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RERTR-12 Insertion 1 Irradiation Summary Report

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SUMMARY

The Reduced Enrichment for Research and Test Reactor (RERTR) experiment RERTR-12 was designed to provide comprehensive information on the performance of uranium-molybdenum (U-Mo) based monolithic fuels for research reactor applications.[1] RERTR-12 insertion 1 includes the capsules irradiated during the first two irradiation cycles. These capsules include Z, X1, X2 and X3 capsules.

The following report summarizes the life of the RERTR-12 insertion 1 experiment through end of irradiation, including as-run neutronic analysis results, thermal analysis results and hydraulic testing results.

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FIGURES

TABLES

ACRONYMS

Al	Aluminum
ATR	Advanced Test Reactor
BOC	Beginning of Cycle
DAS	Data Acquisition System
EFPD	Effective Full Power Days
EOC	End of Cycle
FD	Fuel Development
GTRI	Global Threat Reduction Initiative
HIP	Hot Isostatic Pressing
L2AR	Local-to-Average Ratio
LEU	Low Enriched Uranium
MCNP	Monte Carlo N-Particle
MOC	Middle of Cycle
Mo	Molybdenum
RERTR	Reduced Enrichment Research and Test Reactor
U	Uranium
U-Mo	Uranium-Molybdenum Alloy
Zr	Zirconium

RERTR-12 Insertion 1 Irradiation Summary Report

1. EXPERIMENT GOALS

In support of the Global Threat Reduction Initiative (GTRI) Fuel Development (FD) program (historically known as Reduced Enrichment Research and Test Reactor (RERTR)), the RERTR-12 experiment was designed to provide comprehensive information on the performance of uranium-molybdenum (U-Mo) based monolithic fuels for research reactor applications.[1]

The RERTR-12 test assembly holds 4 capsules, designated as A, B, C and D, with A at the top of the assembly and D at the bottom. Each capsule has 2 levels, with 4 plate positions per level, for a total of 8 plate positions per capsule and 32 plate positions per assembly. Within each capsule the 8 plate positions are azimuthally designated as 1 through 4 in the upper level and 5 through 8 in the lower level. There were three different capsule configurations associated with the RERTR-12 experiment, the loading diagram for the RERTR-12 insertion 1 Experiment Capsule Configuration is shown in Table 1. The experiment matrix for RERTR-12-1 (RERTR-12 first irradiation cycle) is shown in Table 2 and the experiment matrix for RERTR-12-2 (RERTR-12 second irradiation cycle) is shown in Table 3. The RERTR-12 mini-plates were oriented plate identification number face on to the core (see Figure 1).

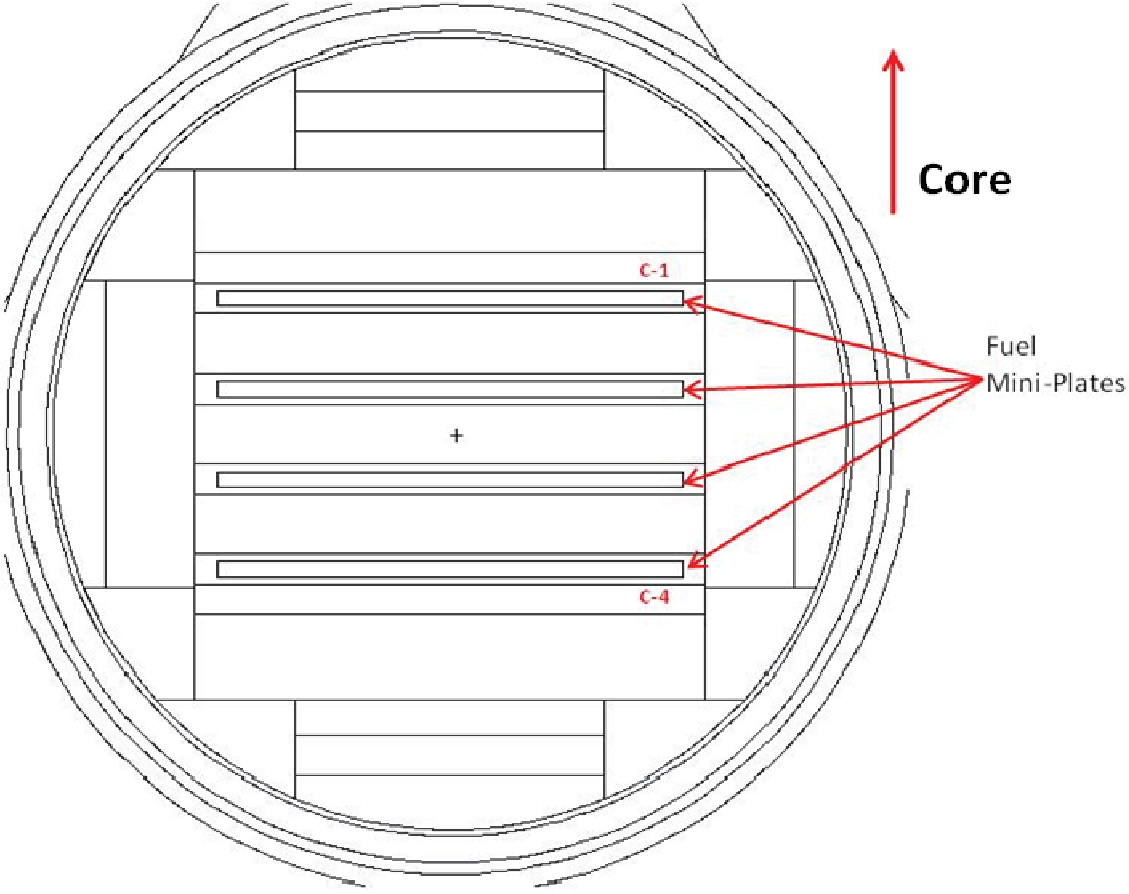

Figure 1: MCNP-Generated radial cross-section view of RERTR-12 test assembly (mini-plates C1 through C4).

Table 1: RERTR-12 Insertion 1 Experiment Capsule Configuration

RERTR Test Train Position	RERTR-12-1 Capsule	RERTR-12-2 Capsule
A	DUM	Z
B	X3	X3
C	X1	DUM
D	X2	X2

Table 2: RERTR-12-1 Experiment Matrix

Capsule	Column 1	Column 2	Column 3	Column 4
A-Top	**A1**	**A2**	**A3**	**A4**
	BLANK	BLANK	BLANK	BLANK
A-Bottom	**A5**	**A6**	**A7**	**A8**
	BLANK	BLANK	BLANK	BLANK
B-Top	**B1**	**B2**	**B3**	**B4**
	U-10Mo 70% Enriched HIP **L1P759**	U-10Mo 70% Enriched HIP **L1P784**	U-10Mo 50% Enriched HIP **L1P596**	U-10Mo 40% Enriched HIP **L1P464**
B-Bottom	**B5**	**B6**	**B7**	**B8**
	U-10Mo 70% Enriched HIP **L1P785**	U-10Mo 70% Enriched HIP **L1P786**	U-10Mo 50% Enriched HIP **L1P590**	U-10Mo 40% Enriched HIP **L1P465**
C-Top	**C1**	**C2**	**C3**	**C4**
	U-10Mo 70% Enriched HIP **L1P772**	U-10Mo 70% Enriched HIP **L1P773**	U-10Mo 50% Enriched HIP **L1P591**	U-10Mo 40% Enriched HIP **L1P460**
C-Bottom	**C5**	**C6**	**C7**	**C8**
	U-10Mo 70% Enriched HIP **L1P774**	U-10Mo 70% Enriched HIP **L1P776**	U-10Mo 50% Enriched HIP **L1P592**	U-10Mo 40% Enriched HIP **L1P461**
D-Top	**D1**	**D2**	**D3**	**D4**
	U-10Mo 70% Enriched HIP **L1P754**	U-10Mo 70% Enriched HIP **L1P755**	U-10Mo 50% Enriched HIP **L1P593**	U-10Mo 40% Enriched HIP **L1P462**
D-Bottom	**D5**	**D6**	**D7**	**D8**
	U-10Mo 70% Enriched HIP **L1P756**	U-10Mo 70% Enriched HIP **L1P758**	U-10Mo 50% Enriched HIP **L1P595**	U-10Mo 40% Enriched HIP **L1P463**

