ATTACHMENT (4)

CCNPP CALCULATION, "SOURCE TERMS FOR ISFSI 32P BURNUP EXTENSION," DOCUMENT NO. CA06721, REVISION NO. 0

Calvert Cliffs Nuclear Power Plant, Inc.
June 15, 2009

ESP No.:	ES200600043	Supp No.	000	Rev. No.	0000	Page 1 of 132

FORM 19, CALCULATION COVER SHEET

A. INITIATION (Control Doc Type - DCALC) Page 1 of 1

DCALC No.: CA06721 Revision No.: 0000

Vendor Calculation (Check one): ☐ Yes ☒ No

Responsible Group: Nuclear Fuel Services

Responsible Engineer: J. R. Massari

B. CALCULATION

ENGINEERING DISCIPLINE:
☐ Civil ☐ Instr & Controls ☒ Nuc Engrg
☐ Electrical ☐ Mechanical ☐ Nuc Fuel Mngmt
☐ Other: ☐ Reliability Engrg

Title: SOURCE TERMS FOR ISFSI 32P BURNUP EXTENSION

Unit ☐ 1 ☐ 2 ☒ COMMON

Proprietary or Safeguards Calculation ☒ YES ☐ NO

Comments:

Vendor Calc No.: N/A REVISION NO.:

Vendor Name: N/A

Safety Class (Check one): ☒ SR ☐ AQ ☐ NSR

There are assumptions that require Verification during walkdown: AIT #:

This calculation **SUPERSEDES**:

C. REVIEW AND APPROVAL:

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Printed Name and Signature Date

Independent Reviewer/Verifier: G. Gryczkowski 3-12-07
Printed Name and Signature Date

Approval: P. I. Wengloski 3/13/07
Printed Name and Signature Date

IF the results or conclusions of this calculation or revision might affect a procedure or the basis of a procedure, a Change Notification Form (Form 14) shall be forwarded to the Procedure Development Unit with a summary of the calculation's purpose and results.

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1.0 INTRODUCTION AND OBJECTIVE

The current design of the 32P Dry Storage Canisters (DSCs) used at CCNPP is limited by ISFSI Technical Specification 3.1.1(1,3) to storing only standard Combustion Engineering (CE) 14x14 assemblies with burnup ≤ 47 GWd/MTU. Under some ISFSI loading schedules designed to increase space in the spent fuel pool, assemblies below this burnup limit will be depleted by the end of 2008 unless the ISFSI design is modified to allow the storage of higher burnup assemblies. In addition, regardless of loading schedule, at the current burnup limit, there will be insufficient assemblies to allow a complete loading of all the Phase III Horizontal Storage Modules (HSMs). However, as of December 2005, there were 639 standard CE 14x14 fuel assemblies in the spent fuel pool with discharge burnups between 46.25 GWd/MTU (the FH-352 administrative burnup limit) and 52 GWd/MTU.

The purpose of this calculation is to define the thermal and radiological source terms for CE standard 14x14 fuel assemblies in the spent fuel pool with burnups ≤ 52 GWd/MTU using the SAS2H sequence of SCALE 4.4. The objective is to determine if extending the ISFSI burnup limit to 52 GWd/MTU, while maintaining the maximum assembly heat load at 660 watts, would resolve the above mentioned issues. Assembly neutron, gamma, and isotopic source terms will be identified which bound all standard CE 14x14 assemblies with burnups ≤ 52 GWd/MTU at the time when they have cooled to 660 watts.

2.0 INPUT

2.1 Standard CE 14x14 Assembly Hardware Materials and Masses

Table 2-1 lists the standard CE 14x14 assembly hardware (non-UO_2) masses. This information is generally consistent with that used for previous ISFSI source term calculations (Refs. 3, 13, & 14). Changes involve the addition of Erbia, which was used as a burnable absorber in later standard CE 14x14 fuel, and distribution of the Zircaloy cladding mass among the plenum and active fuel region (entirely in active fuel region previously).

Table 2-1 – Standard CE 14x14 Assembly Hardware Materials and Masses

Part	Parts/ assembly	Weight(kg)/ assembly	Material	Region	Reference	Notes
Hold down springs	4	1.1	Inconel X-750	Top Endfitting	2	1
Flowplate	1	1.45	304 Stainless Steel	Top Endfitting	2	1
Locking Posts	5	2.63	304 Stainless Steel	Top Endfitting	2	1
Hold Down Plate	1	1	304 Stainless Steel	Top Endfitting	2	1
Plenum springs	176	7.98	302 Stainless Steel	Plenum	4	1
Plenum Spacer Grid	1	0.68	Zircaloy-4	Plenum	2	1
Fuel Rod Cladding in Plenum	176	7.43	Zircaloy-4	Plenum	4	2
Guide Tubes in Plenum	5	0.84	Zircaloy-4	Plenum	2 & 4	2
Spacer Grids	7	4.76	Zircaloy-4	Active Fuel	2	1
Fuel Rod Cladding in Act. Fuel Region	176	96.47	Zircaloy-4	Active Fuel	4	2
Guide Tubes in Act. Fuel Region	5	10.96	Zircaloy-4	Active Fuel	2 & 4	2
Al_2O_3-B_4C Burnable Poison Rods	12 max	11.4	Al_2O_3-B_4C	Active Fuel	4	1
Er_2O_3 Integral Burnable Poison Rods	68 max	2.9	Er_2O_3	Active Fuel	9 CORD File	3
Bottom Spacer Grid	1	1.36	Inconel 625	Bot. Endfitting	2	1
Bottom Nozzle	1	5	304 Stainless Steel	Bot. Endfitting	2	1

Note 1 Consistent with Reference 3 (app A-2)
Note 2 103.9 kg/assy clad and 11.8 kg/assy guide tube material distributed among model regions per ratio of active fuel length to total rod length
Note 3 Per UFSAR Tables 3.3-1 & 3.3-2 standard batches 1P-1S and 2N-2R used Erbium integral BP pins rather than non-fuel bearing Al2O3-B4C pins

2.2 Standard CE 14x14 Assembly Dimensions

Information on the physical dimensions of a standard CE 14x14 assembly were obtained from Reference 3 and are summarized in Table 2-2 below.

Table 2-2 – Standard CE 14x14 Assembly Dimensions

Parameter	Value
Rod Pitch (in)	0.58
Pellet OD (in)	0.3765
Clad ID (in)	0.384
Clad OD (in)	0.44
Guide Tube ID	1.035
Guide Tube OD	1.115
Fuel Length (in)	136.7
Assembly Pitch (in)	8.18

2.3 SAS2H Path B Model for a CE 14x14 Assembly

The effective radii for the SAS2H Path B model for 176 pin Standard CE 14x14 assemblies were taken from Reference 8, Attachment A, and are summarized in Figure 2-1.

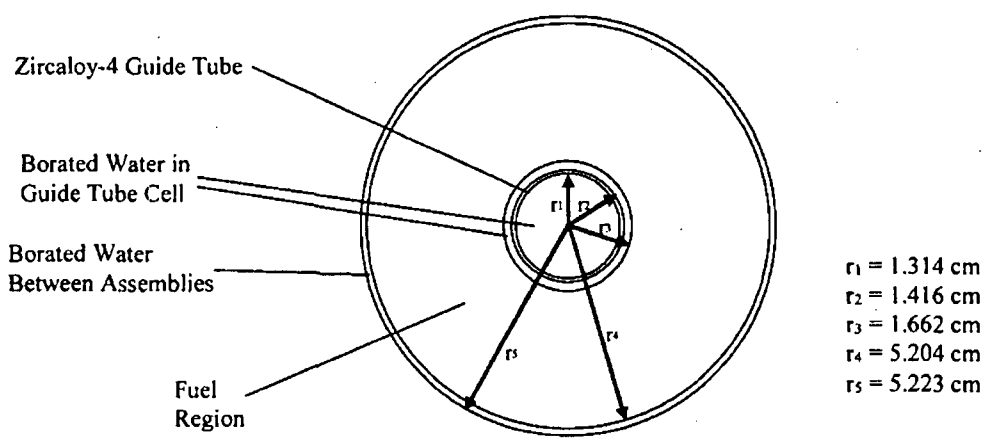


Figure 2-1. SAS2H Path B Model for Standard 176 Pin CE 14x14 Assemblies

2.4 Material Compositions

The material compositions and densities utilized in this calculation are provided in Table 2-3 below, with the appropriate reference(s) indicated. Table 2-4 lists the UO_2 compositions utilized. The initial uranium isotopic masses are determined by multiplying the assembly uranium mass (0.4 MTU) by the isotopic weight percent factors shown below (Ref. 12).

Wt % U234=.0089 * Wt % U235
Wt % U236=.0046 * Wt % U235
Wt % U235=enrichment
Wt % U238= 100 - Wt % U234 - Wt % U235 - Wt % U236

Table 2-4 also summarizes the conversion of the material information to mixture density and composition for input into SAS2H (Data Block 4). Fuel region density is calculated by dividing the total fuel mass by the volume of the active fuel region in an assembly (43,894 cm^3 based on info from Table 2-2).

Table 2-3 – Material Compositions

Element	Zircaloy-4 ppm	SS-304 ppm	SS-302 ppm	Inconel-X750 ppm	Inconel-625 ppm	Al_2O_3-B_4C ppm	Er_2O_3 ppm	UO_2 Impurities ppm U
H	13	0	0	0	0	0	0	0
Li	0	0	0	0	0	0	0	1
B	0.33	0	0	0	0	30670	0	1
C	270	800	1500	399	1000	8520	0	100
N	80	1300	1300	1300	0	100	0	100
O	950	0	0	0	0	433060	125480	134454
F	0	0	0	0	0	25	0	15
Na	0	0	0	0	0	2000	0	15
Mg	0	0	0	0	0	10000	0	2
Al	24	0	0	7982	4000	486770	0	16.7
Si	0	10000	10000	2993	5000	20000	0	12.1
P	0	450	450	0	150	0	0	35
S	35	300	300	70	150	0	0	0
Cl	0	0	0	0	0	25	0	35
Ca	0	0	0	0	0	4000	0	2
Ti	20	0	0	24943	4000	0	0	1
V	20	0	0	0	0	0	0	3
Cr	1250	190000	180000	149660	215000	1580	0	4
Mn	20	20000	20000	6984	5000	0	0	1.7
Fe	2250	687050	696350	67846	50000	1580	0	300
Co	20	800	800	6485	10000	0	0	1
Ni	70	89200	89200	721859	580000	1580	0	300
Cu	20	0	0	499	0	0	0	1
Zn	0	0	0	0	0	0	0	40.3
Zr	978740	0	0	0	0	0	0	0
Nb	120	100	100	8980	36500	0	0	0
Mo	0	0	0	0	89200	0	0	10
Ag	0	0	0	0	0	0	0	0.1
Cd	0.25	0	0	0	0	0	0	25
In	0	0	0	0	0	0	0	2
Sn	16000	0	0	0	0	0	0	4
Gd	0	0	0	0	0	100	0	0
Er	0	0	0	0	0	0	874520	0
Hf	78	0	0	0	0	0	0	0
W	20	0	0	0	0	0	0	2
Pb	0	0	0	0	0	0	0	1
Bi	0	0	0	0	0	0	0	0.4
Th	0	0	0	0	0	0	0	30
U	0.2	0	0	0	0	0	0	n/a
Reference	1, 4*	1†	1†	1, 3, 26	4	4	11	10 (p. 50), 4**

* Compositions of C, Co, Ni, and Zr only taken from Reference 4 (info based on CE specifications)

** Compositions of C,N,F,Cl,Fe,Ni, and Th only taken from Reference 4 (info based on CE specifications)

† Fe rebalanced to maintain 100% total

Table 2-4 UO_2 Material Compositions

Enrichment	2.05	2.45	2.73	3.03	3.4	3.65	3.81	4	4.08	4.2	4.3	4.48
U-234 (g)	72.98	87.22	97.188	107.868	121.04	129.94	135.636	142.4	145.248	149.52	153.08	159.488
U-235 (g)	8200	9800	10920	12120	13600	14600	15240	16000	16320	16800	17200	17920
U-236 (g)	37.72	45.08	50.232	55.752	62.56	67.16	70.104	73.6	75.072	77.28	79.12	82.432
U-238 (g)	391689.3	390067.7	388932.6	387716.4	386216.4	385202.9	384554.3	383784.0	383459.7	382973.2	382567.8	381838.1
O-16 (g)	53782	53785	53787	53789	53792	53794	53795	53796	53797	53797	53798	53799
Total U (g)	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000
Total UO_2 (g)	453782	453785	453787	453789	453792	453794	453795	453796	453797	453797	453798	453799
UO_2 Density (g/cc)	10.3382	10.3383	10.3383	10.3384	10.3384	10.3385	10.3385	10.3385	10.3385	10.3386	10.3386	10.3386
92234 wt%	0.0161	0.0192	0.0214	0.0238	0.0267	0.0286	0.0299	0.0314	0.0320	0.0329	0.0337	0.0351
92235 wt%	1.8070	2.1596	2.4064	2.6708	2.9970	3.2173	3.3583	3.5258	3.5963	3.7021	3.7902	3.9489
92236 wt%	0.0083	0.0099	0.0111	0.0123	0.0138	0.0148	0.0154	0.0162	0.0165	0.0170	0.0174	0.0182
92238 wt%	86.3166	85.9587	85.7082	85.4398	85.1087	84.8851	84.7419	84.5719	84.5004	84.3930	84.3035	84.1425
8016 wt%	11.8520	11.8526	11.8529	11.8533	11.8538	11.8542	11.8544	11.8547	11.8548	11.8549	11.8551	11.8553

2.5 Hardware Activation Flux Scaling Factors

Flux scaling factors are utilized to ratio hardware mass based on the fraction of core average flux in particular regions for input to the light elements section of the SAS2H input to determine activated hardware source terms. Standard flux factors developed by Pacific Northwest Laboratory for Combustion Engineering 14x14 fuel assemblies (Ref. 15, Table 5.1) were utilized for determining the final photon source terms. These flux factors were utilized for previous 24P and 32P shielding calculations (Refs. 25, 26, 32 & 33) and verified to be conservative by reviewing MCNP neutron flux tally results for the active fuel, plenum and top endfitting regions from Ref. 16 (case CDNrng2, mesh tally 54). For determining acceptable assembly loading times, flux factors from previous assembly insertion requirements calculations (Refs. 13 and 14) with an even greater degree of conservatism were utilized for consistency.

Table 2-5. Flux Scaling Factors for Hardware Activation

Region/Part	Loading Flux Factor	Photon Source Flux Factor
Top Endfitting (flowplate/above flowplate)	0.16/0.16	0.05/0.017
Plenum/Spring	0.17	0.20
Plenum/Spacer & Clad	0.23	0.20
Active Fuel	1.00	1.00
Bottom/Lower Spacer	0.26	0.20
Bottom/Bottom Nozzle	0.22	0.20
Reference	13 & 14	26, p. 52 15, Table 5.1

2.6 Standard CE 14x14 Irradiation Histories

Table 2-6 below summarizes the cycle effective full power days (EFPD) for all cycles that contained standard CE 14x14 fuel assemblies. Information for cycles U1C1 – U1C15 and U2C1 – U2C14 were obtained from Reference 17 (p. 71). EFPD's for cycles U1C16 and U2C15 were determined assuming a core power of 2700 MWt and using core masses of 88.141 and 88.033 MTU from References 18 and 19, respectively, and cycle burnups of 19,686 MWd/MTU and 20,362 MWd/MTU from References 20 and 21, respectively.

Table 2-6. Cycle Effective Full Power Days

Cycle	EFPD	Cycle	EFPD
U1C1	521	U2C1	499
U1C2	254	U2C2	302
U1C3	297	U2C3	347
U1C4	367	U2C4	508
U1C5	402	U2C5	409
U1C6	407	U2C6	412
U1C7	409	U2C7	422
U1C8	401	U2C8	552
U1C9	349	U2C9	555
U1C10	633	U2C10	582
U1C11	507	U2C11	642
U1C12	631	U2C12	637
U1C13	588	U2C13	665
U1C14	611	U2C14	634
U1C15	651	U2C15	664
U1C16	643	-	-

Appendix E provides the inventory of standard CE 14x14 assemblies in the spent fuel pool as of December 2005, and the discharge date of each assembly, provided by Nuclear Fuel Management Characteristics such as assembly burnup, initial enrichment, cycles in core, and discharge date are included. Table 2-7 summarizes the burnup/enrichment distribution of the assemblies in Appendix E.

2.7 Standard CE 14x14 Axial Burnup Profiles

The dynamics of reactor operation results in non-uniform axial-burnup profiles in fuel with any significant burnup. At the beginning of life in a PWR, a near-cosine axial-shaped flux will begin depleting fuel near the axial center of a fuel assembly at a greater rate than at the ends. As the reactor continues to operate, the cosine flux shape will flatten because of the fuel depletion and fission product buildup that occurs near the center. However, because of the high leakage near the ends of the fuel, burnup will drop off rapidly near the ends. The majority of PWR fuel assemblies have similar axial-burnup shapes - relatively flat in the axial mid-section (with peak burnup from 1.1 to 1.2 times the assembly average burnup) and significantly underburned fuel at the ends (with burnup of 50 to 60% of the assembly average). Note that due to a difference in the moderator density, the burnup is slightly higher at the bottom of the assembly than at the top. The cooler higher-density water at the assembly inlet results in a higher reactivity and thus higher burnup than the warmer moderator at the assembly outlet.

Appendix F contains ROCS asbuilt batch average axial burnup profiles from standard CE 14x14 fuel assemblies discharged from Unit 2 Cycle 14 (Ref. 26, p. 44) and Unit 1 Cycle 16 (Ref. 29 Att I, & 30). The average of the former profiles was utilized as the basis for the axial source distribution for the design basis 24P and 32P shielding calculations.

Table 2-7. Burnup and Enrichment Distribution (No. of Assemblies) of Standard CE 14x14 Fuel with Burnup < 52 GWd/MTU in the Spent Fuel Pool as of Dec. 2005

Enrichment Wt% U235	Burnup (MWd/MTU)																	Grand Total
	16000-17999	18000-19999	22000-23999	24000-25999	26000-27999	28000-29999	30000-31999	32000-33999	34000-35999	36000-37999	38000-39999	40000-41999	42000-43999	44000-45999	46000-47999	48000-49999	50000-52000	
2.05	6	1																7
2.45		1			15	3							1					20
2.73					6	2	4	3	2	4								21
2.99			1	1	2	2	2	1	2	1	1							13
3.03					2	9	2	9	12	5							1	40
3.4						1			1	5	1	8	8	19	4	11	4	62
3.55											4	6	5					15
3.65									3	8	8	4						23
3.81															4			4
3.85															4			4
4										4	23	9	8	16	25	37		122
4.05									11	2	9	30	11	4	8	4	4	83
4.08											12	21	34	52	36			155
4.2											8			16	44	12	4	84
4.3											8	8	40	56	59	67	21	259
4.48												16		23	56	130	119	344
Grand Total	6	2	1	1	25	17	8	13	31	29	74	102	107	186	240	261	153	1256

3.0 ASSUMPTIONS

The following assumptions are used in performing this calculation:

1. It is assumed that moderator temperature and density remain a constant 573.43K (572.5°F) and 0.7264 g/cm^3, respectively. The basis for this assumption is Reference 31, Tables 2.7 and 2.8.

2. It is assumed that the cladding temperature during depletion remains constant at 620°F (599.82K). The basis for this assumption is that it is consistent with Reference 8 (p. 9). In addition, Appendix J of Ref. 8 showed that changes in cladding temperature did not impact isotopic activities.

3. An assembly loading of 0.400 MTU was assumed to bound all standard CE 14x14 assemblies as listed in UFSAR Tables 3.3-1 and 3.3-2.

4. It is assumed that the bounding thermal limit for loading an assembly in an extended burnup 32P DSC will be 660 watts/assembly. Neutron and photon sources will be identified which bound all standard CE 14x14 assemblies at the time when 660 watts is reached.

5. It is assumed that assemblies with inert replacement rods may be included in the population of fuel eligble to be loaded. Request for approval to load these assemblies will be part of this submittal.

6. For the final photon source hardware activation cases, 2.108kg of stainless steel in the top endfitting is assumed to be in the "flowplate" region of the top endfitting (1.45kg flowplate + 25% of locking post mass). The basis for this is that it is consistent with the current design basis for the 24P and 32P shielding calculations (see Reference 25, page 38 and Reference 26, ORIGEN2.1 case *orcc02t2.u6*). The remaining stainless steel in the top endfitting (2.973 kg) is assumed to be in the lower flux region above the flow plate.

7. It is assumed that the fuel temperature remains constant at 892.4 K (1146.6°F) which represents the typical beginning of cycle fuel temperature (Ref. 31, Table 6.5). Appendix J of Ref. 8 showed that changes in fuel temperature ranging from 500K to 1300K did not significantly impact total isotopic activities or decay heat.

4.0 REFERENCES

1. DOE/RW-0184, "Characteristics of Potential Repository Wastes," U.S. Department of Energy, Rev. 1.

2. CCNPP Memo NEU-01-016, "Design Input Data for CCNPP ISFSI," April 3, 2001.

3. CCNPP Calculation CA03896, "Decay Heat and Radiological Source Term Determination for CE 14x14 Standard PWR Fuel," Rev. 0.

4. CCNPP Memo NEU-89-034, "Response to NUTECH Request for Information," January 17, 1989.

5. CCNPP Memo TSE-97-063, "Fuel Assembly Data for ISFSI," April 30, 1997.

6. "SCALE 4.4: A Modular Code System for Performing Standardized Computer Analyses for Licensing Evaluation," NUREG/CR-0200, Rev. 6, September 1998.

7. CCNPP Calculation CA06105, "SCALE 4.4 Installation and Verification on PC0398," Rev. 0.

8. CCNPP Calculation CA05780, "SCALE 4.4 SAS2H Validation," Rev. 0.

9. CCNPP Calculation CA05735, "Calvert Cliffs Unit 1 Cycle 16 CORD/ROCS Design Models and Depletions," Westinghouse Calculation A-CC1-FE-0128, Rev. 0

10. ORNL/TM-11018, "Standard and Extended Burnup PWR and BWR Reactor Models for the ORIGEN2 Computer Code," Oak Ridge National Laboratory, December 1989.

11. Chart of the Nuclides, 14th Edition

12. NUREG/CR-5625 (ORNL-6698), "Technical Support for a Proposed Decay Heat Guide Using SAS2H/ORIGEN-S Data," September 1994.

13. CCNPP Calculation CA06432, "ISFSI 32P Assembly Insertion Requirements," Rev. 0

14. CCNPP Calculation CA05803, "ISFSI 24P Assembly Insertion Requirements," Rev. 0

15. PNL-6906, "Spent Fuel Assembly Hardware Characterization and 10CFR61 Classification for Waste Disposal," Pacific Northwest Laboratory, June 1989.

16. CCNPP Calculation CA06520, "Dose Rates Above the Reactor Vessel Head During Normal Operation," Rev. 0.

17. CCNPP Calculation CA06188, "EQ Source Term for 24-Month Full Core VAP and Appendix K Power Uprate," Rev. 0.

18. CCNPP Calculation CA05947, "Determination of U1C16 Fission Product Isotopic Activities Using SAS2H," Rev. 0.

19. CCNPP Calculation CA06139, "Determination of U2C15 Fission Product Isotopic Activities Using SAS2H," Rev. 0.

20. CCNPP Memo DE05854, "Unit 1 Cycle 16 End of Cycle (EOC) Burnup," April, 9, 2004.

21. CCNPP Memo DE06084, "Unit 2 Cycle 15 End of Cycle (EOC) Burnup," February 23, 2005.

22. CCNPP Memo DE06226, "Potential Reinsert Fuel Assemblies," October 24, 2005

23. Interim Staff Guidance 5, "Confinement Evaluation," U.S. Nuclear Regulatory Commission, Rev. 1.

24. Yucca Mountain Project Report TDR-MGR-RL-000002, "Preclosure Safety Analysis Guide," Bechtel SAIC, Rev. 1.

25. CCNPP Calculation CA05924, "Calvert Cliffs ISFSI/NUHOMS-24P Radiation Dose Rates for Loading and Transfer," Rev. 0.

26. CCNPP Calculation CA05925, "Calvert Cliffs ISFSI/NUHOMS-24P HSM Dose Rates," Rev. 0.

27. EPRI TR-106305, "Burnup Verification Measurements on Spent-Fuel Assemblies at Arkansas Nuclear One, Unit 1," March 1996.

28. EPRI TR-106305, "The Fork+ Developmental Measurement Campaign at Maine Yankee," June 1999.

29. CCNPP Calculation CA06015, "Unit 2 Spent Fuel Pool Criticality Analysis with Soluble Boron and Burnup Credit but without Boraflex Credit", Rev. 0.

30. CCNPP Calculation CA05743, "Calvert Cliffs Unit 1 Cycle 16 CORD and ROCS Asbuilt Models and Depletions", Rev. 0.

31. CCNPP Calculation CA05947, "Determination of U1C16 Fission Product Isotopic Activities Using SAS2H," Rev. 0

32. CCNPP Calculation CA06327, "Shielding Evaluation with the New Top Shield Plug for NUHOMS-32P," Rev. 0, Transnuclear Calculation 1095-60.

33. CCNPP Calculation CA06293, "NUHOMS 32P HSM Dose Rates for Calvert Cliffs ISFSI," Rev. 0, Transnuclear Calculation 1095-50.

5.0 METHOD OF ANALYSIS

The design analysis is performed based on the following methodology:

- Depletion cases are run using the SAS2H sequence of the SCALE 4.4 code system (Reference 6) to determine the thermal and radiological source terms of fuel assemblies with characteristics which bound those in Table 2-7. SAS2H is a control module that implements an analytic sequence of which the functional modules (or codes) are BONAMI-S, NITAWL-S, XSDRNPM-S, COUPLE, and ORIGEN-S. A fuel assembly is modeled with SAS2H in one-dimensional cylindrical geometry. This modeling is a two step process. First the fuel is represented as an infinite lattice of fuel rods with XSDRPM-S, a one-dimensional discrete-ordinates code, where resonance data is obtained from BONAMI-S and NITAWL-S (the "Path A" model). Second, cell-spectrum-weighted cross sections from XSDRNPM-S are then applied to the fuel zone in a larger cell model representing part or all of a fuel assembly within an infinite lattice (the "Path B" model). Material and volume ratios for the zones must be appropriate for the physical system being represented. Weighted cross section and spectra data from this model are used by COUPLE to update the ORIGEN-S data library. ORIGEN-S performs point depletion calculations to provide updated isotopic concentrations that are fed back to the one-dimensional model. The first step is then repeated and new weighted cross sections and spectra data are determined for the next depletion calculation. Updating of the ORIGEN-S library for depletion time steps is performed to appropriately represent changes (with depletion) in the neutron energy spectrum within the fuel assembly. The 44GROUPNDF5 cross section library that was used in the CCNPP validation of SAS2H (Reference 8) was utilized in this work. 44GROUPNDF5 is a 44-energy group library derived from the latest ENDF/B-V files with the exception of O-16, Eu-154, and Eu-155, which were taken from the more improved ENDF/B-VI files.

- Following the SAS2H depletion, a decay-only ORIGEN-S run is utilized to obtain the thermal and radiological assembly source terms at 60 different times following shutdown (from 0 to 59 years, in 1 year increments).

- A simple post-processor code, ORGS32P.EXE, was written in Quickbasic (see Appendix C) to extract the total (sum of fission product, light element, and actinide) assembly decay heats, and photon and neutron source strengths from the SAS2H/ORIGEN-S output file, and summarize them in a comma deliminated file (*.sum) with the same prefix as the input file name. In addition, the curies for each of the 53 isotopes listed below at each time step were extracted and summarized in a comma deliminated file (*.iso) with the same prefix as the input file name. This isotope list is based on that given in Reference 23 (Table 7.1) supplemented with those isotopes contained in Reference 24 (Table 8.4). It generally represents greater than 98% of the fission product activity and ~100% of the actinide activity during the time frames of interest (7 – 15 years after discharge).

```
h  3   c 14   cl 36  co 60  se 79  kr 81  kr 85  sr 89  sr 90   y 90  nb 94  zr 95  tc 99
ru103  ru106  pd107  cd113m xe127   i129  cs134  cs135  cs137   i137  xe137  pm147  sm151
eu154  eu155  ac227  pa231   u232   u233   u234   u235   u236   u238  np237  np239  pu238
pu239  pu240  pu241  pu242  am241  am242  am242m am243  cm242  cm243  cm244  cm245  cm246
th230
```

The program also produces a *DBwatt.sum* summary file that summarizes the decay time when each burnup/enrichment combination reaches thermal outputs of 420, 480, 540, 600, 660, 720, 780, 840, and 900 watts, along with the neutron and photon source strength at that time. Heats other than 660 watts are included in the event that it is determined that a zoned loading scheme is required to support loading higher burnup fuel. Note that only a simple linear interpolation is utilized since the ORIGEN-S output is in one year increments. A similar DBwatt.iso file is produced which summarizes the curies of the above mentioned isotopes at the times when the above mentioned assembly decay heats are reached.

ORIGN32P is executed from the command prompt using the following command: ORIGN32P *filename*. Note that *filename* must be in the short (8 character) format which may be obtained using the dir /x command at the command prompt.

- The Excel 97 regression tool was utilized to generate fits from the information in the *DBwatt.sum* file yielding the decay time required to reach an assembly thermal output of 660 watts as a function of enrichment and discharge burnup. Similar fits were also developed to yield the assembly neutron and photon sources (in terms of MeV/sec and photons/sec) at the time when the assembly thermal output is 660 watts.

- The above fits are then applied to the assembly population from Appendix E to determine the date when each assembly would be eligible for loading into a 32P DSC with a decay heat limit of 660W per assembly, along with the associated neutron and photon sources at that time. This information is then used to identify the bounding radiological source terms at the time an assembly is eligible for loading.

- Axial profiles and neutron peaking factors used in the 24P and 32P shielding analysis were evaluated against a larger dataset to verify continued acceptability. The Section 2.7 burnup profiles may be used directly for photon sources, which are linear with burnup. However, the assembly neutron source strength at a given time is not linear with assembly burnup. As a result, the assembly average neutron source must be increased by a peaking factor to account for axial burnups above the assembly average in the center part of the active fuel region. As in References 25 and 26, this peaking factor is developed using the assembly axial burnup profile from Section 2.7 and a power law function that relates assembly neutron activity at a given axial node to the node burnup. The function takes the form:

$$\text{Neutron Peaking Factor} = \Sigma\ [L(j) / 347.2\text{cm}] * (B(j)/B)^x$$

where j is the ROCS axial group,
B is the assembly average burnup
B(j) is the burnup in axial group j,
L(j) is the length of group j, and
x is based on a Ref. 26 (Appendix C) fit of ORIGEN2.1 calculated neutron activity vs. burnup, and equals 4.384.

Since the exponent x is important to proper modeling of the peak axial neutron dose, benchmarking it is desirable. Several references exist where neutron activity versus assembly burnup has been measured. Reference 27 details the results of assembly axial neutron source strength measurements made with the Fork detector at ANO-1 and Oconee, respectively. For these two measurement campaigns, Reference 27 calculated the exponent to be 3.83 and 3.81, respectively. These are both B&W plants. Reference 28 details the results of a similar measurement campaign with the Fork+ detector that was performed at Maine Yankee, which was a CE plant with fuel similar to Calvert Cliffs. A power law fit of the entire range of measurement yields an exponent value of 3.5 and 3.8 for the two detectors used. However, Reference 28 indicates that the measurements below 6,000 MWd/MTU are suspect. Removing the six suspect data points and redoing the fit yields exponent values of 4.42 and 4.35 (see Figures 5-1 and 5-2 below). The average of these two values is 4.385, which agrees very well with the Ref. 26 ORIGEN calculation (which was only done for higher burnups).

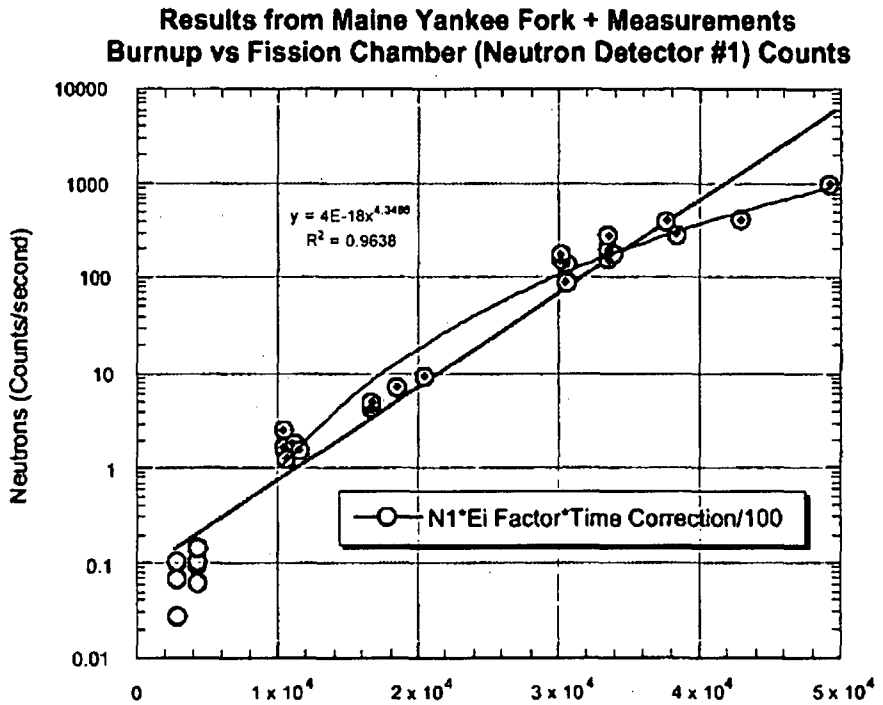


Figure 5-1 – Results from Maine Yankee Fork+ Detector 1 Neurtron Source Measurements

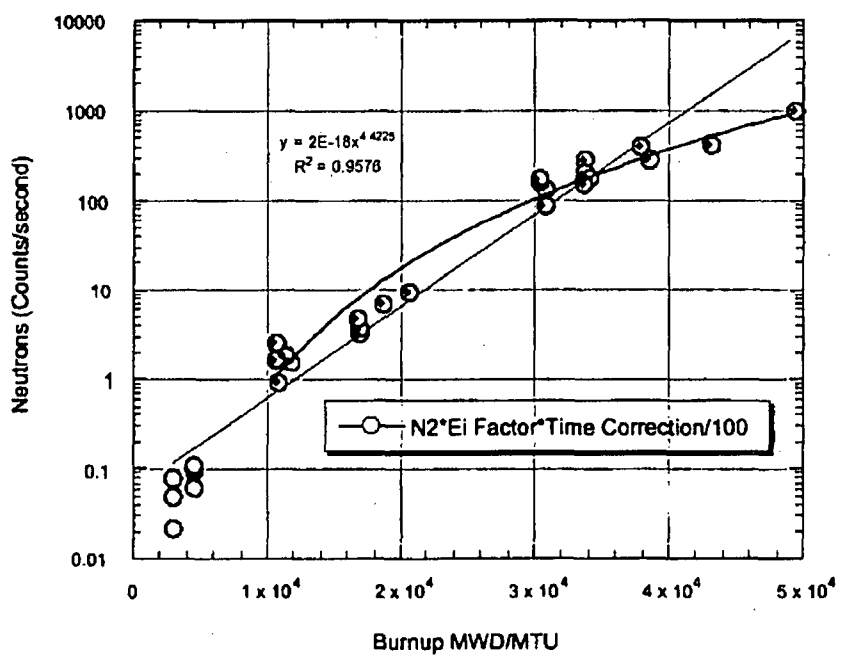


Figure 5-2 – Results from Maine Yankee Fork+ Detector 2 Neutron Source Measurements

6.0 CALCULATION AND COMPUTATIONS

6.1 SAS2H/ORIGEN-S DEPLETIONS

SAS2H/ORIGEN-S cases were prepared to cover the range of enrichments and burnups indicated in Table 2-7. SAS2H Data Block 4 materials input for each UO_2 enrichment in Table 2-7 is presented in Table 2-4. Table 6-1 summarizes the conversion of fuel pin information from Section 2.2 from inches to centimeters for use in the Path A pin cell portion of the SAS2H input (Data Block 5). Section 2.3 discusses the Path B portion of the SAS2H input (Data Block 8).

Table 6-1. SAS2H Pin Cell Dimensions

Pitch (cm)	1.4732
Pellet OD (cm)	0.95631
Clad OD (cm)	1.1176
Clad ID (cm)	0.97536

Appendix E lists the discharge burnup of all standard CE 14x14 assemblies in the CCNPP spent fuel pools, along with the cycles in which they operated. This cycle information was combined with the cycle EFPDs in Table 2-6 to determine the total EFPD for each assembly in Appendix E. The average specific power of the assembly (MW/MTU) is then determined for each assembly in Appendix E by dividing the assembly burnup by the assembly total EFPD. The assembly average specific power for all standard CE 14x14 fuel ranges from 19.80 to 41.01 MW/MTU, with an average of 33.22 MW/MTU. Higher specific power yields a higher neutron flux during operation and a decrease in fuel depletion time to achieve the same burnup. The equilibrium concentration of Xe-135 increases as the neutron flux increases, which results in neutron spectral hardening. An increase in resonance capture of neutrons in U-238 due to the hardened spectrum results in increased production of actinides. This results in higher predicted decay heats (as can be seen in Tables 5.5 and 5.6 of Ref. 12) and neutron source strengths for a given burnup in the time frame of interest for ISFSI loadings (decay times of 7 – 15 years). Therefore, the maximum assembly average specific power of 41.01 MW/MTU or 16.40 MW/assembly for a 0.4 MTU assembly was utilized in all calculations. Table 6-2 provides the total EFPDs required to achieve a given burnup at this specific power.

Table 6-2. SAS2H Assembly EFPDs as a Function of Discharge Burnup

GWd/MTU	Total EFPD	EFPD/cycle for 2 cycles
52	1268.0	634.0
50	1219.2	609.6
48	1170.4	585.2
46	1121.7	560.8
44	1072.9	536.5
42	1024.1	512.1
40	975.4	487.7
38	926.6	463.3
36	877.8	438.9
34	829.1	414.5
32	780.3	390.1
30	731.5	365.8
28	682.8	341.4
26	634.0	317.0
24	585.2	292.6
22	536.5	268.2
20	487.7	243.8
18	438.9	219.5
16	390.1	195.1

All depletions were modeled as occurring over two cycles, with 10 libraries per cycle. If more than one library is requested per cycle, SAS2H models boron letdown by varying the boron concentration linearly from 1.9 to 0.1 times the average during the time interval of the cycle. An average boron concentration of 850 ppm was utilized for all cases since this will yield a BOC boron concentration of 1615 ppm, which was typical for the beginning of 24-month cycles during which most of the assemblies of interest were in the core (Ref. 31, p. 10).

Assembly light element masses used in the SAS2H/ORIGEN-S cases were obtained from Appendix A, where they were calculated for each assembly region using the information in Sections 2.1, 2.4 and 2.5. Only the assembly total light element masses were utilized in the runs performed for this section. Cases to determine the photon source strength and spectrum for hardware activation in specific assembly regions will be run once the overall bounding assembly photon source has been identified.

All SAS2H/ORIGEN-S cases run are included on the attached CD-ROM. The file names have the format ExxByy, where xx represents the first two significant figures of the assembly enrichement in Table 2-7, and yy represents the assembly burnup in GWd/MTU. As mentioned in Section 5, the thermal and radiological sources were extracted for each case using the ORGS32P post-processor to a *.sum file with the same name as the input file, and selected isotope curies were extracted to a *.iso file. Appendix D summarizes the results from the DBwatt.sum file produced by the ORS32P code, which summarizes decay times to various assembly heats for each case and the associated assembly neutron and gamma source at that time.

6.2 FITS FOR DECAY TIME TO 660 WATTS AND ASSOCIATED RADIOLOGICAL SOURCES

A fit of the data for an assembly decay heat of 660 watts in Appendix D to the following equations is performed using the using the Excel 97 regression tool (used because Excel 2003 produced less accurate fits):

$$660\text{Time}(e,b) = C_0+C_1e+C_2b+C_3e^2+C_4b^2+C_5e^3+C_6b^3+C_7eb + 0.3$$

$$\text{Ln n/s@660}(e,b) = C_0+C_1e+C_2b+C_3e^2+C_4b^2+C_5e^3+C_6b^3+C_7eb$$

$$\text{Ln p/s@660}(e,b) = C_0+C_1e+C_2b+C_3e^2+C_4b^2+C_5e^3+C_6b^3+C_7eb$$

$$\text{Ln MeV/s@660}(e,b) = C_0+C_1e+C_2b+C_3e^2+C_4b^2+C_5e^3+C_6b^3+C_7eb$$

$$\text{Ln LE MeV/s@660}(e,b) = C_0+C_1e+C_2b+C_3e^2+C_4b^2+C_5e^3+C_6b^3+C_7eb$$

In the above equation, e is initial enrichment, and b is burnup in MWd/MTU. In all cases, the regression has an $R^2 > 0.99$, indicating a very good fit. In the case of the fit for cooling time the results have been conservatively increased by 0.3 years to bound the maximum residual value from the fit. The coefficients for each of the above equations are provided in Table 6-3 below. Appendix I also provides a fit to assembly decay heat as a function of enrichment, burnup, and cooling time from all *.sum files for cooling times ranging from 5 to 40 years

Table 6-3. Regression Coefficients for Cooling Time and Radiological Sources for an Assembly Heat of 660W

Variable	Cooling Time (yrs) to 660W Coefficients	Neutron/sec at 660W Coefficients	Photons/sec at 660W Coefficients	Photon MeV/sec at 660W Coefficients	Light Element Photon MeV/sec at 660W Coefficients
C_0	-3.3444E+00	1.3447E+01	3.6019E+01	3.3816E+01	3.2163E+01
C_1	-2.7158E+00	-1.1912E+00	6.6883E-02	-1.0028E-01	4.3612E-02
C_2	9.7926E-04	3.8104E-04	1.0669E-05	1.0021E-04	-4.2818E-05
C_3	1.1751E+00	4.5615E-02	-3.0053E-02	-2.7674E-03	-1.2666E-01
C_4	-3.0280E-08	-5.6719E-09	-7.1546E-10	-2.4190E-09	2.6230E-09
C_5	-9.8160E-02	-2.7345E-03	1.2493E-03	-1.0720E-03	1.1163E-02
C_6	4.3583E-13	2.5373E-14	3.7212E-15	1.2514E-14	-4.8920E-14
C_7	-5.9154E-05	1.1001E-05	3.7258E-06	4.5745E-06	8.9053E-06
Fit Adjusted R^2	0.9994	0.9999	0.9989	0.9902	0.9988

Table 6-4 presents the results of a comparison of the 660Time fit with SAS2H cases run for specific assemblies. These cases are included on the attached CD-ROM with filenames the same as the assembly ID. The results indicate that the fit produces slightly conservative decay times to an assembly decay heat of 660W. Figure 6-1 presents a graph of decay time to 660W as a function of enrichment and burnup, with the population of standard CE 14x14 assemblies in the spent fuel pool as of Dec 2005 superimposed for perspective.

Table 6-4. Comparison of 660W Fit with Assembly Specific SAS2H Cases

Assembly	Enrichment	Burnup (MWd/MTU)	Years to 660W	
			Excel Fit	Assembly Specific SAS2H run
2J104	3.4	51031	16.2	15.78
2N602	4.48	51232	15.3	14.92

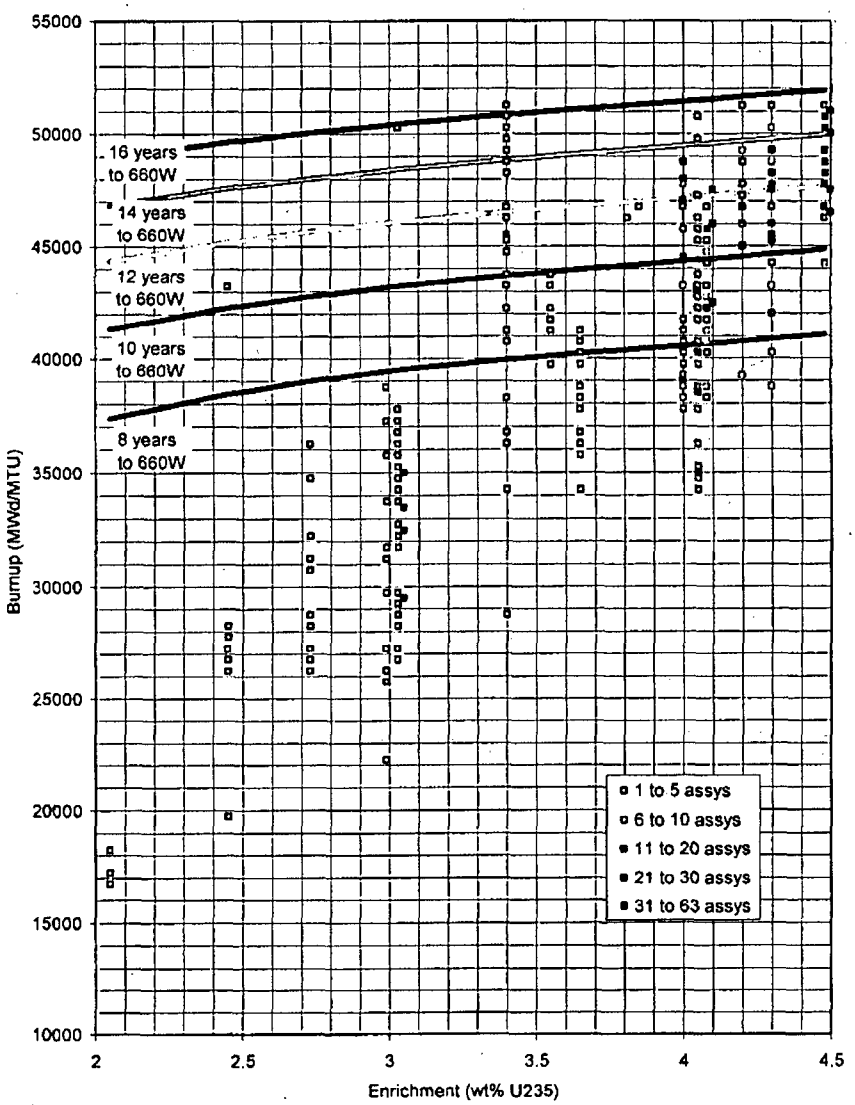


Figure 6-1. Time Since Discharge For a Standard 0.4 MTU CE 14x14 Assembly to Reach 660W

6.3 ADEQUACY OF 660 WATT LIMIT FOR FUEL BURNUP ≤ 52 GWD/MTU

Using the fits developed in Section 6.2, the decay time to 660 watts, and the associated neutron and photon source terms were determined for each assembly in Appendix E. The decay time to 660 watts was then added to the discharge date of each assembly to determine the date when each assembly decay heat would meet the 660 watt limit. The assemblies were then sorted in ascending order according to the date when the decay heat would be ≤ 660. For every 32nd assembly, the numer of 32P DSCs available to be loaded was increased by one. Assemblies which have known or suspected leaking fuel rods, assemblies included in 32P Loading 50 in February 2006, and assemblies considered potential core reinserts (Ref. 22) were excluded from consideration. This was done for three populations of assemblies: those below the current ISFSI burnup limit of 47 GWd/MTU, and those below proposed extended limits of 50 GWd/MTU and 52 GWd/MTU. The results are presented in Figure 6-2 below. These results confirm that the current ISFSI Technical Specification burnup limit of 47 GWd/MTU will be insufficient to allow all of the HSMs that have been constructed in ISFSI Phases I – III to be filled. Increasing the burnup limit to either 50 or 52 GWd/MTU, while maintaining the assembly thermal limit at 660 watts would be sufficient to allow all HSMs in Phases I – III to be utilized by 2011. However, a 52 GWd/MTU lmit will offer slightly more margin for changes in the assembly loading schedule.

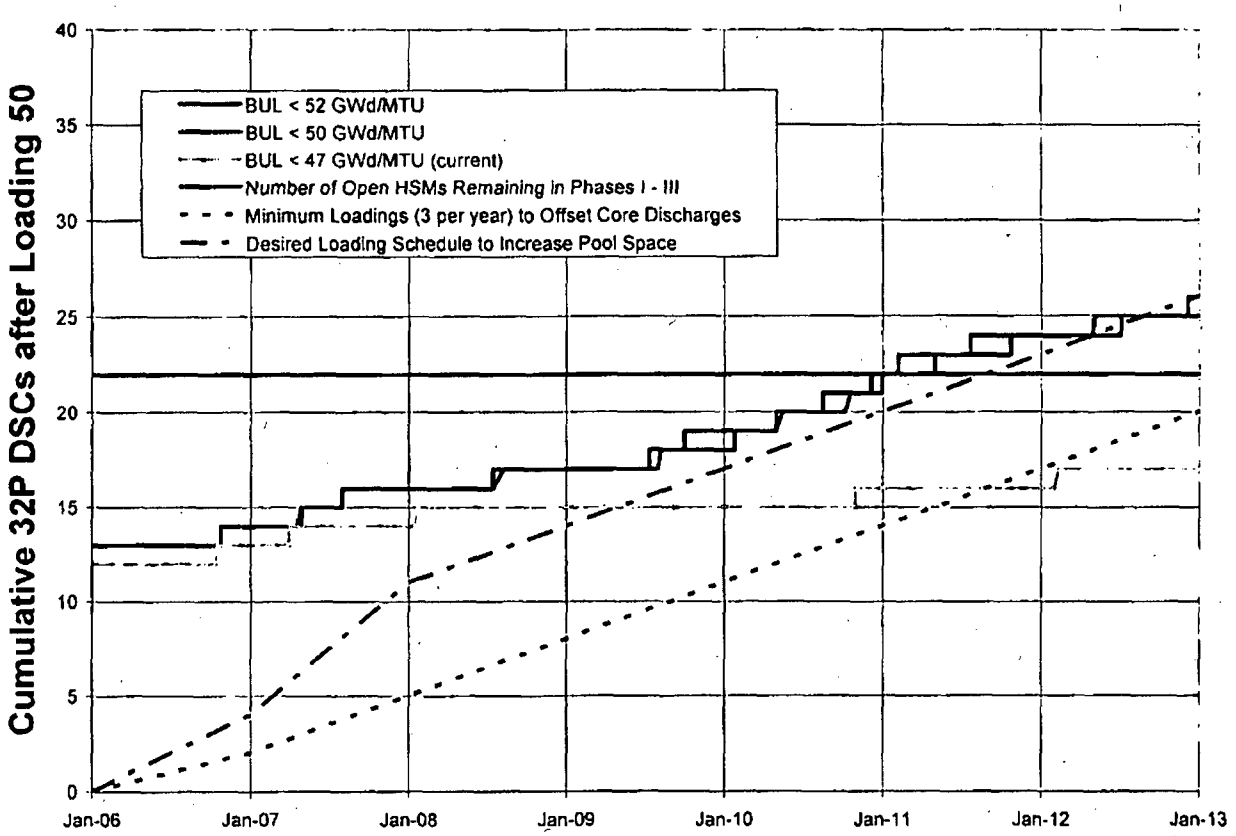


Figure 6-2. 32P DSC Loading Scenarios for Various Burnup Limits

6.4 BOUNDING NEUTRON AND PHOTON SOURCES AT 660 WATTS FOR BURNUP ≤ 52 GWD/MTU

Table 6-5 lists the top eight assemblies from Appendix E with the highest neutron source at the time when they have cooled to 660 watts. While assembly 1F048 has the highest neutron source at 660 watts, it reached that decay heat level in 2002. Examination of the sum file for E303B50 on the attached CD-ROM reveals that the neutron source drops by ~14% between cooling times of 16 and 20 years, giving 1F048 a neutron source which is currently on par with that of the third highest assembly, 2J104, at the time it reaches 660 watts (2018). Similarly, the 1BT07 neutron source is also currently below 2J104. Therefore, to bound 2J104 when it reaches 660 watts, the extended burnup neutron source will be based on an assembly with an enrichment of 3.4% ^{235}U, a burnup of 52 GWd/MTU, and 16 years cooling time. Based on sum file E34B52 the neutron source would be 4.175E8 neutrons/sec per assembly. Table 6-6 provides the standard 44-group neutron source spectrum from the compressed SAS2H/ORIGEN-S output file E34B52.out (note that energy groups 38-44 have been lumped together since there was no source in these groups). Table 6-7 presents the same case using the same 8-group structure used for the current 32P neutron source spectrum for ease of comparison with that source (see case E34B52n8 on the attached CD-ROM; only the 84** card in the ORIGEN-S portion of the input was changed).

Table 6-5. Assemblies with Highest Neutron Source at the Time That Decay Heat Equals 660 Watts

Assembly	Enrichment	Burnup (MWd/MTU)	Cooling Time (yrs) to 660W	Assembly 660W Date	Neutron/sec at 660W	Photons/sec at 660W	Photon MeV/sec at 660W	Light Element Photon MeV/sec at 660W
1F048	3.03	50365	15.9	1-Oct-02	**4.41E+08**	3.35E+15	1.13E+15	3.05E+13
1BT07	2.45	43239	10.6	25-May-91	**4.18E+08**	3.67E+15	1.36E+15	5.94E+13
2J104	3.4	51031	16.2	3-May-18	**3.86E+08**	3.43E+15	1.14E+15	2.83E+13
1L102	3.4	50572	16	2-Nov-18	3.79E+08	3.46E+15	1.16E+15	3.00E+13
2J111	3.4	50397	16	26-Sep-16	3.77E+08	3.47E+15	1.17E+15	3.07E+13
2J105	3.4	50223	15	21-Jul-12	3.74E+08	3.48E+15	1.17E+15	3.13E+13
2J101	3.4	49940	15	2-May-19	3.70E+08	3.50E+15	1.18E+15	3.24E+13
2J110	3.4	49209	14	26-Jun-19	3.58E+08	3.56E+15	1.21E+15	3.52E+13

Table 6-6. 44-group Extended Burnup Assembly Neutron Source (3.4% enrichment, 52 GWd/MTU, 16y decay)

Group	Emin (MeV)	Emax (MeV)	Neutrons/sec	Group	Emin (MeV)	Emax	Neutrons/sec
1	1.40E+01	2.00E+01	0.000E+00	20	1.66E+00	1.80E+00	1.640E+07
2	1.20E+01	1.40E+01	7.343E+04	21	1.57E+00	1.66E+00	1.091E+07
3	1.00E+01	1.20E+01	4.500E+05	22	1.50E+00	1.57E+00	9.098E+06
4	8.00E+00	1.00E+01	1.525E+06	23	1.44E+00	1.50E+00	7.771E+06
5	7.50E+00	8.00E+00	1.233E+06	24	1.33E+00	1.44E+00	1.556E+07
6	7.00E+00	7.50E+00	1.648E+06	25	1.20E+00	1.33E+00	1.924E+07
7	6.50E+00	7.00E+00	2.438E+06	26	1.00E+00	1.20E+00	2.992E+07
8	6.00E+00	6.50E+00	3.643E+06	27	8.00E-01	1.00E+00	2.910E+07
9	5.50E+00	6.00E+00	5.460E+06	28	7.00E-01	8.00E-01	1.680E+07
10	5.00E+00	5.50E+00	7.343E+06	29	6.00E-01	7.00E-01	1.678E+07
11	4.50E+00	5.00E+00	1.017E+07	30	5.12E-01	6.00E-01	1.443E+07
12	4.00E+00	4.50E+00	1.330E+07	31	5.10E-01	5.12E-01	3.280E+05
13	3.50E+00	4.00E+00	2.145E+07	32	4.50E-01	5.10E-01	9.839E+06
14	3.00E+00	3.50E+00	2.662E+07	33	4.00E-01	4.50E-01	8.198E+06
15	2.50E+00	3.00E+00	3.467E+07	34	3.00E-01	4.00E-01	1.583E+07
16	2.35E+00	2.50E+00	1.310E+07	35	2.00E-01	3.00E-01	3.838E+03
17	2.15E+00	2.35E+00	1.833E+07	36	1.50E-01	2.00E-01	1.919E+03
18	2.00E+00	2.15E+00	1.456E+07	37	1.00E-01	1.50E-01	1.919E+03
19	1.80E+00	2.00E+00	2.124E+07	38 - 44	1.00E-02	1.00E-01	0.000E+00
						Total	4.175E+08

Table 6-7. Comparison of Current and Extended Burnup Assembly Neutron Source for 32P DSC

Group	Emin (MeV)	Emax (MeV)	Current 32P		Extended Burnup 32P	
			Group Probability	Neutrons/sec	Group Probability	Neutrons/sec
1	6.36	20.00	0.027	9.026E+06	0.020	8.232E+06
2	3.01	6.36	0.201	6.636E+07	0.207	8.657E+07
3	1.83	3.01	0.224	7.407E+07	0.238	9.926E+07
4	1.10	1.83	0.209	6.891E+07	0.233	9.714E+07
5	0.55	1.10	0.192	6.342E+07	0.206	8.582E+07
6	0.11	0.55	0.133	4.377E+07	0.097	4.044E+07
7	0.00335	0.11	0.013	4.435E+06	9.19E-07	3.838E+02
8	0.00	0.00335	0.000	0.000E+00	0.000	0.000E+00
		Total	1.000	3.300E+08	1.000	4.175E+08

Table 6-8 lists the top eight assemblies from Appendix E with the highest total photon source (sum of light element, fission product, and actinide photon spectra from fuel and hardware) at the time when they have cooled to 660 watts. However, these assemblies reached a decay heat of 660 watts 16 – 20 years ago, and due to further decay would currently have total photon MeV/sec less than 40% of what it was at the time the assembly reached 660 watts (based on info from E303B30.sum).

Similar to Table 6-8, Table 6-9 provides the top eight assemblies with the highest total photon source from the population in Appendix E that would decay to 660 watts later than January 1, 2002. January 2002 was chosen since the photon source of any assembly reaching 660 watts at that date would have decayed by at least 30% as of this writing. However, the bounding assembly from this population, 1P013, does not reach 660 watts until April 2007. To bound 1P013 when it reaches 660 watts, the extended burnup photon source will be based on an assembly with an enrichment of 4.3% ^{235}U, a burnup of 40 GWd/MTU, and 7 years cooling time. Based on sum file E43B40 the total photon source would be 1.627E15 MeV/sec per assembly, and the light-element photon source (of which the top and bottom endfittings are dominant contributors) is 6.64E13 MeV/sec. While the latter is slightly below the highest light-element photon source in the population that reaches 660 watts after January 2002 (6.68E13 MeV/sec from 2K004; also shown in Table 6-9), all such assemblies would be below that light element source as of this writing.

Table 6-10 provides the ISFSI design basis 18-group photon source spectrum from the compressed SAS2H/ORIGEN-S output files E43B40*x*.out, where *x* is "t", "p", "a", or "b" for top endfitting, plenum, active fuel region, or bottom endfitting light elements, respectively, from Appendix H. Average photon energies for each region are also provided by dividing MeV/sec by photon/sec. Table 6-11 provides comparison with the original 24P/32P design basis photon source. The group structure was set to match the design basis spectrum using the 83** card in the ORIGEN-S portion of the input.

Table 6-8. Assemblies with Highest Photon Source (MeV/sec) at the Time That Decay Heat Equals 660 Watts

Assembly	Enrichment	Burnup (MWd/MTU)	Cooling Time (yrs) to 660W	Assembly 660W Date	Neutron/sec at 660W	Photons/sec at 660W	Photon MeV/sec at 660W	Light Element Photon MeV/sec at 660W
1D104	2.73	30733	5.5	11-Apr-86	1.07E+08	4.65E+15	1.65E+15	8.33E+13
2D139	2.73	31147	5.6	27-Oct-90	1.14E+08	4.63E+15	1.65E+15	8.34E+13
1D116	2.73	31330	5.6	24-May-86	1.16E+08	4.62E+15	1.65E+15	8.35E+13
2D002	3.03	31703	5.6	24-Nov-89	1.00E+08	4.65E+15	1.65E+15	8.04E+13
2D028	3.03	31703	5.6	24-Nov-89	1.00E+08	4.65E+15	1.65E+15	8.04E+13
2C034	2.99	31816	5.6	3-Sep-86	1.05E+08	4.64E+15	1.65E+15	8.09E+13
1D006	3.03	32041	5.7	16-Jun-86	1.05E+08	4.63E+15	1.65E+15	8.05E+13
1D007	3.03	32041	5.7	16-Jun-86	1.05E+08	4.63E+15	1.65E+15	8.05E+13

Table 6-9. Assemblies with Highest Photon Source (MeV/sec) that Cool to 660W after Jan. 2002

Assembly	Enrichment	Burnup (MWd/MTU)	Cooling Time (yrs) to 660W	Assembly 660W Date	Neutron/sec at 660W	Photons/sec at 660W	Photon MeV/sec at 660W	Light Element Photon MeV/sec at 660W
1P013	4.3	38522	7.1	16-Apr-07	1.07E+08	**4.44E+15**	1.574E+15	6.58E+13
1P014	4.3	38522	7.1	16-Apr-07	1.07E+08	4.44E+15	1.574E+15	6.58E+13
1P016	4.3	38539	7.1	18-Apr-07	1.07E+08	4.44E+15	1.573E+15	6.58E+13
1P015	4.3	38540	7.1	18-Apr-07	1.07E+08	4.44E+15	1.573E+15	6.58E+13
2K004	4.08	38664	7.2	6-Jun-02	1.22E+08	4.41E+15	1.572E+15	6.68E+13
2K006	4.08	38664	7.2	6-Jun-02	1.22E+08	4.41E+15	1.572E+15	6.68E+13
2K012	4.08	38664	7.2	6-Jun-02	1.22E+08	4.41E+15	1.572E+15	6.68E+13
2K003	4.08	38668	7.2	6-Jun-02	1.22E+08	4.41E+15	1.572E+15	6.68E+13

Table 6-10. 18-group Extended Burnup Assembly Photon Source (4.3% enrichment, 40 GWd/MTU, 7y decay)

Group	Emin (MeV)	Emax (MeV)	Top Endfitting		Plenum		Active Fuel		Bottom Endfitting		Total	
			γ/sec	MeV/sec	γ/sec	MeV/sec	γ/sec	MeV/sec	γ/sec	MeV/sec	γ/sec	MeV/sec
1	0.00E+00	2.00E-02	2.76E+11	2.78E+09	1.75E+11	1.76E+09	1.12E+15	1.13E+13	6.89E+11	6.92E+09	1.12E+15	1.13E+13
2	2.00E-02	3.00E-02	2.12E+12	5.29E+10	7.18E+10	1.79E+09	2.41E+14	6.01E+12	2.19E+12	5.47E+10	2.45E+14	6.12E+12
3	3.00E-02	4.50E-02	5.06E+11	1.90E+10	2.97E+10	1.11E+09	3.03E+14	1.13E+13	5.53E+11	2.07E+10	3.04E+14	1.14E+13
4	4.50E-02	7.00E-02	1.77E+10	1.02E+09	1.70E+10	9.75E+08	1.96E+14	1.13E+13	5.84E+10	3.36E+09	1.96E+14	1.13E+13
5	7.00E-02	1.00E-01	9.01E+09	7.66E+08	8.06E+09	6.85E+08	1.31E+14	1.11E+13	2.83E+10	2.41E+09	1.31E+14	1.11E+13
6	1.00E-01	1.50E-01	1.60E+10	1.99E+09	4.10E+09	5.12E+08	1.33E+14	1.67E+13	2.52E+10	3.15E+09	1.33E+14	1.67E+13
7	1.50E-01	3.00E-01	1.74E+11	3.92E+10	4.51E+09	1.01E+09	1.15E+14	2.58E+13	1.77E+11	3.97E+10	1.15E+14	2.59E+13
8	3.00E-01	4.50E-01	1.03E+12	3.87E+11	2.14E+10	8.01E+09	5.71E+13	2.14E+13	1.03E+12	3.88E+11	5.92E+13	2.22E+13
9	4.50E-01	7.00E-01	1.33E+12	7.64E+11	2.72E+10	1.56E+10	2.00E+15	1.15E+15	1.33E+12	7.64E+11	2.00E+15	1.15E+15
10	7.00E-01	1.00E+00	1.93E+09	1.64E+09	1.84E+10	1.56E+10	2.73E+14	2.32E+14	1.31E+10	1.11E+10	2.73E+14	2.32E+14
11	1.00E+00	1.50E+00	1.36E+12	1.70E+12	6.50E+12	8.13E+12	6.43E+13	8.04E+13	1.72E+13	2.16E+13	8.94E+13	1.12E+14
12	1.50E+00	2.00E+00	9.78E-01	1.71E+00	8.09E+01	1.42E+02	1.88E+12	3.28E+12	1.15E+01	2.02E+01	1.88E+12	3.28E+12
13	2.00E+00	2.50E+00	7.19E+06	1.62E+07	3.43E+07	7.72E+07	4.62E+11	1.04E+12	9.10E+07	2.05E+08	4.62E+11	1.04E+12
14	2.50E+00	3.00E+00	1.12E+04	3.07E+04	5.32E+04	1.46E+05	1.71E+10	4.70E+10	1.41E+05	3.88E+05	1.71E+10	4.70E+10
15	3.00E+00	4.00E+00	3.11E-12	1.09E-11	2.05E-13	7.18E-13	2.13E+09	7.46E+09	3.95E-10	1.38E-09	2.13E+09	7.46E+09
16	4.00E+00	6.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.48E+06	2.74E+07	0.00E+00	0.00E+00	5.48E+06	2.74E+07
17	6.00E+00	8.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.31E+05	4.42E+06	0.00E+00	0.00E+00	6.31E+05	4.42E+06
18	8.00E+00	1.10E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.26E+04	6.90E+05	0.00E+00	0.00E+00	7.26E+04	6.90E+05
		Total	6.84E+12	2.97E+12	6.88E+12	8.18E+12	4.63E+15	1.58E+15	2.33E+13	2.28E+13	4.67E+15	1.61E+15
Average Photon Energy (MeV)			0.435		1.188		0.445		1.017		0.450	

Table 6-11. Comparison of Current and Extended Burnup Assembly Photon Source for 32P DSC

Emean (MeV)	Current 32P		Extended Burnup 32P	
	γ/sec	MeV/sec	γ/sec	MeV/sec
0.0100	9.93E+14	9.93E+12	1.12E+15	1.13E+13
0.0250	2.23E+14	5.57E+12	2.45E+14	6.12E+12
0.0375	2.70E+14	1.01E+13	3.04E+14	1.14E+13
0.0575	1.98E+14	1.14E+13	1.96E+14	1.13E+13
0.0850	1.22E+14	1.03E+13	1.31E+14	1.11E+13
0.1250	1.26E+14	1.57E+13	1.33E+14	1.67E+13
0.2250	9.92E+13	2.23E+13	1.15E+14	2.59E+13
0.3750	5.28E+13	1.98E+13	5.92E+13	2.22E+13
0.5750	1.86E+15	1.07E+15	2.00E+15	1.15E+15
0.8500	2.62E+14	2.23E+14	2.73E+14	2.32E+14
1.2500	1.09E+14	1.36E+14	8.94E+13	1.12E+14
1.7500	2.24E+12	3.92E+12	1.88E+12	3.28E+12
2.2500	1.57E+11	3.52E+11	4.62E+11	1.04E+12
2.7500	8.75E+09	2.41E+10	1.71E+10	4.70E+10
3.5000	1.12E+09	3.93E+09	2.13E+09	7.46E+09
5.0000	9.70E+06	4.85E+07	5.48E+06	2.74E+07
7.0000	1.12E+06	7.83E+06	6.31E+05	4.42E+06
9.5000	1.29E+05	1.22E+06	7.26E+04	6.90E+05
Total	4.32E+15	1.54E+15	4.67E+15	1.61E+15

Note that the photon source terms in Table 6-10 and 6-11 utilize the "source" flux factors in Table 2-5.

Appendix F presents a review of the source axial profiles and neutron peaking factor utilized in previous 24P and 32P shielding calculations. Incorporating additional sub-batch average axial profiles from other cycles did not significantly change the profiles or neutron peaking factor. Therefore, it is not considered necessary to update the axial profile or neutron peaking factor for extending the burnup limit.

6.5 RADIONUCLIDE SOURCE TERMS AT 660 WATTS FOR BURNUP ≤ 52 GWD/MTU

As discussed in Section 5, activities of selected nuclides were extracted from each SAS2H/ORIGEN-S case at each timestep, and summarized in *.iso files. Table 6-12 summarizes the selected nuclide activities for the extended burnup design basis neutron and photon source terms, as required by NUREG-1536 (p. 7-5). Appendix G provides the acitivies of the selected nuclides at the time when the assembly reaches a decay heat of 660 watts for each SAS2H/ORIGEN-S case run.

Table 6-12. Selected Isotope Activities for Extended Burnup Neutron and Photon Sources

Isotope	Design Basis Neutron Source 3.4% ^{235}U, 52 GWd/MTU, 16y decay Activity (Curies/assy)	Design Basis Photon Source 4.3% ^{235}U, 40 GWd/MTU, 7y decay Activity (Curies/assy)
h3	1.72E+02	2.25E+02
c14	1.65E+00	9.84E-01
cl36	4.88E-02	2.99E-02
co60	3.05E+02	6.98E+02
se79	4.05E-02	3.25E-02
kr81	9.03E-08	3.86E-08
kr85	1.76E+03	2.85E+03
sr89	4.84E-30	2.42E-10
sr90	2.87E+04	3.25E+04
y90	2.87E+04	3.25E+04
nb94	8.56E-02	5.82E-02
zr95	2.29E-22	7.16E-07
tc99	7.95E+00	6.60E+00
ru103	0.00E+00	1.73E-14
ru106	6.67E+00	2.07E+03
pd107	8.73E-02	4.93E-02
cd113m	1.29E+01	1.13E+01
xe127	0.00E+00	1.99E-23
i129	2.02E-02	1.50E-02
cs134	5.64E+02	7.05E+03
cs135	2.35E-01	2.13E-01
cs137	4.62E+04	4.43E+04
i137	0.00E+00	0.00E+00
xe137	0.00E+00	0.00E+00
pm147	1.09E+03	1.29E+04
sm151	1.69E+02	1.86E+02
eu154	1.26E+03	1.72E+03
eu155	1.91E+02	4.54E+02
ac227	3.65E-06	2.11E-06
pa231	9.00E-06	1.00E-05
u232	2.08E-02	1.06E-02
u233	2.31E-05	1.65E-05
u234	4.26E-01	5.69E-01
u235	3.24E-03	1.01E-02
u236	1.25E-01	1.44E-01
u238	1.24E-01	1.25E-01
np237	2.05E-01	1.64E-01
np239	2.70E+01	9.40E+00
pu238	2.31E+03	1.36E+03
pu239	1.37E+02	1.47E+02
pu240	2.90E+02	2.22E+02
pu241	3.19E+04	4.16E+04
pu242	1.84E+00	8.52E-01
am241	1.28E+03	6.08E+02
am242	3.84E+00	3.43E+00
am242m	3.86E+00	3.45E+00
am243	2.70E+01	9.40E+00
cm242	3.18E+00	3.18E+00
cm243	1.30E+01	6.32E+00
cm244	2.91E+03	8.75E+02
cm245	4.57E-01	8.62E-02
cm246	2.20E-01	2.08E-02
th230	6.43E-05	4.89E-05
Reference Case	E34B52	E43B40

7.0 DOCUMENTATION OF COMPUTER CODES

SAS2H/ORIGEN-S sequence of SCALE 4.4, QuickBasic v4.5, and Excel are the only computer codes used in this analysis. All inputs, outputs, and spreadsheets used in this calculation are included on the CD-ROM associated with this calculation and are summarized in Table 7-1 below.

SCALE 4.4 was executed on the Calvert Cliffs safety related PC number PC0398. Verification and validation of the SAS2H sequence of SCALE 4.4 was accomplished in References 7 and 8. See Section 6.1 to identify the files for a particular case. Input files have an "inp" extension and output files have an "out" extension, but have been compressed (*.zip) due to their extreme size.

A short QuickBasic program (see Appendix C), ORGS32P, was written to quickly extract decay heat, neutron and gamma source strength, and isotope curies from the ORIGEN-S portion of the output, and create more usable summary files. Further description of the output file (*.sum & *.iso) contents is provided in Sections 5 and 6.1. These output files may be easily checked through direct visual comparison with the original SAS2H output.

Excel was used as computational support software for performing simple repetitive hand calculations, data manipulation, and graphing that can be easily checked by hand

Table 7-1. Directory Listing of CD-ROM

```
 Volume in drive D is Roxio3
 Volume Serial Number is 034A-2E0F

 Directory of D:\

12/19/2006  05:20 PM    <DIR>          CA06721 - 32P+ Source Term
               0 File(s)          2,148 bytes

 Directory of D:\CA06721 - 32P+ Source Term

02/26/2006  07:46 PM               560 2j104arp.arp
02/27/2006  11:54 AM           139,768 2j104arp.out
12/19/2006  04:50 PM         3,392,512 32P+ Source Term - CA06721 - final.doc
12/19/2006  05:10 PM         7,869,440 32P+SourceTerm3.xls
03/31/2006  01:39 PM         6,497,563 cr6886.pdf
03/31/2006  01:32 PM           998,867 cr6894.pdf
02/21/2006  03:21 PM            14,514 E303B52.inp
08/22/2006  02:08 PM            14,514 B303B52m.inp
12/19/2006  05:11 PM         3,420,685 E303B52m.zip
12/06/2006  11:03 AM            14,091 e340b42a.inp
12/19/2006  05:11 PM         3,397,252 e340b42a.zip
08/22/2006  11:21 AM            14,549 E448B52m.inp
12/19/2006  05:11 PM         3,433,521 E448B52m.zip
01/30/2006  02:26 PM         4,035,170 isg-5R1.pdf
03/27/2006  03:37 PM               168 LITEL.BAT
02/20/2006  10:46 AM         3,962,528 NUREG-CR-6487.pdf
04/11/2006  02:57 PM             8,050 orgagain.bat
03/28/2006  12:19 PM            15,500 ORGS32P.BAS
03/28/2006  12:19 PM            51,732 ORGS32P.EXE
04/11/2006  11:11 AM            16,462 ORGS32PL.BAS
04/11/2006  11:12 AM            52,116 ORGS32PL.EXE
02/21/2006  05:04 PM            11,656 run32p.bat
02/20/2006  11:21 AM         5,098,250 YMP Preclosure Safety Analysis.pdf
12/19/2006  05:21 PM    <DIR>          SAS2H cases
12/19/2006  05:24 PM    <DIR>          Isotopes extracted without Light Elements
12/19/2006  05:24 PM    <DIR>          Isotopes extracted with Light Elements
              23 File(s)     42,510,232 bytes

 Directory of D:\CA06721 - 32P+ Source Term\SAS2H cases

02/23/2006  01:05 PM            14,619 2J104.inp
02/23/2006  01:22 PM         4,628,742 2J104.ZIP
02/27/2006  11:54 AM             4,668 2j104arp.inp
02/23/2006  01:11 PM            14,535 2N602.inp
02/21/2006  04:05 PM            14,529 E205B16.inp
02/21/2006  04:46 PM         3,208,010 E205B16.ZIP
02/21/2006  04:04 PM            14,529 E205B18.inp
```

Table 7-1. Directory Listing of CD-ROM

02/21/2006	04:47 PM	3,213,386	E205B18.ZIP
02/21/2006	04:03 PM	14,529	E205B20.inp
02/21/2006	04:48 PM	3,220,097	E205B20.ZIP
02/21/2006	04:03 PM	14,551	E205B42.inp
02/21/2006	04:48 PM	3,252,428	E205B42.ZIP
02/21/2006	04:02 PM	14,529	E205B44.inp
02/21/2006	05:16 PM	3,253,928	E205B44.ZIP
02/21/2006	03:59 PM	14,529	E245B16.inp
02/21/2006	05:28 PM	3,206,418	E245B16.ZIP
02/21/2006	03:58 PM	14,529	E245B18.inp
02/21/2006	05:37 PM	3,213,270	E245B18.ZIP
02/21/2006	03:57 PM	14,529	E245B20.inp
02/21/2006	05:47 PM	3,218,498	E245B20.ZIP
02/21/2006	03:56 PM	14,529	E245B22.inp
02/21/2006	05:56 PM	3,222,911	E245B22.ZIP
02/21/2006	03:56 PM	14,529	E245B24.inp
02/21/2006	06:06 PM	3,224,215	E245B24.ZIP
02/21/2006	03:55 PM	14,529	E245B26.inp
02/21/2006	06:16 PM	3,228,491	E245B26.ZIP
02/21/2006	03:55 PM	14,529	E245B28.inp
02/21/2006	06:25 PM	3,234,600	E245B28.ZIP
02/21/2006	03:54 PM	14,529	E245B30.inp
02/21/2006	06:35 PM	3,235,500	E245B30.ZIP
02/21/2006	03:54 PM	14,529	E245B32.inp
02/21/2006	06:45 PM	3,240,164	E245B32.ZIP
02/21/2006	03:53 PM	14,529	E245B34.inp
02/21/2006	06:54 PM	3,243,487	E245B34.ZIP
02/21/2006	03:53 PM	14,529	E245B36.inp
02/21/2006	07:04 PM	3,245,293	E245B36.ZIP
02/21/2006	03:47 PM	14,529	E245B38.inp
02/21/2006	07:14 PM	3,248,918	E245B38.ZIP
02/21/2006	03:47 PM	14,529	E245B40.inp
02/21/2006	07:23 PM	3,250,731	E245B40.ZIP
02/21/2006	03:46 PM	14,551	E245B42.inp
02/21/2006	07:33 PM	3,253,389	E245B42.ZIP
02/21/2006	03:45 PM	14,529	E245B44.inp
02/21/2006	07:43 PM	3,255,644	E245B44.ZIP
02/21/2006	03:44 PM	14,529	E273B20.inp
02/21/2006	07:54 PM	3,217,728	E273B20.ZIP
02/21/2006	03:42 PM	14,529	E273B22.inp
02/21/2006	08:04 PM	3,220,454	E273B22.ZIP
02/21/2006	03:41 PM	14,529	E273B24.inp
02/21/2006	08:14 PM	3,227,001	E273B24.ZIP
02/21/2006	03:40 PM	14,529	E273B26.inp
02/21/2006	08:25 PM	3,232,382	E273B26.ZIP
02/21/2006	03:39 PM	14,529	E273B28.inp
02/21/2006	08:35 PM	3,235,849	E273B28.ZIP
02/21/2006	03:38 PM	14,529	E273B30.inp
02/21/2006	08:45 PM	3,239,875	E273B30.ZIP
02/21/2006	03:38 PM	14,529	E273B32.inp
02/21/2006	08:55 PM	3,245,854	E273B32.ZIP
02/21/2006	03:37 PM	14,529	E273B34.inp
02/21/2006	09:05 PM	3,244,388	E273B34.ZIP
02/21/2006	03:37 PM	14,529	E273B36.inp
02/21/2006	09:15 PM	3,246,035	E273B36.ZIP
02/21/2006	03:36 PM	14,529	E273B38.inp
02/21/2006	09:25 PM	3,249,780	E273B38.ZIP
02/21/2006	03:36 PM	14,529	E273B40.inp
02/21/2006	09:35 PM	3,250,594	E273B40.ZIP
02/21/2006	03:36 PM	14,551	E273B42.inp
02/21/2006	09:45 PM	3,255,141	E273B42.ZIP
02/21/2006	03:35 PM	14,529	E273B44.inp
02/21/2006	09:56 PM	3,257,609	E273B44.ZIP
02/21/2006	03:33 PM	14,529	E303B20.inp
02/21/2006	10:06 PM	3,217,492	E303B20.ZIP
02/21/2006	03:32 PM	14,529	E303B22.inp
02/21/2006	10:16 PM	3,221,031	E303B22.ZIP
02/21/2006	03:31 PM	14,529	E303B24.inp
02/21/2006	10:26 PM	3,224,999	E303B24.ZIP
02/21/2006	03:30 PM	14,529	E303B26.inp
02/21/2006	10:36 PM	3,229,942	E303B26.ZIP
02/21/2006	03:30 PM	14,529	E303B28.inp
02/21/2006	10:46 PM	3,234,222	E303B28.ZIP
02/21/2006	03:29 PM	14,529	E303B30.inp
02/21/2006	10:56 PM	3,237,554	E303B30.ZIP
02/21/2006	03:29 PM	14,529	E303B32.inp
02/21/2006	11:06 PM	3,238,154	E303B32.ZIP
02/21/2006	03:28 PM	14,529	E303B34.inp

Table 7-1. Directory Listing of CD-ROM

02/21/2006	11:16 PM	3,243,721	E303B34.ZIP
02/21/2006	03:27 PM	14,529	E303B36.inp
02/21/2006	11:26 PM	3,247,192	E303B36.ZIP
02/21/2006	03:27 PM	14,529	E303B38.inp
02/21/2006	11:36 PM	3,249,848	E303B38.ZIP
02/21/2006	03:26 PM	14,529	E303B40.inp
02/21/2006	11:46 PM	3,252,662	E303B40.ZIP
02/21/2006	03:26 PM	14,551	E303B42.inp
02/21/2006	11:57 PM	3,255,056	E303B42.ZIP
02/21/2006	03:25 PM	14,529	E303B44.inp
02/22/2006	12:07 AM	3,250,096	E303B44.ZIP
02/21/2006	03:25 PM	14,529	E303B46.inp
02/22/2006	12:17 AM	3,250,281	E303B46.ZIP
02/21/2006	03:24 PM	14,531	E303B48.inp
02/22/2006	12:27 AM	3,255,027	E303B48.ZIP
02/21/2006	03:22 PM	14,531	E303B50.inp
02/22/2006	12:37 AM	3,253,814	E303B50.ZIP
02/21/2006	03:21 PM	14,514	E303B52.inp
02/22/2006	12:47 AM	3,259,479	E303B52.ZIP
02/21/2006	03:15 PM	14,529	E340B26.inp
02/22/2006	12:58 AM	3,223,612	E340B26.ZIP
02/21/2006	03:13 PM	14,529	E340B28.inp
02/22/2006	01:08 AM	3,228,158	E340B28.ZIP
02/21/2006	03:10 PM	14,529	E340B30.inp
02/22/2006	01:18 AM	3,231,550	E340B30.ZIP
02/21/2006	03:09 PM	14,529	E340B32.inp
02/22/2006	01:28 AM	3,234,372	E340B32.ZIP
02/21/2006	03:05 PM	14,529	E340B34.inp
02/22/2006	01:38 AM	3,237,847	E340B34.ZIP
02/21/2006	03:05 PM	14,529	E340B36.inp
02/22/2006	01:48 AM	3,241,904	E340B36.ZIP
02/21/2006	03:04 PM	14,529	E340B38.inp
02/22/2006	01:58 AM	3,243,597	E340B38.ZIP
02/21/2006	03:04 PM	14,529	E340B40.inp
02/22/2006	02:09 AM	3,244,098	E340B40.ZIP
02/21/2006	03:03 PM	14,551	E340B42.inp
02/22/2006	02:19 AM	3,247,938	E340B42.ZIP
02/21/2006	03:02 PM	14,529	E340B44.inp
02/22/2006	02:29 AM	3,249,833	E340B44.ZIP
02/21/2006	03:02 PM	14,529	E340B46.inp
02/22/2006	02:39 AM	3,251,773	E340B46.ZIP
02/21/2006	02:56 PM	14,531	E340B48.inp
02/22/2006	02:50 AM	3,255,866	E340B48.ZIP
02/21/2006	02:55 PM	14,531	E340B50.inp
02/22/2006	03:00 AM	3,255,323	E340B50.ZIP
02/21/2006	02:52 PM	14,527	E340B52.inp
02/22/2006	03:10 AM	3,256,027	E340B52.ZIP
03/27/2006	11:06 AM	11,519	E34B52n8.inp
03/29/2006	12:37 PM	3,397,167	E34B52n8.zip
02/21/2006	02:35 PM	14,529	E365B34.inp
02/22/2006	03:20 AM	3,235,035	E365B34.ZIP
02/21/2006	02:35 PM	14,529	E365B36.inp
02/22/2006	03:30 AM	3,238,689	E365B36.ZIP
02/21/2006	02:34 PM	14,529	E365B38.inp
02/22/2006	03:40 AM	3,239,029	E365B38.ZIP
02/21/2006	02:34 PM	14,529	E365B40.inp
02/22/2006	03:52 AM	3,247,106	E365B40.ZIP
02/21/2006	02:30 PM	14,551	E365B42.inp
02/22/2006	04:02 AM	3,247,705	E365B42.ZIP
02/21/2006	02:29 PM	14,529	E365B44.inp
02/22/2006	04:12 AM	3,251,559	E365B44.ZIP
02/21/2006	02:28 PM	14,529	E365B46.inp
02/22/2006	04:23 AM	3,255,338	E365B46.ZIP
02/21/2006	02:27 PM	14,531	E365B48.inp
02/22/2006	04:33 AM	3,260,830	E365B48.ZIP
02/21/2006	02:26 PM	14,531	E365B50.inp
02/22/2006	04:43 AM	3,260,487	E365B50.ZIP
02/21/2006	02:26 PM	14,527	E365B52.inp
02/22/2006	04:53 AM	3,264,278	E365B52.ZIP
02/21/2006	02:24 PM	14,529	E381B34.inp
02/22/2006	05:03 AM	3,236,965	E381B34.ZIP
02/21/2006	02:24 PM	14,529	E381B36.inp
02/22/2006	05:13 AM	3,238,896	E381B36.ZIP
02/21/2006	02:14 PM	14,529	E381B38.inp
02/22/2006	05:23 AM	3,242,031	E381B38.ZIP
02/21/2006	02:09 PM	14,529	E381B40.inp
02/22/2006	05:33 AM	3,245,918	E381B40.ZIP
02/21/2006	02:07 PM	14,551	E381B42.inp

Table 7-1. Directory Listing of CD-ROM

02/22/2006	05:43 AM	3,249,505	E381B42.ZIP
02/21/2006	01:40 PM	14,529	E381B44.inp
02/22/2006	05:55 AM	3,251,353	E381B44.ZIP
02/21/2006	01:39 PM	14,529	E381B46.inp
02/22/2006	06:05 AM	3,251,265	E381B46.ZIP
02/21/2006	01:38 PM	14,531	E381B48.inp
02/22/2006	06:15 AM	3,255,001	E381B48.ZIP
02/21/2006	01:38 PM	14,531	E381B50.inp
02/22/2006	06:25 AM	3,258,283	E381B50.ZIP
02/21/2006	01:36 PM	14,527	E381B52.inp
02/22/2006	06:36 AM	3,259,460	E381B52.ZIP
02/21/2006	01:24 PM	14,528	E400B34.inp
02/22/2006	06:46 AM	3,237,372	E400B34.ZIP
02/21/2006	01:23 PM	14,528	E400B36.inp
02/22/2006	06:56 AM	3,241,453	E400B36.ZIP
02/21/2006	01:22 PM	14,528	E400B38.inp
02/22/2006	07:07 AM	3,242,389	E400B38.ZIP
02/21/2006	02:07 PM	14,529	E400B40.inp
02/22/2006	07:17 AM	3,245,031	E400B40.ZIP
02/21/2006	01:21 PM	14,550	E400B42.inp
02/22/2006	07:27 AM	3,249,101	E400B42.ZIP
02/21/2006	01:20 PM	14,528	E400B44.inp
02/22/2006	07:37 AM	3,251,221	E400B44.ZIP
02/21/2006	01:19 PM	14,528	E400B46.inp
02/22/2006	07:48 AM	3,255,047	E400B46.ZIP
02/21/2006	01:18 PM	14,530	E400B48.inp
02/22/2006	07:59 AM	3,258,959	E400B48.ZIP
02/21/2006	01:16 PM	14,530	E400B50.inp
02/22/2006	08:09 AM	3,252,678	E400B50.ZIP
02/21/2006	01:15 PM	14,526	E400B52.inp
02/22/2006	08:19 AM	3,257,670	E400B52.ZIP
02/21/2006	01:09 PM	14,529	E408B34.inp
02/22/2006	08:30 AM	3,236,749	E408B34.ZIP
02/21/2006	01:08 PM	14,529	E408B36.inp
02/22/2006	08:40 AM	3,237,647	E408B36.ZIP
02/21/2006	01:06 PM	14,529	E408B38.inp
02/22/2006	08:50 AM	3,243,594	E408B38.ZIP
02/21/2006	01:05 PM	14,529	E408B40.inp
02/22/2006	09:00 AM	3,244,418	E408B40.ZIP
02/21/2006	01:03 PM	14,551	E408B42.inp
02/22/2006	09:11 AM	3,247,648	E408B42.ZIP
02/21/2006	01:02 PM	14,529	E408B44.inp
02/22/2006	09:21 AM	3,249,558	E408B44.ZIP
02/21/2006	01:01 PM	14,529	E408B46.inp
02/22/2006	09:31 AM	3,252,709	E408B46.ZIP
02/21/2006	01:01 PM	14,531	E408B48.inp
02/22/2006	09:41 AM	3,254,611	E408B48.ZIP
02/21/2006	01:17 PM	14,531	E408B50.inp
02/22/2006	09:51 AM	3,260,822	E408B50.ZIP
02/21/2006	12:58 PM	14,527	E408B52.inp
02/22/2006	10:02 AM	3,259,226	E408B52.ZIP
02/21/2006	12:55 PM	14,529	E420B38.inp
02/22/2006	10:12 AM	3,241,284	E420B38.ZIP
02/21/2006	12:54 PM	14,529	E420B40.inp
02/22/2006	10:22 AM	3,246,315	E420B40.ZIP
02/21/2006	12:53 PM	14,551	E420B42.inp
02/22/2006	10:33 AM	3,249,207	E420B42.ZIP
02/21/2006	12:53 PM	14,529	E420B44.inp
02/22/2006	10:43 AM	3,249,390	E420B44.ZIP
02/21/2006	12:52 PM	14,529	E420B46.inp
02/22/2006	10:53 AM	3,253,291	E420B46.ZIP
02/21/2006	12:51 PM	14,531	E420B48.inp
02/22/2006	11:04 AM	3,254,061	E420B48.ZIP
02/21/2006	12:51 PM	14,531	E420B50.inp
02/22/2006	11:14 AM	3,256,289	E420B50.ZIP
02/21/2006	12:50 PM	14,527	E420B52.inp
02/22/2006	11:24 AM	3,259,312	E420B52.ZIP
02/21/2006	12:54 PM	14,529	E430B38.inp
02/22/2006	11:35 AM	3,243,628	E430B38.ZIP
02/21/2006	12:46 PM	14,529	E430B40.inp
02/22/2006	11:45 AM	3,246,654	E430B40.ZIP
12/13/2006	04:43 PM	14,189	E430B40a.inp
12/13/2006	05:03 PM	3,248,611	E430B40A.ZIP
12/04/2006	11:04 AM	14,113	E430B40b.inp
12/13/2006	05:03 PM	3,074,716	E430B40B.ZIP
12/04/2006	11:05 AM	14,223	E430B40p.inp
12/13/2006	05:03 PM	3,118,198	E430B40P.ZIP
12/14/2006	03:12 PM	14,125	E430B40t.inp

