581-003	4.540-003	4.343-003	3.866-003	3.415-003	2.659-003	1.613-003	8.625-004	4.614-004
TE127	.000	1.373-007	1.012-009	6.910-010	3.802-010	2.127-010	6.661-011	2.085-011	2.044-012	1.964-014	5.908-017	1.777-019
LU176M	.000	1.426-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	7.242-006	4.778-010	3.426-010	2.250-010	1.496-010	6.610-011	2.921-011	5.704-012	2.175-013	3.665-015	6.175-017
LU177M	.000	2.486-008	1.453-008	1.111-008	7.302-009	4.854-009	2.145-009	9.478-010	1.851-010	7.057-012	1.189-013	2.004-015
HF175	.000	3.709-002	1.130-002	6.239-003	2.461-003	9.965-004	1.633-004	2.678-005	7.195-007	5.185-010	6.148-014	7.276-018
HF178M	.000	1.582-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	6.137+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	4.039-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	6.615-001	9.300-002	3.487-002	7.507-003	1.687-003	8.519-005	4.302-006	1.097-008	7.135-014	2.343-020	7.694-027
HF182	.000	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011
TA182	.000	4.491-003	2.179-003	1.518-003	8.616-004	4.969-004	1.653-004	5.498-005	6.083-006	7.451-008	3.615-010	5.955-011
TA182M	.000	4.551-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	4.741-003	3.916-010	1.125-013	3.210-019	1.309-024	.000	.000	.000	.000	.000	.000
W181	.000	5.229-005	2.632-005	1.867-005	1.091-005	6.472-006	2.277-006	8.012-007	9.918-008	1.520-009	8.192-012	4.416-014
W183M	.000	1.192-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	1.447-002	4.779-003	2.747-003	1.154-003	4.969-004	9.210-005	1.707-005	5.863-007	6.921-010	1.514-013	3.310-017
W185M	.000	1.281-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	1.282+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	1.558-004	4.701-005	2.582-005	1.010-005	4.058-006	6.549-007	1.057-007	2.752-009	1.866-012	2.042-016	2.234-020
RE186	.000	1.800-003	4.901-013	8.087-018	2.632-025	1.386-032	.000	.000	.000	.000	.000	.000
RE187	.000	1.627-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011
RE188	.000	2.928-002	3.940-004	2.164-004	8.468-005	3.402-005	5.489-006	8.858-007	2.307-008	1.564-011	1.712-015	1.873-019
RE188M	.000	5.626-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	1.008-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017
PB209	.000	3.159-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	4.348-017	2.666+002	1.529+001	8.747+000	3.524+000	1.500+000	3.989-001	2.182-001	1.542-001	1.063-001	7.032-002	4.753-002
TOTAL	4.348-017	2.666+002	1.529+001	8.747+000	3.524+000	1.500+000	3.989-001	2.182-001	1.542-001	1.063-001	7.032-002	4.753-002

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	2.855-011	2.803-011	2.777-011	2.738-011	2.699-011	2.625-011	2.552-011	2.413-011	2.157-011	1.874-011	1.629-011
HE	.000	1.148-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.214-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	5.132-010	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012	7.594-012
B	.000	3.850-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	3.160-006	3.108-006	3.107-006	3.107-006	3.107-006	3.107-006	3.107-006	3.107-006	3.106-006	3.105-006	3.104-006
N	.000	4.865-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	1.513-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	1.471-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	5.598-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	6.824-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	2.934-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	1.065-003	1.147-014	1.147-014	1.147-014	1.146-014	1.146-014	1.145-014	1.144-014	1.141-014	1.138-014	1.135-014
P	.000	5.937-008	1.769-010	9.742-012	1.950-013	9.456-014	9.331-014	9.326-014	9.315-014	9.295-014	9.270-014	9.246-014
CA	.000	1.136-007	5.837-008	4.522-008	3.033-008	2.057-008	9.458-009	4.350-009	9.199-010	4.115-011	8.464-013	1.741-014
SC	.000	1.135-003	2.037-004	1.240-004	5.700-005	2.878-005	5.913-006	1.305-006	6.362-008	1.511-010	7.926-014	4.157-017
TI	.000	1.740-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	2.070-017	1.659+000	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017	2.055-017
CR	.000	7.877-002	2.679-003	5.972-004	5.696-005	5.801-006	6.018-008	6.243-010	6.717-014	7.778-022	9.343-032	.000
MN	.000	5.193+000	4.298-003	3.763-003	3.055-003	2.495-003	1.664-003	1.110-003	4.936-004	9.765-005	1.288-005	1.700-006
FE	.000	3.197-002	1.858-002	1.653-002	1.482-002	1.372-002	1.197-002	1.047-002	8.022-003	4.707-003	2.417-003	1.241-003
CO	.000	2.926-001	1.671-001	1.512-001	1.369-001	1.289-001	1.186-001	1.107-001	9.702-002	7.457-002	5.367-002	3.863-002
NI	.000	2.160-002	1.405-004	1.404-004	1.401-004	1.399-004	1.394-004	1.390-004	1.380-004	1.362-004	1.340-004	1.318-004
CU	.000	2.129-001	2.196-022	2.018-029	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	1.562-006	1.110-006	9.362-007	7.168-007	5.530-007	3.290-007	1.958-007	6.933-008	8.694-009	6.487-010	4.840-011
SR	.000	3.986-002	4.655-003	2.043-003	5.627-004	1.607-004	1.310-005	1.072-006	1.057-008	3.313-009	3.121-009	2.941-009
Y	.000	2.357+000	1.449-002	7.116-003	2.338-003	7.927-004	9.110-005	1.048-005	1.548-007	1.585-008	1.491-008	1.405-008
ZR	.000	8.795+001	5.644+000	2.946+000	1.065+000	3.960-001	5.476-002	7.572-003	1.451-004	3.641-007	3.112-007	3.112-007
NB	.000	1.527+002	9.003+000	5.319+000	2.102+000	8.103-001	1.146-001	1.591-002	3.154-004	2.160-007	1.460-007	1.825-007
MO	.000	4.387-002	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.609-009	1.608-009	1.607-009
TC	.000	8.722-003	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010
AG	.000	3.148-007	1.443-007	1.318-007	1.145-007	9.986-008	7.595-008	5.778-008	3.345-008	1.123-008	2.873-009	7.386-010
CD	.000	1.084-003	1.031-005	4.149-006	1.067-006	3.468-007	1.066-007	7.193-008	4.124-008	1.385-008	3.540-009	9.049-010
IN	.000	2.472-001	1.144-001	7.958-002	4.512-002	2.602-002	8.657-003	2.882-003	3.195-004	3.927-006	1.607-008	6.574-011
SN	.000	6.427+000	1.243-001	9.399-002	6.563-002	4.705-002	2.503-002	1.382-002	4.533-003	5.694-004	6.580-005	2.729-005
SB	.000	1.163-001	7.921-002	7.597-002	7.121-002	6.688-002	5.901-002	5.207-002	4.054-002	2.458-002	1.315-002	7.033-003
TE	.000	2.197-003	4.371-003	4.581-003	4.540-003	4.343-003	3.866-003	3.415-003	2.659-003	1.613-003	8.625-004	4.614-004
LU	.000	1.433-003	1.501-008	1.146-008	7.527-009	5.003-009	2.211-009	9.770-010	1.908-010	7.276-012	1.237-013	3.149-015
HF	.000	7.034+000	1.043-001	4.111-002	9.968-003	2.683-003	2.485-004	3.108-005	7.305-007	5.389-010	1.947-011	1.941-011
TA	.000	9.237-003	2.179-003	1.518-003	8.616-004	4.969-004	1.653-004	5.498-005	6.083-006	7.451-008	3.615-010	5.955-011
W	.000	1.298+000	4.852-003	2.791-003	1.175-003	5.074-004	9.503-005	1.798-005	6.883-007	2.214-009	8.344-012	4.420-014
RE	.000	3.670-002	3.940-004	2.164-004	8.468-005	3.402-005	5.489-006	8.858-007	2.308-008	3.215-011	1.651-011	1.651-011
PB	2.278-017	3.159-006	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013
SUMTOT	4.348-017	2.666+002	1.529+001	8.747+000	3.524+000	1.500+000	3.989-001	2.182-001	1.542-001	1.063-001	7.032-002	4.753-002
TOTAL	4.348-017	2.666+002	1.529+001	8.747+000	3.524+000	1.500+000	3.989-001	2.182-001	1.542-001	1.063-001	7.032-002	4.753-002

CUMULATIVE TABLE TOTALS

AP+FP	4.348-017	2.666+002	1.529+001	8.747+000	3.524+000	1.500+000	3.989-001	2.182-001	1.542-001	1.063-001	7.032-002	4.753-002
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	4.348-017	2.666+002	1.529+001	8.747+000	3.524+000	1.500+000	3.989-001	2.182-001	1.542-001	1.063-001	7.032-002	4.753-002

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0

(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC

BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U234	2.893+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002
U235	9.078+000	7.980+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000
U236	6.348+000	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001
U238	1.045+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002
PU238	.000	5.523+003	5.910+003	5.906+003	5.898+003	5.889+003	5.869+003	5.847+003	5.802+003	5.712+003	5.600+003	5.490+003
PU239	.000	3.915+004	4.083+004	4.083+004	4.083+004	4.083+004	4.083+004	4.083+004	4.083+004	4.083+004	4.082+004	4.082+004
PU240	.000	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.076+004	1.076+004
AM241	.000	8.561+001	5.125+002	7.184+002	1.037+003	1.344+003	1.945+003	2.531+003	3.660+003	5.757+003	8.098+003	1.016+004
CM244	.000	5.902+001	5.846+001	5.809+001	5.752+001	5.697+001	5.589+001	5.484+001	5.278+001	4.889+001	4.443+001	4.037+001
TOTALS												
TABLE	4.093+002	5.601+004	5.850+004	5.870+004	5.901+004	5.931+004	5.988+004	6.045+004	6.153+004	6.352+004	6.574+004	6.769+004
ACTUAL	4.093+002	5.601+004	5.850+004	5.870+004	5.901+004	5.931+004	5.988+004	6.045+004	6.153+004	6.352+004	6.574+004	6.769+004

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U238	1.254+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004
PU238	.000	9.006+002	9.638+002	9.631+002	9.618+002	9.604+002	9.571+002	9.536+002	9.462+002	9.315+002	9.132+002	8.954+002
PU240	.000	5.678+004	5.678+004	5.677+004	5.677+004	5.677+004	5.677+004	5.677+004	5.676+004	5.675+004	5.673+004	5.672+004
PU242	.000	4.147+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002
CM242	.000	3.525+004	2.212+004	1.714+004	1.151+004	7.812+003	3.603+003	1.665+003	3.625+002	2.768+001	1.213+001	1.168+001
CM244	.000	7.106+003	7.038+003	6.994+003	6.926+003	6.860+003	6.730+003	6.602+003	6.354+003	5.886+003	5.349+003	4.861+003
TOTALS												
TABLE	1.254+004	1.130+005	9.986+004	9.484+004	8.913+004	8.537+004	8.102+004	7.895+004	7.739+004	7.656+004	7.597+004	7.545+004
ACTUAL	1.254+004	1.130+005	9.986+004	9.484+004	8.913+004	8.537+004	8.102+004	7.895+004	7.739+004	7.656+004	7.597+004	7.545+004
OVERALL TOTALS												
TABLE	1.295+004	1.690+005	1.584+005	1.535+005	1.481+005	1.447+005	1.409+005	1.394+005	1.389+005	1.401+005	1.417+005	1.431+005
ACTUAL	1.295+004	1.690+005	1.584+005	1.535+005	1.481+005	1.447+005	1.409+005	1.394+005	1.389+005	1.401+005	1.417+005	1.431+005

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	5.097+013	1.031+012	6.053+011	3.102+011	1.901+011	9.798+010	6.222+010	3.160+010	1.298+010	6.317+009	3.423+009
2.500-002	.000	4.117+013	4.125+012	3.299+012	2.445+012	1.880+012	1.193+012	8.184+011	4.568+011	2.108+011	1.050+011	5.561+010
3.750-002	.000	4.752+012	1.837+011	1.668+011	1.491+011	1.372+011	1.195+011	1.051+011	8.180+010	4.960+010	2.655+010	1.421+010
5.750-002	.000	1.174+013	3.108+011	1.280+011	3.558+010	1.248+010	3.110+009	1.433+009	5.847+008	2.440+008	1.334+008	8.147+007
8.500-002	.000	5.176+012	1.644+010	9.156+009	3.849+009	1.802+009	5.578+008	2.796+008	1.552+008	9.419+007	5.628+007	3.444+007
1.250-001	.000	7.017+012	4.309+011	1.655+011	3.930+010	1.175+010	3.398+009	2.515+009	1.885+009	1.139+009	6.116+008	3.288+008
2.250-001	4.582-013	4.037+013	2.588+011	1.360+011	8.578+010	6.443+010	4.637+010	3.830+010	2.892+010	1.745+010	9.337+009	4.995+009
3.750-001	.000	2.205+013	4.771+011	3.709+011	3.133+011	2.877+011	2.522+011	2.224+011	1.732+011	1.050+011	5.617+010	3.005+010
5.750-001	.000	5.857+014	1.043+012	6.540+011	4.469+011	3.818+011	3.252+011	2.860+011	2.226+011	1.349+011	7.218+010	3.861+010
8.500-001	1.826-013	6.352+014	9.849+013	5.574+013	2.141+013	8.171+012	1.158+012	1.671+011	6.738+009	7.268+008	1.035+008	1.926+007
1.250+000	1.039-013	3.826+013	8.739+011	6.558+011	6.306+011	6.083+011	5.680+011	5.313+011	4.655+011	3.578+011	2.575+011	1.854+011
1.750+000	5.205-014	1.311+013	1.029+009	5.630+008	2.206+008	8.893+007	1.453+007	2.389+006	6.533+004	5.902+001	6.720+000	6.190+000
2.250+000	2.608-014	1.920+012	4.997+007	1.109+007	5.769+006	4.067+006	3.110+006	2.827+006	2.467+006	1.896+006	1.365+006	9.825+005
2.750+000	1.307-014	9.604+011	2.135+004	1.588+004	1.205+004	1.055+004	9.375+003	8.717+003	7.634+003	5.868+003	4.224+003	3.040+003
3.500+000	9.623-015	2.134+010	1.445-008	1.070-008	6.684-009	4.231-009	1.696-009	6.795-010	1.091-010	2.840-012	5.431-014	2.485-014
5.000+000	2.865-015	6.263+006	4.301-009	3.185-009	1.990-009	1.260-009	5.048-010	2.023-010	3.249-011	8.413-013	1.232-014	3.748-015
7.000+000	1.859-016	4.387+005	2.791-010	2.067-010	1.291-010	8.174-011	3.275-011	1.313-011	2.108-012	5.459-014	7.990-016	2.431-016
1.100+001	1.176-017	3.424+004	1.765-011	1.307-011	8.165-012	5.169-012	2.071-012	8.300-013	1.333-013	3.452-015	5.053-017	1.538-017
TOTAL	8.485-013	1.458+015	1.070+014	6.193+013	2.587+013	1.175+013	3.767+012	2.235+012	1.470+012	8.908+011	5.340+011	3.327+011
MEV/SEC	6.233-013	9.758+014	8.560+013	4.887+013	1.946+013	8.105+012	2.022+012	1.088+012	8.023+011	5.763+011	3.905+011	2.683+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	7.645+005	1.547+004	9.080+003	4.653+003	2.851+003	1.470+003	9.332+002	4.740+002	1.948+002	9.476+001	5.135+001
2.500-002	.000	1.029+006	1.031+005	8.247+004	6.112+004	4.699+004	2.982+004	2.046+004	1.142+004	5.271+003	2.625+003	1.390+003
3.750-002	.000	1.782+005	6.889+003	6.255+003	5.592+003	5.146+003	4.481+003	3.943+003	3.068+003	1.860+003	9.955+002	5.329+002
5.750-002	.000	6.750+005	1.787+004	7.362+003	2.046+003	7.175+002	1.788+002	8.240+001	3.362+001	1.403+001	7.669+000	4.684+000
8.500-002	.000	4.399+005	1.397+003	7.782+002	3.272+002	1.531+002	4.741+001	2.377+001	1.319+001	8.006+000	4.784+000	2.927+000
1.250-001	.000	8.771+005	5.387+004	2.068+004	4.913+003	1.469+003	4.247+002	3.143+002	2.356+002	1.424+002	7.645+001	4.110+001
2.250-001	1.031-019	9.084+006	5.823+004	3.059+004	1.930+004	1.450+004	1.043+004	8.618+003	6.508+003	3.927+003	2.101+003	1.124+003
3.750-001	.000	8.270+006	1.789+005	1.391+005	1.175+005	1.079+005	9.458+004	8.342+004	6.494+004	3.937+004	2.106+004	1.127+004
5.750-001	.000	3.368+008	5.998+005	3.760+005	2.570+005	2.195+005	1.870+005	1.645+005	1.280+005	7.758+004	4.150+004	2.220+004
8.500-001	1.552-019	5.399+008	8.372+007	4.738+007	1.820+007	6.945+006	9.839+005	1.420+005	5.728+003	6.177+002	8.800+001	1.637+001
1.250+000	1.299-019	4.783+007	8.424+005	8.198+005	7.882+005	7.604+005	7.100+005	6.641+005	5.819+005	4.473+005	3.219+005	2.317+005
1.750+000	9.109-020	2.295+007	1.801+003	9.852+002	3.860+002	1.556+002	2.543+001	4.180+000	1.143-001	1.033-004	1.178-005	1.083-005
2.250+000	5.868-020	4.321+006	1.124+002	2.495+001	1.298+001	9.150+000	6.998+000	6.360+000	5.551+000	4.267+000	3.071+000	2.211+000
2.750+000	3.593-020	2.641+006	5.872-002	4.367-002	3.313-002	2.903-002	2.578-002	2.397-002	2.099-002	1.614-002	1.162-002	8.360-003
3.500+000	3.368-020	7.467+004	5.057-014	3.744-014	2.339-014	1.481-014	5.934-015	2.378-015	3.820-016	9.938-018	1.901-019	8.699-020
5.000+000	1.432-020	3.132+001	2.151-014	1.593-014	9.950-015	6.299-015	2.524-015	1.011-015	1.624-016	4.207-018	6.158-020	1.874-020
7.000+000	1.301-021	3.071+000	1.954-015	1.447-015	9.038-016	5.722-016	2.293-016	9.188-017	1.476-017	3.821-019	5.593-021	1.702-021
1.100+001	1.293-022	3.767-001	1.941-016	1.438-016	8.981-017	5.686-017	2.278-017	9.130-018	1.466-018	3.797-020	5.558-022	1.691-022
TOTAL	6.233-019	9.758+008	8.560+007	4.887+007	1.946+007	8.105+006	2.022+006	1.088+006	8.023+005	5.763+005	3.905+005	2.683+005
GAM POW	9.991-026	1.564+002	1.372+001	7.834+000	3.118+000	1.299+000	3.242-001	1.745-001	1.286-001	9.238-002	6.260-002	4.302-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	6.907+011	6.615+011	6.473+011	6.258+011	6.056+011	5.670+011	5.309+011	4.655+011	3.578+011	2.575+011	1.854+011
PB204	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	3.660+006	3.506+006	3.431+006	3.317+006	3.210+006	3.005+006	2.814+006	2.467+006	1.896+006	1.365+006	9.825+005
PB204	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	1.133+004	1.085+004	1.062+004	1.026+004	9.931+003	9.299+003	8.707+003	7.634+003	5.868+003	4.224+003	3.040+003

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	4.571+009	3.520+017	2.825+011	2.647+011	2.621+011	2.612+011	2.623+011	2.653+011	2.734+011	2.903+011	3.093+011	3.261+011
2.500-002	.000	1.773+015	1.382+009	1.103+009	1.413+009	1.712+009	2.298+009	2.870+009	3.972+009	6.018+009	8.302+009	1.032+010
3.750-002	8.387+005	1.782+016	5.128+008	4.886+008	5.016+008	5.179+008	5.564+008	5.986+008	6.851+008	8.501+008	1.035+009	1.198+009
5.750-002	2.858+007	7.447+015	1.604+010	1.175+010	1.631+010	2.070+010	2.932+010	3.773+010	5.394+010	8.401+010	1.178+011	1.472+011
8.500-002	7.165+007	1.927+017	4.726+009	1.361+009	1.357+009	1.360+009	1.366+009	1.371+009	1.382+009	1.401+009	1.423+009	1.442+009
1.250-001	1.490+008	1.529+017	6.453+009	5.532+008	5.430+008	5.453+008	5.501+008	5.551+008	5.649+008	5.834+008	6.041+008	6.223+008
2.250-001	5.007+008	1.063+017	5.101+009	6.520+008	6.425+008	6.424+008	6.425+008	6.427+008	6.432+008	6.442+008	6.452+008	6.460+008
3.750-001	1.249+006	1.059+016	5.956+008	3.353+008	3.355+008	3.356+008	3.360+008	3.362+008	3.368+008	3.379+008	3.391+008	3.402+008
5.750-001	7.022+004	1.633+015	5.412+007	5.417+007	5.423+007	5.429+007	5.445+007	5.464+007	5.501+007	5.568+007	5.638+007	5.696+007
8.500-001	3.477+004	2.968+015	7.786+007	7.795+007	7.798+007	7.801+007	7.808+007	7.814+007	7.827+007	7.848+007	7.870+007	7.887+007
1.250+000	1.206+004	9.645+013	6.913+007	6.918+007	6.919+007	6.919+007	6.919+007	6.918+007	6.919+007	6.919+007	6.919+007	6.919+007
1.750+000	5.899+003	5.045+011	1.159+007	1.160+007	1.160+007	1.161+007	1.161+007	1.161+007	1.162+007	1.163+007	1.164+007	1.164+007
2.250+000	3.417+003	2.828+004	2.551+004	2.445+004	2.325+004	2.246+004	2.155+004	2.113+004	2.084+004	2.076+004	2.079+004	2.086+004
2.750+000	1.985+003	4.256+004	9.414+004	1.185+005	1.542+005	1.866+005	2.447+005	2.951+005	3.756+005	4.788+005	5.427+005	5.686+005
3.500+000	1.775+003	1.448+004	1.304+004	1.248+004	1.186+004	1.145+004	1.097+004	1.075+004	1.058+004	1.051+004	1.046+004	1.042+004
5.000+000	7.625+002	6.149+003	5.529+003	5.292+003	5.024+003	4.848+003	4.644+003	4.548+003	4.477+003	4.444+003	4.422+003	4.403+003
7.000+000	8.777+001	7.003+002	6.287+002	6.016+002	5.708+002	5.504+002	5.270+002	5.159+002	5.077+002	5.036+002	5.009+002	4.985+002
1.100+001	1.009+001	8.015+001	7.187+001	6.874+001	6.518+001	6.283+001	6.013+001	5.884+001	5.788+001	5.740+001	5.707+001	5.678+001
TOTAL	5.323+009	8.462+017	3.175+011	2.812+011	2.834+011	2.873+011	2.976+011	3.097+011	3.351+011	3.843+011	4.395+011	4.881+011
MEV/SEC	2.082+008	7.338+016	7.998+009	5.354+009	5.582+009	5.830+009	6.360+009	6.906+009	7.993+009	1.004+010	1.232+010	1.434+010