Table 3: RERTR-12-2 Experiment Matrix

Capsule	Column 1	Column 2	Column 3	Column 4
A-Top	**A1**	**A2**	**A3**	**A4**
	U-10Mo 70% Enriched HIP **L1P787**	U-10Mo 40% Enriched 0.020” Thick Foil **L2P481**	U-10Mo 40% Enriched 0.020” Thick Foil **L2P498**	U-10Mo 70% Enriched HIP **L1P789**
A-Bottom	**A5**	**A6**	**A7**	**A8**
	U-10Mo 70% Enriched HIP **L1P7A0**	U-10Mo 40% Enriched 0.020” Thick Foil **L2P482**	U-10Mo 40% Enriched 0.020” Thick Foil **L2P499**	U-10Mo 70% Enriched HIP **L1P7A1**
B-Top	**B1**	**B2**	**B3**	**B4**
	U-10Mo 70% Enriched HIP **L1P759**	U-10Mo 70% Enriched HIP **L1P784**	U-10Mo 50% Enriched HIP **L1P596**	U-10Mo 40% Enriched HIP **L1P464**
B-Bottom	**B5**	**B6**	**B7**	**B8**
	U-10Mo 70% Enriched HIP **L1P785**	U-10Mo 70% Enriched HIP **L1P786**	U-10Mo 50% Enriched HIP **L1P590**	U-10Mo 40% Enriched HIP **L1P465**
C-Top	**C1**	**C2**	**C3**	**C4**
	BLANK	BLANK	BLANK	BLANK
C-Bottom	**C5**	**C6**	**C7**	**C8**
	BLANK	BLANK	BLANK	BLANK
D-Top	**D1**	**D2**	**D3**	**D4**
	U-10Mo 70% Enriched HIP **L1P754**	U-10Mo 70% Enriched HIP **L1P755**	U-10Mo 50% Enriched HIP **L1P593**	U-10Mo 40% Enriched HIP **L1P462**
D-Bottom	**D5**	**D6**	**D7**	**D8**
	U-10Mo 70% Enriched HIP **L1P756**	U-10Mo 70% Enriched HIP **L1P758**	U-10Mo 50% Enriched HIP **L1P595**	U-10Mo 40% Enriched HIP **L1P463**

2. CONSTITUENT MASSES AND DENSITIES

The constituent masses and densities for plates in the X1, X2, X3 and Z capsules were obtained from the as-built package plate summary sheets[2]. Table 4 summarizes the constituent mass and density for all plates irradiated in RERTR-12-1 and RERTR-12-2.

Table 4: RERTR-12 Constituent Masses and Densities for Plates Irradiated in the First and Second Cycle

Fuel Plate ID	Fuel Plate Number	Volume (cc)	Fuel Constituent Masses			Constituent Densities		
			Total-U (g)	U-235 (g)	Mo (g)	Total U (g/cc)	U-235 (g/cc)	Mo (g/cc)
Z-1	L1P787	0.3626	6.055	4.201	0.694	16.701	11.587	1.914
Z-2	L2P481	0.8202	12.196	4.788	1.421	14.870	5.838	1.733
Z-3	L2P498	0.7941	11.395	4.559	1.244	14.349	5.741	1.567
Z-4	L1P789	0.4040	6.064	4.207	0.695	15.009	10.412	1.720
Z-5	L1P7A0	0.4013	6.162	4.291	0.692	15.356	10.693	1.724
Z-6	L2P482	0.7996	12.193	4.820	1.379	15.250	6.028	1.725
Z-7	L2P499	0.7937	11.031	4.413	1.205	13.898	5.560	1.518
Z-8	L1P7A1	0.4013	6.167	4.294	0.693	15.368	10.701	1.727
X3-1	L1P759	0.3996	6.050	4.213	0.670	15.142	10.544	1.677
X3-2	L1P784	0.4005	6.047	4.173	0.688	15.099	10.420	1.718
X3-3	L1P596	0.4014	6.143	3.026	0.684	15.304	7.539	1.704
X3-4	L1P464	0.3982	6.034	2.409	0.684	15.153	6.050	1.718
X3-5	L1P785	0.4018	6.047	4.173	0.688	15.052	10.387	1.712
X3-6	L1P786	0.3947	5.893	4.067	0.671	14.932	10.305	1.700
X3-7	L1P590	0.4013	6.156	3.032	0.686	15.341	7.556	1.710
X3-8	L1P465	0.3925	5.865	2.288	0.662	14.941	5.829	1.686
X1-1	L1P772	0.3936	6.028	4.197	0.667	15.314	10.662	1.695
X1-2	L1P773	0.4379	5.977	4.162	0.666	13.650	9.505	1.521
X1-3	L1P591	0.3602	6.119	3.014	0.682	16.988	8.368	1.893
X1-4	L1P460	0.3996	6.173	2.408	0.697	15.448	6.026	1.744
X1-5	L1P774	0.3978	5.982	4.166	0.667	15.039	10.473	1.677
X1-6	L1P776	0.3642	5.186	3.611	0.575	14.238	9.914	1.579
X1-7	L1P592	0.4013	6.113	3.091	0.685	15.234	7.703	1.707
X1-8	L1P461	0.3987	6.115	2.441	0.694	15.337	6.122	1.741
X2-1	L1P754	0.3601	5.906	4.112	0.654	16.400	11.419	1.816
X2-2	L1P755	0.3881	5.610	3.906	0.624	14.453	10.063	1.608
X2-3	L1P593	0.4022	6.132	3.101	0.688	15.247	7.710	1.711
X2-4	L1P462	0.3997	6.047	2.359	0.683	15.130	5.902	1.709
X2-5	L1P756	0.4274	5.912	4.116	0.657	13.833	9.631	1.537
X2-6	L1P758	0.4028	6.005	4.181	0.669	14.907	10.379	1.661
X2-7	L1P595	0.4015	6.117	3.073	0.683	15.234	7.653	1.701
X2-8	L1P463	0.3974	6.068	2.422	0.688	15.268	6.094	1.731

3. EXPERIMENT HARDWARE

The experiment hardware configuration is identical to that used in the RERTR-7A, -7B, -8, -9A, -9B, -10A and -10B experiments. A list of irradiation hardware drawings used for analysis is given in Table 5.

Table 5: RERTR Irradiation Hardware Drawing List.

Drawing Number	Drawing Title
DWG-630223	RERTR ATR Large B-Position Irradiation Experiment Assembly
DWG-630233	ATR Large B-Position Basket
DWG-630231	ATR Top Spacer Assembly
DWG-630225	ATR Upper Spacer Assembly
DWG-630229	ATR Bottom Spacer Assembly
DWG-630227	ATR Large B-Position Fuel Capsule Assembly
DWG-630237	Fuel Capsule
DWG-630239	Capsule Cap
DWG-630244	RERTR Mini-Plate
DWG-630245	Fuel Plate, 0.020 Monolithic

The RERTR miniplate irradiation assembly, (see Figure 2) shows the main components of the test assembly, which include the bottom spacer, upper and top spacers, experiment capsules and basket. The bottom spacer elevates the experiment capsules to the correct location in the core. The upper and top spacers allow the operators to assure that the experiment is seated fully into the basket. All spacers are similar to the capsule design except the spacers do not have the grooves for the plates. The capsules hold the fuel plates; a capsule cap is welded onto the top of the capsule to keep the plates from sliding out during handling and irradiation. The fuel plate drawings for monolithic and thick monolithic plates (DWG-630244 and DWG-630245, respectively) and RERTR miniplate capsule assembly are shown in Figure 3, Figure 4 and Figure 5, respectively. Each capsule has a notch at the top and a groove at the bottom which allow the capsules to stack and align properly into the core. The basket holds the test assembly in the reactor during irradiation, the notches on the outer wall allow for bypass coolant flow to cool the outer wall. The basket has two guide bars on the inside wall to guide the assembly into the baskets.

Figure 2: RERTR miniplate irradiation assembly.