Table 7-1. Directory Listing of CD-ROM

```
12/15/2006  04:43 PM        3,053,628 E430B40T.ZIP
02/21/2006  12:39 PM           14,551 E430B42.inp
02/22/2006  11:56 AM        3,249,872 E430B42.ZIP
02/21/2006  12:45 PM           14,529 E430B44.inp
02/22/2006  12:06 PM        3,249,697 E430B44.ZIP
02/21/2006  12:44 PM           14,529 E430B46.inp
02/22/2006  12:17 PM        3,252,696 E430B46.ZIP
02/21/2006  12:42 PM           14,531 E430B48.inp
02/22/2006  12:27 PM        3,255,788 E430B48.ZIP
02/21/2006  12:41 PM           14,531 E430B50.inp
02/22/2006  12:38 PM        3,259,282 E430B50.ZIP
02/21/2006  12:41 PM           14,527 E430B52.inp
02/22/2006  12:48 PM        3,261,958 E430B52.ZIP
02/21/2006  12:35 PM           14,551 E448B38.inp
02/22/2006  12:58 PM        3,247,849 E448B38.ZIP
02/21/2006  12:45 PM           14,529 E448B40.inp
02/22/2006  01:09 PM        3,246,560 E448B40.ZIP
02/21/2006  12:33 PM           14,551 E448B42.inp
02/22/2006  01:19 PM        3,248,128 E448B42.ZIP
02/21/2006  12:44 PM           14,529 E448B44.inp
02/22/2006  01:28 PM        3,250,646 E448B44.ZIP
02/21/2006  12:43 PM           14,529 E448B46.inp
02/22/2006  01:38 PM        3,251,368 E448B46.ZIP
02/21/2006  11:49 AM           14,553 E448B48.inp
02/22/2006  01:49 PM        3,256,614 E448B48.ZIP
02/21/2006  11:49 AM           14,553 E448B50.inp
02/22/2006  02:00 PM        3,256,582 E448B50.ZIP
02/21/2006  11:49 AM           14,549 E448B52.inp
02/22/2006  02:11 PM        3,262,163 E448B52.ZIP
02/17/2006  04:52 PM           14,549 E45B512A.inp
02/20/2006  04:20 PM           14,571 E45B512L.inp
02/20/2006  03:52 PM           14,560 E45B512S.inp
             273 File(s)  437,856,599 bytes

 Directory of D:\CA06721 - 32P+ Source Term\Isotopes extracted without Light Elements

02/23/2006  01:08 PM           24,368 2J104.ISO
02/23/2006  01:08 PM            4,900 2J104.SUM
03/28/2006  12:53 PM        1,168,356 DBWATT.ISO
03/28/2006  12:53 PM          174,594 DBWATT.SUM
03/28/2006  11:52 AM           24,631 E205B16.ISO
03/28/2006  11:52 AM            4,637 E205B16.SUM
03/28/2006  11:52 AM           24,774 E205B18.ISO
03/28/2006  11:52 AM            4,682 E205B18.SUM
03/28/2006  11:52 AM           24,792 E205B20.ISO
03/28/2006  11:52 AM            4,706 E205B20.SUM
03/28/2006  11:52 AM           24,544 E205B42.ISO
03/28/2006  11:52 AM            4,715 E205B42.SUM
03/28/2006  11:52 AM           24,429 E205B44.ISO
03/28/2006  11:52 AM            4,707 E205B44.SUM
03/28/2006  11:52 AM           24,889 E245B16.ISO
03/28/2006  11:52 AM            4,649 E245B16.SUM
03/28/2006  12:52 PM           24,798 E245B18.ISO
03/28/2006  12:52 PM            4,672 E245B18.SUM
03/28/2006  12:00 PM           24,912 E245B20.ISO
03/28/2006  12:00 PM            4,687 E245B20.SUM
03/28/2006  12:00 PM           24,841 E245B22.ISO
03/28/2006  12:00 PM            4,705 E245B22.SUM
03/28/2006  12:00 PM           24,844 E245B24.ISO
03/28/2006  12:00 PM            4,719 E245B24.SUM
03/28/2006  12:00 PM           24,682 E245B26.ISO
03/28/2006  12:00 PM            4,734 E245B26.SUM
03/28/2006  12:00 PM           24,498 E245B28.ISO
03/28/2006  12:00 PM            4,739 E245B28.SUM
03/28/2006  12:00 PM           24,484 E245B30.ISO
03/28/2006  12:00 PM            4,731 E245B30.SUM
03/28/2006  12:00 PM           24,525 E245B32.ISO
03/28/2006  12:00 PM            4,719 E245B32.SUM
03/28/2006  12:01 PM           24,597 E245B34.ISO
03/28/2006  12:01 PM            4,715 E245B34.SUM
03/28/2006  12:01 PM           24,622 E245B36.ISO
03/28/2006  12:01 PM            4,714 E245B36.SUM
03/28/2006  12:01 PM           24,451 E245B38.ISO
03/28/2006  12:01 PM            4,723 E245B38.SUM
03/28/2006  12:01 PM           24,484 E245B40.ISO
03/28/2006  12:01 PM            4,715 E245B40.SUM
03/28/2006  12:01 PM           24,277 E245B42.ISO
03/28/2006  12:01 PM            4,725 E245B42.SUM
```

Table 7-1. Directory Listing of CD-ROM

03/28/2006	12:01 PM	24,568	E245B44.ISO
03/28/2006	12:01 PM	4,711	E245B44.SUM
03/28/2006	12:01 PM	24,827	E273B20.ISO
03/28/2006	12:01 PM	4,674	E273B20.SUM
03/28/2006	12:01 PM	24,704	E273B22.ISO
03/28/2006	12:01 PM	4,704	E273B22.SUM
03/28/2006	12:02 PM	24,623	E273B24.ISO
03/28/2006	12:02 PM	4,711	E273B24.SUM
03/28/2006	12:02 PM	24,566	E273B26.ISO
03/28/2006	12:02 PM	4,730	E273B26.SUM
03/28/2006	12:02 PM	24,547	E273B28.ISO
03/28/2006	12:02 PM	4,722	E273B28.SUM
03/28/2006	12:02 PM	24,410	E273B30.ISO
03/28/2006	12:02 PM	4,722	E273B30.SUM
03/28/2006	12:02 PM	24,609	E273B32.ISO
03/28/2006	12:02 PM	4,732	E273B32.SUM
03/28/2006	12:02 PM	24,321	E273B34.ISO
03/28/2006	12:02 PM	4,724	E273B34.SUM
03/28/2006	12:02 PM	24,343	E273B36.ISO
03/28/2006	12:02 PM	4,720	E273B36.SUM
03/28/2006	12:03 PM	24,442	E273B38.ISO
03/28/2006	12:03 PM	4,707	E273B38.SUM
03/28/2006	12:03 PM	24,617	E273B40.ISO
03/28/2006	12:03 PM	4,727	E273B40.SUM
03/28/2006	12:03 PM	24,383	E273B42.ISO
03/28/2006	12:03 PM	4,721	E273B42.SUM
03/28/2006	12:03 PM	24,563	E273B44.ISO
03/28/2006	12:03 PM	4,732	E273B44.SUM
03/28/2006	12:03 PM	24,890	E303B20.ISO
03/28/2006	12:03 PM	4,658	E303B20.SUM
03/28/2006	12:03 PM	24,828	E303B22.ISO
03/28/2006	12:03 PM	4,697	E303B22.SUM
03/28/2006	12:03 PM	24,739	E303B24.ISO
03/28/2006	12:03 PM	4,721	E303B24.SUM
03/28/2006	12:04 PM	24,743	E303B26.ISO
03/28/2006	12:04 PM	4,725	E303B26.SUM
03/28/2006	12:04 PM	24,630	E303B28.ISO
03/28/2006	12:04 PM	4,720	E303B28.SUM
03/28/2006	12:04 PM	24,605	E303B30.ISO
03/28/2006	12:04 PM	4,756	E303B30.SUM
03/28/2006	12:04 PM	24,491	E303B32.ISO
03/28/2006	12:04 PM	4,738	E303B32.SUM
03/28/2006	12:04 PM	24,414	E303B34.ISO
03/28/2006	12:04 PM	4,730	E303B34.SUM
03/28/2006	12:04 PM	24,489	E303B36.ISO
03/28/2006	12:04 PM	4,734	E303B36.SUM
03/28/2006	12:04 PM	24,496	E303B38.ISO
03/28/2006	12:04 PM	4,720	E303B38.SUM
03/28/2006	12:04 PM	24,439	E303B40.ISO
03/28/2006	12:04 PM	4,725	E303B40.SUM
03/28/2006	12:05 PM	24,554	E303B42.ISO
03/28/2006	12:05 PM	4,727	E303B42.SUM
03/28/2006	12:05 PM	24,337	E303B44.ISO
03/28/2006	12:05 PM	4,728	E303B44.SUM
03/28/2006	12:05 PM	24,458	E303B46.ISO
03/28/2006	12:05 PM	4,723	E303B46.SUM
03/28/2006	12:05 PM	24,481	E303B48.ISO
03/28/2006	12:05 PM	4,719	E303B48.SUM
03/28/2006	12:05 PM	24,350	E303B50.ISO
03/28/2006	12:05 PM	4,709	E303B50.SUM
03/28/2006	12:05 PM	24,529	E303B52.ISO
03/28/2006	12:05 PM	4,717	E303B52.SUM
03/28/2006	12:05 PM	24,569	E340B26.ISO
03/28/2006	12:05 PM	4,635	E340B26.SUM
03/28/2006	12:05 PM	24,581	E340B28.ISO
03/28/2006	12:05 PM	4,670	E340B28.SUM
03/28/2006	12:06 PM	24,600	E340B30.ISO
03/28/2006	12:06 PM	4,683	E340B30.SUM
03/28/2006	12:06 PM	24,403	E340B32.ISO
03/28/2006	12:06 PM	4,672	E340B32.SUM
03/28/2006	12:06 PM	24,423	E340B34.ISO
03/28/2006	12:06 PM	4,683	E340B34.SUM
03/28/2006	12:06 PM	24,500	E340B36.ISO
03/28/2006	12:06 PM	4,675	E340B36.SUM
03/28/2006	12:06 PM	24,336	E340B38.ISO
03/28/2006	12:06 PM	4,661	E340B38.SUM
03/28/2006	12:06 PM	24,501	E340B40.ISO
03/28/2006	12:06 PM	4,673	E340B40.SUM

Table 7-1. Directory Listing of CD-ROM

03/28/2006	12:06 PM	24,393	E340B42.ISO
03/28/2006	12:06 PM	4,661	E340B42.SUM
03/28/2006	12:07 PM	24,486	E340B44.ISO
03/28/2006	12:07 PM	4,647	E340B44.SUM
03/28/2006	12:07 PM	24,466	E340B46.ISO
03/28/2006	12:07 PM	4,673	E340B46.SUM
03/28/2006	12:07 PM	24,245	E340B48.ISO
03/28/2006	12:07 PM	4,652	E340B48.SUM
03/28/2006	12:07 PM	24,432	E340B50.ISO
03/28/2006	12:07 PM	4,653	E340B50.SUM
03/28/2006	12:07 PM	24,373	E340B52.ISO
03/28/2006	12:07 PM	4,669	E340B52.SUM
03/28/2006	12:07 PM	24,502	E365B34.ISO
03/28/2006	12:07 PM	4,737	E365B34.SUM
03/28/2006	12:07 PM	24,495	E365B36.ISO
03/28/2006	12:07 PM	4,720	E365B36.SUM
03/28/2006	12:07 PM	24,562	E365B38.ISO
03/28/2006	12:07 PM	4,733	E365B38.SUM
03/28/2006	12:08 PM	24,257	E365B40.ISO
03/28/2006	12:08 PM	4,727	E365B40.SUM
03/28/2006	12:08 PM	24,225	E365B42.ISO
03/28/2006	12:08 PM	4,727	E365B42.SUM
03/28/2006	12:08 PM	24,455	E365B44.ISO
03/28/2006	12:08 PM	4,740	E365B44.SUM
03/28/2006	12:08 PM	24,257	E365B46.ISO
03/28/2006	12:08 PM	4,711	E365B46.SUM
03/28/2006	12:08 PM	24,505	E365B48.ISO
03/28/2006	12:08 PM	4,721	E365B48.SUM
03/28/2006	12:08 PM	24,503	E365B50.ISO
03/28/2006	12:08 PM	4,713	E365B50.SUM
03/28/2006	12:08 PM	24,362	E365B52.ISO
03/28/2006	12:08 PM	4,730	E365B52.SUM
03/28/2006	12:08 PM	24,504	E381B34.ISO
03/28/2006	12:08 PM	4,743	E381B34.SUM
03/28/2006	12:09 PM	24,576	E381B36.ISO
03/28/2006	12:09 PM	4,744	E381B36.SUM
03/28/2006	12:52 PM	24,582	E381B38.ISO
03/28/2006	12:52 PM	4,742	E381B38.SUM
03/28/2006	12:10 PM	24,555	E381B40.ISO
03/28/2006	12:10 PM	4,746	E381B40.SUM
03/28/2006	12:10 PM	24,409	E381B42.ISO
03/28/2006	12:10 PM	4,729	E381B42.SUM
03/28/2006	12:10 PM	24,235	E381B44.ISO
03/28/2006	12:10 PM	4,740	E381B44.SUM
03/28/2006	12:11 PM	24,255	E381B46.ISO
03/28/2006	12:11 PM	4,723	E381B46.SUM
03/28/2006	12:11 PM	24,550	E381B48.ISO
03/28/2006	12:11 PM	4,724	E381B48.SUM
03/28/2006	12:11 PM	24,425	E381B50.ISO
03/28/2006	12:11 PM	4,728	E381B50.SUM
03/28/2006	12:11 PM	24,350	E381B52.ISO
03/28/2006	12:11 PM	4,726	E381B52.SUM
03/28/2006	12:11 PM	24,441	E400B34.ISO
03/28/2006	12:11 PM	4,546	E400B34.SUM
03/28/2006	12:11 PM	24,209	E400B36.ISO
03/28/2006	12:11 PM	4,569	E400B36.SUM
03/28/2006	12:11 PM	24,579	E400B38.ISO
03/28/2006	12:11 PM	4,565	E400B38.SUM
03/28/2006	12:41 PM	24,459	E400B40.ISO
03/28/2006	12:41 PM	4,547	E400B40.SUM
03/28/2006	12:41 PM	24,566	E400B42.ISO
03/28/2006	12:41 PM	4,546	E400B42.SUM
03/28/2006	12:41 PM	24,242	E400B44.ISO
03/28/2006	12:41 PM	4,550	E400B44.SUM
03/28/2006	12:41 PM	24,372	E400B46.ISO
03/28/2006	12:41 PM	4,545	E400B46.SUM
03/28/2006	12:41 PM	24,200	E400B48.ISO
03/28/2006	12:41 PM	4,533	E400B48.SUM
03/28/2006	12:41 PM	24,492	E400B50.ISO
03/28/2006	12:41 PM	4,550	E400B50.SUM
03/28/2006	12:41 PM	24,405	E400B52.ISO
03/28/2006	12:41 PM	4,535	E400B52.SUM
03/28/2006	12:41 PM	24,560	E408B34.ISO
03/28/2006	12:41 PM	4,742	E408B34.SUM
03/28/2006	12:42 PM	24,485	E408B36.ISO
03/28/2006	12:42 PM	4,746	E408B36.SUM
03/28/2006	12:42 PM	24,456	E408B38.ISO
03/28/2006	12:42 PM	4,733	E408B38.SUM

Table 7-1. Directory Listing of CD-ROM

```
03/28/2006  12:42 PM            24,613 E408B40.ISO
03/28/2006  12:42 PM             4,729 E408B40.SUM
03/28/2006  12:42 PM            24,493 E408B42.ISO
03/28/2006  12:42 PM             4,748 E408B42.SUM
03/28/2006  12:42 PM            24,482 E408B44.ISO
03/28/2006  12:42 PM             4,718 E408B44.SUM
03/28/2006  12:42 PM            24,364 E408B46.ISO
03/28/2006  12:42 PM             4,726 E408B46.SUM
03/28/2006  12:42 PM            24,492 E408B48.ISO
03/28/2006  12:42 PM             4,729 E408B48.SUM
03/28/2006  12:43 PM            24,371 E408B50.ISO
03/28/2006  12:43 PM             4,723 E408B50.SUM
03/28/2006  12:43 PM            24,426 E408B52.ISO
03/28/2006  12:43 PM             4,723 E408B52.SUM
03/28/2006  12:43 PM            24,403 E420B38.ISO
03/28/2006  12:43 PM             4,683 E420B38.SUM
03/28/2006  12:43 PM            24,491 E420B40.ISO
03/28/2006  12:43 PM             4,685 E420B40.SUM
03/28/2006  12:43 PM            24,536 E420B42.ISO
03/28/2006  12:43 PM             4,687 E420B42.SUM
03/28/2006  12:43 PM            24,369 E420B44.ISO
03/28/2006  12:43 PM             4,668 E420B44.SUM
03/28/2006  12:43 PM            24,542 E420B46.ISO
03/28/2006  12:43 PM             4,661 E420B46.SUM
03/28/2006  12:44 PM            24,477 E420B48.ISO
03/28/2006  12:44 PM             4,679 E420B48.SUM
03/28/2006  12:44 PM            24,418 E420B50.ISO
03/28/2006  12:44 PM             4,679 E420B50.SUM
03/28/2006  12:44 PM            24,427 E420B52.ISO
03/28/2006  12:44 PM             4,664 E420B52.SUM
03/28/2006  12:44 PM            24,398 E430B38.ISO
03/28/2006  12:44 PM             4,679 E430B38.SUM
03/28/2006  12:44 PM            24,390 E430B40.ISO
03/28/2006  12:44 PM             4,680 E430B40.SUM
03/28/2006  12:44 PM            24,386 E430B42.ISO
03/28/2006  12:44 PM             4,665 E430B42.SUM
03/28/2006  12:53 PM            24,516 E430B44.ISO
03/28/2006  12:53 PM             4,669 E430B44.SUM
03/28/2006  12:46 PM            24,379 E430B46.ISO
03/28/2006  12:46 PM             4,678 E430B46.SUM
03/28/2006  12:46 PM            24,460 E430B48.ISO
03/28/2006  12:46 PM             4,673 E430B48.SUM
03/28/2006  12:46 PM            24,474 E430B50.ISO
03/28/2006  12:46 PM             4,664 E430B50.SUM
03/28/2006  12:46 PM            24,495 E430B52.ISO
03/28/2006  12:46 PM             4,656 E430B52.SUM
03/28/2006  12:47 PM            24,182 E448B38.ISO
03/28/2006  12:47 PM             4,745 E448B38.SUM
03/28/2006  12:47 PM            24,422 E448B40.ISO
03/28/2006  12:47 PM             4,727 E448B40.SUM
03/28/2006  12:47 PM            24,283 E448B42.ISO
03/28/2006  12:47 PM             4,725 E448B42.SUM
03/28/2006  12:47 PM            24,224 E448B44.ISO
03/28/2006  12:47 PM             4,743 E448B44.SUM
03/28/2006  12:47 PM            24,458 E448B46.ISO
03/28/2006  12:47 PM             4,739 E448B46.SUM
03/28/2006  12:47 PM            24,452 E448B48.ISO
03/28/2006  12:47 PM             4,722 E448B48.SUM
03/28/2006  12:47 PM            24,452 E448B50.ISO
03/28/2006  12:47 PM             4,722 E448B50.SUM
03/28/2006  12:47 PM            24,511 E448B52.ISO
03/28/2006  12:47 PM             4,730 E448B52.SUM
              260 File(s)     5,108,027 bytes

 Directory of D:\CA06721 - 32P+ Source Term\Isotopes extracted with Light Elements

10/03/2006  10:46 AM           601,215 all.sum
04/11/2006  03:08 PM         1,170,232 DBWATT.ISO
04/11/2006  03:08 PM           174,608 DBWATT.SUM
04/11/2006  02:57 PM            25,988 E205B16.ISO
04/11/2006  02:57 PM             4,637 E205B16.SUM
04/11/2006  02:57 PM            26,093 E205B18.ISO
04/11/2006  02:57 PM             4,682 E205B18.SUM
04/11/2006  02:57 PM            26,167 E205B20.ISO
04/11/2006  02:57 PM             4,706 E205B20.SUM
04/11/2006  02:57 PM            25,995 E205B42.ISO
04/11/2006  02:57 PM             4,715 E205B42.SUM
04/11/2006  02:57 PM            25,951 E205B44.ISO
```

Table 7-1. Directory Listing of CD-ROM

04/11/2006	02:57 PM	4,707	E205B44.SUM
04/11/2006	02:58 PM	26,176	E245B16.ISO
04/11/2006	02:58 PM	4,649	E245B16.SUM
04/11/2006	02:58 PM	26,060	E245B18.ISO
04/11/2006	02:58 PM	4,672	E245B18.SUM
04/11/2006	02:58 PM	26,278	E245B20.ISO
04/11/2006	02:58 PM	4,687	E245B20.SUM
04/11/2006	02:58 PM	26,147	E245B22.ISO
04/11/2006	02:58 PM	4,705	E245B22.SUM
04/11/2006	02:58 PM	26,226	E245B24.ISO
04/11/2006	02:58 PM	4,719	E245B24.SUM
04/11/2006	02:58 PM	26,062	E245B26.ISO
04/11/2006	02:58 PM	4,734	E245B26.SUM
04/11/2006	02:58 PM	25,876	E245B28.ISO
04/11/2006	02:58 PM	4,739	E245B28.SUM
04/11/2006	02:58 PM	25,903	E245B30.ISO
04/11/2006	02:58 PM	4,731	E245B30.SUM
04/11/2006	02:58 PM	25,958	E245B32.ISO
04/11/2006	02:58 PM	4,719	E245B32.SUM
04/11/2006	02:58 PM	25,943	E245B34.ISO
04/11/2006	02:58 PM	4,715	E245B34.SUM
04/11/2006	02:58 PM	26,049	E245B36.ISO
04/11/2006	02:58 PM	4,714	E245B36.SUM
04/11/2006	02:59 PM	25,896	E245B38.ISO
04/11/2006	02:59 PM	4,723	E245B38.SUM
04/11/2006	02:59 PM	25,852	E245B40.ISO
04/11/2006	02:59 PM	4,715	E245B40.SUM
04/11/2006	02:59 PM	25,791	E245B42.ISO
04/11/2006	02:59 PM	4,725	E245B42.SUM
04/11/2006	02:59 PM	25,977	E245B44.ISO
04/11/2006	02:59 PM	4,711	E245B44.SUM
04/11/2006	02:59 PM	26,195	E273B20.ISO
04/11/2006	02:59 PM	4,674	E273B20.SUM
04/11/2006	02:59 PM	26,094	E273B22.ISO
04/11/2006	02:59 PM	4,704	E273B22.SUM
04/11/2006	02:59 PM	26,003	E273B24.ISO
04/11/2006	02:59 PM	4,711	E273B24.SUM
04/11/2006	02:59 PM	25,935	E273B26.ISO
04/11/2006	02:59 PM	4,730	E273B26.SUM
04/11/2006	02:59 PM	25,884	E273B28.ISO
04/11/2006	02:59 PM	4,722	E273B28.SUM
04/11/2006	02:59 PM	25,978	E273B30.ISO
04/11/2006	02:59 PM	4,722	E273B30.SUM
04/11/2006	02:59 PM	25,906	E273B32.ISO
04/11/2006	02:59 PM	4,732	E273B32.SUM
04/11/2006	02:59 PM	25,737	E273B34.ISO
04/11/2006	02:59 PM	4,724	E273B34.SUM
04/11/2006	03:00 PM	25,698	E273B36.ISO
04/11/2006	03:00 PM	4,720	E273B36.SUM
04/11/2006	03:00 PM	25,843	E273B38.ISO
04/11/2006	03:00 PM	4,707	E273B38.SUM
04/11/2006	03:00 PM	26,065	E273B40.ISO
04/11/2006	03:00 PM	4,727	E273B40.SUM
04/11/2006	03:00 PM	25,850	E273B42.ISO
04/11/2006	03:00 PM	4,721	E273B42.SUM
04/11/2006	03:00 PM	25,982	E273B44.ISO
04/11/2006	03:00 PM	4,732	E273B44.SUM
04/11/2006	03:00 PM	26,273	E303B20.ISO
04/11/2006	03:00 PM	4,658	E303B20.SUM
04/11/2006	03:00 PM	26,216	E303B22.ISO
04/11/2006	03:00 PM	4,697	E303B22.SUM
04/11/2006	03:00 PM	26,117	E303B24.ISO
04/11/2006	03:00 PM	4,721	E303B24.SUM
04/11/2006	03:00 PM	26,113	E303B26.ISO
04/11/2006	03:00 PM	4,725	E303B26.SUM
04/11/2006	03:00 PM	26,015	E303B28.ISO
04/11/2006	03:00 PM	4,720	E303B28.SUM
04/11/2006	03:00 PM	25,993	E303B30.ISO
04/11/2006	03:00 PM	4,756	E303B30.SUM
04/11/2006	03:00 PM	25,877	E303B32.ISO
04/11/2006	03:00 PM	4,738	E303B32.SUM
04/11/2006	03:01 PM	25,915	E303B34.ISO
04/11/2006	03:01 PM	4,730	E303B34.SUM
04/11/2006	03:01 PM	25,844	E303B36.ISO
04/11/2006	03:01 PM	4,734	E303B36.SUM
04/11/2006	03:01 PM	25,983	E303B38.ISO
04/11/2006	03:01 PM	4,720	E303B38.SUM
04/11/2006	03:01 PM	25,861	E303B40.ISO

Table 7-1. Directory Listing of CD-ROM

04/11/2006	03:01 PM	4,725	E303B40.SUM
04/11/2006	03:01 PM	25,986	E303B42.ISO
04/11/2006	03:01 PM	4,727	E303B42.SUM
04/11/2006	03:01 PM	25,771	E303B44.ISO
04/11/2006	03:01 PM	4,728	E303B44.SUM
04/11/2006	03:01 PM	25,869	E303B46.ISO
04/11/2006	03:01 PM	4,723	E303B46.SUM
04/11/2006	03:01 PM	26,043	E303B48.ISO
04/11/2006	03:01 PM	4,719	E303B48.SUM
04/11/2006	03:01 PM	25,727	E303B50.ISO
04/11/2006	03:01 PM	4,709	E303B50.SUM
04/11/2006	03:01 PM	26,043	E303B52.ISO
04/11/2006	03:01 PM	4,717	E303B52.SUM
04/11/2006	03:01 PM	25,950	E340B26.ISO
04/11/2006	03:01 PM	4,635	E340B26.SUM
04/11/2006	03:01 PM	25,951	E340B28.ISO
04/11/2006	03:01 PM	4,670	E340B28.SUM
04/11/2006	03:02 PM	26,004	E340B30.ISO
04/11/2006	03:02 PM	4,683	E340B30.SUM
04/11/2006	03:02 PM	25,795	E340B32.ISO
04/11/2006	03:02 PM	4,672	E340B32.SUM
04/11/2006	03:02 PM	25,718	E340B34.ISO
04/11/2006	03:02 PM	4,683	E340B34.SUM
04/11/2006	03:02 PM	25,936	E340B36.ISO
04/11/2006	03:02 PM	4,675	E340B36.SUM
04/11/2006	03:02 PM	25,781	E340B38.ISO
04/11/2006	03:02 PM	4,661	E340B38.SUM
04/11/2006	03:02 PM	26,006	E340B40.ISO
04/11/2006	03:02 PM	4,673	E340B40.SUM
04/11/2006	03:02 PM	25,866	E340B42.ISO
04/11/2006	03:02 PM	4,661	E340B42.SUM
04/11/2006	03:02 PM	25,900	E340B44.ISO
04/11/2006	03:02 PM	4,647	E340B44.SUM
04/11/2006	03:02 PM	26,031	E340B46.ISO
04/11/2006	03:02 PM	4,673	E340B46.SUM
04/11/2006	03:02 PM	25,680	E340B48.ISO
04/11/2006	03:02 PM	4,652	E340B48.SUM
04/11/2006	03:02 PM	25,816	E340B50.ISO
04/11/2006	03:02 PM	4,653	E340B50.SUM
04/11/2006	03:02 PM	25,796	E340B52.ISO
04/11/2006	03:02 PM	4,669	E340B52.SUM
04/11/2006	03:03 PM	25,892	E365B34.ISO
04/11/2006	03:03 PM	4,737	E365B34.SUM
04/11/2006	03:03 PM	25,907	E365B36.ISO
04/11/2006	03:03 PM	4,720	E365B36.SUM
04/11/2006	03:03 PM	25,981	E365B38.ISO
04/11/2006	03:03 PM	4,733	E365B38.SUM
04/11/2006	03:03 PM	25,671	E365B40.ISO
04/11/2006	03:03 PM	4,727	E365B40.SUM
04/11/2006	03:03 PM	25,639	E365B42.ISO
04/11/2006	03:03 PM	4,727	E365B42.SUM
04/11/2006	03:03 PM	25,891	E365B44.ISO
04/11/2006	03:03 PM	4,740	E365B44.SUM
04/11/2006	03:03 PM	25,692	E365B46.ISO
04/11/2006	03:03 PM	4,711	E365B46.SUM
04/11/2006	03:03 PM	25,925	E365B48.ISO
04/11/2006	03:03 PM	4,721	E365B48.SUM
04/11/2006	03:03 PM	25,886	E365B50.ISO
04/11/2006	03:03 PM	4,713	E365B50.SUM
04/11/2006	03:03 PM	25,796	E365B52.ISO
04/11/2006	03:03 PM	4,730	E365B52.SUM
04/11/2006	03:03 PM	25,966	E381B34.ISO
04/11/2006	03:03 PM	4,743	E381B34.SUM
04/11/2006	03:04 PM	25,976	E381B36.ISO
04/11/2006	03:04 PM	4,744	E381B36.SUM
04/11/2006	03:04 PM	25,998	E381B38.ISO
04/11/2006	03:04 PM	4,742	E381B38.SUM
04/11/2006	03:04 PM	25,975	E381B40.ISO
04/11/2006	03:04 PM	4,746	E381B40.SUM
04/11/2006	03:04 PM	25,849	E381B42.ISO
04/11/2006	03:04 PM	4,729	E381B42.SUM
04/11/2006	03:04 PM	25,856	E381B44.ISO
04/11/2006	03:04 PM	4,740	E381B44.SUM
04/11/2006	03:04 PM	25,669	E381B46.ISO
04/11/2006	03:04 PM	4,723	E381B46.SUM
04/11/2006	03:04 PM	25,907	E381B48.ISO
04/11/2006	03:04 PM	4,724	E381B48.SUM
04/11/2006	03:04 PM	25,816	E381B50.ISO

Table 7-1. Directory Listing of CD-ROM

04/11/2006	03:04 PM	4,728	E381B50.SUM
04/11/2006	03:04 PM	25,779	E381B52.ISO
04/11/2006	03:04 PM	4,726	E381B52.SUM
04/11/2006	03:04 PM	25,851	E400B34.ISO
04/11/2006	03:04 PM	4,546	E400B34.SUM
04/11/2006	03:04 PM	25,627	E400B36.ISO
04/11/2006	03:04 PM	4,569	E400B36.SUM
04/11/2006	03:04 PM	25,876	E400B38.ISO
04/11/2006	03:04 PM	4,565	E400B38.SUM
04/11/2006	03:05 PM	25,975	E400B40.ISO
04/11/2006	03:05 PM	4,746	E400B40.SUM
04/11/2006	03:05 PM	25,911	E400B42.ISO
04/11/2006	03:05 PM	4,546	E400B42.SUM
04/11/2006	03:05 PM	25,720	E400B44.ISO
04/11/2006	03:05 PM	4,550	E400B44.SUM
04/11/2006	03:05 PM	25,807	E400B46.ISO
04/11/2006	03:05 PM	4,545	E400B46.SUM
04/11/2006	03:05 PM	25,674	E400B48.ISO
04/11/2006	03:05 PM	4,533	E400B48.SUM
04/11/2006	03:05 PM	25,858	E400B50.ISO
04/11/2006	03:05 PM	4,550	E400B50.SUM
04/11/2006	03:05 PM	25,897	E400B52.ISO
04/11/2006	03:05 PM	4,535	E400B52.SUM
04/11/2006	03:05 PM	25,904	E408B34.ISO
04/11/2006	03:05 PM	4,742	E408B34.SUM
04/11/2006	03:05 PM	25,894	E408B36.ISO
04/11/2006	03:05 PM	4,746	E408B36.SUM
04/11/2006	03:05 PM	25,930	E408B38.ISO
04/11/2006	03:05 PM	4,733	E408B38.SUM
04/11/2006	03:05 PM	26,035	E408B40.ISO
04/11/2006	03:05 PM	4,729	E408B40.SUM
04/11/2006	03:05 PM	25,929	E408B42.ISO
04/11/2006	03:05 PM	4,748	E408B42.SUM
04/11/2006	03:06 PM	25,918	E408B44.ISO
04/11/2006	03:06 PM	4,718	E408B44.SUM
04/11/2006	03:06 PM	25,815	E408B46.ISO
04/11/2006	03:06 PM	4,726	E408B46.SUM
04/11/2006	03:06 PM	26,039	E408B48.ISO
04/11/2006	03:06 PM	4,729	E408B48.SUM
04/11/2006	03:06 PM	25,764	E408B50.ISO
04/11/2006	03:06 PM	4,723	E408B50.SUM
04/11/2006	03:06 PM	25,803	E408B52.ISO
04/11/2006	03:06 PM	4,723	E408B52.SUM
04/11/2006	03:06 PM	25,806	E420B38.ISO
04/11/2006	03:06 PM	4,683	E420B38.SUM
04/11/2006	03:06 PM	25,892	E420B40.ISO
04/11/2006	03:06 PM	4,685	E420B40.SUM
04/11/2006	03:06 PM	25,930	E420B42.ISO
04/11/2006	03:06 PM	4,687	E420B42.SUM
04/11/2006	03:06 PM	25,786	E420B44.ISO
04/11/2006	03:06 PM	4,668	E420B44.SUM
04/11/2006	03:06 PM	25,908	E420B46.ISO
04/11/2006	03:06 PM	4,661	E420B46.SUM
04/11/2006	03:06 PM	26,072	E420B48.ISO
04/11/2006	03:06 PM	4,679	E420B48.SUM
04/11/2006	03:06 PM	25,878	E420B50.ISO
04/11/2006	03:06 PM	4,679	E420B50.SUM
04/11/2006	03:07 PM	25,868	E420B52.ISO
04/11/2006	03:07 PM	4,664	E420B52.SUM
04/11/2006	03:07 PM	25,797	E430B38.ISO
04/11/2006	03:07 PM	4,679	E430B38.SUM
04/11/2006	03:07 PM	25,867	E430B40.ISO
04/11/2006	03:07 PM	4,680	E430B40.SUM
04/11/2006	03:07 PM	25,780	E430B42.ISO
04/11/2006	03:07 PM	4,665	E430B42.SUM
04/11/2006	03:07 PM	25,986	E430B44.ISO
04/11/2006	03:07 PM	4,669	E430B44.SUM
04/11/2006	03:07 PM	25,940	E430B46.ISO
04/11/2006	03:07 PM	4,678	E430B46.SUM
04/11/2006	03:07 PM	25,825	E430B48.ISO
04/11/2006	03:07 PM	4,673	E430B48.SUM
04/11/2006	03:07 PM	25,876	E430B50.ISO
04/11/2006	03:07 PM	4,664	E430B50.SUM
04/11/2006	03:07 PM	25,933	E430B52.ISO
04/11/2006	03:07 PM	4,656	E430B52.SUM
04/11/2006	03:07 PM	25,612	E448B38.ISO
04/11/2006	03:07 PM	4,745	E448B38.SUM
04/11/2006	03:07 PM	25,779	E448B40.ISO

Table 7-1. Directory Listing of CD-ROM

```
04/11/2006  03:07 PM            4,727 E448B40.SUM
04/11/2006  03:08 PM           25,722 E448B42.ISO
04/11/2006  03:08 PM            4,725 E448B42.SUM
04/11/2006  03:08 PM           25,822 E448B44.ISO
04/11/2006  03:08 PM            4,743 E448B44.SUM
04/11/2006  03:08 PM           25,885 E448B46.ISO
04/11/2006  03:08 PM            4,739 E448B46.SUM
04/11/2006  03:08 PM           25,889 E448B48.ISO
04/11/2006  03:08 PM            4,722 E448B48.SUM
04/11/2006  03:08 PM           25,791 E448B50.ISO
04/11/2006  03:08 PM            4,722 E448B50.SUM
04/11/2006  03:08 PM           25,947 E448B52.ISO
04/11/2006  03:08 PM            4,730 E448B52.SUM
             259 File(s)      5,863,592 bytes

    Total Files Listed:
             815 File(s)    491,340,598 bytes
               4 Dir(s)               0 bytes free
```

8.0 RESULTS AND CONCLUSIONS

This calculation determined that increasing the ISFSI Technical Specification 3.1.1.(3) burnup limit to either 50 or 52 GWd/MTU, while maintaining the assembly thermal limit at 660 watts would be sufficient to allow all HSMs in Phases I – III to be utilized by 2011. However, a 52 GWd/MTU lmit will offer slightly more margin for changes in the assembly loading schedule. Assembly neutron and gamma source spectrums bounding all assemblies up to a 52 GWd/MTU burnup limit at the time when they have cooled to 660 watts are provided in Tables 6-6 and 6-10, respectively.

APPENDIX A – STANDARD CE 14X14 ASSEMBLY LIGHT ELEMENT MASSES FOR LOADING TIME CASES

MASSES			Flux			Zircaloy-4	SS-304	SS-302	Inconel-X750	Inconel-625	Al_2O_3-B_4C	Er_2O_3	UO_2 Impurities		
Top	Base (kg)	Flux Factor	Adjusted (kg)		Element	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Element	Total (kg)
Zircaloy-4					H	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	0.00E+00
SS-304	5.08	0.16	0.81		Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Li	0.00E+00
SS-302					B	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	B	0.00E+00
Inconel-X750	1.10	0.16	0.18		C	0.00E+00	6.50E-04	0.00E+00	7.02E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	C	7.20E-04
Inconel-625					N	0.00E+00	1.06E-03	0.00E+00	2.29E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N	1.29E-03
Al_2O_3-B_4C					O	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	O	0.00E+00
Er_2O_3					F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	F	0.00E+00
kg U (for UO_2 Impurities)					Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Na	0.00E+00
Total	6.18		0.99		Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mg	0.00E+00
					Al	0.00E+00	0.00E+00	0.00E+00	1.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Al	1.40E-03
					Si	0.00E+00	8.13E-03	0.00E+00	5.27E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Si	8.65E-03
					P	0.00E+00	3.66E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	P	3.66E-04
					S	0.00E+00	2.44E-04	0.00E+00	1.23E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	S	2.56E-04
					Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cl	0.00E+00
					Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ca	0.00E+00
					Ti	0.00E+00	0.00E+00	0.00E+00	4.39E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ti	4.39E-03
					V	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	V	0.00E+00
					Cr	0.00E+00	1.54E-01	0.00E+00	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cr	1.81E-01
					Mn	0.00E+00	1.63E-02	0.00E+00	1.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mn	1.75E-02
					Fe	0.00E+00	5.58E-01	0.00E+00	1.19E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Fe	5.70E-01
					Co	0.00E+00	6.50E-04	0.00E+00	1.76E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Co	2.41E-03
					Ni	0.00E+00	7.25E-02	0.00E+00	1.26E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ni	1.99E-01
					Cu	0.00E+00	0.00E+00	0.00E+00	8.78E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cu	8.78E-05
					Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zn	0.00E+00
					Zr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	0.00E+00
					Nb	0.00E+00	8.13E-05	0.00E+00	1.53E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Nb	1.61E-03
					Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mo	0.00E+00
					Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ag	0.00E+00
					Cd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cd	0.00E+00
					In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	In	0.00E+00
					Sn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Sn	0.00E+00
					Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Gd	0.00E+00
					Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Er	0.00E+00
					Hf	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	0.00E+00
					W	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	W	0.00E+00
					Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Pb	0.00E+00
					Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Bi	0.00E+00
					Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Th	0.00E+00
					U	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	0.00E+00
					Total	0.00E+00	8.13E-01	0.00E+00	1.76E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Total	9.89E-01

Plenum	Base (kg)	Flux Factor	Flux Adjusted (kg)
Zircaloy-4	8.95	0.23	2.06
SS-304			
SS-302	7.98	0.17	1.36
Inconel-X750			
Inconel-625			
Al_2O_3-B_4C			
Er_2O_3			
kg U (for UO_2 Impurities)			
Total	16.93		3.42

Element	Zircaloy-4 Mass(kg)	SS-304 Mass(kg)	SS-302 Mass(kg)	Inconel-X750 Mass(kg)	Inconel-625 Mass(kg)	Al_2O_3-B_4C Mass(kg)	Er_2O_3 Mass(kg)	UO_2 Impurities Mass(kg)	Element	Total (kg)
H	2.68E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	2.68E-05
Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Li	0.00E+00
B	6.80E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	B	6.80E-07
C	5.56E-04	0.00E+00	2.03E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	C	2.59E-03
N	1.65E-04	0.00E+00	1.76E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N	1.93E-03
O	1.96E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	O	1.96E-03
F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	F	0.00E+00
Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Na	0.00E+00
Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mg	0.00E+00
Al	4.94E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Al	4.94E-05
Si	0.00E+00	0.00E+00	1.36E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Si	1.36E-02
P	0.00E+00	0.00E+00	6.10E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	P	6.10E-04
S	7.21E-05	0.00E+00	4.07E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	S	4.79E-04
Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cl	0.00E+00
Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ca	0.00E+00
Ti	4.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ti	4.12E-05
V	4.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	V	4.12E-05
Cr	2.57E-03	0.00E+00	2.44E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cr	2.47E-01
Mn	4.12E-05	0.00E+00	2.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mn	2.72E-02
Fe	4.63E-03	0.00E+00	9.45E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Fe	9.49E-01
Co	4.12E-05	0.00E+00	1.09E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Co	1.13E-03
Ni	1.44E-04	0.00E+00	1.21E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ni	1.21E-01
Cu	4.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cu	4.12E-05
Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zn	0.00E+00
Zr	2.02E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	2.02E+00
Nb	2.47E-04	0.00E+00	1.36E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Nb	3.83E-04
Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mo	0.00E+00
Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ag	0.00E+00
Cd	5.15E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cd	5.15E-07
In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	In	0.00E+00
Sn	3.30E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Sn	3.30E-02
Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Gd	0.00E+00
Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Er	0.00E+00
Hf	1.61E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	1.61E-04
W	4.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	W	4.12E-05
Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Pb	0.00E+00
Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Bi	0.00E+00
Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Th	0.00E+00
U	4.12E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	4.12E-07
Total	2.06E+00	0.00E+00	1.36E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Total	3.42E+00

			Flux			Zircaloy-4	SS-304	SS-302	Inconel-X750	Inconel-625	Al_2O_3-B_4C	Er_2O_3	UO_2 Impurities		
Active Fuel Region	*Base (kg)*	*Flux Factor*	*Adjusted (kg)*		Element	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Element	Total (kg)
Zircaloy-4	112.19	1	112.19		H	1.46E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	1.46E-03
SS-304					Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Li	4.00E-04
SS-302					B	3.70E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.50E-01	0.00E+00	4.00E-04	B	3.50E-01
Inconel-X750					C	3.03E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.71E-02	0.00E+00	4.00E-02	C	1.67E-01
Inconel-625					N	8.97E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-03	0.00E+00	4.00E-02	N	5.01E-02
Al_2O_3-B_4C	11.4	1	11.40		O	1.07E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.94E+00	3.64E-01	5.38E+01	O	5.92E+01
Er_2O_3	2.9	1	2.90		F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-04	0.00E+00	6.00E-03	F	6.29E-03
kg U (for UO_2 Impurities)	400	1	400.00		Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-02	0.00E+00	6.00E-03	Na	2.88E-02
					Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-01	0.00E+00	8.00E-04	Mg	1.15E-01
					Al	2.69E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.55E+00	0.00E+00	6.68E-03	Al	5.56E+00
					Si	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-01	0.00E+00	4.84E-03	Si	2.33E-01
					P	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-02	P	1.40E-02
					S	3.93E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	S	3.93E-03
					Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-04	0.00E+00	1.40E-02	Cl	1.43E-02
					Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-02	0.00E+00	8.00E-04	Ca	4.64E-02
					Ti	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Ti	2.64E-03
					V	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-03	V	3.44E-03
UO2	4.54E+02	kg			Cr	1.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-02	0.00E+00	1.60E-03	Cr	1.60E-01
	1001.36	lbs			Mn	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-02	0.00E+00	6.80E-04	Mn	2.09E-02
	Conservative compared with CA03830				Fe	2.52E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-02	0.00E+00	1.20E-01	Fe	3.90E-01
					Co	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Co	2.64E-03
Assy Total weight	6.07E+02	kg			Ni	7.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-01	Ni	1.28E-01
	1338.80	lbs			Cu	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Cu	2.64E-03
	Conservative compared with CA03830				Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-02	Zn	1.61E-02
					Zr	1.10E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	1.10E+02
					Nb	1.35E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Nb	1.35E-02
					Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-03	Mo	4.00E-03
					Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-05	Ag	4.00E-05
					Cd	2.80E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-02	Cd	1.00E-02
					In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E-04	In	8.00E-04
386					Sn	1.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.60E-03	Sn	1.80E+00
437.9396415					Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-03	0.00E+00	0.00E+00	Gd	1.14E-03
51.93964148					Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E+00	0.00E+00	Er	2.54E+00
					Hf	8.75E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	8.75E-03
					W	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E-04	W	3.04E-03
					Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Pb	4.00E-04
					Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.60E-04	Bi	1.60E-04
					Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-02	Th	1.20E-02
					U	2.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	2.24E-05
					Total	1.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E+01	2.90E+00	5.42E+01	Total	1.81E+02

Bottom Nozzle	Base (kg)	Flux Factor	Flux Adjusted (kg)
Zircaloy-4			0.00
SS-304	5	0.22	1.10
SS-302			0.00
Inconel-X750			0.00
Inconel-625	1.36	0.26	0.35
Al_2O_3-B_4C			0.00
Er_2O_3			0.00
kg U (for UO_2 Impurities)			0.00
Total	6.36		1.4536

Element	Zircaloy-4 Mass(kg)	SS-304 Mass(kg)	SS-302 Mass(kg)	Inconel-X750 Mass(kg)	Inconel-625 Mass(kg)	Al_2O_3-B_4C Mass(kg)	Er_2O_3 Mass(kg)	UO_2 Impurities Mass(kg)	Element	Total (kg)
H	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	0.00E+00
Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Li	0.00E+00
B	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	B	0.00E+00
C	0.00E+00	8.80E-04	0.00E+00	0.00E+00	3.54E-04	0.00E+00	0.00E+00	0.00E+00	C	1.23E-03
N	0.00E+00	1.43E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N	1.43E-03
O	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	O	0.00E+00
F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	F	0.00E+00
Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Na	0.00E+00
Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mg	0.00E+00
Al	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.41E-03	0.00E+00	0.00E+00	0.00E+00	Al	1.41E-03
Si	0.00E+00	1.10E-02	0.00E+00	0.00E+00	1.77E-03	0.00E+00	0.00E+00	0.00E+00	Si	1.28E-02
P	0.00E+00	4.95E-04	0.00E+00	0.00E+00	5.30E-05	0.00E+00	0.00E+00	0.00E+00	P	5.48E-04
S	0.00E+00	3.30E-04	0.00E+00	0.00E+00	5.30E-05	0.00E+00	0.00E+00	0.00E+00	S	3.83E-04
Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cl	0.00E+00
Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ca	0.00E+00
Ti	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.41E-03	0.00E+00	0.00E+00	0.00E+00	Ti	1.41E-03
V	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	V	0.00E+00
Cr	0.00E+00	2.09E-01	0.00E+00	0.00E+00	7.60E-02	0.00E+00	0.00E+00	0.00E+00	Cr	2.85E-01
Mn	0.00E+00	2.20E-02	0.00E+00	0.00E+00	1.77E-03	0.00E+00	0.00E+00	0.00E+00	Mn	2.38E-02
Fe	0.00E+00	7.56E-01	0.00E+00	0.00E+00	1.77E-02	0.00E+00	0.00E+00	0.00E+00	Fe	7.73E-01
Co	0.00E+00	8.80E-04	0.00E+00	0.00E+00	3.54E-03	0.00E+00	0.00E+00	0.00E+00	Co	4.42E-03
Ni	0.00E+00	9.81E-02	0.00E+00	0.00E+00	2.05E-01	0.00E+00	0.00E+00	0.00E+00	Ni	3.03E-01
Cu	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cu	0.00E+00
Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zn	0.00E+00
Zr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	0.00E+00
Nb	0.00E+00	1.10E-04	0.00E+00	0.00E+00	1.29E-02	0.00E+00	0.00E+00	0.00E+00	Nb	1.30E-02
Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.15E-02	0.00E+00	0.00E+00	0.00E+00	Mo	3.15E-02
Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ag	0.00E+00
Cd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cd	0.00E+00
In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	In	0.00E+00
Sn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Sn	0.00E+00
Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Gd	0.00E+00
Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Er	0.00E+00
Hf	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	0.00E+00
W	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	W	0.00E+00
Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Pb	0.00E+00
Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Bi	0.00E+00
Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Th	0.00E+00
U	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	0.00E+00
Total	0.00E+00	1.10E+00	0.00E+00	0.00E+00	3.54E-01	0.00E+00	0.00E+00	0.00E+00	Total	1.45E+00

Assembly Total	Element	Zircaloy-4 Mass(kg)	SS-304 Mass(kg)	SS-302 Mass(kg)	Inconel-X750 Mass(kg)	Inconel-625 Mass(kg)	Al_2O_3-B_4C Mass(kg)	Er_2O_3 Mass(kg)	UO_2 Impurities Mass(kg)	Element	Total (kg)
	H	1.49E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	0.00149
	Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Li	0.00040
	B	3.77E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.50E-01	0.00E+00	4.00E-04	B	0.35008
	C	3.08E-02	1.53E-03	2.03E-03	7.02E-05	3.54E-04	9.71E-02	0.00E+00	4.00E-02	C	0.17196
	N	9.14E-03	2.49E-03	1.76E-03	2.29E-04	0.00E+00	1.14E-03	0.00E+00	4.00E-02	N	0.05476
	O	1.09E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.94E+00	3.64E-01	5.38E+01	O	59.19091
	F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-04	0.00E+00	6.00E-03	F	0.00629
	Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-02	0.00E+00	6.00E-03	Na	0.02880
	Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-01	0.00E+00	8.00E-04	Mg	0.11480
	Al	2.74E-03	0.00E+00	0.00E+00	1.40E-03	1.41E-03	5.55E+00	0.00E+00	6.68E-03	Al	5.56142
	Si	0.00E+00	1.91E-02	1.36E-02	5.27E-04	1.77E-03	2.28E-01	0.00E+00	4.84E-03	Si	0.26783
	P	0.00E+00	8.61E-04	8.10E-04	0.00E+00	5.30E-05	0.00E+00	0.00E+00	1.40E-02	P	0.01552
	S	4.00E-03	5.74E-04	4.07E-04	1.23E-05	5.30E-05	0.00E+00	0.00E+00	0.00E+00	S	0.00504
	Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-04	0.00E+00	1.40E-02	Cl	0.01429
	Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-02	0.00E+00	8.00E-04	Ca	0.04640
	Ti	2.28E-03	0.00E+00	0.00E+00	4.39E-03	1.41E-03	0.00E+00	0.00E+00	4.00E-04	Ti	0.00849
	V	2.28E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-03	V	0.00348
	Cr	1.43E-01	3.63E-01	2.44E-01	2.83E-02	7.60E-02	1.80E-02	0.00E+00	1.60E-03	Cr	0.87240
	Mn	2.28E-03	3.83E-02	2.71E-02	1.23E-03	1.77E-03	1.80E-02	0.00E+00	6.80E-04	Mn	0.08936
	Fe	2.57E-01	1.31E+00	9.45E-01	1.19E-02	1.77E-02	1.80E-02	0.00E+00	1.20E-01	Fe	2.68354
	Co	2.28E-03	1.53E-03	1.09E-03	1.76E-03	3.54E-03	0.00E+00	0.00E+00	4.00E-04	Co	0.01060
	Ni	8.00E-03	1.71E-01	1.21E-01	1.26E-01	2.05E-01	0.00E+00	0.00E+00	1.20E-01	Ni	0.75120
	Cu	2.28E-03	0.00E+00	0.00E+00	8.78E-05	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Cu	0.00277
	Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-02	Zn	0.01612
	Zr	1.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	111.81640
	Nb	1.37E-02	1.91E-04	1.36E-04	1.53E-03	1.29E-02	0.00E+00	0.00E+00	0.00E+00	Nb	0.02847
	Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.15E-02	0.00E+00	0.00E+00	4.00E-03	Mo	0.03554
	Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-05	Ag	0.00004
	Cd	2.86E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-02	Cd	0.01003
	In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E-04	In	0.00080
	Sn	1.83E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.60E-03	Sn	1.82952
	Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-03	0.00E+00	0.00E+00	Gd	0.00114
	Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E+00	0.00E+00	Er	2.53611
	Hf	8.91E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	0.00891
	W	2.28E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E-04	W	0.00308
	Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Pb	0.00040
	Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.60E-04	Bi	0.00016
	Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-02	Th	0.01200
	U	2.28E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	0.00002
	Total	1.14E+02	1.91E+00	1.36E+00	1.76E-01	3.54E-01	1.14E+01	2.90E+00	5.42E+01	Total	1.87E+02

APPENDIX B – EXAMPLE SAS2H/ORIGEN-S INPUT

```
=sas2h    parm=skipshipdata
sas2 Enrichment 3.40% Burnup 52.00 GWd/MTU CE 14x14 Std
' two 24 mos. cycle burn
44groupndf5    latticecell
'
'     MATERIAL SPECIFICATION INPUT
'
arbm-uo2  10.3384 5 0 0 0
            92234  0.0267
            92235  2.9970
            92236  0.0138
            92238 85.1087
             8016 11.8538
              1 1.0 892.36 end
co-59     3 0 1-20 573.43 end
zr-94     1 0 1-20 892.36 end
mo-94     1 0 1-20 892.36 end
nb-95     1 0 1-20 892.36 end
mo-95     1 0 1-20 892.36 end
tc-99     1 0 1-20 892.36 end
rh-103    1 0 1-20 892.36 end
rh-105    1 0 1-20 892.36 end
ru-106    1 0 1-20 892.36 end
sn-126    1 0 1-20 892.36 end
xe-131    1 0 1-20 892.36 end
cs-134    1 0 1-20 892.36 end
cs-135    1 0 1-20 892.36 end
cs-137    1 0 1-20 892.36 end
pr-143    1 0 1-20 892.36 end
nd-143    1 0 1-20 892.36 end
ce-144    1 0 1-20 892.36 end
nd-144    1 0 1-20 892.36 end
nd-145    1 0 1-20 892.36 end
nd-146    1 0 1-20 892.36 end
nd-147    1 0 1-20 892.36 end
pm-147    1 0 1-20 892.36 end
sm-147    1 0 1-20 892.36 end
nd-148    1 0 1-20 892.36 end
pm-148    1 0 1-20 892.36 end
sm-148    1 0 1-20 892.36 end
pm-149    1 0 1-20 892.36 end
sm-149    1 0 1-20 892.36 end
nd-150    1 0 1-20 892.36 end
sm-150    1 0 1-20 892.36 end
sm-151    1 0 1-20 892.36 end
eu-151    1 0 1-20 892.36 end
sm-152    1 0 1-20 892.36 end
eu-153    1 0 1-20 892.36 end
eu-154    1 0 1-20 892.36 end
gd-154    1 0 1-20 892.36 end
eu-155    1 0 1-20 892.36 end
gd-155    1 0 1-20 892.36 end
gd-157    1 0 1-20 892.36 end
gd-158    1 0 1-20 892.36 end
gd-160    1 0 1-20 892.36 end
'
'
'CLAD material:
zirc2     2  1                    599.82    end
'
'MODERATOR material:
'
h2o       3 den=0.7264     1       573.43 end
boron     3 den=0.7264  850.0e-6   573.43 end
'
'END OF MATERIAL SPECIFICATIONS
end comp
'
'     BASE REACTOR LATTICE SPECIFICATION    (Path A Model)
' - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
squarepitch  1.4732 0.95631 1 3 1.1176 2 0.97536 0 end
' - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
npin/assm=176 fuelngth=347.218 ncycles=2 nlib/cyc=10
printlevel=4 lightel=37  inplevel=2 numholes=5
numinstr=0        mxtube=2          ortube=1.41605
srtube=1.31445    asmpitch=20.7772  numztotal=5
```

```
mxrepeats=1        mixmod=3          facmesh=1.0    end
'
'      Path B Model
'
3 1.314  2 1.416  3 1.662  500 5.204  3 5.223
'
'POWER HISTORY
'
power=16.404    burn=634  down=30 tmpfuel=892.4
 tmpclad=599.82 tmpmod=573.43
power=16.404    burn=634  down=3650 tmpclad=599.82
 tmpfuel=892.4 tmpmod=573.43 end
'
'
' Light Elements
'
H     0.00149
Li    0.00040
B     0.35008
C     0.17196
N     0.05476
O    59.19091
F     0.00629
Na    0.02880
Mg    0.11480
Al    5.56142
Si    0.26783
P     0.01552
S     0.00504
Cl    0.01429
Ca    0.04640
Ti    0.00849
V     0.00348
Cr    0.87240
Mn    0.08936
Fe    2.68354
Co    0.01060
Ni    0.75120
Cu    0.00277
Zn    0.01612
Zr  111.81640
Nb    0.02847
Mo    0.03554
Ag    0.00004
Cd    0.01003
In    0.00080
Sn    1.82952
Gd    0.00114
Er    2.53611
Hf    0.00891
W     0.00308
Pb    0.00040
Bi    0.00016
'
'      END OF SAS2H INPUT
'
end
=origens
0$$  a8 26 a11 71 e
1$$ 1  1t
 CE 14x14, Standard E4.48 B51.312
3$$ 21 0 1 44 a33 18  e
2t
35$$ 0  t
'
54$$ a8 1 a11 0 e
56$$ 0 10 a13 -1 a14 5 3 0 2 e   5t
Part B CE 14x14 Standard
per CE 14x14 Standard assembly
60**  0 1 2 3 4 5 6 7 8 9
65$$
'GRAM-ATOMS   GRAMS    CURIES     WATTS-ALL  WATTS-GAMMA
     3Z      1  0  0   1  0  0    1  0  0         3Z         6Z
     3Z      1  0  0   1  0  0    1  0  0         3Z         6Z
     3Z      1  0  0   1  0  0    1  0  0         3Z         6Z
81$$ 2 0 26 1 e
82$$ 2 2 2 2 2 2 2 2 2 2 e
83**
 1.E+7        8.E+6        6.5E+6       5.E+6        4.E+6        3.E+6
 2.5E+6       2.E+6        1.66E+6      1.33E+6      1.E+6        8.E+5
```

```
 6.E+5          4.E+5          3.E+5          2.E+5          1.E+5          5.E+4
 1.E+4         e
84**
 2.E+7          1.4E+7         1.2E+7         1.E+7          8.E+6
 7.5E+6         7.E+6          6.5E+6         6.E+6          5.5E+6         5.E+6
 4.5E+6         4.E+6          3.5E+6         3.E+6          2.5E+6
 2.349999E+6    2.149999E+6    2.E+6          1.799999E+6    1.659999E+6
 1.569999E+6    1.5E+6         1.439999E+6    1.329999E+6    1.199999E+6    1.E+6
 7.999999E+5    6.999999E+5    5.999999E+5    5.119999E+5    5.099999E+5
 4.499999E+5    3.999999E+5    2.999999E+5    1.999999E+5    1.499999E+5
 9.999994E+4    7.499994E+4    6.999994E+4    6.E+4          4.5E+4         3.E+4
 2.E+4          9.999996E+3 e
 t
CE 14x14 Standard Decay Time = 0y
CE 14x14 Standard Decay Time = 1y
CE 14x14 Standard Decay Time = 2y
CE 14x14 Standard Decay Time = 3y
CE 14x14 Standard Decay Time = 4y
CE 14x14 Standard Decay Time = 5y
CE 14x14 Standard Decay Time = 6y
CE 14x14 Standard Decay Time = 7y
CE 14x14 Standard Decay Time = 8y
CE 14x14 Standard Decay Time = 9y
'
54$$ a8 1 a11 0 e
56$$ 0 10 a10 10 a14 5 a17 2 e
57** 9  e  5t
60** 10 11 12 13 14 15 16 17 18 19
65$$
'GRAM-ATOMS    GRAMS     CURIES      WATTS-ALL  WATTS-GAMMA
     3Z       1  0  0   1  0  0    1  0  0          3Z          6Z
     3Z       1  0  0   1  0  0    1  0  0          3Z          6Z
     3Z       1  0  0   1  0  0    1  0  0          3Z          6Z
81$$ 2 0 26 1 e
82$$ 2 2 2 2 2 2 2 2 2 2 e
83**
 1.E+7          8.E+6          6.5E+6         5.E+6          4.E+6          3.E+6
 2.5E+6         2.E+6          1.66E+6        1.33E+6        1.E+6          8.E+5
 6.E+5          4.E+5          3.E+5          2.E+5          1.E+5          5.E+4
 1.E+4         e
84**
 2.E+7          1.4E+7         1.2E+7         1.E+7          8.E+6
 7.5E+6         7.E+6          6.5E+6         6.E+6          5.5E+6         5.E+6
 4.5E+6         4.E+6          3.5E+6         3.E+6          2.5E+6
 2.349999E+6    2.149999E+6    2.E+6          1.799999E+6    1.659999E+6
 1.569999E+6    1.5E+6         1.439999E+6    1.329999E+6    1.199999E+6    1.E+6
 7.999999E+5    6.999999E+5    5.999999E+5    5.119999E+5    5.099999E+5
 4.499999E+5    3.999999E+5    2.999999E+5    1.999999E+5    1.499999E+5
 9.999994E+4    7.499994E+4    6.999994E+4    6.E+4          4.5E+4         3.E+4
 2.E+4          9.999996E+3 e
 t
CE 14x14 Standard Decay Time = 10y
CE 14x14 Standard Decay Time = 11y
CE 14x14 Standard Decay Time = 12y
CE 14x14 Standard Decay Time = 13y
CE 14x14 Standard Decay Time = 14y
CE 14x14 Standard Decay Time = 15y
CE 14x14 Standard Decay Time = 16y
CE 14x14 Standard Decay Time = 17y
CE 14x14 Standard Decay Time = 18y
CE 14x14 Standard Decay Time = 19y
'
54$$ a8 1 a11 0 e
56$$ 0 10 a10 10 a14 5 a17 2 e
57** 19  e  5t
60**  20 21 22 23 24 25 26 27 28 29
65$$
'GRAM-ATOMS    GRAMS     CURIES      WATTS-ALL  WATTS-GAMMA
     3Z       1  0  0   1  0  0    1  0  0          3Z          6Z
     3Z       1  0  0   1  0  0    1  0  0          3Z          6Z
     3Z       1  0  0   1  0  0    1  0  0          3Z          6Z
81$$ 2 0 26 1 e
82$$ 2 2 2 2 2 2 2 2 2 2 e
83**
 1.E+7          8.E+6          6.5E+6         5.E+6          4.E+6          3.E+6
 2.5E+6         2.E+6          1.66E+6        1.33E+6        1.E+6          8.E+5
 6.E+5          4.E+5          3.E+5          2.E+5          1.E+5          5.E+4
 1.E+4         e
84**
 2.E+7          1.4E+7         1.2E+7         1.E+7          8.E+6
```

```
 7.5E+6        7.E+6         6.5E+6        6.E+6         5.5E+6        5.E+6
 4.5E+6        4.E+6         3.5E+6        3.E+6         2.5E+6
 2.349999E+6   2.149999E+6   2.E+6         1.799999E+6   1.659999E+6
 1.569999E+6   1.5E+6        1.439999E+6   1.329999E+6   1.199999E+6   1.E+6
 7.999999E+5   6.999999E+5   5.999999E+5   5.119999E+5   5.099999E+5
 4.499999E+5   3.999999E+5   2.999999E+5   1.999999E+5   1.499999E+5
 9.999994E+4   7.499994E+4   6.999994E+4   6.E+4         4.5E+4        3.E+4
 2.E+4         9.999996E+3 e
 t
CE 14x14 Standard Decay Time = 20y
CE 14x14 Standard Decay Time = 21y
CE 14x14 Standard Decay Time = 22y
CE 14x14 Standard Decay Time = 23y
CE 14x14 Standard Decay Time = 24y
CE 14x14 Standard Decay Time = 25y
CE 14x14 Standard Decay Time = 26y
CE 14x14 Standard Decay Time = 27y
CE 14x14 Standard Decay Time = 28y
CE 14x14 Standard Decay Time = 29y
'
54$$ a8 1 a11 0 e
56$$ 0 10 a10 10 a14 5 a17 2 e
57** 29  e  5t
60**  30 31 32 33 34 35 36 37 38 39
65$$
'GRAM-ATOMS   GRAMS     CURIES      WATTS-ALL  WATTS-GAMMA
     3Z       1  0  0   1  0  0    1  0  0         3Z          6Z
     3Z       1  0  0   1  0  0    1  0  0         3Z          6Z
     3Z       1  0  0   1  0  0    1  0  0         3Z          6Z
81$$ 2 0 26 1 e
82$$ 2 2 2 2 2 2 2 2 2 2 e
83**
 1.E+7         8.E+6         6.5E+6        5.E+6         4.E+6         3.E+6
 2.5E+6        2.E+6         1.66E+6       1.33E+6       1.E+6         8.E+5
 6.E+5         4.E+5         3.E+5         2.E+5         1.E+5         5.E+4
 1.E+4        e
84**
 2.E+7         1.4E+7        1.2E+7        1.E+7         8.E+6
 7.5E+6        7.E+6         6.5E+6        6.E+6         5.5E+6        5.E+6
 4.5E+6        4.E+6         3.5E+6        3.E+6         2.5E+6
 2.349999E+6   2.149999E+6   2.E+6         1.799999E+6   1.659999E+6
 1.569999E+6   1.5E+6        1.439999E+6   1.329999E+6   1.199999E+6   1.E+6
 7.999999E+5   6.999999E+5   5.999999E+5   5.119999E+5   5.099999E+5
 4.499999E+5   3.999999E+5   2.999999E+5   1.999999E+5   1.499999E+5
 9.999994E+4   7.499994E+4   6.999994E+4   6.E+4         4.5E+4        3.E+4
 2.E+4         9.999996E+3 e
 t
CE 14x14 Standard Decay Time = 30y
CE 14x14 Standard Decay Time = 31y
CE 14x14 Standard Decay Time = 32y
CE 14x14 Standard Decay Time = 33y
CE 14x14 Standard Decay Time = 34y
CE 14x14 Standard Decay Time = 35y
CE 14x14 Standard Decay Time = 36y
CE 14x14 Standard Decay Time = 37y
CE 14x14 Standard Decay Time = 38y
CE 14x14 Standard Decay Time = 39y
'
54$$ a8 1 a11 0 e
56$$ 0 10 a10 10 a14 5 a17 2 e
57** 39  e  5t
60**  40 41 42 43 44 45 46 47 48 49
65$$
'GRAM-ATOMS   GRAMS     CURIES      WATTS-ALL  WATTS-GAMMA
     3Z       1  0  0   1  0  0    1  0  0         3Z          6Z
     3Z       1  0  0   1  0  0    1  0  0         3Z          6Z
     3Z       1  0  0   1  0  0    1  0  0         3Z          6Z
81$$ 2 0 26 1 e
82$$ 2 2 2 2 2 2 2 2 2 2 e
83**
 1.E+7         8.E+6         6.5E+6        5.E+6         4.E+6         3.E+6
 2.5E+6        2.E+6         1.66E+6       1.33E+6       1.E+6         8.E+5
 6.E+5         4.E+5         3.E+5         2.E+5         1.E+5         5.E+4
 1.E+4        e
84**
 2.E+7         1.4E+7        1.2E+7        1.E+7         8.E+6
 7.5E+6        7.E+6         6.5E+6        6.E+6         5.5E+6        5.E+6
 4.5E+6        4.E+6         3.5E+6        3.E+6         2.5E+6
 2.349999E+6   2.149999E+6   2.E+6         1.799999E+6   1.659999E+6
 1.569999E+6   1.5E+6        1.439999E+6   1.329999E+6   1.199999E+6   1.E+6
```

```
 7.999999E+5  6.999999E+5  5.999999E+5  5.119999E+5  5.099999E+5
 4.499999E+5  3.999999E+5  2.999999E+5  1.999999E+5  1.499999E+5
 9.999994E+4  7.499994E+4  6.999994E+4  6.E+4        4.5E+4       3.E+4
 2.E+4        9.999996E+3 e
 t
CE 14x14 Standard Decay Time = 40y
CE 14x14 Standard Decay Time = 41y
CE 14x14 Standard Decay Time = 42y
CE 14x14 Standard Decay Time = 43y
CE 14x14 Standard Decay Time = 44y
CE 14x14 Standard Decay Time = 45y
CE 14x14 Standard Decay Time = 46y
CE 14x14 Standard Decay Time = 47y
CE 14x14 Standard Decay Time = 48y
CE 14x14 Standard Decay Time = 49y
'
54$$ a8 1 a11 0 e
56$$ 0 10 a10 10 a14 5 a17 2 e
57** 49  e  5t
60**  50 51 52 53 54 55 56 57 58 59
65$$
'GRAM-ATOMS   GRAMS    CURIES     WATTS-ALL  WATTS-GAMMA
     3Z      1  0  0   1  0  0    1  0  0         3Z         6Z
     3Z      1  0  0   1  0  0    1  0  0         3Z         6Z
     3Z      1  0  0   1  0  0    1  0  0         3Z         6Z
81$$ 2 0 26 1 e
82$$ 2 2 2 2 2 2 2 2 2 2 e
83**
 1.E+7        8.E+6        6.5E+6       5.E+6        4.E+6        3.E+6
 2.5E+6       2.E+6        1.66E+6      1.33E+6      1.E+6        8.E+5
 6.E+5        4.E+5        3.E+5        2.E+5        1.E+5        5.E+4
 1.E+4       e
84**
 2.E+7        1.4E+7       1.2E+7       1.E+7        8.E+6
 7.5E+6       7.E+6        6.5E+6       6.E+6        5.5E+6       5.E+6
 4.5E+6       4.E+6        3.5E+6       3.E+6        2.5E+6
 2.349999E+6  2.149999E+6  2.E+6        1.799999E+6  1.659999E+6
 1.569999E+6  1.5E+6       1.439999E+6  1.329999E+6  1.199999E+6  1.E+6
 7.999999E+5  6.999999E+5  5.999999E+5  5.119999E+5  5.099999E+5
 4.499999E+5  3.999999E+5  2.999999E+5  1.999999E+5  1.499999E+5
 9.999994E+4  7.499994E+4  6.999994E+4  6.E+4        4.5E+4       3.E+4
 2.E+4        9.999996E+3 e
 t
CE 14x14 Standard Decay Time = 50y
CE 14x14 Standard Decay Time = 51y
CE 14x14 Standard Decay Time = 52y
CE 14x14 Standard Decay Time = 53y
CE 14x14 Standard Decay Time = 54y
CE 14x14 Standard Decay Time = 55y
CE 14x14 Standard Decay Time = 56y
CE 14x14 Standard Decay Time = 57y
CE 14x14 Standard Decay Time = 58y
CE 14x14 Standard Decay Time = 59y
'
56$$ f0  t
end
```

APPENDIX C – SOURCE CODE FOR ORGS32P POST-PROCESSOR PROGRAM

```
DECLARE SUB Comline (N, A$(), Max)
CLS
CLEAR
'
'This program summarizes ORIGEN-S decay heat info
'
'dimension variables
DIM A$(1 TO 15)
DIM iso$(54)            'total number of isotopes extracted
DIM curiesDB(54)        'total number of isotopes interpolated
DIM leheat(60)          'light element watts
DIM acheat(60)          'actinide watts
DIM fpheat(60)          'fission product watts
DIM thermal(60)         'total watts
DIM neupersec(60)       'total neutrons per second
DIM mevpersec(4, 60)    'le, act, fp, tot mev per second
DIM phopersec(4, 60)    'le, act, fp, tot pho per second
DIM time(60)            '60 decay times
DIM curies(54, 60)      'isotope curies
'
'Get what was typed on the command line.
CALL Comline(N, A$(), 10)
'
' other variables used
'
tcount = 0               'counter for number of times read
columns = 10             'determine number of columns in table
fpsize = 29              'number of fission product isotopes
isize = 54               'total number of isotopes
' fission product isotope list
iso$(1) = " h  3 "
iso$(2) = " c 14 "
iso$(3) = "cl 36 "
iso$(4) = "co 60 "
iso$(5) = "se 79 "
iso$(6) = "kr 81 "
iso$(7) = "kr 85 "
iso$(8) = "sr 89 "
iso$(9) = "sr 90 "
iso$(10) = " y 90 "
iso$(11) = "nb 94 "
iso$(12) = "zr 95 "
iso$(13) = "tc 99 "
iso$(14) = "ru103 "
iso$(15) = "ru106 "
iso$(16) = "pd107 "
iso$(17) = "cd113m"
iso$(18) = "xe127 "
iso$(19) = " i129 "
iso$(20) = "cs134 "
iso$(21) = "cs135 "
iso$(22) = "cs137 "
iso$(23) = " i137 "
iso$(24) = "xe137 "
iso$(25) = "cs137 "
iso$(26) = "pm147 "
iso$(27) = "sm151 "
iso$(28) = "eu154 "
iso$(29) = "eu155 "
' actinide isotope list
iso$(30) = "ac227 "
iso$(31) = "pa231 "
iso$(32) = " u232 "
iso$(33) = " u233 "
iso$(34) = " u234 "
iso$(35) = " u235 "
```

```
iso$(36) = " u236 "
iso$(37) = " u238 "
iso$(38) = "np237 "
iso$(39) = "np239 "
iso$(40) = "pu238 "
iso$(41) = "pu239 "
iso$(42) = "pu240 "
iso$(43) = "pu241 "
iso$(44) = "pu242 "
iso$(45) = "am241 "
iso$(46) = "am242 "
iso$(47) = "am242m"
iso$(48) = "am243 "
iso$(49) = "cm242 "
iso$(50) = "cm243 "
iso$(51) = "cm244 "
iso$(52) = "cm245 "
iso$(53) = "cm246 "
iso$(54) = "th230 "
'
' Enter name of input and output files
'
'read input file name command line
file$ = A$(1)
'dummy inputs for debuging
'file$ = "c:\QuickB~1.1\E45B512A.OUT"
OPEN file$ FOR INPUT ACCESS READ AS #1
'
' Get enrichment and burnup info from case title
'
DO UNTIL INSTR(start$, "sas2 Enrichment")
        LINE INPUT #1, start$
LOOP
estart = INSTR(start$, "Enrichment") + 10
eend = INSTR(start$, "%")
e = VAL(LTRIM$(MID$(start$, estart, eend - estart)))
bstart = INSTR(start$, "Burnup") + 6
bend = INSTR(start$, "GWd")
b = VAL(LTRIM$(MID$(start$, bstart, bend - bstart)))
'
' Find start of ORIGEN-S case output
'
DO UNTIL INSTR(start$, "obtaining data from position no.    1 on unit no.   71")
        LINE INPUT #1, start$
LOOP
DO UNTIL tcount = 60
        lastcount = tcount
        '
        'Find start of a ORIGEN-S tables in output and get times
        '
        DO UNTIL INSTR(start$, "Part B CE 14x14")
                LINE INPUT #1, start$
        LOOP
        timeflag = 0
        DO
        '
        'Figure out if these are light el., actinide, or fp tables
        '
                IF INSTR(start$, "light elements") THEN
                        table = 1
                ELSEIF INSTR(start$, "actinides") THEN
                        table = 2
                ELSE
                        table = 3               'fission products
                END IF
                ' find and save times if haven't been to this time before
                IF timeflag = 0 THEN
```

```
        DO UNTIL (INSTR(Line$, "charge  discharge") OR INSTR(Line$, "initial"))
                LINE INPUT #1, Line$
        LOOP
        IF INSTR(Line$, "charge  discharge") THEN
                firstcol = 31
        ELSE
                firstcol = 21
        END IF
        FOR i = 0 TO columns - 1        'get times starting at first column
                b$ = MID$(Line$, i * 10 + firstcol, 10)
                coltim = VAL(LTRIM$(LEFT$(b$, 8)))
                time(tcount) = coltim
                tcount = tcount + 1
        NEXT i
END IF
timeflag = 1
'
'Get fission product or actinide isotope curies from table at each time
'
DO UNTIL INSTR(start$, "nuclide radioactivity, curies")
        LINE INPUT #1, start$
LOOP
'
Line$ = ""
SELECT CASE table
        CASE 1  'don't care about light element curies
        CASE 2  'actinide curies
                DO UNTIL INSTR(Line$, "total")
                        LINE INPUT #1, Line$
                                FOR i = fpsize + 1 TO isize          ' Check to see if line has isotope that is on the list
                                        IF INSTR(Line$, iso$(i)) THEN
                                                FOR j = 0 TO (columns - 1)          'get curies at all times in table
                                                        b$ = MID$(Line$, j * 10 + firstcol, 10)
                                                        curies(i, j + lastcount) = VAL(LTRIM$(b$))
                                                NEXT j
                                        END IF
                                NEXT i
                LOOP
        CASE 3  'fission product curies
                DO UNTIL INSTR(Line$, "total")
                        LINE INPUT #1, Line$
                                FOR i = 1 TO fpsize            ' Check to see if line has isotope that is on the list
                                        IF INSTR(Line$, iso$(i)) THEN
                                                FOR j = 0 TO (columns - 1)          'get curies at all times in table
                                                        b$ = MID$(Line$, j * 10 + firstcol, 10)
                                                        curies(i, j + lastcount) = VAL(LTRIM$(b$))
                                                NEXT j
                                        END IF
                                NEXT i
                LOOP
END SELECT
'
'Get total watts from table for each time
'
DO UNTIL INSTR(start$, "nuclide thermal power, watts")
        LINE INPUT #1, start$
LOOP
Line$ = ""
DO UNTIL INSTR(Line$, "total")
        LINE INPUT #1, Line$
LOOP
FOR i = 0 TO columns - 1        'get thermal totals starting at first time column
        b$ = MID$(Line$, i * 10 + firstcol, 10)
        SELECT CASE table
        CASE 1
                leheat(i + lastcount) = VAL(LTRIM$(b$))
        CASE 2
```

```
                        acheat(i + lastcount) = VAL(LTRIM$(b$))
                CASE 3
                        fpheat(i + lastcount) = VAL(LTRIM$(b$))
                END SELECT
        NEXT i
        start$ = ""
        IF table < 3 THEN
                DO UNTIL INSTR(start$, "Part B CE 14x14")
                        LINE INPUT #1, start$
                LOOP
        END IF
LOOP UNTIL table = 3
start$ = ""
Line$ = ""
'
'Find light element photon table and get info
'
DO UNTIL INSTR(start$, "photon spectrum as a function of time for light elements")
        LINE INPUT #1, start$
LOOP
DO UNTIL INSTR(Line$, "total")
        LINE INPUT #1, Line$
LOOP
FOR i = 0 TO columns - 1        'get totals starting at first time column
        b$ = MID$(Line$, i * 10 + 31, 10)
        phopersec(1, i + lastcount) = VAL(LTRIM$(b$))
NEXT i
DO UNTIL INSTR(Line$, "mev/sec")
        LINE INPUT #1, Line$
LOOP
FOR i = 0 TO columns - 1        'get totals starting at first time column
        b$ = MID$(Line$, i * 10 + 31, 10)
        mevpersec(1, i + lastcount) = VAL(LTRIM$(b$))
NEXT i
start$ = ""
Line$ = ""
'
'Find fission product photon table and get info
'
DO UNTIL INSTR(start$, "photon spectrum as a function of time for fission products")
        LINE INPUT #1, start$
LOOP
DO UNTIL INSTR(Line$, "total")
        LINE INPUT #1, Line$
LOOP
FOR i = 0 TO columns - 1        'get totals starting at first time column
        b$ = MID$(Line$, i * 10 + 31, 10)
        phopersec(3, i + lastcount) = VAL(LTRIM$(b$))
NEXT i
DO UNTIL INSTR(Line$, "mev/sec")
        LINE INPUT #1, Line$
LOOP
FOR i = 0 TO columns - 1        'get totals starting at first time column
        b$ = MID$(Line$, i * 10 + 31, 10)
        mevpersec(3, i + lastcount) = VAL(LTRIM$(b$))
NEXT i
start$ = ""
Line$ = ""
'
'Find actinide photon table and get info
'
DO UNTIL INSTR(start$, "photon spectrum as a function of time for heavy metals")
        LINE INPUT #1, start$
LOOP
DO UNTIL INSTR(Line$, "total")
        LINE INPUT #1, Line$
LOOP
```

```
        FOR i = 0 TO columns - 1        'get totals starting at first time column
                b$ = MID$(Line$, i * 10 + 31, 10)
                phopersec(2, i + lastcount) = VAL(LTRIM$(b$))
        NEXT i
        DO UNTIL INSTR(Line$, "mev/sec")
                LINE INPUT #1, Line$
        LOOP
        FOR i = 0 TO columns - 1        'get totals starting at first time column
                b$ = MID$(Line$, i * 10 + 31, 10)
                mevpersec(2, i + lastcount) = VAL(LTRIM$(b$))
        NEXT i
        '
        'Find total neutron source table and get info
        '
        DO UNTIL INSTR(start$, "total (alpha-n plus spon. fission) neutron source")
                LINE INPUT #1, start$
        LOOP
        FOR i = 1 TO 55
                LINE INPUT #1, Line$
        NEXT i
        '
        FOR i = 0 TO columns - 1        'get totals starting at first time column
                b$ = MID$(Line$, i * 10 + 33, 10)
                neupersec(i + lastcount) = VAL(LTRIM$(b$))
        NEXT i
LOOP
CLOSE #1
'
' output comma deliminated heat and rad summary file
'
namelen = LEN(file$)
outfile$ = LEFT$(file$, namelen - 4) + ".sum"
OPEN outfile$ FOR OUTPUT AS #2
PRINT #2, "Enrich"; ","; "Burnup"; ","; "time"; ","; "watts"; ","; "n/sec"; ","; "tot m/sec"; ","; "tot p/sec"; ","; "le m/sec"
FOR i = 0 TO tcount - 1
        phopersec(4, i) = phopersec(1, i) + phopersec(2, i) + phopersec(3, i)
        mevpersec(4, i) = mevpersec(1, i) + mevpersec(2, i) + mevpersec(3, i)
        thermal(i) = leheat(i) + acheat(i) + fpheat(i)
        PRINT #2, e; ","; b; ","; time(i); ","; thermal(i); ","; neupersec(i); ","; mevpersec(4, i); ","; phopersec(4, i); ","; mevpersec(1, i)
NEXT i
CLOSE #2
'
' output comma deliminated isotope summary file
'
outfile$ = LEFT$(file$, namelen - 4) + ".iso"
OPEN outfile$ FOR OUTPUT AS #2
PRINT #2, "time";
FOR i = 1 TO isize
        PRINT #2, ","; iso$(i);
NEXT i
PRINT #2,
FOR i = 0 TO tcount - 1
        PRINT #2, time(i);
        FOR j = 1 TO isize
                PRINT #2, ","; curies(j, i);
        NEXT j
        PRINT #2,
NEXT i
CLOSE #2
'
' interpolate to time for various design basis assy watts and find associated n/sec, p/sec, mev/sec, and curies
'
OPEN "DBwatt.sum" FOR APPEND AS #3
OPEN "DBwatt.iso" FOR APPEND AS #4
PRINT #4, "E", "B", "DBwatt", "time",
FOR i = 1 TO isize
        PRINT #4, iso$(i),
```

```
NEXT i
PRINT #4,
FOR DBwatt = 420 TO 900 STEP 60
        i = 1
        DO UNTIL thermal(i) <= DBwatt
                i = i + 1
        LOOP
        IF thermal(i) = DBwatt THEN       'you got lucky
                timeDB = time(i)
                npsDB = neupersec(i)
                ppsDB = phopersec(4, i)
                mpsDB = mevpersec(4, i)
                lempsDB = mevpersec(1, i)
                FOR j = 1 TO isize
                        curiesDB(j) = curies(j, i)
                NEXT j
        ELSE                              'linearly interpolate to DBwatt values
                interp = (DBwatt - thermal(i)) / ((thermal(i - 1) - thermal(i)))
                timeDB = time(i) + interp * (time(i - 1) - time(i))
                npsDB = neupersec(i) + interp * (neupersec(i - 1) - neupersec(i))
                ppsDB = phopersec(4, i) + interp * (phopersec(4, i - 1) - phopersec(4, i))
                mpsDB = mevpersec(4, i) + interp * (mevpersec(4, i - 1) - mevpersec(4, i))
                lempsDB = mevpersec(1, i) + interp * (mevpersec(1, i - 1) - mevpersec(1, i))
                FOR j = 1 TO isize
                        curiesDB(j) = curies(j, i) + interp * (curies(j, i - 1) - curies(j, i))
                NEXT j
        END IF
        PRINT #3, e, b, DBwatt, timeDB, npsDB, mpsDB, ppsDB, lempsDB
        PRINT #4, e, b, DBwatt, timeDB,
        FOR j = 1 TO isize
                PRINT #4, curiesDB(j),
        NEXT j
        PRINT #4,
NEXT DBwatt
CLOSE #3
CLOSE #4
END

'SUB procedure to get command line and split into arguments.
'Parameters:  NumArgs : Number of command line args found.
'             Args$() : Array in which to return arguments.
'             MaxArgs : Maximum number of arguments array can return.
SUB Comline (NumArgs, Args$(), MaxArgs) STATIC
CONST TRUE = -1, FALSE = 0

   NumArgs = 0: In = FALSE
   'Get the command line using the COMMAND$ function.
   Cl$ = COMMAND$
   L = LEN(Cl$)
   'Go through the command line a character at a time.
   FOR i = 1 TO L
      C$ = MID$(Cl$, i, 1)
      'Test for character being a blank or a tab.
      IF (C$ <> " " AND C$ <> CHR$(9)) THEN
      'Neither blank nor tab. Test if you're already inside an argument.
         IF NOT In THEN
         'You've found the start of a new argument.
            'Test for too many arguments.
            IF NumArgs = MaxArgs THEN EXIT FOR
            NumArgs = NumArgs + 1
            In = TRUE
         END IF
         'Add the character to the current argument.
         Args$(NumArgs) = Args$(NumArgs) + C$
      ELSE
      'Found a blank or a tab.
         'Set "Not in an argument" flag to FALSE.
```

```
        In = FALSE
      END IF
    NEXT i

END SUB
```