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	8.857+001	5.280+009	4.238+003	3.971+003	3.932+003	3.919+003	3.934+003	3.980+003	4.101+003	4.354+003	4.640+003	4.892+003
2.500-002	.000	4.432+007	3.455+001	2.757+001	3.533+001	4.280+001	5.746+001	7.176+001	9.931+001	1.504+002	2.075+002	2.579+002
3.750-002	3.145-002	6.684+008	1.923+001	1.832+001	1.881+001	1.942+001	2.086+001	2.245+001	2.569+001	3.188+001	3.881+001	4.491+001
5.750-002	1.643+000	4.282+008	9.221+002	6.755+002	9.378+002	1.190+003	1.686+003	2.170+003	3.101+003	4.831+003	6.762+003	8.464+003
8.500-002	6.090+000	1.638+010	4.017+002	1.157+002	1.154+002	1.156+002	1.161+002	1.166+002	1.174+002	1.191+002	1.209+002	1.226+002
1.250-001	1.863+001	1.911+010	8.066+002	6.915+001	6.788+001	6.816+001	6.877+001	6.939+001	7.062+001	7.293+001	7.551+001	7.779+001
2.250-001	1.127+002	2.392+010	1.148+003	1.467+002	1.446+002	1.445+002	1.446+002	1.446+002	1.447+002	1.449+002	1.452+002	1.453+002
3.750-001	4.685-001	3.970+009	2.234+002	1.258+002	1.258+002	1.259+002	1.260+002	1.261+002	1.263+002	1.267+002	1.272+002	1.276+002
5.750-001	4.038-002	9.389+008	3.112+001	3.115+001	3.118+001	3.122+001	3.131+001	3.142+001	3.163+001	3.202+001	3.242+001	3.275+001
8.500-001	2.955-002	2.522+009	6.618+001	6.625+001	6.629+001	6.631+001	6.637+001	6.642+001	6.653+001	6.671+001	6.689+001	6.704+001
1.250+000	1.507-002	1.206+008	8.641+001	8.648+001	8.649+001	8.649+001	8.648+001	8.648+001	8.648+001	8.648+001	8.649+001	8.649+001
1.750+000	1.032-002	8.830+005	2.028+001	2.030+001	2.031+001	2.031+001	2.032+001	2.033+001	2.034+001	2.036+001	2.037+001	2.037+001
2.250+000	7.688-003	6.363-002	5.740-002	5.502-002	5.231-002	5.053-002	4.849-002	4.754-002	4.689-002	4.671-002	4.677-002	4.693-002
2.750+000	5.460-003	1.170-001	2.589-001	3.258-001	4.240-001	5.131-001	6.728-001	8.114-001	1.033+000	1.317+000	1.492+000	1.564+000
3.500+000	6.212-003	5.068-002	4.562-002	4.369-002	4.150-002	4.006-002	3.840-002	3.762-002	3.705-002	3.679-002	3.663-002	3.648-002
5.000+000	3.812-003	3.075-002	2.764-002	2.648-002	2.512-002	2.424-002	2.322-002	2.274-002	2.239-002	2.222-002	2.211-002	2.201-002
7.000+000	6.144-004	4.902-003	4.401-003	4.211-003	3.995-003	3.853-003	3.689-003	3.612-003	3.554-003	3.525-003	3.506-003	3.489-003
1.100+001	1.110-004	8.817-004	7.906-004	7.561-004	7.169-004	6.911-004	6.614-004	6.473-004	6.367-004	6.314-004	6.278-004	6.246-004
TOTAL	2.082+002	7.338+010	7.998+003	5.354+003	5.582+003	5.830+003	6.360+003	6.906+003	7.993+003	1.004+004	1.232+004	1.434+004
GAM POW	3.337-005	1.176+004	1.282-003	8.583-004	8.948-004	9.346-004	1.019-003	1.107-003	1.281-003	1.609-003	1.976-003	2.299-003

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U235	8.387+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.233+017	6.119+014	4.110+014	2.688+014	2.015+014	1.307+014	9.083+013	4.899+013	2.294+013	1.670+013	1.498+013
2.500-002	.000	5.749+016	2.417+014	1.318+014	7.440+013	5.437+013	3.681+013	2.731+013	1.688+013	8.928+012	5.694+012	4.286+012
3.750-002	.000	6.942+016	7.000+014	4.459+014	3.050+014	2.388+014	1.567+014	1.054+014	5.126+013	1.887+013	1.191+013	1.032+013
5.750-002	.000	2.639+016	1.165+014	8.167+013	5.544+013	4.231+013	2.774+013	1.925+013	1.026+013	4.665+012	3.346+012	2.994+012
8.500-002	.000	3.496+016	1.455+014	1.145+014	8.603+013	6.789+013	4.415+013	2.940+013	1.381+013	4.453+012	2.471+012	2.054+012
1.250-001	.000	6.978+016	1.247+015	5.906+014	3.160+014	2.322+014	1.466+014	9.473+013	4.023+013	8.426+012	2.438+012	1.620+012
2.250-001	.000	2.116+017	8.197+013	5.462+013	3.600+013	2.716+013	1.778+013	1.244+013	6.747+012	3.071+012	2.096+012	1.801+012
3.750-001	.000	1.557+017	6.007+013	3.537+013	2.519+013	2.042+013	1.483+013	1.130+013	7.126+012	3.674+012	2.139+012	1.454+012
5.750-001	.000	3.090+017	1.655+015	8.098+014	4.277+014	3.316+014	2.677+014	2.326+014	1.897+014	1.522+014	1.338+014	1.235+014
8.500-001	.000	3.563+017	1.011+016	5.717+015	2.207+015	8.526+014	1.334+014	2.973+013	9.559+012	4.655+012	2.188+012	1.142+012
1.250+000	.000	2.178+017	3.924+013	2.879+013	2.068+013	1.625+013	1.092+013	7.630+012	3.941+012	1.365+012	6.207+011	4.121+011
1.750+000	.000	7.779+016	3.759+013	3.302+012	1.592+012	1.313+012	9.110+011	6.362+011	3.168+011	8.975+010	2.963+010	1.767+010
2.250+000	.000	4.339+016	2.622+013	2.218+013	1.764+013	1.414+013	9.082+012	5.836+012	2.413+012	4.144+011	4.643+010	5.318+009
2.750+000	.000	1.907+016	1.436+012	1.356+011	6.999+010	5.832+010	4.088+010	2.869+010	1.416+010	3.483+009	6.105+008	1.079+008
3.500+000	.000	1.140+016	2.314+010	1.124+010	9.060+009	7.627+009	5.408+009	3.834+009	1.928+009	4.873+008	8.733+007	1.565+007
5.000+000	.000	6.863+015	2.288-006	2.317-006	2.361-006	2.401-006	2.473-006	2.536-006	2.640-006	2.780-006	2.878-006	2.929-006
7.000+000	.000	4.456+013	1.484-007	1.504-007	1.532-007	1.558-007	1.604-007	1.645-007	1.713-007	1.804-007	1.867-007	1.900-007
1.100+001	.000	4.349+009	9.387-009	9.508-009	9.687-009	9.850-009	1.015-008	1.040-008	1.083-008	1.141-008	1.181-008	1.202-008
TOTAL	.000	1.790+018	1.507+016	8.446+015	3.841+015	2.101+015	9.974+014	6.672+014	4.013+014	2.337+014	1.835+014	1.646+014
MEV/SEC	.000	1.239+018	9.978+015	5.557+015	2.275+015	1.034+015	3.451+014	2.114+014	1.422+014	9.930+013	8.257+013	7.474+013

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED CLADDING ASSOCIATED WITH 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.850+009	9.178+006	6.166+006	4.032+006	3.022+006	1.961+006	1.362+006	7.349+005	3.441+005	2.505+005	2.248+005
2.500-002	.000	1.437+009	6.043+006	3.295+006	1.860+006	1.359+006	9.202+005	6.828+005	4.221+005	2.232+005	1.424+005	1.072+005
3.750-002	.000	2.603+009	2.625+007	1.672+007	1.144+007	8.955+006	5.876+006	3.954+006	1.922+006	7.077+005	4.468+005	3.871+005
5.750-002	.000	1.517+009	6.700+006	4.696+006	3.188+006	2.433+006	1.595+006	1.107+006	5.898+005	2.682+005	1.924+005	1.722+005
8.500-002	.000	2.972+009	1.236+007	9.729+006	7.313+006	5.770+006	3.753+006	2.499+006	1.174+006	3.785+005	2.100+005	1.746+005
1.250-001	.000	8.723+009	1.559+008	7.383+007	3.950+007	2.902+007	1.832+007	1.184+007	5.029+006	1.053+006	3.048+005	2.026+005
2.250-001	.000	4.762+010	1.844+007	1.229+007	8.099+006	6.110+006	4.001+006	2.798+006	1.518+006	6.909+005	4.717+005	4.052+005
3.750-001	.000	5.838+010	2.252+007	1.326+007	9.446+006	7.656+006	5.562+006	4.237+006	2.672+006	1.378+006	8.023+005	5.454+005
5.750-001	.000	1.777+011	9.518+008	4.656+008	2.459+008	1.907+008	1.539+008	1.338+008	1.091+008	8.749+007	7.695+007	7.099+007
8.500-001	.000	3.028+011	8.591+009	4.859+009	1.876+009	7.247+008	1.134+008	2.527+007	8.125+006	3.957+006	1.860+006	9.709+005
1.250+000	.000	2.723+011	4.905+007	3.599+007	2.585+007	2.031+007	1.365+007	9.537+006	4.926+006	1.706+006	7.758+005	5.151+005
1.750+000	.000	1.361+011	6.577+007	5.779+006	2.786+006	2.299+006	1.594+006	1.113+006	5.543+005	1.571+005	5.186+004	3.093+004
2.250+000	.000	9.763+010	5.899+007	4.991+007	3.969+007	3.181+007	2.043+007	1.313+007	5.429+006	9.324+005	1.045+005	1.197+004
2.750+000	.000	5.246+010	3.950+006	3.730+005	1.925+005	1.604+005	1.124+005	7.889+004	3.895+004	9.579+003	1.679+003	2.968+002
3.500+000	.000	3.989+010	8.098+004	3.933+004	3.171+004	2.669+004	1.893+004	1.342+004	6.747+003	1.705+003	3.057+002	5.478+001
5.000+000	.000	3.431+010	1.144-011	1.159-011	1.181-011	1.200-011	1.236-011	1.268-011	1.320-011	1.390-011	1.439-011	1.464-011
7.000+000	.000	3.119+008	1.039-012	1.053-012	1.072-012	1.090-012	1.123-012	1.152-012	1.199-012	1.263-012	1.307-012	1.330-012
1.100+001	.000	4.784+004	1.033-013	1.046-013	1.066-013	1.084-013	1.116-013	1.145-013	1.191-013	1.255-013	1.299-013	1.322-013
TOTAL	.000	1.239+012	9.978+009	5.557+009	2.275+009	1.034+009	3.451+008	2.114+008	1.422+008	9.930+007	8.257+007	7.474+007
GAM POW	.000	1.986+005	1.599+003	8.908+002	3.647+002	1.658+002	5.532+001	3.389+001	2.280+001	1.592+001	1.324+001	1.198+001

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	2.993+010	1.210+010	1.081+010	9.057+009	7.627+009	5.408+009	3.834+009	1.928+009	4.873+008	8.733+007	1.565+007

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
NEUT PRODN	.00	.00	8.11-010	8.11-010	8.11-010	8.11-010	8.11-010	8.11-010	8.11-010	8.11-010	8.11-010	8.11-010
NEUT DESTN	.00	.00	9.82+000	9.82+000	9.82+000	9.82+000	9.82+000	9.82+000	9.82+000	9.82+000	9.82+000	9.82+000
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	1.999+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000	2.001+000
H 2	5.999-004	8.089-004	8.089-004	8.089-004	8.089-004	8.089-004	8.089-004	8.089-004	8.089-004	8.089-004	8.089-004	8.089-004
H 3	.000	1.555-005	1.527-005	1.513-005	1.491-005	1.470-005	1.430-005	1.390-005	1.314-005	1.175-005	1.021-005	8.872-006
HE 3	.000	7.353-008	3.577-007	4.978-007	7.146-007	9.224-007	1.329-006	1.725-006	2.484-006	3.879-006	5.417-006	6.753-006
HE 4	.000	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002
LI 6	.000	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004
LI 7	.000	1.321-001	1.321-001	1.321-001	1.321-001	1.321-001	1.321-001	1.321-001	1.321-001	1.321-001	1.321-001	1.321-001
BE 9	1.000+001	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000
BE 10	.000	2.133-005	2.133-005	2.133-005	2.133-005	2.133-005	2.133-005	2.133-005	2.133-005	2.133-005	2.133-005	2.133-005
B 10	4.167-001	2.280-001	2.280-001	2.280-001	2.280-001	2.280-001	2.280-001	2.280-001	2.280-001	2.280-001	2.280-001	2.280-001
B 11	1.833+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000	1.836+000
C 12	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002	5.434+002
C 13	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000	6.608+000
C 14	.000	2.602-002	2.601-002	2.601-002	2.601-002	2.601-002	2.601-002	2.601-002	2.601-002	2.600-002	2.599-002	2.598-002
N 14	7.471+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001	7.468+001
N 15	2.940-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001	2.949-001
NE 21	.000	1.179-005	1.179-005	1.179-005	1.179-005	1.179-005	1.179-005	1.179-005	1.179-005	1.179-005	1.179-005	1.179-005
NE 22	.000	1.772-005	1.772-005	1.772-005	1.772-005	1.772-005	1.772-005	1.772-005	1.772-005	1.772-005	1.772-005	1.772-005
NA 23	.000	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006
NA 24	.000	2.022-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 24	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001	1.949+001
MG 25	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000	2.570+000
MG 26	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000	2.943+000
AL 27	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002
AL 28	.000	6.424-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 28	1.148+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002	1.149+002
SI 29	6.023+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000	6.025+000
SI 30	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000	4.136+000
P 31	.000	7.224-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005
TI 47	.000	7.651-007	7.651-007	7.651-007	7.651-007	7.651-007	7.651-007	7.651-007	7.651-007	7.651-007	7.651-007	7.651-007
TI 49	.000	2.070-006	2.070-006	2.070-006	2.070-006	2.070-006	2.070-006	2.070-006	2.070-006	2.070-006	2.070-006	2.070-006
TI 50	.000	8.213-006	8.213-006	8.213-006	8.213-006	8.213-006	8.213-006	8.213-006	8.213-006	8.213-006	8.213-006	8.213-006
V 50	.000	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005	3.152-005
V 51	.000	4.077-003	6.047-003	6.127-003	6.148-003	6.150-003	6.150-003	6.150-003	6.150-003	6.150-003	6.150-003	6.150-003
CR 50	2.716+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000	2.710+000
CR 51	.000	2.074-003	1.030-004	2.297-005	2.191-006	2.231-007	2.315-009	2.401-011	2.584-015	2.992-023	3.593-033	.000
CR 52	5.441+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001	5.438+001
CR 53	6.287+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000	6.299+000
CR 54	1.591+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000	1.608+000
MN 54	.000	4.405-004	3.376-004	2.955-004	2.399-004	1.959-004	1.307-004	8.715-005	3.876-005	7.669-006	1.012-006	1.335-007
MN 55	2.500+001	2.494+001	2.494+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.496+001	2.496+001
MN 56	.000	9.135-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	1.964+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001	1.962+001
FE 55	.000	1.565-002	1.434-002	1.373-002	1.282-002	1.199-002	1.049-002	9.185-003	7.036-003	4.128-003	2.120-003	1.089-003
FE 56	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002	3.216+002
FE 57	7.672+000	7.801+000	7.801+000	7.801+000	7.801+000	7.801+000	7.801+000	7.801+000	7.801+000	7.801+000	7.801+000	7.801+000
FE 58	1.053+000	1.056+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000	1.057+000
FE 59	.000	9.298-005	1.464-005	5.811-006	1.367-006	3.350-007	2.011-008	1.207-009	4.348-012	5.644-017	4.397-023	3.426-029
CO 58	.000	1.056-003	3.260-004	1.811-004	7.219-005	2.952-005	4.936-006	8.253-007	2.307-008	1.803-011	2.356-015	3.079-019
CO 59	.000	4.404-004	5.189-004	5.279-004	5.325-004	5.336-004	5.343-004	5.346-004	5.352-004	5.364-004	5.380-004	5.395-004
CO 60	.000	3.416-005	3.271-005	3.201-005	3.095-005	2.995-005	2.804-005	2.626-005	2.302-005	1.770-005	1.274-005	9.167-006
NI 58	6.740+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001	6.732+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NI 59	.000	7.076-002	7.076-002	7.076-002	7.076-002	7.076-002	7.076-002	7.075-002	7.075-002	7.075-002	7.075-002	7.075-002
NI 60	2.665+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001	2.664+001
NI 61	1.173+000	1.183+000	1.183+000	1.183+000	1.183+000	1.183+000	1.183+000	1.183+000	1.183+000	1.183+000	1.183+000	1.183+000
NI 62	3.788+000	3.778+000	3.778+000	3.778+000	3.778+000	3.778+000	3.778+000	3.778+000	3.778+000	3.778+000	3.778+000	3.778+000
NI 63	.000	1.099-002	1.097-002	1.095-002	1.093-002	1.091-002	1.087-002	1.083-002	1.075-002	1.059-002	1.039-002	1.019-002
NI 64	9.912-001	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000	1.015+000
NI 65	.000	3.523-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 63	5.140+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001	5.136+001
CU 64	.000	2.901-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	2.360+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001	2.359+001
CU 66	.000	4.316-007	8.254-030	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZN 64	.000	1.404-002	1.415-002	1.415-002	1.415-002	1.415-002	1.415-002	1.415-002	1.415-002	1.415-002	1.415-002	1.415-002
ZN 65	.000	9.471-007	6.734-007	5.678-007	4.348-007	3.354-007	1.996-007	1.188-007	4.205-008	5.273-009	3.934-010	2.936-011
ZN 66	.000	8.451-003	8.452-003	8.452-003	8.452-003	8.452-003	8.452-003	8.452-003	8.452-003	8.452-003	8.452-003	8.452-003
ZN 67	.000	5.758-007	5.761-007	5.761-007	5.761-007	5.761-007	5.761-007	5.761-007	5.761-007	5.761-007	5.761-007	5.761-007
SR 88	.000	4.853-006	4.853-006	4.853-006	4.853-006	4.853-006	4.853-006	4.853-006	4.853-006	4.853-006	4.853-006	4.853-006
Y 89	.000	1.831-007	3.333-007	3.534-007	3.648-007	3.679-007	3.690-007	3.691-007	3.691-007	3.691-007	3.691-007	3.691-007
Y 90	.000	5.264-007	4.532-015	4.515-015	4.487-015	4.461-015	4.408-015	4.356-015	4.253-015	4.055-015	3.821-015	3.600-015
Y 91	.000	5.266-007	1.271-007	6.244-008	2.052-008	6.956-009	7.993-010	9.184-011	1.213-012	2.114-016	4.236-021	8.487-026
ZR 90	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001	3.299+001
ZR 91	7.255+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000	7.253+000
ZR 92	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001	1.120+001
ZR 93	.000	8.239-004	8.239-004	8.239-004	8.239-004	8.239-004	8.239-004	8.239-004	8.239-004	8.239-004	8.239-004	8.239-004
ZR 94	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001	1.164+001
ZR 95	.000	1.471-004	4.009-005	2.093-005	7.564-006	2.813-006	3.889-007	5.378-008	1.028-009	3.760-013	1.901-017	9.611-022
ZR 96	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000	1.913+000
ZR 97	.000	5.217-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	5.331-005	3.705-005	2.189-005	8.654-006	3.336-006	4.717-007	6.550-008	1.298-009	4.586-013	2.319-017	1.172-021
NB 97	.000	3.709-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 95	.000	5.713-005	1.805-004	2.148-004	2.414-004	2.515-004	2.568-004	2.575-004	2.576-004	2.576-004	2.576-004	2.576-004
MO 97	.000	5.080-004	5.136-004	5.136-004	5.136-004	5.136-004	5.136-004	5.136-004	5.136-004	5.136-004	5.136-004	5.136-004
MO 98	.000	2.700-007	2.700-007	2.700-007	2.700-007	2.700-007	2.700-007	2.700-007	2.700-007	2.700-007	2.700-007	2.700-007
AG107	.000	4.236-007	4.253-007	4.253-007	4.253-007	4.253-007	4.253-007	4.253-007	4.253-007	4.253-007	4.253-007	4.253-007
AG109	.000	6.739-008	1.909-007	2.448-007	3.201-007	3.838-007	4.879-007	5.671-007	6.734-007	7.706-007	8.072-007	8.166-007
CD106	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003	3.062-003
CD108	2.136-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003	2.135-003
CD109	.000	7.524-007	6.289-007	5.750-007	4.997-007	4.360-007	3.319-007	2.526-007	1.464-007	4.916-008	1.257-008	3.212-009
CD110	3.055-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002	3.045-002
CD111	3.157-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002	3.151-002
CD112	6.001-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002	6.009-002
CD113	3.063-002	1.156-005	1.156-005	1.156-005	1.156-005	1.156-005	1.156-005	1.156-005	1.156-005	1.156-005	1.156-005	1.156-005
CD114	7.270-002	1.036-001	1.036-001	1.036-001	1.036-001	1.036-001	1.036-001	1.036-001	1.036-001	1.036-001	1.036-001	1.036-001
CD115	.000	3.254-006	1.991-022	1.557-030	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	4.020-006	6.225-007	2.450-007	5.689-008	1.376-008	8.051-010	4.711-011	1.613-013	1.890-018	1.296-024	8.885-031
CD116	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002	1.933-002
IN115	.000	3.881-006	7.278-006	7.655-006	7.844-006	7.887-006	7.900-006	7.900-006	7.900-006	7.900-006	7.900-006	7.900-006
SN116	.000	2.306-006	2.306-006	2.306-006	2.306-006	2.306-006	2.306-006	2.306-006	2.306-006	2.306-006	2.306-006	2.306-006
SN117	.000	3.487-006	3.496-006	3.496-006	3.496-006	3.496-006	3.496-006	3.496-006	3.496-006	3.496-006	3.496-006	3.496-006
SUMTOT	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
TOTAL	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	2.000+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000	2.002+000
HE	.000	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002	7.765-002
LI	.000	1.324-001	1.324-001	1.324-001	1.324-001	1.324-001	1.324-001	1.324-001	1.324-001	1.324-001	1.324-001	1.324-001
BE	1.000+001	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000
B	2.250+000	2.064+000	2.064+000	2.064+000	2.064+000	2.064+000	2.064+000	2.064+000	2.064+000	2.064+000	2.064+000	2.064+000
C	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002	5.500+002
N	7.500+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001	7.497+001
NE	.000	2.951-005	2.951-005	2.951-005	2.951-005	2.951-005	2.951-005	2.951-005	2.951-005	2.951-005	2.951-005	2.951-005
NA	.000	5.620-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006	3.599-006
MG	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001	2.500+001
AL	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002	8.000+002
SI	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002	1.250+002
P	.000	7.224-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005	7.236-005
TI	.000	1.105-005	1.105-005	1.105-005	1.105-005	1.105-005	1.105-005	1.105-005	1.105-005	1.105-005	1.105-005	1.105-005
V	.000	4.108-003	6.079-003	6.159-003	6.180-003	6.182-003	6.182-003	6.182-003	6.182-003	6.182-003	6.182-003	6.182-003
CR	6.500+001	6.500+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.499+001	6.500+001	6.500+001	6.500+001
MN	2.500+001	2.494+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.495+001	2.496+001	2.496+001
FE	3.500+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.501+002	3.500+002	3.500+002
CO	.000	1.530-003	8.777-004	7.410-004	6.356-004	5.931-004	5.672-004	5.617-004	5.583-004	5.541-004	5.507-004	5.487-004
NI	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002	1.000+002
CU	7.500+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.495+001	7.496+001	7.496+001
ZN	.000	2.249-002	2.260-002	2.260-002	2.260-002	2.260-002	2.260-002	2.260-002	2.260-002	2.260-002	2.260-002	2.260-002
SR	.000	5.092-006	4.942-006	4.922-006	4.910-006	4.907-006	4.906-006	4.906-006	4.906-006	4.906-006	4.906-006	4.906-006
Y	.000	1.238-006	4.604-007	4.158-007	3.853-007	3.748-007	3.698-007	3.692-007	3.691-007	3.691-007	3.691-007	3.691-007
ZR	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001	6.500+001
NB	.000	5.375-005	3.707-005	2.190-005	8.658-006	3.337-006	4.724-007	6.633-008	2.479-009	1.927-009	2.860-009	3.793-009
MO	.000	5.655-004	6.945-004	7.288-004	7.554-004	7.655-004	7.708-004	7.715-004	7.716-004	7.716-004	7.716-004	7.716-004
AG	.000	4.912-007	6.164-007	6.703-007	7.455-007	8.092-007	9.133-007	9.926-007	1.099-006	1.196-006	1.233-006	1.242-006
CD	2.500-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001	2.501-001
IN	.000	3.886-006	7.278-006	7.655-006	7.844-006	7.887-006	7.900-006	7.900-006	7.900-006	7.900-006	7.900-006	7.900-006
SN	.000	5.793-006	5.802-006	5.802-006	5.802-006	5.802-006	5.802-006	5.802-006	5.802-006	5.802-006	5.802-006	5.802-006
SUMTOT	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
TOTAL	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