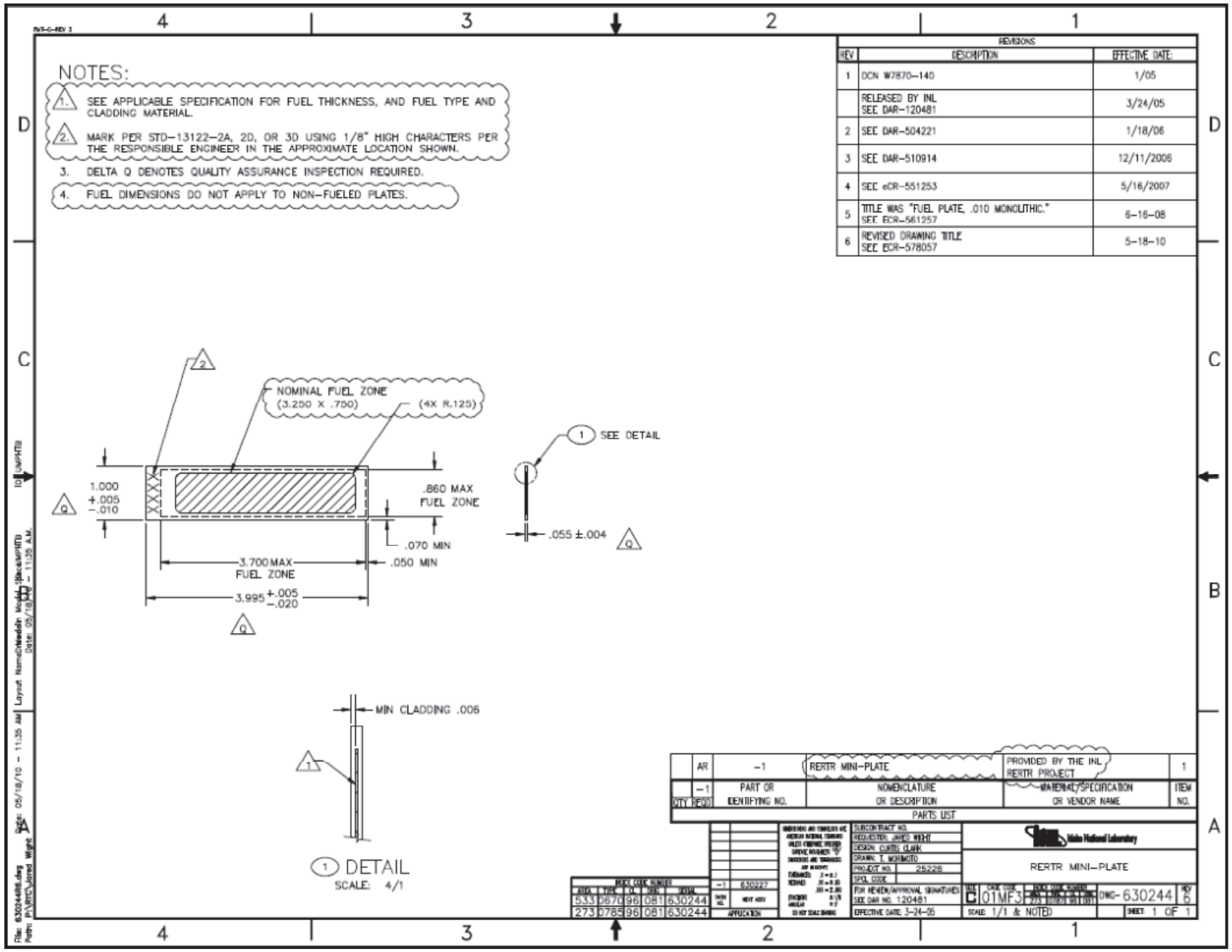

Figure 3: DWG-630244: RERTR monolithic fuel miniplate.

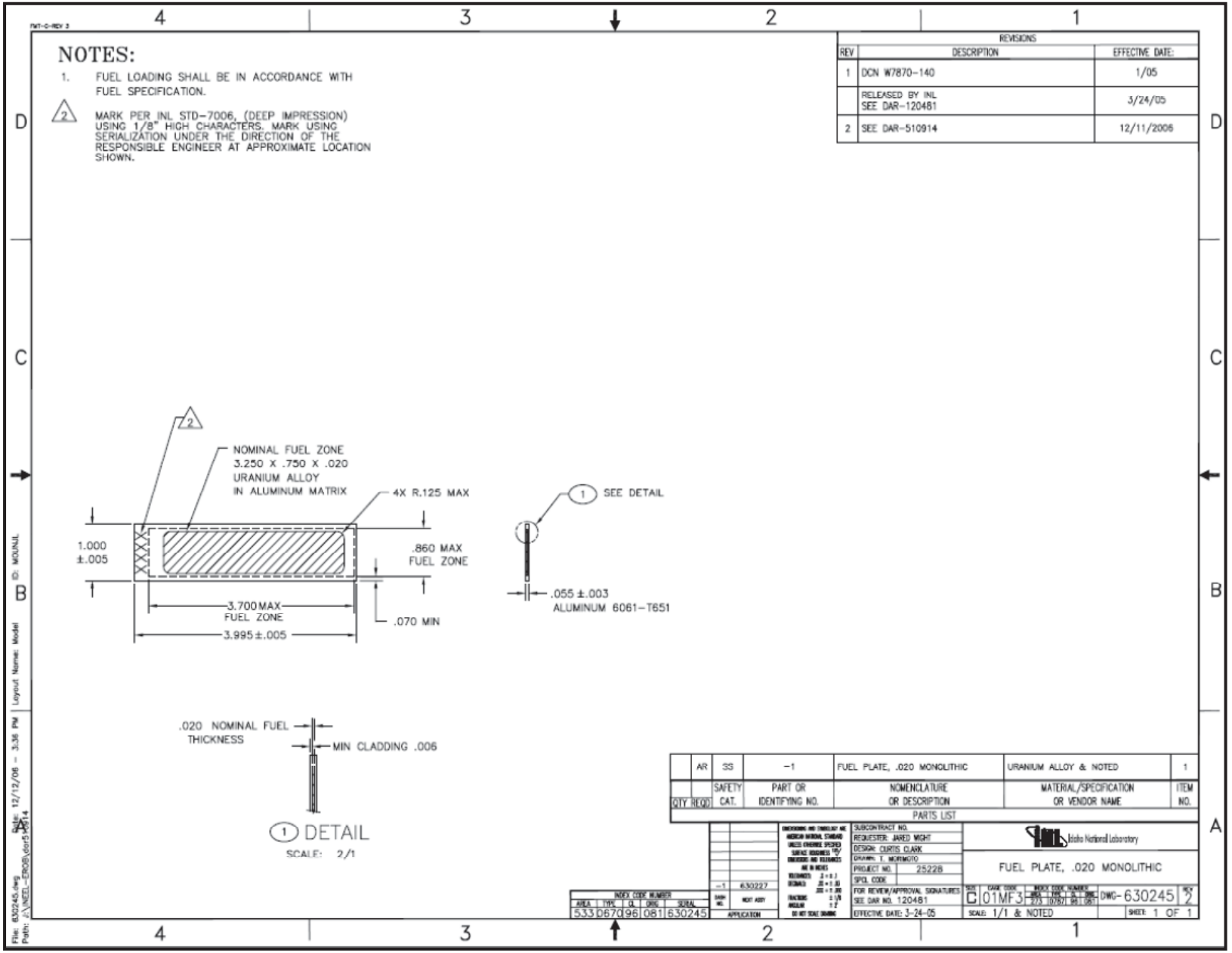

Figure 4: DWG-630245: RERTR thick (0.020 in) monolithic fuel miniplate.

Figure 5: RERTR capsule assembly.

4. IRRADIATION HISTORY

The RERTR-12 insertion 1 test assembly was irradiated in cycle 146A and cycle 146B in the large-B position B-11. The power of position B-11 is represented by the south lobe power which is the average of the SW, C and SE lobe powers, S = (SW + C + SE)/3. Cycle 146A ran for 50.5 EFPDs at average power of 112.1 MW (south lobe power of 25.4 MW) and cycle 146B ran for a total of 39.2 EFPDs at average power of 116.0 MW (south lobe power of 25.0 MW).