APPENDIX D – CE 14X14 DECAY TIME TO SELECTED HEATS AND ASSOCIATED NEUTRON AND PHOTON SOURCE STRENGTHS

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
2.05	16	420	4.35	1.10E+07	9.37E+14	3.16E+15	5.82E+13
2.05	18	420	4.78	1.82E+07	9.85E+14	3.11E+15	6.13E+13
2.05	20	420	5.24	2.84E+07	1.02E+15	3.05E+15	6.33E+13
2.05	42	420	27.75	2.47E+08	6.75E+14	2.01E+15	6.15E+12
2.05	44	420	30.72	2.61E+08	6.55E+14	1.94E+15	4.33E+12
2.45	16	420	4.28	7597630	9.20E+14	3.17E+15	5.38E+13
2.45	18	420	4.72	1.26E+07	9.70E+14	3.13E+15	5.67E+13
2.45	20	420	5.15	1.99E+07	1.01E+15	3.07E+15	5.89E+13
2.45	22	420	5.73	2.99E+07	1.03E+15	3.01E+15	5.96E+13
2.45	24	420	6.40	4.29E+07	1.03E+15	2.93E+15	5.90E+13
2.45	26	420	7.22	5.91E+07	1.02E+15	2.85E+15	5.68E+13
2.45	28	420	8.34	7.82E+07	9.85E+14	2.75E+15	5.24E+13
2.45	30	420	9.92	9.89E+07	9.33E+14	2.65E+15	4.51E+13
2.45	32	420	11.97	1.20E+08	8.76E+14	2.54E+15	3.65E+13
2.45	34	420	14.62	1.39E+08	8.22E+14	2.43E+15	2.71E+13
2.45	36	420	17.62	1.57E+08	7.79E+14	2.33E+15	1.92E+13
2.45	38	420	20.88	1.72E+08	7.43E+14	2.24E+15	1.30E+13
2.45	40	420	23.94	1.88E+08	7.16E+14	2.16E+15	9.12E+12
2.45	42	420	27.13	2.01E+08	6.90E+14	2.09E+15	6.26E+12
2.45	44	420	30.11	2.14E+08	6.68E+14	2.02E+15	4.40E+12
2.73	20	420	5.10	1.59E+07	9.97E+14	3.09E+15	5.62E+13
2.73	22	420	5.69	2.39E+07	1.02E+15	3.02E+15	5.68E+13
2.73	24	420	6.34	3.46E+07	1.03E+15	2.96E+15	5.65E+13
2.73	26	420	7.15	4.80E+07	1.01E+15	2.87E+15	5.45E+13
2.73	28	420	8.26	6.38E+07	9.83E+14	2.79E+15	5.04E+13
2.73	30	420	9.80	8.14E+07	9.36E+14	2.69E+15	4.37E+13
2.73	32	420	11.83	9.95E+07	8.80E+14	2.58E+15	3.54E+13
2.73	34	420	14.35	1.17E+08	8.30E+14	2.48E+15	2.68E+13
2.73	36	420	17.35	1.33E+08	7.87E+14	2.38E+15	1.90E+13
2.73	38	420	20.52	1.47E+08	7.52E+14	2.29E+15	1.31E+13
2.73	40	420	23.69	1.61E+08	7.23E+14	2.21E+15	9.03E+12
2.73	42	420	26.76	1.74E+08	6.98E+14	2.13E+15	6.30E+12
2.73	44	420	29.84	1.86E+08	6.74E+14	2.06E+15	4.37E+12
3.03	20	420	5.04	1.27E+07	9.90E+14	3.10E+15	5.37E+13
3.03	22	420	5.65	1.92E+07	1.01E+15	3.04E+15	5.43E+13
3.03	24	420	6.28	2.78E+07	1.02E+15	2.97E+15	5.40E+13
3.03	26	420	7.06	3.88E+07	1.01E+15	2.90E+15	5.24E+13
3.03	28	420	8.18	5.19E+07	9.82E+14	2.81E+15	4.84E+13
3.03	30	420	9.71	6.66E+07	9.37E+14	2.72E+15	4.21E+13
3.03	32	420	11.68	8.21E+07	8.85E+14	2.63E+15	3.44E+13
3.03	34	420	14.19	9.72E+07	8.35E+14	2.52E+15	2.61E+13
3.03	36	420	17.02	1.12E+08	7.96E+14	2.44E+15	1.89E+13
3.03	38	420	20.24	1.24E+08	7.59E+14	2.34E+15	1.30E+13
3.03	40	420	23.36	1.37E+08	7.31E+14	2.26E+15	9.00E+12
3.03	42	420	26.38	1.49E+08	7.07E+14	2.18E+15	6.32E+12
3.03	44	420	29.39	1.61E+08	6.84E+14	2.11E+15	4.44E+12
3.03	46	420	32.39	1.71E+08	6.61E+14	2.04E+15	3.11E+12
3.03	48	420	35.17	1.82E+08	6.43E+14	1.98E+15	2.25E+12

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
3.03	50	420	37.90	1.93E+08	6.24E+14	1.91E+15	1.63E+12
3.03	52	420	40.46	2.03E+08	6.09E+14	1.86E+15	1.22E+12
3.4	26	420	6.99	3.03E+07	1.01E+15	2.93E+15	4.99E+13
3.4	28	420	8.09	4.08E+07	9.79E+14	2.85E+15	4.62E+13
3.4	30	420	9.62	5.27E+07	9.38E+14	2.76E+15	4.02E+13
3.4	32	420	11.54	6.54E+07	8.89E+14	2.67E+15	3.31E+13
3.4	34	420	13.99	7.81E+07	8.40E+14	2.58E+15	2.52E+13
3.4	36	420	16.89	9.00E+07	7.99E+14	2.48E+15	1.82E+13
3.4	38	420	19.89	1.02E+08	7.68E+14	2.39E+15	1.28E+13
3.4	40	420	22.94	1.13E+08	7.41E+14	2.32E+15	8.99E+12
3.4	42	420	26.01	1.24E+08	7.15E+14	2.24E+15	6.29E+12
3.4	44	420	28.97	1.34E+08	6.93E+14	2.16E+15	4.44E+12
3.4	46	420	32.07	1.43E+08	6.69E+14	2.09E+15	3.09E+12
3.4	48	420	34.80	1.54E+08	6.51E+14	2.03E+15	2.24E+12
3.4	50	420	37.53	1.63E+08	6.32E+14	1.97E+15	1.63E+12
3.4	52	420	40.17	1.73E+08	6.15E+14	1.91E+15	1.20E+12
3.65	34	420	13.89	6.77E+07	8.43E+14	2.60E+15	2.47E+13
3.65	36	420	16.75	7.85E+07	8.03E+14	2.51E+15	1.78E+13
3.65	38	420	19.64	8.93E+07	7.74E+14	2.43E+15	1.28E+13
3.65	40	420	22.81	9.90E+07	7.44E+14	2.35E+15	8.84E+12
3.65	42	420	25.78	1.09E+08	7.21E+14	2.27E+15	6.26E+12
3.65	44	420	28.95	1.18E+08	6.94E+14	2.19E+15	4.31E+12
3.65	46	420	31.79	1.28E+08	6.74E+14	2.12E+15	3.09E+12
3.65	48	420	34.63	1.37E+08	6.54E+14	2.05E+15	2.22E+12
3.65	50	420	37.33	1.46E+08	6.37E+14	1.99E+15	1.62E+12
3.65	52	420	40.03	1.55E+08	6.19E+14	1.94E+15	1.19E+12
3.81	34	420	13.84	6.20E+07	8.45E+14	2.62E+15	2.43E+13
3.81	36	420	16.67	7.20E+07	8.06E+14	2.53E+15	1.77E+13
3.81	38	420	19.64	8.19E+07	7.74E+14	2.44E+15	1.25E+13
3.81	40	420	22.68	9.14E+07	7.47E+14	2.36E+15	8.81E+12
3.81	42	420	25.75	1.01E+08	7.22E+14	2.29E+15	6.15E+12
3.81	44	420	28.68	1.10E+08	7.00E+14	2.21E+15	4.37E+12
3.81	46	420	31.57	1.19E+08	6.79E+14	2.14E+15	3.12E+12
3.81	48	420	34.42	1.28E+08	6.58E+14	2.08E+15	2.24E+12
3.81	50	420	37.18	1.36E+08	6.40E+14	2.02E+15	1.61E+12
3.81	52	420	39.78	1.45E+08	6.23E+14	1.96E+15	1.20E+12
4	34	420	13.79	5.60E+07	8.46E+14	2.63E+15	2.39E+13
4	36	420	16.57	6.53E+07	8.08E+14	2.55E+15	1.74E+13
4	38	420	19.56	7.43E+07	7.77E+14	2.46E+15	1.23E+13
4	40	420	22.56	8.33E+07	7.51E+14	2.39E+15	8.73E+12
4	42	420	25.63	9.18E+07	7.25E+14	2.31E+15	6.10E+12
4	44	420	28.59	1.00E+08	7.02E+14	2.23E+15	4.32E+12
4	46	420	31.50	1.09E+08	6.81E+14	2.16E+15	3.07E+12
4	48	420	34.30	1.17E+08	6.61E+14	2.10E+15	2.22E+12
4	50	420	37.03	1.26E+08	6.43E+14	2.03E+15	1.60E+12
4	52	420	39.60	1.34E+08	6.26E+14	1.98E+15	1.19E+12
4.08	34	420	13.78	5.36E+07	8.46E+14	2.64E+15	2.37E+13
4.08	36	420	16.56	6.26E+07	8.08E+14	2.55E+15	1.73E+13
4.08	38	420	19.44	7.16E+07	7.79E+14	2.47E+15	1.24E+13
4.08	40	420	22.56	8.00E+07	7.51E+14	2.39E+15	8.65E+12
4.08	42	420	25.50	8.87E+07	7.28E+14	2.32E+15	6.14E+12

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
4.08	44	420	28.47	9.71E+07	7.05E+14	2.24E+15	4.34E+12
4.08	46	420	31.36	1.05E+08	6.84E+14	2.18E+15	3.10E+12
4.08	48	420	34.30	1.13E+08	6.62E+14	2.11E+15	2.20E+12
4.08	50	420	36.91	1.22E+08	6.45E+14	2.05E+15	1.62E+12
4.08	52	420	39.60	1.30E+08	6.27E+14	1.99E+15	1.18E+12
4.2	38	420	19.45	6.73E+07	7.80E+14	2.48E+15	1.22E+13
4.2	40	420	22.49	7.55E+07	7.52E+14	2.40E+15	8.60E+12
4.2	42	420	25.50	8.36E+07	7.28E+14	2.33E+15	6.05E+12
4.2	44	420	28.46	9.16E+07	7.06E+14	2.25E+15	4.28E+12
4.2	46	420	31.25	9.99E+07	6.86E+14	2.19E+15	3.09E+12
4.2	48	420	34.20	1.07E+08	6.64E+14	2.11E+15	2.19E+12
4.2	50	420	36.90	1.15E+08	6.46E+14	2.06E+15	1.60E+12
4.2	52	420	39.46	1.24E+08	6.29E+14	2.00E+15	1.19E+12
4.3	38	420	19.38	6.42E+07	7.81E+14	2.49E+15	1.22E+13
4.3	40	420	22.35	7.22E+07	7.55E+14	2.42E+15	8.65E+12
4.3	42	420	25.43	7.99E+07	7.30E+14	2.34E+15	6.03E+12
4.3	44	420	28.39	8.77E+07	7.07E+14	2.27E+15	4.27E+12
4.3	46	420	31.22	9.55E+07	6.87E+14	2.20E+15	3.07E+12
4.3	48	420	34.05	1.03E+08	6.67E+14	2.13E+15	2.21E+12
4.3	50	420	36.90	1.10E+08	6.46E+14	2.06E+15	1.58E+12
4.3	52	420	39.46	1.18E+08	6.30E+14	2.00E+15	1.17E+12
4.48	38	420	19.24	5.90E+07	7.84E+14	2.51E+15	1.21E+13
4.48	40	420	22.30	6.63E+07	7.57E+14	2.43E+15	8.52E+12
4.48	42	420	25.25	7.38E+07	7.34E+14	2.36E+15	6.05E+12
4.48	44	420	28.21	8.11E+07	7.11E+14	2.28E+15	4.27E+12
4.48	46	420	31.07	8.84E+07	6.91E+14	2.21E+15	3.06E+12
4.48	48	420	33.91	9.56E+07	6.70E+14	2.15E+15	2.20E+12
4.48	50	420	36.66	1.03E+08	6.51E+14	2.08E+15	1.60E+12
4.48	52	420	39.31	1.10E+08	6.34E+14	2.02E+15	1.17E+12
2.05	16	480	3.92	1.11E+07	1.04E+15	3.65E+15	6.17E+13
2.05	18	480	4.32	1.85E+07	1.09E+15	3.60E+15	6.53E+13
2.05	20	480	4.71	2.89E+07	1.14E+15	3.54E+15	6.81E+13
2.05	42	480	21.15	3.15E+08	8.08E+14	2.37E+15	1.46E+13
2.05	44	480	24.08	3.32E+08	7.79E+14	2.29E+15	1.03E+13
2.45	16	480	3.88	7711273	1.01E+15	3.67E+15	5.69E+13
2.45	18	480	4.24	1.29E+07	1.08E+15	3.62E+15	6.05E+13
2.45	20	480	4.65	2.03E+07	1.12E+15	3.57E+15	6.32E+13
2.45	22	480	4.99	3.07E+07	1.16E+15	3.51E+15	6.58E+13
2.45	24	480	5.54	4.43E+07	1.18E+15	3.43E+15	6.64E+13
2.45	26	480	6.02	6.18E+07	1.19E+15	3.35E+15	6.68E+13
2.45	28	480	6.77	8.28E+07	1.17E+15	3.25E+15	6.48E+13
2.45	30	480	7.67	1.07E+08	1.14E+15	3.15E+15	6.11E+13
2.45	32	480	8.80	1.35E+08	1.10E+15	3.03E+15	5.57E+13
2.45	34	480	10.34	1.63E+08	1.04E+15	2.91E+15	4.79E+13
2.45	36	480	12.32	1.91E+08	9.70E+14	2.78E+15	3.87E+13
2.45	38	480	14.81	2.16E+08	9.11E+14	2.67E+15	2.92E+13
2.45	40	480	17.51	2.38E+08	8.67E+14	2.56E+15	2.14E+13
2.45	42	480	20.45	2.57E+08	8.28E+14	2.47E+15	1.51E+13
2.45	44	480	23.31	2.75E+08	7.98E+14	2.38E+15	1.08E+13
2.73	20	480	4.61	1.62E+07	1.11E+15	3.58E+15	6.02E+13
2.73	22	480	4.96	2.45E+07	1.15E+15	3.52E+15	6.27E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
2.73	24	480	5.48	3.56E+07	1.17E+15	3.46E+15	6.35E+13
2.73	26	480	5.97	5.00E+07	1.19E+15	3.38E+15	6.39E+13
2.73	28	480	6.69	6.76E+07	1.17E+15	3.29E+15	6.22E+13
2.73	30	480	7.57	8.83E+07	1.15E+15	3.19E+15	5.89E+13
2.73	32	480	8.68	1.12E+08	1.11E+15	3.08E+15	5.39E+13
2.73	34	480	10.16	1.37E+08	1.05E+15	2.96E+15	4.67E+13
2.73	36	480	12.10	1.61E+08	9.80E+14	2.84E+15	3.80E+13
2.73	38	480	14.45	1.84E+08	9.25E+14	2.73E+15	2.93E+13
2.73	40	480	17.16	2.04E+08	8.78E+14	2.63E+15	2.14E+13
2.73	42	480	19.96	2.23E+08	8.42E+14	2.53E+15	1.54E+13
2.73	44	480	22.87	2.40E+08	8.09E+14	2.45E+15	1.09E+13
3.03	20	480	4.57	1.29E+07	1.10E+15	3.60E+15	5.75E+13
3.03	22	480	4.92	1.96E+07	1.14E+15	3.54E+15	5.98E+13
3.03	24	480	5.43	2.86E+07	1.16E+15	3.47E+15	6.07E+13
3.03	26	480	5.92	4.04E+07	1.18E+15	3.41E+15	6.12E+13
3.03	28	480	6.63	5.49E+07	1.17E+15	3.32E+15	5.96E+13
3.03	30	480	7.48	7.22E+07	1.15E+15	3.23E+15	5.67E+13
3.03	32	480	8.57	9.19E+07	1.11E+15	3.13E+15	5.21E+13
3.03	34	480	9.96	1.13E+08	1.05E+15	3.02E+15	4.57E+13
3.03	36	480	11.82	1.35E+08	9.92E+14	2.90E+15	3.76E+13
3.03	38	480	14.15	1.55E+08	9.35E+14	2.79E+15	2.89E+13
3.03	40	480	16.78	1.74E+08	8.90E+14	2.69E+15	2.14E+13
3.03	42	480	19.62	1.91E+08	8.52E+14	2.59E+15	1.54E+13
3.03	44	480	22.43	2.07E+08	8.21E+14	2.51E+15	1.11E+13
3.03	46	480	25.26	2.22E+08	7.94E+14	2.42E+15	7.95E+12
3.03	48	480	28.00	2.36E+08	7.69E+14	2.35E+15	5.75E+12
3.03	50	480	30.63	2.51E+08	7.47E+14	2.28E+15	4.22E+12
3.03	52	480	33.28	2.63E+08	7.25E+14	2.21E+15	3.09E+12
3.4	26	480	5.88	3.15E+07	1.17E+15	3.43E+15	5.80E+13
3.4	28	480	6.56	4.31E+07	1.16E+15	3.36E+15	5.69E+13
3.4	30	480	7.38	5.71E+07	1.15E+15	3.28E+15	5.43E+13
3.4	32	480	8.45	7.31E+07	1.11E+15	3.17E+15	5.00E+13
3.4	34	480	9.82	9.08E+07	1.06E+15	3.07E+15	4.40E+13
3.4	36	480	11.63	1.09E+08	1.00E+15	2.97E+15	3.65E+13
3.4	38	480	13.82	1.27E+08	9.48E+14	2.86E+15	2.87E+13
3.4	40	480	16.46	1.43E+08	9.01E+14	2.76E+15	2.12E+13
3.4	42	480	19.26	1.58E+08	8.63E+14	2.66E+15	1.53E+13
3.4	44	480	21.99	1.73E+08	8.33E+14	2.57E+15	1.11E+13
3.4	46	480	24.82	1.86E+08	8.05E+14	2.49E+15	7.99E+12
3.4	48	480	27.55	2.00E+08	7.80E+14	2.41E+15	5.80E+12
3.4	50	480	30.19	2.13E+08	7.58E+14	2.34E+15	4.26E+12
3.4	52	480	32.84	2.25E+08	7.36E+14	2.27E+15	3.12E+12
3.65	34	480	9.75	7.86E+07	1.06E+15	3.10E+15	4.29E+13
3.65	36	480	11.53	9.48E+07	1.00E+15	3.00E+15	3.57E+13
3.65	38	480	13.72	1.11E+08	9.51E+14	2.89E+15	2.80E+13
3.65	40	480	16.25	1.26E+08	9.07E+14	2.79E+15	2.10E+13
3.65	42	480	18.96	1.40E+08	8.71E+14	2.70E+15	1.54E+13
3.65	44	480	21.76	1.53E+08	8.40E+14	2.62E+15	1.11E+13
3.65	46	480	24.59	1.66E+08	8.11E+14	2.53E+15	7.96E+12
3.65	48	480	27.22	1.79E+08	7.88E+14	2.46E+15	5.86E+12
3.65	50	480	29.97	1.91E+08	7.64E+14	2.38E+15	4.24E+12

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
3.65	52	480	32.50	2.03E+08	7.43E+14	2.31E+15	3.15E+12
3.81	34	480	9.71	7.19E+07	1.06E+15	3.12E+15	4.22E+13
3.81	36	480	11.47	8.69E+07	1.01E+15	3.01E+15	3.52E+13
3.81	38	480	13.64	1.02E+08	9.54E+14	2.92E+15	2.78E+13
3.81	40	480	16.15	1.16E+08	9.11E+14	2.82E+15	2.09E+13
3.81	42	480	18.78	1.30E+08	8.76E+14	2.73E+15	1.55E+13
3.81	44	480	21.59	1.42E+08	8.44E+14	2.64E+15	1.11E+13
3.81	46	480	24.37	1.54E+08	8.16E+14	2.56E+15	8.03E+12
3.81	48	480	27.11	1.66E+08	7.92E+14	2.48E+15	5.82E+12
3.81	50	480	29.84	1.78E+08	7.67E+14	2.40E+15	4.22E+12
3.81	52	480	32.35	1.90E+08	7.47E+14	2.34E+15	3.15E+12
4	34	480	9.63	6.49E+07	1.06E+15	3.14E+15	4.16E+13
4	36	480	11.38	7.86E+07	1.01E+15	3.04E+15	3.47E+13
4	38	480	13.51	9.24E+07	9.59E+14	2.94E+15	2.76E+13
4	40	480	15.95	1.06E+08	9.17E+14	2.85E+15	2.08E+13
4	42	480	18.66	1.18E+08	8.80E+14	2.76E+15	1.53E+13
4	44	480	21.43	1.30E+08	8.49E+14	2.67E+15	1.11E+13
4	46	480	24.15	1.42E+08	8.22E+14	2.59E+15	8.06E+12
4	48	480	27.00	1.53E+08	7.95E+14	2.50E+15	5.76E+12
4	50	480	29.63	1.64E+08	7.72E+14	2.43E+15	4.24E+12
4	52	480	32.19	1.75E+08	7.52E+14	2.36E+15	3.14E+12
4.08	34	480	9.62	6.22E+07	1.06E+15	3.14E+15	4.12E+13
4.08	36	480	11.36	7.54E+07	1.01E+15	3.05E+15	3.45E+13
4.08	38	480	13.47	8.87E+07	9.60E+14	2.95E+15	2.74E+13
4.08	40	480	15.95	1.01E+08	9.16E+14	2.85E+15	2.06E+13
4.08	42	480	18.62	1.14E+08	8.81E+14	2.77E+15	1.52E+13
4.08	44	480	21.43	1.25E+08	8.49E+14	2.67E+15	1.10E+13
4.08	46	480	24.04	1.37E+08	8.25E+14	2.60E+15	8.09E+12
4.08	48	480	26.89	1.48E+08	7.97E+14	2.51E+15	5.79E+12
4.08	50	480	29.52	1.59E+08	7.74E+14	2.45E+15	4.26E+12
4.08	52	480	32.07	1.70E+08	7.54E+14	2.38E+15	3.15E+12
4.2	38	480	13.43	8.35E+07	9.62E+14	2.97E+15	2.72E+13
4.2	40	480	15.94	9.55E+07	9.17E+14	2.86E+15	2.04E+13
4.2	42	480	18.55	1.07E+08	8.83E+14	2.78E+15	1.51E+13
4.2	44	480	21.28	1.19E+08	8.53E+14	2.69E+15	1.10E+13
4.2	46	480	24.04	1.30E+08	8.25E+14	2.61E+15	7.97E+12
4.2	48	480	26.77	1.40E+08	8.00E+14	2.53E+15	5.80E+12
4.2	50	480	29.46	1.51E+08	7.76E+14	2.46E+15	4.23E+12
4.2	52	480	31.95	1.62E+08	7.57E+14	2.39E+15	3.16E+12
4.3	38	480	13.38	7.96E+07	9.63E+14	2.98E+15	2.70E+13
4.3	40	480	15.86	9.12E+07	9.20E+14	2.88E+15	2.04E+13
4.3	42	480	18.50	1.02E+08	8.85E+14	2.79E+15	1.50E+13
4.3	44	480	21.20	1.13E+08	8.55E+14	2.71E+15	1.10E+13
4.3	46	480	23.93	1.24E+08	8.28E+14	2.63E+15	7.99E+12
4.3	48	480	26.66	1.34E+08	8.03E+14	2.55E+15	5.81E+12
4.3	50	480	29.34	1.45E+08	7.80E+14	2.48E+15	4.25E+12
4.3	52	480	31.94	1.55E+08	7.57E+14	2.40E+15	3.13E+12
4.48	38	480	13.32	7.29E+07	9.64E+14	3.00E+15	2.66E+13
4.48	40	480	15.76	8.38E+07	9.23E+14	2.90E+15	2.02E+13
4.48	42	480	18.39	9.44E+07	8.88E+14	2.82E+15	1.50E+13
4.48	44	480	21.09	1.05E+08	8.58E+14	2.73E+15	1.09E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
4.48	46	480	23.81	1.15E+08	8.32E+14	2.65E+15	7.95E+12
4.48	48	480	26.44	1.25E+08	8.08E+14	2.58E+15	5.86E+12
4.48	50	480	29.09	1.35E+08	7.86E+14	2.50E+15	4.29E+12
4.48	52	480	31.82	1.44E+08	7.61E+14	2.42E+15	3.12E+12
2.05	16	540	3.67	1.13E+07	1.12E+15	4.14E+15	6.41E+13
2.05	18	540	3.93	1.87E+07	1.20E+15	4.09E+15	6.88E+13
2.05	20	540	4.29	2.93E+07	1.25E+15	4.04E+15	7.22E+13
2.05	42	540	15.99	3.81E+08	9.58E+14	2.74E+15	2.89E+13
2.05	44	540	18.63	4.07E+08	9.13E+14	2.64E+15	2.12E+13
2.45	16	540	3.62	7804201	1.10E+15	4.16E+15	5.91E+13
2.45	18	540	3.89	1.30E+07	1.18E+15	4.12E+15	6.36E+13
2.45	20	540	4.21	2.06E+07	1.23E+15	4.06E+15	6.71E+13
2.45	22	540	4.59	3.11E+07	1.27E+15	4.00E+15	6.97E+13
2.45	24	540	4.92	4.53E+07	1.32E+15	3.93E+15	7.22E+13
2.45	26	540	5.38	6.32E+07	1.34E+15	3.85E+15	7.31E+13
2.45	28	540	5.85	8.56E+07	1.35E+15	3.76E+15	7.32E+13
2.45	30	540	6.49	1.12E+08	1.34E+15	3.65E+15	7.17E+13
2.45	32	540	7.19	1.43E+08	1.31E+15	3.54E+15	6.91E+13
2.45	34	540	8.12	1.77E+08	1.25E+15	3.40E+15	6.44E+13
2.45	36	540	9.33	2.13E+08	1.19E+15	3.26E+15	5.77E+13
2.45	38	540	10.92	2.49E+08	1.12E+15	3.12E+15	4.89E+13
2.45	40	540	12.91	2.82E+08	1.04E+15	2.99E+15	3.92E+13
2.45	42	540	15.25	3.12E+08	9.87E+14	2.87E+15	3.00E+13
2.45	44	540	17.81	3.37E+08	9.40E+14	2.76E+15	2.23E+13
2.73	20	540	4.16	1.64E+07	1.22E+15	4.08E+15	6.40E+13
2.73	22	540	4.55	2.49E+07	1.27E+15	4.02E+15	6.65E+13
2.73	24	540	4.88	3.64E+07	1.31E+15	3.96E+15	6.89E+13
2.73	26	540	5.32	5.12E+07	1.33E+15	3.88E+15	6.99E+13
2.73	28	540	5.79	6.98E+07	1.34E+15	3.80E+15	7.03E+13
2.73	30	540	6.41	9.22E+07	1.34E+15	3.69E+15	6.89E+13
2.73	32	540	7.07	1.18E+08	1.31E+15	3.59E+15	6.68E+13
2.73	34	540	7.95	1.48E+08	1.27E+15	3.47E+15	6.28E+13
2.73	36	540	9.14	1.80E+08	1.20E+15	3.33E+15	5.64E+13
2.73	38	540	10.67	2.12E+08	1.13E+15	3.20E+15	4.83E+13
2.73	40	540	12.54	2.42E+08	1.06E+15	3.07E+15	3.94E+13
2.73	42	540	14.85	2.70E+08	1.00E+15	2.94E+15	3.03E+13
2.73	44	540	17.32	2.94E+08	9.58E+14	2.84E+15	2.28E+13
3.03	20	540	4.12	1.31E+07	1.20E+15	4.09E+15	6.11E+13
3.03	22	540	4.50	1.99E+07	1.25E+15	4.03E+15	6.35E+13
3.03	24	540	4.84	2.92E+07	1.29E+15	3.97E+15	6.57E+13
3.03	26	540	5.25	4.14E+07	1.32E+15	3.91E+15	6.71E+13
3.03	28	540	5.74	5.67E+07	1.33E+15	3.82E+15	6.73E+13
3.03	30	540	6.32	7.53E+07	1.33E+15	3.74E+15	6.64E+13
3.03	32	540	6.97	9.74E+07	1.31E+15	3.64E+15	6.45E+13
3.03	34	540	7.86	1.23E+08	1.27E+15	3.52E+15	6.06E+13
3.03	36	540	8.95	1.50E+08	1.21E+15	3.40E+15	5.51E+13
3.03	38	540	10.43	1.78E+08	1.15E+15	3.27E+15	4.76E+13
3.03	40	540	12.24	2.06E+08	1.08E+15	3.14E+15	3.92E+13
3.03	42	540	14.47	2.31E+08	1.02E+15	3.02E+15	3.05E+13
3.03	44	540	16.90	2.54E+08	9.73E+14	2.91E+15	2.30E+13
3.03	46	540	19.44	2.75E+08	9.34E+14	2.82E+15	1.71E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
3.03	48	540	22.10	2.93E+08	9.00E+14	2.73E+15	1.25E+13
3.03	50	540	24.69	3.11E+08	8.71E+14	2.64E+15	9.23E+12
3.03	52	540	27.21	3.28E+08	8.45E+14	2.56E+15	6.84E+12
3.4	26	540	5.19	3.23E+07	1.31E+15	3.93E+15	6.38E+13
3.4	28	540	5.67	4.45E+07	1.33E+15	3.86E+15	6.41E+13
3.4	30	540	6.23	5.95E+07	1.33E+15	3.77E+15	6.34E+13
3.4	32	540	6.89	7.73E+07	1.31E+15	3.68E+15	6.15E+13
3.4	34	540	7.75	9.80E+07	1.27E+15	3.57E+15	5.81E+13
3.4	36	540	8.81	1.21E+08	1.22E+15	3.46E+15	5.32E+13
3.4	38	540	10.15	1.45E+08	1.17E+15	3.35E+15	4.67E+13
3.4	40	540	11.91	1.69E+08	1.10E+15	3.23E+15	3.87E+13
3.4	42	540	14.01	1.92E+08	1.04E+15	3.11E+15	3.07E+13
3.4	44	540	16.49	2.12E+08	9.88E+14	2.99E+15	2.31E+13
3.4	46	540	18.99	2.31E+08	9.49E+14	2.89E+15	1.72E+13
3.4	48	540	21.51	2.49E+08	9.17E+14	2.81E+15	1.28E+13
3.4	50	540	24.06	2.66E+08	8.88E+14	2.72E+15	9.51E+12
3.4	52	540	26.62	2.82E+08	8.62E+14	2.64E+15	7.05E+12
3.65	34	540	7.67	8.48E+07	1.27E+15	3.61E+15	5.66E+13
3.65	36	540	8.72	1.05E+08	1.22E+15	3.50E+15	5.20E+13
3.65	38	540	10.04	1.27E+08	1.16E+15	3.38E+15	4.58E+13
3.65	40	540	11.79	1.48E+08	1.10E+15	3.27E+15	3.80E+13
3.65	42	540	13.79	1.69E+08	1.05E+15	3.16E+15	3.05E+13
3.65	44	540	16.16	1.88E+08	1.00E+15	3.05E+15	2.32E+13
3.65	46	540	18.63	2.06E+08	9.60E+14	2.95E+15	1.75E+13
3.65	48	540	21.22	2.23E+08	9.27E+14	2.86E+15	1.29E+13
3.65	50	540	23.76	2.39E+08	8.97E+14	2.77E+15	9.59E+12
3.65	52	540	26.32	2.54E+08	8.70E+14	2.69E+15	7.10E+12
3.81	34	540	7.63	7.75E+07	1.27E+15	3.63E+15	5.58E+13
3.81	36	540	8.66	9.62E+07	1.23E+15	3.53E+15	5.13E+13
3.81	38	540	9.98	1.16E+08	1.17E+15	3.41E+15	4.51E+13
3.81	40	540	11.67	1.36E+08	1.11E+15	3.30E+15	3.78E+13
3.81	42	540	13.70	1.56E+08	1.05E+15	3.19E+15	3.02E+13
3.81	44	540	15.99	1.75E+08	1.00E+15	3.08E+15	2.32E+13
3.81	46	540	18.54	1.91E+08	9.64E+14	2.98E+15	1.74E+13
3.81	48	540	21.02	2.08E+08	9.32E+14	2.89E+15	1.30E+13
3.81	50	540	23.60	2.23E+08	9.02E+14	2.80E+15	9.61E+12
3.81	52	540	26.12	2.38E+08	8.76E+14	2.72E+15	7.13E+12
4	34	540	7.59	6.98E+07	1.27E+15	3.65E+15	5.47E+13
4	36	540	8.60	8.70E+07	1.23E+15	3.55E+15	5.04E+13
4	38	540	9.90	1.05E+08	1.17E+15	3.44E+15	4.46E+13
4	40	540	11.60	1.24E+08	1.11E+15	3.32E+15	3.73E+13
4	42	540	13.54	1.42E+08	1.06E+15	3.22E+15	3.02E+13
4	44	540	15.84	1.60E+08	1.01E+15	3.11E+15	2.32E+13
4	46	540	18.33	1.76E+08	9.71E+14	3.01E+15	1.74E+13
4	48	540	20.83	1.91E+08	9.38E+14	2.92E+15	1.30E+13
4	50	540	23.42	2.06E+08	9.08E+14	2.83E+15	9.58E+12
4	52	540	25.84	2.20E+08	8.83E+14	2.75E+15	7.23E+12
4.08	34	540	7.57	6.69E+07	1.28E+15	3.66E+15	5.43E+13
4.08	36	540	8.59	8.33E+07	1.23E+15	3.55E+15	5.00E+13
4.08	38	540	9.89	1.01E+08	1.18E+15	3.45E+15	4.41E+13
4.08	40	540	11.54	1.19E+08	1.12E+15	3.34E+15	3.72E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
4.08	42	540	13.54	1.37E+08	1.06E+15	3.23E+15	2.98E+13
4.08	44	540	15.76	1.54E+08	1.01E+15	3.13E+15	2.32E+13
4.08	46	540	18.26	1.69E+08	9.73E+14	3.03E+15	1.73E+13
4.08	48	540	20.74	1.85E+08	9.41E+14	2.94E+15	1.30E+13
4.08	50	540	23.33	1.99E+08	9.10E+14	2.85E+15	9.60E+12
4.08	52	540	25.82	2.13E+08	8.84E+14	2.76E+15	7.18E+12
4.2	38	540	9.81	9.52E+07	1.18E+15	3.46E+15	4.40E+13
4.2	40	540	11.45	1.12E+08	1.12E+15	3.36E+15	3.71E+13
4.2	42	540	13.43	1.29E+08	1.06E+15	3.25E+15	2.98E+13
4.2	44	540	15.74	1.45E+08	1.02E+15	3.14E+15	2.29E+13
4.2	46	540	18.16	1.60E+08	9.76E+14	3.04E+15	1.74E+13
4.2	48	540	20.65	1.75E+08	9.44E+14	2.96E+15	1.30E+13
4.2	50	540	23.24	1.89E+08	9.13E+14	2.86E+15	9.59E+12
4.2	52	540	25.66	2.03E+08	8.89E+14	2.79E+15	7.23E+12
4.3	38	540	9.79	9.06E+07	1.18E+15	3.48E+15	4.36E+13
4.3	40	540	11.42	1.07E+08	1.12E+15	3.37E+15	3.68E+13
4.3	42	540	13.36	1.23E+08	1.07E+15	3.27E+15	2.97E+13
4.3	44	540	15.61	1.39E+08	1.02E+15	3.16E+15	2.30E+13
4.3	46	540	18.08	1.54E+08	9.80E+14	3.06E+15	1.73E+13
4.3	48	540	20.56	1.68E+08	9.47E+14	2.97E+15	1.30E+13
4.3	50	540	23.06	1.82E+08	9.18E+14	2.88E+15	9.69E+12
4.3	52	540	25.58	1.95E+08	8.91E+14	2.80E+15	7.22E+12
4.48	38	540	9.75	8.29E+07	1.18E+15	3.49E+15	4.29E+13
4.48	40	540	11.32	9.84E+07	1.13E+15	3.40E+15	3.65E+13
4.48	42	540	13.30	1.13E+08	1.07E+15	3.28E+15	2.94E+13
4.48	44	540	15.49	1.28E+08	1.03E+15	3.19E+15	2.29E+13
4.48	46	540	17.90	1.42E+08	9.85E+14	3.09E+15	1.73E+13
4.48	48	540	20.42	1.55E+08	9.52E+14	3.00E+15	1.30E+13
4.48	50	540	22.88	1.69E+08	9.24E+14	2.92E+15	9.72E+12
4.48	52	540	25.42	1.81E+08	8.95E+14	2.83E+15	7.22E+12
2.05	16	600	3.42	1.14E+07	1.21E+15	4.63E+15	6.64E+13
2.05	18	600	3.71	1.89E+07	1.29E+15	4.58E+15	7.12E+13
2.05	20	600	3.94	2.97E+07	1.35E+15	4.53E+15	7.57E+13
2.05	42	600	12.28	4.38E+08	1.14E+15	3.14E+15	4.75E+13
2.05	44	600	14.42	4.76E+08	1.07E+15	3.01E+15	3.71E+13
2.45	16	600	3.36	7897128	1.18E+15	4.65E+15	6.13E+13
2.45	18	600	3.65	1.32E+07	1.26E+15	4.61E+15	6.58E+13
2.45	20	600	3.89	2.09E+07	1.34E+15	4.55E+15	7.01E+13
2.45	22	600	4.19	3.16E+07	1.39E+15	4.50E+15	7.35E+13
2.45	24	600	4.55	4.59E+07	1.44E+15	4.42E+15	7.60E+13
2.45	26	600	4.87	6.44E+07	1.48E+15	4.34E+15	7.83E+13
2.45	28	600	5.26	8.75E+07	1.50E+15	4.25E+15	7.95E+13
2.45	30	600	5.74	1.15E+08	1.51E+15	4.15E+15	7.93E+13
2.45	32	600	6.25	1.48E+08	1.50E+15	4.03E+15	7.84E+13
2.45	34	600	6.89	1.86E+08	1.46E+15	3.90E+15	7.60E+13
2.45	36	600	7.70	2.27E+08	1.40E+15	3.76E+15	7.17E+13
2.45	38	600	8.70	2.71E+08	1.34E+15	3.61E+15	6.58E+13
2.45	40	600	9.96	3.15E+08	1.26E+15	3.45E+15	5.80E+13
2.45	42	600	11.66	3.56E+08	1.18E+15	3.30E+15	4.84E+13
2.45	44	600	13.67	3.93E+08	1.11E+15	3.16E+15	3.85E+13
2.73	20	600	3.86	1.66E+07	1.31E+15	4.57E+15	6.68E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
2.73	22	600	4.14	2.53E+07	1.38E+15	4.52E+15	7.03E+13
2.73	24	600	4.50	3.69E+07	1.42E+15	4.45E+15	7.27E+13
2.73	26	600	4.82	5.22E+07	1.46E+15	4.38E+15	7.49E+13
2.73	28	600	5.19	7.14E+07	1.49E+15	4.29E+15	7.63E+13
2.73	30	600	5.68	9.46E+07	1.50E+15	4.19E+15	7.61E+13
2.73	32	600	6.15	1.23E+08	1.50E+15	4.09E+15	7.57E+13
2.73	34	600	6.78	1.55E+08	1.47E+15	3.97E+15	7.35E+13
2.73	36	600	7.56	1.91E+08	1.42E+15	3.83E+15	6.98E+13
2.73	38	600	8.53	2.29E+08	1.36E+15	3.68E+15	6.44E+13
2.73	40	600	9.75	2.69E+08	1.28E+15	3.54E+15	5.72E+13
2.73	42	600	11.27	3.08E+08	1.20E+15	3.39E+15	4.88E+13
2.73	44	600	13.22	3.43E+08	1.13E+15	3.25E+15	3.92E+13
3.03	20	600	3.83	1.33E+07	1.30E+15	4.58E+15	6.36E+13
3.03	22	600	4.09	2.02E+07	1.36E+15	4.53E+15	6.71E+13
3.03	24	600	4.46	2.97E+07	1.41E+15	4.47E+15	6.94E+13
3.03	26	600	4.78	4.21E+07	1.45E+15	4.40E+15	7.16E+13
3.03	28	600	5.12	5.79E+07	1.48E+15	4.32E+15	7.32E+13
3.03	30	600	5.61	7.73E+07	1.49E+15	4.24E+15	7.31E+13
3.03	32	600	6.06	1.01E+08	1.49E+15	4.14E+15	7.30E+13
3.03	34	600	6.70	1.28E+08	1.47E+15	4.02E+15	7.09E+13
3.03	36	600	7.44	1.59E+08	1.43E+15	3.89E+15	6.77E+13
3.03	38	600	8.33	1.93E+08	1.37E+15	3.77E+15	6.30E+13
3.03	40	600	9.50	2.28E+08	1.30E+15	3.63E+15	5.65E+13
3.03	42	600	10.96	2.63E+08	1.22E+15	3.48E+15	4.84E+13
3.03	44	600	12.77	2.96E+08	1.15E+15	3.35E+15	3.98E+13
3.03	46	600	14.88	3.26E+08	1.10E+15	3.23E+15	3.12E+13
3.03	48	600	17.23	3.51E+08	1.05E+15	3.11E+15	2.38E+13
3.03	50	600	19.62	3.75E+08	1.00E+15	3.01E+15	1.80E+13
3.03	52	600	22.10	3.96E+08	9.71E+14	2.91E+15	1.34E+13
3.4	26	600	4.73	3.29E+07	1.43E+15	4.43E+15	6.80E+13
3.4	28	600	5.03	4.55E+07	1.47E+15	4.35E+15	6.99E+13
3.4	30	600	5.54	6.10E+07	1.49E+15	4.27E+15	6.97E+13
3.4	32	600	5.96	8.00E+07	1.49E+15	4.19E+15	6.98E+13
3.4	34	600	6.60	1.02E+08	1.47E+15	4.08E+15	6.79E+13
3.4	36	600	7.29	1.28E+08	1.43E+15	3.96E+15	6.52E+13
3.4	38	600	8.16	1.56E+08	1.38E+15	3.84E+15	6.11E+13
3.4	40	600	9.27	1.86E+08	1.32E+15	3.71E+15	5.52E+13
3.4	42	600	10.68	2.17E+08	1.24E+15	3.58E+15	4.78E+13
3.4	44	600	12.39	2.46E+08	1.18E+15	3.44E+15	3.98E+13
3.4	46	600	14.42	2.74E+08	1.12E+15	3.33E+15	3.16E+13
3.4	48	600	16.65	2.98E+08	1.07E+15	3.21E+15	2.45E+13
3.4	50	600	19.08	3.20E+08	1.03E+15	3.10E+15	1.83E+13
3.4	52	600	21.49	3.41E+08	9.90E+14	3.01E+15	1.38E+13
3.65	34	600	6.53	8.84E+07	1.47E+15	4.11E+15	6.61E+13
3.65	36	600	7.19	1.11E+08	1.44E+15	4.01E+15	6.38E+13
3.65	38	600	8.03	1.36E+08	1.39E+15	3.88E+15	5.98E+13
3.65	40	600	9.12	1.63E+08	1.32E+15	3.76E+15	5.43E+13
3.65	42	600	10.50	1.91E+08	1.26E+15	3.63E+15	4.74E+13
3.65	44	600	12.16	2.18E+08	1.19E+15	3.50E+15	3.96E+13
3.65	46	600	14.15	2.43E+08	1.13E+15	3.38E+15	3.16E+13
3.65	48	600	16.36	2.67E+08	1.08E+15	3.27E+15	2.45E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
3.65	50	600	18.68	2.88E+08	1.04E+15	3.17E+15	1.87E+13
3.65	52	600	21.03	3.09E+08	1.00E+15	3.08E+15	1.42E+13
3.81	34	600	6.49	8.08E+07	1.47E+15	4.13E+15	6.51E+13
3.81	36	600	7.14	1.02E+08	1.44E+15	4.03E+15	6.29E+13
3.81	38	600	7.98	1.25E+08	1.39E+15	3.91E+15	5.90E+13
3.81	40	600	9.00	1.50E+08	1.33E+15	3.80E+15	5.40E+13
3.81	42	600	10.40	1.76E+08	1.27E+15	3.66E+15	4.69E+13
3.81	44	600	12.04	2.02E+08	1.20E+15	3.54E+15	3.93E+13
3.81	46	600	13.96	2.26E+08	1.14E+15	3.43E+15	3.17E+13
3.81	48	600	16.16	2.49E+08	1.09E+15	3.30E+15	2.47E+13
3.81	50	600	18.47	2.69E+08	1.05E+15	3.21E+15	1.89E+13
3.81	52	600	20.87	2.88E+08	1.01E+15	3.11E+15	1.43E+13
4	34	600	6.45	7.28E+07	1.47E+15	4.15E+15	6.38E+13
4	36	600	7.08	9.19E+07	1.44E+15	4.05E+15	6.18E+13
4	38	600	7.91	1.13E+08	1.39E+15	3.94E+15	5.82E+13
4	40	600	8.97	1.36E+08	1.34E+15	3.82E+15	5.28E+13
4	42	600	10.31	1.60E+08	1.27E+15	3.70E+15	4.63E+13
4	44	600	11.92	1.84E+08	1.21E+15	3.57E+15	3.90E+13
4	46	600	13.82	2.07E+08	1.14E+15	3.46E+15	3.16E+13
4	48	600	15.94	2.29E+08	1.10E+15	3.35E+15	2.48E+13
4	50	600	18.24	2.49E+08	1.05E+15	3.24E+15	1.90E+13
4	52	600	20.62	2.67E+08	1.02E+15	3.15E+15	1.44E+13
4.08	34	600	6.43	6.97E+07	1.47E+15	4.16E+15	6.33E+13
4.08	36	600	7.07	8.81E+07	1.44E+15	4.05E+15	6.13E+13
4.08	38	600	7.89	1.09E+08	1.40E+15	3.95E+15	5.77E+13
4.08	40	600	8.91	1.31E+08	1.34E+15	3.84E+15	5.28E+13
4.08	42	600	10.26	1.54E+08	1.28E+15	3.71E+15	4.62E+13
4.08	44	600	11.87	1.78E+08	1.21E+15	3.59E+15	3.89E+13
4.08	46	600	13.71	2.00E+08	1.15E+15	3.48E+15	3.18E+13
4.08	48	600	15.87	2.21E+08	1.10E+15	3.36E+15	2.48E+13
4.08	50	600	18.18	2.40E+08	1.06E+15	3.26E+15	1.90E+13
4.08	52	600	20.49	2.59E+08	1.02E+15	3.17E+15	1.45E+13
4.2	38	600	7.86	1.02E+08	1.40E+15	3.97E+15	5.71E+13
4.2	40	600	8.90	1.23E+08	1.34E+15	3.85E+15	5.20E+13
4.2	42	600	10.17	1.46E+08	1.28E+15	3.73E+15	4.60E+13
4.2	44	600	11.76	1.68E+08	1.21E+15	3.62E+15	3.89E+13
4.2	46	600	13.64	1.89E+08	1.15E+15	3.50E+15	3.15E+13
4.2	48	600	15.78	2.10E+08	1.11E+15	3.39E+15	2.47E+13
4.2	50	600	18.01	2.29E+08	1.06E+15	3.28E+15	1.91E+13
4.2	52	600	20.37	2.46E+08	1.03E+15	3.19E+15	1.45E+13
4.3	38	600	7.84	9.72E+07	1.39E+15	3.98E+15	5.65E+13
4.3	40	600	8.87	1.18E+08	1.34E+15	3.86E+15	5.16E+13
4.3	42	600	10.13	1.39E+08	1.28E+15	3.75E+15	4.57E+13
4.3	44	600	11.71	1.61E+08	1.22E+15	3.63E+15	3.87E+13
4.3	46	600	13.55	1.81E+08	1.16E+15	3.52E+15	3.16E+13
4.3	48	600	15.65	2.01E+08	1.11E+15	3.41E+15	2.48E+13
4.3	50	600	17.94	2.19E+08	1.06E+15	3.30E+15	1.91E+13
4.3	52	600	20.22	2.37E+08	1.03E+15	3.21E+15	1.46E+13
4.48	38	600	7.80	8.90E+07	1.40E+15	4.00E+15	5.57E+13
4.48	40	600	8.78	1.08E+08	1.35E+15	3.90E+15	5.12E+13
4.48	42	600	10.03	1.28E+08	1.28E+15	3.78E+15	4.53E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
4.48	44	600	11.60	1.48E+08	1.22E+15	3.66E+15	3.85E+13
4.48	46	600	13.42	1.68E+08	1.16E+15	3.55E+15	3.15E+13
4.48	48	600	15.51	1.86E+08	1.12E+15	3.44E+15	2.48E+13
4.48	50	600	17.77	2.03E+08	1.07E+15	3.34E+15	1.91E+13
4.48	52	600	20.04	2.20E+08	1.04E+15	3.24E+15	1.46E+13
2.05	16	660	3.17	1.15E+07	1.30E+15	5.13E+15	6.87E+13
2.05	18	660	3.48	1.91E+07	1.38E+15	5.07E+15	7.35E+13
2.05	20	660	3.73	3.00E+07	1.45E+15	5.02E+15	7.81E+13
2.05	42	660	9.88	4.79E+08	1.35E+15	3.58E+15	6.53E+13
2.05	44	660	11.43	5.33E+08	1.26E+15	3.42E+15	5.52E+13
2.45	16	660	3.11	7990055	1.27E+15	5.15E+15	6.35E+13
2.45	18	660	3.42	1.33E+07	1.35E+15	5.10E+15	6.81E+13
2.45	20	660	3.68	2.11E+07	1.43E+15	5.05E+15	7.24E+13
2.45	22	660	3.90	3.20E+07	1.50E+15	4.99E+15	7.66E+13
2.45	24	660	4.19	4.65E+07	1.55E+15	4.92E+15	7.98E+13
2.45	26	660	4.53	6.53E+07	1.60E+15	4.84E+15	8.22E+13
2.45	28	660	4.82	8.90E+07	1.63E+15	4.75E+15	8.44E+13
2.45	30	660	5.20	1.18E+08	1.66E+15	4.65E+15	8.54E+13
2.45	32	660	5.64	1.52E+08	1.66E+15	4.53E+15	8.53E+13
2.45	34	660	6.08	1.91E+08	1.65E+15	4.40E+15	8.48E+13
2.45	36	660	6.70	2.36E+08	1.60E+15	4.25E+15	8.21E+13
2.45	38	660	7.40	2.84E+08	1.55E+15	4.10E+15	7.84E+13
2.45	40	660	8.27	3.36E+08	1.48E+15	3.93E+15	7.30E+13
2.45	42	660	9.39	3.88E+08	1.40E+15	3.77E+15	6.55E+13
2.45	44	660	10.79	4.38E+08	1.31E+15	3.59E+15	5.65E+13
2.73	20	660	3.64	1.68E+07	1.40E+15	5.06E+15	6.90E+13
2.73	22	660	3.87	2.56E+07	1.48E+15	5.01E+15	7.30E+13
2.73	24	660	4.13	3.75E+07	1.54E+15	4.95E+15	7.64E+13
2.73	26	660	4.47	5.29E+07	1.58E+15	4.87E+15	7.86E+13
2.73	28	660	4.78	7.25E+07	1.62E+15	4.79E+15	8.08E+13
2.73	30	660	5.12	9.66E+07	1.66E+15	4.69E+15	8.21E+13
2.73	32	660	5.57	1.25E+08	1.66E+15	4.59E+15	8.21E+13
2.73	34	660	5.97	1.59E+08	1.65E+15	4.47E+15	8.19E+13
2.73	36	660	6.58	1.98E+08	1.62E+15	4.34E+15	7.97E+13
2.73	38	660	7.24	2.41E+08	1.57E+15	4.18E+15	7.65E+13
2.73	40	660	8.06	2.87E+08	1.50E+15	4.02E+15	7.17E+13
2.73	42	660	9.13	3.34E+08	1.42E+15	3.86E+15	6.49E+13
2.73	44	660	10.48	3.80E+08	1.33E+15	3.70E+15	5.65E+13
3.03	20	660	3.61	1.34E+07	1.39E+15	5.07E+15	6.57E+13
3.03	22	660	3.84	2.05E+07	1.46E+15	5.02E+15	6.96E+13
3.03	24	660	4.07	3.01E+07	1.52E+15	4.96E+15	7.31E+13
3.03	26	660	4.42	4.27E+07	1.57E+15	4.90E+15	7.53E+13
3.03	28	660	4.73	5.88E+07	1.60E+15	4.81E+15	7.73E+13
3.03	30	660	5.04	7.89E+07	1.65E+15	4.74E+15	7.89E+13
3.03	32	660	5.49	1.03E+08	1.65E+15	4.63E+15	7.89E+13
3.03	34	660	5.91	1.32E+08	1.65E+15	4.53E+15	7.88E+13
3.03	36	660	6.48	1.64E+08	1.62E+15	4.39E+15	7.70E+13
3.03	38	660	7.07	2.02E+08	1.58E+15	4.27E+15	7.45E+13
3.03	40	660	7.88	2.42E+08	1.52E+15	4.12E+15	7.01E+13
3.03	42	660	8.89	2.84E+08	1.45E+15	3.96E+15	6.40E+13
3.03	44	660	10.14	3.27E+08	1.37E+15	3.81E+15	5.65E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
3.03	46	660	11.67	3.67E+08	1.29E+15	3.66E+15	4.80E+13
3.03	48	660	13.50	4.04E+08	1.22E+15	3.52E+15	3.90E+13
3.03	50	660	15.60	4.36E+08	1.16E+15	3.39E+15	3.07E+13
3.03	52	660	17.78	4.65E+08	1.10E+15	3.27E+15	2.37E+13
3.4	26	660	4.36	3.33E+07	1.56E+15	4.92E+15	7.16E+13
3.4	28	660	4.68	4.61E+07	1.59E+15	4.85E+15	7.36E+13
3.4	30	660	4.97	6.23E+07	1.64E+15	4.77E+15	7.52E+13
3.4	32	660	5.41	8.17E+07	1.65E+15	4.69E+15	7.54E+13
3.4	34	660	5.83	1.05E+08	1.64E+15	4.58E+15	7.53E+13
3.4	36	660	6.36	1.32E+08	1.63E+15	4.47E+15	7.40E+13
3.4	38	660	6.94	1.63E+08	1.59E+15	4.34E+15	7.19E+13
3.4	40	660	7.72	1.97E+08	1.54E+15	4.21E+15	6.79E+13
3.4	42	660	8.66	2.34E+08	1.47E+15	4.07E+15	6.27E+13
3.4	44	660	9.79	2.71E+08	1.40E+15	3.92E+15	5.61E+13
3.4	46	660	11.28	3.07E+08	1.32E+15	3.77E+15	4.80E+13
3.4	48	660	13.03	3.41E+08	1.24E+15	3.63E+15	3.94E+13
3.4	50	660	14.96	3.73E+08	1.19E+15	3.51E+15	3.17E+13
3.4	52	660	17.09	4.01E+08	1.13E+15	3.39E+15	2.47E+13
3.65	34	660	5.78	9.08E+07	1.65E+15	4.61E+15	7.32E+13
3.65	36	660	6.28	1.15E+08	1.62E+15	4.51E+15	7.23E+13
3.65	38	660	6.86	1.42E+08	1.59E+15	4.40E+15	7.01E+13
3.65	40	660	7.63	1.73E+08	1.54E+15	4.26E+15	6.65E+13
3.65	42	660	8.54	2.05E+08	1.48E+15	4.12E+15	6.15E+13
3.65	44	660	9.64	2.40E+08	1.41E+15	3.99E+15	5.54E+13
3.65	46	660	11.00	2.74E+08	1.33E+15	3.84E+15	4.80E+13
3.65	48	660	12.69	3.06E+08	1.26E+15	3.71E+15	4.00E+13
3.65	50	660	14.61	3.35E+08	1.20E+15	3.58E+15	3.21E+13
3.65	52	660	16.75	3.62E+08	1.15E+15	3.46E+15	2.51E+13
3.81	34	660	5.75	8.30E+07	1.64E+15	4.63E+15	7.19E+13
3.81	36	660	6.23	1.05E+08	1.63E+15	4.53E+15	7.11E+13
3.81	38	660	6.83	1.31E+08	1.60E+15	4.41E+15	6.90E+13
3.81	40	660	7.56	1.59E+08	1.55E+15	4.29E+15	6.56E+13
3.81	42	660	8.44	1.90E+08	1.49E+15	4.16E+15	6.10E+13
3.81	44	660	9.54	2.22E+08	1.42E+15	4.02E+15	5.50E+13
3.81	46	660	10.89	2.54E+08	1.34E+15	3.89E+15	4.78E+13
3.81	48	660	12.54	2.84E+08	1.27E+15	3.75E+15	4.00E+13
3.81	50	660	14.44	3.13E+08	1.21E+15	3.63E+15	3.22E+13
3.81	52	660	16.48	3.39E+08	1.16E+15	3.51E+15	2.55E+13
4	34	660	5.72	7.47E+07	1.64E+15	4.66E+15	7.05E+13
4	36	660	6.19	9.49E+07	1.62E+15	4.55E+15	6.97E+13
4	38	660	6.77	1.18E+08	1.60E+15	4.45E+15	6.78E+13
4	40	660	7.49	1.44E+08	1.55E+15	4.33E+15	6.46E+13
4	42	660	8.36	1.72E+08	1.49E+15	4.20E+15	6.02E+13
4	44	660	9.44	2.02E+08	1.43E+15	4.06E+15	5.44E+13
4	46	660	10.76	2.32E+08	1.35E+15	3.93E+15	4.75E+13
4	48	660	12.35	2.61E+08	1.29E+15	3.80E+15	4.00E+13
4	50	660	14.21	2.89E+08	1.22E+15	3.67E+15	3.24E+13
4	52	660	16.28	3.13E+08	1.17E+15	3.55E+15	2.55E+13
4.08	34	660	5.70	7.16E+07	1.63E+15	4.66E+15	6.99E+13
4.08	36	660	6.17	9.10E+07	1.63E+15	4.56E+15	6.92E+13
4.08	38	660	6.77	1.13E+08	1.60E+15	4.46E+15	6.72E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
4.08	40	660	7.47	1.38E+08	1.56E+15	4.34E+15	6.42E+13
4.08	42	660	8.33	1.66E+08	1.50E+15	4.21E+15	5.98E+13
4.08	44	660	9.38	1.95E+08	1.43E+15	4.08E+15	5.42E+13
4.08	46	660	10.69	2.24E+08	1.36E+15	3.95E+15	4.74E+13
4.08	48	660	12.30	2.52E+08	1.28E+15	3.81E+15	3.98E+13
4.08	50	660	14.14	2.79E+08	1.23E+15	3.69E+15	3.23E+13
4.08	52	660	16.15	3.04E+08	1.17E+15	3.58E+15	2.57E+13
4.2	38	660	6.73	1.07E+08	1.60E+15	4.48E+15	6.65E+13
4.2	40	660	7.42	1.30E+08	1.56E+15	4.36E+15	6.36E+13
4.2	42	660	8.26	1.56E+08	1.50E+15	4.23E+15	5.95E+13
4.2	44	660	9.31	1.84E+08	1.43E+15	4.11E+15	5.39E+13
4.2	46	660	10.62	2.12E+08	1.36E+15	3.98E+15	4.72E+13
4.2	48	660	12.19	2.39E+08	1.29E+15	3.84E+15	3.98E+13
4.2	50	660	14.02	2.65E+08	1.23E+15	3.71E+15	3.24E+13
4.2	52	660	16.02	2.89E+08	1.19E+15	3.60E+15	2.57E+13
4.3	38	660	6.71	1.01E+08	1.60E+15	4.49E+15	6.59E+13
4.3	40	660	7.40	1.24E+08	1.56E+15	4.37E+15	6.30E+13
4.3	42	660	8.22	1.49E+08	1.50E+15	4.25E+15	5.90E+13
4.3	44	660	9.28	1.76E+08	1.44E+15	4.13E+15	5.36E+13
4.3	46	660	10.56	2.03E+08	1.37E+15	4.00E+15	4.70E+13
4.3	48	660	12.09	2.29E+08	1.30E+15	3.86E+15	3.99E+13
4.3	50	660	13.87	2.55E+08	1.24E+15	3.74E+15	3.27E+13
4.3	52	660	15.95	2.77E+08	1.19E+15	3.62E+15	2.57E+13
4.48	38	660	6.68	9.27E+07	1.60E+15	4.50E+15	6.48E+13
4.48	40	660	7.34	1.14E+08	1.56E+15	4.40E+15	6.22E+13
4.48	42	660	8.16	1.37E+08	1.51E+15	4.28E+15	5.83E+13
4.48	44	660	9.18	1.62E+08	1.44E+15	4.16E+15	5.31E+13
4.48	46	660	10.45	1.87E+08	1.38E+15	4.03E+15	4.67E+13
4.48	48	660	11.98	2.12E+08	1.30E+15	3.90E+15	3.95E+13
4.48	50	660	13.75	2.36E+08	1.25E+15	3.78E+15	3.25E+13
4.48	52	660	15.76	2.58E+08	1.20E+15	3.66E+15	2.59E+13
2.05	16	720	2.96	1.17E+07	1.38E+15	5.62E+15	7.08E+13
2.05	18	720	3.25	1.93E+07	1.47E+15	5.56E+15	7.59E+13
2.05	20	720	3.53	3.03E+07	1.54E+15	5.51E+15	8.04E+13
2.05	42	720	8.34	5.08E+08	1.57E+15	4.05E+15	8.03E+13
2.05	44	720	9.45	5.74E+08	1.47E+15	3.86E+15	7.19E+13
2.45	16	720	2.93	8089319	1.35E+15	5.64E+15	6.52E+13
2.45	18	720	3.19	1.35E+07	1.44E+15	5.59E+15	7.03E+13
2.45	20	720	3.47	2.13E+07	1.52E+15	5.54E+15	7.47E+13
2.45	22	720	3.70	3.23E+07	1.59E+15	5.48E+15	7.88E+13
2.45	24	720	3.91	4.70E+07	1.66E+15	5.41E+15	8.29E+13
2.45	26	720	4.19	6.61E+07	1.72E+15	5.33E+15	8.61E+13
2.45	28	720	4.51	9.00E+07	1.76E+15	5.24E+15	8.82E+13
2.45	30	720	4.81	1.19E+08	1.80E+15	5.14E+15	9.01E+13
2.45	32	720	5.13	1.54E+08	1.82E+15	5.03E+15	9.13E+13
2.45	34	720	5.57	1.95E+08	1.81E+15	4.90E+15	9.10E+13
2.45	36	720	5.97	2.42E+08	1.79E+15	4.75E+15	9.05E+13
2.45	38	720	6.55	2.94E+08	1.75E+15	4.59E+15	8.80E+13
2.45	40	720	7.16	3.50E+08	1.69E+15	4.42E+15	8.45E+13
2.45	42	720	7.96	4.09E+08	1.62E+15	4.24E+15	7.92E+13
2.45	44	720	8.96	4.69E+08	1.53E+15	4.05E+15	7.20E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
2.73	20	720	3.43	1.70E+07	1.50E+15	5.56E+15	7.11E+13
2.73	22	720	3.67	2.58E+07	1.58E+15	5.50E+15	7.52E+13
2.73	24	720	3.88	3.78E+07	1.64E+15	5.44E+15	7.92E+13
2.73	26	720	4.12	5.36E+07	1.70E+15	5.37E+15	8.24E+13
2.73	28	720	4.45	7.34E+07	1.75E+15	5.28E+15	8.46E+13
2.73	30	720	4.76	9.79E+07	1.80E+15	5.19E+15	8.63E+13
2.73	32	720	5.04	1.28E+08	1.82E+15	5.08E+15	8.80E+13
2.73	34	720	5.48	1.62E+08	1.81E+15	4.96E+15	8.77E+13
2.73	36	720	5.88	2.03E+08	1.80E+15	4.83E+15	8.75E+13
2.73	38	720	6.43	2.48E+08	1.76E+15	4.68E+15	8.54E+13
2.73	40	720	6.99	2.98E+08	1.72E+15	4.52E+15	8.27E+13
2.73	42	720	7.78	3.51E+08	1.64E+15	4.35E+15	7.77E+13
2.73	44	720	8.71	4.06E+08	1.56E+15	4.17E+15	7.16E+13
3.03	20	720	3.39	1.35E+07	1.48E+15	5.57E+15	6.78E+13
3.03	22	720	3.63	2.07E+07	1.56E+15	5.52E+15	7.17E+13
3.03	24	720	3.85	3.04E+07	1.62E+15	5.46E+15	7.55E+13
3.03	26	720	4.06	4.32E+07	1.69E+15	5.39E+15	7.89E+13
3.03	28	720	4.40	5.95E+07	1.73E+15	5.31E+15	8.10E+13
3.03	30	720	4.71	7.99E+07	1.78E+15	5.23E+15	8.27E+13
3.03	32	720	4.98	1.05E+08	1.81E+15	5.13E+15	8.45E+13
3.03	34	720	5.40	1.34E+08	1.81E+15	5.02E+15	8.45E+13
3.03	36	720	5.81	1.69E+08	1.80E+15	4.89E+15	8.43E+13
3.03	38	720	6.30	2.08E+08	1.77E+15	4.76E+15	8.29E+13
3.03	40	720	6.87	2.51E+08	1.73E+15	4.61E+15	8.04E+13
3.03	42	720	7.60	2.98E+08	1.67E+15	4.45E+15	7.61E+13
3.03	44	720	8.47	3.48E+08	1.59E+15	4.29E+15	7.06E+13
3.03	46	720	9.58	3.97E+08	1.50E+15	4.11E+15	6.34E+13
3.03	48	720	10.87	4.46E+08	1.42E+15	3.95E+15	5.53E+13
3.03	50	720	12.49	4.90E+08	1.33E+15	3.79E+15	4.63E+13
3.03	52	720	14.38	5.28E+08	1.26E+15	3.65E+15	3.72E+13
3.4	26	720	4.00	3.38E+07	1.68E+15	5.42E+15	7.51E+13
3.4	28	720	4.33	4.67E+07	1.71E+15	5.35E+15	7.71E+13
3.4	30	720	4.65	6.30E+07	1.77E+15	5.27E+15	7.88E+13
3.4	32	720	4.92	8.31E+07	1.79E+15	5.18E+15	8.05E+13
3.4	34	720	5.31	1.07E+08	1.80E+15	5.08E+15	8.09E+13
3.4	36	720	5.72	1.35E+08	1.80E+15	4.97E+15	8.07E+13
3.4	38	720	6.17	1.68E+08	1.78E+15	4.84E+15	7.99E+13
3.4	40	720	6.74	2.05E+08	1.74E+15	4.71E+15	7.75E+13
3.4	42	720	7.41	2.45E+08	1.69E+15	4.56E+15	7.41E+13
3.4	44	720	8.21	2.88E+08	1.62E+15	4.41E+15	6.94E+13
3.4	46	720	9.23	3.32E+08	1.54E+15	4.24E+15	6.30E+13
3.4	48	720	10.51	3.75E+08	1.45E+15	4.08E+15	5.52E+13
3.4	50	720	11.96	4.17E+08	1.37E+15	3.93E+15	4.72E+13
3.4	52	720	13.72	4.55E+08	1.30E+15	3.79E+15	3.87E+13
3.65	34	720	5.25	9.27E+07	1.80E+15	5.12E+15	7.87E+13
3.65	36	720	5.66	1.17E+08	1.79E+15	5.01E+15	7.86E+13
3.65	38	720	6.07	1.47E+08	1.78E+15	4.89E+15	7.80E+13
3.65	40	720	6.65	1.79E+08	1.75E+15	4.77E+15	7.58E+13
3.65	42	720	7.29	2.15E+08	1.70E+15	4.63E+15	7.28E+13
3.65	44	720	8.06	2.54E+08	1.63E+15	4.47E+15	6.83E+13
3.65	46	720	9.02	2.95E+08	1.55E+15	4.32E+15	6.26E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
3.65	48	720	10.23	3.35E+08	1.47E+15	4.16E+15	5.54E+13
3.65	50	720	11.68	3.74E+08	1.39E+15	4.01E+15	4.75E+13
3.65	52	720	13.38	4.10E+08	1.32E+15	3.88E+15	3.92E+13
3.81	34	720	5.21	8.47E+07	1.80E+15	5.14E+15	7.74E+13
3.81	36	720	5.63	1.07E+08	1.79E+15	5.03E+15	7.72E+13
3.81	38	720	6.03	1.34E+08	1.78E+15	4.92E+15	7.68E+13
3.81	40	720	6.61	1.64E+08	1.75E+15	4.79E+15	7.46E+13
3.81	42	720	7.22	1.98E+08	1.70E+15	4.66E+15	7.18E+13
3.81	44	720	7.97	2.35E+08	1.64E+15	4.51E+15	6.77E+13
3.81	46	720	8.94	2.73E+08	1.56E+15	4.36E+15	6.19E+13
3.81	48	720	10.09	3.12E+08	1.49E+15	4.22E+15	5.53E+13
3.81	50	720	11.52	3.49E+08	1.41E+15	4.06E+15	4.75E+13
3.81	52	720	13.14	3.84E+08	1.33E+15	3.93E+15	3.96E+13
4	34	720	5.17	7.63E+07	1.79E+15	5.15E+15	7.59E+13
4	36	720	5.60	9.70E+07	1.79E+15	5.05E+15	7.56E+13
4	38	720	5.98	1.22E+08	1.78E+15	4.94E+15	7.54E+13
4	40	720	6.55	1.49E+08	1.75E+15	4.83E+15	7.34E+13
4	42	720	7.15	1.80E+08	1.70E+15	4.70E+15	7.07E+13
4	44	720	7.90	2.14E+08	1.65E+15	4.56E+15	6.68E+13
4	46	720	8.82	2.50E+08	1.58E+15	4.42E+15	6.16E+13
4	48	720	9.95	2.86E+08	1.50E+15	4.27E+15	5.50E+13
4	50	720	11.35	3.21E+08	1.42E+15	4.12E+15	4.75E+13
4	52	720	12.94	3.55E+08	1.35E+15	3.98E+15	3.98E+13
4.08	34	720	5.15	7.30E+07	1.79E+15	5.16E+15	7.53E+13
4.08	36	720	5.58	9.30E+07	1.79E+15	5.06E+15	7.51E+13
4.08	38	720	5.96	1.17E+08	1.79E+15	4.96E+15	7.48E+13
4.08	40	720	6.53	1.43E+08	1.76E+15	4.84E+15	7.28E+13
4.08	42	720	7.11	1.73E+08	1.71E+15	4.72E+15	7.04E+13
4.08	44	720	7.88	2.06E+08	1.65E+15	4.57E+15	6.64E+13
4.08	46	720	8.79	2.40E+08	1.58E+15	4.44E+15	6.12E+13
4.08	48	720	9.89	2.76E+08	1.51E+15	4.29E+15	5.49E+13
4.08	50	720	11.26	3.10E+08	1.43E+15	4.14E+15	4.75E+13
4.08	52	720	12.85	3.43E+08	1.35E+15	4.00E+15	3.98E+13
4.2	38	720	5.94	1.10E+08	1.78E+15	4.98E+15	7.39E+13
4.2	40	720	6.50	1.35E+08	1.75E+15	4.87E+15	7.21E+13
4.2	42	720	7.05	1.64E+08	1.72E+15	4.74E+15	6.98E+13
4.2	44	720	7.82	1.95E+08	1.66E+15	4.61E+15	6.59E+13
4.2	46	720	8.74	2.27E+08	1.58E+15	4.46E+15	6.07E+13
4.2	48	720	9.82	2.61E+08	1.51E+15	4.32E+15	5.46E+13
4.2	50	720	11.17	2.95E+08	1.44E+15	4.17E+15	4.74E+13
4.2	52	720	12.75	3.27E+08	1.36E+15	4.04E+15	3.98E+13
4.3	38	720	5.93	1.04E+08	1.79E+15	4.99E+15	7.32E+13
4.3	40	720	6.48	1.28E+08	1.75E+15	4.87E+15	7.14E+13
4.3	42	720	7.03	1.56E+08	1.71E+15	4.75E+15	6.92E+13
4.3	44	720	7.78	1.86E+08	1.66E+15	4.62E+15	6.54E+13
4.3	46	720	8.69	2.17E+08	1.59E+15	4.48E+15	6.04E+13
4.3	48	720	9.76	2.50E+08	1.52E+15	4.35E+15	5.44E+13
4.3	50	720	11.05	2.83E+08	1.45E+15	4.20E+15	4.75E+13
4.3	52	720	12.62	3.14E+08	1.37E+15	4.07E+15	4.00E+13
4.48	38	720	5.90	9.53E+07	1.78E+15	5.01E+15	7.20E+13
4.48	40	720	6.42	1.18E+08	1.75E+15	4.91E+15	7.04E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
4.48	42	720	6.98	1.43E+08	1.71E+15	4.78E+15	6.82E+13
4.48	44	720	7.74	1.71E+08	1.66E+15	4.65E+15	6.44E+13
4.48	46	720	8.59	2.00E+08	1.60E+15	4.53E+15	5.99E+13
4.48	48	720	9.66	2.31E+08	1.53E+15	4.38E+15	5.40E+13
4.48	50	720	10.93	2.62E+08	1.46E+15	4.24E+15	4.73E+13
4.48	52	720	12.46	2.92E+08	1.38E+15	4.11E+15	4.00E+13
2.05	16	780	2.85	1.18E+07	1.46E+15	6.11E+15	7.22E+13
2.05	18	780	3.03	1.95E+07	1.56E+15	6.05E+15	7.82E+13
2.05	20	780	3.32	3.06E+07	1.64E+15	6.00E+15	8.28E+13
2.05	42	780	7.31	5.29E+08	1.78E+15	4.53E+15	9.22E+13
2.05	44	780	8.10	6.05E+08	1.69E+15	4.33E+15	8.60E+13
2.45	16	780	2.81	8192957	1.43E+15	6.14E+15	6.66E+13
2.45	18	780	2.98	1.36E+07	1.53E+15	6.08E+15	7.24E+13
2.45	20	780	3.25	2.15E+07	1.61E+15	6.03E+15	7.69E+13
2.45	22	780	3.51	3.26E+07	1.69E+15	5.97E+15	8.11E+13
2.45	24	780	3.73	4.74E+07	1.76E+15	5.90E+15	8.52E+13
2.45	26	780	3.92	6.68E+07	1.83E+15	5.82E+15	8.93E+13
2.45	28	780	4.19	9.11E+07	1.88E+15	5.73E+15	9.21E+13
2.45	30	780	4.52	1.21E+08	1.93E+15	5.64E+15	9.41E+13
2.45	32	780	4.79	1.56E+08	1.96E+15	5.53E+15	9.58E+13
2.45	34	780	5.09	1.99E+08	1.97E+15	5.39E+15	9.70E+13
2.45	36	780	5.52	2.46E+08	1.96E+15	5.24E+15	9.64E+13
2.45	38	780	5.90	3.01E+08	1.93E+15	5.09E+15	9.58E+13
2.45	40	780	6.44	3.60E+08	1.88E+15	4.91E+15	9.33E+13
2.45	42	780	6.99	4.25E+08	1.82E+15	4.72E+15	9.02E+13
2.45	44	780	7.77	4.91E+08	1.75E+15	4.52E+15	8.46E+13
2.73	20	780	3.21	1.71E+07	1.59E+15	6.05E+15	7.33E+13
2.73	22	780	3.47	2.61E+07	1.67E+15	5.99E+15	7.75E+13
2.73	24	780	3.69	3.82E+07	1.74E+15	5.93E+15	8.14E+13
2.73	26	780	3.89	5.41E+07	1.81E+15	5.86E+15	8.52E+13
2.73	28	780	4.12	7.43E+07	1.87E+15	5.77E+15	8.84E+13
2.73	30	780	4.46	9.91E+07	1.92E+15	5.69E+15	9.01E+13
2.73	32	780	4.74	1.29E+08	1.95E+15	5.58E+15	9.20E+13
2.73	34	780	5.00	1.65E+08	1.97E+15	5.46E+15	9.36E+13
2.73	36	780	5.42	2.06E+08	1.96E+15	5.32E+15	9.32E+13
2.73	38	780	5.82	2.54E+08	1.94E+15	5.17E+15	9.26E+13
2.73	40	780	6.30	3.06E+08	1.90E+15	5.02E+15	9.09E+13
2.73	42	780	6.87	3.63E+08	1.85E+15	4.83E+15	8.79E+13
2.73	44	780	7.57	4.24E+08	1.78E+15	4.65E+15	8.34E+13
3.03	20	780	3.17	1.37E+07	1.57E+15	6.06E+15	7.00E+13
3.03	22	780	3.43	2.09E+07	1.65E+15	6.01E+15	7.39E+13
3.03	24	780	3.66	3.07E+07	1.72E+15	5.95E+15	7.77E+13
3.03	26	780	3.85	4.36E+07	1.79E+15	5.88E+15	8.14E+13
3.03	28	780	4.06	6.03E+07	1.85E+15	5.80E+15	8.47E+13
3.03	30	780	4.40	8.09E+07	1.91E+15	5.72E+15	8.64E+13
3.03	32	780	4.68	1.06E+08	1.94E+15	5.63E+15	8.82E+13
3.03	34	780	4.94	1.37E+08	1.97E+15	5.52E+15	8.98E+13
3.03	36	780	5.33	1.72E+08	1.96E+15	5.39E+15	8.99E+13
3.03	38	780	5.73	2.12E+08	1.95E+15	5.26E+15	8.96E+13
3.03	40	780	6.17	2.58E+08	1.92E+15	5.11E+15	8.84E+13
3.03	42	780	6.73	3.08E+08	1.87E+15	4.94E+15	8.56E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
3.03	44	780	7.38	3.62E+08	1.80E+15	4.77E+15	8.18E+13
3.03	46	780	8.15	4.19E+08	1.72E+15	4.59E+15	7.66E+13
3.03	48	780	9.13	4.76E+08	1.63E+15	4.41E+15	6.98E+13
3.03	50	780	10.33	5.31E+08	1.54E+15	4.23E+15	6.16E+13
3.03	52	780	11.77	5.82E+08	1.44E+15	4.05E+15	5.26E+13
3.4	26	780	3.82	3.41E+07	1.78E+15	5.91E+15	7.72E+13
3.4	28	780	4.00	4.73E+07	1.83E+15	5.84E+15	8.07E+13
3.4	30	780	4.33	6.38E+07	1.89E+15	5.77E+15	8.23E+13
3.4	32	780	4.62	8.41E+07	1.93E+15	5.68E+15	8.41E+13
3.4	34	780	4.88	1.09E+08	1.95E+15	5.58E+15	8.57E+13
3.4	36	780	5.22	1.38E+08	1.97E+15	5.47E+15	8.63E+13
3.4	38	780	5.63	1.71E+08	1.95E+15	5.34E+15	8.60E+13
3.4	40	780	6.01	2.10E+08	1.93E+15	5.21E+15	8.54E+13
3.4	42	780	6.58	2.53E+08	1.89E+15	5.06E+15	8.29E+13
3.4	44	780	7.15	3.00E+08	1.83E+15	4.90E+15	8.00E+13
3.4	46	780	7.90	3.49E+08	1.76E+15	4.72E+15	7.53E+13
3.4	48	780	8.82	4.00E+08	1.67E+15	4.55E+15	6.92E+13
3.4	50	780	9.90	4.51E+08	1.59E+15	4.38E+15	6.20E+13
3.4	52	780	11.26	4.99E+08	1.49E+15	4.21E+15	5.36E+13
3.65	34	780	4.84	9.41E+07	1.94E+15	5.62E+15	8.32E+13
3.65	36	780	5.16	1.20E+08	1.96E+15	5.51E+15	8.41E+13
3.65	38	780	5.57	1.49E+08	1.95E+15	5.39E+15	8.37E+13
3.65	40	780	5.94	1.84E+08	1.94E+15	5.27E+15	8.33E+13
3.65	42	780	6.48	2.22E+08	1.90E+15	5.13E+15	8.12E+13
3.65	44	780	7.02	2.64E+08	1.84E+15	4.97E+15	7.86E+13
3.65	46	780	7.76	3.09E+08	1.78E+15	4.81E+15	7.42E+13
3.65	48	780	8.64	3.56E+08	1.70E+15	4.64E+15	6.86E+13
3.65	50	780	9.69	4.03E+08	1.61E+15	4.48E+15	6.19E+13
3.65	52	780	10.94	4.49E+08	1.52E+15	4.31E+15	5.42E+13
3.81	34	780	4.82	8.59E+07	1.94E+15	5.64E+15	8.17E+13
3.81	36	780	5.12	1.10E+08	1.96E+15	5.53E+15	8.27E+13
3.81	38	780	5.54	1.37E+08	1.95E+15	5.41E+15	8.23E+13
3.81	40	780	5.91	1.69E+08	1.93E+15	5.29E+15	8.19E+13
3.81	42	780	6.43	2.04E+08	1.90E+15	5.16E+15	8.00E+13
3.81	44	780	6.97	2.44E+08	1.85E+15	5.01E+15	7.76E+13
3.81	46	780	7.69	2.86E+08	1.79E+15	4.86E+15	7.34E+13
3.81	48	780	8.54	3.30E+08	1.71E+15	4.69E+15	6.82E+13
3.81	50	780	9.54	3.76E+08	1.62E+15	4.53E+15	6.18E+13
3.81	52	780	10.78	4.20E+08	1.54E+15	4.37E+15	5.43E+13
4	34	780	4.80	7.73E+07	1.93E+15	5.65E+15	7.99E+13
4	36	780	5.08	9.89E+07	1.96E+15	5.55E+15	8.11E+13
4	38	780	5.49	1.24E+08	1.95E+15	5.45E+15	8.08E+13
4	40	780	5.87	1.53E+08	1.94E+15	5.33E+15	8.04E+13
4	42	780	6.37	1.86E+08	1.90E+15	5.20E+15	7.87E+13
4	44	780	6.91	2.22E+08	1.86E+15	5.06E+15	7.63E+13
4	46	780	7.60	2.61E+08	1.80E+15	4.91E+15	7.25E+13
4	48	780	8.41	3.03E+08	1.72E+15	4.75E+15	6.77E+13
4	50	780	9.40	3.45E+08	1.64E+15	4.59E+15	6.16E+13
4	52	780	10.59	3.88E+08	1.56E+15	4.44E+15	5.44E+13
4.08	34	780	4.78	7.41E+07	1.93E+15	5.66E+15	7.93E+13
4.08	36	780	5.06	9.48E+07	1.95E+15	5.57E+15	8.05E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
4.08	38	780	5.48	1.19E+08	1.95E+15	5.46E+15	8.01E+13
4.08	40	780	5.86	1.47E+08	1.94E+15	5.35E+15	7.98E+13
4.08	42	780	6.34	1.78E+08	1.91E+15	5.21E+15	7.82E+13
4.08	44	780	6.88	2.14E+08	1.86E+15	5.08E+15	7.59E+13
4.08	46	780	7.57	2.51E+08	1.80E+15	4.93E+15	7.21E+13
4.08	48	780	8.36	2.92E+08	1.73E+15	4.77E+15	6.74E+13
4.08	50	780	9.33	3.34E+08	1.65E+15	4.62E+15	6.14E+13
4.08	52	780	10.54	3.74E+08	1.56E+15	4.45E+15	5.43E+13
4.2	38	780	5.45	1.12E+08	1.95E+15	5.48E+15	7.92E+13
4.2	40	780	5.83	1.38E+08	1.94E+15	5.37E+15	7.88E+13
4.2	42	780	6.30	1.68E+08	1.91E+15	5.24E+15	7.74E+13
4.2	44	780	6.84	2.02E+08	1.87E+15	5.10E+15	7.52E+13
4.2	46	780	7.52	2.38E+08	1.81E+15	4.96E+15	7.16E+13
4.2	48	780	8.30	2.77E+08	1.74E+15	4.80E+15	6.70E+13
4.2	50	780	9.25	3.17E+08	1.66E+15	4.65E+15	6.13E+13
4.2	52	780	10.44	3.56E+08	1.57E+15	4.49E+15	5.42E+13
4.3	38	780	5.43	1.06E+08	1.95E+15	5.49E+15	7.85E+13
4.3	40	780	5.81	1.32E+08	1.93E+15	5.38E+15	7.81E+13
4.3	42	780	6.27	1.60E+08	1.91E+15	5.26E+15	7.69E+13
4.3	44	780	6.82	1.92E+08	1.87E+15	5.12E+15	7.45E+13
4.3	46	780	7.47	2.27E+08	1.81E+15	4.98E+15	7.11E+13
4.3	48	780	8.23	2.65E+08	1.74E+15	4.84E+15	6.68E+13
4.3	50	780	9.18	3.03E+08	1.66E+15	4.68E+15	6.11E+13
4.3	52	780	10.33	3.42E+08	1.58E+15	4.52E+15	5.44E+13
4.48	38	780	5.39	9.71E+07	1.95E+15	5.51E+15	7.72E+13
4.48	40	780	5.78	1.20E+08	1.93E+15	5.41E+15	7.69E+13
4.48	42	780	6.22	1.47E+08	1.91E+15	5.29E+15	7.57E+13
4.48	44	780	6.77	1.77E+08	1.87E+15	5.16E+15	7.35E+13
4.48	46	780	7.40	2.09E+08	1.82E+15	5.03E+15	7.03E+13
4.48	48	780	8.14	2.44E+08	1.75E+15	4.88E+15	6.61E+13
4.48	50	780	9.07	2.81E+08	1.67E+15	4.72E+15	6.07E+13
4.48	52	780	10.18	3.17E+08	1.60E+15	4.57E+15	5.42E+13
2.05	16	840	2.73	1.19E+07	1.54E+15	6.60E+15	7.36E+13
2.05	18	840	2.91	1.97E+07	1.64E+15	6.55E+15	7.98E+13
2.05	20	840	3.12	3.09E+07	1.73E+15	6.49E+15	8.52E+13
2.05	42	840	6.60	5.43E+08	1.97E+15	5.01E+15	1.02E+14
2.05	44	840	7.20	6.26E+08	1.89E+15	4.80E+15	9.71E+13
2.45	16	840	2.69	8296594	1.51E+15	6.63E+15	6.80E+13
2.45	18	840	2.87	1.38E+07	1.61E+15	6.57E+15	7.37E+13
2.45	20	840	3.04	2.17E+07	1.70E+15	6.53E+15	7.92E+13
2.45	22	840	3.31	3.28E+07	1.78E+15	6.46E+15	8.34E+13
2.45	24	840	3.55	4.78E+07	1.86E+15	6.39E+15	8.75E+13
2.45	26	840	3.75	6.73E+07	1.93E+15	6.31E+15	9.16E+13
2.45	28	840	3.94	9.20E+07	2.00E+15	6.22E+15	9.53E+13
2.45	30	840	4.22	1.22E+08	2.06E+15	6.13E+15	9.80E+13
2.45	32	840	4.51	1.58E+08	2.09E+15	6.02E+15	9.97E+13
2.45	34	840	4.78	2.01E+08	2.11E+15	5.88E+15	1.01E+14
2.45	36	840	5.07	2.50E+08	2.12E+15	5.74E+15	1.02E+14
2.45	38	840	5.47	3.06E+08	2.10E+15	5.58E+15	1.02E+14
2.45	40	840	5.86	3.68E+08	2.07E+15	5.40E+15	1.01E+14
2.45	42	840	6.36	4.35E+08	2.02E+15	5.21E+15	9.83E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
2.45	44	840	6.91	5.07E+08	1.95E+15	5.01E+15	9.49E+13
2.73	20	840	3.00	1.73E+07	1.68E+15	6.54E+15	7.54E+13
2.73	22	840	3.27	2.63E+07	1.77E+15	6.49E+15	7.97E+13
2.73	24	840	3.50	3.85E+07	1.84E+15	6.42E+15	8.36E+13
2.73	26	840	3.71	5.45E+07	1.91E+15	6.36E+15	8.75E+13
2.73	28	840	3.90	7.50E+07	1.99E+15	6.27E+15	9.13E+13
2.73	30	840	4.15	1.00E+08	2.05E+15	6.18E+15	9.38E+13
2.73	32	840	4.45	1.31E+08	2.08E+15	6.07E+15	9.59E+13
2.73	34	840	4.72	1.67E+08	2.10E+15	5.95E+15	9.72E+13
2.73	36	840	4.98	2.10E+08	2.12E+15	5.81E+15	9.88E+13
2.73	38	840	5.38	2.58E+08	2.11E+15	5.67E+15	9.82E+13
2.73	40	840	5.77	3.12E+08	2.08E+15	5.51E+15	9.77E+13
2.73	42	840	6.21	3.72E+08	2.04E+15	5.33E+15	9.60E+13
2.73	44	840	6.76	4.37E+08	1.98E+15	5.14E+15	9.30E+13
3.03	20	840	2.98	1.38E+07	1.66E+15	6.55E+15	7.19E+13
3.03	22	840	3.23	2.10E+07	1.74E+15	6.50E+15	7.60E+13
3.03	24	840	3.47	3.09E+07	1.82E+15	6.44E+15	7.98E+13
3.03	26	840	3.68	4.40E+07	1.89E+15	6.37E+15	8.36E+13
3.03	28	840	3.86	6.08E+07	1.96E+15	6.30E+15	8.72E+13
3.03	30	840	4.09	8.18E+07	2.04E+15	6.22E+15	9.01E+13
3.03	32	840	4.39	1.07E+08	2.07E+15	6.12E+15	9.18E+13
3.03	34	840	4.66	1.38E+08	2.10E+15	6.01E+15	9.34E+13
3.03	36	840	4.92	1.74E+08	2.12E+15	5.88E+15	9.50E+13
3.03	38	840	5.28	2.16E+08	2.11E+15	5.75E+15	9.52E+13
3.03	40	840	5.68	2.63E+08	2.09E+15	5.60E+15	9.44E+13
3.03	42	840	6.06	3.16E+08	2.07E+15	5.44E+15	9.37E+13
3.03	44	840	6.61	3.73E+08	2.01E+15	5.26E+15	9.07E+13
3.03	46	840	7.20	4.34E+08	1.93E+15	5.08E+15	8.71E+13
3.03	48	840	7.92	4.98E+08	1.85E+15	4.88E+15	8.20E+13
3.03	50	840	8.83	5.62E+08	1.76E+15	4.68E+15	7.53E+13
3.03	52	840	9.91	6.25E+08	1.65E+15	4.49E+15	6.74E+13
3.4	26	840	3.63	3.43E+07	1.87E+15	6.40E+15	7.94E+13
3.4	28	840	3.83	4.77E+07	1.93E+15	6.33E+15	8.28E+13
3.4	30	840	4.01	6.46E+07	2.02E+15	6.26E+15	8.59E+13
3.4	32	840	4.32	8.51E+07	2.06E+15	6.17E+15	8.77E+13
3.4	34	840	4.60	1.10E+08	2.09E+15	6.07E+15	8.93E+13
3.4	36	840	4.85	1.40E+08	2.11E+15	5.97E+15	9.08E+13
3.4	38	840	5.16	1.75E+08	2.12E+15	5.84E+15	9.15E+13
3.4	40	840	5.56	2.14E+08	2.10E+15	5.71E+15	9.10E+13
3.4	42	840	5.93	2.59E+08	2.08E+15	5.56E+15	9.04E+13
3.4	44	840	6.45	3.08E+08	2.03E+15	5.39E+15	8.80E+13
3.4	46	840	6.97	3.61E+08	1.97E+15	5.22E+15	8.52E+13
3.4	48	840	7.69	4.17E+08	1.89E+15	5.04E+15	8.05E+13
3.4	50	840	8.51	4.75E+08	1.80E+15	4.86E+15	7.48E+13
3.4	52	840	9.51	5.33E+08	1.71E+15	4.67E+15	6.78E+13
3.65	34	840	4.55	9.51E+07	2.08E+15	6.11E+15	8.67E+13
3.65	36	840	4.81	1.21E+08	2.10E+15	6.00E+15	8.82E+13
3.65	38	840	5.10	1.52E+08	2.12E+15	5.89E+15	8.92E+13
3.65	40	840	5.49	1.87E+08	2.10E+15	5.77E+15	8.88E+13
3.65	42	840	5.86	2.27E+08	2.08E+15	5.62E+15	8.81E+13
3.65	44	840	6.35	2.71E+08	2.04E+15	5.47E+15	8.62E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
3.65	46	840	6.87	3.19E+08	1.99E+15	5.31E+15	8.36E+13
3.65	48	840	7.55	3.71E+08	1.92E+15	5.13E+15	7.95E+13
3.65	50	840	8.32	4.24E+08	1.83E+15	4.95E+15	7.43E+13
3.65	52	840	9.27	4.78E+08	1.74E+15	4.77E+15	6.78E+13
3.81	34	840	4.53	8.69E+07	2.07E+15	6.13E+15	8.52E+13
3.81	36	840	4.79	1.11E+08	2.10E+15	6.03E+15	8.66E+13
3.81	38	840	5.06	1.39E+08	2.11E+15	5.91E+15	8.77E+13
3.81	40	840	5.46	1.72E+08	2.10E+15	5.79E+15	8.73E+13
3.81	42	840	5.83	2.09E+08	2.08E+15	5.66E+15	8.67E+13
3.81	44	840	6.29	2.50E+08	2.05E+15	5.52E+15	8.52E+13
3.81	46	840	6.82	2.95E+08	2.00E+15	5.36E+15	8.25E+13
3.81	48	840	7.46	3.44E+08	1.93E+15	5.18E+15	7.88E+13
3.81	50	840	8.20	3.95E+08	1.85E+15	5.01E+15	7.39E+13
3.81	52	840	9.12	4.47E+08	1.75E+15	4.83E+15	6.77E+13
4	34	840	4.50	7.82E+07	2.07E+15	6.15E+15	8.34E+13
4	36	840	4.76	1.00E+08	2.10E+15	6.05E+15	8.48E+13
4	38	840	5.00	1.26E+08	2.12E+15	5.96E+15	8.62E+13
4	40	840	5.41	1.56E+08	2.10E+15	5.83E+15	8.57E+13
4	42	840	5.78	1.90E+08	2.09E+15	5.70E+15	8.52E+13
4	44	840	6.22	2.28E+08	2.05E+15	5.55E+15	8.38E+13
4	46	840	6.75	2.70E+08	2.00E+15	5.40E+15	8.13E+13
4	48	840	7.36	3.15E+08	1.94E+15	5.25E+15	7.79E+13
4	50	840	8.07	3.63E+08	1.86E+15	5.08E+15	7.34E+13
4	52	840	8.97	4.12E+08	1.77E+15	4.90E+15	6.74E+13
4.08	34	840	4.49	7.49E+07	2.06E+15	6.15E+15	8.27E+13
4.08	36	840	4.75	9.59E+07	2.09E+15	6.07E+15	8.41E+13
4.08	38	840	4.99	1.21E+08	2.11E+15	5.96E+15	8.54E+13
4.08	40	840	5.39	1.49E+08	2.10E+15	5.84E+15	8.50E+13
4.08	42	840	5.76	1.82E+08	2.09E+15	5.72E+15	8.45E+13
4.08	44	840	6.19	2.19E+08	2.06E+15	5.58E+15	8.33E+13
4.08	46	840	6.72	2.60E+08	2.01E+15	5.43E+15	8.08E+13
4.08	48	840	7.32	3.04E+08	1.95E+15	5.26E+15	7.75E+13
4.08	50	840	8.03	3.50E+08	1.87E+15	5.09E+15	7.30E+13
4.08	52	840	8.91	3.98E+08	1.79E+15	4.93E+15	6.74E+13
4.2	38	840	4.97	1.14E+08	2.11E+15	5.98E+15	8.43E+13
4.2	40	840	5.36	1.41E+08	2.10E+15	5.87E+15	8.41E+13
4.2	42	840	5.74	1.72E+08	2.09E+15	5.74E+15	8.36E+13
4.2	44	840	6.14	2.07E+08	2.06E+15	5.61E+15	8.26E+13
4.2	46	840	6.68	2.45E+08	2.01E+15	5.46E+15	8.01E+13
4.2	48	840	7.26	2.87E+08	1.95E+15	5.31E+15	7.70E+13
4.2	50	840	7.96	3.32E+08	1.87E+15	5.13E+15	7.27E+13
4.2	52	840	8.82	3.78E+08	1.80E+15	4.97E+15	6.72E+13
4.3	38	840	4.96	1.08E+08	2.10E+15	5.99E+15	8.35E+13
4.3	40	840	5.34	1.34E+08	2.10E+15	5.88E+15	8.33E+13
4.3	42	840	5.71	1.64E+08	2.09E+15	5.76E+15	8.29E+13
4.3	44	840	6.11	1.97E+08	2.06E+15	5.63E+15	8.20E+13
4.3	46	840	6.65	2.34E+08	2.02E+15	5.48E+15	7.96E+13
4.3	48	840	7.23	2.75E+08	1.96E+15	5.33E+15	7.65E+13
4.3	50	840	7.91	3.18E+08	1.88E+15	5.17E+15	7.23E+13
4.3	52	840	8.78	3.62E+08	1.80E+15	5.00E+15	6.69E+13
4.48	38	840	4.94	9.88E+07	2.10E+15	6.01E+15	8.20E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
4.48	40	840	5.30	1.23E+08	2.10E+15	5.90E+15	8.20E+13
4.48	42	840	5.68	1.50E+08	2.09E+15	5.79E+15	8.16E+13
4.48	44	840	6.05	1.82E+08	2.07E+15	5.66E+15	8.09E+13
4.48	46	840	6.59	2.16E+08	2.02E+15	5.53E+15	7.85E+13
4.48	48	840	7.15	2.54E+08	1.97E+15	5.37E+15	7.57E+13
4.48	50	840	7.83	2.94E+08	1.90E+15	5.22E+15	7.17E+13
4.48	52	840	8.67	3.36E+08	1.82E+15	5.06E+15	6.64E+13
2.05	16	900	2.62	1.20E+07	1.62E+15	7.09E+15	7.51E+13
2.05	18	900	2.80	1.99E+07	1.72E+15	7.04E+15	8.12E+13
2.05	20	900	2.96	3.11E+07	1.82E+15	6.98E+15	8.72E+13
2.05	42	900	5.99	5.56E+08	2.16E+15	5.50E+15	1.10E+14
2.05	44	900	6.56	6.42E+08	2.09E+15	5.27E+15	1.06E+14
2.45	16	900	2.57	8400231	1.58E+15	7.13E+15	6.93E+13
2.45	18	900	2.76	1.39E+07	1.69E+15	7.06E+15	7.51E+13
2.45	20	900	2.92	2.19E+07	1.79E+15	7.02E+15	8.07E+13
2.45	22	900	3.11	3.31E+07	1.88E+15	6.95E+15	8.57E+13
2.45	24	900	3.37	4.82E+07	1.96E+15	6.88E+15	8.98E+13
2.45	26	900	3.59	6.78E+07	2.03E+15	6.79E+15	9.39E+13
2.45	28	900	3.78	9.27E+07	2.10E+15	6.71E+15	9.77E+13
2.45	30	900	3.96	1.23E+08	2.19E+15	6.62E+15	1.02E+14
2.45	32	900	4.24	1.60E+08	2.23E+15	6.51E+15	1.04E+14
2.45	34	900	4.52	2.03E+08	2.25E+15	6.38E+15	1.05E+14
2.45	36	900	4.79	2.53E+08	2.26E+15	6.23E+15	1.06E+14
2.45	38	900	5.05	3.11E+08	2.27E+15	6.07E+15	1.07E+14
2.45	40	900	5.46	3.74E+08	2.24E+15	5.90E+15	1.07E+14
2.45	42	900	5.84	4.44E+08	2.21E+15	5.70E+15	1.05E+14
2.45	44	900	6.31	5.19E+08	2.15E+15	5.50E+15	1.03E+14
2.73	20	900	2.90	1.75E+07	1.76E+15	7.04E+15	7.68E+13
2.73	22	900	3.07	2.65E+07	1.86E+15	6.98E+15	8.19E+13
2.73	24	900	3.32	3.88E+07	1.94E+15	6.91E+15	8.58E+13
2.73	26	900	3.54	5.49E+07	2.02E+15	6.85E+15	8.98E+13
2.73	28	900	3.73	7.55E+07	2.09E+15	6.77E+15	9.36E+13
2.73	30	900	3.92	1.01E+08	2.17E+15	6.68E+15	9.68E+13
2.73	32	900	4.16	1.32E+08	2.22E+15	6.57E+15	9.98E+13
2.73	34	900	4.45	1.69E+08	2.24E+15	6.45E+15	1.01E+14
2.73	36	900	4.72	2.12E+08	2.26E+15	6.31E+15	1.03E+14
2.73	38	900	4.97	2.62E+08	2.27E+15	6.17E+15	1.04E+14
2.73	40	900	5.35	3.17E+08	2.25E+15	6.00E+15	1.03E+14
2.73	42	900	5.73	3.79E+08	2.22E+15	5.82E+15	1.02E+14
2.73	44	900	6.15	4.47E+08	2.18E+15	5.63E+15	1.01E+14
3.03	20	900	2.88	1.40E+07	1.74E+15	7.04E+15	7.32E+13
3.03	22	900	3.02	2.12E+07	1.84E+15	6.99E+15	7.82E+13
3.03	24	900	3.28	3.12E+07	1.91E+15	6.93E+15	8.20E+13
3.03	26	900	3.50	4.44E+07	1.99E+15	6.87E+15	8.57E+13
3.03	28	900	3.70	6.13E+07	2.07E+15	6.79E+15	8.94E+13
3.03	30	900	3.89	8.25E+07	2.15E+15	6.70E+15	9.27E+13
3.03	32	900	4.09	1.08E+08	2.20E+15	6.62E+15	9.55E+13
3.03	34	900	4.39	1.39E+08	2.24E+15	6.51E+15	9.70E+13
3.03	36	900	4.66	1.76E+08	2.25E+15	6.38E+15	9.87E+13
3.03	38	900	4.91	2.19E+08	2.27E+15	6.25E+15	1.00E+14
3.03	40	900	5.25	2.67E+08	2.26E+15	6.10E+15	9.99E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
3.03	42	900	5.63	3.21E+08	2.24E+15	5.94E+15	9.95E+13
3.03	44	900	5.99	3.82E+08	2.21E+15	5.76E+15	9.86E+13
3.03	46	900	6.53	4.46E+08	2.14E+15	5.57E+15	9.53E+13
3.03	48	900	7.07	5.15E+08	2.07E+15	5.37E+15	9.20E+13
3.03	50	900	7.77	5.85E+08	1.97E+15	5.17E+15	8.68E+13
3.03	52	900	8.61	6.57E+08	1.88E+15	4.95E+15	8.03E+13
3.4	26	900	3.45	3.46E+07	1.97E+15	6.89E+15	8.15E+13
3.4	28	900	3.66	4.81E+07	2.03E+15	6.81E+15	8.49E+13
3.4	30	900	3.84	6.51E+07	2.13E+15	6.75E+15	8.81E+13
3.4	32	900	4.01	8.61E+07	2.19E+15	6.66E+15	9.12E+13
3.4	34	900	4.31	1.11E+08	2.22E+15	6.57E+15	9.29E+13
3.4	36	900	4.58	1.41E+08	2.25E+15	6.46E+15	9.44E+13
3.4	38	900	4.83	1.77E+08	2.27E+15	6.34E+15	9.58E+13
3.4	40	900	5.12	2.17E+08	2.27E+15	6.21E+15	9.65E+13
3.4	42	900	5.51	2.63E+08	2.25E+15	6.05E+15	9.61E+13
3.4	44	900	5.88	3.14E+08	2.22E+15	5.89E+15	9.50E+13
3.4	46	900	6.35	3.70E+08	2.17E+15	5.72E+15	9.29E+13
3.4	48	900	6.87	4.30E+08	2.10E+15	5.53E+15	8.98E+13
3.4	50	900	7.53	4.93E+08	2.02E+15	5.34E+15	8.54E+13
3.4	52	900	8.28	5.58E+08	1.93E+15	5.13E+15	7.99E+13
3.65	34	900	4.26	9.62E+07	2.21E+15	6.61E+15	9.03E+13
3.65	36	900	4.54	1.23E+08	2.24E+15	6.50E+15	9.17E+13
3.65	38	900	4.79	1.54E+08	2.26E+15	6.38E+15	9.32E+13
3.65	40	900	5.04	1.90E+08	2.27E+15	6.27E+15	9.42E+13
3.65	42	900	5.44	2.31E+08	2.25E+15	6.12E+15	9.35E+13
3.65	44	900	5.81	2.77E+08	2.23E+15	5.97E+15	9.27E+13
3.65	46	900	6.24	3.27E+08	2.19E+15	5.80E+15	9.11E+13
3.65	48	900	6.76	3.82E+08	2.13E+15	5.62E+15	8.82E+13
3.65	50	900	7.37	4.40E+08	2.05E+15	5.44E+15	8.44E+13
3.65	52	900	8.07	5.01E+08	1.96E+15	5.24E+15	7.95E+13
3.81	34	900	4.23	8.79E+07	2.21E+15	6.63E+15	8.87E+13
3.81	36	900	4.51	1.12E+08	2.23E+15	6.53E+15	9.01E+13
3.81	38	900	4.76	1.41E+08	2.25E+15	6.41E+15	9.13E+13
3.81	40	900	5.00	1.75E+08	2.27E+15	6.30E+15	9.27E+13
3.81	42	900	5.40	2.12E+08	2.25E+15	6.16E+15	9.21E+13
3.81	44	900	5.76	2.55E+08	2.23E+15	6.02E+15	9.14E+13
3.81	46	900	6.18	3.03E+08	2.19E+15	5.85E+15	8.99E+13
3.81	48	900	6.70	3.54E+08	2.14E+15	5.68E+15	8.73E+13
3.81	50	900	7.27	4.09E+08	2.06E+15	5.50E+15	8.38E+13
3.81	52	900	7.96	4.67E+08	1.98E+15	5.31E+15	7.90E+13
4	34	900	4.20	7.91E+07	2.20E+15	6.65E+15	8.68E+13
4	36	900	4.48	1.01E+08	2.23E+15	6.55E+15	8.83E+13
4	38	900	4.73	1.27E+08	2.26E+15	6.45E+15	8.97E+13
4	40	900	4.97	1.58E+08	2.27E+15	6.33E+15	9.08E+13
4	42	900	5.34	1.93E+08	2.25E+15	6.20E+15	9.05E+13
4	44	900	5.72	2.32E+08	2.23E+15	6.05E+15	8.98E+13
4	46	900	6.09	2.76E+08	2.20E+15	5.91E+15	8.89E+13
4	48	900	6.62	3.24E+08	2.14E+15	5.74E+15	8.61E+13
4	50	900	7.17	3.76E+08	2.08E+15	5.56E+15	8.29E+13
4	52	900	7.85	4.30E+08	2.00E+15	5.39E+15	7.85E+13
4.08	34	900	4.19	7.58E+07	2.20E+15	6.65E+15	8.61E+13