CUMULATIVE TABLE TOTALS

AP+FP	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003	2.270+003

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	1.501-001	1.474-001	1.460-001	1.439-001	1.419-001	1.380-001	1.342-001	1.269-001	1.134-001	9.855-002	8.565-002
H 4	.000	4.242-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.204+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.711-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007
B 12	.000	2.531-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	1.160-001	1.160-001	1.160-001	1.160-001	1.160-001	1.160-001	1.160-001	1.160-001	1.159-001	1.159-001	1.159-001
C 15	.000	3.377-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	1.229-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	2.948-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	1.761+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	1.676-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.780-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.096+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	1.927+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	4.875-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	4.729-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	4.397+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	8.549-005	2.547-007	1.402-008	2.807-010	1.362-010	1.343-010	1.343-010	1.341-010	1.338-010	1.335-010	1.331-010
TI 51	.000	1.204-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 52	.000	1.541+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.023-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	1.034-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	1.917+002	9.525+000	2.123+000	2.025-001	2.063-002	2.140-004	2.219-006	2.388-010	2.765-018	.000	.000
CR 55	.000	3.304+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	3.410+000	2.613+000	2.287+000	1.857+000	1.517+000	1.012+000	6.746-001	3.001-001	5.936-002	7.833-003	1.033-003
MN 56	.000	1.983+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	4.772-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	1.581-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	3.915+001	3.587+001	3.433+001	3.206+001	2.999+001	2.625+001	2.297+001	1.760+001	1.032+001	5.302+000	2.722+000
FE 59	.000	4.575+000	7.205-001	2.859-001	6.728-002	1.648-002	9.893-004	5.938-005	2.139-007	2.777-012	2.164-018	1.686-024
CO 58	.000	3.360+001	1.037+001	5.765+000	2.297+000	9.394-001	1.571-001	2.626-002	7.342-004	5.738-007	7.498-011	9.798-015
CO 60	.000	3.864-002	3.700-002	3.621-002	3.501-002	3.388-002	3.172-002	2.970-002	2.604-002	2.002-002	1.441-002	1.037-002
CO 60M	.000	7.514-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	2.926-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	5.259-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	5.361-003	5.361-003	5.361-003	5.361-003	5.361-003	5.361-003	5.361-003	5.361-003	5.361-003	5.361-003	5.361-003
NI 63	.000	6.783-001	6.766-001	6.758-001	6.745-001	6.732-001	6.707-001	6.682-001	6.631-001	6.532-001	6.410-001	6.291-001
NI 65	.000	6.743+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	3.456-005	4.606-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.119+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	2.412+002	4.613-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	2.316-004	2.239-018	2.201-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	7.805-003	5.549-003	4.679-003	3.583-003	2.764-003	1.645-003	9.787-004	3.466-004	4.345-005	3.242-006	2.419-007
SR 89	.000	5.406-003	1.041-003	4.570-004	1.259-004	3.594-005	2.930-006	2.389-007	1.588-009	7.017-014	2.528-019	9.108-025
SR 90	.000	2.486-009	2.466-009	2.457-009	2.442-009	2.427-009	2.399-009	2.370-009	2.314-009	2.207-009	2.079-009	1.959-009
SR 91	.000	1.504-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	5.194-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	2.865-001	2.467-009	2.457-009	2.442-009	2.428-009	2.399-009	2.371-009	2.315-009	2.207-009	2.080-009	1.960-009
Y 91	.000	1.292-002	3.119-003	1.532-003	5.034-004	1.707-004	1.961-005	2.253-006	2.975-008	5.188-012	1.039-016	2.082-021
Y 92	.000	1.692-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.194-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
Y 94	.000	1.076-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	6.913-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.071-006	2.071-006	2.071-006	2.071-006	2.071-006	2.071-006	2.071-006	2.071-006	2.071-006	2.071-006	2.071-006
ZR 95	.000	3.161+000	8.616-001	4.498-001	1.626-001	6.045-002	8.359-003	1.156-003	2.210-005	8.081-009	4.086-013	2.066-017
ZR 97	.000	9.977+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	1.611-008	4.851-008	6.451-008	8.929-008	1.131-007	1.597-007	2.052-007	2.928-007	4.551-007	6.360-007	7.953-007
NB 95	.000	2.086+000	1.449+000	8.565-001	3.386-001	1.305-001	1.845-002	2.562-003	5.078-005	1.794-008	9.070-013	4.586-017
NB 95M	.000	2.256-002	6.392-003	3.337-003	1.206-003	4.485-004	6.201-005	8.575-006	1.640-007	5.995-011	3.031-015	1.532-019
NB 96	.000	1.371-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	9.977+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	9.441+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 99	.000	1.688-006	1.234-019	3.339-026	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	7.048-005	3.211-010	3.208-010	3.204-010	3.200-010	3.191-010	3.182-010	3.165-010	3.130-010	3.088-010	3.046-010
AG108M	.000	3.615-009	3.608-009	3.605-009	3.600-009	3.595-009	3.585-009	3.575-009	3.556-009	3.517-009	3.470-009	3.423-009
AG109M	.000	1.943-003	1.624-003	1.485-003	1.291-003	1.126-003	8.572-004	6.525-004	3.781-004	1.270-004	3.246-005	8.297-006
AG110	.000	7.888-005	3.800-009	3.218-009	2.480-009	1.925-009	1.160-009	6.988-010	2.537-010	3.344-011	2.656-012	2.110-013
AG110M	.000	3.986-007	2.857-007	2.419-007	1.864-007	1.447-007	8.720-008	5.254-008	1.908-008	2.515-009	1.997-010	1.586-011
CD107	.000	7.524-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	1.943-003	1.624-003	1.485-003	1.291-003	1.126-003	8.572-004	6.525-004	3.781-004	1.270-004	3.246-005	8.297-006
CD111M	.000	1.337-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	1.659+000	1.015-016	7.938-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.024-001	1.586-002	6.240-003	1.449-003	3.505-004	2.051-005	1.200-006	4.108-009	4.814-014	3.301-020	.000
CD117	.000	4.946-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.886-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116	.000	1.183-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	9.326-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	2.653-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	4.683-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	.000	5.818+003	6.243+001	4.710+001	3.797+001	3.365+001	2.841+001	2.463+001	1.884+001	1.129+001	6.185+000	3.570+000
TOTAL	.000	5.818+003	6.243+001	4.710+001	3.797+001	3.365+001	2.841+001	2.463+001	1.884+001	1.129+001	6.185+000	3.570+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	5.744-001	1.474-001	1.460-001	1.439-001	1.419-001	1.380-001	1.342-001	1.269-001	1.134-001	9.855-002	8.565-002
HE	.000	1.204+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.711-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.036-006	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007	4.769-007
B	.000	2.531-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	1.160-001	1.160-001	1.160-001	1.160-001	1.160-001	1.160-001	1.160-001	1.160-001	1.159-001	1.159-001	1.159-001
N	.000	1.229-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	2.948-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	1.778+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.096+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	1.927+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	4.397+000	1.345-010	1.345-010	1.344-010	1.344-010	1.343-010	1.342-010	1.341-010	1.338-010	1.335-010	1.331-010
P	.000	8.549-005	2.547-007	1.402-008	2.807-010	1.362-010	1.343-010	1.343-010	1.341-010	1.338-010	1.335-010	1.331-010
SC	.000	6.472-007	7.578-018	2.775-022	.000	.000	.000	.000	.000	.000	.000	.000
TI	.000	1.204-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	.000	1.552+000	5.637-018	5.637-018	5.637-018	5.637-018	5.637-018	5.637-018	5.637-018	5.637-018	5.637-018	5.637-018
CR	.000	1.950+002	9.525+000	2.123+000	2.025-001	2.063-002	2.140-004	2.219-006	2.388-010	2.765-018	.000	.000
MN	.000	1.987+003	2.613+000	2.287+000	1.857+000	1.517+000	1.012+000	6.746-001	3.001-001	5.936-002	7.833-003	1.033-003
FE	.000	4.373+001	3.659+001	3.462+001	3.213+001	3.001+001	2.625+001	2.297+001	1.760+001	1.032+001	5.302+000	2.722+000
CO	.000	3.380+001	1.041+001	5.801+000	2.332+000	9.733-001	1.888-001	5.596-002	2.677-002	2.002-002	1.441-002	1.037-002
NI	.000	7.427+000	6.820-001	6.811-001	6.798-001	6.786-001	6.760-001	6.735-001	6.685-001	6.586-001	6.464-001	6.344-001
CU	.000	1.360+003	2.243-018	2.201-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	7.805-003	5.549-003	4.679-003	3.583-003	2.764-003	1.645-003	9.787-004	3.466-004	4.345-005	3.242-006	2.419-007
SR	.000	6.916-003	1.041-003	4.570-004	1.259-004	3.594-005	2.933-006	2.413-007	3.902-009	2.207-009	2.079-009	1.959-009
Y	.000	3.175-001	3.119-003	1.532-003	5.034-004	1.707-004	1.961-005	2.256-006	3.207-008	2.213-009	2.080-009	1.960-009
ZR	.000	1.314+001	8.616-001	4.498-001	1.626-001	6.045-002	8.361-003	1.158-003	2.417-005	2.079-006	2.071-006	2.071-006
NB	.000	2.153+001	1.456+000	8.598-001	3.398-001	1.309-001	1.851-002	2.571-003	5.124-005	4.731-007	6.360-007	7.953-007
MO	.000	1.688-006	1.234-019	3.339-026	.000	.000	.000	.000	.000	.000	.000	.000
AG	.000	2.093-003	1.625-003	1.485-003	1.291-003	1.126-003	8.573-004	6.526-004	3.782-004	1.270-004	3.246-005	8.301-006
CD	.000	1.835+000	1.748-002	7.725-003	2.740-003	1.477-003	8.777-004	6.537-004	3.781-004	1.270-004	3.246-005	8.297-006
IN	.000	9.451-002	4.529-017	4.764-017	4.881-017	4.908-017	4.916-017	4.917-017	4.917-017	4.917-017	4.917-017	4.917-017
SUMTOT	.000	5.818+003	6.243+001	4.710+001	3.797+001	3.365+001	2.841+001	2.463+001	1.884+001	1.129+001	6.185+000	3.570+000
TOTAL	.000	5.818+003	6.243+001	4.710+001	3.797+001	3.365+001	2.841+001	2.463+001	1.884+001	1.129+001	6.185+000	3.570+000

CUMULATIVE TABLE TOTALS

AP+FP	.000	5.818+003	6.243+001	4.710+001	3.797+001	3.365+001	2.841+001	2.463+001	1.884+001	1.129+001	6.185+000	3.570+000
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	.000	5.818+003	6.243+001	4.710+001	3.797+001	3.365+001	2.841+001	2.463+001	1.884+001	1.129+001	6.185+000	3.570+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	5.055-006	4.963-006	4.917-006	4.847-006	4.779-006	4.647-006	4.518-006	4.272-006	3.818-006	3.318-006	2.884-006
HE 6	.000	1.119+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	6.379-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010
BE 11	.000	3.812-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	2.006-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	3.402-005	3.402-005	3.401-005	3.401-005	3.401-005	3.401-005	3.401-005	3.400-005	3.400-005	3.399-005	3.398-005
C 15	.000	5.747-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	5.325-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	3.613-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	4.879-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	4.688-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	2.043-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	7.645-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	3.456+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	6.794-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	1.604-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	1.555-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	8.665-007	2.582-009	1.422-010	2.846-012	1.380-012	1.362-012	1.361-012	1.359-012	1.357-012	1.353-012	1.349-012
TI 51	.000	8.815-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 52	.000	2.297-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	1.236-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	4.473-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	4.102-002	2.038-003	4.544-004	4.334-005	4.414-006	4.578-008	4.749-010	5.111-014	5.918-022	7.108-032	.000
CR 55	.000	2.156-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	1.698-002	1.301-002	1.139-002	9.248-003	7.552-003	5.037-003	3.359-003	1.494-003	2.956-004	3.900-005	5.146-006
MN 56	.000	2.964+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	3.312-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	3.744-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	5.384-002	4.933-002	4.722-002	4.409-002	4.124-002	3.610-002	3.159-002	2.420-002	1.420-002	7.291-003	3.744-003
FE 59	.000	4.266-002	6.718-003	2.666-003	6.273-004	1.537-004	9.225-006	5.537-007	1.995-009	2.589-014	2.017-020	1.572-028
CO 58	.000	2.012-001	6.211-002	3.451-002	1.375-002	5.624-003	9.403-004	1.572-004	4.395-006	3.435-009	4.489-013	5.866-017
CO 60	.000	5.957-004	5.705-004	5.583-004	5.397-004	5.223-004	4.890-004	4.579-004	4.015-004	3.086-004	2.221-004	1.599-004
CO 60M	.000	2.807-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	9.469-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	9.976-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	3.413-005	3.413-005	3.413-005	3.413-005	3.413-005	3.413-005	3.413-005	3.413-005	3.413-005	3.413-005	3.413-005
NI 63	.000	2.694-004	2.687-004	2.684-004	2.679-004	2.674-004	2.664-004	2.654-004	2.634-004	2.594-004	2.546-004	2.498-004
NI 65	.000	4.720-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	1.373-008	1.829-024	2.112-032	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	2.076+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.651+000	3.158-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	3.719-007	3.595-021	3.534-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	2.735-005	1.944-005	1.640-005	1.255-005	9.684-006	5.763-006	3.429-006	1.214-006	1.523-007	1.136-008	8.477-010
SR 89	.000	1.869-005	3.600-006	1.580-006	4.351-007	1.242-007	1.013-008	8.259-010	5.490-012	2.426-016	8.739-022	3.148-027
SR 90	.000	2.885-012	2.863-012	2.851-012	2.834-012	2.817-012	2.784-012	2.751-012	2.686-012	2.561-012	2.413-012	2.274-012
SR 91	.000	1.205-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	7.869-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	1.588-003	1.367-011	1.362-011	1.354-011	1.346-011	1.330-011	1.314-011	1.283-011	1.223-011	1.153-011	1.086-011
Y 91	.000	4.640-005	1.120-005	5.502-006	1.808-006	6.129-007	7.043-008	8.093-009	1.069-010	1.863-014	3.733-019	7.479-024
Y 92	.000	1.703-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	3.885-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
Y 94	.000	1.793-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	1.585-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.406-010	2.406-010	2.406-010	2.406-010	2.406-010	2.406-010	2.406-010	2.406-010	2.406-010	2.406-010	2.406-010
ZR 95	.000	1.601-002	4.364-003	2.278-003	8.234-004	3.062-004	4.234-005	5.855-006	1.120-007	4.093-011	2.069-015	1.046-019
ZR 97	.000	5.199-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 93M	.000	2.854-012	8.595-012	1.143-011	1.582-011	2.003-011	2.830-011	3.636-011	5.187-011	8.063-011	1.127-010	1.409-010
NB 95	.000	1.000-002	6.953-003	4.108-003	1.624-003	6.259-004	8.850-005	1.229-005	2.436-007	8.606-011	4.351-015	2.200-019
NB 95M	.000	3.135-005	8.881-006	4.636-006	1.676-006	6.231-007	8.816-008	1.191-008	2.278-010	8.329-014	4.211-018	2.129-022
NB 96	.000	2.280-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	6.641-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	4.156-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	2.626-007	1.197-012	1.195-012	1.194-012	1.192-012	1.189-012	1.186-012	1.179-012	1.166-012	1.151-012	1.135-012
AG108M	.000	3.516-011	3.510-011	3.507-011	3.502-011	3.497-011	3.487-011	3.478-011	3.459-011	3.421-011	3.375-011	3.329-011
AG109M	.000	1.002-006	8.373-007	7.655-007	6.653-007	5.805-007	4.419-007	3.364-007	1.949-007	6.545-008	1.873-008	4.277-009
AG110	.000	5.667-007	2.730-011	2.312-011	1.781-011	1.383-011	8.332-012	5.020-012	1.823-012	2.403-013	1.909-014	1.516-015
AG110M	.000	6.656-009	4.771-009	4.040-009	3.113-009	2.416-009	1.456-009	8.773-010	3.185-010	4.199-011	3.335-012	2.649-013
CD107	.000	3.417-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	1.237-006	1.034-006	9.455-007	8.217-007	7.169-007	5.457-007	4.154-007	2.407-007	8.084-008	2.066-008	5.282-009
CD111M	.000	3.138-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	5.266-003	3.222-019	2.520-027	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	3.819-004	5.914-005	2.327-005	5.404-006	1.307-006	7.649-008	4.475-009	1.532-011	1.795-016	1.231-022	8.441-029
CD117	.000	3.562-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.533-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116	.000	9.689-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	1.535-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	1.195-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	1.768-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	.000	7.100+001	1.455-001	1.036-001	7.111-002	5.639-002	4.305-002	3.593-002	2.644-002	1.513-002	7.878-003	4.230-003
TOTAL	.000	7.100+001	1.455-001	1.036-001	7.111-002	5.639-002	4.305-002	3.593-002	2.644-002	1.513-002	7.878-003	4.230-003

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	5.055-006	4.963-006	4.917-006	4.847-006	4.779-006	4.647-006	4.518-006	4.272-006	3.818-006	3.318-006	2.884-006
HE	.000	1.119+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	6.379-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	3.869-008	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010	5.724-010
B	.000	2.006-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	3.459-005	3.402-005	3.401-005	3.401-005	3.401-005	3.401-005	3.401-005	3.400-005	3.400-005	3.399-005	3.398-005
N	.000	5.325-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	3.613-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.899-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	7.645-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	3.457+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	1.555-002	1.674-013	1.674-013	1.673-013	1.673-013	1.672-013	1.671-013	1.669-013	1.666-013	1.661-013	1.657-013
P	.000	8.665-007	2.582-009	1.422-010	2.846-012	1.380-012	1.362-012	1.361-012	1.359-012	1.357-012	1.353-012	1.349-012
TI	.000	8.815-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	.000	2.310-002	6.215-020	6.215-020	6.215-020	6.215-020	6.215-020	6.215-020	6.215-020	6.215-020	6.215-020	6.215-020
CR	.000	6.258-002	2.038-003	4.544-004	4.334-005	4.414-006	4.578-008	4.749-010	5.111-014	5.918-022	7.108-032	.000
MN	.000	2.966+001	1.301-002	1.139-002	9.248-003	7.552-003	5.037-003	3.359-003	1.494-003	2.956-004	3.900-005	5.146-006
FE	.000	9.650-002	5.605-002	4.988-002	4.471-002	4.140-002	3.611-002	3.159-002	2.420-002	1.420-002	7.291-003	3.744-003
CO	.000	2.029-001	6.268-002	3.507-002	1.429-002	6.146-003	1.429-003	6.151-004	4.059-004	3.086-004	2.221-004	1.599-004
NI	.000	4.751-002	3.029-004	3.025-004	3.020-004	3.015-004	3.005-004	2.995-004	2.975-004	2.936-004	2.887-004	2.840-004
CU	.000	3.728+000	3.626-021	3.534-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	2.735-005	1.944-005	1.640-005	1.255-005	9.684-006	5.763-006	3.429-006	1.214-006	1.523-007	1.136-008	8.477-010
SR	.000	3.082-005	3.600-006	1.580-006	4.351-007	1.242-007	1.013-008	8.286-010	8.176-012	2.562-012	2.413-012	2.274-012
Y	.000	1.823-003	1.120-005	5.503-006	1.808-006	6.129-007	7.044-008	8.106-009	1.197-010	1.225-011	1.153-011	1.086-011
ZR	.000	6.800-002	4.364-003	2.278-003	8.234-004	3.062-004	4.234-005	5.855-006	1.122-007	2.816-010	2.406-010	2.406-010
NB	.000	1.180-001	6.961-003	4.113-003	1.626-003	6.265-004	8.859-005	1.230-005	2.438-007	1.668-010	1.127-010	1.409-010
AG	.000	1.838-006	8.421-007	7.696-007	6.685-007	5.829-007	4.434-007	3.373-007	1.953-007	6.553-008	1.677-008	4.312-009
CD	.000	6.055-003	6.017-005	2.422-005	6.226-006	2.024-006	6.222-007	4.199-007	2.407-007	8.084-008	2.066-008	5.282-009
IN	.000	5.467-004	6.497-020	6.834-020	7.002-020	7.041-020	7.052-020	7.053-020	7.053-020	7.053-020	7.053-020	7.053-020
SUMTOT	.000	7.100+001	1.455-001	1.036-001	7.111-002	5.639-002	4.305-002	3.593-002	2.644-002	1.513-002	7.878-003	4.230-003
TOTAL	.000	7.100+001	1.455-001	1.036-001	7.111-002	5.639-002	4.305-002	3.593-002	2.644-002	1.513-002	7.878-003	4.230-003

CUMULATIVE TABLE TOTALS

AP+FP	.000	7.100+001	1.455-001	1.036-001	7.111-002	5.639-002	4.305-002	3.593-002	2.644-002	1.513-002	7.878-003	4.230-003
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	.000	7.100+001	1.455-001	1.036-001	7.111-002	5.639-002	4.305-002	3.593-002	2.644-002	1.513-002	7.878-003	4.230-003

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NP237	.000	.000	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007
TOTALS												
TABLE	.000	.000	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007
ACTUAL	.000	.000	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U233	.000	.000	1.016-017	1.735-017	2.883-017	4.002-017	6.242-017	8.482-017	1.344-016	2.288-016	3.455-016	4.623-016
TOTALS												
TABLE	.000	.000	1.016-017	1.735-017	2.883-017	4.002-017	6.242-017	8.482-017	1.344-016	2.288-016	3.455-016	4.623-016
ACTUAL	.000	.000	1.016-017	1.735-017	2.883-017	4.002-017	6.242-017	8.482-017	1.344-016	2.288-016	3.455-016	4.623-016
OVERALL TOTALS												
TABLE	.000	.000	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007
ACTUAL	.000	.000	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007	1.007-007

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.547+013	1.206+011	5.816+010	2.535+010	1.400+010	6.227+009	3.648+009	1.561+009	3.227+008	5.801+007	2.244+007
2.500-002	.000	2.050+012	5.506+008	3.283+008	1.617+008	9.417+007	4.812+007	3.322+007	1.953+007	7.860+006	3.382+006	2.162+006
3.750-002	.000	1.378+012	3.075+008	1.681+008	6.616+007	2.727+007	5.350+006	1.742+006	9.966+005	8.833+005	7.959+005	7.326+005
5.750-002	.000	2.068+012	4.360+008	2.386+008	9.382+007	3.841+007	7.082+006	1.910+006	8.551+005	7.227+005	6.262+005	5.587+005
8.500-002	.000	1.326+012	2.644+008	1.467+008	5.975+007	2.607+007	6.444+006	2.738+006	1.329+006	5.553+005	2.482+005	1.522+005
1.250-001	.000	9.146+011	1.677+008	9.220+007	3.636+007	1.481+007	2.527+006	4.891+005	8.453+004	5.706+004	4.226+004	3.166+004
2.250-001	.000	1.398+012	2.849+008	1.553+008	6.032+007	2.414+007	3.916+006	6.594+005	4.186+004	1.890+004	1.355+004	9.750+003
3.750-001	.000	1.321+012	2.955+010	6.616+009	6.463+008	7.202+007	2.106+006	3.141+005	7.605+004	5.323+004	3.830+004	2.760+004
5.750-001	.000	1.440+013	1.025+011	5.694+010	2.269+010	9.280+009	1.553+009	2.603+008	7.586+006	4.815+004	3.572+003	5.855+002
8.500-001	.000	7.640+013	5.374+011	3.297+011	1.651+011	9.457+010	4.317+010	2.555+010	1.093+010	2.156+009	2.846+008	3.757+007
1.250+000	.000	2.602+012	2.836+009	2.760+009	2.650+009	2.553+009	2.374+009	2.214+009	1.932+009	1.482+009	1.066+009	7.671+008
1.750+000	.000	9.333+013	1.900+009	1.055+009	4.206+008	1.720+008	2.876+007	4.809+006	1.345+005	1.166+002	9.351-001	7.765-002
2.250+000	.000	9.908+012	1.451+004	1.420+004	1.373+004	1.328+004	1.244+004	1.165+004	1.021+004	7.848+003	5.649+003	4.066+003
2.750+000	.000	2.038+012	4.489+001	4.393+001	4.247+001	4.110+001	3.848+001	3.603+001	3.159+001	2.428+001	1.748+001	1.258+001
3.500+000	.000	1.194+011	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	4.322+007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	1.172+007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	1.788+006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	2.247+014	7.968+011	4.564+011	2.174+011	1.209+011	5.343+010	3.172+010	1.445+010	3.971+009	1.414+009	8.308+008
MEV/SEC	.000	2.696+014	5.356+011	3.217+011	1.581+011	8.946+010	4.071+010	2.470+010	1.173+010	3.690+009	1.575+009	9.913+008