There was one mid-cycle SCRAM during Cycle 146A with a duration of 4 days from dates 02/14/2010 – 02/18/2010. There were no mid-cycle SCRAMs during Cycle 146B. This information is tabulated in Table 6.

Table 6: Irradiation History for RERTR-12 Insertion 1

ATR CYCLE	RERTR-12 Capsules Irradiated*	Dates Irradiated	Cycle EFPDs	Mid-Cycle Scram Decay Days	Post-Cycle Decay Days	South Lobe Source Power (MW)	Total Core Power (MW)
146A	B,C,D	02/08/2010 – 04/03/2010	50.5	4	18	25.4	112.1
146B	A,B,D	04/21/2010 – 05/30/2010	39.2	0	20	25.0	116.0

*See Table 1 for capsule configurations

The power history for each cycle is obtained as in ATR Surveillance Report from the ATR Data Acquisition System (DAS). The plots of each lobe power on an hourly basis are shown in Figure and figure for cycle 146A and 146B, respectively.

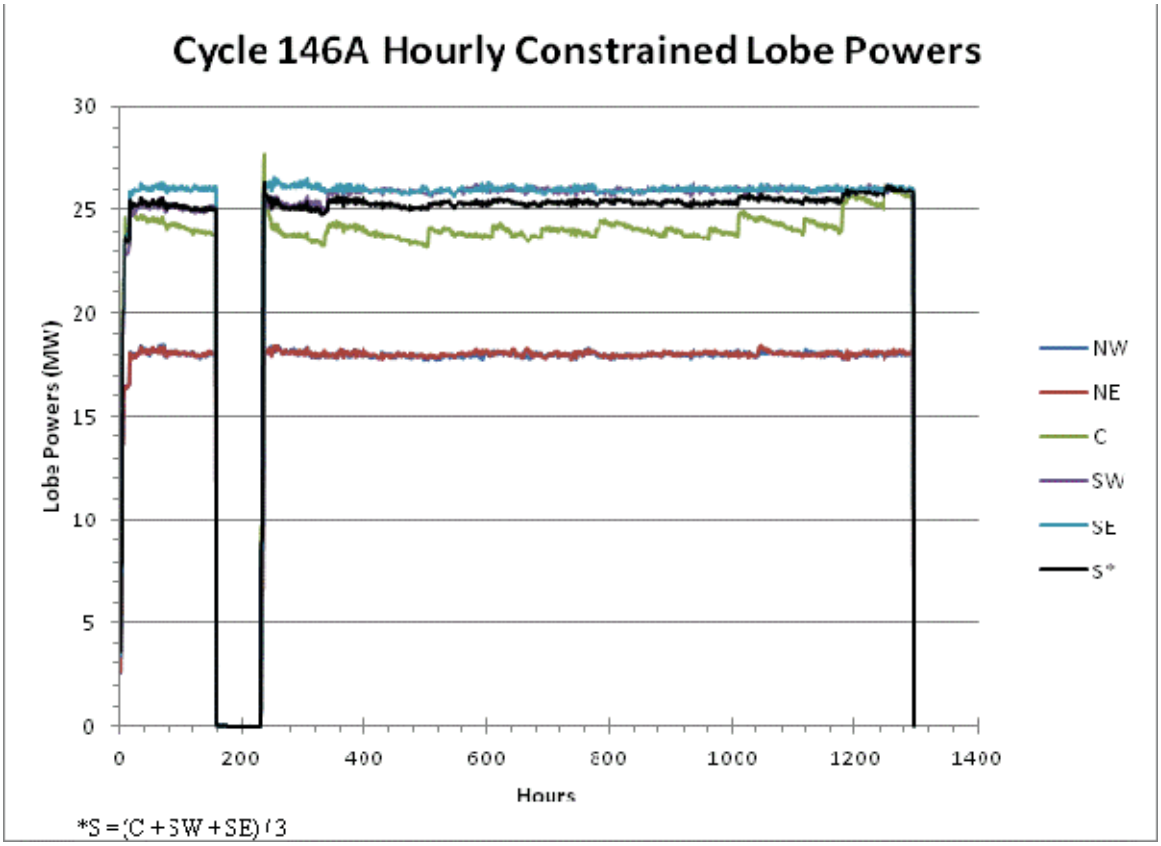

Figure 6: Hourly lobe power history for ATR Cycle 146A.

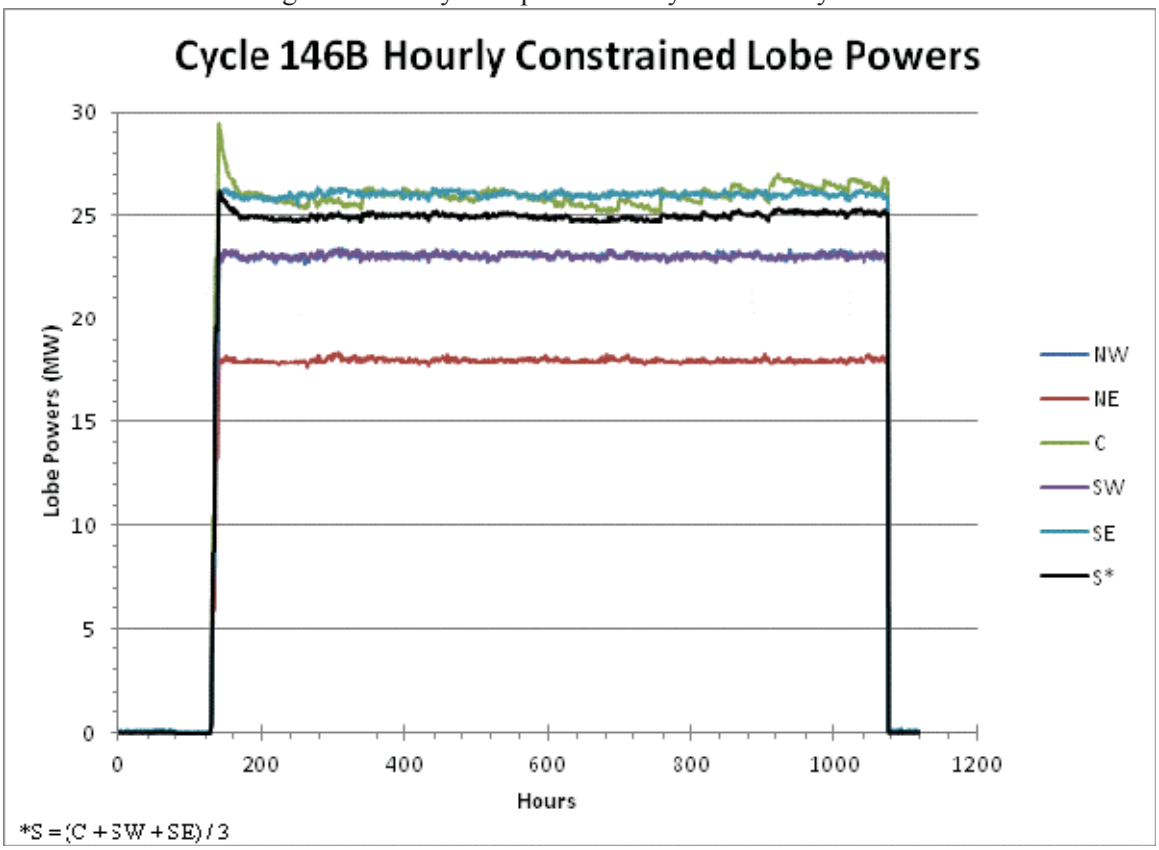

Figure 7: Hourly lobe power history for ATR Cycle 146B.

5. AS-RUN NUCLEAR ANALYSIS

5.1 Neutronics

The as-run calculations were performed using the irradiation history in Table 4 and the Monte Carlo N-Particle (MCNP) code. The calculated as-run fission heat rates, fission densities, and as-run U-235 burnup results for the fueled miniplates reported have an uncertainty band (1σ) of 2.5%.[3] The time intervals used to calculate the average plate power and burnup is shown in Table 7. The average plate power and burnup for the time intervals for cycle 146A are shown in Table 10 through Table 13. The average plate power and burnup for the time intervals for cycle 146B are shown in Table 14 through Table 17. The plots of the power and fission density as a function of the ATR Cycle time interval are in Appendix A.