Enrichment Wt% U235	Burnup (GWd/MTU)	Assembly Heat (watts)	Decay time (y)	Neutrons /sec	Total Photon MeV/sec	Total Photons /sec	Light Element Photon MeV/sec
4.08	36	900	4.46	9.70E+07	2.23E+15	6.56E+15	8.76E+13
4.08	38	900	4.72	1.22E+08	2.25E+15	6.46E+15	8.89E+13
4.08	40	900	4.96	1.52E+08	2.26E+15	6.34E+15	9.01E+13
4.08	42	900	5.32	1.85E+08	2.26E+15	6.22E+15	8.99E+13
4.08	44	900	5.69	2.23E+08	2.24E+15	6.07E+15	8.92E+13
4.08	46	900	6.06	2.66E+08	2.21E+15	5.93E+15	8.83E+13
4.08	48	900	6.59	3.12E+08	2.15E+15	5.76E+15	8.56E+13
4.08	50	900	7.12	3.62E+08	2.09E+15	5.59E+15	8.26E+13
4.08	52	900	7.82	4.15E+08	2.00E+15	5.41E+15	7.80E+13
4.2	38	900	4.70	1.15E+08	2.24E+15	6.47E+15	8.77E+13
4.2	40	900	4.94	1.43E+08	2.26E+15	6.36E+15	8.90E+13
4.2	42	900	5.29	1.75E+08	2.26E+15	6.24E+15	8.88E+13
4.2	44	900	5.66	2.11E+08	2.24E+15	6.11E+15	8.83E+13
4.2	46	900	6.02	2.51E+08	2.21E+15	5.95E+15	8.75E+13
4.2	48	900	6.54	2.95E+08	2.16E+15	5.80E+15	8.49E+13
4.2	50	900	7.06	3.44E+08	2.10E+15	5.63E+15	8.21E+13
4.2	52	900	7.74	3.94E+08	2.01E+15	5.46E+15	7.77E+13
4.3	38	900	4.69	1.09E+08	2.24E+15	6.49E+15	8.69E+13
4.3	40	900	4.93	1.36E+08	2.26E+15	6.38E+15	8.81E+13
4.3	42	900	5.27	1.66E+08	2.26E+15	6.26E+15	8.81E+13
4.3	44	900	5.64	2.01E+08	2.24E+15	6.13E+15	8.75E+13
4.3	46	900	5.99	2.40E+08	2.21E+15	5.98E+15	8.67E+13
4.3	48	900	6.51	2.82E+08	2.16E+15	5.82E+15	8.42E+13
4.3	50	900	7.01	3.29E+08	2.10E+15	5.66E+15	8.16E+13
4.3	52	900	7.69	3.77E+08	2.02E+15	5.49E+15	7.74E+13
4.48	38	900	4.66	9.98E+07	2.24E+15	6.51E+15	8.54E+13
4.48	40	900	4.90	1.24E+08	2.26E+15	6.40E+15	8.66E+13
4.48	42	900	5.22	1.53E+08	2.26E+15	6.29E+15	8.68E+13
4.48	44	900	5.59	1.85E+08	2.24E+15	6.17E+15	8.62E+13
4.48	46	900	5.95	2.21E+08	2.22E+15	6.03E+15	8.54E+13
4.48	48	900	6.45	2.60E+08	2.17E+15	5.87E+15	8.32E+13
4.48	50	900	6.94	3.04E+08	2.11E+15	5.71E+15	8.06E+13
4.48	52	900	7.61	3.50E+08	2.04E+15	5.55E+15	7.66E+13

APPENDIX E – CHARACTERISTICS OF STANDARD CE 14X14 ASSEMBLIES STORED IN THE SPENT FUEL POOL AS OF JANUARY 2006

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
0	1	1BT04	2.45	19507	521	37.44	U1C1					31-Dec-76	3.9	23-Nov-80	1.88E+07	5.07E+15	1.41E+15	7.14E+13	
0	2	2A026	2.05	16523	498.5	33.15	U2C1					15-Sep-78	3.4	22-Jan-82	1.34E+07	5.08E+15	1.29E+15	7.19E+13	
0	3	2A003	2.05	17230	498.5	34.56	U2C1					15-Sep-78	3.5	17-Mar-82	1.58E+07	5.07E+15	1.33E+15	7.30E+13	
0	4	2A012	2.05	17391	498.5	34.89	U2C1					15-Sep-78	3.5	28-Mar-82	1.64E+07	5.07E+15	1.34E+15	7.32E+13	
0	5	2A035	2.05	17391	498.5	34.89	U2C1					15-Sep-78	3.5	28-Mar-82	1.64E+07	5.07E+15	1.34E+15	7.32E+13	
0	6	2A066	2.05	17391	498.5	34.89	U2C1					15-Sep-78	3.5	28-Mar-82	1.64E+07	5.07E+15	1.34E+15	7.32E+13	
0	7	2A067	2.05	17391	498.5	34.89	U2C1					15-Sep-78	3.5	28-Mar-82	1.64E+07	5.07E+15	1.34E+15	7.32E+13	
0	8	1C111	2.99	26163	775.2	33.75	U1C1	U1C2				22-Jan-78	4.8	4-Nov-82	4.50E+07	4.92E+15	1.60E+15	7.55E+13	
0	9	1B027	2.45	26416	775.2	34.08	U1C1	U1C2				22-Jan-78	4.9	29-Nov-82	6.90E+07	4.83E+15	1.62E+15	8.28E+13	
0	10	1BT06	2.45	26937	775.2	34.75	U1C1	U1C2				22-Jan-78	4.9	27-Dec-82	7.50E+07	4.80E+15	1.63E+15	8.34E+13	
0	11	1B009	2.45	27274	775.2	35.18	U1C1	U1C2				22-Jan-78	5.0	15-Jan-83	7.91E+07	4.78E+15	1.64E+15	8.38E+13	
0	12	1B002	2.45	27487	775.2	35.46	U1C1	U1C2				22-Jan-78	5.0	27-Jan-83	8.17E+07	4.77E+15	1.64E+15	8.40E+13	
0	13	1C003	2.99	29527	1072	27.54	U1C1	U1C2	U1C3			20-Apr-79	5.2	10-Jul-84	7.63E+07	4.76E+15	1.65E+15	7.96E+13	
0	14	1C010	2.99	29527	1072	27.54	U1C1	U1C2	U1C3			20-Apr-79	5.2	10-Jul-84	7.63E+07	4.76E+15	1.65E+15	7.96E+13	
0	15	2B066	2.45	26052	800.3	32.55	U2C1	U2C2				12-Oct-79	4.8	30-Jul-84	6.50E+07	4.85E+15	1.62E+15	8.23E+13	
0	16	2B008	2.45	26072	800.3	32.58	U2C1	U2C2				12-Oct-79	4.8	31-Jul-84	6.53E+07	4.84E+15	1.62E+15	8.23E+13	
0	17	2B070	2.45	27069	800.3	33.82	U2C1	U2C2				12-Oct-79	5.0	23-Sep-84	7.66E+07	4.79E+15	1.63E+15	8.36E+13	
0	18	2B075	2.45	27069	800.3	33.82	U2C1	U2C2				12-Oct-79	5.0	23-Sep-84	7.66E+07	4.79E+15	1.63E+15	8.36E+13	
0	19	2B011	2.45	27118	800.3	33.88	U2C1	U2C2				12-Oct-79	5.0	25-Sep-84	7.72E+07	4.79E+15	1.63E+15	8.36E+13	
0	20	2B064	2.45	27122	800.3	33.89	U2C1	U2C2				12-Oct-79	5.0	26-Sep-84	7.72E+07	4.79E+15	1.63E+15	8.36E+13	
0	21	2B068	2.45	27309	800.3	34.12	U2C1	U2C2				12-Oct-79	5.0	6-Oct-84	7.95E+07	4.78E+15	1.64E+15	8.38E+13	
0	22	2B007	2.45	27764	800.3	34.69	U2C1	U2C2				12-Oct-79	5.1	1-Nov-84	8.52E+07	4.76E+15	1.64E+15	8.43E+13	
0	23	2B055	2.45	28325	800.3	35.39	U2C1	U2C2				12-Oct-79	5.2	5-Dec-84	9.27E+07	4.73E+15	1.65E+15	8.48E+13	
0	24	2B036	2.45	28418	800.3	35.51	U2C1	U2C2				12-Oct-79	5.2	11-Dec-84	9.40E+07	4.72E+15	1.65E+15	8.49E+13	
0	25	1D024	3.03	26581	917.6	28.97	U1C2	U1C3	U1C4			17-Oct-80	4.8	18-Aug-85	4.69E+07	4.90E+15	1.61E+15	7.56E+13	
0	26	1D002	3.03	27498	917.6	29.97	U1C2	U1C3	U1C4			17-Oct-80	4.9	27-Sep-85	5.45E+07	4.86E+15	1.63E+15	7.69E+13	
0	27	1D038	3.03	29819	917.6	32.50	U1C2	U1C3	U1C4			17-Oct-80	5.3	23-Jan-86	7.75E+07	4.75E+15	1.65E+15	7.94E+13	
0	28	1D009	3.03	29854	917.6	32.53	U1C2	U1C3	U1C4			17-Oct-80	5.3	25-Jan-86	7.79E+07	4.75E+15	1.65E+15	7.94E+13	
0	29	1D104	2.73	30733	917.6	33.49	U1C2	U1C3	U1C4			17-Oct-80	5.5	11-Apr-86	1.07E+08	4.65E+15	1.65E+15	8.33E+13	
0	30	1D116	2.73	31330	917.6	34.14	U1C2	U1C3	U1C4			17-Oct-80	5.6	24-May-86	1.16E+08	4.62E+15	1.65E+15	8.35E+13	
0	31	1D006	3.03	32041	917.6	34.92	U1C2	U1C3	U1C4			17-Oct-80	5.7	16-Jun-86	1.05E+08	4.63E+15	1.65E+15	8.05E+13	
1	32	1D007	3.03	32041	917.6	34.92	U1C2	U1C3	U1C4			17-Oct-80	5.7	16-Jun-86	1.05E+08	4.63E+15	1.65E+15	8.05E+13	
1	33	1D039	3.03	32041	917.6	34.92	U1C2	U1C3	U1C4			17-Oct-80	5.7	16-Jun-86	1.05E+08	4.63E+15	1.65E+15	8.05E+13	
1	34	2C034	2.99	31816	1147.7	27.72	U2C1	U2C2	U2C3			17-Jan-81	5.6	3-Sep-86	1.05E+08	4.64E+15	1.65E+15	8.09E+13	
1	35	1F116	2.73	26284	768.9	34.18	U1C4	U1C5				16-Apr-82	4.8	28-Jan-87	5.52E+07	4.88E+15	1.62E+15	7.91E+13	
1	36	2C007	2.99	33651	1147.7	29.32	U2C1	U2C2	U2C3			17-Jan-81	6.0	29-Jan-87	1.31E+08	4.53E+15	1.64E+15	8.06E+13	
1	37	1F105	2.73	26317	768.9	34.23	U1C4	U1C5				16-Apr-82	4.8	30-Jan-87	5.55E+07	4.88E+15	1.62E+15	7.92E+13	
1	38	1F101	2.73	26354	768.9	34.27	U1C4	U1C5				16-Apr-82	4.8	1-Feb-87	5.58E+07	4.88E+15	1.62E+15	7.92E+13	
1	39	1F114	2.73	26997	768.9	35.11	U1C4	U1C5				16-Apr-82	4.9	4-Mar-87	6.20E+07	4.85E+15	1.63E+15	8.01E+13	
1	40	1F117	2.73	26997	768.9	35.11	U1C4	U1C5				16-Apr-82	4.9	4-Mar-87	6.20E+07	4.85E+15	1.63E+15	8.01E+13	
1	41	1F111	2.73	27062	768.9	35.20	U1C4	U1C5				16-Apr-82	4.9	7-Mar-87	6.27E+07	4.85E+15	1.63E+15	8.02E+13	
1	42	2C201	2.99	35977	1147.7	31.35	U2C1	U2C2	U2C3			17-Jan-81	6.7	23-Sep-87	1.70E+08	4.38E+15	1.61E+15	7.85E+13	
1	43	2C210	2.99	35977	1147.7	31.35	U2C1	U2C2	U2C3			17-Jan-81	6.7	23-Sep-87	1.70E+08	4.38E+15	1.61E+15	7.85E+13	
1	44	2E110	2.73	28396	854.9	33.22	U2C3	U2C4				15-Oct-82	5.1	14-Nov-87	7.71E+07	4.78E+15	1.64E+15	8.17E+13	
1	45	2E102	2.73	28889	854.9	33.79	U2C3	U2C4				15-Oct-82	5.2	12-Dec-87	8.29E+07	4.75E+15	1.65E+15	8.22E+13	
1	46	1E025	3.03	32636	1065.7	30.62	U1C3	U1C4	U1C5			16-Apr-82	5.8	29-Jan-88	1.13E+08	4.60E+15	1.65E+15	8.05E+13	
1	47	2C109	2.99	37470	1147.7	32.65	U2C1	U2C2	U2C3			17-Jan-81	7.2	28-Mar-88	1.98E+08	4.28E+15	1.57E+15	7.60E+13	
1	48	1E014	3.03	33647	1065.7	31.57	U1C3	U1C4	U1C5			16-Apr-82	6.0	22-Apr-88	1.28E+08	4.54E+15	1.64E+15	8.02E+13	
1	49	1E015	3.03	34116	1065.7	32.01	U1C3	U1C4	U1C5			16-Apr-82	6.1	4-Jun-88	1.35E+08	4.51E+15	1.63E+15	8.00E+13	
1	50	2C212	2.99	38502	1147.7	33.55	U2C1	U2C2	U2C3			17-Jan-81	7.6	21-Aug-88	2.17E+08	4.21E+15	1.55E+15	7.38E+13	
1	51	1G145	3.03	28062	809.5	34.67	U1C5	U1C6				30-Sep-83	5.0	5-Oct-88	5.96E+07	4.84E+15	1.63E+15	7.76E+13	
1	52	1G125	3.03	28065	809.5	34.67	U1C5	U1C6				30-Sep-83	5.0	5-Oct-88	5.96E+07	4.84E+15	1.63E+15	7.76E+13	
1	53	1G129	3.03	28703	809.5	35.46	U1C5	U1C6				30-Sep-83	5.1	6-Nov-88	6.58E+07	4.81E+15	1.64E+15	7.83E+13	
1	54	1G126	3.03	28828	809.5	35.61	U1C5	U1C6				30-Sep-83	5.1	12-Nov-88	6.70E+07	4.80E+15	1.64E+15	7.85E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
1	55	1G134	3.03	29075	809.5	35.92	U1C5	U1C6				30-Sep-83	5.2	25-Nov-88	6.95E+07	4.79E+15	1.64E+15	7.87E+13	
1	56	1G141	3.03	29542	809.5	36.49	U1C5	U1C6				30-Sep-83	5.2	20-Dec-88	7.45E+07	4.77E+15	1.65E+15	7.92E+13	
1	57	1G124	3.03	29678	809.5	36.66	U1C5	U1C6				30-Sep-83	5.3	28-Dec-88	7.60E+07	4.76E+15	1.65E+15	7.93E+13	
1	58	2D044	3.03	35710	1156.7	30.87	U2C2	U2C3	U2C4			15-Oct-82	6.6	15-May-89	1.62E+08	4.41E+15	1.61E+15	7.85E+13	
1	59	2D036	3.03	35727	1156.7	30.89	U2C2	U2C3	U2C4			15-Oct-82	6.6	17-May-89	1.62E+08	4.40E+15	1.61E+15	7.85E+13	
1	60	2D002	3.03	31703	1058.6	29.95	U2C2	U2C3	U2C5			20-Apr-84	5.6	24-Nov-89	1.00E+08	4.65E+15	1.65E+15	8.04E+13	
1	61	2D028	3.03	31703	1058.6	29.95	U2C2	U2C3	U2C5			20-Apr-84	5.6	24-Nov-89	1.00E+08	4.65E+15	1.65E+15	8.04E+13	
1	62	1F009	3.03	34714	1176.1	29.52	U1C4	U1C5	U1C6			30-Sep-83	6.3	15-Jan-90	1.45E+08	4.47E+15	1.63E+15	7.95E+13	
1	63	1F045	3.03	34714	1176.1	29.52	U1C4	U1C5	U1C6			30-Sep-83	6.3	15-Jan-90	1.45E+08	4.47E+15	1.63E+15	7.95E+13	
2	64	2F134	3.03	32559	916.9	35.51	U2C4	U2C5				20-Apr-84	5.8	27-Jan-90	1.12E+08	4.60E+15	1.65E+15	8.05E+13	
2	65	2F146	3.03	32730	916.9	35.70	U2C4	U2C5				20-Apr-84	5.8	9-Feb-90	1.15E+08	4.59E+15	1.65E+15	8.05E+13	
2	66	2F145	3.03	32803	916.9	35.78	U2C4	U2C5				20-Apr-84	5.8	15-Feb-90	1.16E+08	4.59E+15	1.65E+15	8.05E+13	
2	67	2B048	2.45	26865	907.4	29.61	U2C1	U1C7				05-Apr-85	4.9	6-Mar-90	7.41E+07	4.81E+15	1.63E+15	8.33E+13	
2	68	2B054	2.45	26865	907.4	29.61	U2C1	U1C7				05-Apr-85	4.9	6-Mar-90	7.41E+07	4.81E+15	1.63E+15	8.33E+13	
2	69	1F027	3.03	35250	1176.1	29.97	U1C4	U1C5	U1C6			30-Sep-83	6.5	11-Mar-90	1.54E+08	4.44E+15	1.62E+15	7.90E+13	
2	70	1F037	3.03	35250	1176.1	29.97	U1C4	U1C5	U1C6			30-Sep-83	6.5	11-Mar-90	1.54E+08	4.44E+15	1.62E+15	7.90E+13	
2	71	1F035	3.03	35466	1176.1	30.16	U1C4	U1C5	U1C6			30-Sep-83	6.5	3-Apr-90	1.57E+08	4.42E+15	1.62E+15	7.88E+13	
2	72	1F039	3.03	35466	1176.1	30.16	U1C4	U1C5	U1C6			30-Sep-83	6.5	3-Apr-90	1.57E+08	4.42E+15	1.62E+15	7.88E+13	
2	73	2B058	2.45	28267	907.4	31.15	U2C1	U1C7				05-Apr-85	5.1	27-May-90	9.19E+07	4.73E+15	1.65E+15	8.48E+13	
2	74	1F038	3.03	36208	1176.1	30.79	U1C4	U1C5	U1C6			30-Sep-83	6.7	26-Jun-90	1.70E+08	4.37E+15	1.60E+15	7.78E+13	
2	75	1F005	3.03	36993	1176.1	31.45	U1C4	U1C5	U1C6			30-Sep-83	7.0	30-Sep-90	1.84E+08	4.32E+15	1.59E+15	7.66E+13	
2	76	1F014	3.03	37007	1176.1	31.47	U1C4	U1C5	U1C6			30-Sep-83	7.0	1-Oct-90	1.85E+08	4.32E+15	1.59E+15	7.66E+13	
2	77	2D139	2.73	31147	1058.1	29.44	U2C2	U2C3	U1C7			05-Apr-85	5.6	27-Oct-90	1.14E+08	4.63E+15	1.65E+15	8.34E+13	
2	78	2D101	2.73	32374	1058.1	30.60	U2C2	U2C3	U1C7			05-Apr-85	5.8	31-Jan-91	1.33E+08	4.55E+15	1.65E+15	8.34E+13	
2	79	2D102	2.73	32374	1058.1	30.60	U2C2	U2C3	U1C7			05-Apr-85	5.8	31-Jan-91	1.33E+08	4.55E+15	1.65E+15	8.34E+13	
2	80	2D124	2.73	32396	1058.1	30.62	U2C2	U2C3	U1C7			05-Apr-85	5.8	2-Feb-91	1.33E+08	4.55E+15	1.65E+15	8.34E+13	
2	81	1G009	3.65	34099	1218.4	27.99	U1C5	U1C6	U1C7			05-Apr-85	6.0	13-Apr-91	9.29E+07	4.61E+15	1.64E+15	7.41E+13	
2	82	1BT07	2.45	43239	1438.6	30.06	U1C1	U1C2	U1C3	U1C4		17-Oct-80	10.6	25-May-91	4.18E+08	3.67E+15	1.36E+15	5.94E+13	
2	83	1F007	3.03	34136	1177.8	28.98	U1C4	U1C5	U1C7			05-Apr-85	6.1	27-May-91	1.36E+08	4.51E+15	1.63E+15	8.00E+13	
2	84	1F012	3.03	34136	1177.8	28.98	U1C4	U1C5	U1C7			05-Apr-85	6.1	27-May-91	1.36E+08	4.51E+15	1.63E+15	8.00E+13	
2	85	1G030	3.65	35687	1218.4	29.29	U1C5	U1C6	U1C7			05-Apr-85	6.4	1-Sep-91	1.12E+08	4.52E+15	1.62E+15	7.34E+13	
2	86	1G022	3.65	35695	1218.4	29.30	U1C5	U1C6	U1C7			05-Apr-85	6.4	2-Sep-91	1.12E+08	4.52E+15	1.62E+15	7.34E+13	
2	87	1G011	3.65	36503	1218.4	29.96	U1C5	U1C6	U1C7			05-Apr-85	6.6	23-Nov-91	1.23E+08	4.47E+15	1.61E+15	7.26E+13	
2	88	1G005	3.65	36571	1218.4	30.02	U1C5	U1C6	U1C7			05-Apr-85	6.7	1-Dec-91	1.24E+08	4.47E+15	1.61E+15	7.26E+13	
2	89	1G028	3.65	36909	1218.4	30.29	U1C5	U1C6	U1C7			05-Apr-85	6.8	7-Jan-92	1.28E+08	4.45E+15	1.60E+15	7.22E+13	
2	90	2D122	2.73	34827	1061	32.82	U2C2	U2C3	U2C6			18-Oct-85	6.5	4-Apr-92	1.76E+08	4.39E+15	1.62E+15	8.18E+13	
2	91	2D126	2.73	34860	1061	32.86	U2C2	U2C3	U2C6			18-Oct-85	6.5	7-Apr-92	1.77E+08	4.39E+15	1.62E+15	8.18E+13	
2	92	2H106	3.4	28517	834.2	34.18	U2C6	U2C7				13-Mar-87	5.1	24-Apr-92	4.99E+07	4.85E+15	1.63E+15	7.34E+13	
2	93	2F004	3.65	36238	1328.7	27.27	U2C4	U2C5	U2C6			18-Oct-85	6.6	9-May-92	1.19E+08	4.49E+15	1.61E+15	7.29E+13	
2	94	1G012	3.65	37964	1218.4	31.16	U1C5	U1C6	U1C7			05-Apr-85	7.1	13-May-92	1.43E+08	4.39E+15	1.58E+15	7.07E+13	
2	95	1G014	3.65	37964	1218.4	31.16	U1C5	U1C6	U1C7			05-Apr-85	7.1	13-May-92	1.43E+08	4.39E+15	1.58E+15	7.07E+13	
3	96	2F013	3.65	36315	1328.7	27.33	U2C4	U2C5	U2C6			18-Oct-85	6.6	17-May-92	1.20E+08	4.48E+15	1.61E+15	7.28E+13	
3	97	2F029	3.65	36315	1328.7	27.33	U2C4	U2C5	U2C6			18-Oct-85	6.6	17-May-92	1.20E+08	4.48E+15	1.61E+15	7.28E+13	
3	98	1G025	3.65	38194	1218.4	31.35	U1C5	U1C6	U1C7			05-Apr-85	7.2	11-Jun-92	1.46E+08	4.37E+15	1.58E+15	7.03E+13	
3	99	1E103	2.73	36106	1075.2	33.58	U1C3	U1C4	U2C6			18-Oct-85	6.9	29-Aug-92	2.02E+08	4.30E+15	1.59E+15	8.00E+13	
3	100	1E110	2.73	36106	1075.2	33.58	U1C3	U1C4	U2C6			18-Oct-85	6.9	29-Aug-92	2.02E+08	4.30E+15	1.59E+15	8.00E+13	
3	101	1E111	2.73	36106	1075.2	33.58	U1C3	U1C4	U2C6			18-Oct-85	6.9	29-Aug-92	2.02E+08	4.30E+15	1.59E+15	8.00E+13	
3	102	1E108	2.73	36132	1075.2	33.60	U1C3	U1C4	U2C6			18-Oct-85	6.9	1-Sep-92	2.02E+08	4.30E+15	1.59E+15	8.00E+13	
3	103	1G015	3.65	38871	1218.4	31.90	U1C5	U1C6	U1C7			05-Apr-85	7.4	11-Sep-92	1.56E+08	4.33E+15	1.56E+15	6.91E+13	
3	104	2F014	3.65	38188	1328.7	28.74	U2C4	U2C5	U2C6			18-Oct-85	7.2	24-Dec-92	1.46E+08	4.37E+15	1.58E+15	7.03E+13	
3	105	2F020	3.65	38188	1328.7	28.74	U2C4	U2C5	U2C6			18-Oct-85	7.2	24-Dec-92	1.46E+08	4.37E+15	1.58E+15	7.03E+13	
3	106	2D042	3.03	33772	1071.6	31.52	U2C2	U2C3	U2C7			13-Mar-87	6.1	31-Mar-93	1.30E+08	4.53E+15	1.64E+15	8.02E+13	
3	107	2E009	3.03	35245	1255.5	28.07	U2C3	U2C4	U1C8			24-Oct-86	6.4	3-Apr-93	1.54E+08	4.44E+15	1.62E+15	7.90E+13	
3	108	2F012	3.65	38979	1328.7	29.34	U2C4	U2C5	U2C6			18-Oct-85	7.5	10-Apr-93	1.58E+08	4.32E+15	1.56E+15	6.89E+13	