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	2.321+005	1.809+003	8.723+002	3.803+002	2.100+002	9.341+001	5.471+001	2.342+001	4.841+000	8.702-001	3.366-001
2.500-002	.000	5.125+004	1.377+001	8.208+000	4.043+000	2.354+000	1.203+000	8.306-001	4.883-001	1.965-001	8.456-002	5.404-002
3.750-002	.000	5.168+004	1.153+001	6.305+000	2.481+000	1.023+000	2.006-001	6.531-002	3.737-002	3.312-002	2.985-002	2.747-002
5.750-002	.000	1.189+005	2.507+001	1.372+001	5.394+000	2.209+000	4.072-001	1.098-001	4.917-002	4.155-002	3.601-002	3.201-002
8.500-002	.000	1.127+005	2.247+001	1.247+001	5.079+000	2.216+000	5.477-001	2.327-001	1.130-001	4.720-002	2.110-002	1.294-002
1.250-001	.000	1.143+005	2.096+001	1.153+001	4.545+000	1.851+000	3.159-001	6.114-002	1.057-002	7.132-003	5.283-003	3.957-003
2.250-001	.000	3.145+005	6.410+001	3.495+001	1.357+001	5.432+000	8.811-001	1.484-001	9.419-003	4.252-003	3.048-003	2.194-003
3.750-001	.000	4.954+005	1.108+004	2.481+003	2.424+002	2.701+001	7.898-001	1.178-001	2.852-002	1.996-002	1.436-002	1.035-002
5.750-001	.000	8.279+006	5.892+004	3.274+004	1.305+004	5.336+003	8.929+002	1.497+002	4.362+000	2.769-002	2.054-003	3.366-004
8.500-001	.000	6.494+007	4.568+005	2.803+005	1.404+005	8.038+004	3.670+004	2.172+004	9.289+003	1.833+003	2.419+002	3.193+001
1.250+000	.000	3.252+006	3.544+003	3.449+003	3.313+003	3.191+003	2.968+003	2.767+003	2.415+003	1.852+003	1.332+003	9.589+002
1.750+000	.000	1.633+008	3.324+003	1.847+003	7.361+002	3.010+002	5.033+001	8.415+000	2.354-001	2.041-004	1.636-006	1.359-007
2.250+000	.000	2.229+007	3.264-002	3.195-002	3.088-002	2.988-002	2.798-002	2.620-002	2.297-002	1.766-002	1.271-002	9.148-003
2.750+000	.000	5.605+006	1.235-004	1.208-004	1.168-004	1.130-004	1.058-004	9.909-005	8.688-005	6.678-005	4.807-005	3.460-005
3.500+000	.000	4.179+005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	2.161+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	8.201+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	1.966+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	2.696+008	5.356+005	3.217+005	1.581+005	8.946+004	4.071+004	2.470+004	1.173+004	3.690+003	1.575+003	9.913+002
GAM POW	.000	4.322+001	8.586-002	5.158-002	2.535-002	1.434-002	6.525-003	3.960-003	1.881-003	5.915-004	2.525-004	1.589-004

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	4.904+008	2.190+003	1.230+001	7.728+000	7.730+000	7.731+000	7.731+000	7.731+000	7.731+000	7.731+000	7.731+000
2.500-002	.000	1.578+007	7.081+001	7.636-001	6.156-001	6.156-001	6.156-001	6.156-001	6.156-001	6.156-001	6.156-001	6.156-001
3.750-002	.000	9.844+005	4.384+000	1.280-002	3.588-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003	3.591-003
5.750-002	.000	2.379+008	1.058+003	2.274+000	4.115-002	4.101-002	4.101-002	4.101-002	4.101-002	4.101-002	4.101-002	4.101-002
8.500-002	.000	1.107+008	4.951+002	3.748+000	2.723+000	2.725+000	2.725+000	2.725+000	2.725+000	2.725+000	2.725+000	2.725+000
1.250-001	.000	1.938+008	8.630+002	2.302+000	4.858-001	4.858-001	4.858-001	4.858-001	4.858-001	4.858-001	4.858-001	4.858-001
2.250-001	.000	1.461+008	6.504+002	1.488+000	1.162-001	1.162-001	1.162-001	1.162-001	1.162-001	1.162-001	1.162-001	1.162-001
3.750-001	.000	8.621+006	4.038+001	2.167+000	2.105+000	2.107+000	2.107+000	2.107+000	2.107+000	2.107+000	2.107+000	2.107+000
5.750-001	.000	.000	1.269-004	1.269-004	1.269-004	1.269-004	1.269-004	1.269-004	1.269-004	1.269-004	1.269-004	1.269-004
8.500-001	.000	.000	1.764-008	1.764-008	1.764-008	1.764-008	1.764-008	1.765-008	1.767-008	1.773-008	1.785-008	1.802-008
1.250+000	.000	.000	1.003-008	1.003-008	1.003-008	1.003-008	1.004-008	1.005-008	1.007-008	1.013-008	1.025-008	1.042-008
1.750+000	.000	.000	5.027-009	5.027-009	5.027-009	5.027-009	5.068-009	5.103-009	5.208-009	5.553-009	6.232-009	7.184-009
2.250+000	.000	.000	2.519-009	2.519-009	2.519-009	2.519-009	2.519-009	2.519-009	2.519-009	2.519-009	2.519-009	2.519-009
2.750+000	.000	.000	1.262-009	1.262-009	1.262-009	1.262-009	1.262-009	1.262-009	1.262-009	1.262-009	1.262-009	1.262-009
3.500+000	.000	.000	9.294-010	9.294-010	9.294-010	9.294-010	9.294-010	9.294-010	9.294-010	9.294-010	9.294-010	9.294-010
5.000+000	.000	.000	2.767-010	2.767-010	2.767-010	2.767-010	2.767-010	2.767-010	2.767-010	2.767-010	2.767-010	2.767-010
7.000+000	.000	.000	1.795-011	1.795-011	1.795-011	1.795-011	1.795-011	1.795-011	1.795-011	1.795-011	1.795-011	1.795-011
1.100+001	.000	.000	1.135-012	1.135-012	1.135-012	1.135-012	1.135-012	1.135-012	1.135-012	1.135-012	1.135-012	1.135-012
TOTAL	.000	1.204+009	5.372+003	2.506+001	1.382+001	1.382+001	1.382+001	1.382+001	1.383+001	1.382+001	1.382+001	1.382+001
MEV/SEC	.000	9.121+007	4.071+002	2.089+000	1.242+000	1.242+000	1.243+000	1.243+000	1.243+000	1.243+000	1.243+000	1.243+000

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	7.356+000	3.285-005	1.845-007	1.159-007	1.160-007	1.160-007	1.160-007	1.160-007	1.160-007	1.160-007	1.160-007
2.500-002	.000	3.944-001	1.770-008	1.909-008	1.539-008	1.539-008	1.539-008	1.539-008	1.539-008	1.539-008	1.539-008	1.539-008
3.750-002	.000	3.692-002	1.644-007	4.800-010	1.346-010	1.346-010	1.347-010	1.347-010	1.347-010	1.347-010	1.347-010	1.347-010
5.750-002	.000	1.368+001	6.086-005	1.308-007	2.366-009	2.358-009	2.358-009	2.358-009	2.358-009	2.358-009	2.358-009	2.358-009
8.500-002	.000	9.407+000	4.209-005	3.185-007	2.315-007	2.316-007	2.316-007	2.316-007	2.316-007	2.316-007	2.316-007	2.316-007
1.250-001	.000	2.423+001	1.079-004	2.878-007	6.070-008	6.072-008	6.073-008	6.073-008	6.073-008	6.073-008	6.073-008	6.073-008
2.250-001	.000	3.288+001	1.463-004	3.347-007	2.615-008	2.614-008	2.614-008	2.614-008	2.614-008	2.614-008	2.614-008	2.614-008
3.750-001	.000	3.233+000	1.514-005	8.127-007	7.895-007	7.901-007	7.902-007	7.902-007	7.902-007	7.902-007	7.902-007	7.902-007
5.750-001	.000	.000	7.298-011	7.299-011	7.299-011	7.299-011	7.299-011	7.299-011	7.299-011	7.299-011	7.299-011	7.299-011
8.500-001	.000	.000	1.499-014	1.499-014	1.499-014	1.499-014	1.500-014	1.500-014	1.502-014	1.507-014	1.517-014	1.532-014
1.250+000	.000	.000	1.254-014	1.254-014	1.254-014	1.254-014	1.255-014	1.256-014	1.258-014	1.266-014	1.281-014	1.302-014
1.750+000	.000	.000	8.797-015	8.797-015	8.797-015	8.797-015	8.869-015	8.930-015	9.114-015	9.718-015	1.091-014	1.257-014
2.250+000	.000	.000	5.667-015	5.667-015	5.667-015	5.667-015	5.667-015	5.667-015	5.667-015	5.667-015	5.668-015	5.668-015
2.750+000	.000	.000	3.471-015	3.471-015	3.471-015	3.471-015	3.471-015	3.471-015	3.471-015	3.471-015	3.471-015	3.471-015
3.500+000	.000	.000	3.253-015	3.253-015	3.253-015	3.253-015	3.253-015	3.253-015	3.253-015	3.253-015	3.253-015	3.253-015
5.000+000	.000	.000	1.384-015	1.384-015	1.384-015	1.384-015	1.384-015	1.384-015	1.384-015	1.384-015	1.384-015	1.384-015
7.000+000	.000	.000	1.257-016	1.257-016	1.257-016	1.257-016	1.257-016	1.257-016	1.257-016	1.257-016	1.257-016	1.257-016
1.100+001	.000	.000	1.249-017	1.249-017	1.249-017	1.249-017	1.249-017	1.249-017	1.249-017	1.249-017	1.249-017	1.249-017
TOTAL	.000	9.121+001	4.071-004	2.089-006	1.242-006	1.242-006	1.243-006	1.243-006	1.243-006	1.243-006	1.243-006	1.243-006
GAM POW	.000	1.462-005	6.526-011	3.348-013	1.990-013	1.992-013	1.992-013	1.992-013	1.992-013	1.992-013	1.992-013	1.992-013

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U237	.000	4.904+008	2.182+003	4.604+000	2.977-004	2.521-008	1.807-016	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U237	.000	1.578+007	7.020+001	1.481-001	9.578-006	8.110-010	5.814-018	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U237	.000	9.844+005	4.381+000	9.243-003	5.977-007	5.061-011	3.628-019	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U237	.000	2.379+008	1.058+003	2.233+000	1.444-004	1.223-008	8.766-017	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U237	.000	1.107+008	4.925+002	1.039+000	6.720-005	5.690-009	4.079-017	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U237	.000	1.938+008	8.625+002	1.820+000	1.177-004	9.965-009	7.144-017	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U237	.000	8.621+006	3.836+001	8.095-002	5.235-006	4.432-010	3.178-018	.000	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	4.302+008	1.550+002	2.265+000	8.751-003	4.260-005	1.020-009	2.444-014	.000	.000	.000	.000
2.500-002	.000	1.543+007	1.149+003	3.215+001	1.327-001	6.486-004	1.554-008	3.723-013	.000	.000	.000	.000
3.750-002	.000	5.594+009	9.287+002	5.889+000	2.317-002	1.133-004	2.714-009	6.502-014	.000	.000	.000	.000
5.750-002	.000	7.329+006	5.097+000	2.366-002	7.016-006	2.659-009	3.849-016	5.586-023	.000	.000	.000	.000
8.500-002	.000	5.044+009	7.306+002	6.679-001	1.323-004	5.009-008	7.282-015	1.059-021	.000	.000	.000	.000
1.250-001	.000	1.229+006	1.319+000	6.559-003	1.949-006	7.377-010	1.066-016	1.547-023	.000	.000	.000	.000
2.250-001	.000	1.424+007	2.677+002	2.212+000	4.026-003	1.786-005	4.241-010	1.016-014	.000	.000	.000	.000
3.750-001	.000	7.498+007	2.379+003	1.349+001	4.100-003	1.563-006	2.273-013	3.306-020	.000	.000	.000	.000
5.750-001	.000	8.073+006	2.582+002	1.463+000	4.450-004	1.697-007	2.468-014	3.590-021	.000	.000	.000	.000
8.500-001	.000	1.426+006	4.586+001	2.600-001	7.908-005	3.016-008	4.386-015	6.379-022	.000	.000	.000	.000
1.250+000	.000	5.150+002	1.357-003	2.204-006	9.455-011	5.372-015	1.734-023	.000	.000	.000	.000	.000
1.750+000	.000	3.306+001	8.709-005	1.415-007	6.069-012	3.448-016	1.113-024	.000	.000	.000	.000	.000
2.250+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2.750+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3.500+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	1.119+010	5.921+003	5.843+001	1.734-001	8.242-004	1.970-008	4.719-013	.000	.000	.000	.000
MEV/SEC	.000	6.831+008	1.268+003	7.735+000	7.096-003	2.583-005	6.011-010	1.440-014	.000	.000	.000	.000

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMPURITIES IN 1 MT INITIAL URANIUM-MK 1A 6% PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	6.452+000	2.325-006	3.398-008	1.313-010	6.390-013	1.530-017	3.666-022	.000	.000	.000	.000
2.500-002	.000	3.858-001	2.873-005	8.038-007	3.317-009	1.622-011	3.885-016	9.308-021	.000	.000	.000	.000
3.750-002	.000	2.098+002	3.483-005	2.208-007	8.690-010	4.248-012	1.018-016	2.438-021	.000	.000	.000	.000
5.750-002	.000	4.214-001	2.931-007	1.361-009	4.034-013	1.529-016	2.213-023	3.212-030	.000	.000	.000	.000
8.500-002	.000	4.287+002	6.210-005	5.677-008	1.125-011	4.257-015	6.189-022	9.001-029	.000	.000	.000	.000
1.250-001	.000	1.537-001	1.649-007	8.198-010	2.437-013	9.222-017	1.333-023	1.933-030	.000	.000	.000	.000
2.250-001	.000	3.204+000	6.023-005	4.977-007	9.060-010	4.018-012	9.542-017	2.286-021	.000	.000	.000	.000
3.750-001	.000	2.812+001	8.921-004	5.057-006	1.537-009	5.862-013	8.525-020	1.240-026	.000	.000	.000	.000
5.750-001	.000	4.642+000	1.484-004	8.415-007	2.559-010	9.758-014	1.419-020	2.064-027	.000	.000	.000	.000
8.500-001	.000	1.212+000	3.898-005	2.210-007	6.722-011	2.563-014	3.728-021	5.422-028	.000	.000	.000	.000
1.250+000	.000	6.437-004	1.696-009	2.755-012	1.182-016	6.715-021	2.168-029	.000	.000	.000	.000	.000
1.750+000	.000	5.785-005	1.524-010	2.476-013	1.062-017	6.035-022	1.948-030	.000	.000	.000	.000	.000
2.250+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2.750+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3.500+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.000+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
7.000+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.100+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TOTAL	.000	6.831+002	1.268-003	7.735-006	7.096-009	2.583-011	6.011-016	1.440-020	.000	.000	.000	.000
GAM POW	.000	1.095-004	2.033-010	1.240-012	1.137-015	4.141-018	9.635-023	2.308-027	.000	.000	.000	.000

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CS132	.000	3.306+001	8.709-005	1.415-007	6.069-012	3.448-018	1.113-024	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

REACTIVITY AND BURNUP DATA
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
TIME, SEC	.00	.00	1.04+007	1.56+007	2.37+007	3.16+007	4.73+007	6.31+007	9.47+007	1.58+008	2.37+008	3.16+008
NEUT. FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SP POW,MW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BURNUP,MWD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
K INFINITY	.00000	.00000	1.19977	1.19979	1.19985	1.19991	1.20003	1.20014	1.20030	1.20046	1.20049	1.20042
NEUT PRODN	.00	.00	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003	6.20+003
NEUT DESTN	.00	.00	5.17+003	5.17+003	5.17+003	5.17+003	5.17+003	5.17+003	5.17+003	5.17+003	5.17+003	5.16+003
TOT BURNUP	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG N FLUX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AVG SP POW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

SIZE OF MMAX(I): MMAX= 1 #= 856 MMAX= 2 #= 430 MMAX= 3 #= 142 MMAX= 4 #= 48 MMAX= 5 #= 92 MMAX= 6 #= 53
MMAX= 7 #= 46 MMAX= 8 #= 0 MMAX= 9 #= 0 MMAX=10 #= 0 MMAX=11 #= 0 MMAX=12 #= 0

THE NUMBER OF NON-ZERO TERMS IN A=6398
THE NUMBER OF NON-ZERO FISSION PRODUCT YIELDS=3242
ILITE= 684 IACT= 129 IFP= 858 ITOT=1671
THE NUMBER OF NON-ZERO NATURAL ABUNDANCES= 434
THE NUMBER OF NON-ZERO PHOTON YIELDS= 7807
THE MAXIMUM NUMBER OF TERMS IN AP= 438

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 1	4.140+000	4.142+000	4.142+000	4.142+000	4.142+000	4.142+000	4.142+000	4.142+000	4.142+000	4.142+000	4.142+000	4.142+000
H 2	1.242-003	1.675-003	1.675-003	1.675-003	1.675-003	1.675-003	1.675-003	1.675-003	1.675-003	1.675-003	1.675-003	1.675-003
H 3	.000	1.555-005	1.527-005	1.513-005	1.491-005	1.470-005	1.430-005	1.390-005	1.314-005	1.175-005	1.021-005	8.872-006
HE 4	.000	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002
LI 6	.000	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004	3.521-004
LI 7	.000	1.346-001	1.346-001	1.346-001	1.346-001	1.346-001	1.346-001	1.346-001	1.346-001	1.346-001	1.346-001	1.346-001
BE 9	1.000+001	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000
BE 10	.000	2.162-005	2.162-005	2.162-005	2.162-005	2.162-005	2.162-005	2.162-005	2.162-005	2.162-005	2.162-005	2.162-005
B 10	4.246-001	2.323-001	2.323-001	2.323-001	2.323-001	2.323-001	2.323-001	2.323-001	2.323-001	2.323-001	2.323-001	2.323-001
B 11	1.868+000	1.871+000	1.871+000	1.871+000	1.871+000	1.871+000	1.871+000	1.871+000	1.871+000	1.871+000	1.871+000	1.871+000
C 12	5.667+002	5.667+002	5.667+002	5.667+002	5.667+002	5.667+002	5.667+002	5.667+002	5.667+002	5.667+002	5.667+002	5.667+002
C 13	6.891+000	6.891+000	6.891+000	6.891+000	6.891+000	6.891+000	6.891+000	6.891+000	6.891+000	6.891+000	6.891+000	6.891+000
C 14	.000	2.839-002	2.839-002	2.839-002	2.839-002	2.839-002	2.839-002	2.839-002	2.838-002	2.837-002	2.837-002	2.836-002
N 14	8.153+001	8.150+001	8.150+001	8.150+001	8.150+001	8.150+001	8.150+001	8.150+001	8.150+001	8.150+001	8.150+001	8.150+001
N 15	3.209-001	3.218-001	3.218-001	3.218-001	3.218-001	3.218-001	3.218-001	3.218-001	3.218-001	3.218-001	3.218-001	3.218-001
NE 21	.000	1.260-005	1.260-005	1.260-005	1.260-005	1.260-005	1.260-005	1.260-005	1.260-005	1.260-005	1.260-005	1.260-005
NE 22	.000	1.893-005	1.893-005	1.893-005	1.893-005	1.893-005	1.893-005	1.893-005	1.893-005	1.893-005	1.893-005	1.893-005
NA 23	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000
MG 24	2.082+001	2.082+001	2.082+001	2.082+001	2.082+001	2.082+001	2.082+001	2.082+001	2.082+001	2.082+001	2.082+001	2.082+001
MG 25	2.746+000	2.746+000	2.746+000	2.746+000	2.746+000	2.746+000	2.746+000	2.746+000	2.746+000	2.746+000	2.746+000	2.746+000
MG 26	3.144+000	3.144+000	3.144+000	3.144+000	3.144+000	3.144+000	3.144+000	3.144+000	3.144+000	3.144+000	3.144+000	3.144+000
AL 27	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002
SI 28	1.227+002	1.227+002	1.227+002	1.227+002	1.227+002	1.227+002	1.227+002	1.227+002	1.227+002	1.227+002	1.227+002	1.227+002
SI 29	6.435+000	6.438+000	6.438+000	6.438+000	6.438+000	6.438+000	6.438+000	6.438+000	6.438+000	6.438+000	6.438+000	6.438+000
SI 30	4.419+000	4.419+000	4.419+000	4.419+000	4.419+000	4.419+000	4.419+000	4.419+000	4.419+000	4.419+000	4.419+000	4.419+000
P 31	.000	7.719-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005
TI 46	3.392-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001	3.391-001
TI 47	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001	3.129-001
TI 48	3.162+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000	3.158+000
TI 49	2.365-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001	2.399-001
TI 50	2.324-001	2.325-001	2.325-001	2.325-001	2.325-001	2.325-001	2.325-001	2.325-001	2.325-001	2.325-001	2.325-001	2.325-001
V 50	1.050-002	1.046-002	1.046-002	1.046-002	1.046-002	1.046-002	1.046-002	1.046-002	1.046-002	1.046-002	1.046-002	1.046-002
V 51	4.272+000	4.279+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000
CR 50	6.295+000	6.281+000	6.281+000	6.281+000	6.281+000	6.281+000	6.281+000	6.281+000	6.281+000	6.281+000	6.281+000	6.281+000
CR 51	.000	4.799-003	2.385-004	5.316-005	5.070-006	5.164-007	5.357-009	5.557-011	5.979-015	6.924-023	8.316-033	.000
CR 52	1.261+002	1.260+002	1.260+002	1.260+002	1.260+002	1.260+002	1.260+002	1.260+002	1.260+002	1.260+002	1.260+002	1.260+002
CR 53	1.457+001	1.460+001	1.460+001	1.460+001	1.460+001	1.460+001	1.460+001	1.460+001	1.460+001	1.460+001	1.460+001	1.460+001
CR 54	3.688+000	3.726+000	3.726+000	3.726+000	3.726+000	3.726+000	3.726+000	3.726+000	3.726+000	3.726+000	3.726+000	3.726+000
MN 54	.000	5.860-004	4.491-004	3.931-004	3.192-004	2.607-004	1.738-004	1.159-004	5.157-005	1.020-005	1.346-006	1.776-007
MN 55	2.928+001	2.922+001	2.922+001	2.922+001	2.922+001	2.922+001	2.922+001	2.923+001	2.923+001	2.923+001	2.923+001	2.924+001
MN 56	.000	1.073-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 54	2.613+001	2.611+001	2.611+001	2.611+001	2.611+001	2.611+001	2.611+001	2.611+001	2.611+001	2.611+001	2.611+001	2.611+001
FE 55	.000	2.084-002	1.910-002	1.828-002	1.707-002	1.597-002	1.397-002	1.223-002	9.368-003	5.497-003	2.823-003	1.449-003
FE 56	4.279+002	4.278+002	4.278+002	4.278+002	4.278+002	4.278+002	4.278+002	4.278+002	4.278+002	4.278+002	4.278+002	4.278+002
FE 57	1.021+001	1.038+001	1.038+001	1.038+001	1.038+001	1.038+001	1.038+001	1.038+001	1.038+001	1.038+001	1.038+001	1.038+001
FE 58	1.401+000	1.405+000	1.406+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000	1.407+000
FE 59	.000	1.238-004	1.949-005	7.735-006	1.820-006	4.459-007	2.676-008	1.607-009	5.788-012	7.513-017	5.854-023	4.561-029
CO 58	.000	1.553-003	4.796-004	2.665-004	1.062-004	4.343-005	7.261-006	1.214-006	3.394-008	2.653-011	3.466-015	4.529-019
CO 59	8.565-001	8.487-001	8.488-001	8.489-001	8.489-001	8.489-001	8.489-001	8.489-001	8.489-001	8.489-001	8.489-001	8.489-001
CO 60	.000	8.288-003	7.938-003	7.768-003	7.510-003	7.267-003	6.804-003	6.371-003	5.586-003	4.294-003	3.090-003	2.224-003
NI 58	9.914+001	9.903+001	9.903+001	9.903+001	9.903+001	9.903+001	9.903+001	9.903+001	9.903+001	9.903+001	9.903+001	9.903+001
NI 59	.000	1.041-001	1.041-001	1.041-001	1.041-001	1.041-001	1.041-001	1.041-001	1.041-001	1.041-001	1.041-001	1.041-001