Table 7: Cycle Breakdown

Time Interval	146A (days)	146B (days)
BOC	1.00E-04	1.00E-04
MOC 1	16	18
MOC 2	16	10
EOC	18.5	11.2
Total EFPDs	50.5	39.2
Cumulative	50.5	89.7

The MCNP-calculated neutronic results reported[3] were calculated using the nominal fuel foil mass and thickness shown in Table 8 for plates in type Z capsule and Table 9 for plates in type X capsule.

Table 8: RERTR-12 Calculated Nominal Initial Constituent Masses and Densities for Capsule Type Z Based off a Nominal Fuel Alloy Density of 17.2 g/cc

Plate Position	Enrich.	Fuel Alloy Thick. (mm)	Fuel Alloy Volume (cc)	Fuel Alloy Mass (g)	Fuel Phase Constituent Masses (g)				Fuel Phase Constituent Densities (g/cc)		
					Total U	U-238	U-235	Mo	U-238	U-235	Mo
1	70%	0.254	0.399	6.870	6.183	1.855	4.328	0.687	4.644	10.836	1.720
2	40%	0.508	0.799	13.741	12.366	7.420	4.947	1.374	9.288	6.192	1.720
3	40%	0.508	0.799	13.741	12.366	7.420	4.947	1.374	9.288	6.192	1.720
4	70%	0.254	0.399	6.870	6.183	1.855	4.328	0.687	4.644	10.836	1.720
5	70%	0.254	0.399	6.870	6.183	1.855	4.328	0.687	4.644	10.836	1.720
6	40%	0.508	0.799	13.741	12.366	7.420	4.947	1.374	9.288	6.192	1.720
7	40%	0.508	0.799	13.741	12.366	7.420	4.947	1.374	9.288	6.192	1.720
8	70%	0.254	0.399	6.870	6.183	1.855	4.328	0.687	4.644	10.836	1.720
			Totals	82.444	74.196	37.100	37.100	8.244			

Table 9: RERTR-12 Calculated Nominal Initial Constituent Masses and Densities for Capsule Type X Based off a Nominal Fuel Alloy Density of 17.2 g/cc

Plate Position	Enrich.	Fuel Alloy Thick. (mm)	Fuel Alloy Volume (cc)	Fuel Alloy Mass (g)	Fuel Phase Constituent Masses (g)				Fuel Phase Constituent Densities (g/cc)		
					Total U	U-238	U-235	Mo	U-238	U-235	Mo
1	70%	0.254	0.399	6.870	6.183	1.855	4.328	0.687	4.644	10.836	1.720
2	70%	0.254	0.399	6.870	6.183	1.855	4.328	0.687	4.644	10.836	1.720
3	50%	0.254	0.399	6.870	6.183	3.092	3.092	0.687	7.740	7.740	1.720
4	40%	0.254	0.399	6.870	6.183	3.710	2.473	0.687	9.288	6.192	1.720
5	70%	0.254	0.399	6.870	6.183	1.855	4.328	0.687	4.644	10.836	1.720
6	70%	0.254	0.399	6.870	6.183	1.855	4.328	0.687	4.644	10.836	1.720
7	50%	0.254	0.399	6.870	6.183	3.092	3.092	0.687	7.740	7.740	1.720
8	40%	0.254	0.399	6.870	6.183	3.710	2.473	0.687	9.288	6.192	1.720
			Totals	54.960	49.464	21.024	28.442	5.496			

Table 10: MCNP-Calculated As-run Results for RERTR-12-1 Irradiated in ATR Position B-11 During Cycle 146A, BOC, Averaged South Lobe Power of 25.4 MW

Configuration		Plate	Density (g/cc)	Fission Power Density (W/cc)	Fission Heat Rate (W/g)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)
A-1	DUM	Blank	2.70	--	--	--	--
A-2		Blank	2.70	--	--	--	--
A-3		Blank	2.70	--	--	--	--
A-4		Blank	2.70	--	--	--	--
A-5		Blank	2.70	--	--	--	--
A-6		Blank	2.70	--	--	--	--
A-7		Blank	2.70	--	--	--	--
A-8		Blank	2.70	--	--	--	--
B-1	X3-1	L1P759	17.20	37658.44	2189.38	478.26	6.83E+14
B-2		L1P784	17.20	25871.77	1504.13	328.57	5.99E+14
B-3		L1P596	17.20	17637.89	1025.47	224.00	5.40E+14
B-4		L1P464	17.20	14896.76	866.06	189.19	4.96E+14
B-5		L1P785	17.20	39858.19	2317.27	506.20	7.33E+14
B-6		L1P786	17.20	27429.79	1594.71	348.36	6.41E+14
B-7		L1P590	17.20	18699.14	1087.17	237.48	5.74E+14
B-8		L1P465	17.20	15810.95	919.21	200.80	5.34E+14
C-1	X1-1	L1P772	17.20	40385.69	2347.94	512.90	7.38E+14
C-2		L1P773	17.20	27534.58	1600.80	349.69	6.47E+14
C-3		L1P591	17.20	18675.73	1085.81	237.18	5.83E+14
C-4		L1P460	17.20	15977.82	928.91	202.92	5.35E+14
C-5		L1P774	17.20	38680.25	2248.79	491.24	7.13E+14
C-6		L1P776	17.20	26682.33	1551.25	338.87	6.27E+14
C-7		L1P592	17.20	18091.41	1051.84	229.76	5.62E+14
C-8		L1P461	17.20	15345.90	892.17	194.89	5.14E+14
D-1	X2-1	L1P754	17.20	34585.25	2010.71	439.23	6.34E+14
D-2		L1P755	17.20	23861.36	1387.25	303.04	5.57E+14
D-3		L1P593	17.20	16363.12	951.36	207.81	5.00E+14
D-4		L1P462	17.20	13847.56	805.06	175.86	4.60E+14
D-5		L1P756	17.20	29499.31	1715.03	374.64	5.34E+14
D-6		L1P758	17.20	19933.00	1158.86	253.15	4.62E+14
D-7		L1P595	17.20	13741.86	798.96	174.52	4.14E+14
D-8		L1P463	17.20	11592.44	673.96	147.22	3.81E+14
Max			--	40385.69	2347.94	512.90	7.38E+14

Table 11: MCNP-Calculated As-run Results for RERTR-12-1 Irradiated in ATR Position B-11 During Cycle 146A, MOC1 (16 EFPD), Averaged South Lobe Power of 25.4 MW