DSCs	# Assys	Assembly	Enrich.	Bumup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
3	109	1G013	3.65	40297	1218.4	33.07	U1C5	U1C6	U1C7			05-Apr-85	8.0	15-Apr-93	1.78E+08	4.24E+15	1.53E+15	6.59E+13	
3	110	1G038	3.65	40526	1218.4	33.26	U1C5	U1C6	U1C7			05-Apr-85	8.1	23-May-93	1.82E+08	4.22E+15	1.52E+15	6.54E+13	
3	111	2F006	3.65	39732	1328.7	29.90	U2C4	U2C5	U2C6			18-Oct-85	7.8	31-Jul-93	1.69E+08	4.28E+15	1.54E+15	6.73E+13	
3	112	2F007	3.65	39732	1328.7	29.90	U2C4	U2C5	U2C6			18-Oct-85	7.8	31-Jul-93	1.69E+08	4.28E+15	1.54E+15	6.73E+13	
3	113	2F031	3.65	39732	1328.7	29.90	U2C4	U2C5	U2C6			18-Oct-85	7.8	31-Jul-93	1.69E+08	4.28E+15	1.54E+15	6.73E+13	
3	114	1H007	4	37570	1216.7	30.88	U1C6	U1C7	U1C8			24-Oct-86	6.9	10-Sep-93	1.13E+08	4.46E+15	1.59E+15	6.88E+13	
3	115	1H010	4	37570	1216.7	30.88	U1C6	U1C7	U1C8			24-Oct-86	6.9	10-Sep-93	1.13E+08	4.46E+15	1.59E+15	6.88E+13	
3	116	1H025	4	37570	1216.7	30.88	U1C6	U1C7	U1C8			24-Oct-86	6.9	10-Sep-93	1.13E+08	4.46E+15	1.59E+15	6.88E+13	
3	117	1H026	4	37570	1216.7	30.88	U1C6	U1C7	U1C8			24-Oct-86	6.9	10-Sep-93	1.13E+08	4.46E+15	1.59E+15	6.88E+13	
3	118	1H027	4	38277	1216.7	31.46	U1C6	U1C7	U1C8			24-Oct-86	7.1	3-Dec-93	1.22E+08	4.42E+15	1.58E+15	6.79E+13	
3	119	1H023	4	38331	1216.7	31.50	U1C6	U1C7	U1C8			24-Oct-86	7.1	10-Dec-93	1.23E+08	4.42E+15	1.58E+15	6.78E+13	
3	120	1H016	4	38401	1216.7	31.56	U1C6	U1C7	U1C8			24-Oct-86	7.2	18-Dec-93	1.24E+08	4.41E+15	1.58E+15	6.77E+13	
3	121	1H024	4	38401	1216.7	31.56	U1C6	U1C7	U1C8			24-Oct-86	7.2	18-Dec-93	1.24E+08	4.41E+15	1.58E+15	6.77E+13	
3	122	2F027	3.65	40769	1328.7	30.68	U2C4	U2C5	U2C6			18-Oct-85	8.3	15-Jan-94	1.85E+08	4.21E+15	1.52E+15	6.48E+13	
3	123	2F018	3.65	41203	1328.7	31.01	U2C4	U2C5	U2C6			18-Oct-85	8.5	1-Apr-94	1.92E+08	4.18E+15	1.50E+15	6.36E+13	
3	124	2E007	3.03	37252	1277.3	29.16	U2C3	U2C4	U2C7			13-Mar-87	7.1	15-Apr-94	1.89E+08	4.30E+15	1.58E+15	7.61E+13	
3	125	2G008	4	38352	1243.6	30.84	U2C5	U2C6	U2C7			13-Mar-87	7.1	1-May-94	1.23E+08	4.42E+15	1.58E+15	6.78E+13	
3	126	2G010	4	38352	1243.6	30.84	U2C5	U2C6	U2C7			13-Mar-87	7.1	1-May-94	1.23E+08	4.42E+15	1.58E+15	6.78E+13	
3	127	2G016	4	38352	1243.6	30.84	U2C5	U2C6	U2C7			13-Mar-87	7.1	1-May-94	1.23E+08	4.42E+15	1.58E+15	6.78E+13	
4	128	1H014	4	39732	1216.7	32.66	U1C6	U1C7	U1C8			24-Oct-86	7.7	17-Jun-94	1.41E+08	4.34E+15	1.55E+15	6.54E+13	
4	129	2G044	4	38953	1243.6	31.32	U2C5	U2C6	U2C7			13-Mar-87	7.4	18-Jul-94	1.31E+08	4.38E+15	1.57E+15	6.68E+13	
4	130	2G048	4	38953	1243.6	31.32	U2C5	U2C6	U2C7			13-Mar-87	7.4	18-Jul-94	1.31E+08	4.38E+15	1.57E+15	6.68E+13	
4	131	1H127	3.55	39514	1216.7	32.48	U1C6	U1C7	U1C8			24-Oct-86	7.7	19-Jul-94	1.75E+08	4.27E+15	1.55E+15	6.83E+13	
4	132	1H131	3.55	39514	1216.7	32.48	U1C6	U1C7	U1C8			24-Oct-86	7.7	19-Jul-94	1.75E+08	4.27E+15	1.55E+15	6.83E+13	
4	133	2G041	4	39047	1243.6	31.40	U2C5	U2C6	U2C7			13-Mar-87	7.4	31-Jul-94	1.32E+08	4.38E+15	1.56E+15	6.67E+13	
4	134	1H009	4	40129	1216.7	32.98	U1C6	U1C7	U1C8			24-Oct-86	7.8	16-Aug-94	1.46E+08	4.31E+15	1.54E+15	6.46E+13	
4	135	1H035	4	40149	1216.7	33.00	U1C6	U1C7	U1C8			24-Oct-86	7.8	19-Aug-94	1.46E+08	4.31E+15	1.54E+15	6.45E+13	
4	136	2G036	4	39280	1243.6	31.59	U2C5	U2C6	U2C7			13-Mar-87	7.5	1-Sep-94	1.35E+08	4.36E+15	1.56E+15	6.63E+13	
4	137	2G040	4	39280	1243.6	31.59	U2C5	U2C6	U2C7			13-Mar-87	7.5	1-Sep-94	1.35E+08	4.36E+15	1.56E+15	6.63E+13	
4	138	2G003	4	39287	1243.6	31.59	U2C5	U2C6	U2C7			13-Mar-87	7.5	2-Sep-94	1.35E+08	4.36E+15	1.56E+15	6.62E+13	
4	139	2G017	4	39294	1243.6	31.60	U2C5	U2C6	U2C7			13-Mar-87	7.5	3-Sep-94	1.35E+08	4.36E+15	1.56E+15	6.62E+13	
4	140	1J005	4.05	36311	1158.9	31.33	U1C7	U1C8	U1C9			08-Apr-88	6.5	10-Oct-94	9.60E+07	4.53E+15	1.61E+15	6.97E+13	
4	141	1H003	4	40605	1216.7	33.37	U1C6	U1C7	U1C8			24-Oct-86	8.0	29-Oct-94	1.53E+08	4.28E+15	1.53E+15	6.35E+13	
4	142	1H030	4	40605	1216.7	33.37	U1C6	U1C7	U1C8			24-Oct-86	8.0	29-Oct-94	1.53E+08	4.28E+15	1.53E+15	6.35E+13	
4	143	2G122	3.55	39731	1243.6	31.95	U2C5	U2C6	U2C7			13-Mar-87	7.8	8-Jan-95	1.78E+08	4.26E+15	1.54E+15	6.78E+13	
4	144	2G125	3.55	39731	1243.6	31.95	U2C5	U2C6	U2C7			13-Mar-87	7.8	8-Jan-95	1.78E+08	4.26E+15	1.54E+15	6.78E+13	
4	145	2G028	4	40263	1243.6	32.38	U2C5	U2C6	U2C7			13-Mar-87	7.9	23-Jan-95	1.48E+08	4.30E+15	1.54E+15	6.43E+13	
4	146	2G032	4	40807	1243.6	32.81	U2C5	U2C6	U2C7			13-Mar-87	8.1	20-Apr-95	1.55E+08	4.27E+15	1.52E+15	6.31E+13	
4	147	2J103	3.4	34298	974.8	35.18	U2C7	U2C8				17-Mar-89	6.1	21-Apr-95	1.10E+08	4.56E+15	1.64E+15	7.64E+13	
4	148	1H106	3.55	41360	1216.7	33.99	U1C6	U1C7	U1C8			24-Oct-86	8.6	24-May-95	2.05E+08	4.15E+15	1.50E+15	6.36E+13	
4	149	2G033	4	41044	1243.6	33.00	U2C5	U2C6	U2C7			13-Mar-87	8.2	29-May-95	1.59E+08	4.26E+15	1.52E+15	6.25E+13	
4	150	2G021	4	41050	1243.6	33.01	U2C5	U2C6	U2C7			13-Mar-87	8.2	30-May-95	1.59E+08	4.26E+15	1.52E+15	6.25E+13	
4	151	1J110	3.4	38086	1158.9	32.86	U1C7	U1C8	U1C9			08-Apr-88	7.2	3-Jul-95	1.66E+08	4.33E+15	1.57E+15	7.22E+13	
4	152	2E040	3.03	37734	1204.3	31.33	U2C3	U2C4	U1C9			08-Apr-88	7.3	16-Jul-95	1.98E+08	4.27E+15	1.57E+15	7.52E+13	
4	153	1H103	3.55	41915	1216.7	34.45	U1C6	U1C7	U1C8			24-Oct-86	8.9	5-Sep-95	2.14E+08	4.11E+15	1.48E+15	6.19E+13	
4	154	1H112	3.55	41960	1216.7	34.49	U1C6	U1C7	U1C8			24-Oct-86	8.9	14-Sep-95	2.15E+08	4.11E+15	1.48E+15	6.18E+13	
4	155	1H122	3.55	42033	1216.7	34.55	U1C6	U1C7	U1C8			24-Oct-86	8.9	28-Sep-95	2.16E+08	4.10E+15	1.48E+15	6.16E+13	
4	156	1H132	3.55	42038	1216.7	34.55	U1C6	U1C7	U1C8			24-Oct-86	8.9	29-Sep-95	2.16E+08	4.10E+15	1.47E+15	6.15E+13	
4	157	2G106	3.55	41369	1243.6	33.27	U2C5	U2C6	U2C7			13-Mar-87	8.6	12-Oct-95	2.05E+08	4.15E+15	1.49E+15	6.35E+13	
4	158	2G107	3.55	41369	1243.6	33.27	U2C5	U2C6	U2C7			13-Mar-87	8.6	12-Oct-95	2.05E+08	4.15E+15	1.49E+15	6.35E+13	
4	159	2G110	3.55	41369	1243.6	33.27	U2C5	U2C6	U2C7			13-Mar-87	8.6	12-Oct-95	2.05E+08	4.15E+15	1.49E+15	6.35E+13	
5	160	2G022	4	41861	1243.6	33.66	U2C5	U2C6	U2C7			13-Mar-87	8.6	19-Oct-95	1.70E+08	4.21E+15	1.50E+15	6.04E+13	
5	161	2H009	4.05	37521	1386.6	27.06	U2C6	U2C7	U2C8			17-Mar-89	6.9	22-Jan-96	1.10E+08	4.47E+15	1.59E+15	6.86E+13	
5	162	2G124	3.55	43448	1243.6	34.94	U2C5	U2C6	U2C7			13-Mar-87	9.7	5-Dec-96	2.40E+08	4.01E+15	1.43E+15	5.69E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
5	163	2G118	3.55	43452	1243.6	34.94	U2C5	U2C6	U2C7			13-Mar-87	9.7	6-Dec-96	2.40E+08	4.01E+15	1.43E+15	5.69E+13	
5	164	2G102	3.55	43505	1243.6	34.98	U2C5	U2C6	U2C7			13-Mar-87	9.8	18-Dec-96	2.41E+08	4.00E+15	1.43E+15	5.67E+13	
5	165	2H032	4.05	42000	1386.6	30.29	U2C6	U2C7	U2C8			17-Mar-89	8.7	8-Nov-97	1.68E+08	4.21E+15	1.49E+15	5.98E+13	
5	166	1K017	4.05	34391	1382.8	24.87	U1C8	U1C9	U1C10			19-Mar-92	6.1	10-Apr-98	7.63E+07	4.63E+15	1.63E+15	7.03E+13	
5	167	1K040	4.05	34391	1382.8	24.87	U1C8	U1C9	U1C10			19-Mar-92	6.1	10-Apr-98	7.63E+07	4.63E+15	1.63E+15	7.03E+13	
5	168	1K030	4.05	34448	1382.8	24.91	U1C8	U1C9	U1C10			19-Mar-92	6.1	14-Apr-98	7.68E+07	4.63E+15	1.63E+15	7.03E+13	
5	169	2H111	3.4	42163	1386.6	30.41	U2C6	U2C7	U2C8			17-Mar-89	9.1	18-Apr-98	2.36E+08	4.06E+15	1.46E+15	6.17E+13	
5	170	1K038	4.05	34504	1382.8	24.95	U1C8	U1C9	U1C10			19-Mar-92	6.1	18-Apr-98	7.74E+07	4.62E+15	1.63E+15	7.03E+13	
5	171	1K046	4.05	34509	1382.8	24.96	U1C8	U1C9	U1C10			19-Mar-92	6.1	19-Apr-98	7.74E+07	4.62E+15	1.63E+15	7.03E+13	
5	172	1L026	4.05	34681	982.2	35.31	U1C9	U1C10				19-Mar-92	6.1	2-May-98	7.91E+07	4.61E+15	1.62E+15	7.03E+13	
5	173	1K006	4.05	35317	1382.8	25.54	U1C8	U1C9	U1C10			19-Mar-92	6.3	22-Jun-98	8.54E+07	4.58E+15	1.62E+15	7.01E+13	
5	174	1K011	4.05	35338	1382.8	25.56	U1C8	U1C9	U1C10			19-Mar-92	6.3	24-Jun-98	8.57E+07	4.58E+15	1.62E+15	7.01E+13	
5	175	2H045	4.05	43415	1386.6	31.31	U2C6	U2C7	U2C8			17-Mar-89	9.4	13-Aug-98	1.88E+08	4.12E+15	1.45E+15	5.57E+13	
5	176	2H034	4.05	43453	1386.6	31.34	U2C6	U2C7	U2C8			17-Mar-89	9.4	21-Aug-98	1.89E+08	4.12E+15	1.45E+15	5.56E+13	
5	177	2H027	4.05	43499	1386.6	31.37	U2C6	U2C7	U2C8			17-Mar-89	9.5	31-Aug-98	1.89E+08	4.11E+15	1.45E+15	5.54E+13	
5	178	1L110	3.4	36487	982.2	37.15	U1C9	U1C10				19-Mar-92	6.7	28-Nov-98	1.41E+08	4.43E+15	1.61E+15	7.46E+13	
5	179	1L112	3.4	36487	982.2	37.15	U1C9	U1C10				19-Mar-92	6.7	28-Nov-98	1.41E+08	4.43E+15	1.61E+15	7.46E+13	
5	180	1L101	3.4	36625	982.2	37.29	U1C9	U1C10				19-Mar-92	6.7	13-Dec-98	1.43E+08	4.42E+15	1.60E+15	7.45E+13	
5	181	1L108	3.4	36625	982.2	37.29	U1C9	U1C10				19-Mar-92	6.7	13-Dec-98	1.43E+08	4.42E+15	1.60E+15	7.45E+13	
5	182	1L106	3.4	36626	982.2	37.29	U1C9	U1C10				19-Mar-92	6.7	13-Dec-98	1.43E+08	4.42E+15	1.60E+15	7.45E+13	
5	183	2H109	3.4	45272	1386.6	32.65	U2C6	U2C7	U2C8			17-Mar-89	11.1	3-Apr-00	2.91E+08	3.84E+15	1.36E+15	5.06E+13	
5	184	2H122	3.4	45272	1386.6	32.65	U2C6	U2C7	U2C8			17-Mar-89	11.1	3-Apr-00	2.91E+08	3.84E+15	1.36E+15	5.06E+13	
5	185	2H121	3.4	45274	1386.6	32.65	U2C6	U2C7	U2C8			17-Mar-89	11.1	3-Apr-00	2.91E+08	3.84E+15	1.36E+15	5.06E+13	
5	186	2K105	4.08	38476	1106.9	34.76	U2C8	U2C9				19-Feb-93	7.2	16-Apr-00	1.19E+08	4.42E+15	1.58E+15	6.71E+13	
5	187	2K101	4.08	38489	1106.9	34.77	U2C8	U2C9				19-Feb-93	7.2	18-Apr-00	1.19E+08	4.42E+15	1.58E+15	6.71E+13	
5	188	2K107	4.08	38491	1106.9	34.77	U2C8	U2C9				19-Feb-93	7.2	18-Apr-00	1.19E+08	4.42E+15	1.58E+15	6.71E+13	
5	189	2K109	4.08	38491	1106.9	34.77	U2C8	U2C9				19-Feb-93	7.2	18-Apr-00	1.19E+08	4.42E+15	1.58E+15	6.71E+13	
5	190	2J002	4.05	38655	1529.3	25.28	U2C7	U2C8	U2C9			19-Feb-93	7.2	12-May-00	1.23E+08	4.40E+15	1.57E+15	6.70E+13	
5	191	2J019	4.05	38655	1529.3	25.28	U2C7	U2C8	U2C9			19-Feb-93	7.2	12-May-00	1.23E+08	4.40E+15	1.57E+15	6.70E+13	
6	192	2J006	4.05	38662	1529.3	25.28	U2C7	U2C8	U2C9			19-Feb-93	7.2	13-May-00	1.24E+08	4.40E+15	1.57E+15	6.70E+13	
6	193	2J013	4.05	38662	1529.3	25.28	U2C7	U2C8	U2C9			19-Feb-93	7.2	13-May-00	1.24E+08	4.40E+15	1.57E+15	6.70E+13	
6	194	1L014	4.05	35324	1488.8	23.73	U1C9	U1C10	U1C11			09-Feb-94	6.3	15-May-00	8.55E+07	4.58E+15	1.62E+15	7.01E+13	
6	195	2J015	4.05	38677	1529.3	25.29	U2C7	U2C8	U2C9			19-Feb-93	7.2	15-May-00	1.24E+08	4.40E+15	1.57E+15	6.70E+13	
6	196	2J030	4.05	38677	1529.3	25.29	U2C7	U2C8	U2C9			19-Feb-93	7.2	15-May-00	1.24E+08	4.40E+15	1.57E+15	6.70E+13	
6	197	1L002	4.05	35330	1488.8	23.73	U1C9	U1C10	U1C11			09-Feb-94	6.3	15-May-00	8.56E+07	4.58E+15	1.62E+15	7.01E+13	
6	198	1L013	4.05	35330	1488.8	23.73	U1C9	U1C10	U1C11			09-Feb-94	6.3	15-May-00	8.56E+07	4.58E+15	1.62E+15	7.01E+13	
6	199	2H116	3.4	45750	1386.6	32.99	U2C6	U2C7	U2C8			17-Mar-89	11.4	8-Aug-00	3.00E+08	3.80E+15	1.34E+15	4.87E+13	
6	200	2H117	3.4	45750	1386.6	32.99	U2C6	U2C7	U2C8			17-Mar-89	11.4	8-Aug-00	3.00E+08	3.80E+15	1.34E+15	4.87E+13	
6	201	2H104	3.4	45767	1386.6	33.01	U2C6	U2C7	U2C8			17-Mar-89	11.4	13-Aug-00	3.00E+08	3.80E+15	1.34E+15	4.87E+13	
6	202	2J022	4.05	39505	1529.3	25.83	U2C7	U2C8	U2C9			19-Feb-93	7.5	4-Sep-00	1.34E+08	4.36E+15	1.56E+15	6.56E+13	
6	203	2J036	4.05	39505	1529.3	25.83	U2C7	U2C8	U2C9			19-Feb-93	7.5	4-Sep-00	1.34E+08	4.36E+15	1.56E+15	6.56E+13	
6	204	2H120	3.4	46058	1386.6	33.22	U2C6	U2C7	U2C8			17-Mar-89	11.6	1-Nov-00	3.05E+08	3.78E+15	1.33E+15	4.75E+13	
6	205	2J011	4.05	40498	1529.3	26.48	U2C7	U2C8	U2C9			19-Feb-93	8.0	30-Jan-01	1.47E+08	4.30E+15	1.53E+15	6.35E+13	
6	206	1H038	4	48408	1566.1	30.91	U1C6	U1C7	U1C8	U1C9		08-Apr-88	13.0	21-Apr-01	2.66E+08	3.78E+15	1.29E+15	3.82E+13	
6	207	2K208	4.08	41233	1106.9	37.25	U2C8	U2C9				19-Feb-93	8.3	25-May-01	1.55E+08	4.26E+15	1.52E+15	6.17E+13	
6	208	2K213	4.08	41237	1106.9	37.25	U2C8	U2C9				19-Feb-93	8.3	26-May-01	1.55E+08	4.26E+15	1.51E+15	6.17E+13	
6	209	1K045	4.05	43470	1382.8	31.44	U1C8	U1C9	U1C10			19-Mar-92	9.4	27-Aug-01	1.89E+08	4.11E+15	1.45E+15	5.55E+13	
6	210	2K115	4.08	41788	1106.9	37.75	U2C8	U2C9				19-Feb-93	8.5	30-Aug-01	1.63E+08	4.22E+15	1.50E+15	6.03E+13	
6	211	2K103	4.08	41817	1106.9	37.78	U2C8	U2C9				19-Feb-93	8.5	4-Sep-01	1.63E+08	4.22E+15	1.50E+15	6.02E+13	
6	212	1K035	4.05	43551	1382.8	31.49	U1C8	U1C9	U1C10			19-Mar-92	9.5	13-Sep-01	1.90E+08	4.11E+15	1.45E+15	5.53E+13	
6	213	2K212	4.08	42206	1106.9	38.13	U2C8	U2C9				19-Feb-93	8.7	14-Nov-01	1.68E+08	4.20E+15	1.49E+15	5.92E+13	
6	214	2K214	4.08	42206	1106.9	38.13	U2C8	U2C9				19-Feb-93	8.7	14-Nov-01	1.68E+08	4.20E+15	1.49E+15	5.92E+13	
6	215	1L001	4.05	40117	1488.8	26.95	U1C9	U1C10	U1C11			09-Feb-94	7.8	22-Nov-01	1.42E+08	4.32E+15	1.54E+15	6.44E+13	
6	216	1L003	4.05	40117	1488.8	26.95	U1C9	U1C10	U1C11			09-Feb-94	7.8	22-Nov-01	1.42E+08	4.32E+15	1.54E+15	6.44E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
6	217	1L029	4.05	40117	1488.8	26.95	U1C9	U1C10	U1C11			09-Feb-94	7.8	22-Nov-01	1.42E+08	4.32E+15	1.54E+15	6.44E+13	
6	218	1L031	4.05	40117	1488.8	26.95	U1C9	U1C10	U1C11			09-Feb-94	7.8	22-Nov-01	1.42E+08	4.32E+15	1.54E+15	6.44E+13	
6	219	1L005	4.05	40129	1488.8	26.95	U1C9	U1C10	U1C11			09-Feb-94	7.8	24-Nov-01	1.42E+08	4.32E+15	1.54E+15	6.43E+13	
6	220	1L011	4.05	40129	1488.8	26.95	U1C9	U1C10	U1C11			09-Feb-94	7.8	24-Nov-01	1.42E+08	4.32E+15	1.54E+15	6.43E+13	
6	221	1L015	4.05	40129	1488.8	26.95	U1C9	U1C10	U1C11			09-Feb-94	7.8	24-Nov-01	1.42E+08	4.32E+15	1.54E+15	6.43E+13	
6	222	1L033	4.05	40129	1488.8	26.95	U1C9	U1C10	U1C11			09-Feb-94	7.8	24-Nov-01	1.42E+08	4.32E+15	1.54E+15	6.43E+13	
6	223	2K117	4.08	42372	1106.9	38.28	U2C8	U2C9				19-Feb-93	8.8	16-Dec-01	1.71E+08	4.19E+15	1.48E+15	5.87E+13	
7	224	2K202	4.08	42405	1106.9	38.31	U2C8	U2C9				19-Feb-93	8.8	22-Dec-01	1.71E+08	4.19E+15	1.48E+15	5.86E+13	
7	225	2K143	4.08	42430	1106.9	38.33	U2C8	U2C9				19-Feb-93	8.9	27-Dec-01	1.71E+08	4.19E+15	1.48E+15	5.85E+13	
7	226	1K120	3.4	43362	1382.8	31.36	U1C8	U1C9	U1C10			19-Mar-92	9.8	30-Dec-01	2.57E+08	3.97E+15	1.42E+15	5.76E+13	
7	227	1L019	4.05	40434	1488.8	27.16	U1C9	U1C10	U1C11			09-Feb-94	7.9	10-Jan-02	1.46E+08	4.30E+15	1.53E+15	6.37E+13	
7	228	1L020	4.05	40434	1488.8	27.16	U1C9	U1C10	U1C11			09-Feb-94	7.9	10-Jan-02	1.46E+08	4.30E+15	1.53E+15	6.37E+13	
7	229	1L037	4.05	40434	1488.8	27.16	U1C9	U1C10	U1C11			09-Feb-94	7.9	10-Jan-02	1.46E+08	4.30E+15	1.53E+15	6.37E+13	
7	230	1L038	4.05	40434	1488.8	27.16	U1C9	U1C10	U1C11			09-Feb-94	7.9	10-Jan-02	1.46E+08	4.30E+15	1.53E+15	6.37E+13	
7	231	1L012	4.05	40462	1488.8	27.18	U1C9	U1C10	U1C11			09-Feb-94	7.9	15-Jan-02	1.47E+08	4.30E+15	1.53E+15	6.36E+13	
7	232	1L034	4.05	40462	1488.8	27.18	U1C9	U1C10	U1C11			09-Feb-94	7.9	15-Jan-02	1.47E+08	4.30E+15	1.53E+15	6.36E+13	
7	233	1L039	4.05	40462	1488.8	27.18	U1C9	U1C10	U1C11			09-Feb-94	7.9	15-Jan-02	1.47E+08	4.30E+15	1.53E+15	6.36E+13	
7	234	1L040	4.05	40462	1488.8	27.18	U1C9	U1C10	U1C11			09-Feb-94	7.9	15-Jan-02	1.47E+08	4.30E+15	1.53E+15	6.36E+13	
7	235	1L006	4.05	40495	1488.8	27.20	U1C9	U1C10	U1C11			09-Feb-94	8.0	20-Jan-02	1.47E+08	4.30E+15	1.53E+15	6.35E+13	
7	236	1L022	4.05	40495	1488.8	27.20	U1C9	U1C10	U1C11			09-Feb-94	8.0	20-Jan-02	1.47E+08	4.30E+15	1.53E+15	6.35E+13	
7	237	1L035	4.05	40495	1488.8	27.20	U1C9	U1C10	U1C11			09-Feb-94	8.0	20-Jan-02	1.47E+08	4.30E+15	1.53E+15	6.35E+13	
7	238	1L036	4.05	40495	1488.8	27.20	U1C9	U1C10	U1C11			09-Feb-94	8.0	20-Jan-02	1.47E+08	4.30E+15	1.53E+15	6.35E+13	
7	239	1L004	4.05	40614	1488.8	27.28	U1C9	U1C10	U1C11			09-Feb-94	8.0	8-Feb-02	1.49E+08	4.29E+15	1.53E+15	6.33E+13	
7	240	1L007	4.05	40614	1488.8	27.28	U1C9	U1C10	U1C11			09-Feb-94	8.0	8-Feb-02	1.49E+08	4.29E+15	1.53E+15	6.33E+13	
7	241	1L021	4.05	40614	1488.8	27.28	U1C9	U1C10	U1C11			09-Feb-94	8.0	8-Feb-02	1.49E+08	4.29E+15	1.53E+15	6.33E+13	
7	242	1L032	4.05	40614	1488.8	27.28	U1C9	U1C10	U1C11			09-Feb-94	8.0	8-Feb-02	1.49E+08	4.29E+15	1.53E+15	6.33E+13	
7	243	2K130	4.08	42719	1106.9	38.59	U2C8	U2C9				19-Feb-93	9.0	21-Feb-02	1.75E+08	4.17E+15	1.47E+15	5.77E+13	
7	244	2K122	4.08	42774	1106.9	38.64	U2C8	U2C9				19-Feb-93	9.0	3-Mar-02	1.76E+08	4.16E+15	1.47E+15	5.75E+13	
7	245	2K136	4.08	42776	1106.9	38.64	U2C8	U2C9				19-Feb-93	9.0	4-Mar-02	1.76E+08	4.16E+15	1.47E+15	5.75E+13	
7	246	1K112	3.4	43879	1382.8	31.73	U1C8	U1C9	U1C10			19-Mar-92	10.1	27-Apr-02	2.67E+08	3.94E+15	1.41E+15	5.58E+13	
7	247	1K119	3.4	43884	1382.8	31.74	U1C8	U1C9	U1C10			19-Mar-92	10.1	28-Apr-02	2.67E+08	3.94E+15	1.41E+15	5.58E+13	
7	248	2K004	4.08	38664	1688.6	22.90	U2C8	U2C9	U2C10			18-Mar-95	7.2	6-Jun-02	1.22E+08	4.41E+15	1.57E+15	6.68E+13	
7	249	2K006	4.08	38664	1688.6	22.90	U2C8	U2C9	U2C10			18-Mar-95	7.2	6-Jun-02	1.22E+08	4.41E+15	1.57E+15	6.68E+13	
7	250	2K012	4.08	38664	1688.6	22.90	U2C8	U2C9	U2C10			18-Mar-95	7.2	6-Jun-02	1.22E+08	4.41E+15	1.57E+15	6.68E+13	
7	251	2K003	4.08	38668	1688.6	22.90	U2C8	U2C9	U2C10			18-Mar-95	7.2	6-Jun-02	1.22E+08	4.41E+15	1.57E+15	6.68E+13	
7	252	2K009	4.08	38668	1688.6	22.90	U2C8	U2C9	U2C10			18-Mar-95	7.2	6-Jun-02	1.22E+08	4.41E+15	1.57E+15	6.68E+13	
7	253	2K013	4.08	38668	1688.6	22.90	U2C8	U2C9	U2C10			18-Mar-95	7.2	6-Jun-02	1.22E+08	4.41E+15	1.57E+15	6.68E+13	
7	254	2K015	4.08	38668	1688.6	22.90	U2C8	U2C9	U2C10			18-Mar-95	7.2	6-Jun-02	1.22E+08	4.41E+15	1.57E+15	6.68E+13	
7	255	2K011	4.08	38681	1688.6	22.91	U2C8	U2C9	U2C10			18-Mar-95	7.2	8-Jun-02	1.22E+08	4.41E+15	1.57E+15	6.68E+13	
8	256	1F048	3.03	50365	1985.6	25.37	U1C4	U1C5	U1C6	U1C7	U1C8	24-Oct-86	15.9	1-Oct-02	4.41E+08	3.35E+15	1.13E+15	3.05E+13	
8	257	1K122	3.4	44688	1382.8	32.32	U1C8	U1C9	U1C10			19-Mar-92	10.6	8-Nov-02	2.81E+08	3.88E+15	1.38E+15	5.28E+13	
8	258	2K001	4.08	40490	1688.6	23.98	U2C8	U2C9	U2C10			18-Mar-95	7.9	20-Feb-03	1.45E+08	4.30E+15	1.53E+15	6.34E+13	
8	259	2K002	4.08	40490	1688.6	23.98	U2C8	U2C9	U2C10			18-Mar-95	7.9	20-Feb-03	1.45E+08	4.30E+15	1.53E+15	6.34E+13	
8	260	2K005	4.08	40490	1688.6	23.98	U2C8	U2C9	U2C10			18-Mar-95	7.9	20-Feb-03	1.45E+08	4.30E+15	1.53E+15	6.34E+13	
8	261	2K016	4.08	40490	1688.6	23.98	U2C8	U2C9	U2C10			18-Mar-95	7.9	20-Feb-03	1.45E+08	4.30E+15	1.53E+15	6.34E+13	
8	262	2K010	4.08	40504	1688.6	23.99	U2C8	U2C9	U2C10			18-Mar-95	7.9	23-Feb-03	1.45E+08	4.30E+15	1.53E+15	6.34E+13	
8	263	2K008	4.08	40508	1688.6	23.99	U2C8	U2C9	U2C10			18-Mar-95	7.9	23-Feb-03	1.45E+08	4.30E+15	1.53E+15	6.34E+13	
8	264	2K014	4.08	40508	1688.6	23.99	U2C8	U2C9	U2C10			18-Mar-95	7.9	23-Feb-03	1.45E+08	4.30E+15	1.53E+15	6.34E+13	
8	265	2K007	4.08	40510	1688.6	23.99	U2C8	U2C9	U2C10			18-Mar-95	7.9	23-Feb-03	1.45E+08	4.30E+15	1.53E+15	6.34E+13	
8	266	1K047	4.05	45824	1382.8	33.14	U1C8	U1C9	U1C10			19-Mar-92	11.0	2-Mar-03	2.23E+08	3.96E+15	1.38E+15	4.76E+13	
8	267	1K048	4.05	45824	1382.8	33.14	U1C8	U1C9	U1C10			19-Mar-92	11.0	2-Mar-03	2.23E+08	3.96E+15	1.38E+15	4.76E+13	
8	268	1K104	3.4	42433	1256.6	33.77	U1C8	U1C9	U1C11			09-Feb-94	9.2	7-May-03	2.41E+08	4.04E+15	1.45E+15	6.08E+13	
8	269	1K103	3.4	45429	1382.8	32.85	U1C8	U1C9	U1C10			19-Mar-92	11.2	17-May-03	2.94E+08	3.83E+15	1.35E+15	5.00E+13	
8	270	1K014	4.05	46310	1382.8	33.49	U1C8	U1C9	U1C10			19-Mar-92	11.3	8-Jul-03	2.30E+08	3.93E+15	1.36E+15	4.59E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
8	271	1K027	4.05	46310	1382.8	33.49	U1C8	U1C9	U1C10			19-Mar-92	11.3	8-Jul-03	2.30E+08	3.93E+15	1.36E+15	4.59E+13	
8	272	1K028	4.05	46310	1382.8	33.49	U1C8	U1C9	U1C10			19-Mar-92	11.3	8-Jul-03	2.30E+08	3.93E+15	1.36E+15	4.59E+13	
8	273	1K032	4.05	46310	1382.8	33.49	U1C8	U1C9	U1C10			19-Mar-92	11.3	8-Jul-03	2.30E+08	3.93E+15	1.36E+15	4.59E+13	
8	274	1K124	3.4	45707	1382.8	33.05	U1C8	U1C9	U1C10			19-Mar-92	11.4	30-Jul-03	2.99E+08	3.81E+15	1.34E+15	4.89E+13	
8	275	1K105	3.4	45723	1382.8	33.07	U1C8	U1C9	U1C10			19-Mar-92	11.4	4-Aug-03	2.99E+08	3.81E+15	1.34E+15	4.88E+13	
8	276	1K121	3.4	45723	1382.8	33.07	U1C8	U1C9	U1C10			19-Mar-92	11.4	4-Aug-03	2.99E+08	3.81E+15	1.34E+15	4.88E+13	
8	277	2J008	4.05	45111	1529.3	29.50	U2C7	U2C8	U2C9			19-Feb-93	10.5	7-Aug-03	2.13E+08	4.01E+15	1.40E+15	5.01E+13	
8	278	2L117	4.3	42128	1136.2	37.08	U2C9	U2C10				18-Mar-95	8.6	15-Oct-03	1.50E+08	4.24E+15	1.50E+15	5.87E+13	
8	279	2L118	4.3	42128	1136.2	37.08	U2C9	U2C10				18-Mar-95	8.6	15-Oct-03	1.50E+08	4.24E+15	1.50E+15	5.87E+13	
8	280	2L119	4.3	42128	1136.2	37.08	U2C9	U2C10				18-Mar-95	8.6	15-Oct-03	1.50E+08	4.24E+15	1.50E+15	5.87E+13	
8	281	2L120	4.3	42128	1136.2	37.08	U2C9	U2C10				18-Mar-95	8.6	15-Oct-03	1.50E+08	4.24E+15	1.50E+15	5.87E+13	
8	282	2L101	4.3	42187	1136.2	37.13	U2C9	U2C10				18-Mar-95	8.6	26-Oct-03	1.51E+08	4.24E+15	1.49E+15	5.85E+13	
8	283	2L102	4.3	42187	1136.2	37.13	U2C9	U2C10				18-Mar-95	8.6	26-Oct-03	1.51E+08	4.24E+15	1.49E+15	5.85E+13	
8	284	2L103	4.3	42187	1136.2	37.13	U2C9	U2C10				18-Mar-95	8.6	26-Oct-03	1.51E+08	4.24E+15	1.49E+15	5.85E+13	
8	285	2L104	4.3	42187	1136.2	37.13	U2C9	U2C10				18-Mar-95	8.6	26-Oct-03	1.51E+08	4.24E+15	1.49E+15	5.85E+13	
8	286	1M102	4.08	44209	1139.4	38.80	U1C10	U1C11				09-Feb-94	9.9	21-Dec-03	1.97E+08	4.07E+15	1.43E+15	5.31E+13	
8	287	1M134	4.08	44209	1139.4	38.80	U1C10	U1C11				09-Feb-94	9.9	21-Dec-03	1.97E+08	4.07E+15	1.43E+15	5.31E+13	
9	288	1M135	4.08	44209	1139.4	38.80	U1C10	U1C11				09-Feb-94	9.9	21-Dec-03	1.97E+08	4.07E+15	1.43E+15	5.31E+13	
9	289	1M170	4.08	44209	1139.4	38.80	U1C10	U1C11				09-Feb-94	9.9	21-Dec-03	1.97E+08	4.07E+15	1.43E+15	5.31E+13	
9	290	2K110	4.08	42784	1688.6	25.34	U2C8	U2C9	U2C10			18-Mar-95	9.0	31-Mar-04	1.76E+08	4.16E+15	1.47E+15	5.75E+13	
9	291	2K111	4.08	42784	1688.6	25.34	U2C8	U2C9	U2C10			18-Mar-95	9.0	31-Mar-04	1.76E+08	4.16E+15	1.47E+15	5.75E+13	
9	292	2K113	4.08	42784	1688.6	25.34	U2C8	U2C9	U2C10			18-Mar-95	9.0	31-Mar-04	1.76E+08	4.16E+15	1.47E+15	5.75E+13	
9	293	2K137	4.08	42784	1688.6	25.34	U2C8	U2C9	U2C10			18-Mar-95	9.0	31-Mar-04	1.76E+08	4.16E+15	1.47E+15	5.75E+13	
9	294	2L321	4.3	43470	1136.2	38.26	U2C9	U2C10				18-Mar-95	9.3	30-Jun-04	1.68E+08	4.16E+15	1.46E+15	5.49E+13	
9	295	2L322	4.3	43470	1136.2	38.26	U2C9	U2C10				18-Mar-95	9.3	30-Jun-04	1.68E+08	4.16E+15	1.46E+15	5.49E+13	
9	296	2L323	4.3	43470	1136.2	38.26	U2C9	U2C10				18-Mar-95	9.3	30-Jun-04	1.68E+08	4.16E+15	1.46E+15	5.49E+13	
9	297	2L324	4.3	43470	1136.2	38.26	U2C9	U2C10				18-Mar-95	9.3	30-Jun-04	1.68E+08	4.16E+15	1.46E+15	5.49E+13	
9	298	2L301	4.3	43481	1136.2	38.27	U2C9	U2C10				18-Mar-95	9.3	2-Jul-04	1.68E+08	4.16E+15	1.46E+15	5.49E+13	
9	299	2L302	4.3	43481	1136.2	38.27	U2C9	U2C10				18-Mar-95	9.3	2-Jul-04	1.68E+08	4.16E+15	1.46E+15	5.49E+13	
9	300	2L303	4.3	43481	1136.2	38.27	U2C9	U2C10				18-Mar-95	9.3	2-Jul-04	1.68E+08	4.16E+15	1.46E+15	5.49E+13	
9	301	2L304	4.3	43481	1136.2	38.27	U2C9	U2C10				18-Mar-95	9.3	2-Jul-04	1.68E+08	4.16E+15	1.46E+15	5.49E+13	
9	302	2K104	4.08	43328	1106.9	39.14	U2C8	U2C9				18-Mar-95	9.3	19-Jul-04	1.84E+08	4.13E+15	1.46E+15	5.59E+13	
9	303	2K106	4.08	43328	1688.6	25.66	U2C8	U2C9	U2C10			18-Mar-95	9.3	19-Jul-04	1.84E+08	4.13E+15	1.46E+15	5.59E+13	
9	304	2K139	4.08	43328	1688.6	25.66	U2C8	U2C9	U2C10			18-Mar-95	9.3	19-Jul-04	1.84E+08	4.13E+15	1.46E+15	5.59E+13	
9	305	2K141	4.08	43328	1688.6	25.66	U2C8	U2C9	U2C10			18-Mar-95	9.3	19-Jul-04	1.84E+08	4.13E+15	1.46E+15	5.59E+13	
9	306	1M103	4.08	45355	1139.4	39.81	U1C10	U1C11				09-Feb-94	10.6	17-Sep-04	2.13E+08	4.00E+15	1.39E+15	4.92E+13	
9	307	1M130	4.08	45355	1139.4	39.81	U1C10	U1C11				09-Feb-94	10.6	17-Sep-04	2.13E+08	4.00E+15	1.39E+15	4.92E+13	
9	308	1M131	4.08	45355	1139.4	39.81	U1C10	U1C11				09-Feb-94	10.6	17-Sep-04	2.13E+08	4.00E+15	1.39E+15	4.92E+13	
9	309	1M136	4.08	45355	1139.4	39.81	U1C10	U1C11				09-Feb-94	10.6	17-Sep-04	2.13E+08	4.00E+15	1.39E+15	4.92E+13	
9	310	1M104	4.08	45598	1139.4	40.02	U1C10	U1C11				09-Feb-94	10.8	17-Nov-04	2.17E+08	3.99E+15	1.39E+15	4.84E+13	
9	311	1M108	4.08	45598	1139.4	40.02	U1C10	U1C11				09-Feb-94	10.8	17-Nov-04	2.17E+08	3.99E+15	1.39E+15	4.84E+13	
9	312	1M149	4.08	45598	1139.4	40.02	U1C10	U1C11				09-Feb-94	10.8	17-Nov-04	2.17E+08	3.99E+15	1.39E+15	4.84E+13	
9	313	1M151	4.08	45601	1139.4	40.02	U1C10	U1C11				09-Feb-94	10.8	18-Nov-04	2.17E+08	3.98E+15	1.39E+15	4.84E+13	
9	314	1M124	4.08	45615	1139.4	40.03	U1C10	U1C11				09-Feb-94	10.8	21-Nov-04	2.17E+08	3.98E+15	1.39E+15	4.83E+13	
9	315	1M127	4.08	45615	1139.4	40.03	U1C10	U1C11				09-Feb-94	10.8	21-Nov-04	2.17E+08	3.98E+15	1.39E+15	4.83E+13	
9	316	1M155	4.08	45615	1139.4	40.03	U1C10	U1C11				09-Feb-94	10.8	21-Nov-04	2.17E+08	3.98E+15	1.39E+15	4.83E+13	
9	317	1M176	4.08	45615	1139.4	40.03	U1C10	U1C11				09-Feb-94	10.8	21-Nov-04	2.17E+08	3.98E+15	1.39E+15	4.83E+13	
9	318	1M132	4.08	45640	1139.4	40.06	U1C10	U1C11				09-Feb-94	10.8	28-Nov-04	2.17E+08	3.98E+15	1.38E+15	4.82E+13	
9	319	1M118	4.08	45642	1139.4	40.06	U1C10	U1C11				09-Feb-94	10.8	28-Nov-04	2.17E+08	3.98E+15	1.38E+15	4.82E+13	
10	320	1M119	4.08	45642	1139.4	40.06	U1C10	U1C11				09-Feb-94	10.8	28-Nov-04	2.17E+08	3.98E+15	1.38E+15	4.82E+13	
10	321	1M157	4.08	45642	1139.4	40.06	U1C10	U1C11				09-Feb-94	10.8	28-Nov-04	2.17E+08	3.98E+15	1.38E+15	4.82E+13	
10	322	1M175	4.08	45642	1139.4	40.06	U1C10	U1C11				09-Feb-94	10.8	28-Nov-04	2.17E+08	3.98E+15	1.38E+15	4.82E+13	
10	323	1M129	4.08	45643	1139.4	40.06	U1C10	U1C11				09-Feb-94	10.8	28-Nov-04	2.17E+08	3.98E+15	1.38E+15	4.82E+13	
10	324	1M147	4.08	45643	1139.4	40.06	U1C10	U1C11				09-Feb-94	10.8	28-Nov-04	2.17E+08	3.98E+15	1.38E+15	4.82E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
10	325	1M166	4.08	45643	1139.4	40.06	U1C10	U1C11				09-Feb-94	10.8	28-Nov-04	2.17E+08	3.98E+15	1.38E+15	4.82E+13	
10	326	1M012	4.08	42162	1770.6	23.81	U1C10	U1C11	U1C12			30-Mar-96	8.7	15-Dec-04	1.68E+08	4.20E+15	1.49E+15	5.93E+13	
10	327	1M013	4.08	42162	1770.6	23.81	U1C10	U1C11	U1C12			30-Mar-96	8.7	15-Dec-04	1.68E+08	4.20E+15	1.49E+15	5.93E+13	
10	328	1M015	4.08	42162	1770.6	23.81	U1C10	U1C11	U1C12			30-Mar-96	8.7	15-Dec-04	1.68E+08	4.20E+15	1.49E+15	5.93E+13	
10	329	1M016	4.08	42162	1770.6	23.81	U1C10	U1C11	U1C12			30-Mar-96	8.7	15-Dec-04	1.68E+08	4.20E+15	1.49E+15	5.93E+13	
10	330	1M126	4.08	45738	1139.4	40.14	U1C10	U1C11				09-Feb-94	10.9	23-Dec-04	2.19E+08	3.98E+15	1.38E+15	4.79E+13	
10	331	1M133	4.08	45738	1139.4	40.14	U1C10	U1C11				09-Feb-94	10.9	23-Dec-04	2.19E+08	3.98E+15	1.38E+15	4.79E+13	
10	332	1M165	4.08	45738	1139.4	40.14	U1C10	U1C11				09-Feb-94	10.9	23-Dec-04	2.19E+08	3.98E+15	1.38E+15	4.79E+13	
10	333	1M169	4.08	45738	1139.4	40.14	U1C10	U1C11				09-Feb-94	10.9	23-Dec-04	2.19E+08	3.98E+15	1.38E+15	4.79E+13	
10	334	1M001	4.08	42220	1770.6	23.85	U1C10	U1C11	U1C12			30-Mar-96	8.7	26-Dec-04	1.68E+08	4.20E+15	1.49E+15	5.91E+13	
10	335	1M007	4.08	42220	1770.6	23.85	U1C10	U1C11	U1C12			30-Mar-96	8.7	26-Dec-04	1.68E+08	4.20E+15	1.49E+15	5.91E+13	
10	336	1M011	4.08	42220	1770.6	23.85	U1C10	U1C11	U1C12			30-Mar-96	8.7	26-Dec-04	1.68E+08	4.20E+15	1.49E+15	5.91E+13	
10	337	1M014	4.08	42220	1770.6	23.85	U1C10	U1C11	U1C12			30-Mar-96	8.7	26-Dec-04	1.68E+08	4.20E+15	1.49E+15	5.91E+13	
10	338	2L001	4.3	40425	1777.9	22.74	U2C9	U2C10	U2C11			15-Mar-97	7.8	4-Jan-05	1.29E+08	4.34E+15	1.54E+15	6.26E+13	
10	339	2L002	4.3	40425	1777.9	22.74	U2C9	U2C10	U2C11			15-Mar-97	7.8	4-Jan-05	1.29E+08	4.34E+15	1.54E+15	6.26E+13	
10	340	2L003	4.3	40425	1777.9	22.74	U2C9	U2C10	U2C11			15-Mar-97	7.8	4-Jan-05	1.29E+08	4.34E+15	1.54E+15	6.26E+13	
10	341	2L004	4.3	40425	1777.9	22.74	U2C9	U2C10	U2C11			15-Mar-97	7.8	4-Jan-05	1.29E+08	4.34E+15	1.54E+15	6.26E+13	
10	342	2L013	4.3	40453	1777.9	22.75	U2C9	U2C10	U2C11			15-Mar-97	7.8	8-Jan-05	1.29E+08	4.33E+15	1.54E+15	6.25E+13	
10	343	2L014	4.3	40453	1777.9	22.75	U2C9	U2C10	U2C11			15-Mar-97	7.8	8-Jan-05	1.29E+08	4.33E+15	1.54E+15	6.25E+13	
10	344	2L015	4.3	40453	1777.9	22.75	U2C9	U2C10	U2C11			15-Mar-97	7.8	8-Jan-05	1.29E+08	4.33E+15	1.54E+15	6.25E+13	
10	345	2L016	4.3	40453	1777.9	22.75	U2C9	U2C10	U2C11			15-Mar-97	7.8	8-Jan-05	1.29E+08	4.33E+15	1.54E+15	6.25E+13	
10	346	2H108	3.4	43640	1415.9	30.82	U2C6	U2C7	U2C10			18-Mar-95	10.0	28-Feb-05	2.62E+08	3.95E+15	1.42E+15	5.66E+13	
10	347	2J009	4.05	47380	1529.3	30.98	U2C7	U2C8	U2C9			19-Feb-93	12.1	7-Apr-05	2.46E+08	3.86E+15	1.32E+15	4.20E+13	
10	348	2J018	4.05	47380	1529.3	30.98	U2C7	U2C8	U2C9			19-Feb-93	12.1	7-Apr-05	2.46E+08	3.86E+15	1.32E+15	4.20E+13	
10	349	2J023	4.05	47380	1529.3	30.98	U2C7	U2C8	U2C9			19-Feb-93	12.1	7-Apr-05	2.46E+08	3.86E+15	1.32E+15	4.20E+13	
10	350	2J032	4.05	47380	1529.3	30.98	U2C7	U2C8	U2C9			19-Feb-93	12.1	7-Apr-05	2.46E+08	3.86E+15	1.32E+15	4.20E+13	
10	351	1M168	4.08	46215	1139.4	40.56	U1C10	U1C11				09-Feb-94	11.2	27-Apr-05	2.26E+08	3.95E+15	1.37E+15	4.62E+13	
11	352	1M101	4.08	46224	1139.4	40.57	U1C10	U1C11				09-Feb-94	11.2	29-Apr-05	2.26E+08	3.94E+15	1.37E+15	4.62E+13	
11	353	1M156	4.08	46224	1139.4	40.57	U1C10	U1C11				09-Feb-94	11.2	29-Apr-05	2.26E+08	3.94E+15	1.37E+15	4.62E+13	
11	354	1M174	4.08	46224	1139.4	40.57	U1C10	U1C11				09-Feb-94	11.2	29-Apr-05	2.26E+08	3.94E+15	1.37E+15	4.62E+13	
11	355	2L221	4.3	44907	1136.2	39.52	U2C9	U2C10				18-Mar-95	10.2	12-May-05	1.87E+08	4.07E+15	1.42E+15	5.04E+13	
11	356	2L222	4.3	44907	1136.2	39.52	U2C9	U2C10				18-Mar-95	10.2	12-May-05	1.87E+08	4.07E+15	1.42E+15	5.04E+13	
11	357	2L223	4.3	44907	1136.2	39.52	U2C9	U2C10				18-Mar-95	10.2	12-May-05	1.87E+08	4.07E+15	1.42E+15	5.04E+13	
11	358	2L224	4.3	44907	1136.2	39.52	U2C9	U2C10				18-Mar-95	10.2	12-May-05	1.87E+08	4.07E+15	1.42E+15	5.04E+13	
11	359	1M122	4.08	46284	1139.4	40.62	U1C10	U1C11				09-Feb-94	11.3	15-May-05	2.27E+08	3.94E+15	1.36E+15	4.60E+13	
11	360	1M125	4.08	46284	1139.4	40.62	U1C10	U1C11				09-Feb-94	11.3	15-May-05	2.27E+08	3.94E+15	1.36E+15	4.60E+13	
11	361	1M161	4.08	46284	1139.4	40.62	U1C10	U1C11				09-Feb-94	11.3	15-May-05	2.27E+08	3.94E+15	1.36E+15	4.60E+13	
11	362	1M163	4.08	46284	1139.4	40.62	U1C10	U1C11				09-Feb-94	11.3	15-May-05	2.27E+08	3.94E+15	1.36E+15	4.60E+13	
11	363	1M110	4.08	46333	1139.4	40.66	U1C10	U1C11				09-Feb-94	11.3	28-May-05	2.27E+08	3.94E+15	1.36E+15	4.58E+13	
11	364	1M113	4.08	46333	1139.4	40.66	U1C10	U1C11				09-Feb-94	11.3	28-May-05	2.27E+08	3.94E+15	1.36E+15	4.58E+13	
11	365	1M116	4.08	46333	1139.4	40.66	U1C10	U1C11				09-Feb-94	11.3	28-May-05	2.27E+08	3.94E+15	1.36E+15	4.58E+13	
11	366	1M141	4.08	46333	1139.4	40.66	U1C10	U1C11				09-Feb-94	11.3	28-May-05	2.27E+08	3.94E+15	1.36E+15	4.58E+13	
11	367	1M109	4.08	46343	1139.4	40.67	U1C10	U1C11				09-Feb-94	11.3	31-May-05	2.28E+08	3.94E+15	1.36E+15	4.57E+13	
11	368	1M114	4.08	46343	1139.4	40.67	U1C10	U1C11				09-Feb-94	11.3	31-May-05	2.28E+08	3.94E+15	1.36E+15	4.57E+13	
11	369	1M117	4.08	46343	1139.4	40.67	U1C10	U1C11				09-Feb-94	11.3	31-May-05	2.28E+08	3.94E+15	1.36E+15	4.57E+13	
11	370	1M172	4.08	46343	1139.4	40.67	U1C10	U1C11				09-Feb-94	11.3	31-May-05	2.28E+08	3.94E+15	1.36E+15	4.57E+13	
11	371	1N004	4.2	39057	1725.3	22.64	U1C11	U1C12	U1C13			03-Apr-98	7.3	28-Jul-05	1.19E+08	4.40E+15	1.56E+15	6.55E+13	
11	372	1N005	4.2	39057	1725.3	22.64	U1C11	U1C12	U1C13			03-Apr-98	7.3	28-Jul-05	1.19E+08	4.40E+15	1.56E+15	6.55E+13	
11	373	1N010	4.2	39057	1725.3	22.64	U1C11	U1C12	U1C13			03-Apr-98	7.3	28-Jul-05	1.19E+08	4.40E+15	1.56E+15	6.55E+13	
11	374	1N011	4.2	39057	1725.3	22.64	U1C11	U1C12	U1C13			03-Apr-98	7.3	28-Jul-05	1.19E+08	4.40E+15	1.56E+15	6.55E+13	
11	375	2L309	4.3	45263	1136.2	39.84	U2C9	U2C10				18-Mar-95	10.4	5-Aug-05	1.92E+08	4.05E+15	1.41E+15	4.93E+13	
11	376	2L310	4.3	45263	1136.2	39.84	U2C9	U2C10				18-Mar-95	10.4	5-Aug-05	1.92E+08	4.05E+15	1.41E+15	4.93E+13	
11	377	2L311	4.3	45263	1136.2	39.84	U2C9	U2C10				18-Mar-95	10.4	5-Aug-05	1.92E+08	4.05E+15	1.41E+15	4.93E+13	
11	378	2L312	4.3	45263	1136.2	39.84	U2C9	U2C10				18-Mar-95	10.4	5-Aug-05	1.92E+08	4.05E+15	1.41E+15	4.93E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
11	379	2L305	4.3	45273	1136.2	39.85	U2C9	U2C10				18-Mar-95	10.4	7-Aug-05	1.92E+08	4.05E+15	1.41E+15	4.92E+13	
11	380	2L306	4.3	45273	1136.2	39.85	U2C9	U2C10				18-Mar-95	10.4	7-Aug-05	1.92E+08	4.05E+15	1.41E+15	4.92E+13	
11	381	2L307	4.3	45273	1136.2	39.85	U2C9	U2C10				18-Mar-95	10.4	7-Aug-05	1.92E+08	4.05E+15	1.41E+15	4.92E+13	
11	382	2L308	4.3	45273	1136.2	39.85	U2C9	U2C10				18-Mar-95	10.4	7-Aug-05	1.92E+08	4.05E+15	1.41E+15	4.92E+13	
11	383	1N006	4.2	39179	1725.3	22.71	U1C11	U1C12	U1C13			03-Apr-98	7.4	13-Aug-05	1.20E+08	4.39E+15	1.56E+15	6.53E+13	
12	384	1N007	4.2	39179	1725.3	22.71	U1C11	U1C12	U1C13			03-Apr-98	7.4	13-Aug-05	1.20E+08	4.39E+15	1.56E+15	6.53E+13	
12	385	1N008	4.2	39179	1725.3	22.71	U1C11	U1C12	U1C13			03-Apr-98	7.4	13-Aug-05	1.20E+08	4.39E+15	1.56E+15	6.53E+13	
12	386	1N009	4.2	39179	1725.3	22.71	U1C11	U1C12	U1C13			03-Apr-98	7.4	13-Aug-05	1.20E+08	4.39E+15	1.56E+15	6.53E+13	
12	387	2L217	4.3	45307	1136.2	39.88	U2C9	U2C10				18-Mar-95	10.4	15-Aug-05	1.92E+08	4.05E+15	1.40E+15	4.91E+13	
12	388	2L218	4.3	45307	1136.2	39.88	U2C9	U2C10				18-Mar-95	10.4	15-Aug-05	1.92E+08	4.05E+15	1.40E+15	4.91E+13	
12	389	2L219	4.3	45307	1136.2	39.88	U2C9	U2C10				18-Mar-95	10.4	15-Aug-05	1.92E+08	4.05E+15	1.40E+15	4.91E+13	
12	390	2L220	4.3	45307	1136.2	39.88	U2C9	U2C10				18-Mar-95	10.4	15-Aug-05	1.92E+08	4.05E+15	1.40E+15	4.91E+13	
12	391	2J016	4.05	41601	1616.5	25.74	U2C7	U2C8	U2C11			15-Mar-97	8.5	26-Aug-05	1.62E+08	4.23E+15	1.50E+15	6.09E+13	
12	392	2J038	4.05	41601	1616.5	25.74	U2C7	U2C8	U2C11			15-Mar-97	8.5	26-Aug-05	1.62E+08	4.23E+15	1.50E+15	6.09E+13	
12	393	2J039	4.05	41601	1616.5	25.74	U2C7	U2C8	U2C11			15-Mar-97	8.5	26-Aug-05	1.62E+08	4.23E+15	1.50E+15	6.09E+13	
12	394	2J040	4.05	41601	1616.5	25.74	U2C7	U2C8	U2C11			15-Mar-97	8.5	26-Aug-05	1.62E+08	4.23E+15	1.50E+15	6.09E+13	
12	395	2L201	4.3	45360	1136.2	39.92	U2C9	U2C10				18-Mar-95	10.5	28-Aug-05	1.93E+08	4.04E+15	1.40E+15	4.89E+13	
12	396	2L202	4.3	45360	1136.2	39.92	U2C9	U2C10				18-Mar-95	10.5	28-Aug-05	1.93E+08	4.04E+15	1.40E+15	4.89E+13	
12	397	2L203	4.3	45360	1136.2	39.92	U2C9	U2C10				18-Mar-95	10.5	28-Aug-05	1.93E+08	4.04E+15	1.40E+15	4.89E+13	
12	398	2L204	4.3	45360	1136.2	39.92	U2C9	U2C10				18-Mar-95	10.5	28-Aug-05	1.93E+08	4.04E+15	1.40E+15	4.89E+13	
12	399	1M106	4.08	46722	1139.4	41.01	U1C10	U1C11				09-Feb-94	11.6	12-Sep-05	2.33E+08	3.91E+15	1.35E+15	4.44E+13	
12	400	1M107	4.08	46725	1139.4	41.01	U1C10	U1C11				09-Feb-94	11.6	13-Sep-05	2.33E+08	3.91E+15	1.35E+15	4.44E+13	
12	401	1M115	4.08	46725	1139.4	41.01	U1C10	U1C11				09-Feb-94	11.6	13-Sep-05	2.33E+08	3.91E+15	1.35E+15	4.44E+13	
12	402	1M171	4.08	46725	1139.4	41.01	U1C10	U1C11				09-Feb-94	11.6	13-Sep-05	2.33E+08	3.91E+15	1.35E+15	4.44E+13	
12	403	2L313	4.3	45569	1136.2	40.11	U2C9	U2C10				18-Mar-95	10.6	19-Oct-05	1.96E+08	4.03E+15	1.40E+15	4.82E+13	
12	404	2L314	4.3	45569	1136.2	40.11	U2C9	U2C10				18-Mar-95	10.6	19-Oct-05	1.96E+08	4.03E+15	1.40E+15	4.82E+13	
12	405	2L315	4.3	45569	1136.2	40.11	U2C9	U2C10				18-Mar-95	10.6	19-Oct-05	1.96E+08	4.03E+15	1.40E+15	4.82E+13	
12	406	2L316	4.3	45569	1136.2	40.11	U2C9	U2C10				18-Mar-95	10.6	19-Oct-05	1.96E+08	4.03E+15	1.40E+15	4.82E+13	
12	407	2L325	4.3	45609	1136.2	40.14	U2C9	U2C10				18-Mar-95	10.6	28-Oct-05	1.96E+08	4.03E+15	1.39E+15	4.81E+13	
12	408	2L326	4.3	45609	1136.2	40.14	U2C9	U2C10				18-Mar-95	10.6	28-Oct-05	1.96E+08	4.03E+15	1.39E+15	4.81E+13	
12	409	2L327	4.3	45609	1136.2	40.14	U2C9	U2C10				18-Mar-95	10.6	28-Oct-05	1.96E+08	4.03E+15	1.39E+15	4.81E+13	
12	410	2L328	4.3	45609	1136.2	40.14	U2C9	U2C10				18-Mar-95	10.6	28-Oct-05	1.96E+08	4.03E+15	1.39E+15	4.81E+13	
12	411	2L317	4.3	45619	1136.2	40.15	U2C9	U2C10				18-Mar-95	10.6	31-Oct-05	1.97E+08	4.03E+15	1.39E+15	4.81E+13	
12	412	2L318	4.3	45619	1136.2	40.15	U2C9	U2C10				18-Mar-95	10.6	31-Oct-05	1.97E+08	4.03E+15	1.39E+15	4.81E+13	
12	413	2L319	4.3	45619	1136.2	40.15	U2C9	U2C10				18-Mar-95	10.6	31-Oct-05	1.97E+08	4.03E+15	1.39E+15	4.81E+13	
12	414	2L320	4.3	45619	1136.2	40.15	U2C9	U2C10				18-Mar-95	10.6	31-Oct-05	1.97E+08	4.03E+15	1.39E+15	4.81E+13	
12	415	1L009	4.05	42189	2130.5	19.80	U1C9	U1C10	U1C11	U2C11		15-Mar-97	8.7	11-Dec-05	1.71E+08	4.19E+15	1.49E+15	5.93E+13	
13	416	1L017	4.05	42189	1623.9	25.98	U1C9	U1C10	U2C11			15-Mar-97	8.7	11-Dec-05	1.71E+08	4.19E+15	1.49E+15	5.93E+13	
13	417	1L024	4.05	42189	1623.9	25.98	U1C9	U1C10	U2C11			15-Mar-97	8.7	11-Dec-05	1.71E+08	4.19E+15	1.49E+15	5.93E+13	
13	418	1L025	4.05	42189	1623.9	25.98	U1C9	U1C10	U2C11			15-Mar-97	8.7	11-Dec-05	1.71E+08	4.19E+15	1.49E+15	5.93E+13	
13	419	2L213	4.3	45888	1136.2	40.39	U2C9	U2C10				18-Mar-95	10.8	7-Jan-06	2.00E+08	4.01E+15	1.39E+15	4.72E+13	
13	420	2L214	4.3	45888	1136.2	40.39	U2C9	U2C10				18-Mar-95	10.8	7-Jan-06	2.00E+08	4.01E+15	1.39E+15	4.72E+13	
13	421	2L215	4.3	45888	1136.2	40.39	U2C9	U2C10				18-Mar-95	10.8	7-Jan-06	2.00E+08	4.01E+15	1.39E+15	4.72E+13	
13	422	2L216	4.3	45888	1136.2	40.39	U2C9	U2C10				18-Mar-95	10.8	7-Jan-06	2.00E+08	4.01E+15	1.39E+15	4.72E+13	
13	423	2L209	4.3	46121	1136.2	40.59	U2C9	U2C10				18-Mar-95	11.0	8-Mar-06	2.03E+08	4.00E+15	1.38E+15	4.64E+13	
13	424	2L210	4.3	46121	1136.2	40.59	U2C9	U2C10				18-Mar-95	11.0	8-Mar-06	2.03E+08	4.00E+15	1.38E+15	4.64E+13	
13	425	2L211	4.3	46121	1136.2	40.59	U2C9	U2C10				18-Mar-95	11.0	8-Mar-06	2.03E+08	4.00E+15	1.38E+15	4.64E+13	
13	426	2L212	4.3	46121	1136.2	40.59	U2C9	U2C10				18-Mar-95	11.0	8-Mar-06	2.03E+08	4.00E+15	1.38E+15	4.64E+13	
13	427	2L205	4.3	46148	1136.2	40.62	U2C9	U2C10				18-Mar-95	11.0	15-Mar-06	2.04E+08	4.00E+15	1.38E+15	4.63E+13	
13	428	2L206	4.3	46148	1136.2	40.62	U2C9	U2C10				18-Mar-95	11.0	15-Mar-06	2.04E+08	4.00E+15	1.38E+15	4.63E+13	
13	429	2L207	4.3	46148	1136.2	40.62	U2C9	U2C10				18-Mar-95	11.0	15-Mar-06	2.04E+08	4.00E+15	1.38E+15	4.63E+13	
13	430	2L208	4.3	46148	1136.2	40.62	U2C9	U2C10				18-Mar-95	11.0	15-Mar-06	2.04E+08	4.00E+15	1.38E+15	4.63E+13	
13	431	1M143	4.08	44648	1770.6	25.22	U1C10	U1C11	U1C12			30-Mar-96	10.1	19-May-06	2.03E+08	4.05E+15	1.42E+15	5.17E+13	
13	432	1M146	4.08	44648	1770.6	25.22	U1C10	U1C11	U1C12			30-Mar-96	10.1	19-May-06	2.03E+08	4.05E+15	1.42E+15	5.17E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
13	433	1M173	4.08	44648	1770.6	25.22	U1C10	U1C11	U1C12			30-Mar-96	10.1	19-May-06	2.03E+08	4.05E+15	1.42E+15	5.17E+13	
13	434	1M144	4.08	44668	1770.6	25.23	U1C10	U1C11	U1C12			30-Mar-96	10.2	24-May-06	2.03E+08	4.04E+15	1.42E+15	5.16E+13	
13	435	1M111	4.08	44702	1770.6	25.25	U1C10	U1C11	U1C12			30-Mar-96	10.2	1-Jun-06	2.04E+08	4.04E+15	1.42E+15	5.15E+13	
13	436	1M142	4.08	44702	1770.6	25.25	U1C10	U1C11	U1C12			30-Mar-96	10.2	1-Jun-06	2.04E+08	4.04E+15	1.42E+15	5.15E+13	
13	437	1M154	4.08	44702	1770.6	25.25	U1C10	U1C11	U1C12			30-Mar-96	10.2	1-Jun-06	2.04E+08	4.04E+15	1.42E+15	5.15E+13	
13	438	1M159	4.08	44702	1770.6	25.25	U1C10	U1C11	U1C12			30-Mar-96	10.2	1-Jun-06	2.04E+08	4.04E+15	1.42E+15	5.15E+13	
13	439	2L005	4.3	43984	1777.9	24.74	U2C9	U2C10	U2C11			15-Mar-97	9.6	14-Oct-06	1.75E+08	4.13E+15	1.44E+15	5.34E+13	
13	440	2L006	4.3	43984	1777.9	24.74	U2C9	U2C10	U2C11			15-Mar-97	9.6	14-Oct-06	1.75E+08	4.13E+15	1.44E+15	5.34E+13	
13	441	2L007	4.3	43984	1777.9	24.74	U2C9	U2C10	U2C11			15-Mar-97	9.6	14-Oct-06	1.75E+08	4.13E+15	1.44E+15	5.34E+13	
13	442	2L008	4.3	43984	1777.9	24.74	U2C9	U2C10	U2C11			15-Mar-97	9.6	14-Oct-06	1.75E+08	4.13E+15	1.44E+15	5.34E+13	
13	443	2L009	4.3	43991	1777.9	24.74	U2C9	U2C10	U2C11			15-Mar-97	9.6	16-Oct-06	1.75E+08	4.13E+15	1.44E+15	5.34E+13	
13	444	2L010	4.3	43991	1777.9	24.74	U2C9	U2C10	U2C11			15-Mar-97	9.6	16-Oct-06	1.75E+08	4.13E+15	1.44E+15	5.34E+13	
13	445	2L011	4.3	43991	1777.9	24.74	U2C9	U2C10	U2C11			15-Mar-97	9.6	16-Oct-06	1.75E+08	4.13E+15	1.44E+15	5.34E+13	
13	446	2L012	4.3	43991	1777.9	24.74	U2C9	U2C10	U2C11			15-Mar-97	9.6	16-Oct-06	1.75E+08	4.13E+15	1.44E+15	5.34E+13	
13	447	1N213	4.2	45431	1137.8	39.93	U1C11	U1C12				30-Mar-96	10.6	24-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	448	1N249	4.2	45431	1137.8	39.93	U1C11	U1C12				30-Mar-96	10.6	24-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	449	1N250	4.2	45431	1137.8	39.93	U1C11	U1C12				30-Mar-96	10.6	24-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	450	1N251	4.2	45431	1137.8	39.93	U1C11	U1C12				30-Mar-96	10.6	24-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	451	1N214	4.2	45441	1137.8	39.94	U1C11	U1C12				30-Mar-96	10.6	27-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	452	1N217	4.2	45441	1137.8	39.94	U1C11	U1C12				30-Mar-96	10.6	27-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	453	1N230	4.2	45441	1137.8	39.94	U1C11	U1C12				30-Mar-96	10.6	27-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	454	1N233	4.2	45441	1137.8	39.94	U1C11	U1C12				30-Mar-96	10.6	27-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	455	1N239	4.2	45448	1137.8	39.94	U1C11	U1C12				30-Mar-96	10.6	28-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	456	1N240	4.2	45448	1137.8	39.94	U1C11	U1C12				30-Mar-96	10.6	28-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	457	1N241	4.2	45448	1137.8	39.94	U1C11	U1C12				30-Mar-96	10.6	28-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	458	1N242	4.2	45448	1137.8	39.94	U1C11	U1C12				30-Mar-96	10.6	28-Oct-06	2.03E+08	4.02E+15	1.40E+15	4.88E+13	
14	459	1N215	4.2	45480	1137.8	39.97	U1C11	U1C12				30-Mar-96	10.6	5-Nov-06	2.04E+08	4.02E+15	1.40E+15	4.87E+13	
14	460	1N216	4.2	45480	1137.8	39.97	U1C11	U1C12				30-Mar-96	10.6	5-Nov-06	2.04E+08	4.02E+15	1.40E+15	4.87E+13	
14	461	1N236	4.2	45480	1137.8	39.97	U1C11	U1C12				30-Mar-96	10.6	5-Nov-06	2.04E+08	4.02E+15	1.40E+15	4.87E+13	
14	462	1N246	4.2	45480	1137.8	39.97	U1C11	U1C12				30-Mar-96	10.6	5-Nov-06	2.04E+08	4.02E+15	1.40E+15	4.87E+13	
14	463	1M120	4.08	45654	1770.6	25.78	U1C10	U1C11	U1C12			30-Mar-96	10.8	20-Jan-07	2.18E+08	3.98E+15	1.38E+15	4.82E+13	
14	464	1M139	4.08	45654	1770.6	25.78	U1C10	U1C11	U1C12			30-Mar-96	10.8	20-Jan-07	2.18E+08	3.98E+15	1.38E+15	4.82E+13	
14	465	1M160	4.08	45654	1770.6	25.78	U1C10	U1C11	U1C12			30-Mar-96	10.8	20-Jan-07	2.18E+08	3.98E+15	1.38E+15	4.82E+13	
14	466	1M167	4.08	45654	1770.6	25.78	U1C10	U1C11	U1C12			30-Mar-96	10.8	20-Jan-07	2.18E+08	3.98E+15	1.38E+15	4.82E+13	
14	467	2L109	4.3	44444	1777.9	25.00	U2C9	U2C10	U2C11			15-Mar-97	9.9	23-Jan-07	1.81E+08	4.10E+15	1.43E+15	5.19E+13	
14	468	2L110	4.3	44444	1777.9	25.00	U2C9	U2C10	U2C11			15-Mar-97	9.9	23-Jan-07	1.81E+08	4.10E+15	1.43E+15	5.19E+13	
14	469	2L111	4.3	44444	1777.9	25.00	U2C9	U2C10	U2C11			15-Mar-97	9.9	23-Jan-07	1.81E+08	4.10E+15	1.43E+15	5.19E+13	
14	470	2L112	4.3	44444	1777.9	25.00	U2C9	U2C10	U2C11			15-Mar-97	9.9	23-Jan-07	1.81E+08	4.10E+15	1.43E+15	5.19E+13	
14	471	1K111	3.4	45143	1381.2	32.68	U1C8	U1C9	U1C12			30-Mar-96	11.0	14-Mar-07	2.89E+08	3.85E+15	1.36E+15	5.11E+13	
14	472	1N220	4.2	46053	1137.8	40.48	U1C11	U1C12				30-Mar-96	11.0	31-Mar-07	2.12E+08	3.98E+15	1.38E+15	4.67E+13	
14	473	1N222	4.2	46053	1137.8	40.48	U1C11	U1C12				30-Mar-96	11.0	31-Mar-07	2.12E+08	3.98E+15	1.38E+15	4.67E+13	
14	474	1N223	4.2	46053	1137.8	40.48	U1C11	U1C12				30-Mar-96	11.0	31-Mar-07	2.12E+08	3.98E+15	1.38E+15	4.67E+13	
14	475	1N226	4.2	46053	1137.8	40.48	U1C11	U1C12				30-Mar-96	11.0	31-Mar-07	2.12E+08	3.98E+15	1.38E+15	4.67E+13	
14	476	1P013	4.3	38522	1829.4	21.06	U1C12	U1C13	U1C14			10-Mar-00	7.1	16-Apr-07	1.07E+08	4.44E+15	1.57E+15	6.58E+13	
14	477	1P014	4.3	38522	1829.4	21.06	U1C12	U1C13	U1C14			10-Mar-00	7.1	16-Apr-07	1.07E+08	4.44E+15	1.57E+15	6.58E+13	
14	478	1P016	4.3	38539	1829.4	21.07	U1C12	U1C13	U1C14			10-Mar-00	7.1	18-Apr-07	1.07E+08	4.44E+15	1.57E+15	6.58E+13	
14	479	1P015	4.3	38540	1829.4	21.07	U1C12	U1C13	U1C14			10-Mar-00	7.1	18-Apr-07	1.07E+08	4.44E+15	1.57E+15	6.58E+13	
15	480	1N204	4.2	46156	1137.8	40.57	U1C11	U1C12				30-Mar-96	11.1	27-Apr-07	2.13E+08	3.97E+15	1.37E+15	4.63E+13	
15	481	1N212	4.2	46156	1137.8	40.57	U1C11	U1C12				30-Mar-96	11.1	27-Apr-07	2.13E+08	3.97E+15	1.37E+15	4.63E+13	
15	482	1N218	4.2	46156	1137.8	40.57	U1C11	U1C12				30-Mar-96	11.1	27-Apr-07	2.13E+08	3.97E+15	1.37E+15	4.63E+13	
15	483	1N221	4.2	46156	1137.8	40.57	U1C11	U1C12				30-Mar-96	11.1	27-Apr-07	2.13E+08	3.97E+15	1.37E+15	4.63E+13	
15	484	1P009	4.3	38683	1829.4	21.15	U1C12	U1C13	U1C14			10-Mar-00	7.2	6-May-07	1.08E+08	4.43E+15	1.57E+15	6.56E+13	
15	485	2M201	4	44581	1223.4	36.44	U2C10	U2C11				15-Mar-97	10.2	8-May-07	2.10E+08	4.03E+15	1.42E+15	5.20E+13	
15	486	2M205	4	44581	1223.4	36.44	U2C10	U2C11				15-Mar-97	10.2	8-May-07	2.10E+08	4.03E+15	1.42E+15	5.20E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
15	487	2M215	4	44581	1223.4	36.44	U2C10	U2C11				15-Mar-97	10.2	8-May-07	2.10E+08	4.03E+15	1.42E+15	5.20E+13	
15	488	2M216	4	44581	1223.4	36.44	U2C10	U2C11				15-Mar-97	10.2	8-May-07	2.10E+08	4.03E+15	1.42E+15	5.20E+13	
15	489	2L105	4.3	45040	1777.9	25.33	U2C9	U2C10	U2C11			15-Mar-97	10.2	10-Jun-07	1.89E+08	4.06E+15	1.41E+15	5.00E+13	
15	490	2L106	4.3	45040	1777.9	25.33	U2C9	U2C10	U2C11			15-Mar-97	10.2	10-Jun-07	1.89E+08	4.06E+15	1.41E+15	5.00E+13	
15	491	2L107	4.3	45040	1777.9	25.33	U2C9	U2C10	U2C11			15-Mar-97	10.2	10-Jun-07	1.89E+08	4.06E+15	1.41E+15	5.00E+13	
15	492	2L108	4.3	45040	1777.9	25.33	U2C9	U2C10	U2C11			15-Mar-97	10.2	10-Jun-07	1.89E+08	4.06E+15	1.41E+15	5.00E+13	
15	493	2L113	4.3	45160	1777.9	25.40	U2C9	U2C10	U2C11			15-Mar-97	10.3	9-Jul-07	1.90E+08	4.06E+15	1.41E+15	4.96E+13	
15	494	2L114	4.3	45160	1777.9	25.40	U2C9	U2C10	U2C11			15-Mar-97	10.3	9-Jul-07	1.90E+08	4.06E+15	1.41E+15	4.96E+13	
15	495	2L115	4.3	45160	1777.9	25.40	U2C9	U2C10	U2C11			15-Mar-97	10.3	9-Jul-07	1.90E+08	4.06E+15	1.41E+15	4.96E+13	
15	496	2L116	4.3	45160	1777.9	25.40	U2C9	U2C10	U2C11			15-Mar-97	10.3	9-Jul-07	1.90E+08	4.06E+15	1.41E+15	4.96E+13	
15	497	1N224	4.2	46457	1137.8	40.83	U1C11	U1C12				30-Mar-96	11.3	17-Jul-07	2.17E+08	3.96E+15	1.36E+15	4.52E+13	
15	498	1N225	4.2	46457	1137.8	40.83	U1C11	U1C12				30-Mar-96	11.3	17-Jul-07	2.17E+08	3.96E+15	1.36E+15	4.52E+13	
15	499	1N228	4.2	46457	1137.8	40.83	U1C11	U1C12				30-Mar-96	11.3	17-Jul-07	2.17E+08	3.96E+15	1.36E+15	4.52E+13	
15	500	1N229	4.2	46457	1137.8	40.83	U1C11	U1C12				30-Mar-96	11.3	17-Jul-07	2.17E+08	3.96E+15	1.36E+15	4.52E+13	
15	501	2M309	4	44883	1223.4	36.69	U2C10	U2C11				15-Mar-97	10.4	19-Jul-07	2.14E+08	4.01E+15	1.41E+15	5.10E+13	
15	502	2M310	4	44883	1223.4	36.69	U2C10	U2C11				15-Mar-97	10.4	19-Jul-07	2.14E+08	4.01E+15	1.41E+15	5.10E+13	
15	503	2M316	4	44883	1223.4	36.69	U2C10	U2C11				15-Mar-97	10.4	19-Jul-07	2.14E+08	4.01E+15	1.41E+15	5.10E+13	
15	504	2M332	4	44883	1223.4	36.69	U2C10	U2C11				15-Mar-97	10.4	19-Jul-07	2.14E+08	4.01E+15	1.41E+15	5.10E+13	
15	505	2M319	4	44930	1223.4	36.73	U2C10	U2C11				15-Mar-97	10.4	30-Jul-07	2.15E+08	4.01E+15	1.40E+15	5.08E+13	
15	506	2M333	4	44930	1223.4	36.73	U2C10	U2C11				15-Mar-97	10.4	30-Jul-07	2.15E+08	4.01E+15	1.40E+15	5.08E+13	
15	507	2M339	4	44930	1223.4	36.73	U2C10	U2C11				15-Mar-97	10.4	30-Jul-07	2.15E+08	4.01E+15	1.40E+15	5.08E+13	
15	508	2M340	4	44930	1223.4	36.73	U2C10	U2C11				15-Mar-97	10.4	30-Jul-07	2.15E+08	4.01E+15	1.40E+15	5.08E+13	
15	509	1N234	4.2	46512	1137.8	40.88	U1C11	U1C12				30-Mar-96	11.3	31-Jul-07	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
15	510	1N237	4.2	46512	1137.8	40.88	U1C11	U1C12				30-Mar-96	11.3	31-Jul-07	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
15	511	1N247	4.2	46512	1137.8	40.88	U1C11	U1C12				30-Mar-96	11.3	31-Jul-07	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
16	512	1N248	4.2	46512	1137.8	40.88	U1C11	U1C12				30-Mar-96	11.3	31-Jul-07	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
16	513	1N235	4.2	46518	1137.8	40.88	U1C11	U1C12				30-Mar-96	11.3	2-Aug-07	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
16	514	1N243	4.2	46518	1137.8	40.88	U1C11	U1C12				30-Mar-96	11.3	2-Aug-07	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
16	515	1N244	4.2	46518	1137.8	40.88	U1C11	U1C12				30-Mar-96	11.3	2-Aug-07	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
16	516	1N245	4.2	46518	1137.8	40.88	U1C11	U1C12				30-Mar-96	11.3	2-Aug-07	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
16	517	2K118	4.08	47765	1688.6	28.29	U2C8	U2C9	U2C10			18-Mar-95	12.4	18-Aug-07	2.48E+08	3.84E+15	1.31E+15	4.06E+13	
16	518	2K132	4.08	47765	1688.6	28.29	U2C8	U2C9	U2C10			18-Mar-95	12.4	18-Aug-07	2.48E+08	3.84E+15	1.31E+15	4.06E+13	
16	519	2K133	4.08	47765	1688.6	28.29	U2C8	U2C9	U2C10			18-Mar-95	12.4	18-Aug-07	2.48E+08	3.84E+15	1.31E+15	4.06E+13	
16	520	2K144	4.08	47765	1688.6	28.29	U2C8	U2C9	U2C10			18-Mar-95	12.4	18-Aug-07	2.48E+08	3.84E+15	1.31E+15	4.06E+13	
16	521	2K119	4.08	47845	1688.6	28.33	U2C8	U2C9	U2C10			18-Mar-95	12.5	11-Sep-07	2.49E+08	3.84E+15	1.31E+15	4.03E+13	
16	522	2K121	4.08	47845	1688.6	28.33	U2C8	U2C9	U2C10			18-Mar-95	12.5	11-Sep-07	2.49E+08	3.84E+15	1.31E+15	4.03E+13	
16	523	2K128	4.08	47845	1688.6	28.33	U2C8	U2C9	U2C10			18-Mar-95	12.5	11-Sep-07	2.49E+08	3.84E+15	1.31E+15	4.03E+13	
16	524	2K129	4.08	47845	1688.6	28.33	U2C8	U2C9	U2C10			18-Mar-95	12.5	11-Sep-07	2.49E+08	3.84E+15	1.31E+15	4.03E+13	
16	525	1MT1	3.85	46605	1770.6	26.32	U1C10	U1C11	U1C12			30-Mar-96	11.7	4-Dec-07	2.56E+08	3.87E+15	1.34E+15	4.50E+13	
16	526	1MT2	3.85	46605	1770.6	26.32	U1C10	U1C11	U1C12			30-Mar-96	11.7	4-Dec-07	2.56E+08	3.87E+15	1.34E+15	4.50E+13	
16	527	1MT3	3.85	46605	1770.6	26.32	U1C10	U1C11	U1C12			30-Mar-96	11.7	4-Dec-07	2.56E+08	3.87E+15	1.34E+15	4.50E+13	
16	528	1MT4	3.85	46605	1770.6	26.32	U1C10	U1C11	U1C12			30-Mar-96	11.7	4-Dec-07	2.56E+08	3.87E+15	1.34E+15	4.50E+13	
16	529	2M302	4	45624	1223.4	37.29	U2C10	U2C11				15-Mar-97	10.9	19-Jan-08	2.25E+08	3.97E+15	1.38E+15	4.84E+13	
16	530	2M305	4	45624	1223.4	37.29	U2C10	U2C11				15-Mar-97	10.9	19-Jan-08	2.25E+08	3.97E+15	1.38E+15	4.84E+13	
16	531	2M325	4	45624	1223.4	37.29	U2C10	U2C11				15-Mar-97	10.9	19-Jan-08	2.25E+08	3.97E+15	1.38E+15	4.84E+13	
16	532	2M338	4	45624	1223.4	37.29	U2C10	U2C11				15-Mar-97	10.9	19-Jan-08	2.25E+08	3.97E+15	1.38E+15	4.84E+13	
16	533	2M103	4	43054	1860.1	23.15	U2C10	U2C11	U2C12			12-Mar-99	9.2	4-Jun-08	1.87E+08	4.13E+15	1.46E+15	5.69E+13	
16	534	2M104	4	43054	1860.1	23.15	U2C10	U2C11	U2C12			12-Mar-99	9.2	4-Jun-08	1.87E+08	4.13E+15	1.46E+15	5.69E+13	
16	535	2M105	4	43054	1860.1	23.15	U2C10	U2C11	U2C12			12-Mar-99	9.2	4-Jun-08	1.87E+08	4.13E+15	1.46E+15	5.69E+13	
16	536	2M116	4	43054	1860.1	23.15	U2C10	U2C11	U2C12			12-Mar-99	9.2	4-Jun-08	1.87E+08	4.13E+15	1.46E+15	5.69E+13	
16	537	2M101	4	43107	1860.1	23.17	U2C10	U2C11	U2C12			12-Mar-99	9.3	15-Jun-08	1.88E+08	4.13E+15	1.46E+15	5.68E+13	
16	538	2M102	4	43107	1860.1	23.17	U2C10	U2C11	U2C12			12-Mar-99	9.3	15-Jun-08	1.88E+08	4.13E+15	1.46E+15	5.68E+13	
16	539	2M106	4	43107	1860.1	23.17	U2C10	U2C11	U2C12			12-Mar-99	9.3	15-Jun-08	1.88E+08	4.13E+15	1.46E+15	5.68E+13	
16	540	2M111	4	43107	1860.1	23.17	U2C10	U2C11	U2C12			12-Mar-99	9.3	15-Jun-08	1.88E+08	4.13E+15	1.46E+15	5.68E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
16	541	1M105	4.08	47613	1770.6	26.89	U1C10	U1C11	U1C12			30-Mar-96	12.3	15-Jul-08	2.46E+08	3.85E+15	1.32E+15	4.11E+13	
16	542	1M121	4.08	47613	1770.6	26.89	U1C10	U1C11	U1C12			30-Mar-96	12.3	15-Jul-08	2.46E+08	3.85E+15	1.32E+15	4.11E+13	
16	543	1M123	4.08	47613	1770.6	26.89	U1C10	U1C11	U1C12			30-Mar-96	12.3	15-Jul-08	2.46E+08	3.85E+15	1.32E+15	4.11E+13	
17	544	1M158	4.08	47613	1770.6	26.89	U1C10	U1C11	U1C12			30-Mar-96	12.3	15-Jul-08	2.46E+08	3.85E+15	1.32E+15	4.11E+13	
17	545	1M112	4.08	47694	1770.6	26.94	U1C10	U1C11	U1C12			30-Mar-96	12.4	8-Aug-08	2.47E+08	3.85E+15	1.32E+15	4.08E+13	
17	546	1M150	4.08	47694	1770.6	26.94	U1C10	U1C11	U1C12			30-Mar-96	12.4	8-Aug-08	2.47E+08	3.85E+15	1.32E+15	4.08E+13	
17	547	1M162	4.08	47694	1770.6	26.94	U1C10	U1C11	U1C12			30-Mar-96	12.4	8-Aug-08	2.47E+08	3.85E+15	1.32E+15	4.08E+13	
17	548	1M164	4.08	47694	1770.6	26.94	U1C10	U1C11	U1C12			30-Mar-96	12.4	8-Aug-08	2.47E+08	3.85E+15	1.32E+15	4.08E+13	
17	549	2LT1	3.81	46279	1777.9	26.03	U2C9	U2C10	U2C11			15-Mar-97	11.5	31-Aug-08	2.56E+08	3.88E+15	1.35E+15	4.63E+13	
17	550	2LT2	3.81	46279	1777.9	26.03	U2C9	U2C10	U2C11			15-Mar-97	11.5	31-Aug-08	2.56E+08	3.88E+15	1.35E+15	4.63E+13	
17	551	2LT3	3.81	46279	1777.9	26.03	U2C9	U2C10	U2C11			15-Mar-97	11.5	31-Aug-08	2.56E+08	3.88E+15	1.35E+15	4.63E+13	
17	552	2LT4	3.81	46279	1777.9	26.03	U2C9	U2C10	U2C11			15-Mar-97	11.5	31-Aug-08	2.56E+08	3.88E+15	1.35E+15	4.63E+13	
17	553	1P006	4.3	42068	1829.4	23.00	U1C12	U1C13	U1C14			10-Mar-00	8.6	26-Sep-08	1.49E+08	4.24E+15	1.50E+15	5.88E+13	
17	554	1P002	4.3	42221	1829.4	23.08	U1C12	U1C13	U1C14			10-Mar-00	8.6	24-Oct-08	1.51E+08	4.23E+15	1.49E+15	5.84E+13	
17	555	1P001	4.3	42222	1829.4	23.08	U1C12	U1C13	U1C14			10-Mar-00	8.6	24-Oct-08	1.51E+08	4.23E+15	1.49E+15	5.84E+13	
17	556	1K117	3.4	43444	1386.7	31.33	U1C8	U1C9	U2C12			12-Mar-99	9.8	9-Jan-09	2.59E+08	3.97E+15	1.42E+15	5.73E+13	
17	557	1L010	4.05	50564	1488.8	33.96	U1C9	U1C10	U1C11			09-Feb-94	15.0	18-Feb-09	2.91E+08	3.65E+15	1.21E+15	3.04E+13	
17	558	1L018	4.05	50564	1488.8	33.96	U1C9	U1C10	U1C11			09-Feb-94	15.0	18-Feb-09	2.91E+08	3.65E+15	1.21E+15	3.04E+13	
17	559	1L027	4.05	50564	1488.8	33.96	U1C9	U1C10	U1C11			09-Feb-94	15.0	18-Feb-09	2.91E+08	3.65E+15	1.21E+15	3.04E+13	
17	560	1L030	4.05	50564	1488.8	33.96	U1C9	U1C10	U1C11			09-Feb-94	15.0	18-Feb-09	2.91E+08	3.65E+15	1.21E+15	3.04E+13	
17	561	2M202	4	47224	1223.4	38.60	U2C10	U2C11				15-Mar-97	12.1	31-Mar-09	2.49E+08	3.86E+15	1.33E+15	4.26E+13	
17	562	2M203	4	47224	1223.4	38.60	U2C10	U2C11				15-Mar-97	12.1	31-Mar-09	2.49E+08	3.86E+15	1.33E+15	4.26E+13	
17	563	2M204	4	47224	1223.4	38.60	U2C10	U2C11				15-Mar-97	12.1	31-Mar-09	2.49E+08	3.86E+15	1.33E+15	4.26E+13	
17	564	2M206	4	47224	1223.4	38.60	U2C10	U2C11				15-Mar-97	12.1	31-Mar-09	2.49E+08	3.86E+15	1.33E+15	4.26E+13	
17	565	2M217	4	47459	1223.4	38.79	U2C10	U2C11				15-Mar-97	12.2	9-Jun-09	2.52E+08	3.85E+15	1.32E+15	4.17E+13	
17	566	2M218	4	47459	1223.4	38.79	U2C10	U2C11				15-Mar-97	12.2	9-Jun-09	2.52E+08	3.85E+15	1.32E+15	4.17E+13	
17	567	2M219	4	47459	1223.4	38.79	U2C10	U2C11				15-Mar-97	12.2	9-Jun-09	2.52E+08	3.85E+15	1.32E+15	4.17E+13	
17	568	2M220	4	47459	1223.4	38.79	U2C10	U2C11				15-Mar-97	12.2	9-Jun-09	2.52E+08	3.85E+15	1.32E+15	4.17E+13	
17	569	1P329	4.3	46428	1218.7	38.10	U1C12	U1C13				03-Apr-98	11.2	13-Jun-09	2.08E+08	3.98E+15	1.37E+15	4.53E+13	
17	570	1P330	4.3	46428	1218.7	38.10	U1C12	U1C13				03-Apr-98	11.2	13-Jun-09	2.08E+08	3.98E+15	1.37E+15	4.53E+13	
17	571	1P332	4.3	46428	1218.7	38.10	U1C12	U1C13				03-Apr-98	11.2	13-Jun-09	2.08E+08	3.98E+15	1.37E+15	4.53E+13	
17	572	1P331	4.3	46429	1218.7	38.10	U1C12	U1C13				03-Apr-98	11.2	13-Jun-09	2.08E+08	3.98E+15	1.37E+15	4.53E+13	
17	573	2J106	3.4	49186	1556.5	31.60	U2C7	U2C8	U2C10			18-Mar-95	14.3	11-Jul-09	3.58E+08	3.56E+15	1.21E+15	3.52E+13	
17	574	2J114	3.4	49186	1556.5	31.60	U2C7	U2C8	U2C10			18-Mar-95	14.3	11-Jul-09	3.58E+08	3.56E+15	1.21E+15	3.52E+13	
17	575	2J117	3.4	49186	1556.5	31.60	U2C7	U2C8	U2C10			18-Mar-95	14.3	11-Jul-09	3.58E+08	3.56E+15	1.21E+15	3.52E+13	
18	576	2J120	3.4	49186	1556.5	31.60	U2C7	U2C8	U2C10			18-Mar-95	14.3	11-Jul-09	3.58E+08	3.56E+15	1.21E+15	3.52E+13	
18	577	2J109	3.4	40780	1639.8	24.87	U2C7	U2C8	U2C13			16-Mar-01	8.4	31-Jul-09	2.11E+08	4.15E+15	1.51E+15	6.59E+13	
18	578	2J112	3.4	40780	1639.8	24.87	U2C7	U2C8	U2C13			16-Mar-01	8.4	31-Jul-09	2.11E+08	4.15E+15	1.51E+15	6.59E+13	
18	579	2J113	3.4	40780	1639.8	24.87	U2C7	U2C8	U2C13			16-Mar-01	8.4	31-Jul-09	2.11E+08	4.15E+15	1.51E+15	6.59E+13	
18	580	2J115	3.4	40780	1639.8	24.87	U2C7	U2C8	U2C13			16-Mar-01	8.4	31-Jul-09	2.11E+08	4.15E+15	1.51E+15	6.59E+13	
18	581	1N103	4.2	46528	1725.3	26.97	U1C11	U1C12	U1C13			03-Apr-98	11.4	8-Aug-09	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
18	582	1N105	4.2	46528	1725.3	26.97	U1C11	U1C12	U1C13			03-Apr-98	11.4	8-Aug-09	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
18	583	1N117	4.2	46528	1725.3	26.97	U1C11	U1C12	U1C13			03-Apr-98	11.4	8-Aug-09	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
18	584	1N118	4.2	46528	1725.3	26.97	U1C11	U1C12	U1C13			03-Apr-98	11.4	8-Aug-09	2.18E+08	3.95E+15	1.36E+15	4.50E+13	
18	585	1P349	4.3	46726	1218.7	38.34	U1C12	U1C13				03-Apr-98	11.4	1-Sep-09	2.12E+08	3.96E+15	1.36E+15	4.42E+13	
18	586	1P350	4.3	46727	1218.7	38.34	U1C12	U1C13				03-Apr-98	11.4	2-Sep-09	2.12E+08	3.96E+15	1.36E+15	4.42E+13	
18	587	1P351	4.3	46727	1218.7	38.34	U1C12	U1C13				03-Apr-98	11.4	2-Sep-09	2.12E+08	3.96E+15	1.36E+15	4.42E+13	
18	588	1P352	4.3	46727	1218.7	38.34	U1C12	U1C13				03-Apr-98	11.4	2-Sep-09	2.12E+08	3.96E+15	1.36E+15	4.42E+13	
18	589	2M207	4	47756	1223.4	39.04	U2C10	U2C11				15-Mar-97	12.5	6-Sep-09	2.57E+08	3.83E+15	1.31E+15	4.06E+13	
18	590	2M209	4	47756	1223.4	39.04	U2C10	U2C11				15-Mar-97	12.5	6-Sep-09	2.57E+08	3.83E+15	1.31E+15	4.06E+13	
18	591	2M213	4	47756	1223.4	39.04	U2C10	U2C11				15-Mar-97	12.5	6-Sep-09	2.57E+08	3.83E+15	1.31E+15	4.06E+13	
18	592	2M214	4	47756	1223.4	39.04	U2C10	U2C11				15-Mar-97	12.5	6-Sep-09	2.57E+08	3.83E+15	1.31E+15	4.06E+13	
18	593	1N106	4.2	46643	1725.3	27.03	U1C11	U1C12	U1C13			03-Apr-98	11.4	8-Sep-09	2.20E+08	3.94E+15	1.36E+15	4.46E+13	
18	594	1N108	4.2	46643	1725.3	27.03	U1C11	U1C12	U1C13			03-Apr-98	11.4	8-Sep-09	2.20E+08	3.94E+15	1.36E+15	4.46E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
18	595	1N110	4.2	46643	1725.3	27.03	U1C11	U1C12	U1C13			03-Apr-98	11.4	8-Sep-09	2.20E+08	3.94E+15	1.36E+15	4.46E+13	
18	596	1N112	4.2	46643	1725.3	27.03	U1C11	U1C12	U1C13			03-Apr-98	11.4	8-Sep-09	2.20E+08	3.94E+15	1.36E+15	4.46E+13	
18	597	2M208	4	47782	1223.4	39.06	U2C10	U2C11				15-Mar-97	12.5	14-Sep-09	2.57E+08	3.82E+15	1.31E+15	4.05E+13	
18	598	2M210	4	47782	1223.4	39.06	U2C10	U2C11				15-Mar-97	12.5	14-Sep-09	2.57E+08	3.82E+15	1.31E+15	4.05E+13	
18	599	2M211	4	47782	1223.4	39.06	U2C10	U2C11				15-Mar-97	12.5	14-Sep-09	2.57E+08	3.82E+15	1.31E+15	4.05E+13	
18	600	2M212	4	47782	1223.4	39.06	U2C10	U2C11				15-Mar-97	12.5	14-Sep-09	2.57E+08	3.82E+15	1.31E+15	4.05E+13	
18	601	1N102	4.2	46665	1725.3	27.05	U1C11	U1C12	U1C13			03-Apr-98	11.5	14-Sep-09	2.20E+08	3.94E+15	1.36E+15	4.45E+13	
18	602	1N104	4.2	46665	1725.3	27.05	U1C11	U1C12	U1C13			03-Apr-98	11.5	14-Sep-09	2.20E+08	3.94E+15	1.36E+15	4.45E+13	
18	603	1N119	4.2	46665	1725.3	27.05	U1C11	U1C12	U1C13			03-Apr-98	11.5	14-Sep-09	2.20E+08	3.94E+15	1.36E+15	4.45E+13	
18	604	1N120	4.2	46665	1725.3	27.05	U1C11	U1C12	U1C13			03-Apr-98	11.5	14-Sep-09	2.20E+08	3.94E+15	1.36E+15	4.45E+13	
18	605	1N101	4.2	46730	1725.3	27.09	U1C11	U1C12	U1C13			03-Apr-98	11.5	2-Oct-09	2.21E+08	3.94E+15	1.35E+15	4.43E+13	
18	606	1N107	4.2	46730	1725.3	27.09	U1C11	U1C12	U1C13			03-Apr-98	11.5	2-Oct-09	2.21E+08	3.94E+15	1.35E+15	4.43E+13	
18	607	1N109	4.2	46730	1725.3	27.09	U1C11	U1C12	U1C13			03-Apr-98	11.5	2-Oct-09	2.21E+08	3.94E+15	1.35E+15	4.43E+13	
19	608	1N116	4.2	46730	1725.3	27.09	U1C11	U1C12	U1C13			03-Apr-98	11.5	2-Oct-09	2.21E+08	3.94E+15	1.35E+15	4.43E+13	
19	609	1N252	4.2	47151	1725.3	27.33	U1C11	U1C12	U1C13			04-Mar-98	11.8	29-Dec-09	2.27E+08	3.91E+15	1.34E+15	4.28E+13	
19	610	2M303	4	48214	1223.4	39.41	U2C10	U2C11				15-Mar-97	12.9	25-Jan-10	2.63E+08	3.80E+15	1.29E+15	3.89E+13	
19	611	2M334	4	48214	1223.4	39.41	U2C10	U2C11				15-Mar-97	12.9	25-Jan-10	2.63E+08	3.80E+15	1.29E+15	3.89E+13	
19	612	2M335	4	48214	1223.4	39.41	U2C10	U2C11				15-Mar-97	12.9	25-Jan-10	2.63E+08	3.80E+15	1.29E+15	3.89E+13	
19	613	2M336	4	48214	1223.4	39.41	U2C10	U2C11				15-Mar-97	12.9	25-Jan-10	2.63E+08	3.80E+15	1.29E+15	3.89E+13	
19	614	1N227	4.2	47151	1725.3	27.33	U1C11	U1C12	U1C13			03-Apr-98	11.8	28-Jan-10	2.27E+08	3.91E+15	1.34E+15	4.28E+13	
19	615	1N232	4.2	47151	1725.3	27.33	U1C11	U1C12	U1C13			03-Apr-98	11.8	28-Jan-10	2.27E+08	3.91E+15	1.34E+15	4.28E+13	
19	616	1N238	4.2	47151	1725.3	27.33	U1C11	U1C12	U1C13			03-Apr-98	11.8	28-Jan-10	2.27E+08	3.91E+15	1.34E+15	4.28E+13	
19	617	2M301	4	48267	1223.4	39.45	U2C10	U2C11				15-Mar-97	12.9	11-Feb-10	2.64E+08	3.79E+15	1.29E+15	3.87E+13	
19	618	2M306	4	48267	1223.4	39.45	U2C10	U2C11				15-Mar-97	12.9	11-Feb-10	2.64E+08	3.79E+15	1.29E+15	3.87E+13	
19	619	2M323	4	48267	1223.4	39.45	U2C10	U2C11				15-Mar-97	12.9	11-Feb-10	2.64E+08	3.79E+15	1.29E+15	3.87E+13	
19	620	2M326	4	48267	1223.4	39.45	U2C10	U2C11				15-Mar-97	12.9	11-Feb-10	2.64E+08	3.79E+15	1.29E+15	3.87E+13	
19	621	2M324	4	48299	1223.4	39.48	U2C10	U2C11				15-Mar-97	12.9	21-Feb-10	2.65E+08	3.79E+15	1.29E+15	3.86E+13	
19	622	2M327	4	48299	1223.4	39.48	U2C10	U2C11				15-Mar-97	12.9	21-Feb-10	2.65E+08	3.79E+15	1.29E+15	3.86E+13	
19	623	2M328	4	48299	1223.4	39.48	U2C10	U2C11				15-Mar-97	12.9	21-Feb-10	2.65E+08	3.79E+15	1.29E+15	3.86E+13	
19	624	2M329	4	48299	1223.4	39.48	U2C10	U2C11				15-Mar-97	12.9	21-Feb-10	2.65E+08	3.79E+15	1.29E+15	3.86E+13	
19	625	1M128	4.08	45937	1776.1	25.86	U1C10	U1C11	U2C12			12-Mar-99	11.0	15-Mar-10	2.22E+08	3.96E+15	1.38E+15	4.72E+13	
19	626	1M138	4.08	45937	1776.1	25.86	U1C10	U1C11	U2C12			12-Mar-99	11.0	15-Mar-10	2.22E+08	3.96E+15	1.38E+15	4.72E+13	
19	627	1M148	4.08	45937	1776.1	25.86	U1C10	U1C11	U2C12			12-Mar-99	11.0	15-Mar-10	2.22E+08	3.96E+15	1.38E+15	4.72E+13	
19	628	1M152	4.08	45937	1776.1	25.86	U1C10	U1C11	U2C12			12-Mar-99	11.0	15-Mar-10	2.22E+08	3.96E+15	1.38E+15	4.72E+13	
19	629	1P317	4.3	47443	1218.7	38.93	U1C12	U1C13				03-Apr-98	12.0	22-Mar-10	2.21E+08	3.91E+15	1.33E+15	4.17E+13	
19	630	1P318	4.3	47443	1218.7	38.93	U1C12	U1C13				03-Apr-98	12.0	22-Mar-10	2.21E+08	3.91E+15	1.33E+15	4.17E+13	
19	631	1P320	4.3	47443	1218.7	38.93	U1C12	U1C13				03-Apr-98	12.0	22-Mar-10	2.21E+08	3.91E+15	1.33E+15	4.17E+13	
19	632	1P319	4.3	47444	1218.7	38.93	U1C12	U1C13				03-Apr-98	12.0	23-Mar-10	2.22E+08	3.91E+15	1.33E+15	4.17E+13	
19	633	1P314	4.3	47457	1218.7	38.94	U1C12	U1C13				03-Apr-98	12.0	27-Mar-10	2.22E+08	3.91E+15	1.33E+15	4.16E+13	
19	634	1P316	4.3	47457	1218.7	38.94	U1C12	U1C13				03-Apr-98	12.0	27-Mar-10	2.22E+08	3.91E+15	1.33E+15	4.16E+13	
19	635	1P313	4.3	47458	1218.7	38.94	U1C12	U1C13				03-Apr-98	12.0	27-Mar-10	2.22E+08	3.91E+15	1.33E+15	4.16E+13	
19	636	1P315	4.3	47458	1218.7	38.94	U1C12	U1C13				03-Apr-98	12.0	27-Mar-10	2.22E+08	3.91E+15	1.33E+15	4.16E+13	
19	637	2M311	4	48516	1223.4	39.66	U2C10	U2C11				15-Mar-97	13.1	1-May-10	2.68E+08	3.78E+15	1.28E+15	3.78E+13	
19	638	2M312	4	48516	1223.4	39.66	U2C10	U2C11				15-Mar-97	13.1	1-May-10	2.68E+08	3.78E+15	1.28E+15	3.78E+13	
19	639	2M330	4	48516	1223.4	39.66	U2C10	U2C11				15-Mar-97	13.1	1-May-10	2.68E+08	3.78E+15	1.28E+15	3.78E+13	
20	640	2M331	4	48516	1223.4	39.66	U2C10	U2C11				15-Mar-97	13.1	1-May-10	2.68E+08	3.78E+15	1.28E+15	3.78E+13	
20	641	2M304	4	48517	1223.4	39.66	U2C10	U2C11				15-Mar-97	13.1	2-May-10	2.68E+08	3.78E+15	1.28E+15	3.78E+13	
20	642	2M315	4	48517	1223.4	39.66	U2C10	U2C11				15-Mar-97	13.1	2-May-10	2.68E+08	3.78E+15	1.28E+15	3.78E+13	
20	643	2M318	4	48517	1223.4	39.66	U2C10	U2C11				15-Mar-97	13.1	2-May-10	2.68E+08	3.78E+15	1.28E+15	3.78E+13	
20	644	2M321	4	48517	1223.4	39.66	U2C10	U2C11				15-Mar-97	13.1	2-May-10	2.68E+08	3.78E+15	1.28E+15	3.78E+13	
20	645	1L023	4.05	49644	2120	23.42	U1C9	U1C10	U1C11	U1C12		30-Mar-96	14.1	13-May-10	2.78E+08	3.71E+15	1.24E+15	3.37E+13	
20	646	1L008	4.05	49646	2120	23.42	U1C9	U1C10	U1C11	U1C12		30-Mar-96	14.1	13-May-10	2.78E+08	3.71E+15	1.24E+15	3.37E+13	
20	647	1L016	4.05	49646	2120	23.42	U1C9	U1C10	U1C11	U1C12		30-Mar-96	14.1	13-May-10	2.78E+08	3.71E+15	1.24E+15	3.37E+13	
20	648	1L028	4.05	49646	2120	23.42	U1C9	U1C10	U1C11	U1C12		30-Mar-96	14.1	13-May-10	2.78E+08	3.71E+15	1.24E+15	3.37E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
20	649	1N202	4.2	47516	1725.3	27.54	U1C11	U1C12	U1C13			03-Apr-98	12.1	14-May-10	2.32E+08	3.89E+15	1.33E+15	4.14E+13	
20	650	1N205	4.2	47516	1725.3	27.54	U1C11	U1C12	U1C13			03-Apr-98	12.1	14-May-10	2.32E+08	3.89E+15	1.33E+15	4.14E+13	
20	651	1N209	4.2	47516	1725.3	27.54	U1C11	U1C12	U1C13			03-Apr-98	12.1	14-May-10	2.32E+08	3.89E+15	1.33E+15	4.14E+13	
20	652	1N210	4.2	47516	1725.3	27.54	U1C11	U1C12	U1C13			03-Apr-98	12.1	14-May-10	2.32E+08	3.89E+15	1.33E+15	4.14E+13	
20	653	2N401	4.48	46731	1278.4	36.55	U2C11	U2C12				12-Mar-99	11.3	18-Jun-10	1.96E+08	3.99E+15	1.37E+15	4.42E+13	
20	654	2N402	4.48	46731	1278.4	36.55	U2C11	U2C12				12-Mar-99	11.3	18-Jun-10	1.96E+08	3.99E+15	1.37E+15	4.42E+13	
20	655	2N408	4.48	46731	1278.4	36.55	U2C11	U2C12				12-Mar-99	11.3	18-Jun-10	1.96E+08	3.99E+15	1.37E+15	4.42E+13	
20	656	2N410	4.48	46731	1278.4	36.55	U2C11	U2C12				12-Mar-99	11.3	18-Jun-10	1.96E+08	3.99E+15	1.37E+15	4.42E+13	
20	657	2N412	4.48	46766	1278.4	36.58	U2C11	U2C12				12-Mar-99	11.3	27-Jun-10	1.96E+08	3.99E+15	1.36E+15	4.40E+13	
20	658	2N414	4.48	46766	1278.4	36.58	U2C11	U2C12				12-Mar-99	11.3	27-Jun-10	1.96E+08	3.99E+15	1.36E+15	4.40E+13	
20	659	2N415	4.48	46766	1278.4	36.58	U2C11	U2C12				12-Mar-99	11.3	27-Jun-10	1.96E+08	3.99E+15	1.36E+15	4.40E+13	
20	660	2N416	4.48	46766	1278.4	36.58	U2C11	U2C12				12-Mar-99	11.3	27-Jun-10	1.96E+08	3.99E+15	1.36E+15	4.40E+13	
20	661	2M308	4	48802	1223.4	39.89	U2C10	U2C11				15-Mar-97	13.4	3-Aug-10	2.72E+08	3.76E+15	1.27E+15	3.67E+13	
20	662	2M313	4	48802	1223.4	39.89	U2C10	U2C11				15-Mar-97	13.4	3-Aug-10	2.72E+08	3.76E+15	1.27E+15	3.67E+13	
20	663	2M322	4	48802	1223.4	39.89	U2C10	U2C11				15-Mar-97	13.4	3-Aug-10	2.72E+08	3.76E+15	1.27E+15	3.67E+13	
20	664	2M337	4	48802	1223.4	39.89	U2C10	U2C11				15-Mar-97	13.4	3-Aug-10	2.72E+08	3.76E+15	1.27E+15	3.67E+13	
20	665	1P341	4.3	47902	1218.7	39.31	U1C12	U1C13				03-Apr-98	12.3	5-Aug-10	2.28E+08	3.89E+15	1.32E+15	4.00E+13	
20	666	1P342	4.3	47902	1218.7	39.31	U1C12	U1C13				03-Apr-98	12.3	5-Aug-10	2.28E+08	3.89E+15	1.32E+15	4.00E+13	
20	667	1P343	4.3	47902	1218.7	39.31	U1C12	U1C13				03-Apr-98	12.3	5-Aug-10	2.28E+08	3.89E+15	1.32E+15	4.00E+13	
20	668	1P344	4.3	47902	1218.7	39.31	U1C12	U1C13				03-Apr-98	12.3	5-Aug-10	2.28E+08	3.89E+15	1.32E+15	4.00E+13	
20	669	2M307	4	48844	1223.4	39.92	U2C10	U2C11				15-Mar-97	13.4	16-Aug-10	2.72E+08	3.75E+15	1.27E+15	3.66E+13	
20	670	2M314	4	48844	1223.4	39.92	U2C10	U2C11				15-Mar-97	13.4	16-Aug-10	2.72E+08	3.75E+15	1.27E+15	3.66E+13	
20	671	2M317	4	48844	1223.4	39.92	U2C10	U2C11				15-Mar-97	13.4	16-Aug-10	2.72E+08	3.75E+15	1.27E+15	3.66E+13	
21	672	2M320	4	48844	1223.4	39.92	U2C10	U2C11				15-Mar-97	13.4	16-Aug-10	2.72E+08	3.75E+15	1.27E+15	3.66E+13	
21	673	1L104	3.4	41231	1633.2	25.25	U1C9	U1C10	U1C15			15-Feb-02	8.6	21-Sep-10	2.19E+08	4.12E+15	1.49E+15	6.46E+13	
21	674	1L105	3.4	41252	1633.2	25.26	U1C9	U1C10	U1C15			15-Feb-02	8.6	25-Sep-10	2.20E+08	4.12E+15	1.49E+15	6.45E+13	
21	675	1L107	3.4	41252	1633.2	25.26	U1C9	U1C10	U1C15			15-Feb-02	8.6	25-Sep-10	2.20E+08	4.12E+15	1.49E+15	6.45E+13	
21	676	1L109	3.4	41254	1633.2	25.26	U1C9	U1C10	U1C15			15-Feb-02	8.6	25-Sep-10	2.20E+08	4.12E+15	1.49E+15	6.45E+13	
21	677	1P345	4.3	48109	1218.7	39.48	U1C12	U1C13				03-Apr-98	12.5	7-Oct-10	2.31E+08	3.87E+15	1.31E+15	3.93E+13	
21	678	1P346	4.3	48109	1218.7	39.48	U1C12	U1C13				03-Apr-98	12.5	7-Oct-10	2.31E+08	3.87E+15	1.31E+15	3.93E+13	
21	679	1P347	4.3	48109	1218.7	39.48	U1C12	U1C13				03-Apr-98	12.5	7-Oct-10	2.31E+08	3.87E+15	1.31E+15	3.93E+13	
21	680	1P348	4.3	48109	1218.7	39.48	U1C12	U1C13				03-Apr-98	12.5	7-Oct-10	2.31E+08	3.87E+15	1.31E+15	3.93E+13	
21	681	2N011	4.48	44212	1943.4	22.75	U2C11	U2C12	U2C13			16-Mar-01	9.6	20-Oct-10	1.63E+08	4.14E+15	1.44E+15	5.24E+13	
21	682	2N001	4.48	44213	1943.4	22.75	U2C11	U2C12	U2C13			16-Mar-01	9.6	20-Oct-10	1.63E+08	4.14E+15	1.44E+15	5.24E+13	
21	683	2N003	4.48	44214	1943.4	22.75	U2C11	U2C12	U2C13			16-Mar-01	9.6	20-Oct-10	1.63E+08	4.14E+15	1.44E+15	5.24E+13	
21	684	2N010	4.48	44214	1943.4	22.75	U2C11	U2C12	U2C13			16-Mar-01	9.6	20-Oct-10	1.63E+08	4.14E+15	1.44E+15	5.24E+13	
21	685	2N007	4.48	44258	1943.4	22.77	U2C11	U2C12	U2C13			16-Mar-01	9.6	30-Oct-10	1.64E+08	4.14E+15	1.44E+15	5.23E+13	
21	686	2N009	4.48	44261	1943.4	22.78	U2C11	U2C12	U2C13			16-Mar-01	9.6	30-Oct-10	1.64E+08	4.14E+15	1.44E+15	5.23E+13	
21	687	2N008	4.48	44262	1943.4	22.78	U2C11	U2C12	U2C13			16-Mar-01	9.6	30-Oct-10	1.64E+08	4.14E+15	1.44E+15	5.22E+13	
21	688	2N012	4.48	44266	1943.4	22.78	U2C11	U2C12	U2C13			16-Mar-01	9.6	31-Oct-10	1.64E+08	4.14E+15	1.44E+15	5.22E+13	
21	689	2P004	4.48	40560	1935.3	20.96	U2C12	U2C13	U2C14			14-Feb-03	7.8	25-Nov-10	1.19E+08	4.35E+15	1.53E+15	6.16E+13	
21	690	2NT1	4	46796	1278.4	36.61	U2C11	U2C12				12-Mar-99	11.7	26-Nov-10	2.43E+08	3.89E+15	1.34E+15	4.42E+13	
21	691	2NT2	4	46796	1278.4	36.61	U2C11	U2C12				12-Mar-99	11.7	26-Nov-10	2.43E+08	3.89E+15	1.34E+15	4.42E+13	
21	692	2NT3	4	46796	1278.4	36.61	U2C11	U2C12				12-Mar-99	11.7	26-Nov-10	2.43E+08	3.89E+15	1.34E+15	4.42E+13	
21	693	2NT4	4	46796	1278.4	36.61	U2C11	U2C12				12-Mar-99	11.7	26-Nov-10	2.43E+08	3.89E+15	1.34E+15	4.42E+13	
21	694	1R119	4.48	45980	1198.2	38.37	U1C13	U1C14				10-Mar-00	10.7	2-Dec-10	1.86E+08	4.04E+15	1.39E+15	4.67E+13	
21	695	1R120	4.48	45980	1198.2	38.37	U1C13	U1C14				10-Mar-00	10.7	2-Dec-10	1.86E+08	4.04E+15	1.39E+15	4.67E+13	
21	696	2P019	4.48	40614	1935.3	20.99	U2C12	U2C13	U2C14			14-Feb-03	7.8	3-Dec-10	1.20E+08	4.35E+15	1.53E+15	6.15E+13	
21	697	2P020	4.48	40614	1935.3	20.99	U2C12	U2C13	U2C14			14-Feb-03	7.8	3-Dec-10	1.20E+08	4.35E+15	1.53E+15	6.15E+13	
21	698	1R101	4.48	45985	1198.2	38.38	U1C13	U1C14				10-Mar-00	10.7	3-Dec-10	1.86E+08	4.04E+15	1.39E+15	4.67E+13	
21	699	1R102	4.48	45986	1198.2	38.38	U1C13	U1C14				10-Mar-00	10.7	4-Dec-10	1.86E+08	4.04E+15	1.39E+15	4.67E+13	
21	700	2P018	4.48	40621	1935.3	20.99	U2C12	U2C13	U2C14			14-Feb-03	7.8	4-Dec-10	1.20E+08	4.35E+15	1.53E+15	6.15E+13	
21	701	1R103	4.48	45992	1198.2	38.38	U1C13	U1C14				10-Mar-00	10.7	5-Dec-10	1.86E+08	4.04E+15	1.39E+15	4.67E+13	
21	702	1R104	4.48	45992	1198.2	38.38	U1C13	U1C14				10-Mar-00	10.7	5-Dec-10	1.86E+08	4.04E+15	1.39E+15	4.67E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
21	703	1R117	4.48	45996	1198.2	38.39	U1C13	U1C14				10-Mar-00	10.8	6-Dec-10	1.86E+08	4.04E+15	1.39E+15	4.67E+13	
22	704	1R118	4.48	45996	1198.2	38.39	U1C13	U1C14				10-Mar-00	10.8	6-Dec-10	1.86E+08	4.04E+15	1.39E+15	4.67E+13	
22	705	2P024	4.48	44452	1301.7	34.15	U2C12	U2C13				16-Mar-01	9.7	11-Dec-10	1.66E+08	4.13E+15	1.43E+15	5.17E+13	
22	706	1R203	4.48	46056	1198.2	38.44	U1C13	U1C14				10-Mar-00	10.8	22-Dec-10	1.87E+08	4.04E+15	1.39E+15	4.65E+13	
22	707	1R204	4.48	46056	1198.2	38.44	U1C13	U1C14				10-Mar-00	10.8	22-Dec-10	1.87E+08	4.04E+15	1.39E+15	4.65E+13	
22	708	1R201	4.48	46061	1198.2	38.44	U1C13	U1C14				10-Mar-00	10.8	23-Dec-10	1.87E+08	4.03E+15	1.39E+15	4.65E+13	
22	709	1R202	4.48	46061	1198.2	38.44	U1C13	U1C14				10-Mar-00	10.8	23-Dec-10	1.87E+08	4.03E+15	1.39E+15	4.65E+13	
22	710	1P321	4.3	48383	1218.7	39.70	U1C12	U1C13				03-Apr-98	12.8	31-Dec-10	2.34E+08	3.86E+15	1.30E+15	3.83E+13	
22	711	1P322	4.3	48383	1218.7	39.70	U1C12	U1C13				03-Apr-98	12.8	31-Dec-10	2.34E+08	3.86E+15	1.30E+15	3.83E+13	
22	712	1P323	4.3	48383	1218.7	39.70	U1C12	U1C13				03-Apr-98	12.8	31-Dec-10	2.34E+08	3.86E+15	1.30E+15	3.83E+13	
22	713	1P324	4.3	48383	1218.7	39.70	U1C12	U1C13				03-Apr-98	12.8	31-Dec-10	2.34E+08	3.86E+15	1.30E+15	3.83E+13	
22	714	1P325	4.3	48383	1218.7	39.70	U1C12	U1C13				03-Apr-98	12.8	31-Dec-10	2.34E+08	3.86E+15	1.30E+15	3.83E+13	
22	715	1P326	4.3	48383	1218.7	39.70	U1C12	U1C13				03-Apr-98	12.8	31-Dec-10	2.34E+08	3.86E+15	1.30E+15	3.83E+13	
22	716	1P327	4.3	48383	1218.7	39.70	U1C12	U1C13				03-Apr-98	12.8	31-Dec-10	2.34E+08	3.86E+15	1.30E+15	3.83E+13	
22	717	1P328	4.3	48383	1218.7	39.70	U1C12	U1C13				03-Apr-98	12.8	31-Dec-10	2.34E+08	3.86E+15	1.30E+15	3.83E+13	
22	718	1P305	4.3	48417	1218.7	39.73	U1C12	U1C13				03-Apr-98	12.8	10-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.82E+13	
22	719	1P306	4.3	48417	1218.7	39.73	U1C12	U1C13				03-Apr-98	12.8	10-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.82E+13	
22	720	1P307	4.3	48417	1218.7	39.73	U1C12	U1C13				03-Apr-98	12.8	10-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.82E+13	
22	721	1P308	4.3	48417	1218.7	39.73	U1C12	U1C13				03-Apr-98	12.8	10-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.82E+13	
22	722	1P301	4.3	48419	1218.7	39.73	U1C12	U1C13				03-Apr-98	12.8	11-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.82E+13	
22	723	1P302	4.3	48419	1218.7	39.73	U1C12	U1C13				03-Apr-98	12.8	11-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.82E+13	
22	724	1P303	4.3	48419	1218.7	39.73	U1C12	U1C13				03-Apr-98	12.8	11-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.82E+13	
22	725	1P304	4.3	48419	1218.7	39.73	U1C12	U1C13				03-Apr-98	12.8	11-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.82E+13	
22	726	1M145	4.08	45715	1750.1	26.12	U1C10	U1C11	U1C14			10-Mar-00	10.9	16-Jan-11	2.19E+08	3.98E+15	1.38E+15	4.80E+13	
22	727	1M153	4.08	45715	1750.1	26.12	U1C10	U1C11	U1C14			10-Mar-00	10.9	16-Jan-11	2.19E+08	3.98E+15	1.38E+15	4.80E+13	
22	728	1M137	4.08	45727	1750.1	26.13	U1C10	U1C11	U1C14			10-Mar-00	10.9	19-Jan-11	2.19E+08	3.98E+15	1.38E+15	4.79E+13	
22	729	1M140	4.08	45727	1750.1	26.13	U1C10	U1C11	U1C14			10-Mar-00	10.9	19-Jan-11	2.19E+08	3.98E+15	1.38E+15	4.79E+13	
22	730	1P311	4.3	48474	1218.7	39.78	U1C12	U1C13				03-Apr-98	12.8	28-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.80E+13	
22	731	1P309	4.3	48475	1218.7	39.78	U1C12	U1C13				03-Apr-98	12.8	28-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.80E+13	
22	732	1P310	4.3	48475	1218.7	39.78	U1C12	U1C13				03-Apr-98	12.8	28-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.80E+13	
22	733	1P312	4.3	48475	1218.7	39.78	U1C12	U1C13				03-Apr-98	12.8	28-Jan-11	2.35E+08	3.85E+15	1.30E+15	3.80E+13	
22	734	1R123	4.48	46232	1198.2	38.58	U1C13	U1C14				10-Mar-00	10.9	5-Feb-11	1.89E+08	4.02E+15	1.38E+15	4.59E+13	
22	735	1R124	4.48	46232	1198.2	38.58	U1C13	U1C14				10-Mar-00	10.9	5-Feb-11	1.89E+08	4.02E+15	1.38E+15	4.59E+13	
23	736	1R121	4.48	46243	1198.2	38.59	U1C13	U1C14				10-Mar-00	10.9	8-Feb-11	1.89E+08	4.02E+15	1.38E+15	4.58E+13	
23	737	1R122	4.48	46243	1198.2	38.59	U1C13	U1C14				10-Mar-00	10.9	8-Feb-11	1.89E+08	4.02E+15	1.38E+15	4.58E+13	
23	738	1P333	4.3	48681	1218.7	39.95	U1C12	U1C13				03-Apr-98	13.0	4-Apr-11	2.38E+08	3.84E+15	1.29E+15	3.72E+13	
23	739	1P334	4.3	48681	1218.7	39.95	U1C12	U1C13				03-Apr-98	13.0	4-Apr-11	2.38E+08	3.84E+15	1.29E+15	3.72E+13	
23	740	1P335	4.3	48681	1218.7	39.95	U1C12	U1C13				03-Apr-98	13.0	4-Apr-11	2.38E+08	3.84E+15	1.29E+15	3.72E+13	
23	741	1P336	4.3	48681	1218.7	39.95	U1C12	U1C13				03-Apr-98	13.0	4-Apr-11	2.38E+08	3.84E+15	1.29E+15	3.72E+13	
23	742	1P337	4.3	48768	1218.7	40.02	U1C12	U1C13				03-Apr-98	13.1	2-May-11	2.39E+08	3.83E+15	1.29E+15	3.69E+13	
23	743	1P338	4.3	48768	1218.7	40.02	U1C12	U1C13				03-Apr-98	13.1	2-May-11	2.39E+08	3.83E+15	1.29E+15	3.69E+13	
23	744	1P339	4.3	48768	1218.7	40.02	U1C12	U1C13				03-Apr-98	13.1	2-May-11	2.39E+08	3.83E+15	1.29E+15	3.69E+13	
23	745	1P340	4.3	48768	1218.7	40.02	U1C12	U1C13				03-Apr-98	13.1	2-May-11	2.39E+08	3.83E+15	1.29E+15	3.69E+13	
23	746	2M006	4	47348	1860.1	25.45	U2C10	U2C11	U2C12			12-Mar-99	12.2	4-May-11	2.51E+08	3.85E+15	1.32E+15	4.21E+13	
23	747	2M007	4	47348	1860.1	25.45	U2C10	U2C11	U2C12			12-Mar-99	12.2	4-May-11	2.51E+08	3.85E+15	1.32E+15	4.21E+13	
23	748	2M008	4	47348	1860.1	25.45	U2C10	U2C11	U2C12			12-Mar-99	12.2	4-May-11	2.51E+08	3.85E+15	1.32E+15	4.21E+13	
23	749	2M009	4	47348	1860.1	25.45	U2C10	U2C11	U2C12			12-Mar-99	12.2	4-May-11	2.51E+08	3.85E+15	1.32E+15	4.21E+13	
23	750	2N607	4.48	47874	1278.4	37.45	U2C11	U2C12				12-Mar-99	12.2	7-May-11	2.11E+08	3.93E+15	1.33E+15	4.02E+13	
23	751	2N608	4.48	47874	1278.4	37.45	U2C11	U2C12				12-Mar-99	12.2	7-May-11	2.11E+08	3.93E+15	1.33E+15	4.02E+13	
23	752	2N616	4.48	47874	1278.4	37.45	U2C11	U2C12				12-Mar-99	12.2	7-May-11	2.11E+08	3.93E+15	1.33E+15	4.02E+13	
23	753	2N622	4.48	47874	1278.4	37.45	U2C11	U2C12				12-Mar-99	12.2	7-May-11	2.11E+08	3.93E+15	1.33E+15	4.02E+13	
23	754	2N606	4.48	47884	1278.4	37.46	U2C11	U2C12				12-Mar-99	12.2	10-May-11	2.11E+08	3.92E+15	1.33E+15	4.01E+13	
23	755	2N615	4.48	47884	1278.4	37.46	U2C11	U2C12				12-Mar-99	12.2	10-May-11	2.11E+08	3.92E+15	1.33E+15	4.01E+13	
23	756	2N620	4.48	47884	1278.4	37.46	U2C11	U2C12				12-Mar-99	12.2	10-May-11	2.11E+08	3.92E+15	1.33E+15	4.01E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
23	757	2N621	4.48	47884	1278.4	37.46	U2C11	U2C12				12-Mar-99	12.2	10-May-11	2.11E+08	3.92E+15	1.33E+15	4.01E+13	
23	758	1R212	4.48	46663	1198.2	38.94	U1C13	U1C14				10-Mar-00	11.2	29-May-11	1.95E+08	4.00E+15	1.37E+15	4.44E+13	
23	759	1R211	4.48	46664	1198.2	38.95	U1C13	U1C14				10-Mar-00	11.2	30-May-11	1.95E+08	4.00E+15	1.37E+15	4.44E+13	
23	760	1R213	4.48	46680	1198.2	38.96	U1C13	U1C14				10-Mar-00	11.2	3-Jun-11	1.95E+08	4.00E+15	1.37E+15	4.43E+13	
23	761	1R214	4.48	46680	1198.2	38.96	U1C13	U1C14				10-Mar-00	11.2	3-Jun-11	1.95E+08	4.00E+15	1.37E+15	4.43E+13	
23	762	1R209	4.48	46686	1198.2	38.96	U1C13	U1C14				10-Mar-00	11.2	5-Jun-11	1.95E+08	4.00E+15	1.37E+15	4.43E+13	
23	763	1R210	4.48	46686	1198.2	38.96	U1C13	U1C14				10-Mar-00	11.2	5-Jun-11	1.95E+08	4.00E+15	1.37E+15	4.43E+13	
23	764	1R215	4.48	46715	1198.2	38.99	U1C13	U1C14				10-Mar-00	11.3	12-Jun-11	1.96E+08	4.00E+15	1.37E+15	4.42E+13	
23	765	1R216	4.48	46716	1198.2	38.99	U1C13	U1C14				10-Mar-00	11.3	13-Jun-11	1.96E+08	4.00E+15	1.37E+15	4.42E+13	
23	766	1N201	4.2	48918	1725.3	28.35	U1C11	U1C12	U1C13			03-Apr-98	13.3	23-Jul-11	2.52E+08	3.80E+15	1.28E+15	3.63E+13	
23	767	1N203	4.2	48918	1725.3	28.35	U1C11	U1C12	U1C13			03-Apr-98	13.3	23-Jul-11	2.52E+08	3.80E+15	1.28E+15	3.63E+13	
24	768	1N208	4.2	48918	1725.3	28.35	U1C11	U1C12	U1C13			03-Apr-98	13.3	23-Jul-11	2.52E+08	3.80E+15	1.28E+15	3.63E+13	
24	769	1N211	4.2	48918	1725.3	28.35	U1C11	U1C12	U1C13			03-Apr-98	13.3	23-Jul-11	2.52E+08	3.80E+15	1.28E+15	3.63E+13	
24	770	2N404	4.48	48264	1278.4	37.75	U2C11	U2C12				12-Mar-99	12.5	1-Sep-11	2.16E+08	3.90E+15	1.32E+15	3.88E+13	
24	771	2N405	4.48	48264	1278.4	37.75	U2C11	U2C12				12-Mar-99	12.5	1-Sep-11	2.16E+08	3.90E+15	1.32E+15	3.88E+13	
24	772	2N413	4.48	48264	1278.4	37.75	U2C11	U2C12				12-Mar-99	12.5	1-Sep-11	2.16E+08	3.90E+15	1.32E+15	3.88E+13	
24	773	2N411	4.48	48266	1278.4	37.76	U2C11	U2C12				12-Mar-99	12.5	2-Sep-11	2.16E+08	3.90E+15	1.31E+15	3.88E+13	
24	774	1N206	4.2	49200	1725.3	28.52	U1C11	U1C12	U1C13			03-Apr-98	13.6	25-Oct-11	2.56E+08	3.78E+15	1.27E+15	3.53E+13	
24	775	1N207	4.2	49200	1725.3	28.52	U1C11	U1C12	U1C13			03-Apr-98	13.6	25-Oct-11	2.56E+08	3.78E+15	1.27E+15	3.53E+13	
24	776	1N219	4.2	49200	1725.3	28.52	U1C11	U1C12	U1C13			03-Apr-98	13.6	25-Oct-11	2.56E+08	3.78E+15	1.27E+15	3.53E+13	
24	777	1N231	4.2	49200	1725.3	28.52	U1C11	U1C12	U1C13			03-Apr-98	13.6	25-Oct-11	2.56E+08	3.78E+15	1.27E+15	3.53E+13	
24	778	1S230	4.3	44609	1261.7	35.36	U1C14	U1C15				15-Feb-02	10.0	2-Feb-12	1.83E+08	4.09E+15	1.43E+15	5.14E+13	
24	779	1S201	4.3	44614	1261.7	35.36	U1C14	U1C15				15-Feb-02	10.0	3-Feb-12	1.83E+08	4.09E+15	1.43E+15	5.14E+13	
24	780	1S214	4.3	44615	1261.7	35.36	U1C14	U1C15				15-Feb-02	10.0	3-Feb-12	1.83E+08	4.09E+15	1.43E+15	5.14E+13	
24	781	1S232	4.3	44615	1261.7	35.36	U1C14	U1C15				15-Feb-02	10.0	3-Feb-12	1.83E+08	4.09E+15	1.43E+15	5.14E+13	
24	782	2K205	4.08	45795	1771.9	25.85	U2C8	U2C9	U2C13			16-Mar-01	10.9	11-Feb-12	2.20E+08	3.97E+15	1.38E+15	4.77E+13	
24	783	2K218	4.08	45795	1771.9	25.85	U2C8	U2C9	U2C13			16-Mar-01	10.9	11-Feb-12	2.20E+08	3.97E+15	1.38E+15	4.77E+13	
24	784	2K220	4.08	45795	1771.9	25.85	U2C8	U2C9	U2C13			16-Mar-01	10.9	11-Feb-12	2.20E+08	3.97E+15	1.38E+15	4.77E+13	
24	785	2K227	4.08	45795	1771.9	25.85	U2C8	U2C9	U2C13			16-Mar-01	10.9	11-Feb-12	2.20E+08	3.97E+15	1.38E+15	4.77E+13	
24	786	2J118	3.4	48748	1562.3	31.20	U2C7	U2C8	U1C13			03-Apr-98	13.9	27-Feb-12	3.51E+08	3.59E+15	1.23E+15	3.69E+13	
24	787	1P111	4.3	47513	1829.4	25.97	U1C12	U1C13	U1C14			10-Mar-00	12.0	19-Mar-12	2.22E+08	3.91E+15	1.33E+15	4.14E+13	
24	788	1P110	4.3	47514	1829.4	25.97	U1C12	U1C13	U1C14			10-Mar-00	12.0	19-Mar-12	2.22E+08	3.91E+15	1.33E+15	4.14E+13	
24	789	1P109	4.3	47515	1829.4	25.97	U1C12	U1C13	U1C14			10-Mar-00	12.0	19-Mar-12	2.22E+08	3.91E+15	1.33E+15	4.14E+13	
24	790	2J107	3.4	46575	1585.5	29.38	U2C7	U2C8	U1C14			10-Mar-00	12.0	21-Mar-12	3.14E+08	3.74E+15	1.31E+15	4.55E+13	
24	791	1P105	4.3	47571	1829.4	26.00	U1C12	U1C13	U1C14			10-Mar-00	12.1	5-Apr-12	2.23E+08	3.91E+15	1.33E+15	4.12E+13	
24	792	1P106	4.3	47572	1829.4	26.00	U1C12	U1C13	U1C14			10-Mar-00	12.1	5-Apr-12	2.23E+08	3.91E+15	1.33E+15	4.12E+13	
24	793	1P107	4.3	47575	1829.4	26.01	U1C12	U1C13	U1C14			10-Mar-00	12.1	6-Apr-12	2.23E+08	3.91E+15	1.33E+15	4.12E+13	
24	794	1S012	4.3	44923	1261.7	35.61	U1C14	U1C15				15-Feb-02	10.2	15-Apr-12	1.87E+08	4.07E+15	1.42E+15	5.04E+13	
24	795	1S007	4.3	44924	1261.7	35.61	U1C14	U1C15				15-Feb-02	10.2	15-Apr-12	1.87E+08	4.07E+15	1.42E+15	5.04E+13	
24	796	1S014	4.3	44924	1261.7	35.61	U1C14	U1C15				15-Feb-02	10.2	15-Apr-12	1.87E+08	4.07E+15	1.42E+15	5.04E+13	
24	797	1S002	4.3	44926	1261.7	35.61	U1C14	U1C15				15-Feb-02	10.2	15-Apr-12	1.87E+08	4.07E+15	1.42E+15	5.04E+13	
24	798	1R225	4.48	47861	1198.2	39.94	U1C13	U1C14				10-Mar-00	12.2	1-May-12	2.11E+08	3.93E+15	1.33E+15	4.02E+13	
24	799	1R226	4.48	47861	1198.2	39.94	U1C13	U1C14				10-Mar-00	12.2	1-May-12	2.11E+08	3.93E+15	1.33E+15	4.02E+13	
25	800	1R227	4.48	47867	1198.2	39.95	U1C13	U1C14				10-Mar-00	12.2	3-May-12	2.11E+08	3.93E+15	1.33E+15	4.02E+13	
25	801	1R229	4.48	47867	1198.2	39.95	U1C13	U1C14				10-Mar-00	12.2	3-May-12	2.11E+08	3.93E+15	1.33E+15	4.02E+13	
25	802	1P101	4.3	47682	1829.4	26.06	U1C12	U1C13	U1C14			10-Mar-00	12.2	7-May-12	2.25E+08	3.90E+15	1.33E+15	4.08E+13	
25	803	1P102	4.3	47683	1829.4	26.06	U1C12	U1C13	U1C14			10-Mar-00	12.2	8-May-12	2.25E+08	3.90E+15	1.33E+15	4.08E+13	
25	804	1P103	4.3	47683	1829.4	26.06	U1C12	U1C13	U1C14			10-Mar-00	12.2	8-May-12	2.25E+08	3.90E+15	1.33E+15	4.08E+13	
25	805	1P104	4.3	47683	1829.4	26.06	U1C12	U1C13	U1C14			10-Mar-00	12.2	8-May-12	2.25E+08	3.90E+15	1.33E+15	4.08E+13	
25	806	2M107	4	48724	1860.1	26.19	U2C10	U2C11	U2C12			12-Mar-99	13.3	4-Jul-12	2.71E+08	3.76E+15	1.27E+15	3.70E+13	
25	807	2M109	4	48724	1860.1	26.19	U2C10	U2C11	U2C12			12-Mar-99	13.3	4-Jul-12	2.71E+08	3.76E+15	1.27E+15	3.70E+13	
25	808	2M110	4	48724	1860.1	26.19	U2C10	U2C11	U2C12			12-Mar-99	13.3	4-Jul-12	2.71E+08	3.76E+15	1.27E+15	3.70E+13	
25	809	2M112	4	48724	1860.1	26.19	U2C10	U2C11	U2C12			12-Mar-99	13.3	4-Jul-12	2.71E+08	3.76E+15	1.27E+15	3.70E+13	
25	810	2J105	3.4	50223	1616.5	31.07	U2C7	U2C8	U2C11			15-Mar-97	15.4	21-Jul-12	3.74E+08	3.48E+15	1.17E+15	3.13E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
25	811	1R109	4.48	48174	1198.2	40.21	U1C13	U1C14				10-Mar-00	12.4	3-Aug-12	2.15E+08	3.91E+15	1.32E+15	3.91E+13	
25	812	1R110	4.48	48174	1198.2	40.21	U1C13	U1C14				10-Mar-00	12.4	3-Aug-12	2.15E+08	3.91E+15	1.32E+15	3.91E+13	
25	813	1R111	4.48	48187	1198.2	40.22	U1C13	U1C14				10-Mar-00	12.4	7-Aug-12	2.15E+08	3.91E+15	1.32E+15	3.90E+13	
25	814	1R112	4.48	48187	1198.2	40.22	U1C13	U1C14				10-Mar-00	12.4	7-Aug-12	2.15E+08	3.91E+15	1.32E+15	3.90E+13	
25	815	1R125	4.48	48214	1198.2	40.24	U1C13	U1C14				10-Mar-00	12.4	15-Aug-12	2.15E+08	3.90E+15	1.32E+15	3.90E+13	
25	816	1R126	4.48	48214	1198.2	40.24	U1C13	U1C14				10-Mar-00	12.4	15-Aug-12	2.15E+08	3.90E+15	1.32E+15	3.90E+13	
25	817	1R127	4.48	48219	1198.2	40.24	U1C13	U1C14				10-Mar-00	12.4	17-Aug-12	2.15E+08	3.90E+15	1.32E+15	3.89E+13	
25	818	1R128	4.48	48219	1198.2	40.24	U1C13	U1C14				10-Mar-00	12.4	17-Aug-12	2.15E+08	3.90E+15	1.32E+15	3.89E+13	
25	819	2M108	4	48878	1860.1	26.28	U2C10	U2C11	U2C12			12-Mar-99	13.5	24-Aug-12	2.73E+08	3.75E+15	1.27E+15	3.65E+13	
25	820	2M113	4	48878	1860.1	26.28	U2C10	U2C11	U2C12			12-Mar-99	13.5	24-Aug-12	2.73E+08	3.75E+15	1.27E+15	3.65E+13	
25	821	2M114	4	48878	1860.1	26.28	U2C10	U2C11	U2C12			12-Mar-99	13.5	24-Aug-12	2.73E+08	3.75E+15	1.27E+15	3.65E+13	
25	822	2M115	4	48878	1860.1	26.28	U2C10	U2C11	U2C12			12-Mar-99	13.5	24-Aug-12	2.73E+08	3.75E+15	1.27E+15	3.65E+13	
25	823	1R221	4.48	45728	1849.2	24.73	U1C13	U1C14	U1C15			15-Feb-02	10.6	6-Sep-12	1.83E+08	4.05E+15	1.40E+15	4.76E+13	
25	824	1R222	4.48	45728	1849.2	24.73	U1C13	U1C14	U1C15			15-Feb-02	10.6	6-Sep-12	1.83E+08	4.05E+15	1.40E+15	4.76E+13	
25	825	1R223	4.48	45729	1849.2	24.73	U1C13	U1C14	U1C15			15-Feb-02	10.6	6-Sep-12	1.83E+08	4.05E+15	1.40E+15	4.76E+13	
25	826	1R224	4.48	45729	1849.2	24.73	U1C13	U1C14	U1C15			15-Feb-02	10.6	6-Sep-12	1.83E+08	4.05E+15	1.40E+15	4.76E+13	
25	827	1R207	4.48	45732	1849.2	24.73	U1C13	U1C14	U1C15			15-Feb-02	10.6	7-Sep-12	1.83E+08	4.05E+15	1.40E+15	4.76E+13	
25	828	1R208	4.48	45733	1849.2	24.73	U1C13	U1C14	U1C15			15-Feb-02	10.6	7-Sep-12	1.83E+08	4.05E+15	1.40E+15	4.76E+13	
25	829	1R113	4.48	48561	1198.2	40.53	U1C13	U1C14				10-Mar-00	12.7	30-Nov-12	2.20E+08	3.88E+15	1.31E+15	3.77E+13	
25	830	1R114	4.48	48561	1198.2	40.53	U1C13	U1C14				10-Mar-00	12.7	30-Nov-12	2.20E+08	3.88E+15	1.31E+15	3.77E+13	
25	831	1R206	4.48	48581	1198.2	40.54	U1C13	U1C14				10-Mar-00	12.8	7-Dec-12	2.20E+08	3.88E+15	1.30E+15	3.76E+13	
26	832	1R205	4.48	48582	1198.2	40.55	U1C13	U1C14				10-Mar-00	12.8	7-Dec-12	2.20E+08	3.88E+15	1.30E+15	3.76E+13	
26	833	1R107	4.48	48589	1198.2	40.55	U1C13	U1C14				10-Mar-00	12.8	9-Dec-12	2.20E+08	3.88E+15	1.30E+15	3.76E+13	
26	834	1R108	4.48	48590	1198.2	40.55	U1C13	U1C14				10-Mar-00	12.8	9-Dec-12	2.20E+08	3.88E+15	1.30E+15	3.76E+13	
26	835	1R115	4.48	48590	1198.2	40.55	U1C13	U1C14				10-Mar-00	12.8	9-Dec-12	2.20E+08	3.88E+15	1.30E+15	3.76E+13	
26	836	1R116	4.48	48590	1198.2	40.55	U1C13	U1C14				10-Mar-00	12.8	9-Dec-12	2.20E+08	3.88E+15	1.30E+15	3.76E+13	
26	837	1R106	4.48	48606	1198.2	40.57	U1C13	U1C14				10-Mar-00	12.8	14-Dec-12	2.20E+08	3.88E+15	1.30E+15	3.76E+13	
26	838	1R105	4.48	48607	1198.2	40.57	U1C13	U1C14				10-Mar-00	12.8	15-Dec-12	2.20E+08	3.88E+15	1.30E+15	3.76E+13	
26	839	2R006	4.48	40889	1301.7	31.41	U2C12	U2C13				22-Feb-05	7.9	22-Jan-13	1.23E+08	4.33E+15	1.53E+15	6.10E+13	
26	840	2R008	4.48	40889	1301.7	31.41	U2C12	U2C13				22-Feb-05	7.9	22-Jan-13	1.23E+08	4.33E+15	1.53E+15	6.10E+13	
26	841	2R001	4.48	40968	1301.7	31.47	U2C12	U2C13				22-Feb-05	8.0	3-Feb-13	1.24E+08	4.33E+15	1.52E+15	6.08E+13	
26	842	2R003	4.48	40968	1301.7	31.47	U2C12	U2C13				22-Feb-05	8.0	3-Feb-13	1.24E+08	4.33E+15	1.52E+15	6.08E+13	
26	843	2R004	4.48	40968	1301.7	31.47	U2C12	U2C13				22-Feb-05	8.0	3-Feb-13	1.24E+08	4.33E+15	1.52E+15	6.08E+13	
26	844	2R007	4.48	40968	1301.7	31.47	U2C12	U2C13				22-Feb-05	8.0	3-Feb-13	1.24E+08	4.33E+15	1.52E+15	6.08E+13	
26	845	1R231	4.48	48910	1198.2	40.82	U1C13	U1C14				10-Mar-00	13.0	21-Mar-13	2.24E+08	3.86E+15	1.29E+15	3.65E+13	
26	846	1R230	4.48	48911	1198.2	40.82	U1C13	U1C14				10-Mar-00	13.0	21-Mar-13	2.24E+08	3.86E+15	1.29E+15	3.65E+13	
26	847	1R228	4.48	48912	1198.2	40.82	U1C13	U1C14				10-Mar-00	13.0	22-Mar-13	2.24E+08	3.86E+15	1.29E+15	3.65E+13	
26	848	1R232	4.48	48913	1198.2	40.82	U1C13	U1C14				10-Mar-00	13.0	22-Mar-13	2.24E+08	3.86E+15	1.29E+15	3.65E+13	
26	849	1R220	4.48	48923	1198.2	40.83	U1C13	U1C14				10-Mar-00	13.1	25-Mar-13	2.24E+08	3.86E+15	1.29E+15	3.64E+13	
26	850	1R219	4.48	48924	1198.2	40.83	U1C13	U1C14				10-Mar-00	13.1	25-Mar-13	2.24E+08	3.86E+15	1.29E+15	3.64E+13	
26	851	1R217	4.48	48927	1198.2	40.83	U1C13	U1C14				10-Mar-00	13.1	26-Mar-13	2.24E+08	3.86E+15	1.29E+15	3.64E+13	
26	852	1R218	4.48	48927	1198.2	40.83	U1C13	U1C14				10-Mar-00	13.1	26-Mar-13	2.24E+08	3.86E+15	1.29E+15	3.64E+13	
26	853	2N603	4.48	50195	1278.4	39.26	U2C11	U2C12				12-Mar-99	14.2	29-May-13	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
26	854	2N617	4.48	50195	1278.4	39.26	U2C11	U2C12				12-Mar-99	14.2	29-May-13	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
26	855	2N643	4.48	50195	1278.4	39.26	U2C11	U2C12				12-Mar-99	14.2	29-May-13	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
26	856	2N648	4.48	50195	1278.4	39.26	U2C11	U2C12				12-Mar-99	14.2	29-May-13	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
26	857	2N605	4.48	50220	1278.4	39.28	U2C11	U2C12				12-Mar-99	14.3	7-Jun-13	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
26	858	2N624	4.48	50220	1278.4	39.28	U2C11	U2C12				12-Mar-99	14.3	7-Jun-13	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
26	859	2N625	4.48	50220	1278.4	39.28	U2C11	U2C12				12-Mar-99	14.3	7-Jun-13	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
26	860	2N632	4.48	50220	1278.4	39.28	U2C11	U2C12				12-Mar-99	14.3	7-Jun-13	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
26	861	2P249	4.48	48083	1301.7	36.94	U2C12	U2C13				16-Mar-01	12.3	13-Jul-13	2.13E+08	3.91E+15	1.32E+15	3.94E+13	
26	862	2P252	4.48	48083	1301.7	36.94	U2C12	U2C13				16-Mar-01	12.3	13-Jul-13	2.13E+08	3.91E+15	1.32E+15	3.94E+13	
26	863	2P250	4.48	48084	1301.7	36.94	U2C12	U2C13				16-Mar-01	12.3	13-Jul-13	2.13E+08	3.91E+15	1.32E+15	3.94E+13	
27	864	2P251	4.48	48084	1301.7	36.94	U2C12	U2C13				16-Mar-01	12.3	13-Jul-13	2.13E+08	3.91E+15	1.32E+15	3.94E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
27	865	1R004	4.48	46917	1849.2	25.37	U1C13	U1C14	U1C15			15-Feb-02	11.4	13-Jul-13	1.98E+08	3.98E+15	1.36E+15	4.35E+13	
27	866	1R003	4.48	46918	1849.2	25.37	U1C13	U1C14	U1C15			15-Feb-02	11.4	14-Jul-13	1.98E+08	3.98E+15	1.36E+15	4.35E+13	
27	867	1R021	4.48	46923	1849.2	25.37	U1C13	U1C14	U1C15			15-Feb-02	11.4	15-Jul-13	1.98E+08	3.98E+15	1.36E+15	4.35E+13	
27	868	1R022	4.48	46923	1849.2	25.37	U1C13	U1C14	U1C15			15-Feb-02	11.4	15-Jul-13	1.98E+08	3.98E+15	1.36E+15	4.35E+13	
27	869	1R024	4.48	46923	1849.2	25.37	U1C13	U1C14	U1C15			15-Feb-02	11.4	15-Jul-13	1.98E+08	3.98E+15	1.36E+15	4.35E+13	
27	870	1R002	4.48	46939	1849.2	25.38	U1C13	U1C14	U1C15			15-Feb-02	11.4	19-Jul-13	1.99E+08	3.98E+15	1.36E+15	4.34E+13	
27	871	1R001	4.48	46942	1849.2	25.39	U1C13	U1C14	U1C15			15-Feb-02	11.4	20-Jul-13	1.99E+08	3.98E+15	1.36E+15	4.34E+13	
27	872	1S019	4.3	43618	1261.7	34.57	U1C14	U1C15				09-Apr-04	9.4	23-Aug-13	1.70E+08	4.15E+15	1.45E+15	5.45E+13	
27	873	2P202	4.48	48256	1301.7	37.07	U2C12	U2C13				16-Mar-01	12.5	3-Sep-13	2.16E+08	3.90E+15	1.32E+15	3.88E+13	
27	874	2P201	4.48	48257	1301.7	37.07	U2C12	U2C13				16-Mar-01	12.5	3-Sep-13	2.16E+08	3.90E+15	1.32E+15	3.88E+13	
27	875	2P203	4.48	48257	1301.7	37.07	U2C12	U2C13				16-Mar-01	12.5	3-Sep-13	2.16E+08	3.90E+15	1.32E+15	3.88E+13	
27	876	2P204	4.48	48257	1301.7	37.07	U2C12	U2C13				16-Mar-01	12.5	3-Sep-13	2.16E+08	3.90E+15	1.32E+15	3.88E+13	
27	877	1S010	4.3	43714	1261.7	34.65	U1C14	U1C15				09-Apr-04	9.4	12-Sep-13	1.71E+08	4.14E+15	1.45E+15	5.42E+13	
27	878	1S017	4.3	43714	1261.7	34.65	U1C14	U1C15				09-Apr-04	9.4	12-Sep-13	1.71E+08	4.14E+15	1.45E+15	5.42E+13	
27	879	1S022	4.3	43714	1261.7	34.65	U1C14	U1C15				09-Apr-04	9.4	12-Sep-13	1.71E+08	4.14E+15	1.45E+15	5.42E+13	
27	880	2P220	4.48	48297	1301.7	37.10	U2C12	U2C13				16-Mar-01	12.5	16-Sep-13	2.16E+08	3.90E+15	1.31E+15	3.87E+13	
27	881	2P217	4.48	48298	1301.7	37.10	U2C12	U2C13				16-Mar-01	12.5	16-Sep-13	2.16E+08	3.90E+15	1.31E+15	3.87E+13	
27	882	2P218	4.48	48298	1301.7	37.10	U2C12	U2C13				16-Mar-01	12.5	16-Sep-13	2.16E+08	3.90E+15	1.31E+15	3.87E+13	
27	883	2P219	4.48	48298	1301.7	37.10	U2C12	U2C13				16-Mar-01	12.5	16-Sep-13	2.16E+08	3.90E+15	1.31E+15	3.87E+13	
27	884	2P221	4.48	48365	1301.7	37.16	U2C12	U2C13				16-Mar-01	12.6	6-Oct-13	2.17E+08	3.90E+15	1.31E+15	3.84E+13	
27	885	2P224	4.48	48365	1301.7	37.16	U2C12	U2C13				16-Mar-01	12.6	6-Oct-13	2.17E+08	3.90E+15	1.31E+15	3.84E+13	
27	886	2P222	4.48	48366	1301.7	37.16	U2C12	U2C13				16-Mar-01	12.6	7-Oct-13	2.17E+08	3.90E+15	1.31E+15	3.84E+13	
27	887	2P223	4.48	48366	1301.7	37.16	U2C12	U2C13				16-Mar-01	12.6	7-Oct-13	2.17E+08	3.90E+15	1.31E+15	3.84E+13	
27	888	2N601	4.48	50564	1278.4	39.55	U2C11	U2C12				12-Mar-99	14.6	9-Oct-13	2.45E+08	3.76E+15	1.24E+15	3.07E+13	
27	889	2N629	4.48	50564	1278.4	39.55	U2C11	U2C12				12-Mar-99	14.6	9-Oct-13	2.45E+08	3.76E+15	1.24E+15	3.07E+13	
27	890	2N635	4.48	50564	1278.4	39.55	U2C11	U2C12				12-Mar-99	14.6	9-Oct-13	2.45E+08	3.76E+15	1.24E+15	3.07E+13	
27	891	2N640	4.48	50564	1278.4	39.55	U2C11	U2C12				12-Mar-99	14.6	9-Oct-13	2.45E+08	3.76E+15	1.24E+15	3.07E+13	
27	892	2J116	3.4	48486	1585.5	30.58	U2C7	U2C8	U1C14			10-Mar-00	13.7	6-Nov-13	3.47E+08	3.61E+15	1.24E+15	3.80E+13	
27	893	2J119	3.4	48487	1585.5	30.58	U2C7	U2C8	U1C14			10-Mar-00	13.7	7-Nov-13	3.47E+08	3.61E+15	1.24E+15	3.80E+13	
27	894	2J102	3.4	48495	1585.5	30.59	U2C7	U2C8	U1C14			10-Mar-00	13.7	9-Nov-13	3.47E+08	3.61E+15	1.24E+15	3.79E+13	
27	895	2J108	3.4	48497	1585.5	30.59	U2C7	U2C8	U1C14			10-Mar-00	13.7	10-Nov-13	3.47E+08	3.61E+15	1.24E+15	3.79E+13	
28	896	2N626	4.48	50654	1278.4	39.62	U2C11	U2C12				12-Mar-99	14.7	10-Nov-13	2.46E+08	3.75E+15	1.23E+15	3.03E+13	
28	897	2N630	4.48	50654	1278.4	39.62	U2C11	U2C12				12-Mar-99	14.7	10-Nov-13	2.46E+08	3.75E+15	1.23E+15	3.03E+13	
28	898	2N631	4.48	50654	1278.4	39.62	U2C11	U2C12				12-Mar-99	14.7	10-Nov-13	2.46E+08	3.75E+15	1.23E+15	3.03E+13	
28	899	2N636	4.48	50654	1278.4	39.62	U2C11	U2C12				12-Mar-99	14.7	10-Nov-13	2.46E+08	3.75E+15	1.23E+15	3.03E+13	
28	900	2P237	4.48	48528	1301.7	37.28	U2C12	U2C13				16-Mar-01	12.7	26-Nov-13	2.19E+08	3.89E+15	1.31E+15	3.78E+13	
28	901	2P238	4.48	48528	1301.7	37.28	U2C12	U2C13				16-Mar-01	12.7	26-Nov-13	2.19E+08	3.89E+15	1.31E+15	3.78E+13	
28	902	2P239	4.48	48528	1301.7	37.28	U2C12	U2C13				16-Mar-01	12.7	26-Nov-13	2.19E+08	3.89E+15	1.31E+15	3.78E+13	
28	903	2P240	4.48	48528	1301.7	37.28	U2C12	U2C13				16-Mar-01	12.7	26-Nov-13	2.19E+08	3.89E+15	1.31E+15	3.78E+13	
28	904	2N613	4.48	50712	1278.4	39.67	U2C11	U2C12				12-Mar-99	14.7	2-Dec-13	2.47E+08	3.75E+15	1.23E+15	3.01E+13	
28	905	2N619	4.48	50712	1278.4	39.67	U2C11	U2C12				12-Mar-99	14.7	2-Dec-13	2.47E+08	3.75E+15	1.23E+15	3.01E+13	
28	906	2N627	4.48	50712	1278.4	39.67	U2C11	U2C12				12-Mar-99	14.7	2-Dec-13	2.47E+08	3.75E+15	1.23E+15	3.01E+13	
28	907	2N638	4.48	50712	1278.4	39.67	U2C11	U2C12				12-Mar-99	14.7	2-Dec-13	2.47E+08	3.75E+15	1.23E+15	3.01E+13	
28	908	2N614	4.48	50771	1278.4	39.71	U2C11	U2C12				12-Mar-99	14.8	23-Dec-13	2.48E+08	3.75E+15	1.23E+15	2.99E+13	
28	909	2N645	4.48	50771	1278.4	39.71	U2C11	U2C12				12-Mar-99	14.8	23-Dec-13	2.48E+08	3.75E+15	1.23E+15	2.99E+13	
28	910	2N646	4.48	50771	1278.4	39.71	U2C11	U2C12				12-Mar-99	14.8	23-Dec-13	2.48E+08	3.75E+15	1.23E+15	2.99E+13	
28	911	2N647	4.48	50771	1278.4	39.71	U2C11	U2C12				12-Mar-99	14.8	23-Dec-13	2.48E+08	3.75E+15	1.23E+15	2.99E+13	
28	912	2N612	4.48	50799	1278.4	39.74	U2C11	U2C12				12-Mar-99	14.8	3-Jan-14	2.48E+08	3.75E+15	1.23E+15	2.98E+13	
28	913	2N633	4.48	50799	1278.4	39.74	U2C11	U2C12				12-Mar-99	14.8	3-Jan-14	2.48E+08	3.75E+15	1.23E+15	2.98E+13	
28	914	2N634	4.48	50799	1278.4	39.74	U2C11	U2C12				12-Mar-99	14.8	3-Jan-14	2.48E+08	3.75E+15	1.23E+15	2.98E+13	
28	915	2N642	4.48	50799	1278.4	39.74	U2C11	U2C12				12-Mar-99	14.8	3-Jan-14	2.48E+08	3.75E+15	1.23E+15	2.98E+13	
28	916	1P208	4.3	49681	1829.4	27.16	U1C12	U1C13	U1C14			10-Mar-00	13.9	5-Feb-14	2.52E+08	3.77E+15	1.26E+15	3.36E+13	
28	917	1P207	4.3	49682	1829.4	27.16	U1C12	U1C13	U1C14			10-Mar-00	13.9	6-Feb-14	2.52E+08	3.77E+15	1.26E+15	3.36E+13	
28	918	1P206	4.3	49684	1829.4	27.16	U1C12	U1C13	U1C14			10-Mar-00	13.9	7-Feb-14	2.52E+08	3.77E+15	1.26E+15	3.36E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
28	919	1P205	4.3	49685	1829.4	27.16	U1C12	U1C13	U1C14			10-Mar-00	13.9	7-Feb-14	2.52E+08	3.77E+15	1.26E+15	3.36E+13	
28	920	1S219	4.3	47685	1261.7	37.79	U1C14	U1C15				15-Feb-02	12.2	15-Apr-14	2.25E+08	3.90E+15	1.33E+15	4.08E+13	
28	921	1S217	4.3	47686	1261.7	37.80	U1C14	U1C15				15-Feb-02	12.2	16-Apr-14	2.25E+08	3.90E+15	1.33E+15	4.08E+13	
28	922	1S231	4.3	47708	1261.7	37.81	U1C14	U1C15				15-Feb-02	12.2	22-Apr-14	2.25E+08	3.90E+15	1.33E+15	4.07E+13	
28	923	1S220	4.3	47712	1261.7	37.82	U1C14	U1C15				15-Feb-02	12.2	23-Apr-14	2.25E+08	3.90E+15	1.33E+15	4.07E+13	
28	924	2P257	4.48	49010	1301.7	37.65	U2C12	U2C13				16-Mar-01	13.1	28-Apr-14	2.25E+08	3.86E+15	1.29E+15	3.61E+13	
28	925	2P259	4.48	49010	1301.7	37.65	U2C12	U2C13				16-Mar-01	13.1	28-Apr-14	2.25E+08	3.86E+15	1.29E+15	3.61E+13	
28	926	2P260	4.48	49010	1301.7	37.65	U2C12	U2C13				16-Mar-01	13.1	28-Apr-14	2.25E+08	3.86E+15	1.29E+15	3.61E+13	
28	927	2P258	4.48	49011	1301.7	37.65	U2C12	U2C13				16-Mar-01	13.1	28-Apr-14	2.25E+08	3.86E+15	1.29E+15	3.61E+13	
29	928	1P204	4.3	49973	1829.4	27.32	U1C12	U1C13	U1C14			10-Mar-00	14.2	18-May-14	2.55E+08	3.75E+15	1.25E+15	3.26E+13	
29	929	1P201	4.3	49975	1829.4	27.32	U1C12	U1C13	U1C14			10-Mar-00	14.2	19-May-14	2.56E+08	3.75E+15	1.25E+15	3.26E+13	
29	930	1P202	4.3	49975	1829.4	27.32	U1C12	U1C13	U1C14			10-Mar-00	14.2	19-May-14	2.56E+08	3.75E+15	1.25E+15	3.26E+13	
29	931	1P203	4.3	49975	1829.4	27.32	U1C12	U1C13	U1C14			10-Mar-00	14.2	19-May-14	2.56E+08	3.75E+15	1.25E+15	3.26E+13	
29	932	1R016	4.48	48053	1849.2	25.99	U1C13	U1C14	U1C15			15-Feb-02	12.3	5-Jun-14	2.13E+08	3.91E+15	1.32E+15	3.95E+13	
29	933	1R015	4.48	48054	1849.2	25.99	U1C13	U1C14	U1C15			15-Feb-02	12.3	5-Jun-14	2.13E+08	3.91E+15	1.32E+15	3.95E+13	
29	934	1R013	4.48	48057	1849.2	25.99	U1C13	U1C14	U1C15			15-Feb-02	12.3	6-Jun-14	2.13E+08	3.91E+15	1.32E+15	3.95E+13	
29	935	1R014	4.48	48059	1849.2	25.99	U1C13	U1C14	U1C15			15-Feb-02	12.3	6-Jun-14	2.13E+08	3.91E+15	1.32E+15	3.95E+13	
29	936	2N602	4.48	51232	1278.4	40.08	U2C11	U2C12				12-Mar-99	15.3	14-Jun-14	2.54E+08	3.72E+15	1.21E+15	2.84E+13	
29	937	2N609	4.48	51232	1278.4	40.08	U2C11	U2C12				12-Mar-99	15.3	14-Jun-14	2.54E+08	3.72E+15	1.21E+15	2.84E+13	
29	938	2N610	4.48	51232	1278.4	40.08	U2C11	U2C12				12-Mar-99	15.3	14-Jun-14	2.54E+08	3.72E+15	1.21E+15	2.84E+13	
29	939	2N637	4.48	51232	1278.4	40.08	U2C11	U2C12				12-Mar-99	15.3	14-Jun-14	2.54E+08	3.72E+15	1.21E+15	2.84E+13	
29	940	2N004	4.48	49262	1943.4	25.35	U2C11	U2C12	U2C13			16-Mar-01	13.4	19-Jul-14	2.29E+08	3.84E+15	1.28E+15	3.52E+13	
29	941	2N005	4.48	49262	1943.4	25.35	U2C11	U2C12	U2C13			16-Mar-01	13.4	19-Jul-14	2.29E+08	3.84E+15	1.28E+15	3.52E+13	
29	942	2N006	4.48	49262	1943.4	25.35	U2C11	U2C12	U2C13			16-Mar-01	13.4	19-Jul-14	2.29E+08	3.84E+15	1.28E+15	3.52E+13	
29	943	2N002	4.48	49264	1943.4	25.35	U2C11	U2C12	U2C13			16-Mar-01	13.4	20-Jul-14	2.29E+08	3.84E+15	1.28E+15	3.52E+13	
29	944	1N001	4.2	51059	1774.5	28.77	U1C11	U1C12	U2C12			12-Mar-99	15.4	29-Jul-14	2.80E+08	3.66E+15	1.20E+15	2.87E+13	
29	945	1N002	4.2	51059	1774.5	28.77	U1C11	U1C12	U2C12			12-Mar-99	15.4	29-Jul-14	2.80E+08	3.66E+15	1.20E+15	2.87E+13	
29	946	1N003	4.2	51059	1774.5	28.77	U1C11	U1C12	U2C12			12-Mar-99	15.4	29-Jul-14	2.80E+08	3.66E+15	1.20E+15	2.87E+13	
29	947	1N012	4.2	51059	1774.5	28.77	U1C11	U1C12	U2C12			12-Mar-99	15.4	29-Jul-14	2.80E+08	3.66E+15	1.20E+15	2.87E+13	
29	948	2N202	4.48	49754	1943.4	25.60	U2C11	U2C12	U2C13			16-Mar-01	13.8	1-Jan-15	2.35E+08	3.81E+15	1.26E+15	3.35E+13	
29	949	2N204	4.48	49754	1943.4	25.60	U2C11	U2C12	U2C13			16-Mar-01	13.8	1-Jan-15	2.35E+08	3.81E+15	1.26E+15	3.35E+13	
29	950	2N205	4.48	49754	1943.4	25.60	U2C11	U2C12	U2C13			16-Mar-01	13.8	1-Jan-15	2.35E+08	3.81E+15	1.26E+15	3.35E+13	
29	951	2N208	4.48	49754	1943.4	25.60	U2C11	U2C12	U2C13			16-Mar-01	13.8	1-Jan-15	2.35E+08	3.81E+15	1.26E+15	3.35E+13	
29	952	2N201	4.48	49782	1943.4	25.62	U2C11	U2C12	U2C13			16-Mar-01	13.8	10-Jan-15	2.35E+08	3.81E+15	1.26E+15	3.34E+13	
29	953	2N203	4.48	49782	1943.4	25.62	U2C11	U2C12	U2C13			16-Mar-01	13.8	10-Jan-15	2.35E+08	3.81E+15	1.26E+15	3.34E+13	
29	954	2N207	4.48	49782	1943.4	25.62	U2C11	U2C12	U2C13			16-Mar-01	13.8	10-Jan-15	2.35E+08	3.81E+15	1.26E+15	3.34E+13	
29	955	2N206	4.48	49787	1943.4	25.62	U2C11	U2C12	U2C13			16-Mar-01	13.8	12-Jan-15	2.35E+08	3.81E+15	1.26E+15	3.34E+13	
29	956	2R224	4.48	47608	1298.6	36.66	U2C13	U2C14				14-Feb-03	11.9	23-Jan-15	2.07E+08	3.94E+15	1.34E+15	4.11E+13	
29	957	2R210	4.48	47609	1298.6	36.66	U2C13	U2C14				14-Feb-03	12.0	23-Jan-15	2.07E+08	3.94E+15	1.34E+15	4.11E+13	
29	958	2R229	4.48	47609	1298.6	36.66	U2C13	U2C14				14-Feb-03	12.0	23-Jan-15	2.07E+08	3.94E+15	1.34E+15	4.11E+13	
29	959	2R232	4.48	47609	1298.6	36.66	U2C13	U2C14				14-Feb-03	12.0	23-Jan-15	2.07E+08	3.94E+15	1.34E+15	4.11E+13	
30	960	1R010	4.48	49122	1849.2	26.56	U1C13	U1C14	U1C15			15-Feb-02	13.2	6-May-15	2.27E+08	3.85E+15	1.29E+15	3.57E+13	
30	961	1R012	4.48	49125	1849.2	26.57	U1C13	U1C14	U1C15			15-Feb-02	13.2	7-May-15	2.27E+08	3.85E+15	1.29E+15	3.57E+13	
30	962	1R019	4.48	49125	1849.2	26.57	U1C13	U1C14	U1C15			15-Feb-02	13.2	7-May-15	2.27E+08	3.85E+15	1.29E+15	3.57E+13	
30	963	1R011	4.48	49126	1849.2	26.57	U1C13	U1C14	U1C15			15-Feb-02	13.2	7-May-15	2.27E+08	3.85E+15	1.29E+15	3.57E+13	
30	964	1R017	4.48	49126	1849.2	26.57	U1C13	U1C14	U1C15			15-Feb-02	13.2	7-May-15	2.27E+08	3.85E+15	1.29E+15	3.57E+13	
30	965	1R018	4.48	49127	1849.2	26.57	U1C13	U1C14	U1C15			15-Feb-02	13.2	7-May-15	2.27E+08	3.85E+15	1.29E+15	3.57E+13	
30	966	1R020	4.48	49127	1849.2	26.57	U1C13	U1C14	U1C15			15-Feb-02	13.2	7-May-15	2.27E+08	3.85E+15	1.29E+15	3.57E+13	
30	967	1R009	4.48	49137	1849.2	26.57	U1C13	U1C14	U1C15			15-Feb-02	13.2	10-May-15	2.27E+08	3.85E+15	1.29E+15	3.57E+13	
30	968	2P225	4.48	50157	1301.7	38.53	U2C12	U2C13				16-Mar-01	14.2	21-May-15	2.40E+08	3.78E+15	1.25E+15	3.21E+13	
30	969	2P226	4.48	50157	1301.7	38.53	U2C12	U2C13				16-Mar-01	14.2	21-May-15	2.40E+08	3.78E+15	1.25E+15	3.21E+13	
30	970	2P227	4.48	50157	1301.7	38.53	U2C12	U2C13				16-Mar-01	14.2	21-May-15	2.40E+08	3.78E+15	1.25E+15	3.21E+13	
30	971	2P228	4.48	50157	1301.7	38.53	U2C12	U2C13				16-Mar-01	14.2	21-May-15	2.40E+08	3.78E+15	1.25E+15	3.21E+13	
30	972	2P236	4.48	50181	1301.7	38.55	U2C12	U2C13				16-Mar-01	14.2	29-May-15	2.40E+08	3.78E+15	1.25E+15	3.20E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
30	973	2P233	4.48	50182	1301.7	38.55	U2C12	U2C13				16-Mar-01	14.2	30-May-15	2.40E+08	3.78E+15	1.25E+15	3.20E+13	
30	974	2P234	4.48	50182	1301.7	38.55	U2C12	U2C13				16-Mar-01	14.2	30-May-15	2.40E+08	3.78E+15	1.25E+15	3.20E+13	
30	975	2P235	4.48	50182	1301.7	38.55	U2C12	U2C13				16-Mar-01	14.2	30-May-15	2.40E+08	3.78E+15	1.25E+15	3.20E+13	
30	976	1S307	4.3	49013	1261.7	38.85	U1C14	U1C15				15-Feb-02	13.3	3-Jun-15	2.43E+08	3.82E+15	1.28E+15	3.60E+13	
30	977	1S306	4.3	49014	1261.7	38.85	U1C14	U1C15				15-Feb-02	13.3	3-Jun-15	2.43E+08	3.82E+15	1.28E+15	3.60E+13	
30	978	1S309	4.3	49015	1261.7	38.85	U1C14	U1C15				15-Feb-02	13.3	4-Jun-15	2.43E+08	3.82E+15	1.28E+15	3.60E+13	
30	979	1S310	4.3	49017	1261.7	38.85	U1C14	U1C15				15-Feb-02	13.3	4-Jun-15	2.43E+08	3.82E+15	1.28E+15	3.60E+13	
30	980	1R008	4.48	49305	1849.2	26.66	U1C13	U1C14	U1C15			15-Feb-02	13.4	5-Jul-15	2.29E+08	3.84E+15	1.28E+15	3.51E+13	
30	981	1R007	4.48	49307	1849.2	26.66	U1C13	U1C14	U1C15			15-Feb-02	13.4	5-Jul-15	2.29E+08	3.84E+15	1.28E+15	3.51E+13	
30	982	1R006	4.48	49309	1849.2	26.67	U1C13	U1C14	U1C15			15-Feb-02	13.4	6-Jul-15	2.29E+08	3.84E+15	1.28E+15	3.51E+13	
30	983	1R005	4.48	49310	1849.2	26.67	U1C13	U1C14	U1C15			15-Feb-02	13.4	6-Jul-15	2.29E+08	3.84E+15	1.28E+15	3.51E+13	
30	984	2P108	4.48	48164	1935.3	24.89	U2C12	U2C13	U2C14			14-Feb-03	12.4	7-Jul-15	2.14E+08	3.91E+15	1.32E+15	3.91E+13	
30	985	2P105	4.48	48165	1935.3	24.89	U2C12	U2C13	U2C14			14-Feb-03	12.4	7-Jul-15	2.15E+08	3.91E+15	1.32E+15	3.91E+13	
30	986	2P107	4.48	48165	1935.3	24.89	U2C12	U2C13	U2C14			14-Feb-03	12.4	7-Jul-15	2.15E+08	3.91E+15	1.32E+15	3.91E+13	
30	987	1N111	4.2	49016	1788.8	27.40	U1C11	U1C12	U1C15			15-Feb-02	13.4	9-Jul-15	2.53E+08	3.79E+15	1.28E+15	3.60E+13	
30	988	1N113	4.2	49020	1788.8	27.40	U1C11	U1C12	U1C15			15-Feb-02	13.4	10-Jul-15	2.53E+08	3.79E+15	1.28E+15	3.60E+13	
30	989	1N114	4.2	49020	1788.8	27.40	U1C11	U1C12	U1C15			15-Feb-02	13.4	10-Jul-15	2.53E+08	3.79E+15	1.28E+15	3.60E+13	
30	990	1N115	4.2	49020	1788.8	27.40	U1C11	U1C12	U1C15			15-Feb-02	13.4	10-Jul-15	2.53E+08	3.79E+15	1.28E+15	3.60E+13	
30	991	2P106	4.48	48218	1935.3	24.92	U2C12	U2C13	U2C14			14-Feb-03	12.4	23-Jul-15	2.15E+08	3.90E+15	1.32E+15	3.89E+13	
31	992	1S203	4.3	49269	1261.7	39.05	U1C14	U1C15				15-Feb-02	13.5	27-Aug-15	2.46E+08	3.80E+15	1.27E+15	3.51E+13	
31	993	1S210	4.3	49269	1261.7	39.05	U1C14	U1C15				15-Feb-02	13.5	27-Aug-15	2.46E+08	3.80E+15	1.27E+15	3.51E+13	
31	994	1S207	4.3	49275	1261.7	39.05	U1C14	U1C15				15-Feb-02	13.5	29-Aug-15	2.46E+08	3.80E+15	1.27E+15	3.51E+13	
31	995	1S209	4.3	49282	1261.7	39.06	U1C14	U1C15				15-Feb-02	13.5	31-Aug-15	2.46E+08	3.80E+15	1.27E+15	3.51E+13	
31	996	1S229	4.3	49282	1261.7	39.06	U1C14	U1C15				15-Feb-02	13.5	31-Aug-15	2.46E+08	3.80E+15	1.27E+15	3.51E+13	
31	997	1S202	4.3	49286	1261.7	39.06	U1C14	U1C15				15-Feb-02	13.6	1-Sep-15	2.46E+08	3.80E+15	1.27E+15	3.50E+13	
31	998	1S204	4.3	49297	1261.7	39.07	U1C14	U1C15				15-Feb-02	13.6	5-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.50E+13	
31	999	1S226	4.3	49298	1261.7	39.07	U1C14	U1C15				15-Feb-02	13.6	5-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.50E+13	
31	1000	1S205	4.3	49317	1261.7	39.09	U1C14	U1C15				15-Feb-02	13.6	12-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.49E+13	
31	1001	1S212	4.3	49317	1261.7	39.09	U1C14	U1C15				15-Feb-02	13.6	12-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.49E+13	
31	1002	1S206	4.3	49324	1261.7	39.09	U1C14	U1C15				15-Feb-02	13.6	14-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.49E+13	
31	1003	1S213	4.3	49324	1261.7	39.09	U1C14	U1C15				15-Feb-02	13.6	14-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.49E+13	
31	1004	1S221	4.3	49325	1261.7	39.09	U1C14	U1C15				15-Feb-02	13.6	14-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.49E+13	
31	1005	1S223	4.3	49325	1261.7	39.09	U1C14	U1C15				15-Feb-02	13.6	14-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.49E+13	
31	1006	1S211	4.3	49327	1261.7	39.10	U1C14	U1C15				15-Feb-02	13.6	15-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.49E+13	
31	1007	1S215	4.3	49327	1261.7	39.10	U1C14	U1C15				15-Feb-02	13.6	15-Sep-15	2.47E+08	3.80E+15	1.27E+15	3.49E+13	
31	1008	2N409	4.48	50490	1943.4	25.98	U2C11	U2C12	U2C13			16-Mar-01	14.5	17-Sep-15	2.44E+08	3.76E+15	1.24E+15	3.09E+13	
31	1009	2N403	4.48	50493	1943.4	25.98	U2C11	U2C12	U2C13			16-Mar-01	14.5	18-Sep-15	2.44E+08	3.76E+15	1.24E+15	3.09E+13	
31	1010	2N406	4.48	50493	1943.4	25.98	U2C11	U2C12	U2C13			16-Mar-01	14.5	18-Sep-15	2.44E+08	3.76E+15	1.24E+15	3.09E+13	
31	1011	2N407	4.48	50493	1943.4	25.98	U2C11	U2C12	U2C13			16-Mar-01	14.5	18-Sep-15	2.44E+08	3.76E+15	1.24E+15	3.09E+13	
31	1012	2R212	4.48	48474	1298.6	37.33	U2C13	U2C14				14-Feb-03	12.7	10-Oct-15	2.19E+08	3.89E+15	1.31E+15	3.80E+13	
31	1013	2R213	4.48	48474	1298.6	37.33	U2C13	U2C14				14-Feb-03	12.7	10-Oct-15	2.19E+08	3.89E+15	1.31E+15	3.80E+13	
31	1014	2R226	4.48	48474	1298.6	37.33	U2C13	U2C14				14-Feb-03	12.7	10-Oct-15	2.19E+08	3.89E+15	1.31E+15	3.80E+13	
31	1015	2R202	4.48	48475	1298.6	37.33	U2C13	U2C14				14-Feb-03	12.7	10-Oct-15	2.19E+08	3.89E+15	1.31E+15	3.80E+13	
31	1016	2R208	4.48	48530	1298.6	37.37	U2C13	U2C14				14-Feb-03	12.7	28-Oct-15	2.19E+08	3.89E+15	1.31E+15	3.78E+13	
31	1017	2R209	4.48	48530	1298.6	37.37	U2C13	U2C14				14-Feb-03	12.7	28-Oct-15	2.19E+08	3.89E+15	1.31E+15	3.78E+13	
31	1018	2R220	4.48	48530	1298.6	37.37	U2C13	U2C14				14-Feb-03	12.7	28-Oct-15	2.19E+08	3.89E+15	1.31E+15	3.78E+13	
31	1019	2R231	4.48	48531	1298.6	37.37	U2C13	U2C14				14-Feb-03	12.7	28-Oct-15	2.19E+08	3.88E+15	1.31E+15	3.78E+13	
31	1020	2P207	4.48	50664	1301.7	38.92	U2C12	U2C13				16-Mar-01	14.7	19-Nov-15	2.47E+08	3.75E+15	1.23E+15	3.03E+13	
31	1021	2P208	4.48	50664	1301.7	38.92	U2C12	U2C13				16-Mar-01	14.7	19-Nov-15	2.47E+08	3.75E+15	1.23E+15	3.03E+13	
31	1022	2P205	4.48	50665	1301.7	38.92	U2C12	U2C13				16-Mar-01	14.7	19-Nov-15	2.47E+08	3.75E+15	1.23E+15	3.03E+13	
31	1023	2P206	4.48	50665	1301.7	38.92	U2C12	U2C13				16-Mar-01	14.7	19-Nov-15	2.47E+08	3.75E+15	1.23E+15	3.03E+13	
32	1024	2P213	4.48	50688	1301.7	38.94	U2C12	U2C13				16-Mar-01	14.7	28-Nov-15	2.47E+08	3.75E+15	1.23E+15	3.02E+13	
32	1025	2P214	4.48	50688	1301.7	38.94	U2C12	U2C13				16-Mar-01	14.7	28-Nov-15	2.47E+08	3.75E+15	1.23E+15	3.02E+13	
32	1026	2P215	4.48	50688	1301.7	38.94	U2C12	U2C13				16-Mar-01	14.7	28-Nov-15	2.47E+08	3.75E+15	1.23E+15	3.02E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
32	1027	2P216	4.48	50688	1301.7	38.94	U2C12	U2C13				16-Mar-01	14.7	28-Nov-15	2.47E+08	3.75E+15	1.23E+15	3.02E+13	
32	1028	2P253	4.48	50758	1301.7	38.99	U2C12	U2C13				16-Mar-01	14.8	23-Dec-15	2.48E+08	3.75E+15	1.23E+15	3.00E+13	
32	1029	2P254	4.48	50758	1301.7	38.99	U2C12	U2C13				16-Mar-01	14.8	23-Dec-15	2.48E+08	3.75E+15	1.23E+15	3.00E+13	
32	1030	2P255	4.48	50758	1301.7	38.99	U2C12	U2C13				16-Mar-01	14.8	23-Dec-15	2.48E+08	3.75E+15	1.23E+15	3.00E+13	
32	1031	2P256	4.48	50758	1301.7	38.99	U2C12	U2C13				16-Mar-01	14.8	23-Dec-15	2.48E+08	3.75E+15	1.23E+15	3.00E+13	
32	1032	2P245	4.48	50767	1301.7	39.00	U2C12	U2C13				16-Mar-01	14.8	27-Dec-15	2.48E+08	3.75E+15	1.23E+15	3.00E+13	
32	1033	2P246	4.48	50767	1301.7	39.00	U2C12	U2C13				16-Mar-01	14.8	27-Dec-15	2.48E+08	3.75E+15	1.23E+15	3.00E+13	
32	1034	2P247	4.48	50767	1301.7	39.00	U2C12	U2C13				16-Mar-01	14.8	27-Dec-15	2.48E+08	3.75E+15	1.23E+15	3.00E+13	
32	1035	2P248	4.48	50767	1301.7	39.00	U2C12	U2C13				16-Mar-01	14.8	27-Dec-15	2.48E+08	3.75E+15	1.23E+15	3.00E+13	
32	1036	2P242	4.48	50809	1301.7	39.03	U2C12	U2C13				16-Mar-01	14.8	11-Jan-16	2.48E+08	3.74E+15	1.23E+15	2.98E+13	
32	1037	2P244	4.48	50809	1301.7	39.03	U2C12	U2C13				16-Mar-01	14.8	11-Jan-16	2.48E+08	3.74E+15	1.23E+15	2.98E+13	
32	1038	2P241	4.48	50810	1301.7	39.03	U2C12	U2C13				16-Mar-01	14.8	12-Jan-16	2.48E+08	3.74E+15	1.23E+15	2.98E+13	
32	1039	2P243	4.48	50810	1301.7	39.03	U2C12	U2C13				16-Mar-01	14.8	12-Jan-16	2.48E+08	3.74E+15	1.23E+15	2.98E+13	
32	1040	1S312	4.3	49698	1261.7	39.39	U1C14	U1C15				15-Feb-02	13.9	19-Jan-16	2.52E+08	3.77E+15	1.26E+15	3.36E+13	
32	1041	1S311	4.3	49700	1261.7	39.39	U1C14	U1C15				15-Feb-02	13.9	20-Jan-16	2.52E+08	3.77E+15	1.26E+15	3.36E+13	
32	1042	1S308	4.3	49712	1261.7	39.40	U1C14	U1C15				15-Feb-02	13.9	24-Jan-16	2.52E+08	3.77E+15	1.26E+15	3.35E+13	
32	1043	1S313	4.3	49712	1261.7	39.40	U1C14	U1C15				15-Feb-02	13.9	24-Jan-16	2.52E+08	3.77E+15	1.26E+15	3.35E+13	
32	1044	2P011	4.48	48828	1935.3	25.23	U2C12	U2C13	U2C14			14-Feb-03	13.0	30-Jan-16	2.23E+08	3.87E+15	1.30E+15	3.68E+13	
32	1045	2P009	4.48	48829	1935.3	25.23	U2C12	U2C13	U2C14			14-Feb-03	13.0	30-Jan-16	2.23E+08	3.87E+15	1.30E+15	3.68E+13	
32	1046	2P010	4.48	48829	1935.3	25.23	U2C12	U2C13	U2C14			14-Feb-03	13.0	30-Jan-16	2.23E+08	3.87E+15	1.30E+15	3.68E+13	
32	1047	2P012	4.48	48830	1935.3	25.23	U2C12	U2C13	U2C14			14-Feb-03	13.0	30-Jan-16	2.23E+08	3.87E+15	1.30E+15	3.68E+13	
32	1048	2P016	4.48	48878	1935.3	25.26	U2C12	U2C13	U2C14			14-Feb-03	13.0	15-Feb-16	2.24E+08	3.86E+15	1.29E+15	3.66E+13	
32	1049	2P013	4.48	48879	1935.3	25.26	U2C12	U2C13	U2C14			14-Feb-03	13.0	15-Feb-16	2.24E+08	3.86E+15	1.29E+15	3.66E+13	
32	1050	2P015	4.48	48879	1935.3	25.26	U2C12	U2C13	U2C14			14-Feb-03	13.0	15-Feb-16	2.24E+08	3.86E+15	1.29E+15	3.66E+13	
32	1051	2P014	4.48	48880	1935.3	25.26	U2C12	U2C13	U2C14			14-Feb-03	13.0	15-Feb-16	2.24E+08	3.86E+15	1.29E+15	3.66E+13	
32	1052	2P209	4.48	50924	1301.7	39.12	U2C12	U2C13				16-Mar-01	15.0	23-Feb-16	2.50E+08	3.74E+15	1.22E+15	2.94E+13	
32	1053	2P210	4.48	50924	1301.7	39.12	U2C12	U2C13				16-Mar-01	15.0	23-Feb-16	2.50E+08	3.74E+15	1.22E+15	2.94E+13	
32	1054	2P211	4.48	50924	1301.7	39.12	U2C12	U2C13				16-Mar-01	15.0	23-Feb-16	2.50E+08	3.74E+15	1.22E+15	2.94E+13	
32	1055	2P212	4.48	50924	1301.7	39.12	U2C12	U2C13				16-Mar-01	15.0	23-Feb-16	2.50E+08	3.74E+15	1.22E+15	2.94E+13	
33	1056	1S101	4.3	47327	1261.7	37.51	U1C14	U1C15				09-Apr-04	11.9	24-Feb-16	2.20E+08	3.92E+15	1.34E+15	4.21E+13	
33	1057	1S102	4.3	47327	1261.7	37.51	U1C14	U1C15				09-Apr-04	11.9	24-Feb-16	2.20E+08	3.92E+15	1.34E+15	4.21E+13	
33	1058	1S103	4.3	47327	1261.7	37.51	U1C14	U1C15				09-Apr-04	11.9	24-Feb-16	2.20E+08	3.92E+15	1.34E+15	4.21E+13	
33	1059	1S104	4.3	47327	1261.7	37.51	U1C14	U1C15				09-Apr-04	11.9	24-Feb-16	2.20E+08	3.92E+15	1.34E+15	4.21E+13	
33	1060	2P229	4.48	50975	1301.7	39.16	U2C12	U2C13				16-Mar-01	15.0	13-Mar-16	2.50E+08	3.73E+15	1.22E+15	2.92E+13	
33	1061	2P230	4.48	50975	1301.7	39.16	U2C12	U2C13				16-Mar-01	15.0	13-Mar-16	2.50E+08	3.73E+15	1.22E+15	2.92E+13	
33	1062	2P231	4.48	50975	1301.7	39.16	U2C12	U2C13				16-Mar-01	15.0	13-Mar-16	2.50E+08	3.73E+15	1.22E+15	2.92E+13	
33	1063	2P232	4.48	50975	1301.7	39.16	U2C12	U2C13				16-Mar-01	15.0	13-Mar-16	2.50E+08	3.73E+15	1.22E+15	2.92E+13	
33	1064	2R201	4.48	49000	1298.6	37.73	U2C13	U2C14				14-Feb-03	13.1	25-Mar-16	2.25E+08	3.86E+15	1.29E+15	3.62E+13	
33	1065	2R205	4.48	49000	1298.6	37.73	U2C13	U2C14				14-Feb-03	13.1	25-Mar-16	2.25E+08	3.86E+15	1.29E+15	3.62E+13	
33	1066	2R225	4.48	49000	1298.6	37.73	U2C13	U2C14				14-Feb-03	13.1	25-Mar-16	2.25E+08	3.86E+15	1.29E+15	3.62E+13	
33	1067	2R221	4.48	49001	1298.6	37.73	U2C13	U2C14				14-Feb-03	13.1	25-Mar-16	2.25E+08	3.86E+15	1.29E+15	3.62E+13	
33	1068	2R207	4.48	49082	1298.6	37.80	U2C13	U2C14				14-Feb-03	13.2	20-Apr-16	2.26E+08	3.85E+15	1.29E+15	3.59E+13	
33	1069	2R206	4.48	49083	1298.6	37.80	U2C13	U2C14				14-Feb-03	13.2	21-Apr-16	2.26E+08	3.85E+15	1.29E+15	3.59E+13	
33	1070	2R211	4.48	49083	1298.6	37.80	U2C13	U2C14				14-Feb-03	13.2	21-Apr-16	2.26E+08	3.85E+15	1.29E+15	3.59E+13	
33	1071	2R230	4.48	49083	1298.6	37.80	U2C13	U2C14				14-Feb-03	13.2	21-Apr-16	2.26E+08	3.85E+15	1.29E+15	3.59E+13	
33	1072	1S222	4.3	50041	1261.7	39.66	U1C14	U1C15				15-Feb-02	14.3	18-May-16	2.56E+08	3.75E+15	1.25E+15	3.23E+13	
33	1073	1S227	4.3	50043	1261.7	39.66	U1C14	U1C15				15-Feb-02	14.3	19-May-16	2.56E+08	3.75E+15	1.25E+15	3.23E+13	
33	1074	1S224	4.3	50045	1261.7	39.66	U1C14	U1C15				15-Feb-02	14.3	20-May-16	2.56E+08	3.75E+15	1.25E+15	3.23E+13	
33	1075	1S233	4.3	50047	1261.7	39.67	U1C14	U1C15				15-Feb-02	14.3	20-May-16	2.56E+08	3.75E+15	1.25E+15	3.23E+13	
33	1076	1S234	4.3	50047	1261.7	39.67	U1C14	U1C15				15-Feb-02	14.3	20-May-16	2.56E+08	3.75E+15	1.25E+15	3.23E+13	
33	1077	1S240	4.3	50047	1261.7	39.67	U1C14	U1C15				15-Feb-02	14.3	20-May-16	2.56E+08	3.75E+15	1.25E+15	3.23E+13	
33	1078	1S238	4.3	50054	1261.7	39.67	U1C14	U1C15				15-Feb-02	14.3	23-May-16	2.57E+08	3.75E+15	1.24E+15	3.23E+13	
33	1079	1S239	4.3	50054	1261.7	39.67	U1C14	U1C15				15-Feb-02	14.3	23-May-16	2.57E+08	3.75E+15	1.24E+15	3.23E+13	
33	1080	1S008	4.3	47684	1261.7	37.79	U1C14	U1C15				09-Apr-04	12.2	7-Jun-16	2.25E+08	3.90E+15	1.33E+15	4.08E+13	