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
NI 60	3.921+001	3.919+001	3.920+001	3.920+001	3.920+001	3.920+001	3.920+001	3.920+001	3.920+001	3.920+001	3.920+001	3.920+001
NI 61	1.726+000	1.741+000	1.741+000	1.741+000	1.741+000	1.741+000	1.741+000	1.741+000	1.741+000	1.741+000	1.741+000	1.741+000
NI 62	5.573+000	5.558+000	5.558+000	5.558+000	5.558+000	5.558+000	5.558+000	5.558+000	5.558+000	5.558+000	5.558+000	5.558+000
NI 63	.000	1.608-002	1.604-002	1.602-002	1.599-002	1.596-002	1.590-002	1.584-002	1.572-002	1.549-002	1.520-002	1.492-002
NI 64	1.458+000	1.483+000	1.483+000	1.483+000	1.483+000	1.483+000	1.483+000	1.483+000	1.483+000	1.483+000	1.483+000	1.483+000
CU 63	5.433+001	5.429+001	5.429+001	5.429+001	5.429+001	5.429+001	5.429+001	5.429+001	5.429+001	5.429+001	5.429+001	5.429+001
CU 64	.000	3.067-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 65	2.495+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001	2.494+001
ZN 64	.000	1.484-002	1.496-002	1.496-002	1.496-002	1.496-002	1.496-002	1.496-002	1.496-002	1.496-002	1.496-002	1.496-002
ZN 66	.000	8.934-003	8.935-003	8.935-003	8.935-003	8.935-003	8.935-003	8.935-003	8.935-003	8.935-003	8.935-003	8.935-003
SR 87	.000	6.854-005	6.854-005	6.854-005	6.854-005	6.854-005	6.854-005	6.854-005	6.854-005	6.854-005	6.854-005	6.854-005
SR 88	.000	6.281-003	6.281-003	6.281-003	6.281-003	6.281-003	6.281-003	6.281-003	6.281-003	6.281-003	6.281-003	6.281-003
SR 89	.000	2.407-004	4.637-005	2.035-005	5.604-006	1.600-006	1.305-007	1.064-008	7.071-011	3.125-015	1.126-020	4.055-026
Y 89	.000	2.370-004	4.314-004	4.574-004	4.721-004	4.761-004	4.776-004	4.777-004	4.777-004	4.777-004	4.777-004	4.777-004
Y 90	.000	6.813-004	5.866-012	5.843-012	5.808-012	5.773-012	5.705-012	5.637-012	5.505-012	5.249-012	4.946-012	4.660-012
Y 91	.000	6.815-004	1.645-004	8.082-005	2.656-005	9.002-006	1.034-006	1.189-007	1.570-009	2.737-013	5.483-018	1.098-022
ZR 90	4.270+004	4.270+004	4.270+004	4.270+004	4.270+004	4.270+004	4.270+004	4.270+004	4.270+004	4.270+004	4.270+004	4.270+004
ZR 91	9.388+003	9.387+003	9.387+003	9.387+003	9.387+003	9.387+003	9.387+003	9.387+003	9.387+003	9.387+003	9.387+003	9.387+003
ZR 92	1.449+004	1.450+004	1.450+004	1.450+004	1.450+004	1.450+004	1.450+004	1.450+004	1.450+004	1.450+004	1.450+004	1.450+004
ZR 93	.000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000	1.066+000
ZR 94	1.507+004	1.507+004	1.507+004	1.507+004	1.507+004	1.507+004	1.507+004	1.507+004	1.507+004	1.507+004	1.507+004	1.507+004
ZR 95	.000	1.904-001	5.189-002	2.709-002	9.790-003	3.640-003	5.034-004	6.961-005	1.331-006	4.867-010	2.460-014	1.244-018
ZR 96	2.476+003	2.475+003	2.475+003	2.475+003	2.475+003	2.475+003	2.475+003	2.475+003	2.475+003	2.475+003	2.475+003	2.475+003
ZR 97	.000	6.752-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 95	.000	6.900-002	4.796-002	2.834-002	1.120-002	4.317-003	6.104-004	8.478-005	1.680-006	5.936-010	3.001-014	1.517-018
NB 95M	.000	7.663-005	2.171-005	1.133-005	4.096-006	1.523-006	2.106-007	2.913-008	5.569-010	2.036-013	1.029-017	5.205-022
NB 97	.000	4.801-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 92	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001	6.072-001
MO 93	.000	1.567-005	1.567-005	1.567-005	1.567-005	1.567-005	1.567-005	1.567-005	1.566-005	1.566-005	1.565-005	1.564-005
MO 94	3.899-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001	3.898-001
MO 95	6.736-001	7.431-001	9.027-001	9.471-001	9.816-001	9.946-001	1.001+000	1.002+000	1.003+000	1.003+000	1.003+000	1.003+000
MO 96	7.150-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001	7.191-001
MO 97	4.153-001	1.073+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000	1.080+000
MO 98	1.053+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000	1.054+000
MO 99	.000	1.505-005	1.101-018	2.976-025	1.552-035	.000	.000	.000	.000	.000	.000	.000
MO100	4.281-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001	4.280-001
TC 99	.000	4.508-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005
RU101	.000	9.621-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005	9.624-005
CD106	3.587-003	3.586-003	3.586-003	3.586-003	3.586-003	3.586-003	3.586-003	3.586-003	3.586-003	3.586-003	3.586-003	3.586-003
CD108	2.502-003	2.501-003	2.501-003	2.501-003	2.501-003	2.501-003	2.501-003	2.501-003	2.501-003	2.501-003	2.501-003	2.501-003
CD110	3.579-002	3.567-002	3.567-002	3.567-002	3.567-002	3.567-002	3.567-002	3.567-002	3.567-002	3.567-002	3.567-002	3.567-002
CD111	3.698-002	3.691-002	3.691-002	3.691-002	3.691-002	3.691-002	3.691-002	3.691-002	3.691-002	3.691-002	3.691-002	3.691-002
CD112	7.028-002	7.038-002	7.038-002	7.038-002	7.038-002	7.038-002	7.038-002	7.038-002	7.038-002	7.038-002	7.038-002	7.038-002
CD113	3.588-002	1.355-005	1.355-005	1.355-005	1.355-005	1.355-005	1.355-005	1.355-005	1.355-005	1.355-005	1.355-005	1.355-005
CD114	8.516-002	1.213-001	1.213-001	1.213-001	1.213-001	1.213-001	1.213-001	1.213-001	1.213-001	1.213-001	1.213-001	1.213-001
CD116	2.264-002	2.264-002	2.264-002	2.264-002	2.264-002	2.264-002	2.264-002	2.264-002	2.264-002	2.264-002	2.264-002	2.264-002
IN113	.000	9.943-003	1.510-002	1.658-002	1.804-002	1.886-002	1.960-002	1.984-002	1.995-002	1.997-002	1.997-002	1.997-002
IN114M	.000	2.348-005	4.376-006	1.889-006	5.072-007	1.413-007	1.096-008	8.500-010	5.115-012	1.852-016	5.201-022	1.461-027
IN115	.000	5.081-006	9.060-006	9.502-006	9.722-006	9.773-006	9.788-006	9.789-006	9.789-006	9.789-006	9.789-006	9.789-006
SN112	1.171+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001	1.169+001
SN113	.000	1.002-002	4.863-003	3.388-003	1.925-003	1.111-003	3.697-004	1.231-004	1.365-005	1.677-007	6.863-010	2.808-012
SN114	7.986+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000	7.985+000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SN115	4.569+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000	4.538+000
SN116	1.783+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002	1.781+002
SN117	9.480+001	9.485+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001	9.486+001
SN117M	.000	1.402-002	3.693-005	1.895-006	1.813-008	1.976-010	2.345-014	2.784-018	3.923-026	.000	.000	.000
SN118	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002	2.998+002
SN119	1.070+002	1.070+002	1.070+002	1.070+002	1.070+002	1.070+002	1.071+002	1.071+002	1.071+002	1.071+002	1.071+002	1.071+002
SN119M	.000	4.077-002	2.903-002	2.450-002	1.878-002	1.451-002	8.654-003	5.162-003	1.837-003	2.326-004	1.757-005	1.327-006
SN120	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002	4.065+002
SN121	.000	8.489-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	2.348-004	2.337-004	2.332-004	2.323-004	2.315-004	2.299-004	2.283-004	2.252-004	2.190-004	2.116-004	2.044-004
SN122	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001	5.867+001
SN123	.000	3.186-003	1.673-003	1.213-003	7.326-004	4.488-004	1.684-004	6.322-005	8.904-006	1.767-007	1.315-009	9.794-012
SN124	7.260+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001	7.257+001
SN125	.000	2.096-003	3.752-007	5.019-009	5.853-012	8.244-015	1.634-020	3.239-026	.000	.000	.000	.000
SB121	.000	3.948-002	4.013-002	4.013-002	4.013-002	4.013-002	4.013-002	4.013-002	4.013-002	4.014-002	4.015-002	4.016-002
SB122	.000	1.287-005	5.392-019	1.103-025	3.718-038	.000	.000	.000	.000	.000	.000	.000
SB123	.000	1.116-003	2.629-003	3.090-003	3.570-003	3.854-003	4.134-003	4.240-003	4.294-003	4.303-003	4.303-003	4.303-003
SB125	.000	2.448-002	2.450-002	2.351-002	2.205-002	2.071-002	1.827-002	1.612-002	1.255-002	7.611-003	4.071-003	2.178-003
TE122	.000	1.547-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004	1.673-004
TE125	.000	8.154-004	2.771-003	3.744-003	5.212-003	6.562-003	9.029-003	1.121-002	1.483-002	1.984-002	2.343-002	2.535-002
TE125M	.000	1.450-004	2.885-004	3.024-004	2.998-004	2.868-004	2.553-004	2.255-004	1.756-004	1.065-004	5.695-005	3.046-005
TE126	.000	1.031-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005	1.408-005
LU175	.000	6.774-004	1.369-003	1.505-003	1.606-003	1.645-003	1.667-003	1.671-003	1.672-003	1.672-003	1.672-003	1.672-003
HF174	2.671-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002	2.504-002
HF175	.000	9.944-004	3.031-004	1.673-004	6.600-005	2.672-005	4.380-006	7.180-007	1.929-008	1.393-011	1.648-015	1.951-019
HF176	8.781-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001	8.517-001
HF177	3.159+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000	2.333+000
HF178	4.628+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000	5.082+000
HF179	2.360+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000	2.695+000
HF180	6.079+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000	6.130+000
HF181	.000	8.695-003	1.222-003	4.583-004	9.867-005	2.217-005	1.120-006	5.654-008	1.442-010	9.377-016	3.079-022	1.011-028
HF182	.000	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005	3.000-005
TA181	.000	1.034-002	1.782-002	1.859-002	1.896-002	1.904-002	1.906-002	1.906-002	1.906-002	1.906-002	1.906-002	1.906-002
TA182	.000	8.083-005	3.921-005	2.731-005	1.551-005	8.942-006	2.974-006	9.894-007	1.095-007	1.341-009	6.505-012	1.072-012
W180	5.449-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003	5.407-003
W181	.000	3.114-005	1.567-005	1.112-005	6.498-006	3.854-006	1.356-006	4.771-007	5.905-008	9.049-010	4.878-012	2.630-014
W182	1.115+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000	1.088+000
W183	6.094-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001	6.278-001
W184	1.314+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000	1.322+000
W185	.000	6.001-004	1.983-004	1.140-004	4.788-005	2.061-005	3.821-006	7.081-007	2.432-008	2.871-011	6.280-015	1.373-018
W186	1.239+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000	1.211+000
W187	.000	4.031-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.602-005	7.850-006	4.311-006	1.687-006	6.777-007	1.094-007	1.765-008	4.595-010	3.116-013	3.410-017	3.731-021
RE185	.000	3.653-004	7.672-004	8.515-004	9.175-004	9.448-004	9.616-004	9.647-004	9.654-004	9.654-004	9.654-004	9.654-004
RE187	.000	2.771-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002	2.811-002
OS186	.000	9.665-006	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005	1.113-005
OS188	.000	2.975-004	3.217-004	3.253-004	3.279-004	3.289-004	3.295-004	3.296-004	3.296-004	3.296-004	3.296-004	3.296-004
PB204	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001	1.180-001
PB205	.000	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005	1.699-005
PB206	2.052+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000	2.044+000
PB207	1.891+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000	1.898+000
PB208	4.504+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000	4.505+000
SUMTOT	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004
TOTAL	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

5 SUMMARY TABLE: CONCENTRATIONS, GRAMS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	4.141+000	4.144+000	4.144+000	4.144+000	4.144+000	4.144+000	4.144+000	4.144+000	4.144+000	4.144+000	4.144+000	4.144+000
HE	.000	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002	7.950-002
LI	.000	1.349-001	1.349-001	1.349-001	1.349-001	1.349-001	1.349-001	1.349-001	1.349-001	1.349-001	1.349-001	1.349-001
BE	1.000+001	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000	9.999+000
B	2.293+000	2.103+000	2.103+000	2.103+000	2.103+000	2.103+000	2.103+000	2.103+000	2.103+000	2.103+000	2.103+000	2.103+000
C	5.736+002	5.736+002	5.736+002	5.736+002	5.736+002	5.736+002	5.736+002	5.736+002	5.736+002	5.736+002	5.736+002	5.736+002
N	8.185+001	8.182+001	8.182+001	8.182+001	8.182+001	8.182+001	8.182+001	8.182+001	8.182+001	8.182+001	8.182+001	8.182+001
NE	.000	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005	3.192-005
NA	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000	1.713+000
MG	2.671+001	2.671+001	2.671+001	2.671+001	2.671+001	2.671+001	2.671+001	2.671+001	2.671+001	2.671+001	2.671+001	2.671+001
AL	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002	8.064+002
SI	1.336+002	1.336+002	1.336+002	1.336+002	1.336+002	1.336+002	1.336+002	1.336+002	1.336+002	1.336+002	1.336+002	1.336+002
P	.000	7.719-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005	7.731-005
TI	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000	4.283+000
V	4.283+000	4.289+000	4.294+000	4.294+000	4.294+000	4.294+000	4.294+000	4.294+000	4.294+000	4.294+000	4.294+000	4.294+000
CR	1.507+002	1.506+002	1.506+002	1.506+002	1.506+002	1.506+002	1.506+002	1.506+002	1.506+002	1.506+002	1.506+002	1.506+002
MN	2.928+001	2.922+001	2.922+001	2.922+001	2.922+001	2.922+001	2.922+001	2.923+001	2.923+001	2.923+001	2.923+001	2.924+001
FE	4.656+002	4.657+002	4.657+002	4.657+002	4.657+002	4.657+002	4.657+002	4.657+002	4.657+002	4.657+002	4.657+002	4.657+002
CO	8.565-001	8.586-001	8.573-001	8.569-001	8.565-001	8.562-001	8.557-001	8.552-001	8.545-001	8.532-001	8.520-001	8.511-001
NI	1.471+002	1.471+002	1.471+002	1.471+002	1.471+002	1.471+002	1.471+002	1.471+002	1.471+002	1.471+002	1.471+002	1.471+002
CU	7.928+001	7.923+001	7.923+001	7.923+001	7.923+001	7.923+001	7.923+001	7.923+001	7.923+001	7.924+001	7.924+001	7.924+001
ZN	.000	2.378-002	2.389-002	2.389-002	2.389-002	2.389-002	2.389-002	2.389-002	2.389-002	2.389-002	2.389-002	2.389-002
SR	.000	6.591-003	6.396-003	6.370-003	6.355-003	6.351-003	6.349-003	6.349-003	6.349-003	6.349-003	6.349-003	6.349-003
Y	.000	1.602-003	5.959-004	5.382-004	4.987-004	4.851-004	4.786-004	4.778-004	4.777-004	4.777-004	4.777-004	4.777-004
ZR	8.412+004	8.412+004	8.412+004	8.412+004	8.412+004	8.412+004	8.412+004	8.412+004	8.412+004	8.412+004	8.412+004	8.412+004
NB	.000	6.956-002	4.798-002	2.835-002	1.121-002	4.319-003	6.116-004	8.601-005	3.366-006	2.659-006	3.874-006	5.089-006
MO	4.282+000	5.014+000	5.181+000	5.225+000	5.260+000	5.273+000	5.280+000	5.281+000	5.281+000	5.281+000	5.281+000	5.281+000
TC	.000	4.510-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005	4.696-005
RU	.000	9.667-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005	9.670-005
CD	2.928-001	2.930-001	2.930-001	2.930-001	2.930-001	2.930-001	2.930-001	2.930-001	2.930-001	2.930-001	2.930-001	2.930-001
IN	.000	9.977-003	1.512-002	1.659-002	1.805-002	1.887-002	1.961-002	1.985-002	1.996-002	1.998-002	1.998-002	1.998-002
SN	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003	1.242+003
SB	.000	6.509-002	6.725-002	6.673-002	6.574-002	6.469-002	6.254-002	6.050-002	5.698-002	5.205-002	4.852-002	4.664-002
TE	.000	1.126-003	3.243-003	4.230-003	5.695-003	7.032-003	9.468-003	1.162-002	1.519-002	2.013-002	2.367-002	2.556-002
LU	.000	6.802-004	1.371-003	1.507-003	1.608-003	1.648-003	1.670-003	1.674-003	1.674-003	1.674-003	1.674-003	1.674-003
HF	1.713+001	1.713+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001	1.712+001
TA	.000	1.042-002	1.786-002	1.862-002	1.897-002	1.904-002	1.906-002	1.906-002	1.906-002	1.906-002	1.906-002	1.906-002
W	4.282+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000	4.254+000
RE	.000	2.808-002	2.888-002	2.896-002	2.903-002	2.905-002	2.907-002	2.907-002	2.907-002	2.907-002	2.907-002	2.907-002
OS	.000	3.077-004	3.334-004	3.370-004	3.396-004	3.406-004	3.412-004	3.413-004	3.413-004	3.413-004	3.413-004	3.413-004
PB	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000	8.565+000
SUMTOT	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004
TOTAL	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004

CUMULATIVE TABLE TOTALS

AP+FP	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004	8.792+004

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	1.501-001	1.474-001	1.460-001	1.439-001	1.419-001	1.380-001	1.342-001	1.269-001	1.134-001	9.855-002	8.565-002
H 4	.000	4.323-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HE 6	.000	1.204+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	1.743-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007
B 12	.000	2.580-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	1.266-001	1.266-001	1.266-001	1.266-001	1.266-001	1.266-001	1.266-001	1.266-001	1.265-001	1.265-001	1.264-001
C 15	.000	3.885-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	1.341-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	3.632-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	4.148-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	3.699+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	8.044+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	1.902-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	8.169+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	1.943+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	5.209-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	5.053-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	4.698+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	9.134-005	2.722-007	1.499-008	3.000-010	1.455-010	1.436-010	1.435-010	1.433-010	1.430-010	1.426-010	1.422-010
CA 45	.000	2.125-004	1.276-004	9.882-005	6.627-005	4.494-005	2.067-005	9.505-006	2.010-006	8.992-008	1.850-009	3.805-011
SC 46	.000	4.369-002	1.619-002	9.857-003	4.532-003	2.129-003	4.701-004	1.038-004	5.058-006	1.202-008	6.302-012	3.305-015
SC 47	.000	1.272-001	2.188-012	1.707-017	4.985-024	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	1.225-002	1.980-022	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	9.781-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	2.017-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	2.389-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	1.877-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015
V 52	.000	1.129+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	2.372-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	2.396-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	4.436+002	2.204+001	4.914+000	4.687-001	4.774-002	4.952-004	5.137-006	5.528-010	6.400-018	.000	.000
CR 55	.000	7.113+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	4.536+000	3.476+000	3.043+000	2.471+000	2.018+000	1.346+000	8.975-001	3.992-001	7.898-002	1.042-002	1.375-003
MN 56	.000	2.331+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	6.348-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	2.103-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	5.213+001	4.776+001	4.571+001	4.268+001	3.993+001	3.495+001	3.059+001	2.343+001	1.375+001	7.059+000	3.625+000
FE 59	.000	6.090+000	9.590-001	3.806-001	8.955-002	2.194-002	1.317-003	7.904-005	2.848-007	3.697-012	2.880-018	2.244-024
CO 58	.000	4.943+001	1.526+001	8.480+000	3.380+000	1.382+000	2.311-001	3.863-002	1.080-003	8.441-007	1.103-010	1.441-014
CO 60	.000	9.375+000	8.979+000	8.787+000	8.494+000	8.220+000	7.696+000	7.207+000	6.318+000	4.857+000	3.496+000	2.516+000
CO 60M	.000	1.426+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	1.904-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	5.779-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	7.887-003	7.887-003	7.887-003	7.887-003	7.887-003	7.887-003	7.887-003	7.887-003	7.887-003	7.886-003	7.886-003
NI 63	.000	9.924-001	9.899-001	9.887-001	9.868-001	9.849-001	9.812-001	9.776-001	9.702-001	9.557-001	9.379-001	9.204-001
NI 65	.000	9.808+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 66	.000	5.027-005	6.699-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	1.183+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	2.550+002	6.709-021	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	2.448-004	2.368-018	2.327-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	8.251-003	5.866-003	4.946-003	3.787-003	2.922-003	1.739-003	1.035-003	3.663-004	4.594-005	3.428-006	2.557-007