Configuration		Plate	Density (g/cc)	Fission Power Density (W/cc)	Fission Heat Rate (W/g)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)	% Depletion U-235 (%)	Fission Density (fissions/cc)	Fission Rate Density (fissions/cc/s)
A-1	DUM	Blank	--	--	--	--	--	--	--	--
A-2		Blank	--	--	--	--	--	--	--	--
A-3		Blank	--	--	--	--	--	--	--	--
A-4		Blank	--	--	--	--	--	--	--	--
A-5		Blank	--	--	--	--	--	--	--	--
A-6		Blank	--	--	--	--	--	--	--	--
A-7		Blank	--	--	--	--	--	--	--	--
A-8		Blank	--	--	--	--	--	--	--	--
B-1	X3-1	L1P759	16.58	37088.69	2236.80	471.03	6.87E+14	7.35%	1.78E+21	1.29E+15
B-2		L1P784	16.77	25806.33	1538.78	327.74	6.02E+14	5.15%	1.22E+21	8.83E+14
B-3		L1P596	16.91	17803.45	1053.03	226.10	5.40E+14	4.89%	8.32E+20	6.02E+14
B-4		L1P464	16.95	14891.54	878.53	189.12	4.95E+14	5.17%	7.02E+20	5.08E+14
B-5		L1P785	16.55	38890.65	2350.57	493.91	7.30E+14	7.74%	1.88E+21	1.36E+15
B-6		L1P786	16.75	27298.45	1630.12	346.69	6.38E+14	5.44%	1.29E+21	9.33E+14
B-7		L1P590	16.89	18517.74	1096.34	235.18	5.75E+14	5.19%	8.82E+20	6.38E+14
B-8		L1P465	16.94	15809.94	933.41	200.79	5.34E+14	5.42%	7.46E+20	5.40E+14
C-1	X1-1	L1P772	16.54	38988.18	2357.21	495.15	7.36E+14	7.85%	1.90E+21	1.37E+15
C-2		L1P773	16.74	27316.71	1631.57	346.92	6.44E+14	5.48%	1.30E+21	9.40E+14
C-3		L1P591	16.89	18526.51	1096.91	235.29	5.77E+14	5.19%	8.81E+20	6.37E+14
C-4		L1P460	16.94	15921.50	940.07	202.20	5.37E+14	5.49%	7.54E+20	5.45E+14
C-5		L1P774	16.57	37622.33	2271.17	477.80	7.04E+14	7.53%	1.82E+21	1.32E+15
C-6		L1P776	16.76	26478.19	1579.96	336.27	6.23E+14	5.30%	1.26E+21	9.11E+14
C-7		L1P592	16.90	18305.90	1083.28	232.48	5.60E+14	5.04%	8.53E+20	6.17E+14
C-8		L1P461	16.94	15312.89	903.71	194.47	5.15E+14	5.30%	7.24E+20	5.24E+14
D-1	X2-1	L1P754	16.63	34401.88	2068.71	436.90	6.42E+14	6.77%	1.63E+21	1.18E+15
D-2		L1P755	16.80	24043.34	1430.87	305.35	5.64E+14	4.76%	1.13E+21	8.17E+14
D-3		L1P593	16.93	16381.50	967.68	208.05	5.07E+14	4.54%	7.72E+20	5.58E+14
D-4		L1P462	16.97	13987.07	824.24	177.64	4.69E+14	4.79%	6.53E+20	4.72E+14
D-5		L1P756	16.71	29345.00	1755.76	372.68	5.44E+14	5.80%	1.39E+21	1.01E+15
D-6		L1P758	16.87	20624.82	1222.57	261.94	4.75E+14	3.96%	9.40E+20	6.80E+14
D-7		L1P595	16.97	14033.15	826.89	178.22	4.28E+14	3.83%	6.48E+20	4.69E+14
D-8		L1P463	17.01	11961.92	703.37	151.92	3.95E+14	4.04%	5.47E+20	3.96E+14
Max			--	38988.18	2357.21	495.15	7.36E+14	7.85%	1.90E+21	1.37E+15

Table 12: MCNP-Calculated As-run Results for RERTR-12-1 Irradiated in ATR Position B-11 During Cycle 146A, MOC2 (32 EFPD), Averaged South Lobe Power of 25.4 MW

Configuration		Plate	Density (g/cc)	Fission Power Density (W/cc)	Fission Heat Rate (W/g)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)	% Depletion U-235 (%)	Fission Density (fissions/cc)	Fission Rate Density (fissions/cc/s)
A-1	DUM	Blank	--	--	--	--	--	--	--	--
A-2		Blank	--	--	--	--	--	--	--	--
A-3		Blank	--	--	--	--	--	--	--	--
A-4		Blank	--	--	--	--	--	--	--	--
A-5		Blank	--	--	--	--	--	--	--	--
A-6		Blank	--	--	--	--	--	--	--	--
A-7		Blank	--	--	--	--	--	--	--	--
A-8		Blank	--	--	--	--	--	--	--	--
B-1	X3-1	L1P759	15.96	34696.22	2173.81	440.64	6.59E+14	14.63%	3.54E+21	1.28E+15
B-2		L1P784	16.33	24862.43	1522.15	315.75	5.83E+14	10.30%	2.45E+21	8.86E+14
B-3		L1P596	16.60	16835.58	1013.97	213.81	5.22E+14	9.88%	1.68E+21	6.08E+14
B-4		L1P464	16.70	14134.82	846.31	179.51	4.81E+14	10.34%	1.41E+21	5.10E+14
B-5		L1P785	15.90	36183.62	2275.94	459.53	7.00E+14	15.35%	3.73E+21	1.35E+15
B-6		L1P786	16.29	26008.99	1597.09	330.31	6.18E+14	10.88%	2.59E+21	9.37E+14
B-7		L1P590	16.58	17576.10	1060.39	223.22	5.55E+14	10.39%	1.76E+21	6.37E+14
B-8		L1P465	16.67	14923.48	895.27	189.53	5.14E+14	10.97%	1.50E+21	5.43E+14
C-1	X1-1	L1P772	15.89	36202.75	2278.91	459.77	7.06E+14	15.49%	3.76E+21	1.36E+15
C-2		L1P773	16.28	26145.99	1605.79	332.05	6.22E+14	10.91%	2.60E+21	9.40E+14
C-3		L1P591	16.57	17852.28	1077.13	226.72	5.58E+14	10.39%	1.76E+21	6.37E+14
C-4		L1P460	16.67	14965.70	897.98	190.06	5.14E+14	11.03%	1.51E+21	5.46E+14
C-5		L1P774	15.93	35497.09	2227.81	450.81	6.84E+14	14.91%	3.61E+21	1.31E+15
C-6		L1P776	16.31	25405.14	1557.57	322.65	6.03E+14	10.59%	2.52E+21	9.11E+14
C-7		L1P592	16.59	17298.13	1042.60	219.69	5.42E+14	10.14%	1.72E+21	6.22E+14
C-8		L1P461	16.69	14433.68	864.98	183.31	4.99E+14	10.59%	1.45E+21	5.24E+14
D-1	X2-1	L1P754	16.05	32410.85	2018.82	411.62	6.27E+14	13.54%	3.27E+21	1.18E+15
D-2		L1P755	16.40	23265.29	1418.93	295.47	5.54E+14	9.55%	2.27E+21	8.21E+14
D-3		L1P593	16.65	15840.91	951.48	201.18	4.96E+14	9.18%	1.55E+21	5.61E+14
D-4		L1P462	16.73	13233.35	790.83	168.06	4.56E+14	9.65%	1.32E+21	4.77E+14
D-5		L1P756	16.22	28336.70	1747.20	359.88	5.37E+14	11.60%	2.79E+21	1.01E+15
D-6		L1P758	16.52	19998.54	1210.69	253.98	4.71E+14	8.14%	1.92E+21	6.94E+14
D-7		L1P595	16.73	13745.65	821.48	174.57	4.24E+14	7.82%	1.32E+21	4.77E+14
D-8		L1P463	16.80	11561.06	688.07	146.83	3.91E+14	8.20%	1.12E+21	4.05E+14
Max			--	36202.75	2278.91	459.77	7.06E+14	15.49%	3.76E+21	1.36E+15

Table 13: MCNP-Calculated As-run Results for RERTR-12-1 Irradiated in ATR Position B-11 During Cycle 146A, EOC (50.5 EFPD), Averaged South Lobe Power of 25.4 MW