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
33	1081	1S013	4.3	47684	1261.7	37.79	U1C14	U1C15				09-Apr-04	12.2	7-Jun-16	2.25E+08	3.90E+15	1.33E+15	4.08E+13	
33	1082	1S024	4.3	47684	1261.7	37.79	U1C14	U1C15				09-Apr-04	12.2	7-Jun-16	2.25E+08	3.90E+15	1.33E+15	4.08E+13	
33	1083	1S006	4.3	47686	1261.7	37.80	U1C14	U1C15				09-Apr-04	12.2	8-Jun-16	2.25E+08	3.90E+15	1.33E+15	4.08E+13	
33	1084	1S004	4.3	47780	1904.3	25.09	U1C14	U1C15	U1C16			09-Apr-04	12.2	6-Jul-16	2.26E+08	3.89E+15	1.32E+15	4.05E+13	
33	1085	1S011	4.3	47780	1904.3	25.09	U1C14	U1C15	U1C16			09-Apr-04	12.2	6-Jul-16	2.26E+08	3.89E+15	1.32E+15	4.05E+13	
33	1086	1S003	4.3	47788	1904.3	25.09	U1C14	U1C15	U1C16			09-Apr-04	12.3	8-Jul-16	2.26E+08	3.89E+15	1.32E+15	4.04E+13	
33	1087	1S009	4.3	47788	1904.3	25.09	U1C14	U1C15	U1C16			09-Apr-04	12.3	8-Jul-16	2.26E+08	3.89E+15	1.32E+15	4.04E+13	
34	1088	1S015	4.3	47788	1904.3	25.09	U1C14	U1C15	U1C16			09-Apr-04	12.3	8-Jul-16	2.26E+08	3.89E+15	1.32E+15	4.04E+13	
34	1089	1S020	4.3	47788	1904.3	25.09	U1C14	U1C15	U1C16			09-Apr-04	12.3	8-Jul-16	2.26E+08	3.89E+15	1.32E+15	4.04E+13	
34	1090	2R310	4.48	49547	1298.6	38.16	U2C13	U2C14				14-Feb-03	13.6	22-Sep-16	2.32E+08	3.82E+15	1.27E+15	3.42E+13	
34	1091	2R329	4.48	49547	1298.6	38.16	U2C13	U2C14				14-Feb-03	13.6	22-Sep-16	2.32E+08	3.82E+15	1.27E+15	3.42E+13	
34	1092	2R330	4.48	49547	1298.6	38.16	U2C13	U2C14				14-Feb-03	13.6	22-Sep-16	2.32E+08	3.82E+15	1.27E+15	3.42E+13	
34	1093	2R326	4.48	49548	1298.6	38.16	U2C13	U2C14				14-Feb-03	13.6	22-Sep-16	2.32E+08	3.82E+15	1.27E+15	3.42E+13	
34	1094	2J111	3.4	50397	1639.8	30.73	U2C7	U2C8	U2C13			16-Mar-01	15.5	26-Sep-16	3.77E+08	3.47E+15	1.17E+15	3.07E+13	
34	1095	1S001	4	47780	1840.8	25.96	U1C13	U1C14	U1C16			09-Apr-04	12.5	8-Oct-16	2.57E+08	3.82E+15	1.31E+15	4.05E+13	
34	1096	1S303	4.3	50603	1261.7	40.11	U1C14	U1C15				15-Feb-02	14.8	7-Dec-16	2.64E+08	3.71E+15	1.23E+15	3.04E+13	
34	1097	1S316	4.3	50603	1261.7	40.11	U1C14	U1C15				15-Feb-02	14.8	7-Dec-16	2.64E+08	3.71E+15	1.23E+15	3.04E+13	
34	1098	1S304	4.3	50610	1261.7	40.11	U1C14	U1C15				15-Feb-02	14.8	9-Dec-16	2.64E+08	3.71E+15	1.23E+15	3.03E+13	
34	1099	1S315	4.3	50610	1261.7	40.11	U1C14	U1C15				15-Feb-02	14.8	9-Dec-16	2.64E+08	3.71E+15	1.23E+15	3.03E+13	
34	1100	1S301	4.3	50618	1261.7	40.12	U1C14	U1C15				15-Feb-02	14.8	12-Dec-16	2.64E+08	3.71E+15	1.22E+15	3.03E+13	
34	1101	1S302	4.3	50620	1261.7	40.12	U1C14	U1C15				15-Feb-02	14.8	13-Dec-16	2.64E+08	3.71E+15	1.22E+15	3.03E+13	
34	1102	1S305	4.3	50620	1261.7	40.12	U1C14	U1C15				15-Feb-02	14.8	13-Dec-16	2.64E+08	3.71E+15	1.22E+15	3.03E+13	
34	1103	1S314	4.3	50620	1261.7	40.12	U1C14	U1C15				15-Feb-02	14.8	13-Dec-16	2.64E+08	3.71E+15	1.22E+15	3.03E+13	
34	1104	1S237	4.3	50695	1261.7	40.18	U1C14	U1C15				15-Feb-02	14.9	10-Jan-17	2.65E+08	3.71E+15	1.22E+15	3.01E+13	
34	1105	1S235	4.3	50696	1261.7	40.18	U1C14	U1C15				15-Feb-02	14.9	10-Jan-17	2.65E+08	3.71E+15	1.22E+15	3.00E+13	
34	1106	1S236	4.3	50696	1261.7	40.18	U1C14	U1C15				15-Feb-02	14.9	10-Jan-17	2.65E+08	3.71E+15	1.22E+15	3.00E+13	
34	1107	1S225	4.3	50697	1261.7	40.18	U1C14	U1C15				15-Feb-02	14.9	11-Jan-17	2.65E+08	3.71E+15	1.22E+15	3.00E+13	
34	1108	2R103	4.48	47702	1301.7	36.65	U2C12	U2C13				22-Feb-05	12.0	28-Feb-17	2.08E+08	3.94E+15	1.33E+15	4.08E+13	
34	1109	2R104	4.48	47702	1301.7	36.65	U2C12	U2C13				22-Feb-05	12.0	28-Feb-17	2.08E+08	3.94E+15	1.33E+15	4.08E+13	
34	1110	2R110	4.48	47702	1301.7	36.65	U2C12	U2C13				22-Feb-05	12.0	28-Feb-17	2.08E+08	3.94E+15	1.33E+15	4.08E+13	
34	1111	2R112	4.48	47702	1301.7	36.65	U2C12	U2C13				22-Feb-05	12.0	28-Feb-17	2.08E+08	3.94E+15	1.33E+15	4.08E+13	
34	1112	2R313	4.48	50021	1298.6	38.52	U2C13	U2C14				14-Feb-03	14.1	3-Mar-17	2.38E+08	3.79E+15	1.26E+15	3.25E+13	
34	1113	2R314	4.48	50021	1298.6	38.52	U2C13	U2C14				14-Feb-03	14.1	3-Mar-17	2.38E+08	3.79E+15	1.26E+15	3.25E+13	
34	1114	2R316	4.48	50021	1298.6	38.52	U2C13	U2C14				14-Feb-03	14.1	3-Mar-17	2.38E+08	3.79E+15	1.26E+15	3.25E+13	
34	1115	2R324	4.48	50021	1298.6	38.52	U2C13	U2C14				14-Feb-03	14.1	3-Mar-17	2.38E+08	3.79E+15	1.26E+15	3.25E+13	
34	1116	2R105	4.48	47762	1965.5	24.30	U2C12	U2C13	U2C15			22-Feb-05	12.1	17-Mar-17	2.09E+08	3.93E+15	1.33E+15	4.06E+13	
34	1117	2R106	4.48	47762	1965.5	24.30	U2C12	U2C13	U2C15			22-Feb-05	12.1	17-Mar-17	2.09E+08	3.93E+15	1.33E+15	4.06E+13	
34	1118	2R108	4.48	47762	1965.5	24.30	U2C12	U2C13	U2C15			22-Feb-05	12.1	17-Mar-17	2.09E+08	3.93E+15	1.33E+15	4.06E+13	
34	1119	2R111	4.48	47762	1965.5	24.30	U2C12	U2C13	U2C15			22-Feb-05	12.1	17-Mar-17	2.09E+08	3.93E+15	1.33E+15	4.06E+13	
35	1120	2R304	4.48	50071	1298.6	38.56	U2C13	U2C14				14-Feb-03	14.1	21-Mar-17	2.39E+08	3.79E+15	1.25E+15	3.24E+13	
35	1121	2R323	4.48	50071	1298.6	38.56	U2C13	U2C14				14-Feb-03	14.1	21-Mar-17	2.39E+08	3.79E+15	1.25E+15	3.24E+13	
35	1122	2R335	4.48	50071	1298.6	38.56	U2C13	U2C14				14-Feb-03	14.1	21-Mar-17	2.39E+08	3.79E+15	1.25E+15	3.24E+13	
35	1123	2R340	4.48	50071	1298.6	38.56	U2C13	U2C14				14-Feb-03	14.1	21-Mar-17	2.39E+08	3.79E+15	1.25E+15	3.24E+13	
35	1124	2P007	4.48	50105	1935.3	25.89	U2C12	U2C13	U2C14			14-Feb-03	14.1	2-Apr-17	2.39E+08	3.79E+15	1.25E+15	3.23E+13	
35	1125	2P008	4.48	50105	1935.3	25.89	U2C12	U2C13	U2C14			14-Feb-03	14.1	2-Apr-17	2.39E+08	3.79E+15	1.25E+15	3.23E+13	
35	1126	2P021	4.48	50129	1935.3	25.90	U2C12	U2C13	U2C14			14-Feb-03	14.2	10-Apr-17	2.40E+08	3.79E+15	1.25E+15	3.22E+13	
35	1127	2P023	4.48	50129	1935.3	25.90	U2C12	U2C13	U2C14			14-Feb-03	14.2	10-Apr-17	2.40E+08	3.79E+15	1.25E+15	3.22E+13	
35	1128	2P022	4.48	50130	1935.3	25.90	U2C12	U2C13	U2C14			14-Feb-03	14.2	10-Apr-17	2.40E+08	3.79E+15	1.25E+15	3.22E+13	
35	1129	2R318	4.48	50199	1298.6	38.66	U2C13	U2C14				14-Feb-03	14.2	5-May-17	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
35	1130	2R319	4.48	50199	1298.6	38.66	U2C13	U2C14				14-Feb-03	14.2	5-May-17	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
35	1131	2R327	4.48	50199	1298.6	38.66	U2C13	U2C14				14-Feb-03	14.2	5-May-17	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
35	1132	2R328	4.48	50199	1298.6	38.66	U2C13	U2C14				14-Feb-03	14.2	5-May-17	2.41E+08	3.78E+15	1.25E+15	3.19E+13	
35	1133	2P101	4.48	50248	1935.3	25.96	U2C12	U2C13	U2C14			14-Feb-03	14.3	22-May-17	2.41E+08	3.78E+15	1.25E+15	3.18E+13	
35	1134	2P102	4.48	50248	1935.3	25.96	U2C12	U2C13	U2C14			14-Feb-03	14.3	22-May-17	2.41E+08	3.78E+15	1.25E+15	3.18E+13	

DSCs	#_ Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
35	1135	2P103	4.48	50248	1935.3	25.96	U2C12	U2C13	U2C14			14-Feb-03	14.3	22-May-17	2.41E+08	3.78E+15	1.25E+15	3.18E+13	
35	1136	2P104	4.48	50249	1935.3	25.97	U2C12	U2C13	U2C14			14-Feb-03	14.3	22-May-17	2.41E+08	3.78E+15	1.25E+15	3.18E+13	
35	1137	2R315	4.48	50254	1298.6	38.70	U2C13	U2C14				14-Feb-03	14.3	24-May-17	2.41E+08	3.78E+15	1.25E+15	3.17E+13	
35	1138	2R317	4.48	50254	1298.6	38.70	U2C13	U2C14				14-Feb-03	14.3	24-May-17	2.41E+08	3.78E+15	1.25E+15	3.17E+13	
35	1139	2R331	4.48	50254	1298.6	38.70	U2C13	U2C14				14-Feb-03	14.3	24-May-17	2.41E+08	3.78E+15	1.25E+15	3.17E+13	
35	1140	2R332	4.48	50254	1298.6	38.70	U2C13	U2C14				14-Feb-03	14.3	24-May-17	2.41E+08	3.78E+15	1.25E+15	3.17E+13	
35	1141	2R308	4.48	50264	1298.6	38.71	U2C13	U2C14				14-Feb-03	14.3	28-May-17	2.41E+08	3.78E+15	1.25E+15	3.17E+13	
35	1142	2R309	4.48	50264	1298.6	38.71	U2C13	U2C14				14-Feb-03	14.3	28-May-17	2.41E+08	3.78E+15	1.25E+15	3.17E+13	
35	1143	2R311	4.48	50264	1298.6	38.71	U2C13	U2C14				14-Feb-03	14.3	28-May-17	2.41E+08	3.78E+15	1.25E+15	3.17E+13	
35	1144	2R325	4.48	50264	1298.6	38.71	U2C13	U2C14				14-Feb-03	14.3	28-May-17	2.41E+08	3.78E+15	1.25E+15	3.17E+13	
35	1145	2R306	4.48	50326	1298.6	38.76	U2C13	U2C14				14-Feb-03	14.4	19-Jun-17	2.42E+08	3.77E+15	1.24E+15	3.15E+13	
35	1146	2R312	4.48	50326	1298.6	38.76	U2C13	U2C14				14-Feb-03	14.4	19-Jun-17	2.42E+08	3.77E+15	1.24E+15	3.15E+13	
35	1147	2R320	4.48	50326	1298.6	38.76	U2C13	U2C14				14-Feb-03	14.4	19-Jun-17	2.42E+08	3.77E+15	1.24E+15	3.15E+13	
35	1148	2R321	4.48	50326	1298.6	38.76	U2C13	U2C14				14-Feb-03	14.4	19-Jun-17	2.42E+08	3.77E+15	1.24E+15	3.15E+13	
35	1149	2R305	4.48	50404	1298.6	38.82	U2C13	U2C14				14-Feb-03	14.4	17-Jul-17	2.43E+08	3.77E+15	1.24E+15	3.12E+13	
35	1150	2R307	4.48	50404	1298.6	38.82	U2C13	U2C14				14-Feb-03	14.4	17-Jul-17	2.43E+08	3.77E+15	1.24E+15	3.12E+13	
35	1151	2R322	4.48	50404	1298.6	38.82	U2C13	U2C14				14-Feb-03	14.4	17-Jul-17	2.43E+08	3.77E+15	1.24E+15	3.12E+13	
36	1152	2R337	4.48	50404	1298.6	38.82	U2C13	U2C14				14-Feb-03	14.4	17-Jul-17	2.43E+08	3.77E+15	1.24E+15	3.12E+13	
36	1153	1S208	4.3	49003	1904.3	25.73	U1C14	U1C15	U1C16			09-Apr-04	13.3	23-Jul-17	2.43E+08	3.82E+15	1.28E+15	3.61E+13	
36	1154	1S216	4.3	49003	1904.3	25.73	U1C14	U1C15	U1C16			09-Apr-04	13.3	23-Jul-17	2.43E+08	3.82E+15	1.28E+15	3.61E+13	
36	1155	1S228	4.3	49003	1904.3	25.73	U1C14	U1C15	U1C16			09-Apr-04	13.3	23-Jul-17	2.43E+08	3.82E+15	1.28E+15	3.61E+13	
36	1156	2R302	4.48	50438	1298.6	38.84	U2C13	U2C14				14-Feb-03	14.5	29-Jul-17	2.44E+08	3.77E+15	1.24E+15	3.11E+13	
36	1157	2R334	4.48	50438	1298.6	38.84	U2C13	U2C14				14-Feb-03	14.5	29-Jul-17	2.44E+08	3.77E+15	1.24E+15	3.11E+13	
36	1158	2R338	4.48	50438	1298.6	38.84	U2C13	U2C14				14-Feb-03	14.5	29-Jul-17	2.44E+08	3.77E+15	1.24E+15	3.11E+13	
36	1159	2R339	4.48	50438	1298.6	38.84	U2C13	U2C14				14-Feb-03	14.5	29-Jul-17	2.44E+08	3.77E+15	1.24E+15	3.11E+13	
36	1160	2R222	4.48	48492	1962.4	24.71	U2C13	U2C14	U2C15			22-Feb-05	12.7	24-Oct-17	2.19E+08	3.89E+15	1.31E+15	3.80E+13	
36	1161	2R227	4.48	48492	1962.4	24.71	U2C13	U2C14	U2C15			22-Feb-05	12.7	24-Oct-17	2.19E+08	3.89E+15	1.31E+15	3.80E+13	
36	1162	2R228	4.48	48492	1962.4	24.71	U2C13	U2C14	U2C15			22-Feb-05	12.7	24-Oct-17	2.19E+08	3.89E+15	1.31E+15	3.80E+13	
36	1163	2R219	4.48	48493	1962.4	24.71	U2C13	U2C14	U2C15			22-Feb-05	12.7	24-Oct-17	2.19E+08	3.89E+15	1.31E+15	3.80E+13	
36	1164	2R101	4.48	48557	1301.7	37.30	U2C12	U2C13				22-Feb-05	12.7	13-Nov-17	2.20E+08	3.88E+15	1.31E+15	3.77E+13	
36	1165	2R102	4.48	48557	1301.7	37.30	U2C12	U2C13				22-Feb-05	12.7	13-Nov-17	2.20E+08	3.88E+15	1.31E+15	3.77E+13	
36	1166	2R107	4.48	48557	1301.7	37.30	U2C12	U2C13				22-Feb-05	12.7	13-Nov-17	2.20E+08	3.88E+15	1.31E+15	3.77E+13	
36	1167	2R109	4.48	48557	1301.7	37.30	U2C12	U2C13				22-Feb-05	12.7	13-Nov-17	2.20E+08	3.88E+15	1.31E+15	3.77E+13	
36	1168	2R301	4.48	51004	1298.6	39.28	U2C13	U2C14				14-Feb-03	15.0	22-Feb-18	2.51E+08	3.73E+15	1.22E+15	2.91E+13	
36	1169	2R303	4.48	51004	1298.6	39.28	U2C13	U2C14				14-Feb-03	15.0	22-Feb-18	2.51E+08	3.73E+15	1.22E+15	2.91E+13	
36	1170	2R333	4.48	51004	1298.6	39.28	U2C13	U2C14				14-Feb-03	15.0	22-Feb-18	2.51E+08	3.73E+15	1.22E+15	2.91E+13	
36	1171	2R336	4.48	51004	1298.6	39.28	U2C13	U2C14				14-Feb-03	15.0	22-Feb-18	2.51E+08	3.73E+15	1.22E+15	2.91E+13	
36	1172	2J104	3.4	51031	1625.8	31.39	U2C7	U2C8	U1C15			15-Feb-02	16.2	3-May-18	3.86E+08	3.43E+15	1.14E+15	2.83E+13	
36	1173	1L102	3.4	50572	1615.8	31.30	U1C9	U1C10	U2C14			14-Feb-03	15.7	2-Nov-18	3.79E+08	3.46E+15	1.16E+15	3.00E+13	
36	1174	2R204	4.48	49865	1962.4	25.41	U2C13	U2C14	U2C15			22-Feb-05	13.9	17-Jan-19	2.36E+08	3.80E+15	1.26E+15	3.31E+13	
36	1175	2R214	4.48	49865	1962.4	25.41	U2C13	U2C14	U2C15			22-Feb-05	13.9	17-Jan-19	2.36E+08	3.80E+15	1.26E+15	3.31E+13	
36	1176	2R216	4.48	49892	1962.4	25.42	U2C13	U2C14	U2C15			22-Feb-05	13.9	26-Jan-19	2.37E+08	3.80E+15	1.26E+15	3.30E+13	
36	1177	2R217	4.48	49892	1962.4	25.42	U2C13	U2C14	U2C15			22-Feb-05	13.9	26-Jan-19	2.37E+08	3.80E+15	1.26E+15	3.30E+13	
36	1178	2R218	4.48	49892	1962.4	25.42	U2C13	U2C14	U2C15			22-Feb-05	13.9	26-Jan-19	2.37E+08	3.80E+15	1.26E+15	3.30E+13	
36	1179	2J101	3.4	49940	1617.4	30.88	U2C7	U2C8	U1C16			09-Apr-04	15.1	2-May-19	3.70E+08	3.50E+15	1.18E+15	3.24E+13	
36	1180	2J110	3.4	49209	1638.6	30.03	U2C7	U2C8	U2C15			22-Feb-05	14.3	26-Jun-19	3.58E+08	3.56E+15	1.21E+15	3.52E+13	
n/a	1181	1A068	2.05	18067	521	34.68	U1C1					31-Dec-76	3.7	31-Aug-80	1.91E+07	5.06E+15	1.37E+15	7.44E+13	Leaker
n/a	1182	1B060	2.45	26416	775.2	34.08	U1C1	U1C2				22-Jan-78	4.9	29-Nov-82	6.90E+07	4.83E+15	1.62E+15	8.28E+13	Leaker
n/a	1183	1C001	2.99	31086	1072	29.00	U1C1	U1C2	U1C3			20-Apr-79	5.5	14-Oct-84	9.50E+07	4.68E+15	1.65E+15	8.06E+13	Leaker
n/a	1184	1C031	2.99	22185	775.2	28.62	U1C1	U1C2				22-Jan-78	4.4	6-Jun-82	2.16E+07	5.04E+15	1.49E+15	6.84E+13	Leaker
n/a	1185	1C039	2.99	27215	1072	25.39	U1C1	U1C2	U1C3			20-Apr-79	4.9	16-Mar-84	5.35E+07	4.87E+15	1.62E+15	7.70E+13	Leaker
n/a	1186	1C205	2.99	25743	775.2	33.21	U1C1	U1C2				22-Jan-78	4.7	18-Oct-82	4.19E+07	4.93E+15	1.59E+15	7.48E+13	Dmgd Top Grid
n/a	1187	1D121	2.73	31330	917.6	34.14	U1C2	U1C3	U1C4			17-Oct-80	5.6	24-May-86	1.16E+08	4.62E+15	1.65E+15	8.35E+13	Leaker
n/a	1188	1K043	4.05	42874	1382.8	31.01	U1C8	U1C9	U1C10			19-Mar-92	9.1	26-Apr-01	1.80E+08	4.15E+15	1.47E+15	5.73E+13	Loading 50

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
n/a	1189	1K106	3.4	45723	1382.8	33.07	U1C8	U1C9	U1C10			19-Mar-92	11.4	4-Aug-03	2.99E+08	3.81E+15	1.34E+15	4.88E+13	Loading 50
n/a	1190	1K107	3.4	45707	1382.8	33.05	U1C8	U1C9	U1C10			19-Mar-92	11.4	30-Jul-03	2.99E+08	3.81E+15	1.34E+15	4.89E+13	Loading 50
n/a	1191	1K108	3.4	45707	1382.8	33.05	U1C8	U1C9	U1C10			19-Mar-92	11.4	30-Jul-03	2.99E+08	3.81E+15	1.34E+15	4.89E+13	Loading 50
n/a	1192	1K109	3.4	45704	1382.8	33.05	U1C8	U1C9	U1C10			19-Mar-92	11.4	30-Jul-03	2.99E+08	3.81E+15	1.34E+15	4.89E+13	?
n/a	1193	1K114	3.4	43362	1382.8	31.36	U1C8	U1C9	U1C10			19-Mar-92	9.8	30-Dec-01	2.57E+08	3.97E+15	1.42E+15	5.76E+13	Loading 50
n/a	1194	1P003	4.3	42219	1829.4	23.08	U1C12	U1C13	U1C14			10-Mar-00	8.6	24-Oct-08	1.51E+08	4.23E+15	1.49E+15	5.84E+13	rod n-13 failed
n/a	1195	1P004	4.3	42220	1829.4	23.08	U1C12	U1C13	U1C14			10-Mar-00	8.6	24-Oct-08	1.51E+08	4.23E+15	1.49E+15	5.84E+13	13 rods failed
n/a	1196	1P005	4.3	42068	1829.4	23.00	U1C12	U1C13	U1C14			10-Mar-00	8.6	26-Sep-08	1.49E+08	4.24E+15	1.50E+15	5.88E+13	rod a-12 failed
n/a	1197	1P007	4.3	42084	1829.4	23.00	U1C12	U1C13	U1C14			10-Mar-00	8.6	29-Sep-08	1.50E+08	4.24E+15	1.50E+15	5.88E+13	rod n-14 failed
n/a	1198	1P008	4.3	42084	1829.4	23.00	U1C12	U1C13	U1C14			10-Mar-00	8.6	29-Sep-08	1.50E+08	4.24E+15	1.50E+15	5.88E+13	rods a-1 & n-1 failed
n/a	1199	1P010	4.3	38672	1829.4	21.14	U1C12	U1C13	U1C14			10-Mar-00	7.2	4-May-07	1.08E+08	4.43E+15	1.57E+15	6.56E+13	pot. reinsert
n/a	1200	1P011	4.3	38673	1829.4	21.14	U1C12	U1C13	U1C14			10-Mar-00	7.2	5-May-07	1.08E+08	4.43E+15	1.57E+15	6.56E+13	pot. reinsert
n/a	1201	1P012	4.3	38673	1829.4	21.14	U1C12	U1C13	U1C14			10-Mar-00	7.2	5-May-07	1.08E+08	4.43E+15	1.57E+15	6.56E+13	pot. reinsert
n/a	1202	1P108	4.3	47575	1829.4	26.01	U1C12	U1C13	U1C14			10-Mar-00	12.1	6-Apr-12	2.23E+08	3.91E+15	1.33E+15	4.12E+13	rod l-14 failed
n/a	1203	1P112	4.3	47512	1829.4	25.97	U1C12	U1C13	U1C14			10-Mar-00	12.0	19-Mar-12	2.22E+08	3.91E+15	1.33E+15	4.14E+13	rod a-14 failed
n/a	1204	1R023	4.48	46923	1849.2	25.37	U1C13	U1C14	U1C15			15-Feb-02	11.4	15-Jul-13	1.98E+08	3.98E+15	1.36E+15	4.35E+13	rod k-1 failed
n/a	1205	1S005	4.3	47780	1904.3	25.09	U1C14	U1C15	U1C16			09-Apr-04	12.2	6-Jul-16	2.26E+08	3.89E+15	1.32E+15	4.05E+13	failed sipping 04
n/a	1206	1S016	4.3	43618	1261.7	34.57	U1C14	U1C15				09-Apr-04	9.4	23-Aug-13	1.70E+08	4.15E+15	1.45E+15	5.45E+13	failed sipping 04
n/a	1207	1S018	4.3	43714	1261.7	34.65	U1C14	U1C15				09-Apr-04	9.4	12-Sep-13	1.71E+08	4.14E+15	1.45E+15	5.42E+13	failed sipping 04
n/a	1208	1S021	4.3	43618	1261.7	34.57	U1C14	U1C15				09-Apr-04	9.4	23-Aug-13	1.70E+08	4.15E+15	1.45E+15	5.45E+13	failed sipping 04
n/a	1209	1S023	4.3	43618	1261.7	34.57	U1C14	U1C15				09-Apr-04	9.4	23-Aug-13	1.70E+08	4.15E+15	1.45E+15	5.45E+13	failed sipping 04
n/a	1210	1S218	4.3	51154	1253.3	40.81	U1C14	U1C16				09-Apr-04	15.4	25-Aug-19	2.71E+08	3.68E+15	1.21E+15	2.85E+13	failed sipping 04
n/a	1211	2H103	3.4	45767	1386.6	33.01	U2C6	U2C7	U2C8			17-Mar-89	11.4	13-Aug-00	3.00E+08	3.80E+15	1.34E+15	4.87E+13	Loading 50
n/a	1212	2H107	3.4	44649	1386.6	32.20	U2C6	U2C7	U2C8			17-Mar-89	10.6	27-Oct-99	2.80E+08	3.88E+15	1.38E+15	5.29E+13	Loading 50
n/a	1213	2H112	3.4	46058	1386.6	33.22	U2C6	U2C7	U2C8			17-Mar-89	11.6	1-Nov-00	3.05E+08	3.78E+15	1.33E+15	4.75E+13	Loading 50
n/a	1214	2H113	3.4	46058	1386.6	33.22	U2C6	U2C7	U2C8			17-Mar-89	11.6	1-Nov-00	3.05E+08	3.78E+15	1.33E+15	4.75E+13	Loading 50
n/a	1215	2H118	3.4	45750	1386.6	32.99	U2C6	U2C7	U2C8			17-Mar-89	11.4	8-Aug-00	3.00E+08	3.80E+15	1.34E+15	4.87E+13	Loading 50
n/a	1216	2J014	4.05	40498	1529.3	26.48	U2C7	U2C8	U2C9			19-Feb-93	8.0	30-Jan-01	1.47E+08	4.30E+15	1.53E+15	6.35E+13	Loading 50
n/a	1217	2J029	4.05	45093	1529.3	29.49	U2C7	U2C8	U2C9			19-Feb-93	10.5	2-Aug-03	2.12E+08	4.01E+15	1.40E+15	5.02E+13	Loading 50
n/a	1218	2J037	4.05	38644	1529.3	25.27	U2C7	U2C8	U2C9			19-Feb-93	7.2	11-May-00	1.23E+08	4.41E+15	1.57E+15	6.70E+13	Loading 50
n/a	1219	2K123	4.08	41788	1106.9	37.75	U2C8	U2C9				19-Feb-93	8.5	30-Aug-01	1.63E+08	4.22E+15	1.50E+15	6.03E+13	Loading 50
n/a	1220	2K124	4.08	42372	1106.9	38.28	U2C8	U2C9				19-Feb-93	8.8	16-Dec-01	1.71E+08	4.19E+15	1.48E+15	5.87E+13	Loading 50
n/a	1221	2K125	4.08	42728	1106.9	38.60	U2C8	U2C9				19-Feb-93	9.0	22-Feb-02	1.76E+08	4.17E+15	1.47E+15	5.77E+13	Loading 50
n/a	1222	2K127	4.08	41817	1106.9	37.78	U2C8	U2C9				19-Feb-93	8.5	4-Sep-01	1.63E+08	4.22E+15	1.50E+15	6.02E+13	Loading 50
n/a	1223	2K201	4.08	42136	1106.9	38.07	U2C8	U2C9				19-Feb-93	8.7	1-Nov-01	1.67E+08	4.20E+15	1.49E+15	5.93E+13	Loading 50
n/a	1224	2K204	4.08	40850	1106.9	36.90	U2C8	U2C9				19-Feb-93	8.1	23-Mar-01	1.50E+08	4.28E+15	1.52E+15	6.26E+13	Loading 50
n/a	1225	2K206	4.08	40850	1106.9	36.90	U2C8	U2C9				19-Feb-93	8.1	23-Mar-01	1.50E+08	4.28E+15	1.52E+15	6.26E+13	Loading 50
n/a	1226	2K207	4.08	41237	1106.9	37.25	U2C8	U2C9				19-Feb-93	8.3	26-May-01	1.55E+08	4.26E+15	1.51E+15	6.17E+13	Loading 50
n/a	1227	2K210	4.08	40850	1106.9	36.90	U2C8	U2C9				19-Feb-93	8.1	23-Mar-01	1.50E+08	4.28E+15	1.52E+15	6.26E+13	Loading 50
n/a	1228	2K211	4.08	41237	1106.9	37.25	U2C8	U2C9				19-Feb-93	8.3	26-May-01	1.55E+08	4.26E+15	1.51E+15	6.17E+13	Loading 50
n/a	1229	2K215	4.08	42136	1106.9	38.07	U2C8	U2C9				19-Feb-93	8.7	1-Nov-01	1.67E+08	4.20E+15	1.49E+15	5.93E+13	Loading 50
n/a	1230	2K216	4.08	41232	1106.9	37.25	U2C8	U2C9				19-Feb-93	8.3	25-May-01	1.55E+08	4.26E+15	1.52E+15	6.17E+13	Loading 50
n/a	1231	2K217	4.08	42136	1106.9	38.07	U2C8	U2C9				19-Feb-93	8.7	1-Nov-01	1.67E+08	4.20E+15	1.49E+15	5.93E+13	Loading 50
n/a	1232	2K219	4.08	42405	1106.9	38.31	U2C8	U2C9				19-Feb-93	8.8	22-Dec-01	1.71E+08	4.19E+15	1.48E+15	5.86E+13	Loading 50
n/a	1233	2K221	4.08	42206	1106.9	38.13	U2C8	U2C9				19-Feb-93	8.7	14-Nov-01	1.68E+08	4.20E+15	1.49E+15	5.92E+13	Loading 50
n/a	1234	2K223	4.08	41232	1106.9	37.25	U2C8	U2C9				19-Feb-93	8.3	25-May-01	1.55E+08	4.26E+15	1.52E+15	6.17E+13	Loading 50
n/a	1235	2K224	4.08	42206	1106.9	38.13	U2C8	U2C9				19-Feb-93	8.7	14-Nov-01	1.68E+08	4.20E+15	1.49E+15	5.92E+13	Loading 50
n/a	1236	2K225	4.08	42405	1106.9	38.31	U2C8	U2C9				19-Feb-93	8.8	22-Dec-01	1.71E+08	4.19E+15	1.48E+15	5.86E+13	Loading 50
n/a	1237	2K226	4.08	42405	1106.9	38.31	U2C8	U2C9				19-Feb-93	8.8	22-Dec-01	1.71E+08	4.19E+15	1.48E+15	5.86E+13	Loading 50
n/a	1238	2M001	4	38922	1860.1	20.92	U2C10	U2C11	U2C12			12-Mar-99	7.3	13-Jul-06	1.30E+08	4.38E+15	1.57E+15	6.69E+13	pot. reinsert
n/a	1239	2M002	4	38922	1860.1	20.92	U2C10	U2C11	U2C12			12-Mar-99	7.3	13-Jul-06	1.30E+08	4.38E+15	1.57E+15	6.69E+13	pot. reinsert
n/a	1240	2M003	4	39095	1860.1	21.02	U2C10	U2C11	U2C12			12-Mar-99	7.4	5-Aug-06	1.32E+08	4.37E+15	1.56E+15	6.66E+13	pot. reinsert
n/a	1241	2M004	4	38922	1860.1	20.92	U2C10	U2C11	U2C12			12-Mar-99	7.3	13-Jul-06	1.30E+08	4.38E+15	1.57E+15	6.69E+13	pot. reinsert
n/a	1242	2M005	4	39095	1860.1	21.02	U2C10	U2C11	U2C12			12-Mar-99	7.4	5-Aug-06	1.32E+08	4.37E+15	1.56E+15	6.66E+13	pot. reinsert