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 89	.000	6.997+000	1.348+000	5.914-001	1.629-001	4.651-002	3.792-003	3.092-004	2.055-006	9.082-011	3.272-016	1.179-021
SR 90	.000	3.217-006	3.192-006	3.180-006	3.160-006	3.142-006	3.104-006	3.068-006	2.995-006	2.856-006	2.691-006	2.536-006
SR 91	.000	1.947+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	6.722-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	1.782-004	1.581-015	4.709-021	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	3.708+002	3.193-006	3.180-006	3.161-006	3.142-006	3.105-006	3.068-006	2.996-006	2.857-006	2.692-006	2.536-006
Y 91	.000	1.672+001	4.037+000	1.983+000	6.516-001	2.209-001	2.538-002	2.916-003	3.851-005	6.714-009	1.345-013	2.695-018
Y 92	.000	2.190+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	6.722-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	1.393+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	8.947-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.785-004	1.583-015	4.716-021	.000	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	2.680-003	2.680-003	2.680-003	2.680-003	2.680-003	2.680-003	2.680-003	2.680-003	2.680-003	2.680-003	2.680-003
ZR 95	.000	4.092+003	1.115+003	5.821+002	2.104+002	7.824+001	1.082+001	1.496+000	2.861-002	1.046-005	5.288-010	2.673-014
ZR 97	.000	1.291+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	3.468-002	9.651-006	1.610-007	2.651-010	5.223-013	2.028-018	7.870-024	.000	.000	.000	.000
NB 93M	.000	2.085-005	6.278-005	8.349-005	1.156-004	1.463-004	2.067-004	2.656-004	3.789-004	5.890-004	8.231-004	1.029-003
NB 94	.000	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.786-008	2.785-008
NB 95	.000	2.699+003	1.876+003	1.109+003	4.382+002	1.689+002	2.388+001	3.317+000	6.572-002	2.322-005	1.174-009	5.935-014
NB 95M	.000	2.920+001	8.272+000	4.319+000	1.561+000	5.804-001	8.026-002	1.110-002	2.122-004	7.759-008	3.923-012	1.983-016
NB 96	.000	1.776+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	1.291+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	1.222+004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	7.461-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.032-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	1.723-005	1.723-005	1.723-005	1.723-005	1.723-005	1.722-005	1.722-005	1.722-005	1.721-005	1.720-005	1.720-005
MO 99	.000	7.220+000	5.281-013	1.428-019	.000	.000	.000	.000	.000	.000	.000	.000
MO101	.000	1.798+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	7.646-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007
TC100	.000	1.051-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	1.798+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	8.256-005	3.761-010	3.758-010	3.753-010	3.748-010	3.737-010	3.727-010	3.707-010	3.667-010	3.617-010	3.568-010
AG108M	.000	4.234-009	4.226-009	4.222-009	4.217-009	4.211-009	4.199-009	4.188-009	4.165-009	4.120-009	4.064-009	4.009-009
AG109M	.000	2.276-003	1.903-003	1.740-003	1.512-003	1.319-003	1.004-003	7.643-004	4.429-004	1.487-004	3.802-005	9.718-006
AG110	.000	9.239-005	4.451-009	3.769-009	2.904-009	2.254-009	1.358-009	8.185-010	2.972-010	3.917-011	3.112-012	2.471-013
AG110M	.000	4.669-007	3.347-007	2.834-007	2.184-007	1.695-007	1.021-007	6.154-008	2.234-008	2.945-009	2.339-010	1.858-011
CD107	.000	8.812-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	2.276-003	1.903-003	1.740-003	1.512-003	1.319-003	1.004-003	7.643-004	4.429-004	1.487-004	3.802-005	9.718-006
CD111M	.000	1.566-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	1.944+000	1.189-016	9.301-025	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	1.199-001	1.857-002	7.309-003	1.697-003	4.106-004	2.402-005	1.405-008	4.811-009	5.638-014	3.866-020	2.651-026
CD117	.000	6.382-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	2.209-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.670-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	5.081-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	1.006+002	4.887+001	3.405+001	1.934+001	1.116+001	3.716+000	1.237+000	1.371-001	1.686-003	6.897-006	2.822-008
IN114	.000	2.302+000	9.692-002	4.184-002	1.123-002	3.129-003	2.427-004	1.883-005	1.133-007	4.101-012	1.152-017	3.235-023
IN114M	.000	5.433-001	1.013-001	4.372-002	1.174-002	3.269-003	2.536-004	1.967-005	1.184-007	4.285-012	1.204-017	3.380-023
IN116	.000	8.217-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	1.221-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	9.738-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	6.032-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN118	.000	2.205-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.562-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.670-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	4.166-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.006+002	4.884+001	3.403+001	1.933+001	1.115+001	3.713+000	1.236+000	1.371-001	1.684-003	6.893-006	2.820-008
SN113M	.000	1.016+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	1.117+003	2.944+000	1.511-001	1.446-003	1.575-005	1.870-009	2.219-013	3.127-021	.000	.000	.000
SN119M	.000	1.826+002	1.301+002	1.098+002	8.415+001	6.499+001	3.877+001	2.313+001	8.230+000	1.042+000	7.872-002	5.946-003
SN121	.000	6.274+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	1.389-002	1.382-002	1.379-002	1.374-002	1.369-002	1.360-002	1.351-002	1.332-002	1.296-002	1.251-002	1.209-002
SN123	.000	2.620+001	1.376+001	9.972+000	6.024+000	3.690+000	1.385+000	5.198-001	7.321-002	1.452-003	1.082-005	8.053-008
SN123M	.000	2.516-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	2.273+002	4.067-002	5.441-004	6.345-007	8.937-010	1.772-015	3.512-021	.000	.000	.000	.000
SN125M	.000	1.833+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	5.105+000	2.138-013	4.375-020	.000	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	4.442-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	2.813-002	7.064-003	3.540-003	1.200-003	4.194-004	5.121-005	6.253-006	9.323-008	2.072-011	5.625-016	1.527-020
SB124M	.000	2.456-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	2.529+001	2.530+001	2.429+001	2.277+001	2.139+001	1.888+001	1.666+001	1.297+001	7.862+000	4.205+000	2.250+000
SB126	.000	3.152-001	3.844-004	1.342-005	7.022-008	4.256-010	1.563-014	5.741-019	.000	.000	.000	.000
SB126M	.000	3.950-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	5.299-004	2.645-004	1.868-004	1.084-004	6.389-005	2.219-005	7.704-006	9.289-007	1.350-008	6.818-011	3.442-013
TE125M	.000	2.613+000	5.199+000	5.450+000	5.401+000	5.167+000	4.599+000	4.063+000	3.164+000	1.919+000	1.026+000	5.489-001
TE127	.000	1.017-004	7.494-007	5.117-007	2.816-007	1.576-007	4.933-008	1.544-008	1.514-009	1.454-011	4.375-014	1.316-016
TE127M	.000	1.641-006	7.651-007	5.224-007	2.875-007	1.608-007	5.036-008	1.577-008	1.545-009	1.485-011	4.467-014	1.344-016
LU176M	.000	1.836-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	6.712-003	4.429-007	3.175-007	2.086-007	1.387-007	6.127-008	2.708-008	5.287-009	2.016-010	3.397-012	5.724-014
LU177M	.000	3.088-006	1.806-006	1.381-006	9.071-007	6.030-007	2.665-007	1.177-007	2.299-008	8.767-010	1.477-011	2.489-013
HF175	.000	1.060+001	3.232+000	1.784+000	7.038-001	2.849-001	4.671-002	7.656-003	2.057-004	1.485-007	1.758-011	2.080-015
HF178M	.000	2.327+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	2.739+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	5.967+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	1.480+002	2.081+001	7.802+000	1.680+000	3.774-001	1.906-002	9.625-004	2.455-006	1.596-011	5.242-018	1.721-024
HF182	.000	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009	6.550-009
TA182	.000	5.045-001	2.447-001	1.705-001	9.677-002	5.581-002	1.856-002	6.175-003	6.832-004	8.369-006	4.060-008	8.688-009
TA182M	.000	1.526-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	7.475-001	6.174-008	1.774-011	5.062-017	2.063-022	.000	.000	.000	.000	.000	.000
W181	.000	1.854-001	9.334-002	6.623-002	3.870-002	2.295-002	8.076-003	2.841-003	3.517-004	5.389-006	2.905-008	1.566-010
W183M	.000	7.734-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	5.642+000	1.864+000	1.071+000	4.502-001	1.938-001	3.592-002	6.658-003	2.287-004	2.700-007	5.904-011	1.291-014
W185M	.000	1.097-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	2.827+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	2.606-001	7.859-002	4.316-002	1.689-002	6.785-003	1.095-003	1.767-004	4.601-006	3.120-009	3.414-013	3.736-017
RE186	.000	2.905-001	7.911-011	1.306-015	4.248-023	.000	.000	.000	.000	.000	.000	.000
RE187	.000	1.060-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009	1.075-009
RE188	.000	5.900+000	7.940-002	4.361-002	1.706-002	6.855-003	1.106-003	1.785-004	4.648-006	3.152-009	3.449-013	3.774-017
RE188M	.000	5.518+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	1.684-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015	1.478-015
PB209	.000	2.747-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	3.355-015	5.804+004	3.406+003	1.999+003	8.699+002	4.194+002	1.515+002	9.169+001	5.620+001	3.073+001	1.706+001	1.010+001
TOTAL	3.355-015	5.804+004	3.406+003	1.999+003	8.699+002	4.194+002	1.515+002	9.169+001	5.620+001	3.073+001	1.706+001	1.010+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

7 SUMMARY TABLE: RADIOACTIVITY, CURIES
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	5.824-001	1.474-001	1.460-001	1.439-001	1.419-001	1.380-001	1.342-001	1.269-001	1.134-001	9.855-002	8.565-002
HE	.000	1.204+002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	1.743-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	1.049-006	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007	4.832-007
B	.000	2.580-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	1.266-001	1.266-001	1.266-001	1.266-001	1.266-001	1.266-001	1.266-001	1.266-001	1.265-001	1.265-001	1.264-001
N	.000	1.341-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	3.632-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	4.148-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	4.522+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	8.169+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	1.944+003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	4.698+000	1.437-010	1.437-010	1.436-010	1.436-010	1.435-010	1.434-010	1.433-010	1.430-010	1.426-010	1.422-010
P	.000	9.134-005	2.722-007	1.499-008	3.000-010	1.455-010	1.436-010	1.435-010	1.433-010	1.430-010	1.426-010	1.422-010
CA	.000	2.145-004	1.276-004	9.882-005	6.627-005	4.494-005	2.067-005	9.505-006	2.010-006	8.992-008	1.850-009	3.805-011
SC	.000	1.931-001	1.619-002	9.857-003	4.532-003	2.129-003	4.701-004	1.038-004	5.058-006	1.202-008	6.302-012	3.305-015
TI	.000	2.389-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	1.877-015	1.129+002	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015	1.870-015
CR	.000	4.507+002	2.204+001	4.914+000	4.687-001	4.774-002	4.952-004	5.137-006	5.528-010	6.400-018	.000	.000
MN	.000	2.335+003	3.476+000	3.043+000	2.471+000	2.018+000	1.346+000	8.975-001	3.992-001	7.898-002	1.042-002	1.375-003
FE	.000	5.822+001	4.872+001	4.609+001	4.277+001	3.995+001	3.495+001	3.059+001	2.343+001	1.375+001	7.059+000	3.625+000
CO	.000	2.017+002	2.424+001	1.727+001	1.187+001	9.601+000	7.927+000	7.245+000	6.319+000	4.857+000	3.496+000	2.516+000
NI	.000	1.081+001	9.978-001	9.966-001	9.947-001	9.928-001	9.891-001	9.854-001	9.781-001	9.636-001	9.458-001	9.283-001
CU	.000	1.438+003	2.373-018	2.327-025	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	8.251-003	5.866-003	4.946-003	3.787-003	2.922-003	1.739-003	1.035-003	3.663-004	4.594-005	3.428-006	2.557-007
SR	.000	8.951+000	1.348+000	5.914-001	1.629-001	4.652-002	3.795-003	3.123-004	5.051-006	2.856-006	2.691-006	2.536-006
Y	.000	4.109+002	4.037+000	1.983+000	6.516-001	2.209-001	2.538-002	2.920-003	4.151-005	2.864-006	2.692-006	2.536-006
ZR	.000	1.700+004	1.115+003	5.821+002	2.104+002	7.824+001	1.082+001	1.499+000	3.129-002	2.691-003	2.680-003	2.680-003
NB	.000	2.786+004	1.884+003	1.113+003	4.397+002	1.695+002	2.396+001	3.328+000	6.631-002	6.123-004	8.232-004	1.029-003
MO	.000	9.029+000	1.723-005	1.723-005	1.723-005	1.723-005	1.722-005	1.722-005	1.722-005	1.721-005	1.720-005	1.720-005
TC	.000	1.808+000	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007	7.964-007
AG	.000	2.452-003	1.903-003	1.740-003	1.512-003	1.319-003	1.004-003	7.644-004	4.429-004	1.487-004	3.802-005	9.723-006
CD	.000	2.157+000	2.048-002	9.049-003	3.209-003	1.730-003	1.028-003	7.657-004	4.429-004	1.487-004	3.802-005	9.718-006
IN	.000	1.038+002	4.907+001	3.414+001	1.936+001	1.117+001	3.716+000	1.237+000	1.371-001	1.686-003	6.897-006	2.822-008
SN	.000	2.567+003	1.957+002	1.539+002	1.095+002	7.985+001	4.388+001	2.490+001	8.454+000	1.058+000	9.125-002	1.803-002
SB	.000	3.082+001	2.531+001	2.429+001	2.277+001	2.139+001	1.888+001	1.666+001	1.297+001	7.862+000	4.205+000	2.250+000
TE	.000	2.614+000	5.200+000	5.450+000	5.401+000	5.167+000	4.599+000	4.063+000	3.164+000	1.919+000	1.026+000	5.489-001
LU	.000	1.903-001	2.248-006	1.698-006	1.116-006	7.417-007	3.277-007	1.448-007	2.828-008	1.078-009	1.835-011	4.853-013
HF	.000	2.927+003	2.404+001	9.586+000	2.383+000	6.624-001	6.577-002	8.619-003	2.082-004	1.551-007	6.567-009	6.550-009
TA	.000	1.253+000	2.447-001	1.705-001	9.677-002	5.581-002	1.856-002	6.175-003	8.832-004	8.369-006	4.060-008	6.688-009
W	.000	2.896+002	2.036+000	1.181+000	5.058-001	2.236-001	4.509-002	9.676-003	5.850-004	5.662-006	2.911-008	1.566-010
RE	.000	1.171+001	7.940-002	4.361-002	1.706-002	6.855-003	1.106-003	1.785-004	4.650-006	4.227-009	1.076-009	1.075-009
PB	1.478-015	2.747-003	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010	9.883-010
SUMTOT	3.355-015	5.804+004	3.406+003	1.999+003	8.699+002	4.194+002	1.515+002	9.169+001	5.620+001	3.073+001	1.706+001	1.010+001
TOTAL	3.355-015	5.804+004	3.406+003	1.999+003	8.699+002	4.194+002	1.515+002	9.169+001	5.620+001	3.073+001	1.706+001	1.010+001

CUMULATIVE TABLE TOTALS

AP+FP	3.355-015	5.804+004	3.406+003	1.999+003	8.699+002	4.194+002	1.515+002	9.169+001	5.620+001	3.073+001	1.706+001	1.010+001
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	3.355-015	5.804+004	3.406+003	1.999+003	8.699+002	4.194+002	1.515+002	9.169+001	5.620+001	3.073+001	1.706+001	1.010+001

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H 3	.000	5.055-006	4.963-006	4.917-006	4.847-006	4.779-006	4.647-006	4.518-006	4.272-006	3.818-006	3.318-006	2.884-006
HE 6	.000	1.119+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI 8	.000	6.500-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE 10	.000	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010
BE 11	.000	3.862-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
B 12	.000	2.045-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C 14	.000	3.712-005	3.712-005	3.712-005	3.712-005	3.712-005	3.712-005	3.712-005	3.711-005	3.710-005	3.709-005	3.708-005
C 15	.000	6.272-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N 16	.000	5.812-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F 20	.000	1.513-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE 23	.000	5.085-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24	.000	1.025+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 24M	.000	2.251-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA 25	.000	2.183-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG 27	.000	7.713-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 28	.000	3.485+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 29	.000	7.260-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL 30	.000	1.714-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI 31	.000	1.661-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
P 32	.000	9.259-007	2.759-009	1.519-010	3.041-012	1.475-012	1.455-012	1.454-012	1.453-012	1.449-012	1.446-012	1.442-012
CA 45	.000	9.724-008	5.837-008	4.522-008	3.033-008	2.057-008	9.458-009	4.350-009	9.189-010	4.115-011	8.464-013	1.741-014
SC 46	.000	5.495-004	2.037-004	1.240-004	5.700-005	2.678-005	5.913-006	1.305-006	6.362-008	1.511-010	7.926-014	4.157-017
SC 47	.000	2.042-004	3.512-015	2.740-020	8.002-027	.000	.000	.000	.000	.000	.000	.000
SC 48	.000	2.590-004	4.189-024	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 49	.000	1.164-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SC 50	.000	5.772-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TI 51	.000	1.749-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 50	2.070-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017
V 52	.000	1.682+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 53	.000	2.864-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V 54	.000	1.037-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CR 51	.000	9.493-002	4.717-003	1.052-003	1.003-004	1.022-005	1.060-007	1.099-009	1.183-013	1.370-021	1.645-031	.000
CR 55	.000	4.642-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 54	.000	2.259-002	1.731-002	1.515-002	1.230-002	1.005-002	6.701-003	4.469-003	1.988-003	3.932-004	5.189-005	6.846-006
MN 56	.000	3.483+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 57	.000	4.407-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MN 58	.000	4.981-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
FE 55	.000	7.169-002	6.568-002	6.287-002	5.870-002	5.492-002	4.806-002	4.206-002	3.222-002	1.891-002	9.708-003	4.985-003
FE 59	.000	5.678-002	8.942-003	3.549-003	8.350-004	2.046-004	1.228-005	7.370-007	2.655-009	3.447-014	2.685-020	2.092-026
CO 58	.000	2.959-001	9.137-002	5.077-002	2.023-002	8.273-003	1.383-003	2.313-004	6.466-006	5.054-009	6.604-013	8.630-017
CO 60	.000	1.445-001	1.384-001	1.355-001	1.310-001	1.267-001	1.187-001	1.111-001	9.741-002	7.488-002	5.390-002	3.879-002
CO 60M	.000	5.328-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 61	.000	6.161-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CO 62	.000	1.096-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NI 59	.000	5.021-005	5.021-005	5.021-005	5.021-005	5.021-005	5.021-005	5.021-005	5.021-005	5.021-005	5.021-005	5.021-005
NI 63	.000	3.941-004	3.932-004	3.927-004	3.919-004	3.912-004	3.897-004	3.882-004	3.853-004	3.796-004	3.725-004	3.655-004
NI 65	.000	6.866-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 64	.000	2.195+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 66	.000	1.746+000	4.594-023	.000	.000	.000	.000	.000	.000	.000	.000	.000
CU 67	.000	3.931-007	3.800-021	3.736-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN 65	.000	2.891-005	2.055-005	1.733-005	1.327-005	1.024-005	6.092-006	3.625-006	1.284-006	1.610-007	1.201-008	8.961-010
SR 89	.000	2.419-002	4.659-003	2.045-003	5.631-004	1.608-004	1.311-005	1.069-006	7.105-009	3.140-013	1.131-018	4.075-024

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6XPU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
SR 90	.000	3.734-009	3.705-009	3.690-009	3.668-009	3.646-009	3.603-009	3.560-009	3.477-009	3.315-009	3.124-009	2.943-009
SR 91	.000	1.560-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SR 93	.000	1.018-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 89M	.000	9.683-007	8.592-018	2.559-023	.000	.000	.000	.000	.000	.000	.000	.000
Y 90	.000	2.055+000	1.770-008	1.763-008	1.752-008	1.742-008	1.721-008	1.701-008	1.661-008	1.583-008	1.492-008	1.406-008
Y 91	.000	6.006-002	1.450-002	7.122-003	2.340-003	7.933-004	9.116-005	1.047-005	1.383-007	2.412-011	4.831-016	9.680-021
Y 92	.000	2.204-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 93	.000	5.029-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 94	.000	2.321-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Y 96	.000	2.052-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ZR 89	.000	1.331-006	1.181-017	3.517-023	7.844-032	.000	.000	.000	.000	.000	.000	.000
ZR 93	.000	3.114-007	3.114-007	3.114-007	3.114-007	3.114-007	3.114-007	3.114-007	3.114-007	3.114-007	3.114-007	3.114-007
ZR 95	.000	2.073+001	5.648+000	2.949+000	1.066+000	3.963-001	5.480-002	7.578-003	1.449-004	5.298-008	2.678-012	1.354-016
ZR 97	.000	6.729+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 92	.000	4.132-004	1.150-007	1.918-009	3.159-012	6.223-015	2.416-020	9.377-026	.000	.000	.000	.000
NB 93M	.000	3.694-009	1.112-008	1.479-008	2.047-008	2.593-008	3.663-008	4.706-008	6.714-008	1.044-007	1.458-007	1.824-007
NB 94	.000	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.839-010	2.838-010	2.838-010
NB 95	.000	1.295+001	8.998+000	5.317+000	2.102+000	8.101-001	1.145-001	1.591-002	3.152-004	1.114-007	5.631-012	2.847-016
NB 95M	.000	4.057-002	1.149-002	6.000-003	2.169-003	8.065-004	1.115-004	1.542-005	2.949-007	1.078-010	5.450-015	2.756-019
NB 96	.000	2.953-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97	.000	8.596+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 97M	.000	5.379+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB 98	.000	9.208-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NB100	.000	8.752-008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93M	.000	1.443-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MO 93	.000	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.609-009	1.608-009	1.607-009
MO 99	.000	2.319-002	1.696-015	4.587-022	2.391-032	.000	.000	.000	.000	.000	.000	.000
MO101	.000	2.054-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC 99	.000	3.834-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010
TC100	.000	9.249-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TC101	.000	8.629-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AG108	.000	3.076-007	1.402-012	1.400-012	1.398-012	1.396-012	1.393-012	1.389-012	1.381-012	1.366-012	1.348-012	1.329-012
AG108M	.000	4.118-011	4.111-011	4.107-011	4.102-011	4.096-011	4.085-011	4.074-011	4.051-011	4.008-011	3.953-011	3.900-011
AG109M	.000	1.173-006	9.807-007	8.967-007	7.793-007	6.799-007	5.176-007	3.940-007	2.283-007	7.667-008	1.960-008	5.009-009
AG110	.000	6.638-007	3.198-011	2.708-011	2.086-011	1.620-011	9.759-012	5.880-012	2.135-012	2.814-013	2.235-014	1.776-015
AG110M	.000	7.796-009	5.588-009	4.732-009	3.646-009	2.830-009	1.705-009	1.028-009	3.731-010	4.918-011	3.907-012	3.103-013
CD107	.000	4.002-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD109	.000	1.449-006	1.211-006	1.107-006	9.624-007	8.397-007	6.392-007	4.866-007	2.820-007	9.469-008	2.420-008	6.187-009
CD111M	.000	3.675-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD115	.000	6.169-003	3.774-019	2.952-027	.000	.000	.000	.000	.000	.000	.000	.000
CD115M	.000	4.473-004	6.927-005	2.726-005	6.330-006	1.531-006	8.959-008	5.242-009	1.794-011	2.103-016	1.442-022	9.886-029
CD117	.000	4.596-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD117M	.000	1.795-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD119	.000	1.831-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CD121	.000	8.418-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN113M	.000	2.344-001	1.138-001	7.933-002	4.505-002	2.600-002	8.656-003	2.882-003	3.195-004	3.927-006	1.607-008	6.574-011
IN114	.000	1.057-002	4.450-004	1.921-004	5.157-005	1.436-005	1.114-006	8.643-008	5.201-010	1.883-014	5.288-020	1.485-025
IN114M	.000	7.662-004	1.428-004	6.166-005	1.655-005	4.610-006	3.576-007	2.774-008	1.669-010	6.043-015	1.697-020	4.767-026
IN116	.000	6.731-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN116M	.000	2.010-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117	.000	4.387-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN117M	.000	2.278-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
IN118	.000	2.662-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119	.000	1.249-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN119M	.000	1.411-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN121	.000	5.018-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN113	.000	1.714-002	8.321-003	5.798-003	3.293-003	1.900-003	6.326-004	2.106-004	2.335-005	2.870-007	1.174-009	4.805-012
SN113M	.000	6.622-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN117M	.000	2.073+000	5.461-003	2.802-004	2.681-006	2.921-008	3.468-012	4.116-016	5.800-024	.000	.000	.000
SN119M	.000	9.441-002	6.723-002	5.674-002	4.350-002	3.359-002	2.004-002	1.195-002	4.254-003	5.387-004	4.069-005	3.073-006
SN121	.000	7.586-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN121M	.000	2.782-005	2.769-005	2.763-005	2.753-005	2.744-005	2.725-005	2.706-005	2.669-005	2.596-005	2.507-005	2.422-005
SN123	.000	8.183-002	4.298-002	3.115-002	1.881-002	1.153-002	4.326-003	1.623-003	2.287-004	4.536-006	3.378-008	2.515-010
SN123M	.000	9.170-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SN125	.000	1.506+000	2.695-004	3.606-006	4.205-009	5.923-012	1.174-017	2.327-023	.000	.000	.000	.000
SN125M	.000	1.233+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB122	.000	3.053-002	1.279-015	2.617-022	8.818-033	.000	.000	.000	.000	.000	.000	.000
SB122M	.000	4.265-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB124	.000	3.735-004	9.379-005	4.700-005	1.594-005	5.568-006	6.799-007	8.302-008	1.238-009	2.752-013	7.469-018	2.027-022
SB124M	.000	6.315-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SB125	.000	7.905-002	7.911-002	7.592-002	7.119-002	6.687-002	5.901-002	5.207-002	4.054-002	2.458-002	1.315-002	7.033-003
SB126	.000	5.823-003	7.103-006	2.479-007	1.297-009	7.863-012	2.888-016	1.061-020	1.431-029	.000	.000	.000
SB126M	.000	5.029-004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TE123M	.000	7.718-007	3.852-007	2.721-007	1.579-007	9.305-008	3.231-008	1.122-008	1.353-009	1.967-011	9.929-014	5.013-016
TE125M	.000	2.196-003	4.370-003	4.581-003	4.540-003	4.343-003	3.866-003	3.415-003	2.659-003	1.613-003	8.625-004	4.614-004
TE127	.000	1.373-007	1.012-009	6.910-010	3.802-010	2.127-010	6.661-011	2.085-011	2.044-012	1.964-014	5.908-017	1.777-019
LU176M	.000	1.426-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LU177	.000	7.242-006	4.778-010	3.426-010	2.250-010	1.496-010	6.610-011	2.921-011	5.704-012	2.175-013	3.665-015	6.175-017
LU177M	.000	2.486-008	1.453-008	1.111-008	7.302-009	4.854-009	2.145-009	9.478-010	1.851-010	7.057-012	1.189-013	2.004-015
HF175	.000	3.709-002	1.130-002	6.239-003	2.461-003	9.965-004	1.633-004	2.678-005	7.195-007	5.195-010	6.148-014	7.276-018
HF178M	.000	1.582-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF179M	.000	6.137+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF180M	.000	4.039-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
HF181	.000	6.615-001	9.300-002	3.487-002	7.507-003	1.687-003	8.519-005	4.302-006	1.097-008	7.135-014	2.343-020	7.694-027
HF182	.000	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011	1.941-011
TA182	.000	4.491-003	2.179-003	1.518-003	8.616-004	4.969-004	1.653-004	5.498-005	6.083-006	7.451-008	3.615-010	5.955-011
TA182M	.000	4.551-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
TA183	.000	4.741-003	3.916-010	1.125-013	3.210-019	1.309-024	.000	.000	.000	.000	.000	.000
W181	.000	5.229-005	2.632-005	1.867-005	1.091-005	6.472-006	2.277-006	8.012-007	9.918-008	1.520-009	8.192-012	4.416-014
W183M	.000	1.192-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W185	.000	1.447-002	4.779-003	2.747-003	1.154-003	4.969-004	9.210-005	1.707-005	5.863-007	6.921-010	1.514-013	3.310-017
W185M	.000	1.281-005	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W187	.000	1.282+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
W188	.000	1.558-004	4.701-005	2.582-005	1.010-005	4.058-006	6.549-007	1.057-007	2.752-009	1.866-012	2.042-016	2.234-020
RE186	.000	1.800-003	4.901-013	8.087-018	2.632-025	1.386-032	.000	.000	.000	.000	.000	.000
RE187	.000	1.627-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011	1.651-011
RE188	.000	2.928-002	3.940-004	2.164-004	8.468-005	3.402-005	5.489-006	8.858-007	2.307-008	1.564-011	1.712-015	1.873-019
RE188M	.000	5.626-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
RE189	.000	1.008-007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
PB204	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017	2.278-017
PB209	.000	3.159-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SUMTOT	4.348-017	3.376+002	1.544+001	8.850+000	3.595+000	1.557+000	4.420-001	2.542-001	1.806-001	1.214-001	7.820-002	5.176-002
TOTAL	4.348-017	3.376+002	1.544+001	8.850+000	3.595+000	1.557+000	4.420-001	2.542-001	1.806-001	1.214-001	7.820-002	5.176-002

*ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0 ACTIVATION PRODUCTS
POWER= 1.00000+000 MW, BURNUP= 1.00000+000 MWD, FLUX= 1.00+000 N/CM**2-SEC

9 SUMMARY TABLE: THERMAL POWER, WATTS
ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
H	.000	5.055-006	4.983-006	4.917-006	4.847-006	4.779-006	4.647-006	4.518-006	4.272-006	3.818-006	3.318-006	2.884-006
HE	.000	1.119+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
LI	.000	8.500-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BE	.000	3.920-008	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010	5.800-010
B	.000	2.045-002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
C	.000	3.775-005	3.712-005	3.712-005	3.712-005	3.712-005	3.712-005	3.712-005	3.711-005	3.710-005	3.709-005	3.708-005
N	.000	5.812-006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
F	.000	1.513-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NE	.000	5.085-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NA	.000	1.050+000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MG	.000	7.713-001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AL	.000	3.486+001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
SI	.000	1.661-002	1.789-013	1.789-013	1.788-013	1.788-013	1.787-013	1.786-013	1.784-013	1.780-013	1.775-013	1.770-013
P	.000	9.259-007	2.759-009	1.519-010	3.041-012	1.475-012	1.455-012	1.454-012	1.453-012	1.449-012	1.446-012	1.442-012
CA	.000	1.136-007	5.837-008	4.522-008	3.033-008	2.057-008	9.458-009	4.350-009	8.199-010	4.115-011	8.464-013	1.741-014
SC	.000	1.135-003	2.037-004	1.240-004	5.700-005	2.678-005	5.913-006	1.305-006	6.362-008	1.511-010	7.926-014	4.157-017
TI	.000	1.749-003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
V	2.070-017	1.682+000	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017	2.061-017
CR	.000	1.414-001	4.717-003	1.052-003	1.003-004	1.022-005	1.060-007	1.099-009	1.183-013	1.370-021	1.645-031	.000
MN	.000	3.485+001	1.731-002	1.515-002	1.230-002	1.005-002	6.701-003	4.469-003	1.988-003	3.932-004	5.189-005	6.846-006
FE	.000	1.285-001	7.462-002	6.642-002	5.954-002	5.512-002	4.808-002	4.207-002	3.222-002	1.891-002	9.708-003	4.985-003
CO	.000	4.955-001	2.298-001	1.862-001	1.512-001	1.350-001	1.200-001	1.113-001	9.742-002	7.488-002	5.390-002	3.879-002
NI	.000	6.910-002	4.434-004	4.429-004	4.421-004	4.414-004	4.399-004	4.384-004	4.355-004	4.298-004	4.227-004	4.157-004
CU	.000	3.941+000	3.846-021	3.736-028	.000	.000	.000	.000	.000	.000	.000	.000
ZN	.000	2.891-005	2.055-005	1.733-005	1.327-005	1.024-005	6.092-006	3.625-006	1.284-006	1.610-007	1.201-008	8.961-010
SR	.000	3.989-002	4.659-003	2.045-003	5.631-004	1.608-004	1.311-005	1.072-006	1.058-008	3.315-009	3.124-009	2.943-009
Y	.000	2.359+000	1.450-002	7.122-003	2.340-003	7.933-004	9.117-005	1.049-005	1.549-007	1.586-008	1.492-008	1.406-008
ZR	.000	8.801+001	5.648+000	2.949+000	1.066+000	3.963-001	5.480-002	7.578-003	1.452-004	3.644-007	3.114-007	3.114-007
NB	.000	1.528+002	9.010+000	5.323+000	2.104+000	8.109-001	1.147-001	1.592-002	3.156-004	2.161-007	1.461-007	1.826-007
MO	.000	4.387-002	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.610-009	1.609-009	1.608-009	1.607-009
TC	.000	8.722-003	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010	3.994-010
AG	.000	2.153-006	9.864-007	9.015-007	7.830-007	6.828-007	5.193-007	3.951-007	2.287-007	7.676-008	1.964-008	5.050-009
CD	.000	7.139-003	7.048-005	2.837-005	7.293-006	2.371-006	7.288-007	4.918-007	2.820-007	9.469-008	2.420-008	6.187-009
IN	.000	2.477-001	1.144-001	7.958-002	4.512-002	2.602-002	8.657-003	2.882-003	3.195-004	3.927-006	1.607-008	6.574-011
SN	.000	6.427+000	1.243-001	9.399-002	6.563-002	4.705-002	2.503-002	1.382-002	4.533-003	5.694-004	6.580-005	2.729-005
SB	.000	1.163-001	7.921-002	7.597-002	7.121-002	6.688-002	5.901-002	5.207-002	4.054-002	2.458-002	1.315-002	7.033-003
TE	.000	2.197-003	4.371-003	4.581-003	4.540-003	4.343-003	3.866-003	3.415-003	2.659-003	1.613-003	8.625-004	4.614-004
LU	.000	1.433-003	1.501-008	1.146-008	7.527-009	5.003-009	2.211-009	9.770-010	1.908-010	7.276-012	1.237-013	3.149-015
HF	.000	7.034+000	1.043-001	4.111-002	9.968-003	2.683-003	2.485-004	3.108-005	7.305-007	5.389-010	1.947-011	1.941-011
TA	.000	9.237-003	2.179-003	1.518-003	8.616-004	4.969-004	1.653-004	5.498-005	6.083-006	7.451-008	3.615-010	5.955-011
W	.000	1.298+000	4.852-003	2.791-003	1.175-003	5.074-004	9.503-005	1.798-005	6.883-007	2.214-009	8.344-012	4.420-014
RE	.000	3.670-002	3.940-004	2.164-004	8.468-005	3.402-005	5.489-006	8.858-007	2.308-008	3.215-011	1.651-011	1.651-011
PB	2.278-017	3.159-006	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013	2.051-013
SUMTOT	4.348-017	3.376+002	1.544+001	8.850+000	3.595+000	1.557+000	4.420-001	2.542-001	1.806-001	1.214-001	7.820-002	5.176-002
TOTAL	4.348-017	3.376+002	1.544+001	8.850+000	3.595+000	1.557+000	4.420-001	2.542-001	1.806-001	1.214-001	7.820-002	5.176-002

CUMULATIVE TABLE TOTALS

AP+FP	4.348-017	3.376+002	1.544+001	8.850+000	3.595+000	1.557+000	4.420-001	2.542-001	1.806-001	1.214-001	7.820-002	5.176-002
ACT+FP	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
AP+ACT+FP	4.348-017	3.376+002	1.544+001	8.850+000	3.595+000	1.557+000	4.420-001	2.542-001	1.806-001	1.214-001	7.820-002	5.176-002

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0

(ALPHA,N) NEUTRON SOURCE, NEUTRONS/SEC

BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U234	2.893+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002	2.811+002
U235	8.078+000	7.980+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000	7.981+000
U236	6.348+000	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001	1.295+001
U238	1.045+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002	1.044+002
PU238	.000	5.523+003	5.910+003	5.906+003	5.898+003	5.889+003	5.869+003	5.847+003	5.802+003	5.712+003	5.600+003	5.490+003
PU239	.000	3.915+004	4.083+004	4.083+004	4.083+004	4.083+004	4.083+004	4.083+004	4.083+004	4.083+004	4.082+004	4.082+004
PU240	.000	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.077+004	1.076+004	1.076+004
AM241	.000	8.561+001	5.125+002	7.184+002	1.037+003	1.344+003	1.945+003	2.531+003	3.660+003	5.757+003	8.098+003	1.016+004
CM244	.000	5.902+001	5.846+001	5.809+001	5.752+001	5.697+001	5.589+001	5.484+001	5.278+001	4.889+001	4.443+001	4.037+001
TOTALS												
TABLE	4.093+002	5.601+004	5.850+004	5.870+004	5.901+004	5.931+004	5.988+004	6.045+004	6.153+004	6.352+004	6.574+004	6.769+004
ACTUAL	4.093+002	5.601+004	5.850+004	5.870+004	5.901+004	5.931+004	5.988+004	6.045+004	6.153+004	6.352+004	6.574+004	6.769+004

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
SPONTANEOUS FISSION NEUTRON SOURCE, NEUTRONS/SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U238	1.254+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004	1.252+004
PU238	.000	9.006+002	9.638+002	9.631+002	9.618+002	9.604+002	9.571+002	9.536+002	9.462+002	9.315+002	9.132+002	8.954+002
PU240	.000	5.678+004	5.678+004	5.677+004	5.677+004	5.677+004	5.677+004	5.677+004	5.676+004	5.675+004	5.673+004	5.672+004
PU242	.000	4.147+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002	4.148+002
CM242	.000	3.525+004	2.212+004	1.714+004	1.151+004	7.812+003	3.603+003	1.665+003	3.625+002	2.768+001	1.213+001	1.168+001
CM244	.000	7.106+003	7.038+003	6.994+003	6.926+003	6.860+003	6.730+003	6.602+003	6.354+003	5.886+003	5.349+003	4.861+003
TOTALS												
TABLE	1.254+004	1.130+005	9.986+004	9.484+004	8.913+004	8.537+004	8.102+004	7.895+004	7.739+004	7.656+004	7.597+004	7.545+004
ACTUAL	1.254+004	1.130+005	9.986+004	9.484+004	8.913+004	8.537+004	8.102+004	7.895+004	7.739+004	7.656+004	7.597+004	7.545+004
OVERALL TOTALS												
TABLE	1.295+004	1.690+005	1.584+005	1.535+005	1.481+005	1.447+005	1.409+005	1.394+005	1.389+005	1.401+005	1.417+005	1.431+005
ACTUAL	1.295+004	1.690+005	1.584+005	1.535+005	1.481+005	1.447+005	1.409+005	1.394+005	1.389+005	1.401+005	1.417+005	1.431+005

PHOTON SPECTRUM FOR ACTIVATION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	6.644+013	1.152+012	6.635+011	3.356+011	2.041+011	1.042+011	6.586+010	3.316+010	1.331+010	6.375+009	3.446+009
2.500-002	.000	4.322+013	4.125+012	3.299+012	2.445+012	1.880+012	1.193+012	8.184+011	4.568+011	2.108+011	1.050+011	5.561+010
3.750-002	.000	6.130+012	1.840+011	1.670+011	1.492+011	1.372+011	1.195+011	1.051+011	8.180+010	4.961+010	2.655+010	1.421+010
5.750-002	.000	1.381+013	3.113+011	1.283+011	3.568+010	1.252+010	3.117+009	1.435+009	5.856+008	2.448+008	1.340+008	8.202+007
8.500-002	.000	6.501+012	1.670+010	9.302+009	3.909+009	1.828+009	5.643+008	2.824+008	1.566+008	9.475+007	5.653+007	3.459+007
1.250-001	.000	7.932+012	4.311+011	1.656+011	3.934+010	1.177+010	3.400+009	2.515+009	1.885+009	1.139+009	6.116+008	3.289+008
2.250-001	4.582-013	4.177+013	2.591+011	1.361+011	8.584+010	6.445+010	4.637+010	3.830+010	2.893+010	1.745+010	9.337+009	4.995+009
3.750-001	.000	2.337+013	5.066+011	3.775+011	3.139+011	2.878+011	2.522+011	2.224+011	1.732+011	1.050+011	5.617+010	3.005+010
5.750-001	.000	6.001+014	1.146+012	7.109+011	4.696+011	3.910+011	3.268+011	2.863+011	2.226+011	1.349+011	7.218+010	3.861+010
8.500-001	1.826-013	7.116+014	9.903+013	5.607+013	2.158+013	8.266+012	1.201+012	1.926+011	1.767+010	2.883+009	3.881+008	5.683+007
1.250+000	1.039-013	4.086+013	6.768+011	6.586+011	6.332+011	6.109+011	5.703+011	5.335+011	4.675+011	3.593+011	2.586+011	1.861+011
1.750+000	5.205-014	1.064+014	2.929+009	1.618+009	6.412+008	2.609+008	4.329+007	7.197+006	1.998+005	1.756+002	7.655+000	6.268+000
2.250+000	2.608-014	1.183+013	4.998+007	1.110+007	5.783+006	4.080+006	3.122+006	2.838+006	2.478+006	1.904+006	1.371+006	9.865+005
2.750+000	1.307-014	2.998+012	2.140+004	1.592+004	1.209+004	1.060+004	9.414+003	8.753+003	7.666+003	5.893+003	4.241+003	3.053+003
3.500+000	9.623-015	1.407+011	1.445-008	1.070-008	6.684-009	4.231-009	1.696-009	6.795-010	1.091-010	2.840-012	5.431-014	2.485-014
5.000+000	2.865-015	4.948+007	4.301-009	3.185-009	1.990-009	1.260-009	5.048-010	2.023-010	3.249-011	8.413-013	1.232-014	3.748-015
7.000+000	1.859-016	1.215+007	2.791-010	2.067-010	1.291-010	8.174-011	3.275-011	1.313-011	2.108-012	5.459-014	7.990-016	2.431-016
1.100+001	1.176-017	1.822+006	1.765-011	1.307-011	8.165-012	5.169-012	2.071-012	8.300-013	1.333-013	3.452-015	5.053-017	1.538-017
TOTAL	8.485-013	1.683+015	1.078+014	6.238+013	2.609+013	1.187+013	3.820+012	2.267+012	1.484+012	8.948+011	5.354+011	3.336+011
MEV/SEC	6.233-013	1.245+015	8.614+013	4.919+013	1.962+013	8.195+012	2.063+012	1.113+012	8.141+011	5.800+011	3.921+011	2.693+011

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	9.966+005	1.728+004	9.952+003	5.033+003	3.061+003	1.563+003	9.880+002	4.974+002	1.996+002	9.563+001	5.169+001
2.500-002	.000	1.081+006	1.031+005	8.248+004	6.112+004	4.699+004	2.982+004	2.046+004	1.142+004	5.271+003	2.626+003	1.390+003
3.750-002	.000	2.299+005	6.901+003	6.261+003	5.595+003	5.147+003	4.481+003	3.943+003	3.068+003	1.860+003	9.955+002	5.329+002
5.750-002	.000	7.939+005	1.790+004	7.376+003	2.051+003	7.197+002	1.792+002	8.251+001	3.367+001	1.407+001	7.705+000	4.716+000
8.500-002	.000	5.526+005	1.420+003	7.907+002	3.323+002	1.554+002	4.796+001	2.400+001	1.331+001	8.054+000	4.805+000	2.940+000
1.250-001	.000	9.914+005	5.389+004	2.070+004	4.917+003	1.471+003	4.250+002	3.144+002	2.356+002	1.424+002	7.645+001	4.111+001
2.250-001	1.031-019	9.398+006	5.829+004	3.062+004	1.931+004	1.450+004	1.043+004	8.618+003	6.508+003	3.927+003	2.101+003	1.124+003
3.750-001	.000	8.765+006	1.900+005	1.416+005	1.177+005	1.079+005	9.458+004	8.342+004	6.494+004	3.937+004	2.106+004	1.127+004
5.750-001	.000	3.451+008	6.587+005	4.088+005	2.700+005	2.249+005	1.879+005	1.646+005	1.280+005	7.758+004	4.150+004	2.220+004
8.500-001	1.552-019	6.048+008	8.418+007	4.766+007	1.834+007	7.026+006	1.021+006	1.637+005	1.502+004	2.451+003	3.299+002	4.831+001
1.250+000	1.299-019	5.108+007	8.459+005	8.232+005	7.916+005	7.636+005	7.129+005	6.668+005	5.843+005	4.491+005	3.233+005	2.327+005
1.750+000	9.109-020	1.863+008	5.125+003	2.832+003	1.122+003	4.566+002	7.576+001	1.260+001	3.497-001	3.073-004	1.340-005	1.097-005
2.250+000	5.868-020	2.661+007	1.125+002	2.498+001	1.301+001	9.180+000	7.026+000	6.386+000	5.574+000	4.285+000	3.084+000	2.220+000
2.750+000	3.593-020	8.246+006	5.884-002	4.379-002	3.325-002	2.914-002	2.589-002	2.407-002	2.108-002	1.620-002	1.166-002	8.395-003
3.500+000	3.368-020	4.926+005	5.057-014	3.744-014	2.339-014	1.481-014	5.934-015	2.378-015	3.820-016	9.938-018	1.901-019	8.699-020
5.000+000	1.432-020	2.474+002	2.151-014	1.593-014	9.950-015	6.299-015	2.524-015	1.011-015	1.624-016	4.207-018	6.158-020	1.874-020
7.000+000	1.301-021	8.508+001	1.954-015	1.447-015	9.038-016	5.722-016	2.293-016	9.188-017	1.476-017	3.821-019	5.593-021	1.702-021
1.100+001	1.293-022	2.004+001	1.941-016	1.438-016	8.981-017	5.686-017	2.278-017	9.130-018	1.466-018	3.797-020	5.558-022	1.691-022
TOTAL	6.233-019	1.245+009	8.614+007	4.919+007	1.962+007	8.195+006	2.063+006	1.113+006	8.141+005	5.800+005	3.921+005	2.693+005
GAM POW	9.991-026	1.996+002	1.381+001	7.885+000	3.145+000	1.314+000	3.307-001	1.784-001	1.305-001	9.297-002	6.285-002	4.318-002

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013	1.039-013

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	3.676+006	3.520+006	3.445+006	3.331+006	3.223+006	3.018+006	2.826+006	2.477+006	1.904+006	1.371+006	9.865+005
PB204	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014	2.608-014

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
CO 60	.000	1.137+004	1.089+004	1.066+004	1.031+004	9.972+003	9.338+003	8.743+003	7.666+003	5.893+003	4.241+003	3.053+003

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
PB204	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016	1.859-016

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PHOTON SPECTRUM FOR ACTINIDES + DAUGHTERS

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	4.571+009	3.520+017	2.825+011	2.647+011	2.621+011	2.612+011	2.623+011	2.653+011	2.734+011	2.903+011	3.093+011	3.281+011
2.500-002	.000	1.773+015	1.382+009	1.103+009	1.413+009	1.712+009	2.298+009	2.870+009	3.972+009	6.018+009	8.302+009	1.032+010
3.750-002	8.387+005	1.782+016	5.128+008	4.886+008	5.016+008	5.179+008	5.564+008	5.986+008	6.851+008	8.501+008	1.035+009	1.198+009
5.750-002	2.858+007	7.447+015	1.604+010	1.175+010	1.631+010	2.070+010	2.932+010	3.773+010	5.394+010	8.401+010	1.176+011	1.472+011
8.500-002	7.165+007	1.927+017	4.726+009	1.361+009	1.357+009	1.360+009	1.366+009	1.371+009	1.382+009	1.401+009	1.423+009	1.442+009
1.250-001	1.490+008	1.529+017	6.453+009	5.532+008	5.430+008	5.453+008	5.501+008	5.551+008	5.649+008	5.834+008	6.041+008	6.223+008
2.250-001	5.007+008	1.083+017	5.101+009	6.520+008	6.425+008	6.424+008	6.425+008	6.427+008	6.432+008	6.442+008	6.452+008	6.460+008
3.750-001	1.249+006	1.059+016	5.956+008	3.353+008	3.355+008	3.356+008	3.360+008	3.362+008	3.368+008	3.379+008	3.391+008	3.402+008
5.750-001	7.022+004	1.633+015	5.412+007	5.417+007	5.423+007	5.429+007	5.445+007	5.464+007	5.501+007	5.568+007	5.638+007	5.696+007
8.500-001	3.477+004	2.968+015	7.786+007	7.795+007	7.798+007	7.801+007	7.808+007	7.814+007	7.827+007	7.848+007	7.870+007	7.887+007
1.250+000	1.206+004	9.645+013	6.913+007	6.918+007	6.919+007	6.919+007	6.919+007	6.918+007	6.919+007	6.919+007	6.919+007	6.919+007
1.750+000	5.899+003	5.045+011	1.159+007	1.160+007	1.160+007	1.161+007	1.161+007	1.161+007	1.162+007	1.163+007	1.164+007	1.164+007
2.250+000	3.417+003	2.828+004	2.551+004	2.445+004	2.325+004	2.246+004	2.155+004	2.113+004	2.084+004	2.076+004	2.079+004	2.086+004
2.750+000	1.985+003	4.256+004	9.414+004	1.185+005	1.542+005	1.866+005	2.447+005	2.951+005	3.756+005	4.788+005	5.427+005	5.686+005
3.500+000	1.775+003	1.448+004	1.304+004	1.248+004	1.186+004	1.145+004	1.097+004	1.075+004	1.058+004	1.051+004	1.046+004	1.042+004
5.000+000	7.625+002	6.149+003	5.529+003	5.292+003	5.024+003	4.848+003	4.644+003	4.548+003	4.477+003	4.444+003	4.422+003	4.403+003
7.000+000	8.777+001	7.003+002	6.287+002	6.016+002	5.708+002	5.504+002	5.270+002	5.159+002	5.077+002	5.036+002	5.009+002	4.985+002
1.100+001	1.009+001	8.015+001	7.187+001	6.874+001	6.518+001	6.283+001	6.013+001	5.884+001	5.788+001	5.740+001	5.707+001	5.678+001
TOTAL	5.323+009	8.462+017	3.175+011	2.812+011	2.834+011	2.873+011	2.976+011	3.097+011	3.351+011	3.843+011	4.395+011	4.881+011
MEV/SEC	2.082+008	7.338+016	7.998+009	5.354+009	5.582+009	5.830+009	6.360+009	6.906+009	7.993+009	1.004+010	1.232+010	1.434+010