Configuration		Plate	Density (g/cc)	Fission Power Density (W/cc)	Fission Heat Rate (W/g)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)	% Depletion U-235 (%)	Fission Density (fissions/cc)	Fission Rate Density (fissions/cc/s)
A-1	DUM	Blank	--	--	--	--	--	--	--	--
A-2		Blank	--	--	--	--	--	--	--	--
A-3		Blank	--	--	--	--	--	--	--	--
A-4		Blank	--	--	--	--	--	--	--	--
A-5		Blank	--	--	--	--	--	--	--	--
A-6		Blank	--	--	--	--	--	--	--	--
A-7		Blank	--	--	--	--	--	--	--	--
A-8		Blank	--	--	--	--	--	--	--	--
B-1	X3-1	L1P759	15.28	33039.90	2162.52	419.61	6.53E+14	22.48%	5.48E+21	1.26E+15
B-2		L1P784	15.84	24509.22	1547.33	311.27	5.82E+14	16.07%	3.83E+21	8.78E+14
B-3		L1P596	16.27	16557.26	1017.65	210.28	5.22E+14	15.38%	2.62E+21	6.00E+14
B-4		L1P464	16.42	13763.48	838.33	174.80	4.79E+14	16.02%	2.20E+21	5.04E+14
B-5		L1P785	15.19	34328.12	2260.42	435.97	6.95E+14	23.56%	5.75E+21	1.32E+15
B-6		L1P786	15.77	25571.34	1621.71	324.76	6.15E+14	16.89%	4.04E+21	9.26E+14
B-7		L1P590	16.23	17288.00	1065.51	219.56	5.53E+14	16.09%	2.74E+21	6.28E+14
B-8		L1P465	16.37	14507.05	885.96	184.24	5.12E+14	16.96%	2.33E+21	5.34E+14
C-1	X1-1	L1P772	15.18	34351.87	2263.47	436.27	7.00E+14	23.67%	5.78E+21	1.32E+15
C-2		L1P773	15.76	25728.43	1632.19	326.75	6.20E+14	16.97%	4.06E+21	9.31E+14
C-3		L1P591	16.22	17522.66	1080.38	222.54	5.57E+14	16.19%	2.76E+21	6.33E+14
C-4		L1P460	16.37	14567.75	889.98	185.01	5.13E+14	17.09%	2.35E+21	5.39E+14
C-5		L1P774	15.24	33720.67	2212.92	428.25	6.77E+14	22.98%	5.59E+21	1.28E+15
C-6		L1P776	15.80	25049.54	1585.02	318.13	6.01E+14	16.46%	3.93E+21	9.01E+14
C-7		L1P592	16.24	17028.84	1048.33	216.27	5.41E+14	15.78%	2.69E+21	6.17E+14
C-8		L1P461	16.40	14069.49	858.01	178.68	4.98E+14	16.46%	2.26E+21	5.18E+14
D-1	X2-1	L1P754	15.41	30905.77	2005.07	392.50	6.21E+14	20.93%	5.08E+21	1.16E+15
D-2		L1P755	15.93	22910.27	1437.90	290.96	5.53E+14	14.99%	3.57E+21	8.18E+14
D-3		L1P593	16.33	15607.02	955.52	198.21	4.94E+14	14.32%	2.43E+21	5.57E+14
D-4		L1P462	16.47	12927.56	784.98	164.18	4.54E+14	15.01%	2.06E+21	4.72E+14
D-5		L1P756	15.66	27253.67	1740.81	346.12	5.33E+14	18.12%	4.37E+21	1.00E+15
D-6		L1P758	16.12	19752.69	1225.40	250.86	4.70E+14	12.82%	3.04E+21	6.97E+14
D-7		L1P595	16.46	13558.95	823.85	172.20	4.23E+14	12.30%	2.08E+21	4.77E+14
D-8		L1P463	16.57	11316.61	682.95	143.72	3.90E+14	12.93%	1.76E+21	4.03E+14
Max			--	34351.87	2263.47	436.27	7.00E+14	23.67%	5.78E+21	1.32E+15

Table 14: MCNP-Calculated As-run Results for RERTR-12-1 Irradiated in ATR Position B-11 During Cycle 146B, BOC, Averaged South Lobe Power of 25.0 MW

Configuration		Plate	Density (g/cc)	Fission Power Density (W/cc)	Fission Heat Rate (W/g)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)
A-1	Z-1	L1P787	17.20	21866.55	1271.27	277.71	4.31E+14
A-2		L2P481	17.20	8129.26	472.61	206.48	3.72E+14
A-3		L2P498	17.20	6621.19	384.94	168.18	3.39E+14
A-4		L1P789	17.20	11977.01	696.32	152.11	3.26E+14
A-5		L1P7A0	17.20	27315.15	1588.04	346.90	5.36E+14
A-6		L2P482	17.20	9983.79	580.43	253.59	4.63E+14
A-7		L2P499	17.20	8141.90	473.35	206.80	4.20E+14
A-8		L1P7A1	17.20	14748.55	857.45	187.31	4.00E+14
B-1	X3-2	L1P759	15.28	27513.23	1800.79	349.42	5.90E+14
B-2		L1P784	15.84	20440.18	1290.44	259.59	5.27E+14
B-3		L1P596	16.27	13860.89	851.93	176.03	4.75E+14
B-4		L1P464	16.42	11484.90	699.54	145.86	4.37E+14
B-5		L1P785	15.19	29068.62	1914.09	369.17	6.22E+14
B-6		L1P786	15.77	21656.81	1373.46	275.04	5.50E+14
B-7		L1P590	16.23	14670.78	904.20	186.32	4.93E+14
B-8		L1P465	16.37	12228.18	746.78	155.30	4.54E+14
C-1	DUM	Blank	--	--	--	--	--
C-2		Blank	--	--	--	--	--
C-3		Blank	--	--	--	--	--
C-4		Blank	--	--	--	--	--
C-5		Blank	--	--	--	--	--
C-6		Blank	--	--	--	--	--
C-7		Blank	--	--	--	--	--
C-8		Blank	--	--	--	--	--
D-1	X2-2	L1P754	15.41	25731.23	1669.36	326.79	5.38E+14
D-2		L1P755	15.93	18949.81	1189.30	240.66	4.77E+14
D-3		L1P593	16.33	12782.87	782.61	162.34	4.28E+14
D-4		L1P462	16.47	10646.92	646.50	135.22	3.95E+14
D-5		L1P756	15.66	22250.89	1421.26	282.59	4.59E+14
D-6		L1P758	16.12	16026.58	994.39	203.54	4.06E+14
D-7		L1P595	16.46	10771.48	654.48	136.80	3.63E+14
D-8		L1P463	16.57	9015.90	544.11	114.50	3.34E+14
Max			--	29068.62	1914.09	369.17	6.22E+14

Table 15: MCNP-Calculated As-run Results for RERTR-12-2 Irradiated in ATR Position B-11 During Cycle 146B, MOC1 (18 EFPD), Averaged South Lobe Power of 25.0 MW

Configuration		Plate	Density (g/cc)	Fission Power Density (W/cc)	Fission Heat Rate (W/g)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)	% Depletion U-235 (%)	Fission Density (fissions/cc)	Fission Rate Density (fissions/cc/s)
A-1	Z-1	L1P787	16.79	22766.62	1356.22	289.14	4.50E+14	4.91%	1.17E+21	1.98E+14
A-2		L2P481	17.05	8338.59	489.20	211.80	3.85E+14	3.23%	4.36E+20	7.37E+13
A-3		L2P498	17.08	6892.36	403.65	175.07	3.52E+14	2.66%	3.55E+20	6.00E+13
A-4		L1P789	16.97	12562.69	740.17	159.55	3.34E+14	2.74%	6.42E+20	1.08E+14
A-5		L1P7A0	16.69	28154.47	1687.36	357.56	5.52E+14	6.13%	1.46E+21	2.47E+14
A-6		L2P482	17.01	10333.27	607.38	262.46	4.76E+14	3.92%	5.35E+20	9.04E+13
A-7		L2P499	17.04	8414.67	493.68	213.73	4.32E+14	3.29%	4.36E+20	7.37E+13
A-8		L1P7A1	16.92	15344.12	906.87	194.87	4.12E+14	3.39%	7.90E+20	1.33E+14
B-1	X3-2	L1P759	14.75	28492.46	1931.60	361.85	6.13E+14	28.53%	6.95E+21	1.17E+15
B-2		L1P784	15.44	21947.90	1421.13	278.74	5.47E+14	20.64%	4.93E+21	8.33E+14
B-3		L1P596	16.00	14725.20	920.33	187.01	4.92E+14	19.72%	3.36E+21	5.68E+14
B-4		L1P464	16.20	12132.77	749.14	154.09	4.54E+14	20.55%	2.81E+21	4.75E+14
B-5		L1P785	14.63	29648.38	2026.74	376.53	6.38E+14	29.94%	7.31E+21	1.24E+15
B-6		L1P786	15.35	22964.18	1496.20	291.65	5.71E+14	21.76%	5.20E+21	8.79E+14
B-7		L1P590	15.94	15628.98	980.35	198.49	5.10E+14	20.68%	3.53E+21	5.96E+14
B-8		L1P465	16.14	12760.71	790.82	162.06	4.68E+14	21.69%	2.98E+21	5.04E+14
C-1	DUM	Blank	--	--	--	--	--	--	--	--
C-2		Blank	--	--	--	--	--	--	--	--
C-3		Blank	--	--	--	--	--	--	--	--
C-4		Blank	--	--	--	--	--	--	--	--
C-5		Blank	--	--	--	--	--	--	--	--
C-6		Blank	--	--	--	--	--	--	--	--
C-7		Blank	--	--	--	--	--	--	--	--
C-8		Blank	--	--	--	--	--	--	--	--
D-1	X2-2	L1P754	14.92	26955.56	1806.95	342.34	5.65E+14	26.62%	6.45E+21	1.09E+15
D-2		L1P755	15.56	20350.50	1307.55	258.45	5.00E+14	19.27%	4.58E+21	7.74E+14
D-3		L1P593	16.09	13792.79	857.46	175.17	4.49E+14	18.36%	3.12E+21	5.27E+14
D-4		L1P462	16.26	11354.84	698.26	144.21	4.13E+14	19.17%	2.63E+21	4.44E+14
D-5		L1P756	15.22	23772.38	1561.43	301.91	4.87E+14	23.05%	5.56E+21	9.39E+14
D-6		L1P758	15.81	17594.47	1113.20	223.45	4.32E+14	16.43%	3.89E+21	6.57E+14
D-7		L1P595	16.25	11807.69	726.78	149.96	3.85E+14	15.68%	2.66E+21	4.49E+14
D-8		L1P463	16.40	9815.05	598.58	124.65	3.55E+14	16.46%	2.24E+21	3.78E+14
Max			--	29648.38	2026.74	376.53	6.38E+14	29.94%	7.31E+21	1.24E+15