DSCs	# Assys	Assembly	Enrich.	Burnup	Total EFPD	Specific Power (MW/MTU)	1st Cycle	2nd Cycle	3rd Cycle	4th Cycle	5th Cycle	Discharge Date	660W Cool Time	660W Date	NPS @ 660W	PPS @ 660	MPS @ 660	LE MPS @ 660W	Notes
n/a	1243	2M010	4	38922	1860.1	20.92	U2C10	U2C11	U2C12			12-Mar-99	7.3	13-Jul-06	1.30E+08	4.38E+15	1.57E+15	6.69E+13	pot. reinsert
n/a	1244	2M011	4	39095	1860.1	21.02	U2C10	U2C11	U2C12			12-Mar-99	7.4	5-Aug-06	1.32E+08	4.37E+15	1.56E+15	6.66E+13	pot. reinsert
n/a	1245	2M012	4	39095	1860.1	21.02	U2C10	U2C11	U2C12			12-Mar-99	7.4	5-Aug-06	1.32E+08	4.37E+15	1.56E+15	6.66E+13	pot. reinsert
n/a	1246	2P001	4.48	40560	1935.3	20.96	U2C12	U2C13	U2C14			14-Feb-03	7.8	25-Nov-10	1.19E+08	4.35E+15	1.53E+15	6.16E+13	rod n-12 failed
n/a	1247	2P002	4.48	40560	1935.3	20.96	U2C12	U2C13	U2C14			14-Feb-03	7.8	25-Nov-10	1.19E+08	4.35E+15	1.53E+15	6.16E+13	rods a-13, 14 failed
n/a	1248	2P003	4.48	40560	1935.3	20.96	U2C12	U2C13	U2C14			14-Feb-03	7.8	25-Nov-10	1.19E+08	4.35E+15	1.53E+15	6.16E+13	rod l-2 failed
n/a	1249	2P005	4.48	50105	1935.3	25.89	U2C12	U2C13	U2C14			14-Feb-03	14.1	2-Apr-17	2.39E+08	3.79E+15	1.25E+15	3.23E+13	rod a-1 failed
n/a	1250	2P006	4.48	50105	1935.3	25.89	U2C12	U2C13	U2C14			14-Feb-03	14.1	2-Apr-17	2.39E+08	3.79E+15	1.25E+15	3.23E+13	rod e-4 failed
n/a	1251	2P017	4.48	40615	1935.3	20.99	U2C12	U2C13	U2C14			14-Feb-03	7.8	3-Dec-10	1.20E+08	4.35E+15	1.53E+15	6.15E+13	rods n-1,3,5 failed
n/a	1252	2R002	4.48	40889	1301.7	31.41	U2C12	U2C13				22-Feb-05	7.9	22-Jan-13	1.23E+08	4.33E+15	1.53E+15	6.10E+13	failed sipping 05
n/a	1253	2R005	4.48	40889	1301.7	31.41	U2C12	U2C13				22-Feb-05	7.9	22-Jan-13	1.23E+08	4.33E+15	1.53E+15	6.10E+13	failed sipping 05
n/a	1254	2R203	4.48	49865	1962.4	25.41	U2C13	U2C14	U2C15			22-Feb-05	13.9	17-Jan-19	2.36E+08	3.80E+15	1.26E+15	3.31E+13	failed sipping 05
n/a	1255	2R215	4.48	49865	1962.4	25.41	U2C13	U2C14	U2C15			22-Feb-05	13.9	17-Jan-19	2.36E+08	3.80E+15	1.26E+15	3.31E+13	failed sipping 05
n/a	1256	2R223	4.48	49892	1962.4	25.42	U2C13	U2C14	U2C15			22-Feb-05	13.9	26-Jan-19	2.37E+08	3.80E+15	1.26E+15	3.30E+13	failed sipping 05

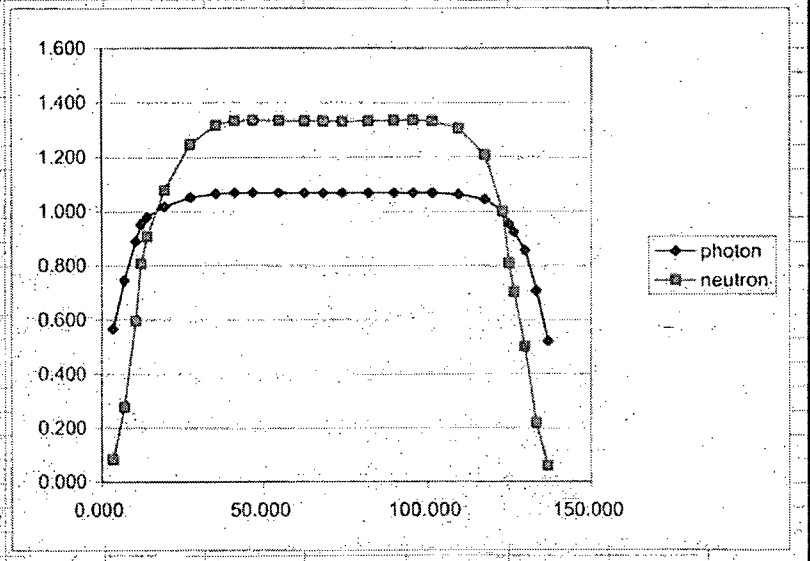
APPENDIX F – AXIAL BURNUP PROFILE OF DISCHARGED STANDARD CE 14X14

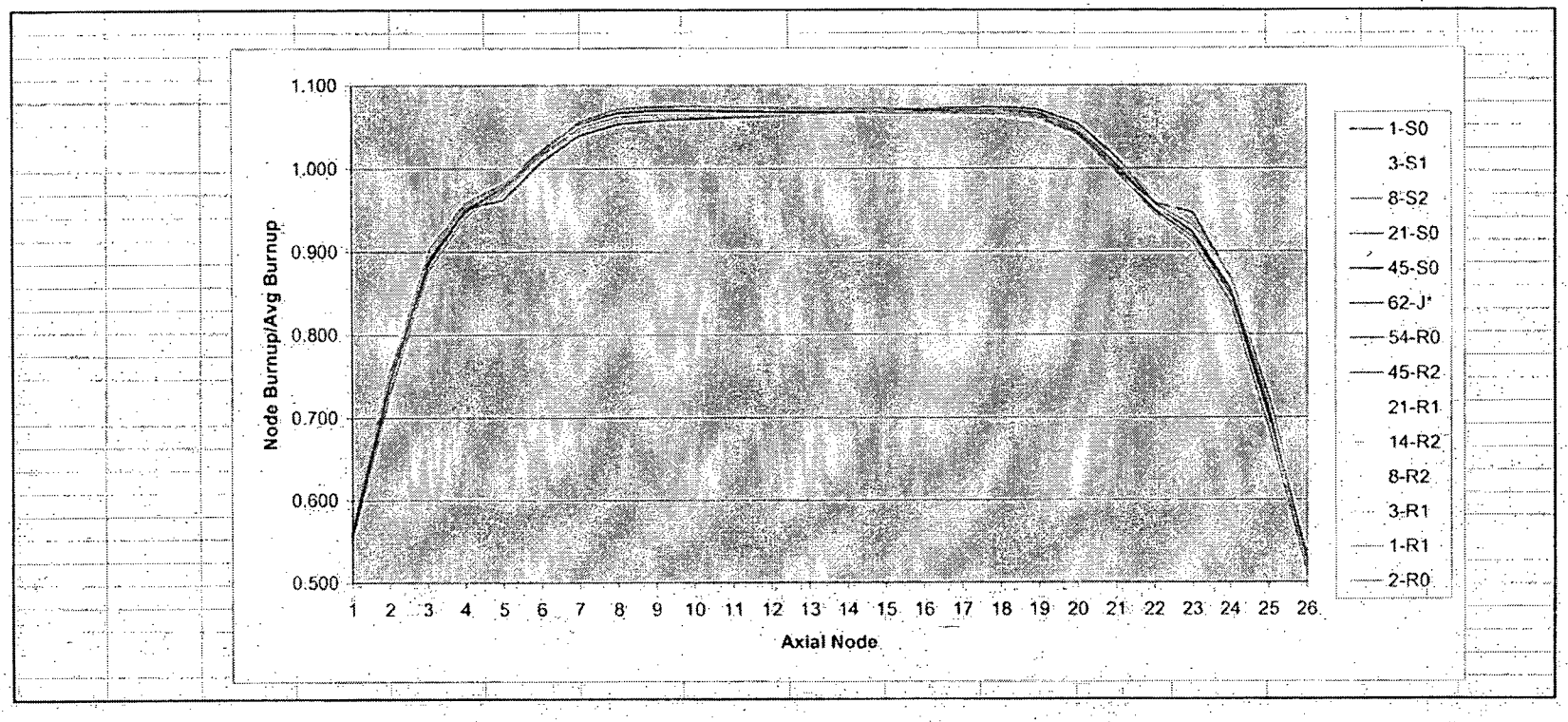
							Node Burnup (GWd/MTU x 0.1)									
plane	node (in)	1-S0	3-S1	8-S2	21-S0	45-S0	62-J*	54-R0	45-R2	21-R1	14-R2	8-R2	3-R1	1-R1	2-R0	Average
bottom 1	3.500	2.6689	2.743	2.8928	2.7829	2.6683	2.881	2.2784	2.8552	2.7482	2.9396	2.9414	2.7448	2.8474	2.2737	2.733
2	3.500	3.5647	3.6629	3.8669	3.7036	3.5646	3.7742	3.0115	3.7299	3.6099	3.8451	3.8475	3.6053	3.7102	3.0053	3.607
3	3.500	4.2539	4.3705	4.5995	4.4119	4.2538	4.4609	3.6177	4.4171	4.2986	4.5537	4.5563	4.2931	4.3886	3.6103	4.292
4	1.500	4.5666	4.6899	4.9156	4.7331	4.5664	4.8199	3.8975	4.7069	4.6032	4.8512	4.8536	4.5972	4.6819	3.8896	4.598
5	2.000	4.7102	4.8355	5.0419	4.8814	4.71	4.8708	4.0297	4.8170	4.7377	4.9622	4.9646	4.7313	4.8093	4.0214	4.723
6	5.466	4.9019	5.0402	5.2346	5.0772	4.9017	5.103	4.2126	4.9898	4.9291	5.1371	5.1396	4.9222	4.9848	4.2040	4.913
7	7.874	5.064	5.2188	5.4138	5.2429	5.0643	5.2642	4.3716	5.1508	5.0995	5.3013	5.3040	5.0922	5.1362	4.3628	5.078
8	7.874	5.1246	5.2858	5.4851	5.3068	5.1253	5.3319	4.4336	5.2161	5.1664	5.3679	5.3709	5.1591	5.1966	4.4247	5.142
9	5.796	5.1354	5.2983	5.4994	5.3209	5.1362	5.3539	4.4462	5.2303	5.1798	5.3819	5.3850	5.1725	5.2123	4.4373	5.156
10	5.796	5.135	5.2985	5.5001	5.3235	5.1359	5.3641	4.4467	5.2320	5.1801	5.3827	5.3857	5.1728	5.2171	4.4378	5.158
11	7.874	5.1322	5.2963	5.4979	5.3243	5.1331	5.3736	4.4443	5.2309	5.1769	5.3801	5.3831	5.1698	5.2206	4.4354	5.157
12	7.874	5.129	5.2937	5.4952	5.3252	5.13	5.3838	4.4410	5.2292	5.1725	5.3763	5.3793	5.1656	5.2243	4.4321	5.156
13	5.796	5.1273	5.2924	5.4939	5.327	5.1283	5.3931	4.4386	5.2284	5.1692	5.3735	5.3764	5.1624	5.2283	4.4298	5.155
14	5.796	5.1266	5.2923	5.4937	5.3294	5.1278	5.4017	4.4371	5.2283	5.1669	5.3717	5.3746	5.1602	5.2322	4.4283	5.155
15	7.874	5.1272	5.2934	5.495	5.3334	5.1284	5.4124	4.4363	5.2291	5.1649	5.3703	5.3733	5.1584	5.2377	4.4274	5.156
16	7.874	5.1289	5.2958	5.4976	5.3393	5.1303	5.4247	4.4356	5.2301	5.1627	5.3689	5.3718	5.1564	5.2440	4.4268	5.158
17	5.796	5.1301	5.2975	5.4992	5.344	5.1316	5.4337	4.4337	5.2295	5.1589	5.3659	5.3688	5.1528	5.2479	4.4249	5.158
18	5.796	5.1274	5.2951	5.4962	5.3443	5.129	5.4369	4.4279	5.2242	5.1506	5.3583	5.3612	5.1447	5.2469	4.4192	5.154
19	7.874	5.107	5.2742	5.4728	5.327	5.1085	5.4226	4.4052	5.2002	5.1224	5.3312	5.3339	5.1168	5.2296	4.3966	5.132
20	7.874	5.016	5.1793	5.3706	5.2382	5.0172	5.3405	4.3201	5.1091	5.0244	5.2359	5.2381	5.0193	5.1510	4.3118	5.041
21	5.466	4.7985	4.9504	5.1322	5.0184	4.7993	5.1328	4.1255	4.9044	4.8081	5.0281	5.0297	4.8036	4.9611	4.1176	4.829
22	2.000	4.562	4.7016	4.881	4.7761	4.5627	4.8523	3.9144	4.6941	4.5806	4.8183	4.8198	4.5764	4.7508	3.9067	4.600
23	1.500	4.3986	4.5335	4.7192	4.6074	4.3993	4.7934	3.7676	4.5619	4.4259	4.6880	4.6895	4.4220	4.6020	3.7601	4.455
24	3.500	4.0699	4.197	4.3989	4.2665	4.0706	4.3922	3.4687	4.2391	4.0926	4.3643	4.3660	4.0889	4.2755	3.4612	4.125
25	3.500	3.3688	3.4738	3.6564	3.5396	3.3694	3.6616	2.8413	3.4842	3.3706	3.6271	3.6287	3.3670	3.5237	2.8344	3.410
top 26	3.500	2.4808	2.5572	2.6869	2.6192	2.4807	2.7259	2.1117	2.4903	2.5095	2.7290	2.7301	2.5067	2.5186	2.1062	2.518
Assembly Avg BU		4.8013	4.9518	5.1473	4.9942	4.8021	5.0648	4.1391	4.9058	4.8343	5.0471	5.0497	4.8283	4.9130	4.1308	4.829

	136.701															
			Node Bu/Avg Bu													
plane	dZ/height	1-S0	3-S1	8-S2	21-S0	45-S0	62-J*	54-R0	45-R2	21-R1	14-R2	8-R2	3-R1	1-R1	2-R0	Average
1	0.0256	0.556	0.554	0.562	0.557	0.556	0.569	0.550	0.582	0.568	0.582	0.582	0.568	0.580	0.550	0.566
2	0.0256	0.742	0.740	0.751	0.742	0.742	0.745	0.728	0.760	0.747	0.762	0.762	0.747	0.755	0.728	0.747
3	0.0256	0.886	0.883	0.894	0.883	0.886	0.881	0.874	0.900	0.889	0.902	0.902	0.889	0.893	0.874	0.889
4	0.0110	0.951	0.947	0.955	0.948	0.951	0.952	0.942	0.959	0.952	0.961	0.961	0.952	0.953	0.942	0.952
5	0.0146	0.981	0.977	0.980	0.977	0.981	0.962	0.974	0.982	0.980	0.983	0.983	0.980	0.979	0.974	0.978
6	0.0400	1.021	1.018	1.017	1.017	1.021	1.008	1.018	1.017	1.020	1.018	1.018	1.019	1.015	1.018	1.017
7	0.0576	1.055	1.054	1.052	1.050	1.055	1.039	1.056	1.050	1.055	1.050	1.050	1.055	1.045	1.056	1.051
8	0.0576	1.067	1.067	1.066	1.063	1.067	1.053	1.071	1.063	1.069	1.064	1.064	1.069	1.058	1.071	1.065
9	0.0424	1.070	1.070	1.068	1.065	1.070	1.057	1.074	1.066	1.071	1.066	1.066	1.071	1.061	1.074	1.068
10	0.0424	1.070	1.070	1.069	1.066	1.070	1.059	1.074	1.066	1.072	1.066	1.067	1.071	1.062	1.074	1.068
11	0.0576	1.069	1.070	1.068	1.066	1.069	1.061	1.074	1.066	1.071	1.066	1.066	1.071	1.063	1.074	1.068
12	0.0576	1.068	1.069	1.068	1.066	1.068	1.063	1.073	1.066	1.070	1.065	1.065	1.070	1.063	1.073	1.068
13	0.0424	1.068	1.069	1.067	1.067	1.068	1.065	1.072	1.066	1.069	1.065	1.065	1.069	1.064	1.072	1.067
14	0.0424	1.068	1.069	1.067	1.067	1.068	1.067	1.072	1.066	1.069	1.064	1.064	1.069	1.065	1.072	1.067
15	0.0576	1.068	1.069	1.068	1.068	1.068	1.069	1.072	1.066	1.068	1.064	1.064	1.068	1.066	1.072	1.068
16	0.0576	1.068	1.069	1.068	1.069	1.068	1.071	1.072	1.066	1.068	1.064	1.064	1.068	1.067	1.072	1.068
17	0.0424	1.068	1.070	1.068	1.070	1.069	1.073	1.071	1.066	1.067	1.063	1.063	1.067	1.068	1.071	1.068
18	0.0424	1.068	1.069	1.068	1.070	1.068	1.073	1.070	1.065	1.065	1.062	1.062	1.066	1.068	1.070	1.067
19	0.0576	1.064	1.065	1.063	1.067	1.064	1.071	1.064	1.060	1.060	1.056	1.056	1.060	1.064	1.064	1.063
20	0.0576	1.045	1.046	1.043	1.049	1.045	1.054	1.044	1.041	1.039	1.037	1.037	1.040	1.048	1.044	1.044
21	0.0400	0.999	1.000	0.997	1.005	0.999	1.013	0.997	1.000	0.995	0.996	0.996	0.995	1.010	0.997	1.000
22	0.0146	0.950	0.949	0.948	0.956	0.950	0.958	0.946	0.957	0.948	0.955	0.954	0.948	0.967	0.946	0.952
23	0.0110	0.916	0.916	0.917	0.923	0.916	0.946	0.910	0.930	0.916	0.929	0.929	0.916	0.937	0.910	0.922
24	0.0256	0.848	0.848	0.855	0.854	0.848	0.867	0.838	0.864	0.847	0.865	0.865	0.847	0.870	0.838	0.854
25	0.0256	0.702	0.702	0.710	0.709	0.702	0.723	0.686	0.710	0.697	0.719	0.719	0.697	0.717	0.686	0.706
26	0.0256	0.517	0.516	0.522	0.524	0.517	0.538	0.510	0.508	0.519	0.541	0.541	0.519	0.513	0.510	0.521
																1.000

			(Node Bu/Avg Bu)^4.38													
plane	dZ/height	1-S0	3-S1	8-S2	21-S0	45-S0	62-J*	54-R0	45-R2	21-R1	14-R2	8-R2	3-R1	1-R1	2-R0	Average
bottom 1	0.0256	0.076	0.075	0.080	0.077	0.076	0.084	0.073	0.093	0.084	0.094	0.094	0.084	0.091	0.073	0.082
2	0.0256	0.271	0.267	0.285	0.270	0.271	0.275	0.248	0.301	0.278	0.303	0.304	0.278	0.292	0.248	0.278
3	0.0256	0.588	0.578	0.611	0.581	0.588	0.573	0.554	0.631	0.598	0.637	0.637	0.597	0.610	0.554	0.596
4	0.0110	0.803	0.788	0.817	0.790	0.802	0.805	0.768	0.834	0.807	0.841	0.841	0.807	0.810	0.768	0.806
5	0.0146	0.919	0.901	0.913	0.905	0.919	0.843	0.889	0.923	0.915	0.928	0.928	0.915	0.911	0.889	0.907
6	0.0400	1.095	1.081	1.077	1.075	1.094	1.033	1.080	1.077	1.089	1.081	1.080	1.088	1.066	1.080	1.078
7	0.0576	1.263	1.259	1.248	1.237	1.262	1.184	1.271	1.238	1.264	1.240	1.240	1.263	1.215	1.271	1.246
8	0.0576	1.331	1.331	1.321	1.305	1.331	1.253	1.352	1.309	1.338	1.310	1.310	1.337	1.279	1.352	1.317
9	0.0424	1.343	1.345	1.337	1.320	1.343	1.276	1.369	1.324	1.353	1.325	1.326	1.352	1.296	1.369	1.333
10	0.0424	1.343	1.345	1.337	1.323	1.343	1.286	1.369	1.326	1.354	1.326	1.326	1.353	1.301	1.369	1.335
11	0.0576	1.339	1.343	1.335	1.324	1.339	1.296	1.366	1.325	1.350	1.323	1.324	1.349	1.305	1.366	1.334
12	0.0576	1.336	1.340	1.332	1.325	1.336	1.307	1.362	1.323	1.345	1.319	1.319	1.344	1.309	1.362	1.332
13	0.0424	1.334	1.339	1.331	1.327	1.334	1.317	1.358	1.322	1.341	1.316	1.316	1.341	1.313	1.358	1.331
14	0.0424	1.333	1.338	1.330	1.329	1.333	1.326	1.356	1.322	1.339	1.314	1.314	1.338	1.318	1.356	1.331
15	0.0576	1.334	1.340	1.332	1.334	1.334	1.338	1.355	1.323	1.336	1.313	1.313	1.336	1.324	1.355	1.333
16	0.0576	1.336	1.342	1.335	1.340	1.336	1.351	1.354	1.324	1.334	1.311	1.311	1.334	1.331	1.354	1.335
17	0.0424	1.337	1.344	1.336	1.346	1.338	1.361	1.352	1.323	1.330	1.308	1.308	1.330	1.335	1.352	1.335
18	0.0424	1.334	1.342	1.333	1.346	1.335	1.365	1.344	1.317	1.320	1.300	1.300	1.321	1.334	1.344	1.331
19	0.0576	1.311	1.319	1.308	1.327	1.311	1.349	1.314	1.291	1.289	1.271	1.271	1.290	1.315	1.314	1.305
20	0.0576	1.211	1.218	1.205	1.233	1.212	1.262	1.206	1.195	1.184	1.175	1.174	1.185	1.230	1.207	1.207
21	0.0400	0.997	0.999	0.987	1.021	0.997	1.060	0.986	0.999	0.976	0.984	0.983	0.978	1.044	0.986	1.000
22	0.0146	0.799	0.797	0.792	0.822	0.799	0.829	0.783	0.824	0.789	0.816	0.815	0.791	0.863	0.783	0.808
23	0.0110	0.681	0.679	0.683	0.702	0.681	0.785	0.662	0.727	0.679	0.724	0.723	0.680	0.751	0.662	0.702
24	0.0256	0.485	0.484	0.502	0.501	0.485	0.535	0.461	0.527	0.482	0.529	0.528	0.483	0.544	0.461	0.501
25	0.0256	0.212	0.211	0.223	0.221	0.212	0.241	0.192	0.223	0.206	0.235	0.235	0.206	0.233	0.192	0.218
top 26	0.0256	0.055	0.055	0.058	0.059	0.055	0.066	0.052	0.051	0.056	0.068	0.067	0.056	0.053	0.052	0.058
Peaking Factor		1.111	1.113	1.108	1.109	1.111	1.103	1.118	1.104	1.110	1.099	1.099	1.109	1.103	1.118	1.108

ht (in)	photon	neutron	pho prob	neu prob	group map	pho group prob	neu group prob							
3.500	0.566	0.082	0.014	0.002	1	1.45E-02	1.91E-03							
7.000	0.747	0.278	0.019	0.006	2									
10.500	0.889	0.596	0.023	0.014	2	4.19E-02	2.02E-02							
12.000	0.952	0.806	0.010	0.008	3									
14.000	0.978	0.907	0.014	0.012	3									
19.466	1.017	1.078	0.041	0.039	3	6.54E-02	5.89E-02							
27.340	1.051	1.246	0.061	0.065	4									
35.214	1.065	1.317	0.061	0.068	4									
41.010	1.068	1.333	0.045	0.051	4									
46.806	1.068	1.335	0.045	0.051	4									
54.680	1.068	1.334	0.062	0.069	4									
62.554	1.068	1.332	0.061	0.069	4									
68.350	1.067	1.331	0.045	0.051	4									
74.146	1.067	1.331	0.045	0.051	4									
82.020	1.068	1.333	0.061	0.069	4									
89.894	1.068	1.335	0.062	0.069	4									
95.691	1.068	1.335	0.045	0.051	4									
101.487	1.067	1.331	0.045	0.051	4									
109.361	1.063	1.305	0.061	0.068	4									
117.235	1.044	1.207	0.060	0.063	4	7.61E-01	8.47E-01							
122.701	1.000	1.000	0.040	0.036	5									
124.701	0.952	0.808	0.014	0.011	5									
126.201	0.922	0.702	0.010	0.007	5	6.40E-02	5.37E-02							
129.701	0.854	0.501	0.022	0.012	6									
133.201	0.705	0.218	0.018	0.005	6	4.00E-02	1.66E-02							
136.701	0.521	0.058	0.013	0.001	7	1.33E-02	1.33E-03							
			1.000	1.000		1.000	1.000	1.99E-03	2.05E-02	5.92E-02	0.85	5.35E-02	1.66E-02	1.33E-03

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0.900
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Node Burnup/Avg Burnup
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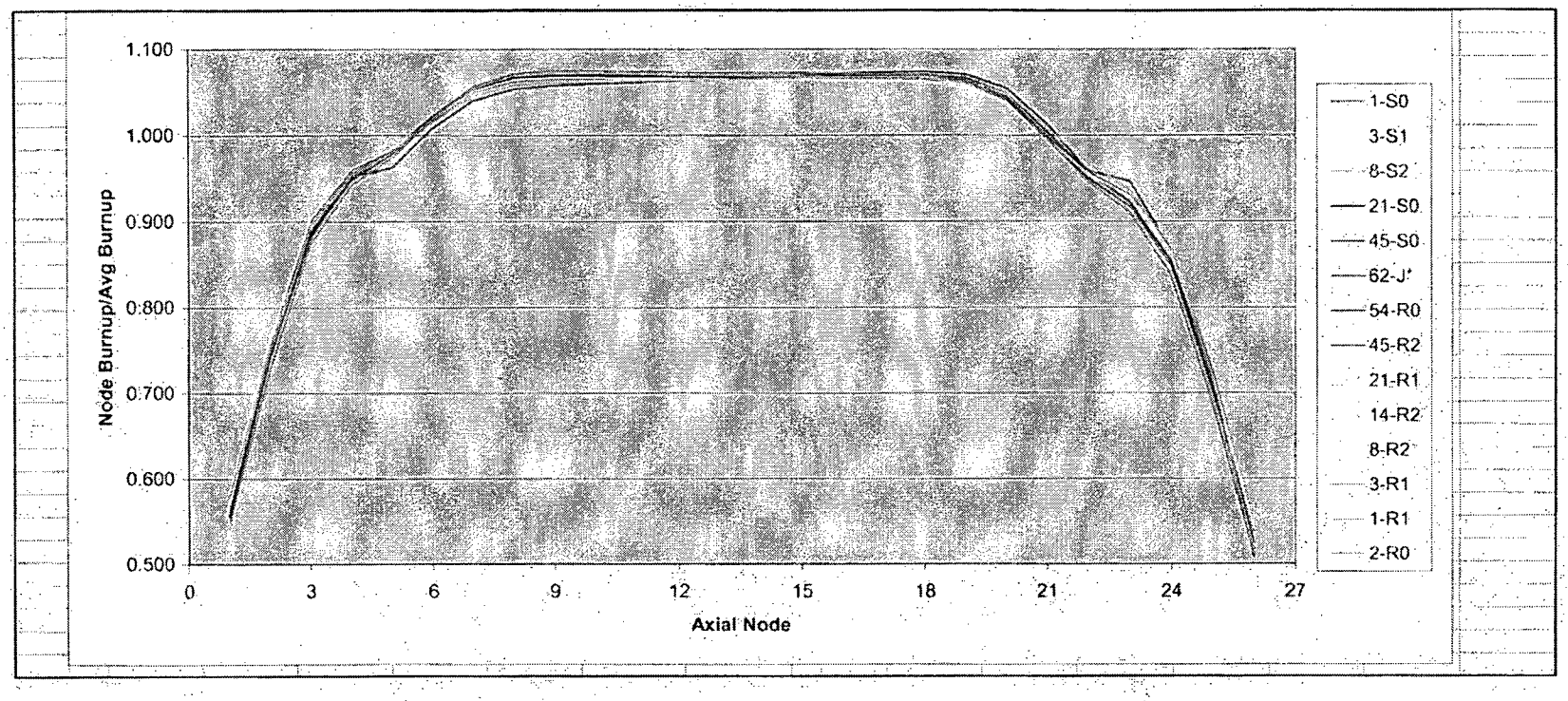
Axial Node
1-S0
3-S1
8-S2
21-S0
45-S0
62-J*
54-R0
45-R2
21-R1
14-R2
8-R2
3-R1
1-R1
2-R0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Node Burnup/Avg Burnup
0
3
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18
21
24
27
Axial Node
1-S0
3-S1
8-S2
21-S0
45-S0
62-J
54-R0
45-R2
21-R1
14-R2
8-R2
3-R1
1-R1
2-R0

APPENDIX G – SELECTED ISOTOPE CURIES FOR STANDARD CE 14X14 ASSEMBLIES AT 660W

E	B	DBwatt	time	h3	c14	cl36	co60	se79	kr81	kr85	sr89	sr90	y90	nb94	zr95	tc99	ru103
2.05	16	660	3.17	1.54E+02	6.44E-01	2.02E-02	7.07E+02	1.31E-02	9.68E-09	1.52E+03	1.04E-01	1.43E+04	1.43E+04	2.93E-02	4.36E+00	2.81E+00	2.22E-03
2.05	18	660	3.48	1.66E+02	7.27E-01	2.27E-02	7.58E+02	1.46E-02	1.22E-08	1.64E+03	6.28E-02	1.56E+04	1.56E+04	3.31E-02	2.77E+00	3.13E+00	1.44E-03
2.05	20	660	3.73	1.77E+02	8.10E-01	2.52E-02	8.08E+02	1.62E-02	1.51E-08	1.74E+03	3.16E-02	1.68E+04	1.68E+04	3.70E-02	1.46E+00	3.44E+00	7.61E-04
2.05	42	660	9.88	2.15E+02	1.79E+00	5.29E-02	6.93E+02	3.21E-02	7.62E-08	1.97E+03	9.27E-16	2.43E+04	2.43E+04	8.05E-02	3.25E-11	6.45E+00	6.22E-21
2.05	44	660	11.43	2.04E+02	1.88E+00	5.54E-02	5.87E+02	3.35E-02	8.48E-08	1.83E+03	1.83E-19	2.40E+04	2.40E+04	8.45E-02	4.97E-14	6.69E+00	7.27E-26
2.45	16	660	3.11	1.48E+02	5.63E-01	1.77E-02	6.51E+02	1.32E-02	8.43E-09	1.59E+03	1.19E-01	1.51E+04	1.51E+04	2.72E-02	4.80E+00	2.83E+00	2.30E-03
2.45	18	660	3.42	1.60E+02	6.37E-01	2.00E-02	7.01E+02	1.48E-02	1.07E-08	1.71E+03	7.52E-02	1.64E+04	1.64E+04	3.08E-02	3.14E+00	3.16E+00	1.54E-03
2.45	20	660	3.68	1.72E+02	7.11E-01	2.22E-02	7.47E+02	1.63E-02	1.32E-08	1.83E+03	4.07E-02	1.78E+04	1.78E+04	3.45E-02	1.78E+00	3.47E+00	8.73E-04
2.45	22	660	3.90	1.83E+02	7.87E-01	2.45E-02	7.93E+02	1.79E-02	1.61E-08	1.94E+03	1.29E-02	1.90E+04	1.90E+04	3.81E-02	6.23E-01	3.79E+00	2.84E-04
2.45	24	660	4.19	1.93E+02	8.65E-01	2.68E-02	8.29E+02	1.94E-02	1.93E-08	2.04E+03	6.35E-04	2.02E+04	2.02E+04	4.18E-02	8.19E-02	4.09E+00	3.64E-06
2.45	26	660	4.53	2.01E+02	9.43E-01	2.91E-02	8.55E+02	2.09E-02	2.29E-08	2.12E+03	3.60E-04	2.12E+04	2.12E+04	4.55E-02	4.82E-02	4.39E+00	2.17E-06
2.45	28	660	4.82	2.10E+02	1.02E+00	3.14E-02	8.79E+02	2.24E-02	2.70E-08	2.19E+03	1.33E-04	2.22E+04	2.22E+04	4.93E-02	1.90E-02	4.68E+00	8.25E-07
2.45	30	660	5.20	2.16E+02	1.10E+00	3.37E-02	8.92E+02	2.39E-02	3.14E-08	2.24E+03	3.77E-06	2.32E+04	2.32E+04	5.31E-02	1.50E-03	4.96E+00	5.95E-09
2.45	32	660	5.64	2.21E+02	1.19E+00	3.61E-02	8.93E+02	2.54E-02	3.63E-08	2.28E+03	1.66E-06	2.39E+04	2.39E+04	5.69E-02	6.88E-04	5.24E+00	2.71E-09
2.45	34	660	6.08	2.25E+02	1.27E+00	3.85E-02	8.90E+02	2.68E-02	4.17E-08	2.31E+03	2.73E-08	2.48E+04	2.48E+04	6.07E-02	3.26E-05	5.51E+00	1.12E-11
2.45	36	660	6.70	2.27E+02	1.35E+00	4.08E-02	8.64E+02	2.83E-02	4.75E-08	2.30E+03	8.68E-09	2.53E+04	2.53E+04	6.45E-02	1.09E-05	5.78E+00	3.66E-12
2.45	38	660	7.40	2.27E+02	1.44E+00	4.32E-02	8.26E+02	2.97E-02	5.38E-08	2.28E+03	1.12E-10	2.58E+04	2.58E+04	6.84E-02	4.02E-07	6.04E+00	1.17E-14
2.45	40	660	8.27	2.24E+02	1.52E+00	4.56E-02	7.71E+02	3.11E-02	6.07E-08	2.23E+03	8.91E-13	2.61E+04	2.61E+04	7.22E-02	9.28E-09	6.29E+00	2.29E-17
2.45	42	660	9.39	2.19E+02	1.61E+00	4.80E-02	6.94E+02	3.25E-02	6.80E-08	2.15E+03	4.82E-15	2.62E+04	2.62E+04	7.62E-02	1.48E-10	6.54E+00	3.03E-20
2.45	44	660	10.79	2.09E+02	1.70E+00	5.04E-02	6.00E+02	3.39E-02	7.59E-08	2.02E+03	1.11E-17	2.60E+04	2.60E+04	8.00E-02	1.03E-12	6.78E+00	1.68E-23
2.73	20	660	3.64	1.68E+02	6.54E-01	2.04E-02	7.11E+02	1.64E-02	1.21E-08	1.88E+03	4.71E-02	1.83E+04	1.83E+04	3.30E-02	1.98E+00	3.49E+00	9.41E-04
2.73	22	660	3.87	1.79E+02	7.25E-01	2.26E-02	7.56E+02	1.80E-02	1.47E-08	2.00E+03	1.73E-02	1.97E+04	1.97E+04	3.65E-02	7.92E-01	3.81E+00	3.58E-04
2.73	24	660	4.13	1.90E+02	7.97E-01	2.47E-02	7.92E+02	1.95E-02	1.77E-08	2.10E+03	7.14E-04	2.08E+04	2.08E+04	4.01E-02	8.91E-02	4.12E+00	3.80E-06
2.73	26	660	4.47	1.98E+02	8.70E-01	2.69E-02	8.17E+02	2.11E-02	2.11E-08	2.18E+03	4.20E-04	2.20E+04	2.20E+04	4.36E-02	5.42E-02	4.42E+00	2.34E-06
2.73	28	660	4.78	2.07E+02	9.44E-01	2.90E-02	8.42E+02	2.26E-02	2.48E-08	2.26E+03	1.74E-04	2.30E+04	2.30E+04	4.73E-02	2.37E-02	4.71E+00	1.01E-06
2.73	30	660	5.12	2.14E+02	1.02E+00	3.12E-02	8.57E+02	2.41E-02	2.89E-08	2.32E+03	4.37E-06	2.40E+04	2.40E+04	5.09E-02	1.68E-03	5.00E+00	6.39E-09
2.73	32	660	5.57	2.19E+02	1.10E+00	3.35E-02	8.59E+02	2.56E-02	3.34E-08	2.36E+03	2.10E-06	2.49E+04	2.49E+04	5.46E-02	8.34E-04	5.28E+00	3.19E-09
2.73	34	660	5.97	2.24E+02	1.17E+00	3.57E-02	8.59E+02	2.71E-02	3.84E-08	2.40E+03	1.49E-07	2.57E+04	2.57E+04	5.83E-02	8.21E-05	5.56E+00	2.01E-10
2.73	36	660	6.58	2.26E+02	1.25E+00	3.80E-02	8.38E+02	2.85E-02	4.38E-08	2.40E+03	1.28E-08	2.64E+04	2.64E+04	6.20E-02	1.52E-05	5.83E+00	5.00E-12
2.73	38	660	7.24	2.27E+02	1.33E+00	4.02E-02	8.06E+02	3.00E-02	4.97E-08	2.38E+03	1.50E-10	2.69E+04	2.69E+04	6.58E-02	5.18E-07	6.09E+00	1.46E-14
2.73	40	660	8.06	2.25E+02	1.42E+00	4.25E-02	7.57E+02	3.14E-02	5.61E-08	2.34E+03	1.20E-12	2.73E+04	2.73E+04	6.95E-02	1.21E-08	6.35E+00	2.88E-17
2.73	42	660	9.13	2.20E+02	1.50E+00	4.48E-02	6.87E+02	3.28E-02	6.30E-08	2.25E+03	7.22E-15	2.74E+04	2.74E+04	7.33E-02	2.13E-10	6.60E+00	4.25E-20
2.73	44	660	10.48	2.10E+02	1.58E+00	4.71E-02	6.00E+02	3.42E-02	7.04E-08	2.12E+03	2.81E-17	2.74E+04	2.74E+04	7.72E-02	2.44E-12	6.85E+00	4.04E-23
3.03	20	660	3.61	1.65E+02	6.02E-01	1.88E-02	6.77E+02	1.65E-02	1.11E-08	1.93E+03	5.31E-02	1.88E+04	1.88E+04	3.16E-02	2.18E+00	3.51E+00	9.96E-04
3.03	22	660	3.84	1.76E+02	6.67E-01	2.08E-02	7.19E+02	1.81E-02	1.36E-08	2.05E+03	2.20E-02	2.02E+04	2.02E+04	3.50E-02	9.65E-01	3.83E+00	4.28E-04
3.03	24	660	4.07	1.86E+02	7.33E-01	2.28E-02	7.57E+02	1.96E-02	1.63E-08	2.16E+03	7.93E-04	2.15E+04	2.15E+04	3.84E-02	9.57E-02	4.14E+00	3.93E-06
3.03	26	660	4.42	1.95E+02	8.01E-01	2.48E-02	7.81E+02	2.12E-02	1.94E-08	2.25E+03	4.83E-04	2.26E+04	2.27E+04	4.19E-02	6.02E-02	4.45E+00	2.51E-06
3.03	28	660	4.73	2.04E+02	8.70E-01	2.68E-02	8.04E+02	2.27E-02	2.28E-08	2.33E+03	2.21E-04	2.38E+04	2.38E+04	4.54E-02	2.88E-02	4.75E+00	1.19E-06
3.03	30	660	5.04	2.11E+02	9.41E-01	2.89E-02	8.23E+02	2.43E-02	2.66E-08	2.40E+03	5.01E-06	2.49E+04	2.49E+04	4.89E-02	1.85E-03	5.04E+00	6.80E-09
3.03	32	660	5.49	2.17E+02	1.01E+00	3.10E-02	8.25E+02	2.58E-02	3.07E-08	2.44E+03	2.57E-06	2.58E+04	2.58E+04	5.24E-02	9.87E-04	5.32E+00	3.63E-09
3.03	34	660	5.91	2.22E+02	1.09E+00	3.31E-02	8.26E+02	2.73E-02	3.53E-08	2.48E+03	4.89E-07	2.67E+04	2.67E+04	5.60E-02	2.11E-04	5.60E+00	6.92E-10
3.03	36	660	6.48	2.25E+02	1.16E+00	3.52E-02	8.08E+02	2.87E-02	4.03E-08	2.49E+03	1.67E-08	2.74E+04	2.74E+04	5.96E-02	1.90E-05	5.88E+00	6.08E-12
3.03	38	660	7.07	2.26E+02	1.24E+00	3.74E-02	7.85E+02	3.02E-02	4.58E-08	2.49E+03	1.92E-10	2.80E+04	2.80E+04	6.32E-02	6.34E-07	6.15E+00	1.73E-14
3.03	40	660	7.88	2.25E+02	1.31E+00	3.95E-02	7.40E+02	3.17E-02	5.18E-08	2.44E+03	2.43E-11	2.84E+04	2.84E+04	6.69E-02	8.95E-08	6.41E+00	2.20E-15
3.03	42	660	8.89	2.20E+02	1.39E+00	4.17E-02	6.77E+02	3.31E-02	5.82E-08	2.36E+03	1.49E-13	2.86E+04	2.87E+04	7.06E-02	1.61E-09	6.66E+00	3.32E-18
3.03	44	660	10.14	2.12E+02	1.47E+00	4.39E-02	5.99E+02	3.45E-02	6.51E-08	2.24E+03	4.91E-17	2.86E+04	2.86E+04	7.43E-02	4.06E-12	6.91E+00	6.59E-23
3.03	46	660	11.67	2.01E+02	1.55E+00	4.61E-02	5.10E+02	3.59E-02	7.26E-08	2.09E+03	1.24E-19	2.83E+04	2.83E+04	7.80E-02	3.06E-14	7.15E+00	4.05E-26
3.03	48	660	13.50	1.88E+02	1.63E+00	4.84E-02	4.16E+02	3.73E-02	8.06E-08	1.90E+03	8.02E-24	2.78E+04	2.78E+04	8.17E-02	1.64E-17	7.39E+00	1.53E-31

E	B	DBwatt	time	ru106	pd107	cd113m	xe127	i129	cs134	cs135	cs137	i137	xe137	pm147	sm151	eu154	eu155
2.05	16	660	3.17	1.63E+04	2.00E-02	5.33E+00	3.02E-12	6.18E-03	6.38E+03	5.20E-02	1.96E+04	0.00E+00	0.00E+00	2.24E+04	9.45E+01	5.68E+02	2.68E+02
2.05	18	660	3.48	1.57E+04	2.40E-02	6.18E+00	2.64E-12	7.02E-03	7.20E+03	5.87E-02	2.19E+04	0.00E+00	0.00E+00	2.19E+04	9.93E+01	6.94E+02	3.05E+02
2.05	20	660	3.73	1.48E+04	2.82E-02	7.07E+00	1.83E-12	7.87E-03	7.99E+03	6.55E-02	2.42E+04	0.00E+00	0.00E+00	2.13E+04	1.04E+02	8.27E+02	3.45E+02
2.05	42	660	9.88	4.60E+02	8.33E-02	1.59E+01	4.88E-30	1.71E-02	3.59E+03	1.48E-01	4.33E+04	0.00E+00	0.00E+00	4.83E+03	1.42E+02	1.65E+03	4.03E+02
2.05	44	660	11.43	1.70E+02	8.88E-02	1.59E+01	2.35E-35	1.80E-02	2.29E+03	1.56E-01	4.37E+04	0.00E+00	0.00E+00	3.22E+03	1.44E+02	1.54E+03	3.39E+02
2.45	16	660	3.11	1.51E+04	1.76E-02	4.89E+00	2.76E-12	6.03E-03	6.10E+03	5.86E-02	1.97E+04	0.00E+00	0.00E+00	2.35E+04	1.02E+02	5.29E+02	2.48E+02
2.45	18	660	3.42	1.46E+04	2.12E-02	5.67E+00	2.50E-12	6.85E-03	6.90E+03	6.60E-02	2.19E+04	0.00E+00	0.00E+00	2.30E+04	1.07E+02	6.50E+02	2.83E+02
2.45	20	660	3.68	1.38E+04	2.49E-02	6.48E+00	1.86E-12	7.67E-03	7.67E+03	7.33E-02	2.42E+04	0.00E+00	0.00E+00	2.25E+04	1.11E+02	7.78E+02	3.21E+02
2.45	22	660	3.90	1.30E+04	2.89E-02	7.35E+00	7.71E-13	8.51E-03	8.41E+03	8.08E-02	2.65E+04	0.00E+00	0.00E+00	2.19E+04	1.16E+02	9.13E+02	3.60E+02
2.45	24	660	4.19	1.18E+04	3.31E-02	8.21E+00	7.52E-15	9.34E-03	8.96E+03	8.82E-02	2.86E+04	0.00E+00	0.00E+00	2.09E+04	1.20E+02	1.04E+03	3.96E+02
2.45	26	660	4.53	1.05E+04	3.74E-02	9.08E+00	5.51E-15	1.02E-02	9.27E+03	9.57E-02	3.07E+04	0.00E+00	0.00E+00	1.97E+04	1.23E+02	1.17E+03	4.27E+02
2.45	28	660	4.82	9.14E+03	4.19E-02	1.00E+01	2.54E-15	1.10E-02	9.50E+03	1.03E-01	3.28E+04	0.00E+00	0.00E+00	1.84E+04	1.28E+02	1.30E+03	4.58E+02
2.45	30	660	5.20	7.55E+03	4.65E-02	1.09E+01	1.33E-17	1.19E-02	9.71E+03	1.11E-01	3.48E+04	0.00E+00	0.00E+00	1.70E+04	1.32E+02	1.42E+03	4.80E+02
2.45	32	660	5.64	6.12E+03	5.12E-02	1.17E+01	7.15E-18	1.27E-02	9.38E+03	1.19E-01	3.67E+04	0.00E+00	0.00E+00	1.53E+04	1.34E+02	1.51E+03	4.96E+02
2.45	34	660	6.08	4.63E+03	5.61E-02	1.27E+01	2.08E-20	1.35E-02	8.87E+03	1.27E-01	3.85E+04	0.00E+00	0.00E+00	1.37E+04	1.38E+02	1.61E+03	5.08E+02
2.45	36	660	6.70	3.32E+03	6.11E-02	1.33E+01	7.90E-21	1.43E-02	7.96E+03	1.35E-01	4.02E+04	0.00E+00	0.00E+00	1.17E+04	1.41E+02	1.67E+03	5.03E+02
2.45	38	660	7.40	2.17E+03	6.62E-02	1.41E+01	1.75E-23	1.52E-02	6.86E+03	1.43E-01	4.16E+04	0.00E+00	0.00E+00	9.78E+03	1.44E+02	1.70E+03	4.89E+02
2.45	40	660	8.27	1.25E+03	7.13E-02	1.46E+01	2.37E-26	1.60E-02	5.55E+03	1.51E-01	4.29E+04	0.00E+00	0.00E+00	7.76E+03	1.46E+02	1.72E+03	4.62E+02
2.45	42	660	9.39	6.14E+02	7.65E-02	1.49E+01	2.15E-29	1.68E-02	4.12E+03	1.59E-01	4.38E+04	0.00E+00	0.00E+00	5.78E+03	1.48E+02	1.68E+03	4.18E+02
2.45	44	660	10.79	2.44E+02	8.18E-02	1.51E+01	8.05E-33	1.77E-02	2.75E+03	1.67E-01	4.43E+04	0.00E+00	0.00E+00	3.98E+03	1.49E+02	1.59E+03	3.60E+02
2.73	20	660	3.64	1.33E+04	2.30E-02	6.15E+00	1.86E-12	7.56E-03	7.47E+03	7.90E-02	2.42E+04	0.00E+00	0.00E+00	2.32E+04	1.17E+02	7.48E+02	3.06E+02
2.73	22	660	3.87	1.24E+04	2.68E-02	6.96E+00	9.05E-13	8.38E-03	8.20E+03	8.69E-02	2.65E+04	0.00E+00	0.00E+00	2.27E+04	1.21E+02	8.80E+02	3.43E+02
2.73	24	660	4.13	1.14E+04	3.07E-02	7.78E+00	7.28E-15	9.20E-03	8.79E+03	9.47E-02	2.87E+04	0.00E+00	0.00E+00	2.18E+04	1.26E+02	1.01E+03	3.79E+02
2.73	26	660	4.47	1.02E+04	3.47E-02	8.60E+00	5.54E-15	1.00E-02	9.09E+03	1.03E-01	3.08E+04	0.00E+00	0.00E+00	2.05E+04	1.30E+02	1.14E+03	4.10E+02
2.73	28	660	4.78	8.91E+03	3.90E-02	9.45E+00	2.87E-15	1.09E-02	9.34E+03	1.10E-01	3.29E+04	0.00E+00	0.00E+00	1.92E+04	1.33E+02	1.26E+03	4.40E+02
2.73	30	660	5.12	7.42E+03	4.34E-02	1.03E+01	1.32E-17	1.17E-02	9.63E+03	1.19E-01	3.49E+04	0.00E+00	0.00E+00	1.78E+04	1.37E+02	1.39E+03	4.66E+02
2.73	32	660	5.57	6.07E+03	4.79E-02	1.11E+01	7.80E-18	1.25E-02	9.31E+03	1.27E-01	3.68E+04	0.00E+00	0.00E+00	1.61E+04	1.40E+02	1.49E+03	4.82E+02
2.73	34	660	5.97	4.66E+03	5.25E-02	1.20E+01	5.63E-19	1.33E-02	8.88E+03	1.35E-01	3.86E+04	0.00E+00	0.00E+00	1.44E+04	1.43E+02	1.58E+03	4.96E+02
2.73	36	660	6.58	3.44E+03	5.73E-02	1.27E+01	1.01E-20	1.42E-02	8.06E+03	1.43E-01	4.03E+04	0.00E+00	0.00E+00	1.25E+04	1.46E+02	1.65E+03	4.95E+02
2.73	38	660	7.24	2.27E+03	6.21E-02	1.34E+01	2.04E-23	1.50E-02	7.03E+03	1.51E-01	4.18E+04	0.00E+00	0.00E+00	1.05E+04	1.49E+02	1.70E+03	4.85E+02
2.73	40	660	8.06	1.33E+03	6.71E-02	1.40E+01	2.78E-26	1.58E-02	5.76E+03	1.59E-01	4.31E+04	0.00E+00	0.00E+00	8.43E+03	1.50E+02	1.71E+03	4.62E+02
2.73	42	660	9.13	6.78E+02	7.22E-02	1.43E+01	2.80E-29	1.66E-02	4.35E+03	1.68E-01	4.41E+04	0.00E+00	0.00E+00	6.36E+03	1.52E+02	1.68E+03	4.22E+02
2.73	44	660	10.48	2.91E+02	7.73E-02	1.45E+01	1.81E-32	1.75E-02	2.99E+03	1.76E-01	4.47E+04	0.00E+00	0.00E+00	4.47E+03	1.54E+02	1.61E+03	3.68E+02
3.03	20	660	3.61	1.27E+04	2.13E-02	5.84E+00	1.83E-12	7.45E-03	7.25E+03	8.52E-02	2.42E+04	0.00E+00	0.00E+00	2.39E+04	1.23E+02	7.18E+02	2.92E+02
3.03	22	660	3.84	1.19E+04	2.48E-02	6.59E+00	1.01E-12	8.26E-03	7.98E+03	9.35E-02	2.65E+04	0.00E+00	0.00E+00	2.34E+04	1.28E+02	8.47E+02	3.27E+02
3.03	24	660	4.07	1.10E+04	2.84E-02	7.37E+00	7.00E-15	9.08E-03	8.59E+03	1.02E-01	2.87E+04	0.00E+00	0.00E+00	2.27E+04	1.32E+02	9.80E+02	3.63E+02
3.03	26	660	4.42	9.90E+03	3.22E-02	8.16E+00	5.50E-15	9.89E-03	8.90E+03	1.10E-01	3.08E+04	0.00E+00	0.00E+00	2.14E+04	1.36E+02	1.10E+03	3.93E+02
3.03	28	660	4.73	8.68E+03	3.62E-02	8.95E+00	3.16E-15	1.07E-02	9.17E+03	1.18E-01	3.29E+04	0.00E+00	0.00E+00	2.00E+04	1.39E+02	1.23E+03	4.22E+02
3.03	30	660	5.04	7.27E+03	4.04E-02	9.75E+00	1.31E-17	1.15E-02	9.51E+03	1.27E-01	3.50E+04	0.00E+00	0.00E+00	1.86E+04	1.43E+02	1.36E+03	4.50E+02
3.03	32	660	5.49	6.01E+03	4.46E-02	1.05E+01	8.25E-18	1.23E-02	9.20E+03	1.35E-01	3.69E+04	0.00E+00	0.00E+00	1.69E+04	1.47E+02	1.46E+03	4.67E+02
3.03	34	660	5.91	4.68E+03	4.90E-02	1.13E+01	1.83E-18	1.32E-02	8.82E+03	1.43E-01	3.87E+04	0.00E+00	0.00E+00	1.52E+04	1.49E+02	1.56E+03	4.82E+02
3.03	36	660	6.48	3.47E+03	5.36E-02	1.20E+01	1.13E-20	1.40E-02	8.07E+03	1.52E-01	4.04E+04	0.00E+00	0.00E+00	1.32E+04	1.52E+02	1.63E+03	4.83E+02
3.03	38	660	7.07	2.34E+03	5.82E-02	1.27E+01	2.24E-23	1.48E-02	7.16E+03	1.60E-01	4.20E+04	0.00E+00	0.00E+00	1.13E+04	1.55E+02	1.69E+03	4.79E+02
3.03	40	660	7.88	1.44E+03	6.30E-02	1.33E+01	3.26E-24	1.56E-02	5.94E+03	1.69E-01	4.33E+04	0.00E+00	0.00E+00	9.13E+03	1.56E+02	1.72E+03	4.59E+02
3.03	42	660	8.89	7.59E+02	6.78E-02	1.37E+01	3.36E-27	1.64E-02	4.58E+03	1.77E-01	4.43E+04	0.00E+00	0.00E+00	6.99E+03	1.58E+02	1.70E+03	4.24E+02
3.03	44	660	10.14	3.38E+02	7.28E-02	1.38E+01	2.76E-32	1.73E-02	3.25E+03	1.86E-01	4.51E+04	0.00E+00	0.00E+00	5.04E+03	1.60E+02	1.63E+03	3.76E+02
3.03	46	660	11.67	1.28E+02	7.78E-02	1.38E+01	1.14E-35	1.81E-02	2.09E+03	1.95E-01	4.54E+04	0.00E+00	0.00E+00	3.36E+03	1.60E+02	1.53E+03	3.18E+02
3.03	48	660	13.50	3.82E+01	8.29E-02	1.35E+01	0.00E+00	1.89E-02	1.21E+03	2.03E-01	4.53E+04	0.00E+00	0.00E+00	2.07E+03	1.61E+02	1.40E+03	2.57E+02

E	B	DBwatt	time	ac227	pa231	u232	u233	u234	u235	u236	u238	np237	np239	pu238	pu239	pu240	pu241
2.05	16	660	3.17	1.61E-07	1.75E-06	9.18E-04	4.08E-06	3.33E-01	7.42E-03	5.46E-02	1.30E-01	4.62E-02	1.43E+00	2.15E+02	1.10E+02	1.30E+02	2.35E+04
2.05	18	660	3.48	2.00E-07	1.95E-06	1.26E-03	4.46E-06	3.20E-01	6.63E-03	5.81E-02	1.30E-01	5.38E-02	2.17E+00	2.83E+02	1.13E+02	1.47E+02	2.69E+04
2.05	20	660	3.73	2.40E-07	2.14E-06	1.67E-03	4.82E-06	3.09E-01	5.93E-03	6.12E-02	1.29E-01	6.15E-02	3.10E+00	3.62E+02	1.16E+02	1.63E+02	3.00E+04
2.05	42	660	9.88	1.13E-06	3.91E-06	1.21E-02	1.02E-05	2.35E-01	1.59E-03	7.39E-02	1.26E-01	1.36E-01	2.56E+01	1.60E+03	1.26E+02	2.78E+02	3.88E+04
2.05	44	660	11.43	1.30E-06	4.02E-06	1.34E-02	1.15E-05	2.38E-01	1.40E-03	7.38E-02	1.26E-01	1.41E-01	2.84E+01	1.71E+03	1.26E+02	2.85E+02	3.68E+04
2.45	16	660	3.11	1.91E-07	2.13E-06	8.99E-04	4.77E-06	4.09E-01	9.92E-03	6.10E-02	1.29E-01	4.67E-02	1.04E+00	1.98E+02	1.10E+02	1.18E+02	2.15E+04
2.45	18	660	3.42	2.39E-07	2.39E-06	1.24E-03	5.23E-06	3.94E-01	8.98E-03	6.53E-02	1.29E-01	5.47E-02	1.60E+00	2.62E+02	1.15E+02	1.34E+02	2.49E+04
2.45	20	660	3.68	2.89E-07	2.63E-06	1.64E-03	5.65E-06	3.81E-01	8.12E-03	6.92E-02	1.29E-01	6.29E-02	2.33E+00	3.38E+02	1.18E+02	1.50E+02	2.80E+04
2.45	22	660	3.90	3.40E-07	2.86E-06	2.13E-03	6.05E-06	3.68E-01	7.33E-03	7.27E-02	1.29E-01	7.12E-02	3.24E+00	4.23E+02	1.21E+02	1.64E+02	3.11E+04
2.45	24	660	4.19	4.00E-07	3.11E-06	2.69E-03	6.45E-06	3.55E-01	6.61E-03	7.58E-02	1.29E-01	7.94E-02	4.34E+00	5.17E+02	1.23E+02	1.78E+02	3.36E+04
2.45	26	660	4.53	4.69E-07	3.35E-06	3.36E-03	6.85E-06	3.43E-01	5.95E-03	7.84E-02	1.28E-01	8.77E-02	5.63E+00	6.21E+02	1.24E+02	1.92E+02	3.58E+04
2.45	28	660	4.82	5.38E-07	3.57E-06	4.12E-03	7.24E-06	3.32E-01	5.34E-03	8.07E-02	1.28E-01	9.58E-02	7.11E+00	7.33E+02	1.26E+02	2.04E+02	3.77E+04
2.45	30	660	5.20	6.17E-07	3.80E-06	4.98E-03	7.65E-06	3.22E-01	4.79E-03	8.27E-02	1.28E-01	1.04E-01	8.77E+00	8.52E+02	1.26E+02	2.16E+02	3.93E+04
2.45	32	660	5.64	7.07E-07	4.02E-06	5.96E-03	8.10E-06	3.12E-01	4.29E-03	8.43E-02	1.28E-01	1.12E-01	1.06E+01	9.75E+02	1.27E+02	2.26E+02	4.04E+04
2.45	34	660	6.08	7.98E-07	4.22E-06	7.03E-03	8.54E-06	3.04E-01	3.84E-03	8.57E-02	1.27E-01	1.19E-01	1.26E+01	1.11E+03	1.28E+02	2.36E+02	4.13E+04
2.45	36	660	6.70	9.15E-07	4.42E-06	8.23E-03	9.12E-06	2.97E-01	3.43E-03	8.68E-02	1.27E-01	1.26E-01	1.48E+01	1.23E+03	1.28E+02	2.46E+02	4.16E+04
2.45	38	660	7.40	1.04E-06	4.60E-06	9.52E-03	9.74E-06	2.91E-01	3.06E-03	8.76E-02	1.27E-01	1.33E-01	1.71E+01	1.37E+03	1.28E+02	2.55E+02	4.15E+04
2.45	40	660	8.27	1.18E-06	4.78E-06	1.10E-02	1.06E-05	2.87E-01	2.73E-03	8.83E-02	1.27E-01	1.40E-01	1.95E+01	1.50E+03	1.29E+02	2.63E+02	4.10E+04
2.45	42	660	9.39	1.36E-06	4.95E-06	1.24E-02	1.15E-05	2.86E-01	2.43E-03	8.87E-02	1.26E-01	1.47E-01	2.20E+01	1.64E+03	1.29E+02	2.70E+02	3.98E+04
2.45	44	660	10.79	1.57E-06	5.11E-06	1.39E-02	1.28E-05	2.86E-01	2.16E-03	8.89E-02	1.26E-01	1.53E-01	2.47E+01	1.75E+03	1.29E+02	2.78E+02	3.80E+04
2.73	20	660	3.64	3.23E-07	2.99E-06	1.63E-03	6.25E-06	4.33E-01	9.80E-03	7.43E-02	1.29E-01	6.35E-02	1.93E+00	3.22E+02	1.19E+02	1.41E+02	2.69E+04
2.73	22	660	3.87	3.81E-07	3.27E-06	2.10E-03	6.69E-06	4.18E-01	8.92E-03	7.83E-02	1.29E-01	7.21E-02	2.71E+00	4.04E+02	1.22E+02	1.56E+02	2.98E+04
2.73	24	660	4.13	4.47E-07	3.54E-06	2.67E-03	7.12E-06	4.04E-01	8.10E-03	8.19E-02	1.28E-01	8.07E-02	3.66E+00	4.97E+02	1.25E+02	1.70E+02	3.26E+04
2.73	26	660	4.47	5.26E-07	3.82E-06	3.33E-03	7.57E-06	3.91E-01	7.34E-03	8.50E-02	1.28E-01	8.93E-02	4.78E+00	5.99E+02	1.26E+02	1.83E+02	3.49E+04
2.73	28	660	4.78	6.05E-07	4.09E-06	4.08E-03	8.00E-06	3.80E-01	6.64E-03	8.79E-02	1.28E-01	9.80E-02	6.09E+00	7.10E+02	1.28E+02	1.96E+02	3.69E+04
2.73	30	660	5.12	6.93E-07	4.35E-06	4.95E-03	8.43E-06	3.67E-01	6.00E-03	9.03E-02	1.28E-01	1.06E-01	7.57E+00	8.29E+02	1.29E+02	2.08E+02	3.87E+04
2.73	32	660	5.57	7.97E-07	4.61E-06	5.94E-03	8.92E-06	3.57E-01	5.42E-03	9.24E-02	1.27E-01	1.15E-01	9.22E+00	9.54E+02	1.30E+02	2.19E+02	3.99E+04
2.73	34	660	5.97	8.99E-07	4.85E-06	7.01E-03	9.40E-06	3.47E-01	4.88E-03	9.42E-02	1.27E-01	1.23E-01	1.10E+01	1.09E+03	1.30E+02	2.29E+02	4.11E+04
2.73	36	660	6.58	1.03E-06	5.09E-06	8.23E-03	1.00E-05	3.39E-01	4.38E-03	9.57E-02	1.27E-01	1.31E-01	1.30E+01	1.22E+03	1.31E+02	2.39E+02	4.14E+04
2.73	38	660	7.24	1.17E-06	5.31E-06	9.55E-03	1.07E-05	3.32E-01	3.94E-03	9.70E-02	1.27E-01	1.39E-01	1.51E+01	1.36E+03	1.31E+02	2.48E+02	4.16E+04
2.73	40	660	8.06	1.34E-06	5.52E-06	1.10E-02	1.14E-05	3.26E-01	3.53E-03	9.79E-02	1.26E-01	1.46E-01	1.74E+01	1.50E+03	1.31E+02	2.57E+02	4.12E+04
2.73	42	660	9.13	1.54E-06	5.74E-06	1.25E-02	1.24E-05	3.24E-01	3.16E-03	9.87E-02	1.26E-01	1.53E-01	1.98E+01	1.64E+03	1.31E+02	2.65E+02	4.02E+04
2.73	44	660	10.48	1.77E-06	5.93E-06	1.40E-02	1.37E-05	3.22E-01	2.82E-03	9.92E-02	1.26E-01	1.60E-01	2.23E+01	1.77E+03	1.31E+02	2.73E+02	3.85E+04
3.03	20	660	3.61	3.60E-07	3.38E-06	1.60E-03	6.89E-06	4.90E-01	1.17E-02	7.91E-02	1.28E-01	6.40E-02	1.59E+00	3.06E+02	1.20E+02	1.33E+02	2.56E+04
3.03	22	660	3.84	4.25E-07	3.69E-06	2.08E-03	7.38E-06	4.75E-01	1.07E-02	8.37E-02	1.28E-01	7.28E-02	2.25E+00	3.85E+02	1.24E+02	1.47E+02	2.86E+04
3.03	24	660	4.07	4.97E-07	4.01E-06	2.63E-03	7.86E-06	4.59E-01	9.82E-03	8.78E-02	1.28E-01	8.17E-02	3.07E+00	4.76E+02	1.26E+02	1.61E+02	3.14E+04
3.03	26	660	4.42	5.88E-07	4.34E-06	3.30E-03	8.36E-06	4.45E-01	8.96E-03	9.15E-02	1.28E-01	9.06E-02	4.04E+00	5.76E+02	1.29E+02	1.75E+02	3.38E+04
3.03	28	660	4.73	6.79E-07	4.65E-06	4.05E-03	8.83E-06	4.31E-01	8.17E-03	9.49E-02	1.28E-01	9.97E-02	5.18E+00	6.85E+02	1.30E+02	1.87E+02	3.61E+04
3.03	30	660	5.04	7.74E-07	4.96E-06	4.90E-03	9.29E-06	4.19E-01	7.44E-03	9.79E-02	1.27E-01	1.09E-01	6.49E+00	8.03E+02	1.31E+02	1.99E+02	3.79E+04
3.03	32	660	5.49	8.95E-07	5.27E-06	5.89E-03	9.82E-06	4.07E-01	6.76E-03	1.00E-01	1.27E-01	1.17E-01	7.96E+00	9.28E+02	1.32E+02	2.11E+02	3.94E+04
3.03	34	660	5.91	1.02E-06	5.56E-06	6.98E-03	1.03E-05	3.96E-01	6.13E-03	1.03E-01	1.27E-01	1.26E-01	9.60E+00	1.06E+03	1.33E+02	2.22E+02	4.06E+04
3.03	36	660	6.48	1.16E-06	5.84E-06	8.20E-03	1.09E-05	3.86E-01	5.55E-03	1.05E-01	1.27E-01	1.35E-01	1.14E+01	1.20E+03	1.34E+02	2.32E+02	4.12E+04
3.03	38	660	7.07	1.31E-06	6.11E-06	9.53E-03	1.16E-05	3.77E-01	5.01E-03	1.06E-01	1.26E-01	1.43E-01	1.33E+01	1.34E+03	1.34E+02	2.41E+02	4.16E+04
3.03	40	660	7.88	1.50E-06	6.37E-06	1.10E-02	1.24E-05	3.71E-01	4.52E-03	1.08E-01	1.26E-01	1.51E-01	1.54E+01	1.48E+03	1.34E+02	2.50E+02	4.13E+04
3.03	42	660	8.89	1.72E-06	6.62E-06	1.26E-02	1.34E-05	3.66E-01	4.07E-03	1.09E-01	1.26E-01	1.59E-01	1.76E+01	1.63E+03	1.34E+02	2.59E+02	4.05E+04
3.03	44	660	10.14	1.98E-06	6.86E-06	1.41E-02	1.47E-05	3.64E-01	3.66E-03	1.10E-01	1.26E-01	1.67E-01	2.00E+01	1.77E+03	1.34E+02	2.67E+02	3.92E+04
3.03	46	660	11.67	2.28E-06	7.09E-06	1.58E-02	1.62E-05	3.65E-01	3.29E-03	1.10E-01	1.25E-01	1.74E-01	2.24E+01	1.90E+03	1.34E+02	2.75E+02	3.72E+04
3.03	48	660	13.50	2.62E-06	7.30E-06	1.73E-02	1.82E-05	3.69E-01	2.95E-03	1.11E-01	1.25E-01	1.82E-01	2.49E+01	2.03E+03	1.34E+02	2.82E+02	3.47E+04

E	B	DBwatt	time	pu242	am241	am242	am242m	am243	cm242	cm243	cm244	cm245	cm246	th230
2.05	16	660	3.17	2.50E-01	1.41E+02	6.56E-01	6.59E-01	1.43E+00	2.57E+01	6.17E-01	7.27E+01	3.33E-03	4.62E-04	1.32E-05
2.05	18	660	3.48	3.34E-01	1.79E+02	8.56E-01	8.60E-01	2.17E+00	2.64E+01	9.84E-01	1.26E+02	6.42E-03	1.03E-03	1.40E-05
2.05	20	660	3.73	4.28E-01	2.15E+02	1.06E+00	1.07E+00	3.10E+00	2.44E+01	1.47E+00	2.02E+02	1.13E-02	2.08E-03	1.46E-05
2.05	42	660	9.88	1.82E+00	8.32E+02	2.86E+00	2.88E+00	2.56E+01	2.38E+00	1.20E+01	3.37E+03	3.77E-01	1.92E-01	2.42E-05
2.05	44	660	11.43	1.95E+00	9.42E+02	2.94E+00	2.95E+00	2.84E+01	2.44E+00	1.27E+01	3.74E+03	4.52E-01	2.46E-01	2.70E-05
2.45	16	660	3.11	1.95E-01	1.27E+02	6.02E-01	6.05E-01	1.04E+00	2.20E+01	4.63E-01	4.84E+01	2.14E-03	2.54E-04	1.60E-05
2.45	18	660	3.42	2.65E-01	1.63E+02	8.00E-01	8.04E-01	1.60E+00	2.33E+01	7.53E-01	8.51E+01	4.21E-03	5.79E-04	1.70E-05
2.45	20	660	3.68	3.44E-01	2.00E+02	1.01E+00	1.02E+00	2.33E+00	2.24E+01	1.15E+00	1.39E+02	7.59E-03	1.19E-03	1.78E-05
2.45	22	660	3.90	4.32E-01	2.35E+02	1.24E+00	1.24E+00	3.24E+00	1.88E+01	1.66E+00	2.16E+02	1.28E-02	2.28E-03	1.83E-05
2.45	24	660	4.19	5.29E-01	2.75E+02	1.46E+00	1.47E+00	4.34E+00	1.52E+01	2.29E+00	3.19E+02	2.04E-02	4.09E-03	1.89E-05
2.45	26	660	4.53	6.33E-01	3.19E+02	1.68E+00	1.69E+00	5.63E+00	1.32E+01	3.02E+00	4.51E+02	3.11E-02	6.94E-03	1.97E-05
2.45	28	660	4.82	7.44E-01	3.61E+02	1.90E+00	1.91E+00	7.11E+00	1.00E+01	3.88E+00	6.18E+02	4.54E-02	1.12E-02	2.03E-05
2.45	30	660	5.20	8.60E-01	4.07E+02	2.10E+00	2.11E+00	8.77E+00	6.78E+00	4.82E+00	8.22E+02	6.40E-02	1.75E-02	2.10E-05
2.45	32	660	5.64	9.80E-01	4.58E+02	2.29E+00	2.30E+00	1.06E+01	5.32E+00	5.83E+00	1.06E+03	8.76E-02	2.63E-02	2.19E-05
2.45	34	660	6.08	1.11E+00	5.08E+02	2.47E+00	2.48E+00	1.26E+01	3.60E+00	6.92E+00	1.35E+03	1.17E-01	3.83E-02	2.26E-05
2.45	36	660	6.70	1.23E+00	5.70E+02	2.63E+00	2.64E+00	1.48E+01	3.01E+00	8.02E+00	1.66E+03	1.52E-01	5.43E-02	2.38E-05
2.45	38	660	7.40	1.36E+00	6.36E+02	2.77E+00	2.79E+00	1.71E+01	2.59E+00	9.13E+00	2.00E+03	1.94E-01	7.52E-02	2.51E-05
2.45	40	660	8.27	1.49E+00	7.13E+02	2.90E+00	2.91E+00	1.95E+01	2.48E+00	1.02E+01	2.37E+03	2.43E-01	1.02E-01	2.67E-05
2.45	42	660	9.39	1.63E+00	8.03E+02	3.00E+00	3.02E+00	2.20E+01	2.51E+00	1.12E+01	2.73E+03	3.00E-01	1.35E-01	2.90E-05
2.45	44	660	10.79	1.76E+00	9.07E+02	3.09E+00	3.10E+00	2.47E+01	2.56E+00	1.20E+01	3.08E+03	3.64E-01	1.76E-01	3.20E-05
2.73	20	660	3.64	2.97E-01	1.89E+02	9.78E-01	9.82E-01	1.93E+00	2.10E+01	9.70E-01	1.09E+02	5.84E-03	8.32E-04	2.00E-05
2.73	22	660	3.87	3.77E-01	2.25E+02	1.20E+00	1.21E+00	2.71E+00	1.82E+01	1.43E+00	1.71E+02	9.97E-03	1.61E-03	2.07E-05
2.73	24	660	4.13	4.64E-01	2.63E+02	1.44E+00	1.44E+00	3.66E+00	1.44E+01	1.98E+00	2.54E+02	1.61E-02	2.92E-03	2.14E-05
2.73	26	660	4.47	5.59E-01	3.07E+02	1.67E+00	1.68E+00	4.78E+00	1.29E+01	2.65E+00	3.63E+02	2.47E-02	5.00E-03	2.23E-05
2.73	28	660	4.78	6.61E-01	3.50E+02	1.90E+00	1.90E+00	6.09E+00	1.01E+01	3.42E+00	5.01E+02	3.64E-02	8.19E-03	2.30E-05
2.73	30	660	5.12	7.69E-01	3.95E+02	2.12E+00	2.13E+00	7.57E+00	6.77E+00	4.30E+00	6.73E+02	5.19E-02	1.29E-02	2.38E-05
2.73	32	660	5.57	8.82E-01	4.47E+02	2.32E+00	2.33E+00	9.22E+00	5.48E+00	5.26E+00	8.75E+02	7.16E-02	1.95E-02	2.48E-05
2.73	34	660	5.97	1.00E+00	4.96E+02	2.52E+00	2.53E+00	1.10E+01	3.79E+00	6.29E+00	1.12E+03	9.64E-02	2.88E-02	2.56E-05
2.73	36	660	6.58	1.12E+00	5.58E+02	2.69E+00	2.70E+00	1.30E+01	3.18E+00	7.37E+00	1.39E+03	1.27E-01	4.13E-02	2.69E-05
2.73	38	660	7.24	1.25E+00	6.23E+02	2.85E+00	2.87E+00	1.51E+01	2.70E+00	8.46E+00	1.69E+03	1.63E-01	5.77E-02	2.83E-05
2.73	40	660	8.06	1.37E+00	6.98E+02	2.99E+00	3.00E+00	1.74E+01	2.57E+00	9.55E+00	2.02E+03	2.06E-01	7.89E-02	3.02E-05
2.73	42	660	9.13	1.50E+00	7.87E+02	3.11E+00	3.13E+00	1.98E+01	2.60E+00	1.06E+01	2.34E+03	2.56E-01	1.06E-01	3.26E-05
2.73	44	660	10.48	1.63E+00	8.90E+02	3.21E+00	3.22E+00	2.23E+01	2.66E+00	1.15E+01	2.66E+03	3.13E-01	1.39E-01	3.58E-05
3.03	20	660	3.61	2.56E-01	1.78E+02	9.39E-01	9.43E-01	1.59E+00	1.95E+01	8.20E-01	8.55E+01	4.49E-03	5.78E-04	2.26E-05
3.03	22	660	3.84	3.27E-01	2.14E+02	1.17E+00	1.17E+00	2.25E+00	1.74E+01	1.21E+00	1.35E+02	7.73E-03	1.13E-03	2.33E-05
3.03	24	660	4.07	4.05E-01	2.51E+02	1.41E+00	1.42E+00	3.07E+00	1.36E+01	1.71E+00	2.02E+02	1.26E-02	2.07E-03	2.41E-05
3.03	26	660	4.42	4.92E-01	2.95E+02	1.65E+00	1.66E+00	4.04E+00	1.24E+01	2.30E+00	2.90E+02	1.95E-02	3.58E-03	2.52E-05
3.03	28	660	4.73	5.85E-01	3.38E+02	1.89E+00	1.90E+00	5.18E+00	1.01E+01	3.00E+00	4.04E+02	2.91E-02	5.92E-03	2.61E-05
3.03	30	660	5.04	6.84E-01	3.82E+02	2.13E+00	2.14E+00	6.49E+00	6.69E+00	3.82E+00	5.47E+02	4.18E-02	9.40E-03	2.69E-05
3.03	32	660	5.49	7.88E-01	4.35E+02	2.35E+00	2.37E+00	7.96E+00	5.58E+00	4.70E+00	7.16E+02	5.82E-02	1.44E-02	2.81E-05
3.03	34	660	5.91	8.98E-01	4.86E+02	2.56E+00	2.57E+00	9.60E+00	4.08E+00	5.68E+00	9.19E+02	7.89E-02	2.14E-02	2.91E-05
3.03	36	660	6.48	1.01E+00	5.46E+02	2.76E+00	2.77E+00	1.14E+01	3.30E+00	6.71E+00	1.15E+03	1.05E-01	3.09E-02	3.05E-05
3.03	38	660	7.07	1.13E+00	6.09E+02	2.93E+00	2.95E+00	1.33E+01	2.80E+00	7.79E+00	1.42E+03	1.36E-01	4.36E-02	3.20E-05
3.03	40	660	7.88	1.25E+00	6.84E+02	3.09E+00	3.10E+00	1.54E+01	2.69E+00	8.85E+00	1.70E+03	1.73E-01	6.02E-02	3.40E-05
3.03	42	660	8.89	1.37E+00	7.71E+02	3.22E+00	3.24E+00	1.76E+01	2.70E+00	9.87E+00	2.00E+03	2.16E-01	8.15E-02	3.66E-05
3.03	44	660	10.14	1.50E+00	8.71E+02	3.34E+00	3.36E+00	2.00E+01	2.77E+00	1.09E+01	2.29E+03	2.66E-01	1.08E-01	3.99E-05
3.03	46	660	11.67	1.63E+00	9.81E+02	3.43E+00	3.45E+00	2.24E+01	2.84E+00	1.16E+01	2.57E+03	3.23E-01	1.41E-01	4.41E-05
3.03	48	660	13.50	1.75E+00	1.11E+03	3.50E+00	3.52E+00	2.49E+01	2.90E+00	1.22E+01	2.82E+03	3.88E-01	1.82E-01	4.92E-05

E	B	DBwatt	time	h3	c14	cl36	co60	se79	kr81	kr85	sr89	sr90	y90	nb94	zr95	tc99	ru103
3.03	50	660	15.60	1.72E+02	1.71E+00	5.06E-02	3.27E+02	3.87E-02	8.93E-08	1.70E+03	2.85E-28	2.71E+04	2.71E+04	8.54E-02	4.91E-21	7.62E+00	3.13E-37
3.03	52	660	17.78	1.56E+02	1.79E+00	5.28E-02	2.54E+02	4.01E-02	9.84E-08	1.51E+03	6.77E-33	2.64E+04	2.64E+04	8.92E-02	9.96E-25	7.85E+00	0.00E+00
3.4	26	660	4.36	1.92E+02	7.29E-01	2.26E-02	7.43E+02	2.13E-02	1.76E-08	2.32E+03	5.58E-04	2.34E+04	2.34E+04	4.00E-02	6.72E-02	4.48E+00	2.69E-06
3.4	28	660	4.68	2.00E+02	7.93E-01	2.45E-02	7.64E+02	2.29E-02	2.07E-08	2.40E+03	2.79E-04	2.46E+04	2.46E+04	4.33E-02	3.48E-02	4.78E+00	1.39E-06
3.4	30	660	4.97	2.08E+02	8.57E-01	2.64E-02	7.84E+02	2.44E-02	2.42E-08	2.48E+03	2.95E-05	2.57E+04	2.57E+04	4.67E-02	4.91E-03	5.08E+00	1.34E-07
3.4	32	660	5.41	2.14E+02	9.23E-01	2.83E-02	7.88E+02	2.60E-02	2.79E-08	2.53E+03	3.19E-06	2.68E+04	2.68E+04	5.01E-02	1.17E-03	5.37E+00	4.14E-09
3.4	34	660	5.83	2.19E+02	9.90E-01	3.02E-02	7.88E+02	2.75E-02	3.21E-08	2.58E+03	9.09E-07	2.77E+04	2.77E+04	5.35E-02	3.56E-04	5.65E+00	1.21E-09
3.4	36	660	6.36	2.22E+02	1.06E+00	3.22E-02	7.76E+02	2.90E-02	3.67E-08	2.59E+03	2.17E-08	2.84E+04	2.84E+04	5.70E-02	2.37E-05	5.93E+00	7.30E-12
3.4	38	660	6.94	2.25E+02	1.13E+00	3.42E-02	7.56E+02	3.05E-02	4.17E-08	2.59E+03	2.28E-09	2.92E+04	2.92E+04	6.05E-02	2.94E-06	6.21E+00	7.41E-13
3.4	40	660	7.72	2.24E+02	1.20E+00	3.63E-02	7.16E+02	3.19E-02	4.71E-08	2.55E+03	6.08E-11	2.97E+04	2.97E+04	6.40E-02	2.02E-07	6.47E+00	5.16E-15
3.4	42	660	8.66	2.21E+02	1.27E+00	3.83E-02	6.63E+02	3.34E-02	5.31E-08	2.48E+03	4.83E-13	3.00E+04	3.00E+04	6.75E-02	4.66E-09	6.73E+00	1.01E-17
3.4	44	660	9.79	2.14E+02	1.35E+00	4.04E-02	5.95E+02	3.49E-02	5.94E-08	2.37E+03	1.95E-15	3.01E+04	3.01E+04	7.11E-02	5.62E-11	6.99E+00	9.98E-21
3.4	46	660	11.28	2.04E+02	1.42E+00	4.25E-02	5.10E+02	3.63E-02	6.63E-08	2.22E+03	2.85E-19	2.98E+04	2.99E+04	7.47E-02	6.61E-14	7.23E+00	8.63E-26
3.4	48	660	13.03	1.90E+02	1.50E+00	4.46E-02	4.20E+02	3.77E-02	7.37E-08	2.04E+03	1.65E-23	2.94E+04	2.94E+04	7.83E-02	3.18E-17	7.48E+00	2.90E-31
3.4	50	660	14.96	1.77E+02	1.57E+00	4.67E-02	3.38E+02	3.91E-02	8.18E-08	1.84E+03	5.28E-27	2.87E+04	2.87E+04	8.20E-02	3.73E-20	7.71E+00	2.04E-35
3.4	52	660	17.09	1.61E+02	1.65E+00	4.88E-02	2.64E+02	4.05E-02	9.03E-08	1.64E+03	2.96E-32	2.79E+04	2.79E+04	8.56E-02	4.00E-24	7.95E+00	0.00E+00
3.65	34	660	5.78	2.17E+02	9.33E-01	2.85E-02	7.66E+02	2.76E-02	3.03E-08	2.63E+03	1.21E-06	2.83E+04	2.84E+04	5.20E-02	4.57E-04	5.68E+00	1.53E-09
3.65	36	660	6.28	2.22E+02	9.98E-01	3.04E-02	7.57E+02	2.91E-02	3.46E-08	2.65E+03	2.54E-08	2.92E+04	2.92E+04	5.54E-02	2.70E-05	5.97E+00	8.10E-12
3.65	38	660	6.86	2.23E+02	1.06E+00	3.23E-02	7.37E+02	3.06E-02	3.93E-08	2.65E+03	4.84E-09	2.99E+04	2.99E+04	5.88E-02	5.61E-06	6.24E+00	1.55E-12
3.65	40	660	7.63	2.23E+02	1.13E+00	3.43E-02	7.00E+02	3.21E-02	4.44E-08	2.62E+03	8.41E-11	3.04E+04	3.04E+04	6.22E-02	2.70E-07	6.51E+00	6.80E-15
3.65	42	660	8.54	2.20E+02	1.20E+00	3.62E-02	6.50E+02	3.36E-02	5.00E-08	2.55E+03	6.72E-13	3.08E+04	3.08E+04	6.57E-02	6.28E-09	6.78E+00	1.34E-17
3.65	44	660	9.64	2.15E+02	1.27E+00	3.82E-02	5.87E+02	3.51E-02	5.61E-08	2.45E+03	3.38E-15	3.09E+04	3.09E+04	6.91E-02	9.24E-11	7.03E+00	1.65E-20
3.65	46	660	11.00	2.06E+02	1.34E+00	4.02E-02	5.10E+02	3.65E-02	6.26E-08	2.31E+03	4.08E-19	3.08E+04	3.08E+04	7.26E-02	9.13E-14	7.29E+00	1.17E-25
3.65	48	660	12.69	1.93E+02	1.41E+00	4.22E-02	4.26E+02	3.79E-02	6.96E-08	2.12E+03	8.49E-22	3.04E+04	3.04E+04	7.62E-02	5.69E-16	7.53E+00	5.90E-29
3.65	50	660	14.61	1.79E+02	1.49E+00	4.43E-02	3.43E+02	3.94E-02	7.72E-08	1.93E+03	4.56E-26	2.98E+04	2.98E+04	7.98E-02	2.54E-19	7.77E+00	1.84E-34
3.65	52	660	16.75	1.63E+02	1.56E+00	4.64E-02	2.68E+02	4.08E-02	8.53E-08	1.72E+03	1.30E-30	2.90E+04	2.90E+04	8.33E-02	6.17E-23	8.01E+00	0.00E+00
3.81	34	660	5.75	2.16E+02	9.00E-01	2.75E-02	7.52E+02	2.77E-02	2.92E-08	2.66E+03	1.40E-06	2.87E+04	2.87E+04	5.11E-02	5.16E-04	5.70E+00	1.72E-09
3.81	36	660	6.23	2.20E+02	9.63E-01	2.94E-02	7.45E+02	2.92E-02	3.34E-08	2.69E+03	2.76E-08	2.95E+04	2.95E+04	5.44E-02	2.89E-05	5.99E+00	8.47E-12
3.81	38	660	6.83	2.23E+02	1.03E+00	3.12E-02	7.25E+02	3.07E-02	3.79E-08	2.69E+03	6.08E-09	3.03E+04	3.03E+04	5.78E-02	6.82E-06	6.26E+00	1.90E-12
3.81	40	660	7.56	2.23E+02	1.09E+00	3.31E-02	6.91E+02	3.22E-02	4.29E-08	2.66E+03	1.00E-10	3.09E+04	3.09E+04	6.11E-02	3.15E-07	6.54E+00	7.86E-15
3.81	42	660	8.44	2.20E+02	1.16E+00	3.50E-02	6.44E+02	3.37E-02	4.82E-08	2.60E+03	8.33E-13	3.13E+04	3.13E+04	6.45E-02	7.59E-09	6.80E+00	1.60E-17
3.81	44	660	9.54	2.15E+02	1.23E+00	3.69E-02	5.82E+02	3.52E-02	5.41E-08	2.50E+03	4.44E-15	3.15E+04	3.15E+04	6.80E-02	1.19E-10	7.06E+00	2.10E-20
3.81	46	660	10.89	2.06E+02	1.29E+00	3.89E-02	5.07E+02	3.66E-02	6.04E-08	2.36E+03	7.52E-18	3.14E+04	3.14E+04	7.14E-02	6.32E-13	7.32E+00	8.46E-24
3.81	48	660	12.54	1.94E+02	1.36E+00	4.08E-02	4.25E+02	3.81E-02	6.71E-08	2.18E+03	1.28E-21	3.10E+04	3.10E+04	7.50E-02	8.34E-16	7.57E+00	8.62E-29
3.81	50	660	14.44	1.80E+02	1.44E+00	4.28E-02	3.44E+02	3.95E-02	7.45E-08	1.97E+03	6.76E-26	3.04E+04	3.04E+04	7.85E-02	3.66E-19	7.81E+00	2.64E-34
3.81	52	660	16.48	1.65E+02	1.51E+00	4.49E-02	2.72E+02	4.09E-02	8.24E-08	1.77E+03	2.68E-30	2.96E+04	2.96E+04	8.20E-02	1.22E-22	8.05E+00	0.00E+00
4	34	660	5.72	2.15E+02	8.64E-01	2.64E-02	7.37E+02	2.78E-02	2.80E-08	2.70E+03	1.61E-06	2.91E+04	2.91E+04	5.01E-02	5.84E-04	5.72E+00	1.92E-09
4	36	660	6.19	2.19E+02	9.24E-01	2.82E-02	7.30E+02	2.93E-02	3.20E-08	2.74E+03	2.98E-08	3.00E+04	3.00E+04	5.34E-02	3.06E-05	6.01E+00	8.83E-12
4	38	660	6.77	2.21E+02	9.85E-01	3.00E-02	7.12E+02	3.08E-02	3.64E-08	2.74E+03	8.28E-09	3.08E+04	3.08E+04	5.67E-02	8.97E-06	6.29E+00	2.50E-12
3.81	40	660	7.56	2.23E+02	1.09E+00	3.31E-02	6.91E+02	3.22E-02	4.29E-08	2.66E+03	1.00E-10	3.09E+04	3.09E+04	6.11E-02	3.15E-07	6.54E+00	7.86E-15
4	42	660	8.36	2.20E+02	1.11E+00	3.36E-02	6.36E+02	3.38E-02	4.63E-08	2.65E+03	9.81E-13	3.18E+04	3.18E+04	6.33E-02	8.75E-09	6.83E+00	1.82E-17
4	44	660	9.44	2.15E+02	1.18E+00	3.55E-02	5.76E+02	3.53E-02	5.19E-08	2.55E+03	5.57E-15	3.20E+04	3.20E+04	6.67E-02	1.46E-10	7.10E+00	2.54E-20
4	46	660	10.76	2.06E+02	1.24E+00	3.74E-02	5.04E+02	3.68E-02	5.79E-08	2.41E+03	1.58E-17	3.20E+04	3.20E+04	7.00E-02	1.24E-12	7.35E+00	1.75E-23
4	48	660	12.35	1.95E+02	1.31E+00	3.93E-02	4.26E+02	3.82E-02	6.44E-08	2.24E+03	1.82E-21	3.16E+04	3.16E+04	7.36E-02	1.15E-15	7.60E+00	1.19E-28
4	50	660	14.21	1.82E+02	1.38E+00	4.12E-02	3.46E+02	3.97E-02	7.16E-08	2.03E+03	9.61E-26	3.10E+04	3.11E+04	7.70E-02	5.08E-19	7.85E+00	3.63E-34
4	52	660	16.28	1.66E+02	1.45E+00	4.32E-02	2.73E+02	4.11E-02	7.91E-08	1.83E+03	3.81E-30	3.03E+04	3.03E+04	8.04E-02	1.69E-22	8.09E+00	0.00E+00
4.08	34	660	5.70	2.15E+02	8.49E-01	2.60E-02	7.30E+02	2.78E-02	2.76E-08	2.71E+03	1.70E-06	2.92E+04	2.92E+04	4.97E-02	6.11E-04	5.73E+00	2.00E-09
4.08	36	660	6.17	2.19E+02	9.08E-01	2.77E-02	7.24E+02	2.93E-02	3.15E-08	2.75E+03	3.07E-08	3.02E+04	3.02E+04	5.29E-02	3.13E-05	6.02E+00	8.95E-12