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	6.857+001	5.280+009	4.238+003	3.971+003	3.932+003	3.919+003	3.934+003	3.980+003	4.101+003	4.354+003	4.640+003	4.892+003
2.500-002	.000	4.432+007	3.455+001	2.757+001	3.533+001	4.280+001	5.746+001	7.176+001	9.931+001	1.504+002	2.075+002	2.579+002
3.750-002	3.145-002	6.684+008	1.923+001	1.832+001	1.881+001	1.942+001	2.086+001	2.245+001	2.569+001	3.188+001	3.881+001	4.491+001
5.750-002	1.643+000	4.282+008	9.221+002	6.755+002	9.378+002	1.190+003	1.686+003	2.170+003	3.101+003	4.831+003	6.762+003	8.464+003
8.500-002	6.090+000	1.638+010	4.017+002	1.157+002	1.154+002	1.156+002	1.161+002	1.166+002	1.174+002	1.191+002	1.209+002	1.226+002
1.250-001	1.863+001	1.911+010	8.066+002	6.915+001	6.788+001	6.816+001	6.877+001	6.939+001	7.062+001	7.293+001	7.551+001	7.779+001
2.250-001	1.127+002	2.392+010	1.148+003	1.467+002	1.446+002	1.445+002	1.446+002	1.446+002	1.447+002	1.449+002	1.452+002	1.453+002
3.750-001	4.685-001	3.970+009	2.234+002	1.258+002	1.258+002	1.259+002	1.260+002	1.261+002	1.263+002	1.267+002	1.272+002	1.276+002
5.750-001	4.038-002	9.389+008	3.112+001	3.115+001	3.118+001	3.122+001	3.131+001	3.142+001	3.163+001	3.202+001	3.242+001	3.275+001
8.500-001	2.955-002	2.522+009	6.618+001	6.625+001	6.629+001	6.631+001	6.637+001	6.642+001	6.653+001	6.671+001	6.689+001	6.704+001
1.250+000	1.507-002	1.206+008	8.641+001	8.648+001	8.649+001	8.649+001	8.648+001	8.648+001	8.648+001	8.648+001	8.649+001	8.649+001
1.750+000	1.032-002	8.830+005	2.028+001	2.030+001	2.031+001	2.031+001	2.032+001	2.033+001	2.034+001	2.036+001	2.037+001	2.037+001
2.250+000	7.688-003	6.363-002	5.740-002	5.502-002	5.231-002	5.053-002	4.849-002	4.754-002	4.689-002	4.671-002	4.677-002	4.693-002
2.750+000	5.460-003	1.170-001	2.589-001	3.258-001	4.240-001	5.131-001	6.728-001	8.114-001	1.033+000	1.317+000	1.492+000	1.564+000
3.500+000	6.212-003	5.068-002	4.562-002	4.389-002	4.150-002	4.006-002	3.840-002	3.762-002	3.705-002	3.679-002	3.663-002	3.648-002
5.000+000	3.812-003	3.075-002	2.764-002	2.646-002	2.512-002	2.424-002	2.322-002	2.274-002	2.239-002	2.222-002	2.211-002	2.201-002
7.000+000	6.144-004	4.902-003	4.401-003	4.211-003	3.995-003	3.853-003	3.689-003	3.612-003	3.554-003	3.525-003	3.506-003	3.489-003
1.100+001	1.110-004	8.817-004	7.906-004	7.561-004	7.169-004	6.911-004	6.614-004	6.473-004	6.367-004	6.314-004	6.278-004	6.246-004
TOTAL	2.082+002	7.338+010	7.998+003	5.354+003	5.582+003	5.830+003	6.360+003	6.906+003	7.993+003	1.004+004	1.232+004	1.434+004
GAM POW	3.337-005	1.176+004	1.282-003	8.583-004	8.948-004	9.346-004	1.019-003	1.107-003	1.281-003	1.609-003	1.976-003	2.299-003

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
U235	8.387+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005	7.373+005

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

OUTPUT UNIT = 8 PAGE

PHOTON SPECTRUM FOR FISSION PRODUCTS

ORIGEN-2 CALCULATIONS OF N FUEL (MK1A) SD-CP-TI-094 REV.0
POWER= 1.00 MW, BURNUP= 1. MWD, FLUX= 1.00+000 N/CM**2-SEC

18 GROUP PHOTON RELEASE RATES, PHOTONS/SECOND
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.233+017	6.119+014	4.110+014	2.888+014	2.015+014	1.307+014	9.083+013	4.899+013	2.294+013	1.670+013	1.498+013
2.500-002	.000	5.749+016	2.417+014	1.318+014	7.440+013	5.437+013	3.681+013	2.731+013	1.688+013	8.928+012	5.694+012	4.286+012
3.750-002	.000	6.942+016	7.000+014	4.459+014	3.050+014	2.388+014	1.567+014	1.054+014	5.126+013	1.887+013	1.191+013	1.032+013
5.750-002	.000	2.639+016	1.165+014	8.167+013	5.544+013	4.231+013	2.774+013	1.925+013	1.026+013	4.665+012	3.346+012	2.994+012
8.500-002	.000	3.496+016	1.455+014	1.145+014	8.603+013	6.789+013	4.415+013	2.940+013	1.381+013	4.453+012	2.471+012	2.054+012
1.250-001	.000	6.978+016	1.247+015	5.906+014	3.160+014	2.322+014	1.466+014	9.473+013	4.023+013	8.426+012	2.438+012	1.620+012
2.250-001	.000	2.116+017	8.197+013	5.462+013	3.600+013	2.716+013	1.778+013	1.244+013	6.747+012	3.071+012	2.096+012	1.801+012
3.750-001	.000	1.557+017	6.007+013	3.537+013	2.519+013	2.042+013	1.483+013	1.130+013	7.126+012	3.674+012	2.139+012	1.454+012
5.750-001	.000	3.090+017	1.655+015	8.098+014	4.277+014	3.316+014	2.677+014	2.326+014	1.897+014	1.522+014	1.338+014	1.235+014
8.500-001	.000	3.563+017	1.011+016	5.717+015	2.207+015	8.526+014	1.334+014	2.973+013	9.559+012	4.655+012	2.188+012	1.142+012
1.250+000	.000	2.178+017	3.924+013	2.879+013	2.068+013	1.625+013	1.092+013	7.630+012	3.941+012	1.365+012	6.207+011	4.121+011
1.750+000	.000	7.779+016	3.759+013	3.302+012	1.592+012	1.313+012	9.110+011	6.362+011	3.168+011	8.975+010	2.963+010	1.767+010
2.250+000	.000	4.339+016	2.622+013	2.218+013	1.764+013	1.414+013	9.082+012	5.836+012	2.413+012	4.144+011	4.643+010	5.318+009
2.750+000	.000	1.907+016	1.436+012	1.356+011	6.999+010	5.832+010	4.088+010	2.869+010	1.416+010	3.483+009	6.105+008	1.079+008
3.500+000	.000	1.140+016	2.314+010	1.124+010	9.060+009	7.627+009	5.408+009	3.834+009	1.928+009	4.873+008	8.733+007	1.565+007
5.000+000	.000	6.863+015	2.288-006	2.317-006	2.361-006	2.401-006	2.473-006	2.536-006	2.640-006	2.780-006	2.878-006	2.929-006
7.000+000	.000	4.456+013	1.484-007	1.504-007	1.532-007	1.558-007	1.604-007	1.645-007	1.713-007	1.804-007	1.867-007	1.900-007
1.100+001	.000	4.349+009	9.387-009	9.508-009	9.687-009	9.850-009	1.015-008	1.040-008	1.083-008	1.141-008	1.181-008	1.202-008
TOTAL	.000	1.790+018	1.507+016	8.446+015	3.841+015	2.101+015	9.974+014	6.672+014	4.013+014	2.337+014	1.835+014	1.646+014
MEV/SEC	.000	1.239+018	9.978+015	5.557+015	2.275+015	1.034+015	3.451+014	2.114+014	1.422+014	9.930+013	8.257+013	7.474+013

18 GROUP SPECIFIC ENERGY RELEASE RATES, MEV/WATT-SEC
BASIS=ACTIVATED IMP. AND CLAD. ASSOCIATED WITH 1 MT INITIAL U-MK 1A 6%PU-240

EMEAN	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
1.500-002	.000	1.850+009	9.178+006	6.166+006	4.032+006	3.022+006	1.961+006	1.362+006	7.349+005	3.441+005	2.505+005	2.248+005
2.500-002	.000	1.437+009	6.043+006	3.295+006	1.860+006	1.359+006	9.202+005	6.828+005	4.221+005	2.232+005	1.424+005	1.072+005
3.750-002	.000	2.603+009	2.625+007	1.672+007	1.144+007	8.955+006	5.876+006	3.954+006	1.922+006	7.077+005	4.468+005	3.871+005
5.750-002	.000	1.517+009	6.700+006	4.696+006	3.188+006	2.433+006	1.595+006	1.107+006	5.898+005	2.682+005	1.924+005	1.722+005
8.500-002	.000	2.972+009	1.236+007	9.729+006	7.313+006	5.770+006	3.753+006	2.499+006	1.174+006	3.785+005	2.100+005	1.746+005
1.250-001	.000	8.723+009	1.559+008	7.383+007	3.950+007	2.902+007	1.832+007	1.184+007	5.029+006	1.053+006	3.048+005	2.026+005
2.250-001	.000	4.762+010	1.844+007	1.229+007	8.099+006	6.110+006	4.001+006	2.798+006	1.518+006	6.909+005	4.717+005	4.052+005
3.750-001	.000	5.838+010	2.252+007	1.326+007	9.446+006	7.656+006	5.562+006	4.237+006	2.672+006	1.378+006	8.023+005	5.454+005
5.750-001	.000	1.777+011	9.518+008	4.656+008	2.459+008	1.907+008	1.539+008	1.338+008	1.091+008	8.749+007	7.695+007	7.099+007
8.500-001	.000	3.028+011	8.591+009	4.859+009	1.876+009	7.247+008	1.134+008	2.527+007	8.125+006	3.957+006	1.860+006	9.709+005
1.250+000	.000	2.723+011	4.905+007	3.599+007	2.585+007	2.031+007	1.365+007	9.537+006	4.926+006	1.706+006	7.758+005	5.151+005
1.750+000	.000	1.361+011	6.577+007	5.779+006	2.786+006	2.299+006	1.594+006	1.113+006	5.543+005	1.571+005	5.186+004	3.093+004
2.250+000	.000	9.763+010	5.899+007	4.991+007	3.969+007	3.181+007	2.043+007	1.313+007	5.429+006	9.324+005	1.045+005	1.197+004
2.750+000	.000	5.246+010	3.950+006	3.730+005	1.925+005	1.604+005	1.124+005	7.889+004	3.895+004	9.579+003	1.679+003	2.968+002
3.500+000	.000	3.989+010	8.098+004	3.933+004	3.171+004	2.669+004	1.893+004	1.342+004	6.747+003	1.705+003	3.057+002	5.478+001
5.000+000	.000	3.431+010	1.144-011	1.159-011	1.181-011	1.200-011	1.236-011	1.268-011	1.320-011	1.390-011	1.439-011	1.464-011
7.000+000	.000	3.119+008	1.039-012	1.053-012	1.072-012	1.090-012	1.123-012	1.152-012	1.199-012	1.263-012	1.307-012	1.330-012
1.100+001	.000	4.784+004	1.033-013	1.046-013	1.066-013	1.084-013	1.116-013	1.145-013	1.191-013	1.255-013	1.299-013	1.322-013
TOTAL	.000	1.239+012	9.978+009	5.557+009	2.275+009	1.034+009	3.451+008	2.114+008	1.422+008	9.930+007	8.257+007	7.474+007
GAM POW	.000	1.986+005	1.599+003	8.908+002	3.647+002	1.658+002	5.532+001	3.389+001	2.280+001	1.592+001	1.324+001	1.198+001

PRINCIPAL PHOTON SOURCES IN GROUP 1,PHOTONS/SEC
MEAN ENERGY= .015MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 2,PHOTONS/SEC
MEAN ENERGY= .025MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 3,PHOTONS/SEC
MEAN ENERGY= .038MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 4,PHOTONS/SEC
MEAN ENERGY= .058MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 5,PHOTONS/SEC
MEAN ENERGY= .085MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 6,PHOTONS/SEC
MEAN ENERGY= .125MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 7,PHOTONS/SEC
MEAN ENERGY= .225MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 8,PHOTONS/SEC
MEAN ENERGY= .375MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 9,PHOTONS/SEC
MEAN ENERGY= .575MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 10,PHOTONS/SEC
MEAN ENERGY= .850MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 11,PHOTONS/SEC
MEAN ENERGY= 1.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 12,PHOTONS/SEC
MEAN ENERGY= 1.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 13,PHOTONS/SEC
MEAN ENERGY= 2.250MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 14,PHOTONS/SEC
MEAN ENERGY= 2.750MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 15,PHOTONS/SEC
MEAN ENERGY= 3.500MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR
RH106	.000	2.993+010	1.210+010	1.081+010	9.057+009	7.627+009	5.408+009	3.834+009	1.828+009	4.873+008	8.733+007	1.565+007

PRINCIPAL PHOTON SOURCES IN GROUP 16,PHOTONS/SEC
MEAN ENERGY= 5.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 17,PHOTONS/SEC
MEAN ENERGY= 7.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

PRINCIPAL PHOTON SOURCES IN GROUP 18,PHOTONS/SEC
MEAN ENERGY=11.000MEV

NUCLIDE	CHARGE	DISCHARGE	120.0D	180.0D	.8YR	1.0YR	1.5YR	2.0YR	3.0YR	5.0YR	7.5YR	10.0YR

STOP 100

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* WARNING - FLOATING UNDERFLOW FAULT-RERUN USING UNDSET NEG *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WARNING - FLOATING OVERFLOW FAULT-RERUN USING OVFSET NEG  *
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********** ORIGEN2: A REVISED AND UPDATED VERSION OF THE ORIGEN COMPUTER CODE **********
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INTRODUCTION

THIS TEXT IS INTENDED TO BE A BRIEF OUTLINE OF THE ORIGEN2 COMPUTER CODE, WHICH IS A REVISED AND UPDATED VERSION OF THE ORIGEN DOCUMENTED IN REPORT ORNL-4628 (MAY 1973). INCLUDED HERE ARE A BRIEF DESCRIPTION OF THE FUNCTIONS OF ORIGEN2, A LISTING OF THE MAJOR DATA SOURCES, A LISTING OF THE PUBLISHED DOCUMENTATION CONCERNING ORIGEN2, AND AN OUTLINE OF THE ORIGEN2 OUTPUT ORGANIZATION. ORIGEN2 IS AVAILABLE FROM THE ORNL RADIATION SHIELDING INFORMATION CENTER (RSIC) AT THE FOLLOWING ADDRESS:

CODES COORDINATOR
RADIATION SHIELDING INFORMATION CENTER
BLDG. 6025
OAK RIDGE NATIONAL LABORATORY
OAK RIDGE, TENNESSEE 37830
PHONE: (615) 574-6176

QUESTIONS CONCERNING ORIGEN2 SHOULD BE ADDRESSED TO RSIC.

DESCRIPTION

ORIGEN2 IS A REVISION AND UPDATE OF THE ORIGEN COMPUTER CODE. SPECIFICALLY, THE INPUT, OUTPUT, CONTROL, AND DATA BASE ASPECTS OF ORIGEN HAVE BEEN SIGNIFICANTLY REVISED AND UPDATED TO REFLECT CURRENT INFORMATION AND NEEDS. IT SHOULD BE NOTED THAT THE MATHEMATICAL METHODS USED TO SOLVE THE NUCLIDE BUILDUP, DEPLETION, AND DECAY EQUATIONS ARE ESSENTIALLY UNCHANGED FROM THAT IN ORIGEN. ORIGEN2 IS A COMPUTER CODE DESIGNED TO CALCULATE THE COMPOSITION AND CHARACTERISTICS OF NUCLEAR MATERIALS AS A FUNCTION OF DECAY TIME AND THE CHANGES THE MATERIALS UNDERGO DURING VARIOUS FUEL CYCLE OPERATIONS. INPUT AND OUTPUT FEATURES HAVE BEEN DESIGNED TO FACILITATE FLEXIBILITY IN THE TYPE OF CASES THAT CAN BE CONSIDERED AND IN CONTROLLING THE DETAIL OF THE OUTPUT. FOR FURTHER INFORMATION, THE USER IS REFERRED TO THE DOCUMENTATION LISTED BELOW.

MAJOR DATA SOURCES

VIRTUALLY ALL ASPECTS OF THE DATA INPUT TO ORIGEN2 HAVE BEEN UPDATED OR REVISED TO REFLECT CURRENT INFORMATION. THE PRINCIPAL SOURCES OF CROSS SECTION DATA WERE THE ENDF/B-IV, ENDF/B-V, AND LENDL COMPILATIONS. DECAY AND PHOTON INFORMATION WERE PRIMARILY BASED ON THE EVALUATED NUCLEAR STRUCTURE DATA FILE (ENSDF) AT ORNL AND ENDF/B-IV. DATA CONCERNING REACTOR AND FUEL CHARACTERISTICS WERE OBTAINED FROM REFERENCE SAFETY ANALYSIS REPORTS AND, WHERE POSSIBLE, THE COMMERCIAL REACTOR VENDORS.

DOCUMENTATION

THE FOLLOWING ITEMS CONSTITUTE THE ORIGEN2 DOCUMENTATION PUBLISHED AS OF THE DATE OF THIS CODE PACKAGE:

A.G. CROFF, 'ORIGEN2 - A REVISED AND UPDATED VERSION OF THE OAK RIDGE ISOTOPE GENERATION AND DEPLETION CODE', ORNL-5621 (JULY 1980).
A.G. CROFF, 'A USER'S MANUAL FOR THE ORIGEN2 COMPUTER CODE', ORNL/TM-7175 (JULY 1980).
A.G. CROFF, M.A. BJERKE, G.W.MORRISON, AND L.M. PETRIE, 'REVISED URANIUM-PLUTONIUM CYCLE PWR AND BWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-6051 (SEPTEMBER 1978).
A.G. CROFF AND M.A. BJERKE, 'ALTERNATIVE FUEL CYCLE PWR MODELS FOR THE ORIGEN COMPUTER CODE', ORNL/TM-7005 (FEB 1980).
A.G. CROFF, R.L. HAESE, AND N.B. GOVE, 'UPDATED DECAY AND PHOTON LIBRARIES FOR THE ORIGEN CODE', ORNL/TM-6055 (FEB 1979)
A.G. CROFF, 'ORIGEN2: A REVISED AND UPDATED VERSION OF ORIGEN', TRANS. AM. NUCL. SOC., VOL. 34, P. 349-50 (JUNE 1980).

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***************************** ORIGEN2:  A REVISED AND UPDATED VERSION OF THE ORIGEN COMPUTER CODE ******************************
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ORGANIZATION OF ORIGEN2 OUTPUT

PAST EXPERIENCE HAS INDICATED THAT MANY USERS ENCOUNTER CONSIDERABLE DIFFICULTY IN FINDING THE DESIRED INFORMATION IN A ORIGEN2 OUT PUT WHICH IS SOMETIMES RATHER MASSIVE. THIS SECTION IS INTENDED AS A BRIEF OUTLINE OF THE ORGANIZATION OF ORIGEN2 OUTPUT. FOR DETAILS REFER TO THE USER'S MANUAL (ORNL/TM-7175, SECT. 8.2). THE ORIGEN2 OUTPUT IS EXTREMELY HIERARCHICAL, AND IS ORGANIZED AS FOLLOWS:

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CARD INPUT ECHO
MISCELLANEOUS INPUT DATA (NEUTRON YIELDS, REPROCESSING LOSSES,ELEMENT CHEMICAL TOXICITIES
LISTING OF ORIGEN2 COMMANDS CURRENTLY BEING EXECUTED
LISTING OF ORIGEN2 DATA LIBRARIES (IF SPECIFIED)
  DECAY LIBRARY
    ACTIVATION PRODUCTS
    ACTINIDES
    FISSION PRODUCTS
  CROSS SECTION/FISSION PRODUCT YIELD LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
  PHOTON LIBRARY
    ACTIVATION PRODUCTS, ACTINIDES, AND FISSION PRODUCTS
OUTPUT 1
  REACTIVITY AND BURNUP DATA
  ACTIVATION PRODUCT TABLES
    GRAM TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    CURIE TABLES (NUCLIDE, ELEMENT, NUCLIDE SUMMARY, ELEMENT SUMMARY)
    ETC. (DEPENDING ON THE OUTPUT OPTIONS SPECIFIED, MANY OF THESE TABLES MAY BE OMITTED
      .
  ACTINIDE TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  FISSION PRODUCT TABLES
    SAME SUBHEADINGS POSSIBLE AS UNDER ACTIVATION PRODUCT TABLES
  NEUTRON PRODUCTION RATE TABLES: (ALPHA,N) AND SPONTANEOUS FISSION
  PHOTON TABLES
    ACTIVATION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    ACTINIDES (SUMMATION AND PRINCIPAL CONTRIBUTORS)
    FISSION PRODUCTS (SUMMATION AND PRINCIPAL CONTRIBUTORS)
OUTPUT 2
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
  .
  .
OUTPUT N
  SAME GENERAL CONTENT AND ORDER AS OUTPUT 1
TABLE OF CONTENTS (UNIT 12) FOR THE ABOVE (UNIT 6) OUTPUT
VARIABLE CROSS SECTION INFORMATION OUTPUT (UNIT 16)
DEBUGGING AND OTHER INTERNAL INFORMATION OUTPUT (UNIT 15)
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THE SCENARIO LISTED ABOVE CONSTITUTES A TYPICAL ORIGEN2 OUTPUT FOR MANY CASES. ONE POSSIBLE MODIFICATION IS THE USE OF AN STP COMMAND TO EXECUTE AN ADDITIONAL SET OF INSTRUCTIONS AFTER THE FIRST SET HAS BEEN EXECUTED. IF THIS IS DONE, THE OUTPUT WILL BEGIN WITH 'MISCELLANEOUS INPUT DATA' IF NSTP=1, 'ORIGEN2COMMANDS CURRENTLY BEING EXECUTED' IF NSTP=2, OR 'OUTPUT 1' FOR NSTP=3. ANOTHER OFTEN-USED OPTION IS TO EMPLOY BOTH THE PRIMARY (UNIT 6) AND ALTERNATE (UNIT 11) OUTPUT UNITS. IF BOTH ARE ROUTED TO PAPER, THE TABLE OF CONTENTS FOR UNIT 11, WHICH IS ON UNIT 13, WILL IMMEDIATELY FOLLOW THE DEBUGGING AND INTERNAL INFORMATION (UNIT 15) OUTPUT. THE 'OUTPUT N' TABLES FOR UNIT 11 WILL BE PRINTED FOLLOWING THE TABLE OF CONTENTS.