E	B	DBwatt	time	ru106	pd107	cd113m	xe127	i129	cs134	cs135	cs137	i137	xe137	pm147	sm151	eu154	eu155
3.03	50	660	15.60	9.51E+00	8.80E-02	1.31E+01	0.00E+00	1.97E-02	6.35E+02	2.12E-01	4.49E+04	0.00E+00	0.00E+00	1.18E+03	1.61E+02	1.25E+03	1.98E+02
3.03	52	660	17.78	2.18E+00	9.32E-02	1.26E+01	0.00E+00	2.05E-02	3.22E+02	2.21E-01	4.43E+04	0.00E+00	0.00E+00	6.60E+02	1.61E+02	1.10E+03	1.50E+02
3.4	26	660	4.36	9.53E+03	2.96E-02	7.69E+00	5.42E-15	9.74E-03	8.71E+03	1.20E-01	3.08E+04	0.00E+00	0.00E+00	2.23E+04	1.44E+02	1.07E+03	3.74E+02
3.4	28	660	4.68	8.41E+03	3.33E-02	8.43E+00	3.41E-15	1.05E-02	8.96E+03	1.28E-01	3.30E+04	0.00E+00	0.00E+00	2.10E+04	1.48E+02	1.19E+03	4.03E+02
3.4	30	660	4.97	7.10E+03	3.71E-02	9.19E+00	3.84E-16	1.14E-02	9.34E+03	1.37E-01	3.50E+04	0.00E+00	0.00E+00	1.97E+04	1.51E+02	1.31E+03	4.31E+02
3.4	32	660	5.41	5.91E+03	4.11E-02	9.90E+00	8.66E-18	1.22E-02	9.11E+03	1.46E-01	3.69E+04	0.00E+00	0.00E+00	1.79E+04	1.55E+02	1.43E+03	4.49E+02
3.4	34	660	5.83	4.66E+03	4.52E-02	1.06E+01	2.95E-18	1.30E-02	8.72E+03	1.55E-01	3.89E+04	0.00E+00	0.00E+00	1.61E+04	1.57E+02	1.52E+03	4.64E+02
3.4	36	660	6.36	3.49E+03	4.95E-02	1.13E+01	1.25E-20	1.38E-02	8.07E+03	1.64E-01	4.05E+04	0.00E+00	0.00E+00	1.41E+04	1.60E+02	1.60E+03	4.69E+02
3.4	38	660	6.94	2.41E+03	5.39E-02	1.20E+01	1.46E-21	1.46E-02	7.22E+03	1.72E-01	4.22E+04	0.00E+00	0.00E+00	1.21E+04	1.62E+02	1.67E+03	4.68E+02
3.4	40	660	7.72	1.54E+03	5.84E-02	1.25E+01	7.06E-24	1.54E-02	6.09E+03	1.81E-01	4.35E+04	0.00E+00	0.00E+00	9.93E+03	1.64E+02	1.70E+03	4.52E+02
3.4	42	660	8.66	8.59E+02	6.30E-02	1.29E+01	9.49E-27	1.62E-02	4.82E+03	1.90E-01	4.46E+04	0.00E+00	0.00E+00	7.77E+03	1.65E+02	1.70E+03	4.23E+02
3.4	44	660	9.79	4.11E+02	6.77E-02	1.32E+01	6.37E-30	1.70E-02	3.54E+03	1.99E-01	4.54E+04	0.00E+00	0.00E+00	5.75E+03	1.67E+02	1.66E+03	3.82E+02
3.4	46	660	11.28	1.55E+02	7.25E-02	1.32E+01	2.25E-35	1.78E-02	2.30E+03	2.08E-01	4.58E+04	0.00E+00	0.00E+00	3.88E+03	1.68E+02	1.57E+03	3.26E+02
3.4	48	660	13.03	4.71E+01	7.73E-02	1.30E+01	0.00E+00	1.88E-02	1.36E+03	2.17E-01	4.59E+04	0.00E+00	0.00E+00	2.41E+03	1.68E+02	1.44E+03	2.67E+02
3.4	50	660	14.96	1.32E+01	8.23E-02	1.26E+01	0.00E+00	1.94E-02	7.55E+02	2.26E-01	4.56E+04	0.00E+00	0.00E+00	1.45E+03	1.68E+02	1.29E+03	2.11E+02
3.4	52	660	17.09	3.23E+00	8.73E-02	1.21E+01	0.00E+00	2.02E-02	3.93E+02	2.35E-01	4.51E+04	0.00E+00	0.00E+00	8.21E+02	1.68E+02	1.15E+03	1.62E+02
3.65	34	660	5.78	4.64E+03	4.30E-02	1.02E+01	3.56E-18	1.29E-02	8.65E+03	1.63E-01	3.89E+04	0.00E+00	0.00E+00	1.67E+04	1.63E+02	1.51E+03	4.52E+02
3.65	36	660	6.28	3.51E+03	4.70E-02	1.09E+01	1.32E-20	1.37E-02	8.08E+03	1.72E-01	4.06E+04	0.00E+00	0.00E+00	1.48E+04	1.66E+02	1.59E+03	4.61E+02
3.65	38	660	6.86	2.47E+03	5.13E-02	1.15E+01	2.90E-21	1.45E-02	7.24E+03	1.81E-01	4.22E+04	0.00E+00	0.00E+00	1.27E+04	1.68E+02	1.66E+03	4.60E+02
3.65	40	660	7.63	1.58E+03	5.56E-02	1.20E+01	8.82E-24	1.53E-02	6.15E+03	1.90E-01	4.36E+04	0.00E+00	0.00E+00	1.04E+04	1.69E+02	1.69E+03	4.46E+02
3.65	42	660	8.54	8.96E+02	6.00E-02	1.25E+01	1.20E-26	1.61E-02	4.91E+03	1.99E-01	4.48E+04	0.00E+00	0.00E+00	8.23E+03	1.71E+02	1.69E+03	4.20E+02
3.65	44	660	9.64	4.40E+02	6.46E-02	1.27E+01	1.00E-29	1.69E-02	3.64E+03	2.08E-01	4.57E+04	0.00E+00	0.00E+00	6.14E+03	1.72E+02	1.66E+03	3.81E+02
3.65	46	660	11.00	1.73E+02	6.92E-02	1.28E+01	2.89E-35	1.77E-02	2.45E+03	2.17E-01	4.61E+04	0.00E+00	0.00E+00	4.25E+03	1.73E+02	1.59E+03	3.32E+02
3.65	48	660	12.69	6.02E+01	7.39E-02	1.26E+01	9.50E-39	1.85E-02	1.51E+03	2.26E-01	4.62E+04	0.00E+00	0.00E+00	2.74E+03	1.74E+02	1.47E+03	2.75E+02
3.65	50	660	14.61	1.69E+01	7.87E-02	1.24E+01	0.00E+00	1.93E-02	8.42E+02	2.35E-01	4.60E+04	0.00E+00	0.00E+00	1.64E+03	1.73E+02	1.33E+03	2.19E+02
3.65	52	660	16.75	4.05E+00	8.36E-02	1.19E+01	0.00E+00	2.01E-02	4.35E+02	2.45E-01	4.55E+04	0.00E+00	0.00E+00	9.26E+02	1.73E+02	1.18E+03	1.68E+02
3.81	34	660	5.75	4.62E+03	4.16E-02	1.00E+01	3.87E-18	1.28E-02	8.63E+03	1.68E-01	3.89E+04	0.00E+00	0.00E+00	1.71E+04	1.67E+02	1.49E+03	4.45E+02
3.81	36	660	6.23	3.50E+03	4.56E-02	1.07E+01	1.34E-20	1.36E-02	8.07E+03	1.77E-01	4.07E+04	0.00E+00	0.00E+00	1.51E+04	1.70E+02	1.58E+03	4.54E+02
3.81	38	660	6.83	2.47E+03	4.97E-02	1.13E+01	3.44E-21	1.44E-02	7.22E+03	1.86E-01	4.23E+04	0.00E+00	0.00E+00	1.30E+04	1.72E+02	1.64E+03	4.53E+02
3.81	40	660	7.56	1.61E+03	5.39E-02	1.18E+01	9.87E-24	1.52E-02	6.19E+03	1.96E-01	4.36E+04	0.00E+00	0.00E+00	1.08E+04	1.73E+02	1.69E+03	4.42E+02
3.81	42	660	8.44	9.31E+02	5.82E-02	1.22E+01	1.38E-26	1.60E-02	4.99E+03	2.05E-01	4.49E+04	0.00E+00	0.00E+00	8.57E+03	1.75E+02	1.70E+03	4.18E+02
3.81	44	660	9.54	4.61E+02	6.27E-02	1.25E+01	1.23E-29	1.68E-02	3.72E+03	2.14E-01	4.58E+04	0.00E+00	0.00E+00	6.41E+03	1.76E+02	1.66E+03	3.81E+02
3.81	46	660	10.89	1.87E+02	6.72E-02	1.25E+01	3.36E-33	1.76E-02	2.53E+03	2.23E-01	4.63E+04	0.00E+00	0.00E+00	4.47E+03	1.77E+02	1.59E+03	3.33E+02
3.81	48	660	12.54	6.53E+01	7.18E-02	1.24E+01	1.40E-38	1.84E-02	1.57E+03	2.32E-01	4.64E+04	0.00E+00	0.00E+00	2.90E+03	1.77E+02	1.48E+03	2.78E+02
3.81	50	660	14.44	1.86E+01	7.65E-02	1.21E+01	0.00E+00	1.92E-02	8.83E+02	2.42E-01	4.62E+04	0.00E+00	0.00E+00	1.74E+03	1.77E+02	1.34E+03	2.22E+02
3.81	52	660	16.48	4.78E+00	8.13E-02	1.17E+01	0.00E+00	2.00E-02	4.71E+02	2.51E-01	4.57E+04	0.00E+00	0.00E+00	1.01E+03	1.77E+02	1.20E+03	1.73E+02
4	34	660	5.72	4.59E+03	4.01E-02	9.75E+00	4.17E-18	1.27E-02	8.56E+03	1.74E-01	3.90E+04	0.00E+00	0.00E+00	1.75E+04	1.72E+02	1.47E+03	4.37E+02
4	36	660	6.19	3.47E+03	4.40E-02	1.04E+01	1.34E-20	1.35E-02	8.02E+03	1.83E-01	4.07E+04	0.00E+00	0.00E+00	1.55E+04	1.75E+02	1.57E+03	4.47E+02
4	38	660	6.77	2.50E+03	4.79E-02	1.10E+01	4.40E-21	1.43E-02	7.24E+03	1.93E-01	4.23E+04	0.00E+00	0.00E+00	1.35E+04	1.76E+02	1.63E+03	4.47E+02
3.81	40	660	7.56	1.61E+03	5.39E-02	1.18E+01	9.87E-24	1.52E-02	6.19E+03	1.96E-01	4.36E+04	0.00E+00	0.00E+00	1.08E+04	1.73E+02	1.69E+03	4.42E+02
4	42	660	8.36	9.48E+02	5.62E-02	1.19E+01	1.51E-26	1.59E-02	5.04E+03	2.12E-01	4.49E+04	0.00E+00	0.00E+00	8.91E+03	1.80E+02	1.69E+03	4.15E+02
4	44	660	9.44	4.78E+02	6.05E-02	1.22E+01	1.44E-29	1.67E-02	3.79E+03	2.21E-01	4.59E+04	0.00E+00	0.00E+00	6.70E+03	1.81E+02	1.66E+03	3.79E+02
4	46	660	10.76	2.02E+02	6.49E-02	1.23E+01	6.71E-33	1.75E-02	2.61E+03	2.31E-01	4.64E+04	0.00E+00	0.00E+00	4.71E+03	1.81E+02	1.60E+03	3.33E+02
4	48	660	12.35	7.13E+01	6.94E-02	1.21E+01	1.96E-38	1.83E-02	1.64E+03	2.40E-01	4.66E+04	0.00E+00	0.00E+00	3.09E+03	1.82E+02	1.50E+03	2.81E+02
4	50	660	14.21	2.06E+01	7.41E-02	1.19E+01	0.00E+00	1.91E-02	9.30E+02	2.49E-01	4.65E+04	0.00E+00	0.00E+00	1.88E+03	1.82E+02	1.36E+03	2.25E+02
4	52	660	16.28	5.24E+00	7.87E-02	1.15E+01	0.00E+00	1.99E-02	4.94E+02	2.59E-01	4.60E+04	0.00E+00	0.00E+00	1.08E+03	1.81E+02	1.21E+03	1.75E+02
4.08	34	660	5.70	4.58E+03	3.95E-02	9.65E+00	4.29E-18	1.27E-02	8.54E+03	1.76E-01	3.90E+04	0.00E+00	0.00E+00	1.76E+04	1.74E+02	1.47E+03	4.33E+02
4.08	36	660	6.17	3.46E+03	4.33E-02	1.03E+01	1.35E-20	1.35E-02	8.01E+03	1.86E-01	4.07E+04	0.00E+00	0.00E+00	1.57E+04	1.77E+02	1.56E+03	4.43E+02

E	B	DBwatt	time	ac227	pa231	u232	u233	u234	u235	u236	u238	np237	np239	pu238	pu239	pu240	pu241
3.03	50	660	15.60	2.98E-06	7.49E-06	1.88E-02	2.03E-05	3.77E-01	2.65E-03	1.11E-01	1.25E-01	1.89E-01	2.75E+01	2.15E+03	1.34E+02	2.90E+02	3.19E+04
3.03	52	660	17.78	3.34E-06	7.65E-06	2.02E-02	2.28E-05	3.87E-01	2.37E-03	1.11E-01	1.25E-01	1.96E-01	3.02E+01	2.27E+03	1.34E+02	2.96E+02	2.91E+04
3.4	26	660	4.36	6.61E-07	4.99E-06	3.25E-03	9.32E-06	5.12E-01	1.11E-02	9.88E-02	1.27E-01	9.18E-02	3.31E+00	5.48E+02	1.31E+02	1.65E+02	3.26E+04
3.4	28	660	4.68	7.67E-07	5.36E-06	4.00E-03	9.85E-06	4.97E-01	1.02E-02	1.03E-01	1.27E-01	1.01E-01	4.28E+00	6.55E+02	1.33E+02	1.77E+02	3.49E+04
3.4	30	660	4.97	8.75E-07	5.71E-06	4.85E-03	1.04E-05	4.83E-01	9.38E-03	1.06E-01	1.27E-01	1.11E-01	5.40E+00	7.70E+02	1.34E+02	1.90E+02	3.70E+04
3.4	32	660	5.41	1.01E-06	6.08E-06	5.83E-03	1.09E-05	4.69E-01	8.59E-03	1.10E-01	1.27E-01	1.20E-01	6.68E+00	8.93E+02	1.36E+02	2.01E+02	3.86E+04
3.4	34	660	5.83	1.15E-06	6.43E-06	6.92E-03	1.15E-05	4.57E-01	7.86E-03	1.13E-01	1.27E-01	1.29E-01	8.11E+00	1.02E+03	1.36E+02	2.12E+02	3.99E+04
3.4	36	660	6.36	1.31E-06	6.78E-06	8.14E-03	1.22E-05	4.45E-01	7.17E-03	1.15E-01	1.26E-01	1.38E-01	9.69E+00	1.17E+03	1.37E+02	2.23E+02	4.08E+04
3.4	38	660	6.94	1.49E-06	7.11E-06	9.48E-03	1.29E-05	4.36E-01	6.53E-03	1.17E-01	1.26E-01	1.47E-01	1.14E+01	1.31E+03	1.37E+02	2.33E+02	4.14E+04
3.4	40	660	7.72	1.71E-06	7.43E-06	1.09E-02	1.37E-05	4.27E-01	5.94E-03	1.19E-01	1.26E-01	1.56E-01	1.33E+01	1.45E+03	1.38E+02	2.42E+02	4.14E+04
3.4	42	660	8.66	1.96E-06	7.75E-06	1.25E-02	1.47E-05	4.20E-01	5.39E-03	1.21E-01	1.26E-01	1.65E-01	1.53E+01	1.60E+03	1.38E+02	2.51E+02	4.08E+04
3.4	44	660	9.79	2.24E-06	8.05E-06	1.42E-02	1.59E-05	4.16E-01	4.89E-03	1.22E-01	1.25E-01	1.73E-01	1.74E+01	1.75E+03	1.38E+02	2.60E+02	3.97E+04
3.4	46	660	11.28	2.60E-06	8.34E-06	1.59E-02	1.75E-05	4.15E-01	4.42E-03	1.23E-01	1.25E-01	1.82E-01	1.97E+01	1.89E+03	1.38E+02	2.68E+02	3.79E+04
3.4	48	660	13.03	2.99E-06	8.61E-06	1.75E-02	1.94E-05	4.18E-01	3.99E-03	1.24E-01	1.25E-01	1.90E-01	2.20E+01	2.03E+03	1.37E+02	2.76E+02	3.55E+04
3.4	50	660	14.96	3.40E-06	8.87E-06	1.91E-02	2.17E-05	4.24E-01	3.60E-03	1.25E-01	1.25E-01	1.98E-01	2.45E+01	2.17E+03	1.37E+02	2.83E+02	3.31E+04
3.4	52	660	17.09	3.83E-06	9.08E-06	2.06E-02	2.41E-05	4.33E-01	3.24E-03	1.25E-01	1.24E-01	2.06E-01	2.70E+01	2.30E+03	1.37E+02	2.90E+02	3.03E+04
3.65	34	660	5.78	1.24E-06	7.03E-06	6.87E-03	1.23E-05	4.98E-01	9.13E-03	1.19E-01	1.26E-01	1.31E-01	7.26E+00	1.00E+03	1.39E+02	2.06E+02	3.94E+04
3.65	36	660	6.28	1.41E-06	7.42E-06	8.08E-03	1.30E-05	4.86E-01	8.37E-03	1.22E-01	1.26E-01	1.40E-01	8.71E+00	1.14E+03	1.39E+02	2.17E+02	4.05E+04
3.65	38	660	6.86	1.61E-06	7.79E-06	9.42E-03	1.37E-05	4.75E-01	7.66E-03	1.24E-01	1.26E-01	1.50E-01	1.03E+01	1.28E+03	1.40E+02	2.27E+02	4.12E+04
3.65	40	660	7.63	1.85E-06	8.16E-06	1.09E-02	1.45E-05	4.66E-01	7.01E-03	1.27E-01	1.26E-01	1.59E-01	1.20E+01	1.43E+03	1.40E+02	2.37E+02	4.12E+04
3.65	42	660	8.54	2.12E-06	8.52E-06	1.25E-02	1.56E-05	4.58E-01	6.39E-03	1.29E-01	1.25E-01	1.68E-01	1.39E+01	1.58E+03	1.40E+02	2.46E+02	4.09E+04
3.65	44	660	9.64	2.44E-06	8.86E-06	1.42E-02	1.68E-05	4.52E-01	5.82E-03	1.30E-01	1.25E-01	1.77E-01	1.59E+01	1.73E+03	1.40E+02	2.55E+02	3.99E+04
3.65	46	660	11.00	2.80E-06	9.20E-06	1.59E-02	1.84E-05	4.50E-01	5.30E-03	1.32E-01	1.25E-01	1.86E-01	1.80E+01	1.88E+03	1.40E+02	2.63E+02	3.84E+04
3.65	48	660	12.69	3.22E-06	9.52E-06	1.76E-02	2.03E-05	4.51E-01	4.81E-03	1.33E-01	1.25E-01	1.95E-01	2.02E+01	2.03E+03	1.40E+02	2.71E+02	3.63E+04
3.65	50	660	14.61	3.69E-06	9.81E-06	1.92E-02	2.25E-05	4.56E-01	4.35E-03	1.34E-01	1.24E-01	2.03E-01	2.26E+01	2.17E+03	1.40E+02	2.79E+02	3.37E+04
3.65	52	660	16.75	4.17E-06	1.01E-05	2.08E-02	2.51E-05	4.64E-01	3.94E-03	1.35E-01	1.24E-01	2.11E-01	2.50E+01	2.30E+03	1.39E+02	2.86E+02	3.10E+04
3.81	34	660	5.75	1.30E-06	7.43E-06	6.84E-03	1.28E-05	5.26E-01	9.98E-03	1.22E-01	1.26E-01	1.32E-01	6.77E+00	9.84E+02	1.40E+02	2.02E+02	3.91E+04
3.81	36	660	6.23	1.49E-06	7.84E-06	8.05E-03	1.35E-05	5.14E-01	9.18E-03	1.26E-01	1.26E-01	1.41E-01	8.15E+00	1.12E+03	1.41E+02	2.13E+02	4.03E+04
3.81	38	660	6.83	1.69E-06	8.25E-06	9.39E-03	1.43E-05	5.01E-01	8.43E-03	1.28E-01	1.26E-01	1.51E-01	9.66E+00	1.26E+03	1.42E+02	2.23E+02	4.09E+04
3.81	40	660	7.56	1.94E-06	8.65E-06	1.09E-02	1.51E-05	4.91E-01	7.73E-03	1.31E-01	1.26E-01	1.61E-01	1.13E+01	1.41E+03	1.42E+02	2.33E+02	4.12E+04
3.81	42	660	8.44	2.22E-06	9.04E-06	1.25E-02	1.62E-05	4.83E-01	7.08E-03	1.33E-01	1.25E-01	1.70E-01	1.31E+01	1.57E+03	1.42E+02	2.42E+02	4.09E+04
3.81	44	660	9.54	2.56E-06	9.42E-06	1.42E-02	1.74E-05	4.77E-01	6.46E-03	1.35E-01	1.25E-01	1.79E-01	1.50E+01	1.71E+03	1.42E+02	2.51E+02	4.01E+04
3.81	46	660	10.89	2.94E-06	9.79E-06	1.59E-02	1.90E-05	4.74E-01	5.90E-03	1.37E-01	1.25E-01	1.88E-01	1.70E+01	1.87E+03	1.42E+02	2.60E+02	3.86E+04
3.81	48	660	12.54	3.39E-06	1.02E-05	1.76E-02	2.09E-05	4.74E-01	5.37E-03	1.38E-01	1.25E-01	1.97E-01	1.92E+01	2.01E+03	1.42E+02	2.68E+02	3.65E+04
3.81	50	660	14.44	3.88E-06	1.04E-05	1.93E-02	2.31E-05	4.79E-01	4.88E-03	1.39E-01	1.24E-01	2.06E-01	2.14E+01	2.16E+03	1.41E+02	2.76E+02	3.40E+04
3.81	52	660	16.48	4.39E-06	1.07E-05	2.09E-02	2.57E-05	4.85E-01	4.43E-03	1.40E-01	1.24E-01	2.14E-01	2.38E+01	2.30E+03	1.41E+02	2.83E+02	3.14E+04
4	34	660	5.72	1.37E-06	7.90E-06	6.80E-03	1.34E-05	5.59E-01	1.10E-02	1.27E-01	1.26E-01	1.33E-01	6.24E+00	9.65E+02	1.42E+02	1.98E+02	3.86E+04
4	36	660	6.19	1.57E-06	8.35E-06	8.01E-03	1.41E-05	5.46E-01	1.02E-02	1.30E-01	1.26E-01	1.42E-01	7.53E+00	1.10E+03	1.43E+02	2.08E+02	3.99E+04
4	38	660	6.77	1.79E-06	8.79E-06	9.35E-03	1.49E-05	5.33E-01	9.38E-03	1.33E-01	1.26E-01	1.52E-01	8.96E+00	1.24E+03	1.43E+02	2.19E+02	4.08E+04
3.81	40	660	7.56	1.94E-06	8.65E-06	1.09E-02	1.51E-05	4.91E-01	7.73E-03	1.31E-01	1.26E-01	1.61E-01	1.13E+01	1.41E+03	1.42E+02	2.33E+02	4.12E+04
4	42	660	8.36	2.35E-06	9.65E-06	1.24E-02	1.68E-05	5.13E-01	7.93E-03	1.39E-01	1.25E-01	1.72E-01	1.22E+01	1.55E+03	1.44E+02	2.38E+02	4.09E+04
4	44	660	9.44	2.70E-06	1.01E-05	1.41E-02	1.81E-05	5.06E-01	7.27E-03	1.41E-01	1.25E-01	1.81E-01	1.40E+01	1.70E+03	1.44E+02	2.47E+02	4.01E+04
4	46	660	10.76	3.11E-06	1.05E-05	1.59E-02	1.97E-05	5.03E-01	6.66E-03	1.43E-01	1.25E-01	1.91E-01	1.60E+01	1.85E+03	1.44E+02	2.56E+02	3.88E+04
4	48	660	12.35	3.58E-06	1.09E-05	1.76E-02	2.16E-05	5.02E-01	6.08E-03	1.44E-01	1.24E-01	2.00E-01	1.80E+01	2.00E+03	1.44E+02	2.64E+02	3.69E+04
4	50	660	14.21	4.11E-06	1.12E-05	1.93E-02	2.39E-05	5.05E-01	5.55E-03	1.46E-01	1.24E-01	2.09E-01	2.02E+01	2.15E+03	1.44E+02	2.72E+02	3.44E+04
4	52	660	16.28	4.67E-06	1.16E-05	2.10E-02	2.65E-05	5.12E-01	5.05E-03	1.47E-01	1.24E-01	2.18E-01	2.24E+01	2.29E+03	1.43E+02	2.80E+02	3.18E+04
4.08	34	660	5.70	1.41E-06	8.09E-06	6.79E-03	1.37E-05	5.73E-01	1.15E-02	1.28E-01	1.26E-01	1.33E-01	6.04E+00	9.57E+02	1.43E+02	1.96E+02	3.85E+04
4.08	36	660	6.17	1.60E-06	8.56E-06	7.99E-03	1.44E-05	5.59E-01	1.06E-02	1.32E-01	1.26E-01	1.43E-01	7.29E+00	1.09E+03	1.43E+02	2.07E+02	3.98E+04

E	B	DBwatt	time	pu242	am241	am242	am242m	am243	cm242	cm243	cm244	cm245	cm246	th230
3.03	50	660	15.60	1.88E+00	1.23E+03	3.56E+00	3.57E+00	2.75E+01	2.94E+00	1.28E+01	3.04E+03	4.60E-01	2.30E-01	5.53E-05
3.03	52	660	17.78	2.01E+00	1.36E+03	3.59E+00	3.61E+00	3.02E+01	2.97E+00	1.32E+01	3.24E+03	5.39E-01	2.88E-01	6.19E-05
3.4	26	660	4.36	4.22E-01	2.80E+02	1.62E+00	1.63E+00	3.31E+00	1.18E+01	1.95E+00	2.25E+02	1.48E-02	2.42E-03	2.87E-05
3.4	28	660	4.68	5.05E-01	3.24E+02	1.87E+00	1.88E+00	4.28E+00	9.98E+00	2.57E+00	3.15E+02	2.23E-02	4.05E-03	2.98E-05
3.4	30	660	4.97	5.94E-01	3.68E+02	2.13E+00	2.14E+00	5.40E+00	6.84E+00	3.29E+00	4.28E+02	3.24E-02	6.48E-03	3.07E-05
3.4	32	660	5.41	6.88E-01	4.20E+02	2.38E+00	2.39E+00	6.68E+00	5.63E+00	4.10E+00	5.65E+02	4.55E-02	1.00E-02	3.21E-05
3.4	34	660	5.83	7.89E-01	4.72E+02	2.60E+00	2.61E+00	8.11E+00	4.31E+00	5.00E+00	7.31E+02	6.23E-02	1.50E-02	3.33E-05
3.4	36	660	6.36	8.94E-01	5.32E+02	2.82E+00	2.84E+00	9.69E+00	3.42E+00	5.97E+00	9.22E+02	8.33E-02	2.19E-02	3.49E-05
3.4	38	660	6.94	1.00E+00	5.95E+02	3.02E+00	3.04E+00	1.14E+01	2.95E+00	6.99E+00	1.14E+03	1.09E-01	3.12E-02	3.65E-05
3.4	40	660	7.72	1.12E+00	6.70E+02	3.21E+00	3.22E+00	1.33E+01	2.83E+00	8.02E+00	1.38E+03	1.40E-01	4.35E-02	3.88E-05
3.4	42	660	8.66	1.23E+00	7.54E+02	3.36E+00	3.38E+00	1.53E+01	2.83E+00	9.05E+00	1.64E+03	1.77E-01	5.94E-02	4.17E-05
3.4	44	660	9.79	1.35E+00	8.50E+02	3.50E+00	3.51E+00	1.74E+01	2.91E+00	1.00E+01	1.90E+03	2.19E-01	7.97E-02	4.50E-05
3.4	46	660	11.28	1.47E+00	9.64E+02	3.61E+00	3.63E+00	1.97E+01	2.99E+00	1.08E+01	2.16E+03	2.68E-01	1.05E-01	4.97E-05
3.4	48	660	13.03	1.59E+00	1.08E+03	3.70E+00	3.72E+00	2.20E+01	3.07E+00	1.16E+01	2.39E+03	3.24E-01	1.36E-01	5.53E-05
3.4	50	660	14.96	1.72E+00	1.21E+03	3.77E+00	3.79E+00	2.45E+01	3.12E+00	1.22E+01	2.60E+03	3.87E-01	1.74E-01	6.15E-05
3.4	52	660	17.09	1.84E+00	1.33E+03	3.82E+00	3.84E+00	2.70E+01	3.16E+00	1.27E+01	2.79E+03	4.57E-01	2.20E-01	6.86E-05
3.65	34	660	5.78	7.24E-01	4.63E+02	2.62E+00	2.64E+00	7.26E+00	4.44E+00	4.59E+00	6.29E+02	5.34E-02	1.20E-02	3.62E-05
3.65	36	660	6.28	8.23E-01	5.21E+02	2.86E+00	2.87E+00	8.71E+00	3.48E+00	5.51E+00	7.99E+02	7.17E-02	1.75E-02	3.77E-05
3.65	38	660	6.86	9.27E-01	5.85E+02	3.08E+00	3.09E+00	1.03E+01	3.07E+00	6.49E+00	9.94E+02	9.44E-02	2.51E-02	3.96E-05
3.65	40	660	7.63	1.03E+00	6.60E+02	3.28E+00	3.29E+00	1.20E+01	2.91E+00	7.49E+00	1.21E+03	1.22E-01	3.52E-02	4.21E-05
3.65	42	660	8.54	1.15E+00	7.44E+02	3.45E+00	3.47E+00	1.39E+01	2.91E+00	8.50E+00	1.44E+03	1.54E-01	4.83E-02	4.51E-05
3.65	44	660	9.64	1.26E+00	8.40E+02	3.61E+00	3.62E+00	1.59E+01	3.00E+00	9.47E+00	1.67E+03	1.93E-01	6.51E-02	4.87E-05
3.65	46	660	11.00	1.38E+00	9.48E+02	3.73E+00	3.75E+00	1.80E+01	3.09E+00	1.04E+01	1.91E+03	2.37E-01	8.62E-02	5.33E-05
3.65	48	660	12.69	1.49E+00	1.07E+03	3.84E+00	3.86E+00	2.02E+01	3.18E+00	1.12E+01	2.14E+03	2.88E-01	1.13E-01	5.91E-05
3.65	50	660	14.61	1.62E+00	1.20E+03	3.92E+00	3.94E+00	2.26E+01	3.24E+00	1.18E+01	2.35E+03	3.45E-01	1.45E-01	6.59E-05
3.65	52	660	16.75	1.74E+00	1.33E+03	3.98E+00	4.00E+00	2.50E+01	3.29E+00	1.23E+01	2.52E+03	4.10E-01	1.84E-01	7.35E-05
3.81	34	660	5.75	6.86E-01	4.57E+02	2.63E+00	2.65E+00	6.77E+00	4.49E+00	4.34E+00	5.74E+02	4.85E-02	1.04E-02	3.81E-05
3.81	36	660	6.23	7.81E-01	5.15E+02	2.88E+00	2.90E+00	8.15E+00	3.52E+00	5.24E+00	7.31E+02	6.54E-02	1.53E-02	3.98E-05
3.81	38	660	6.83	8.81E-01	5.80E+02	3.11E+00	3.12E+00	9.66E+00	3.11E+00	6.19E+00	9.09E+02	8.62E-02	2.19E-02	4.18E-05
3.81	40	660	7.56	9.85E-01	6.54E+02	3.32E+00	3.33E+00	1.13E+01	2.96E+00	7.17E+00	1.11E+03	1.12E-01	3.08E-02	4.43E-05
3.81	42	660	8.44	1.09E+00	7.36E+02	3.51E+00	3.52E+00	1.31E+01	2.96E+00	8.16E+00	1.33E+03	1.42E-01	4.24E-02	4.74E-05
3.81	44	660	9.54	1.20E+00	8.32E+02	3.67E+00	3.69E+00	1.50E+01	3.05E+00	9.13E+00	1.55E+03	1.78E-01	5.73E-02	5.12E-05
3.81	46	660	10.89	1.32E+00	9.41E+02	3.81E+00	3.82E+00	1.70E+01	3.15E+00	1.00E+01	1.78E+03	2.19E-01	7.61E-02	5.60E-05
3.81	48	660	12.54	1.43E+00	1.06E+03	3.92E+00	3.94E+00	1.92E+01	3.25E+00	1.08E+01	1.99E+03	2.67E-01	9.97E-02	6.20E-05
3.81	50	660	14.44	1.55E+00	1.19E+03	4.01E+00	4.03E+00	2.14E+01	3.32E+00	1.15E+01	2.19E+03	3.21E-01	1.29E-01	6.89E-05
3.81	52	660	16.48	1.67E+00	1.31E+03	4.08E+00	4.09E+00	2.38E+01	3.38E+00	1.21E+01	2.37E+03	3.82E-01	1.64E-01	7.66E-05
4	34	660	5.72	6.44E-01	4.50E+02	2.65E+00	2.66E+00	6.24E+00	4.53E+00	4.08E+00	5.16E+02	4.33E-02	8.79E-03	4.04E-05
4	36	660	6.19	7.35E-01	5.07E+02	2.90E+00	2.92E+00	7.53E+00	3.53E+00	4.93E+00	6.58E+02	5.86E-02	1.30E-02	4.22E-05
4	38	660	6.77	8.31E-01	5.71E+02	3.14E+00	3.15E+00	8.96E+00	3.19E+00	5.84E+00	8.21E+02	7.76E-02	1.87E-02	4.43E-05
3.81	40	660	7.56	9.85E-01	6.54E+02	3.32E+00	3.33E+00	1.13E+01	2.96E+00	7.17E+00	1.11E+03	1.12E-01	3.08E-02	4.43E-05
4	42	660	8.36	1.03E+00	7.28E+02	3.56E+00	3.58E+00	1.22E+01	3.01E+00	7.78E+00	1.20E+03	1.29E-01	3.64E-02	5.01E-05
4	44	660	9.44	1.14E+00	8.24E+02	3.74E+00	3.76E+00	1.40E+01	3.12E+00	8.73E+00	1.41E+03	1.62E-01	4.94E-02	5.42E-05
4	46	660	10.76	1.25E+00	9.32E+02	3.89E+00	3.91E+00	1.60E+01	3.22E+00	9.64E+00	1.62E+03	2.00E-01	6.56E-02	5.91E-05
4	48	660	12.35	1.36E+00	1.05E+03	4.02E+00	4.04E+00	1.80E+01	3.33E+00	1.04E+01	1.83E+03	2.44E-01	8.65E-02	6.52E-05
4	50	660	14.21	1.48E+00	1.18E+03	4.12E+00	4.14E+00	2.02E+01	3.42E+00	1.11E+01	2.01E+03	2.95E-01	1.12E-01	7.24E-05
4	52	660	16.28	1.60E+00	1.31E+03	4.19E+00	4.21E+00	2.24E+01	3.47E+00	1.17E+01	2.18E+03	3.52E-01	1.43E-01	8.06E-05
4.08	34	660	5.70	6.27E-01	4.47E+02	2.65E+00	2.66E+00	6.04E+00	4.55E+00	3.97E+00	4.94E+02	4.14E-02	8.21E-03	4.13E-05
4.08	36	660	6.17	7.17E-01	5.04E+02	2.91E+00	2.92E+00	7.29E+00	3.53E+00	4.81E+00	6.30E+02	5.61E-02	1.21E-02	4.31E-05

E	B	DBwatt	time	h3	c14	cl36	co60	se79	kr81	kr85	sr89	sr90	y90	nb94	zr95	tc99	ru103
4.08	38	660	6.77	2.21E+02	9.68E-01	2.95E-02	7.05E+02	3.09E-02	3.58E-08	2.75E+03	8.63E-09	3.10E+04	3.10E+04	5.62E-02	9.29E-06	6.30E+00	2.59E-12
4.08	40	660	7.47	2.21E+02	1.03E+00	3.13E-02	6.75E+02	3.24E-02	4.04E-08	2.73E+03	1.26E-10	3.16E+04	3.16E+04	5.95E-02	3.85E-07	6.58E+00	9.39E-15
4.08	42	660	8.33	2.20E+02	1.09E+00	3.31E-02	6.31E+02	3.39E-02	4.55E-08	2.66E+03	1.03E-12	3.20E+04	3.20E+04	6.28E-02	9.13E-09	6.85E+00	1.89E-17
4.08	44	660	9.38	2.15E+02	1.16E+00	3.49E-02	5.74E+02	3.54E-02	5.10E-08	2.57E+03	6.18E-15	3.23E+04	3.23E+04	6.61E-02	1.59E-10	7.11E+00	2.77E-20
4.08	46	660	10.69	2.07E+02	1.22E+00	3.68E-02	5.04E+02	3.68E-02	5.69E-08	2.44E+03	2.04E-17	3.22E+04	3.22E+04	6.95E-02	1.57E-12	7.37E+00	2.23E-23
4.08	48	660	12.30	1.95E+02	1.29E+00	3.86E-02	4.24E+02	3.83E-02	6.34E-08	2.26E+03	2.00E-21	3.19E+04	3.19E+04	7.30E-02	1.25E-15	7.62E+00	1.28E-28
4.08	50	660	14.14	1.82E+02	1.36E+00	4.05E-02	3.45E+02	3.97E-02	7.04E-08	2.05E+03	1.06E-25	3.13E+04	3.13E+04	7.64E-02	5.56E-19	7.87E+00	3.95E-34
4.08	52	660	16.15	1.67E+02	1.43E+00	4.25E-02	2.75E+02	4.12E-02	7.78E-08	1.85E+03	4.56E-30	3.06E+04	3.06E+04	7.98E-02	2.00E-22	8.11E+00	0.00E+00
4.2	38	660	6.73	2.20E+02	9.44E-01	2.88E-02	6.98E+02	3.09E-02	3.49E-08	2.78E+03	1.00E-08	3.13E+04	3.13E+04	5.56E-02	1.06E-05	6.31E+00	2.94E-12
4.2	40	660	7.42	2.21E+02	1.00E+00	3.05E-02	6.69E+02	3.24E-02	3.94E-08	2.75E+03	1.38E-10	3.20E+04	3.20E+04	5.88E-02	4.17E-07	6.59E+00	1.00E-14
4.2	42	660	8.26	2.19E+02	1.07E+00	3.23E-02	6.27E+02	3.39E-02	4.44E-08	2.70E+03	1.16E-12	3.24E+04	3.24E+04	6.21E-02	1.01E-08	6.86E+00	2.07E-17
4.2	44	660	9.31	2.15E+02	1.13E+00	3.41E-02	5.71E+02	3.54E-02	4.98E-08	2.61E+03	7.02E-15	3.26E+04	3.26E+04	6.54E-02	1.78E-10	7.13E+00	3.07E-20
4.2	46	660	10.62	2.07E+02	1.19E+00	3.59E-02	5.00E+02	3.69E-02	5.55E-08	2.46E+03	2.53E-17	3.26E+04	3.26E+04	6.87E-02	1.90E-12	7.39E+00	2.70E-23
4.2	48	660	12.19	1.96E+02	1.26E+00	3.77E-02	4.24E+02	3.84E-02	6.18E-08	2.29E+03	2.33E-21	3.22E+04	3.22E+04	7.20E-02	1.45E-15	7.64E+00	1.46E-28
4.2	50	660	14.02	1.82E+02	1.32E+00	3.96E-02	3.45E+02	3.98E-02	6.86E-08	2.09E+03	1.23E-25	3.17E+04	3.17E+04	7.55E-02	6.33E-19	7.89E+00	4.45E-34
4.2	52	660	16.02	1.68E+02	1.39E+00	4.15E-02	2.75E+02	4.13E-02	7.59E-08	1.88E+03	5.36E-30	3.10E+04	3.10E+04	7.89E-02	2.31E-22	8.13E+00	0.00E+00
4.3	38	660	6.71	2.20E+02	9.25E-01	2.82E-02	6.92E+02	3.10E-02	3.42E-08	2.79E+03	1.08E-08	3.15E+04	3.15E+04	5.50E-02	1.13E-05	6.33E+00	3.11E-12
4.3	40	660	7.40	2.21E+02	9.84E-01	2.99E-02	6.63E+02	3.25E-02	3.86E-08	2.78E+03	1.45E-10	3.22E+04	3.22E+04	5.82E-02	4.34E-07	6.60E+00	1.04E-14
4.3	42	660	8.22	2.19E+02	1.04E+00	3.16E-02	6.22E+02	3.40E-02	4.35E-08	2.72E+03	1.23E-12	3.26E+04	3.26E+04	6.15E-02	1.07E-08	6.88E+00	2.16E-17
4.3	44	660	9.28	2.14E+02	1.11E+00	3.34E-02	5.66E+02	3.55E-02	4.88E-08	2.63E+03	7.47E-15	3.29E+04	3.29E+04	6.48E-02	1.88E-10	7.14E+00	3.21E-20
4.3	46	660	10.56	2.07E+02	1.17E+00	3.52E-02	4.99E+02	3.70E-02	5.44E-08	2.49E+03	3.00E-17	3.29E+04	3.29E+04	6.80E-02	2.23E-12	7.40E+00	3.15E-23
4.3	48	660	12.09	1.96E+02	1.23E+00	3.70E-02	4.24E+02	3.85E-02	6.06E-08	2.32E+03	2.66E-21	3.26E+04	3.26E+04	7.14E-02	1.64E-15	7.66E+00	1.63E-28
4.3	50	660	13.87	1.83E+02	1.30E+00	3.88E-02	3.48E+02	3.99E-02	6.73E-08	2.13E+03	2.65E-24	3.21E+04	3.21E+04	7.48E-02	5.09E-18	7.91E+00	3.86E-32
4.3	52	660	15.95	1.68E+02	1.36E+00	4.07E-02	2.75E+02	4.14E-02	7.44E-08	1.91E+03	4.42E-29	3.13E+04	3.13E+04	7.82E-02	8.04E-22	8.15E+00	3.38E-38
4.48	38	660	6.68	2.19E+02	8.93E-01	2.72E-02	6.80E+02	3.10E-02	3.30E-08	2.83E+03	1.24E-08	3.19E+04	3.19E+04	5.41E-02	1.28E-05	6.35E+00	3.47E-12
4.48	40	660	7.34	2.20E+02	9.49E-01	2.88E-02	6.54E+02	3.26E-02	3.73E-08	2.82E+03	1.63E-10	3.26E+04	3.26E+04	5.73E-02	4.77E-07	6.63E+00	1.12E-14
4.48	42	660	8.16	2.19E+02	1.01E+00	3.05E-02	6.14E+02	3.41E-02	4.20E-08	2.76E+03	1.35E-12	3.31E+04	3.31E+04	6.05E-02	1.15E-08	6.90E+00	2.29E-17
4.48	44	660	9.18	2.15E+02	1.07E+00	3.22E-02	5.61E+02	3.56E-02	4.71E-08	2.67E+03	8.65E-15	3.34E+04	3.34E+04	6.37E-02	2.15E-10	7.17E+00	3.61E-20
4.48	46	660	10.45	2.07E+02	1.13E+00	3.40E-02	4.96E+02	3.71E-02	5.25E-08	2.54E+03	3.78E-17	3.34E+04	3.34E+04	6.69E-02	2.75E-12	7.43E+00	3.85E-23
4.48	48	660	11.98	1.97E+02	1.19E+00	3.57E-02	4.21E+02	3.86E-02	5.85E-08	2.36E+03	1.07E-20	3.31E+04	3.31E+04	7.02E-02	3.40E-15	7.69E+00	2.11E-27
4.48	50	660	13.75	1.84E+02	1.25E+00	3.75E-02	3.47E+02	4.00E-02	6.49E-08	2.17E+03	5.03E-24	3.26E+04	3.26E+04	7.36E-02	9.16E-18	7.94E+00	7.21E-32
4.48	52	660	15.76	1.69E+02	1.32E+00	3.93E-02	2.76E+02	4.15E-02	7.18E-08	1.95E+03	2.13E-28	3.19E+04	3.19E+04	7.69E-02	3.23E-21	8.19E+00	1.76E-37

E	B	DBwatt	time	ru106	pd107	cd113m	xe127	i129	cs134	cs135	cs137	i137	xe137	pm147	sm151	eu154	eu155
4.08	38	660	6.77	2.49E+03	4.72E-02	1.09E+01	4.46E-21	1.43E-02	7.21E+03	1.96E+01	4.23E+04	0.00E+00	0.00E+00	1.35E+04	1.78E+02	1.63E+03	4.43E+02
4.08	40	660	7.47	1.64E+03	5.13E-02	1.14E+01	1.12E-23	1.51E-02	6.23E+03	2.05E-01	4.38E+04	0.00E+00	0.00E+00	1.13E+04	1.80E+02	1.67E+03	4.35E+02
4.08	42	660	8.33	9.55E+02	5.54E-02	1.18E+01	1.55E-26	1.59E-02	5.05E+03	2.15E-01	4.50E+04	0.00E+00	0.00E+00	9.04E+03	1.82E+02	1.69E+03	4.13E+02
4.08	44	660	9.38	4.89E+02	5.97E-02	1.21E+01	1.55E-29	1.67E-02	3.83E+03	2.24E-01	4.59E+04	0.00E+00	0.00E+00	6.85E+03	1.83E+02	1.67E+03	3.80E+02
4.08	46	660	10.69	2.10E+02	6.40E-02	1.21E+01	8.44E-33	1.75E-02	2.65E+03	2.34E-01	4.65E+04	0.00E+00	0.00E+00	4.84E+03	1.83E+02	1.60E+03	3.34E+02
4.08	48	660	12.30	7.26E+01	6.85E-02	1.20E+01	2.12E-38	1.83E-02	1.65E+03	2.43E-01	4.67E+04	0.00E+00	0.00E+00	3.15E+03	1.84E+02	1.49E+03	2.81E+02
4.08	50	660	14.14	2.11E+01	7.30E-02	1.18E+01	0.00E+00	1.90E-02	9.44E+02	2.53E-01	4.65E+04	0.00E+00	0.00E+00	1.92E+03	1.83E+02	1.36E+03	2.26E+02
4.08	52	660	16.15	5.57E+00	7.77E-02	1.14E+01	0.00E+00	1.98E-02	5.11E+02	2.62E-01	4.61E+04	0.00E+00	0.00E+00	1.13E+03	1.83E+02	1.22E+03	1.77E+02
4.2	38	660	6.73	2.51E+03	4.62E-02	1.07E+01	4.99E-21	1.42E-02	7.22E+03	2.00E-01	4.24E+04	0.00E+00	0.00E+00	1.38E+04	1.82E+02	1.62E+03	4.40E+02
4.2	40	660	7.42	1.66E+03	5.02E-02	1.12E+01	1.18E-23	1.50E-02	6.25E+03	2.10E-01	4.39E+04	0.00E+00	0.00E+00	1.15E+04	1.83E+02	1.67E+03	4.32E+02
4.2	42	660	8.26	9.76E+02	5.42E-02	1.16E+01	1.66E-26	1.58E-02	5.10E+03	2.19E-01	4.50E+04	0.00E+00	0.00E+00	9.29E+03	1.84E+02	1.69E+03	4.12E+02
4.2	44	660	9.31	5.00E+02	5.84E-02	1.19E+01	1.68E-29	1.66E-02	3.87E+03	2.29E-01	4.60E+04	0.00E+00	0.00E+00	7.04E+03	1.86E+02	1.67E+03	3.79E+02
4.2	46	660	10.62	2.17E+02	6.27E-02	1.19E+01	1.00E-32	1.74E-02	2.68E+03	2.38E-01	4.66E+04	0.00E+00	0.00E+00	4.99E+03	1.86E+02	1.61E+03	3.34E+02
4.2	48	660	12.19	7.57E+01	6.71E-02	1.19E+01	2.02E-38	1.82E-02	1.69E+03	2.48E-01	4.68E+04	0.00E+00	0.00E+00	3.28E+03	1.87E+02	1.51E+03	2.81E+02
4.2	50	660	14.02	2.20E+01	7.16E-02	1.16E+01	0.00E+00	1.90E-02	9.67E+02	2.58E-01	4.67E+04	0.00E+00	0.00E+00	2.01E+03	1.86E+02	1.38E+03	2.27E+02
4.2	52	660	16.02	5.87E+00	7.62E-02	1.12E+01	0.00E+00	1.98E-02	5.26E+02	2.67E-01	4.63E+04	0.00E+00	0.00E+00	1.17E+03	1.85E+02	1.24E+03	1.79E+02
4.3	38	660	6.71	2.51E+03	4.54E-02	1.06E+01	5.18E-21	1.42E-02	7.20E+03	2.03E-01	4.24E+04	0.00E+00	0.00E+00	1.40E+04	1.84E+02	1.62E+03	4.36E+02
4.3	40	660	7.40	1.66E+03	4.93E-02	1.11E+01	1.19E-23	1.50E-02	6.24E+03	2.13E-01	4.39E+04	0.00E+00	0.00E+00	1.17E+04	1.86E+02	1.67E+03	4.29E+02
4.3	42	660	8.22	9.79E+02	5.33E-02	1.15E+01	1.70E-26	1.58E-02	5.11E+03	2.23E-01	4.52E+04	0.00E+00	0.00E+00	9.45E+03	1.87E+02	1.69E+03	4.10E+02
4.3	44	660	9.28	5.04E+02	5.74E-02	1.17E+01	1.72E-29	1.66E-02	3.88E+03	2.33E-01	4.60E+04	0.00E+00	0.00E+00	7.17E+03	1.88E+02	1.66E+03	3.77E+02
4.3	46	660	10.56	2.24E+02	6.16E-02	1.18E+01	1.15E-32	1.73E-02	2.72E+03	2.42E-01	4.67E+04	0.00E+00	0.00E+00	5.12E+03	1.89E+02	1.61E+03	3.34E+02
4.3	48	660	12.09	7.89E+01	6.60E-02	1.18E+01	2.29E-38	1.81E-02	1.73E+03	2.52E-01	4.69E+04	0.00E+00	0.00E+00	3.39E+03	1.89E+02	1.51E+03	2.83E+02
4.3	50	660	13.87	2.48E+01	7.04E-02	1.15E+01	0.00E+00	1.89E-02	1.02E+03	2.62E-01	4.68E+04	0.00E+00	0.00E+00	2.12E+03	1.88E+02	1.39E+03	2.31E+02
4.3	52	660	15.95	6.11E+00	7.49E-02	1.11E+01	0.00E+00	1.97E-02	5.35E+02	2.71E-01	4.64E+04	0.00E+00	0.00E+00	1.21E+03	1.88E+02	1.24E+03	1.79E+02
4.48	38	660	6.68	2.50E+03	4.40E-02	1.03E+01	5.61E-21	1.41E-02	7.18E+03	2.10E-01	4.24E+04	0.00E+00	0.00E+00	1.43E+04	1.89E+02	1.60E+03	4.29E+02
4.48	40	660	7.34	1.67E+03	4.78E-02	1.08E+01	1.25E-23	1.49E-02	6.25E+03	2.20E-01	4.40E+04	0.00E+00	0.00E+00	1.21E+04	1.90E+02	1.66E+03	4.24E+02
4.48	42	660	8.16	9.84E+02	5.17E-02	1.12E+01	1.76E-26	1.57E-02	5.13E+03	2.30E-01	4.52E+04	0.00E+00	0.00E+00	9.72E+03	1.92E+02	1.68E+03	4.06E+02
4.48	44	660	9.18	5.18E+02	5.57E-02	1.15E+01	1.88E-29	1.65E-02	3.94E+03	2.40E-01	4.62E+04	0.00E+00	0.00E+00	7.46E+03	1.93E+02	1.67E+03	3.76E+02
4.48	46	660	10.45	2.34E+02	5.98E-02	1.16E+01	1.36E-32	1.73E-02	2.78E+03	2.49E-01	4.68E+04	0.00E+00	0.00E+00	5.35E+03	1.94E+02	1.61E+03	3.34E+02
4.48	48	660	11.98	8.17E+01	6.40E-02	1.15E+01	4.87E-37	1.81E-02	1.76E+03	2.59E-01	4.70E+04	0.00E+00	0.00E+00	3.54E+03	1.94E+02	1.51E+03	2.83E+02
4.48	50	660	13.75	2.67E+01	6.83E-02	1.13E+01	0.00E+00	1.88E-02	1.05E+03	2.69E-01	4.70E+04	0.00E+00	0.00E+00	2.23E+03	1.93E+02	1.40E+03	2.32E+02
4.48	52	660	15.76	7.07E+00	7.28E-02	1.09E+01	0.00E+00	1.96E-02	5.69E+02	2.79E-01	4.66E+04	0.00E+00	0.00E+00	1.31E+03	1.92E+02	1.25E+03	1.83E+02

E	B	DBwatt	time	ac227	pa231	u232	u233	u234	u235	u236	u238	np237	np239	pu238	pu239	pu240	pu241
4.08	38	660	6.77	1.83E-06	9.01E-06	9.33E-03	1.51E-05	5.46E-01	9.80E-03	1.35E-01	1.25E-01	1.53E-01	8.68E+00	1.23E+03	1.44E+02	2.17E+02	4.06E+04
4.08	40	660	7.47	2.09E-06	9.46E-06	1.08E-02	1.61E-05	5.35E-01	9.03E-03	1.38E-01	1.25E-01	1.63E-01	1.02E+01	1.39E+03	1.45E+02	2.27E+02	4.10E+04
4.08	42	660	8.33	2.40E-06	9.90E-06	1.24E-02	1.72E-05	5.26E-01	8.30E-03	1.41E-01	1.25E-01	1.72E-01	1.19E+01	1.54E+03	1.45E+02	2.37E+02	4.09E+04
4.08	44	660	9.38	2.75E-06	1.03E-05	1.41E-02	1.84E-05	5.19E-01	7.62E-03	1.43E-01	1.25E-01	1.82E-01	1.36E+01	1.69E+03	1.45E+02	2.46E+02	4.02E+04
4.08	46	660	10.69	3.18E-06	1.08E-05	1.59E-02	2.00E-05	5.14E-01	6.99E-03	1.45E-01	1.25E-01	1.92E-01	1.55E+01	1.84E+03	1.45E+02	2.54E+02	3.89E+04
4.08	48	660	12.30	3.67E-06	1.12E-05	1.76E-02	2.19E-05	5.13E-01	6.40E-03	1.47E-01	1.24E-01	2.01E-01	1.76E+01	1.99E+03	1.45E+02	2.63E+02	3.69E+04
4.08	50	660	14.14	4.20E-06	1.16E-05	1.93E-02	2.42E-05	5.16E-01	5.84E-03	1.48E-01	1.24E-01	2.10E-01	1.97E+01	2.14E+03	1.44E+02	2.71E+02	3.46E+04
4.08	52	660	16.15	4.77E-06	1.19E-05	2.10E-02	2.68E-05	5.22E-01	5.33E-03	1.50E-01	1.24E-01	2.19E-01	2.19E+01	2.29E+03	1.44E+02	2.79E+02	3.20E+04
4.2	38	660	6.73	1.89E-06	9.35E-06	9.29E-03	1.56E-05	5.66E-01	1.04E-02	1.38E-01	1.25E-01	1.54E-01	8.28E+00	1.22E+03	1.45E+02	2.14E+02	4.04E+04
4.2	40	660	7.42	2.16E-06	9.82E-06	1.07E-02	1.64E-05	5.54E-01	9.63E-03	1.41E-01	1.25E-01	1.63E-01	9.75E+00	1.37E+03	1.46E+02	2.24E+02	4.09E+04
4.2	42	660	8.26	2.46E-06	1.03E-05	1.24E-02	1.75E-05	5.44E-01	8.88E-03	1.44E-01	1.25E-01	1.73E-01	1.14E+01	1.52E+03	1.46E+02	2.34E+02	4.09E+04
4.2	44	660	9.31	2.84E-06	1.08E-05	1.41E-02	1.89E-05	5.37E-01	8.17E-03	1.47E-01	1.25E-01	1.83E-01	1.31E+01	1.68E+03	1.46E+02	2.43E+02	4.02E+04
4.2	46	660	10.62	3.28E-06	1.12E-05	1.58E-02	2.04E-05	5.32E-01	7.51E-03	1.49E-01	1.24E-01	1.93E-01	1.49E+01	1.83E+03	1.46E+02	2.52E+02	3.89E+04
4.2	48	660	12.19	3.79E-06	1.16E-05	1.76E-02	2.24E-05	5.30E-01	6.88E-03	1.51E-01	1.24E-01	2.03E-01	1.69E+01	1.99E+03	1.46E+02	2.61E+02	3.71E+04
4.2	50	660	14.02	4.35E-06	1.21E-05	1.93E-02	2.46E-05	5.32E-01	6.30E-03	1.52E-01	1.24E-01	2.12E-01	1.89E+01	2.13E+03	1.46E+02	2.69E+02	3.48E+04
4.2	52	660	16.02	4.93E-06	1.24E-05	2.10E-02	2.72E-05	5.38E-01	5.76E-03	1.54E-01	1.24E-01	2.22E-01	2.11E+01	2.28E+03	1.45E+02	2.77E+02	3.23E+04
4.3	38	660	6.71	1.94E-06	9.64E-06	9.28E-03	1.59E-05	5.83E-01	1.10E-02	1.41E-01	1.25E-01	1.54E-01	7.97E+00	1.21E+03	1.46E+02	2.12E+02	4.03E+04
4.3	40	660	7.40	2.21E-06	1.01E-05	1.07E-02	1.68E-05	5.71E-01	1.01E-02	1.44E-01	1.25E-01	1.64E-01	9.40E+00	1.36E+03	1.47E+02	2.22E+02	4.08E+04
4.3	42	660	8.22	2.54E-06	1.06E-05	1.23E-02	1.79E-05	5.61E-01	9.37E-03	1.47E-01	1.25E-01	1.74E-01	1.09E+01	1.51E+03	1.47E+02	2.32E+02	4.09E+04
4.3	44	660	9.28	2.92E-06	1.11E-05	1.40E-02	1.92E-05	5.52E-01	8.64E-03	1.49E-01	1.25E-01	1.84E-01	1.26E+01	1.67E+03	1.47E+02	2.41E+02	4.02E+04
4.3	46	660	10.56	3.37E-06	1.16E-05	1.58E-02	2.08E-05	5.48E-01	7.95E-03	1.52E-01	1.24E-01	1.94E-01	1.44E+01	1.82E+03	1.47E+02	2.50E+02	3.90E+04
4.3	48	660	12.09	3.88E-06	1.20E-05	1.76E-02	2.27E-05	5.45E-01	7.30E-03	1.54E-01	1.24E-01	2.04E-01	1.63E+01	1.98E+03	1.47E+02	2.59E+02	3.72E+04
4.3	50	660	13.87	4.46E-06	1.25E-05	1.93E-02	2.50E-05	5.47E-01	6.70E-03	1.56E-01	1.24E-01	2.14E-01	1.83E+01	2.12E+03	1.47E+02	2.67E+02	3.50E+04
4.3	52	660	15.95	5.09E-06	1.29E-05	2.10E-02	2.76E-05	5.53E-01	6.13E-03	1.57E-01	1.24E-01	2.23E-01	2.05E+01	2.27E+03	1.47E+02	2.75E+02	3.24E+04
4.48	38	660	6.68	2.03E-06	1.01E-05	9.24E-03	1.66E-05	6.13E-01	1.20E-02	1.45E-01	1.25E-01	1.55E-01	7.44E+00	1.19E+03	1.48E+02	2.08E+02	4.00E+04
4.48	40	660	7.34	2.31E-06	1.07E-05	1.07E-02	1.75E-05	6.00E-01	1.11E-02	1.48E-01	1.25E-01	1.65E-01	8.79E+00	1.34E+03	1.49E+02	2.18E+02	4.06E+04
4.48	42	660	8.16	2.65E-06	1.12E-05	1.22E-02	1.85E-05	5.90E-01	1.03E-02	1.51E-01	1.25E-01	1.76E-01	1.03E+01	1.49E+03	1.49E+02	2.28E+02	4.07E+04
4.48	44	660	9.18	3.05E-06	1.17E-05	1.40E-02	1.99E-05	5.81E-01	9.50E-03	1.54E-01	1.24E-01	1.86E-01	1.19E+01	1.65E+03	1.49E+02	2.37E+02	4.02E+04
4.48	46	660	10.45	3.53E-06	1.23E-05	1.57E-02	2.15E-05	5.75E-01	8.78E-03	1.57E-01	1.24E-01	1.96E-01	1.36E+01	1.80E+03	1.49E+02	2.46E+02	3.91E+04
4.48	48	660	11.98	4.08E-06	1.28E-05	1.76E-02	2.34E-05	5.73E-01	8.09E-03	1.59E-01	1.24E-01	2.06E-01	1.54E+01	1.96E+03	1.49E+02	2.55E+02	3.73E+04
4.48	50	660	13.75	4.68E-06	1.32E-05	1.93E-02	2.57E-05	5.73E-01	7.44E-03	1.61E-01	1.24E-01	2.16E-01	1.73E+01	2.11E+03	1.49E+02	2.64E+02	3.52E+04
4.48	52	660	15.76	5.34E-06	1.37E-05	2.10E-02	2.84E-05	5.78E-01	6.83E-03	1.63E-01	1.24E-01	2.26E-01	1.94E+01	2.25E+03	1.49E+02	2.72E+02	3.27E+04

E	B	DBwatt	time	pu242	am241	am242	am242m	am243	cm242	cm243	cm244	cm245	cm246	th230
4.08	38	660	6.77	8.11E-01	5.70E+02	3.15E+00	3.16E+00	8.68E+00	3.20E+00	5.71E+00	7.87E+02	7.43E-02	1.75E-02	4.53E-05
4.08	40	660	7.47	9.09E-01	6.42E+02	3.38E+00	3.40E+00	1.02E+01	3.02E+00	6.66E+00	9.64E+02	9.66E-02	2.47E-02	4.80E-05
4.08	42	660	8.33	1.01E+00	7.25E+02	3.59E+00	3.60E+00	1.19E+01	3.03E+00	7.62E+00	1.16E+03	1.23E-01	3.42E-02	5.13E-05
4.08	44	660	9.38	1.12E+00	8.20E+02	3.77E+00	3.79E+00	1.36E+01	3.14E+00	8.57E+00	1.36E+03	1.55E-01	4.64E-02	5.52E-05
4.08	46	660	10.69	1.23E+00	9.28E+02	3.93E+00	3.95E+00	1.55E+01	3.26E+00	9.47E+00	1.56E+03	1.92E-01	6.20E-02	6.04E-05
4.08	48	660	12.30	1.34E+00	1.05E+03	4.06E+00	4.08E+00	1.76E+01	3.36E+00	1.03E+01	1.76E+03	2.35E-01	8.15E-02	6.66E-05
4.08	50	660	14.14	1.45E+00	1.18E+03	4.17E+00	4.19E+00	1.97E+01	3.45E+00	1.10E+01	1.94E+03	2.84E-01	1.06E-01	7.40E-05
4.08	52	660	16.15	1.57E+00	1.31E+03	4.25E+00	4.27E+00	2.19E+01	3.52E+00	1.16E+01	2.12E+03	3.40E-01	1.35E-01	8.20E-05
4.2	38	660	6.73	7.81E-01	5.65E+02	3.17E+00	3.19E+00	8.28E+00	3.24E+00	5.51E+00	7.39E+02	6.97E-02	1.59E-02	4.68E-05
4.2	40	660	7.42	8.77E-01	6.37E+02	3.41E+00	3.42E+00	9.75E+00	3.05E+00	6.44E+00	9.07E+02	9.08E-02	2.25E-02	4.96E-05
4.2	42	660	8.26	9.77E-01	7.19E+02	3.62E+00	3.64E+00	1.14E+01	3.07E+00	7.39E+00	1.09E+03	1.16E-01	3.11E-02	5.28E-05
4.2	44	660	9.31	1.08E+00	8.14E+02	3.81E+00	3.83E+00	1.31E+01	3.17E+00	8.34E+00	1.28E+03	1.46E-01	4.23E-02	5.70E-05
4.2	46	660	10.62	1.19E+00	9.23E+02	3.98E+00	4.00E+00	1.49E+01	3.30E+00	9.23E+00	1.48E+03	1.82E-01	5.66E-02	6.23E-05
4.2	48	660	12.19	1.30E+00	1.04E+03	4.12E+00	4.14E+00	1.69E+01	3.42E+00	1.01E+01	1.67E+03	2.23E-01	7.46E-02	6.86E-05
4.2	50	660	14.02	1.41E+00	1.17E+03	4.23E+00	4.25E+00	1.89E+01	3.51E+00	1.08E+01	1.85E+03	2.70E-01	9.70E-02	7.61E-05
4.2	52	660	16.02	1.52E+00	1.30E+03	4.32E+00	4.34E+00	2.11E+01	3.58E+00	1.14E+01	2.01E+03	3.23E-01	1.24E-01	8.44E-05
4.3	38	660	6.71	7.58E-01	5.61E+02	3.18E+00	3.20E+00	7.97E+00	3.25E+00	5.35E+00	7.02E+02	6.60E-02	1.47E-02	4.82E-05
4.3	40	660	7.40	8.52E-01	6.34E+02	3.43E+00	3.44E+00	9.40E+00	3.07E+00	6.26E+00	8.62E+02	8.62E-02	2.08E-02	5.10E-05
4.3	42	660	8.22	9.50E-01	7.15E+02	3.65E+00	3.67E+00	1.09E+01	3.09E+00	7.20E+00	1.04E+03	1.10E-01	2.88E-02	5.43E-05
4.3	44	660	9.28	1.05E+00	8.10E+02	3.84E+00	3.86E+00	1.26E+01	3.20E+00	8.13E+00	1.23E+03	1.39E-01	3.93E-02	5.86E-05
4.3	46	660	10.56	1.16E+00	9.18E+02	4.02E+00	4.04E+00	1.44E+01	3.34E+00	9.03E+00	1.41E+03	1.73E-01	5.26E-02	6.39E-05
4.3	48	660	12.09	1.26E+00	1.04E+03	4.17E+00	4.19E+00	1.63E+01	3.46E+00	9.86E+00	1.59E+03	2.13E-01	6.94E-02	7.03E-05
4.3	50	660	13.87	1.37E+00	1.16E+03	4.29E+00	4.31E+00	1.83E+01	3.55E+00	1.06E+01	1.78E+03	2.58E-01	9.03E-02	7.77E-05
4.3	52	660	15.95	1.49E+00	1.30E+03	4.38E+00	4.40E+00	2.05E+01	3.63E+00	1.12E+01	1.93E+03	3.09E-01	1.16E-01	8.68E-05
4.48	38	660	6.68	7.18E-01	5.53E+02	3.20E+00	3.22E+00	7.44E+00	3.29E+00	5.07E+00	6.41E+02	6.01E-02	1.27E-02	5.06E-05
4.48	40	660	7.34	8.08E-01	6.26E+02	3.46E+00	3.47E+00	8.79E+00	3.10E+00	5.96E+00	7.89E+02	7.86E-02	1.81E-02	5.34E-05
4.48	42	660	8.16	9.02E-01	7.07E+02	3.70E+00	3.71E+00	1.03E+01	3.13E+00	6.87E+00	9.52E+02	1.01E-01	2.51E-02	5.70E-05
4.48	44	660	9.18	1.00E+00	8.01E+02	3.91E+00	3.93E+00	1.19E+01	3.25E+00	7.80E+00	1.12E+03	1.28E-01	3.43E-02	6.13E-05
4.48	46	660	10.45	1.10E+00	9.10E+02	4.09E+00	4.11E+00	1.36E+01	3.39E+00	8.68E+00	1.30E+03	1.59E-01	4.61E-02	6.69E-05
4.48	48	660	11.98	1.21E+00	1.03E+03	4.25E+00	4.27E+00	1.54E+01	3.52E+00	9.49E+00	1.48E+03	1.96E-01	6.10E-02	7.36E-05
4.48	50	660	13.75	1.31E+00	1.16E+03	4.39E+00	4.41E+00	1.73E+01	3.64E+00	1.03E+01	1.65E+03	2.38E-01	7.96E-02	8.15E-05
4.48	52	660	15.76	1.42E+00	1.30E+03	4.49E+00	4.51E+00	1.94E+01	3.72E+00	1.09E+01	1.80E+03	2.86E-01	1.03E-01	9.04E-05

APPENDIX H – STANDARD CE 14X14 ASSEMBLY LIGHT ELEMENT MASSES FOR PHOTON SOURCE TERM CASES

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MASSES			Flux			Zircaloy-4	SS-304	SS-302	Inconel-X750	Inconel-625	Al_2O_3-B_4C	Er_2O_3	UO_2 Impurities		
Top	Base (kg)	Flux Factor	Adjusted (kg)		Element	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Element	Total (kg)
Zircaloy-4					H	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	0.00E+00
SS-304 flowplate	2.108	0.05	0.11		Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Li	0.00E+00
SS-304 above flowplate	2.973	0.02	0.06		B	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	B	0.00E+00
SS-302					C	0.00E+00	1.32E-04	0.00E+00	8.78E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	C	1.41E-04
Inconel-X750	1.10	0.02	0.02		N	0.00E+00	2.14E-04	0.00E+00	2.86E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N	2.43E-04
Inconel-625					O	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	O	0.00E+00
Al_2O_3-B_4C					F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	F	0.00E+00
Er_2O_3					Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Na	0.00E+00
kg U (for UO_2 impurities)					Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mg	0.00E+00
Total	6.18		0.19		Al	0.00E+00	0.00E+00	0.00E+00	1.76E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Al	1.76E-04
					Si	0.00E+00	1.65E-03	0.00E+00	6.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Si	1.71E-03
					P	0.00E+00	7.42E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	P	7.42E-05
					S	0.00E+00	4.95E-05	0.00E+00	1.54E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	S	5.10E-05
					Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cl	0.00E+00
					Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ca	0.00E+00
					Ti	0.00E+00	0.00E+00	0.00E+00	5.49E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ti	5.49E-04
					V	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	V	0.00E+00
					Cr	0.00E+00	3.13E-02	0.00E+00	3.29E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cr	3.46E-02
					Mn	0.00E+00	3.30E-03	0.00E+00	1.54E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mn	3.45E-03
					Fe	0.00E+00	1.13E-01	0.00E+00	1.49E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Fe	1.15E-01
					Co	0.00E+00	1.32E-04	0.00E+00	1.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Co	2.75E-04
					Ni	0.00E+00	1.47E-02	0.00E+00	1.59E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ni	3.06E-02
					Cu	0.00E+00	0.00E+00	0.00E+00	1.10E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cu	1.10E-05
					Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zn	0.00E+00
					Zr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	0.00E+00
					Nb	0.00E+00	1.65E-05	0.00E+00	1.98E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Nb	2.14E-04
					Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mo	0.00E+00
					Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ag	0.00E+00
					Cd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cd	0.00E+00
					In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	In	0.00E+00
					Sn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Sn	0.00E+00
					Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Gd	0.00E+00
					Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Er	0.00E+00
					Hf	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	0.00E+00
					W	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	W	0.00E+00
					Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Pb	0.00E+00
					Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Bi	0.00E+00
					Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Th	0.00E+00
					U	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	0.00E+00
					Total	0.00E+00	1.65E-01	0.00E+00	2.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Total	1.87E-01

Plenum	Base (kg)	Flux Factor	Flux Adjusted (kg)
Zircaloy-4	8.95	0.2	1.79
SS-304			
SS-302	7.98	0.2	1.60
Inconel-X750			
Inconel-625			
Al_2O_3-B_4C			
Er_2O_3			
kg U (for UO_2 Impurities)			
Total	16.93		3.39

Element	Zircaloy-4 Mass(kg)	SS-304 Mass(kg)	SS-302 Mass(kg)	Inconel-X750 Mass(kg)	Inconel-625 Mass(kg)	Al_2O_3-B_4C Mass(kg)	Er_2O_3 Mass(kg)	UO_2 Impurities Mass(kg)	Element	Total (kg)
H	2.33E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	2.33E-05
Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Li	0.00E+00
B	5.91E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	B	5.91E-07
C	4.84E-04	0.00E+00	2.39E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	C	2.88E-03
N	1.43E-04	0.00E+00	2.07E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N	2.22E-03
O	1.70E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	O	1.70E-03
F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	F	0.00E+00
Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Na	0.00E+00
Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mg	0.00E+00
Al	4.30E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Al	4.30E-05
Si	0.00E+00	0.00E+00	1.60E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Si	1.60E-02
P	0.00E+00	0.00E+00	7.18E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	P	7.18E-04
S	6.27E-05	0.00E+00	4.79E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	S	5.41E-04
Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cl	0.00E+00
Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ca	0.00E+00
Ti	3.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ti	3.58E-05
V	3.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	V	3.58E-05
Cr	2.24E-03	0.00E+00	2.87E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cr	2.90E-01
Mn	3.58E-05	0.00E+00	3.19E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mn	3.20E-02
Fe	4.03E-03	0.00E+00	1.11E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Fe	1.12E+00
Co	3.58E-05	0.00E+00	1.28E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Co	1.31E-03
Ni	1.25E-04	0.00E+00	1.42E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ni	1.42E-01
Cu	3.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cu	3.58E-05
Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zn	0.00E+00
Zr	1.75E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	1.75E+00
Nb	2.15E-04	0.00E+00	1.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Nb	3.75E-04
Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mo	0.00E+00
Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ag	0.00E+00
Cd	4.48E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cd	4.48E-07
In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	In	0.00E+00
Sn	2.87E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Sn	2.87E-02
Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Gd	0.00E+00
Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Er	0.00E+00
Hf	1.40E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	1.40E-04
W	3.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	W	3.58E-05
Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Pb	0.00E+00
Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Bi	0.00E+00
Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Th	0.00E+00
U	3.58E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	3.58E-07
Total	1.79E+00	0.00E+00	1.60E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Total	3.39E+00

			Flux			Zircaloy-4	SS-304	SS-302	Inconel-X750	Inconel-625	Al_2O_3-B_4C	Er_2O_3	UO_2 Impurities		
Active Fuel Region	Base (kg)	Flux Factor	Adjusted (kg)		Element	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Element	Total (kg)
Zircaloy-4	112.19	1	112.19		H	1.46E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	1.46E-03
SS-304					Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Li	4.00E-04
SS-302					B	3.70E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.50E-01	0.00E+00	4.00E-04	B	3.50E-01
Inconel-X750					C	3.03E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.71E-02	0.00E+00	4.00E-02	C	1.67E-01
Inconel-625					N	8.97E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-03	0.00E+00	4.00E-02	N	5.01E-02
Al_2O_3-B_4C	11.4	1	11.40		O	1.07E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.94E+00	3.64E-01	5.38E+01	O	5.92E+01
Er_2O_3	2.9	1	2.90		F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-04	0.00E+00	6.00E-03	F	6.29E-03
kg U (for UO_2 Impurities)	400	1	400.00		Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-02	0.00E+00	6.00E-03	Na	2.88E-02
					Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-01	0.00E+00	8.00E-04	Mg	1.15E-01
					Al	2.69E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.55E+00	0.00E+00	6.68E-03	Al	5.56E+00
					Si	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-01	0.00E+00	4.84E-03	Si	2.33E-01
					P	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-02	P	1.40E-02
					S	3.93E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	S	3.93E-03
					Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-04	0.00E+00	1.40E-02	Cl	1.43E-02
					Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-02	0.00E+00	8.00E-04	Ca	4.64E-02
					Ti	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Ti	2.64E-03
					V	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-03	V	3.44E-03
UO2	4.54E+02	kg			Cr	1.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-02	0.00E+00	1.60E-03	Cr	1.60E-01
	1001.36	lbs			Mn	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.80E-04	Mn	2.92E-03
	Conservative compared with CA03830				Fe	2.52E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-02	0.00E+00	1.20E-01	Fe	3.90E-01
					Co	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Co	2.64E-03
Assy Total weight	6.07E+02	kg			Ni	7.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-02	0.00E+00	1.20E-01	Ni	1.46E-01
	1338.80	lbs			Cu	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Cu	2.64E-03
	Conservative compared with CA03830				Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-02	Zn	1.61E-02
					Zr	1.10E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	1.10E+02
					Nb	1.35E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Nb	1.35E-02
					Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-03	Mo	4.00E-03
					Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-05	Ag	4.00E-05
					Cd	2.80E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-02	Cd	1.00E-02
					In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E-04	In	8.00E-04
386					Sn	1.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.60E-03	Sn	1.80E+00
437.9396415					Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-03	0.00E+00	0.00E+00	Gd	1.14E-03
51.93964148					Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E+00	0.00E+00	Er	2.54E+00
					Hf	8.75E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	8.75E-03
					W	2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E-04	W	3.04E-03
					Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Pb	4.00E-04
					Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.60E-04	Bi	1.60E-04
					Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-02	Th	1.20E-02
					U	2.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	2.24E-05
					Total	1.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E+01	2.90E+00	5.42E+01	Total	1.81E+02

			Flux			Zircaloy-4	SS-304	SS-302	Inconel-X750	Inconel-625	Al_2O_3-B_4C	Er_2O_3	UO_2 Impurities		
Bottom Nozzle	Base (kg)	Flux Factor	Adjusted (kg)		Element	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Mass(kg)	Element	Total (kg)
Zircaloy-4			0.00		H	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	0.00E+00
SS-304	5	0.2	1.00		Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Li	0.00E+00
SS-302			0.00		B	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	B	0.00E+00
Inconel-X750			0.00		C	0.00E+00	8.00E-04	0.00E+00	0.00E+00	2.72E-04	0.00E+00	0.00E+00	0.00E+00	C	1.07E-03
Inconel-625	1.36	0.2	0.27		N	0.00E+00	1.30E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N	1.30E-03
Al_2O_3-B_4C			0.00		O	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	O	0.00E+00
Er_2O_3			0.00		F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	F	0.00E+00
kg U (for UO_2 Impurities)			0.00		Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Na	0.00E+00
Total	6.36		1.272		Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Mg	0.00E+00
					Al	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-03	0.00E+00	0.00E+00	0.00E+00	Al	1.09E-03
					Si	0.00E+00	1.00E-02	0.00E+00	0.00E+00	1.36E-03	0.00E+00	0.00E+00	0.00E+00	Si	1.14E-02
					P	0.00E+00	4.50E-04	0.00E+00	0.00E+00	4.08E-05	0.00E+00	0.00E+00	0.00E+00	P	4.91E-04
					S	0.00E+00	3.00E-04	0.00E+00	0.00E+00	4.08E-05	0.00E+00	0.00E+00	0.00E+00	S	3.41E-04
					Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cl	0.00E+00
					Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ca	0.00E+00
					Ti	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-03	0.00E+00	0.00E+00	0.00E+00	Ti	1.09E-03
					V	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	V	0.00E+00
					Cr	0.00E+00	1.90E-01	0.00E+00	0.00E+00	5.85E-02	0.00E+00	0.00E+00	0.00E+00	Cr	2.48E-01
					Mn	0.00E+00	2.00E-02	0.00E+00	0.00E+00	1.36E-03	0.00E+00	0.00E+00	0.00E+00	Mn	2.14E-02
					Fe	0.00E+00	6.87E-01	0.00E+00	0.00E+00	1.36E-02	0.00E+00	0.00E+00	0.00E+00	Fe	7.01E-01
					Co	0.00E+00	8.00E-04	0.00E+00	0.00E+00	2.72E-03	0.00E+00	0.00E+00	0.00E+00	Co	3.52E-03
					Ni	0.00E+00	8.92E-02	0.00E+00	0.00E+00	1.58E-01	0.00E+00	0.00E+00	0.00E+00	Ni	2.47E-01
					Cu	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cu	0.00E+00
					Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zn	0.00E+00
					Zr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	0.00E+00
					Nb	0.00E+00	1.00E-04	0.00E+00	0.00E+00	9.93E-03	0.00E+00	0.00E+00	0.00E+00	Nb	1.00E-02
					Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.43E-02	0.00E+00	0.00E+00	0.00E+00	Mo	2.43E-02
					Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Ag	0.00E+00
					Cd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Cd	0.00E+00
					In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	In	0.00E+00
					Sn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Sn	0.00E+00
					Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Gd	0.00E+00
					Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Er	0.00E+00
					Hf	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	0.00E+00
					W	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	W	0.00E+00
					Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Pb	0.00E+00
					Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Bi	0.00E+00
					Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Th	0.00E+00
					U	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	0.00E+00
					Total	0.00E+00	1.00E+00	0.00E+00	0.00E+00	2.72E-01	0.00E+00	0.00E+00	0.00E+00	Total	1.27E+00

Assembly Total	Element	Zircaloy-4 Mass(kg)	SS-304 Mass(kg)	SS-302 Mass(kg)	Inconel-X750 Mass(kg)	Inconel-625 Mass(kg)	Al_2O_3-B_4C Mass(kg)	Er_2O_3 Mass(kg)	UO_2 Impurities Mass(kg)	Element	Total (kg)
	H	1.48E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	H	1.48E-03
	Li	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Li	4.00E-04
	B	3.76E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.50E-01	0.00E+00	4.00E-04	B	3.50E-01
	C	3.08E-02	9.32E-04	2.39E-03	8.78E-06	2.72E-04	9.71E-02	0.00E+00	4.00E-02	C	1.72E-01
	N	9.12E-03	1.51E-03	2.07E-03	2.86E-05	0.00E+00	1.14E-03	0.00E+00	4.00E-02	N	5.39E-02
	O	1.08E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.94E+00	3.64E-01	5.38E+01	O	5.92E+01
	F	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-04	0.00E+00	6.00E-03	F	6.29E-03
	Na	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-02	0.00E+00	6.00E-03	Na	2.88E-02
	Mg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-01	0.00E+00	8.00E-04	Mg	1.15E-01
	Al	2.74E-03	0.00E+00	0.00E+00	1.76E-04	1.09E-03	5.55E+00	0.00E+00	6.68E-03	Al	5.56E+00
	Si	0.00E+00	1.16E-02	1.60E-02	6.58E-05	1.36E-03	2.28E-01	0.00E+00	4.84E-03	Si	2.62E-01
	P	0.00E+00	5.24E-04	7.18E-04	0.00E+00	4.08E-05	0.00E+00	0.00E+00	1.40E-02	P	1.53E-02
	S	3.99E-03	3.49E-04	4.79E-04	1.54E-06	4.08E-05	0.00E+00	0.00E+00	0.00E+00	S	4.86E-03
	Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-04	0.00E+00	1.40E-02	Cl	1.43E-02
	Ca	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-02	0.00E+00	8.00E-04	Ca	4.64E-02
	Ti	2.28E-03	0.00E+00	0.00E+00	5.49E-04	1.09E-03	0.00E+00	0.00E+00	4.00E-04	Ti	4.32E-03
	V	2.28E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-03	V	3.48E-03
	Cr	1.42E-01	2.21E-01	2.87E-01	3.29E-03	5.85E-02	1.80E-02	0.00E+00	1.60E-03	Cr	7.32E-01
	Mn	2.28E-03	2.33E-02	3.19E-02	1.54E-04	1.36E-03	0.00E+00	0.00E+00	6.80E-04	Mn	5.97E-02
	Fe	2.56E-01	8.00E-01	1.11E+00	1.49E-03	1.36E-02	1.80E-02	0.00E+00	1.20E-01	Fe	2.32E+00
	Co	2.28E-03	9.32E-04	1.28E-03	1.43E-04	2.72E-03	0.00E+00	0.00E+00	4.00E-04	Co	7.75E-03
	Ni	7.98E-03	1.04E-01	1.42E-01	1.59E-02	1.58E-01	1.80E-02	0.00E+00	1.20E-01	Ni	5.66E-01
	Cu	2.28E-03	0.00E+00	0.00E+00	1.10E-05	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Cu	2.69E-03
	Zn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-02	Zn	1.61E-02
	Zr	1.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Zr	1.12E+02
	Nb	1.37E-02	1.16E-04	1.60E-04	1.98E-04	9.93E-03	0.00E+00	0.00E+00	0.00E+00	Nb	2.41E-02
	Mo	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.43E-02	0.00E+00	0.00E+00	4.00E-03	Mo	2.83E-02
	Ag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-05	Ag	4.00E-05
	Cd	2.85E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-02	Cd	1.00E-02
	In	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E-04	In	8.00E-04
	Sn	1.82E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.60E-03	Sn	1.83E+00
	Gd	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-03	0.00E+00	0.00E+00	Gd	1.14E-03
	Er	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E+00	0.00E+00	Er	2.54E+00
	Hf	8.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Hf	8.89E-03
	W	2.28E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E-04	W	3.08E-03
	Pb	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-04	Pb	4.00E-04
	Bi	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.60E-04	Bi	1.60E-04
	Th	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-02	Th	1.20E-02
	U	2.28E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	U	2.28E-05
	Total	1.14E+02	1.16E+00	1.60E+00	2.20E-02	2.72E-01	1.14E+01	2.90E+00	5.42E+01	Total	1.8554E+02

APPENDIX I – STANDARD CE 14X14 ASSEMBLY DECAY HEAT EXCEL FIT RESULTS

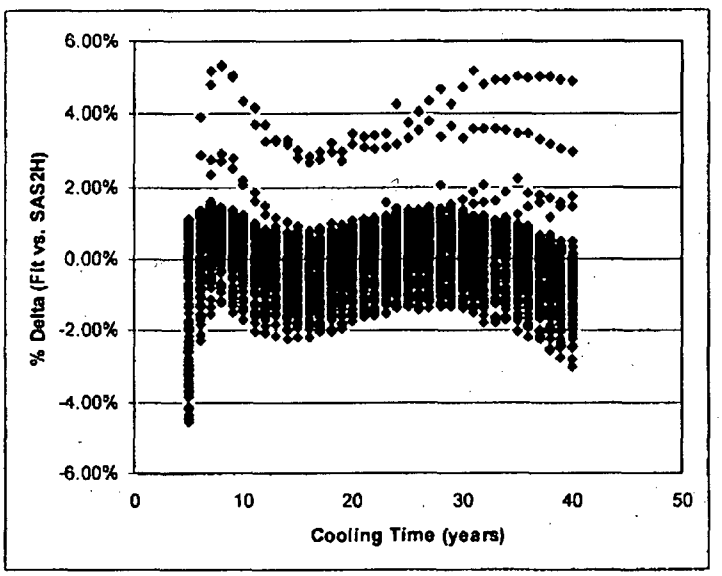
Performed in "SAS2H CE 14x14 DH Fit" tab of *SourceTerm3.xls* spreadsheet on attached CD-ROM. Note that points falling outside of ±2% delta are generally 2.05% enriched fuel of which there is very little remaining.

Regression Statistics	
Multiple R	0.99971804
R Square	0.999436159
Adjusted R Square	0.99943481
Standard Error	0.009645274
Observations	4608

$$\text{Ln watts}(e,b,t) = C_0+C_1\text{Ln}(t)+C_2e+C_3b+C_4e^2+C_5b^2+C_6eb+C_7et+C_8ebt+C_9bt+C_{10}\text{Ln}(t)^2+C_{11}\text{Ln}(t)^3$$

e=enrichment, b=burnup(GWd/MTU), t=cooling time (years)

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	11	7.579E+02	6.890E+01	7.406E+05	0.000E+00
Residual	4596	4.276E-01	9.303E-05		
Total	4607	7.583E+02			

Ln(watts)		*Coefficients*	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
	Intercept	8.117E+00	1.915E-02	4.239E+02	0.000E+00	8.080E+00	8.155E+00
Ln(t)	X Variable 1	-3.498E+00	1.910E-02	-1.832E+02	0.000E+00	-3.536E+00	-3.461E+00
Enrich	X Variable 2	1.753E-02	3.189E-03	5.498E+00	4.045E-08	1.128E-02	2.379E-02
Burnup	X Variable 3	6.775E-02	2.027E-04	3.343E+02	0.000E+00	6.735E-02	6.814E-02
En^2	X Variable 4	-8.508E-04	4.042E-04	-2.105E+00	3.534E-02	-1.643E-03	-5.843E-05
Bu^2	X Variable 5	-3.851E-04	2.562E-06	-1.503E+02	0.000E+00	-3.901E-04	-3.800E-04
E*B	X Variable 6	-1.248E-03	7.130E-05	-1.750E+01	1.931E-66	-1.388E-03	-1.108E-03
E*t	X Variable 7	4.125E-04	9.638E-05	4.280E+00	1.910E-05	2.235E-04	6.014E-04
E*B*t	X Variable 8	9.007E-06	2.355E-06	3.825E+00	1.323E-04	4.391E-06	1.362E-05
B*t	X Variable 9	-1.275E-04	7.464E-06	-1.709E+01	1.652E-63	-1.422E-04	-1.129E-04
Ln(t)^2	X Variable 10	1.133E+00	7.532E-03	1.504E+02	0.000E+00	1.118E+00	1.147E+00
Ln(t)^3	X Variable 11	-1.347E-01	1.097E-03	-1.228E+02	0.000E+00	-1.368E-01	-1.325E-01