Table 16: MCNP-Calculated As-run Results for RERTR-12-2 Irradiated in ATR Position B-11 During Cycle 146B, MOC2 (28 EFPD), Averaged South Lobe Power of 25.0 MW

Configuration		Plate	Density (g/cc)	Fission Power Density (W/cc)	Fission Heat Rate (W/g)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)	% Depletion U-235 (%)	Fission Density (fissions/cc)	Fission Rate Density (fissions/cc/s)
A-1	Z-1	L1P787	16.55	22879.69	1382.74	290.57	4.50E+14	7.75%	1.85E+21	2.73E+14
A-2		L2P481	16.96	8456.10	498.71	214.79	3.89E+14	5.06%	6.82E+20	1.01E+14
A-3		L2P498	17.00	6872.64	404.22	174.56	3.52E+14	4.17%	5.59E+20	8.24E+13
A-4		L1P789	16.84	12400.50	736.47	157.49	3.33E+14	4.37%	1.01E+21	1.49E+14
A-5		L1P7A0	16.39	27523.25	1679.39	349.55	5.48E+14	9.62%	2.30E+21	3.39E+14
A-6		L2P482	16.90	10310.68	610.03	261.89	4.72E+14	6.19%	8.41E+20	1.24E+14
A-7		L2P499	16.96	8441.17	497.81	214.41	4.31E+14	5.12%	6.85E+20	1.01E+14
A-8		L1P7A1	16.76	15140.62	903.54	192.29	4.09E+14	5.34%	1.24E+21	1.83E+14
B-1	X3-2	L1P759	14.44	27623.48	1912.61	350.82	6.06E+14	32.06%	7.79E+21	1.15E+15
B-2		L1P784	15.21	21599.86	1420.49	274.32	5.43E+14	23.41%	5.58E+21	8.23E+14
B-3		L1P596	15.84	14463.05	913.11	183.68	4.87E+14	22.29%	3.80E+21	5.60E+14
B-4		L1P464	16.06	11979.63	745.78	152.14	4.51E+14	23.14%	3.17E+21	4.67E+14
B-5		L1P785	14.31	28634.93	2000.75	363.66	6.29E+14	33.57%	8.18E+21	1.21E+15
B-6		L1P786	15.10	22564.06	1494.43	286.56	5.61E+14	24.64%	5.88E+21	8.67E+14
B-7		L1P590	15.77	15201.60	963.94	193.06	5.01E+14	23.40%	3.99E+21	5.88E+14
B-8		L1P465	16.00	12469.54	779.43	158.36	4.61E+14	24.46%	3.36E+21	4.95E+14
C-1	DUM	Blank	--	--	--	--	--	--	--	--
C-2		Blank	--	--	--	--	--	--	--	--
C-3		Blank	--	--	--	--	--	--	--	--
C-4		Blank	--	--	--	--	--	--	--	--
C-5		Blank	--	--	--	--	--	--	--	--
C-6		Blank	--	--	--	--	--	--	--	--
C-7		Blank	--	--	--	--	--	--	--	--
C-8		Blank	--	--	--	--	--	--	--	--
D-1	X2-2	L1P754	14.63	26100.92	1784.35	331.48	5.58E+14	29.94%	7.25E+21	1.07E+15
D-2		L1P755	15.34	20134.13	1312.12	255.70	4.99E+14	21.79%	5.18E+21	7.64E+14
D-3		L1P593	15.93	13623.08	854.96	173.01	4.49E+14	20.78%	3.53E+21	5.20E+14
D-4		L1P462	16.14	11196.50	693.79	142.20	4.10E+14	21.69%	2.96E+21	4.36E+14
D-5		L1P756	14.97	23253.47	1553.52	295.32	4.83E+14	26.01%	6.26E+21	9.23E+14
D-6		L1P758	15.61	17401.16	1114.49	220.99	4.32E+14	18.66%	4.42E+21	6.52E+14
D-7		L1P595	16.12	11803.00	732.21	149.90	3.84E+14	17.75%	3.01E+21	4.44E+14
D-8		L1P463	16.29	9781.78	600.53	124.23	3.53E+14	18.60%	2.53E+21	3.73E+14
Max			--	28634.93	2000.75	363.66	6.29E+14	33.57%	8.18E+21	1.21E+15

Table 17: MCNP-Calculated As-run Results for RERTR-12-2 Irradiated in ATR Position B-11 During Cycle 146B, EOC (39.2 EFPD), Averaged South Lobe Power of 25.0 MW

Configuration		Plate	Density (g/cc)	Fission Power Density (W/cc)	Fission Heat Rate (W/g)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)	% Depletion U-235 (%)	Fission Density (fissions/cc)	Fission Rate Density (fissions/cc/s)
A-1	Z-1	L1P787	16.27	22428.32	1378.78	284.84	4.48E+14	11.03%	2.62E+21	3.38E+14
A-2		L2P481	16.85	8407.76	498.87	213.56	3.89E+14	7.20%	9.67E+20	1.25E+14
A-3		L2P498	16.92	6849.91	404.88	173.99	3.52E+14	5.94%	7.90E+20	1.02E+14
A-4		L1P789	16.69	12288.93	736.38	156.07	3.33E+14	6.17%	1.43E+21	1.85E+14
A-5		L1P7A0	16.06	26896.09	1675.12	341.58	5.46E+14	13.51%	3.22E+21	4.15E+14
A-6		L2P482	16.78	10255.82	611.36	260.50	4.71E+14	8.84%	1.19E+21	1.54E+14
A-7		L2P499	16.85	8412.75	499.18	213.68	4.30E+14	7.26%	9.70E+20	1.25E+14
A-8		L1P7A1	16.57	15022.85	906.50	190.79	4.08E+14	7.54%	1.75E+21	2.26E+14
B-1	X3-2	L1P759	14.11	26745.18	1895.82	339.66	6.04E+14	35.88%	8.72E+21	1.13E+15
B-2		L1P784	14.94	21383.76	1431.34	271.57	5.42E+14	26.44%	6.31E+21	8.14E+14
B-3		L1P596	15.66	14308.06	913.50	181.71	4.86E+14	25.11%	4.28E+21	5.52E+14
B-4		L1P464	15.92	11778.66	740.02	149.59	4.49E+14	26.04%	3.58E+21	4.62E+14
B-5		L1P785	13.96	27681.13	1982.52	351.55	6.26E+14	37.57%	9.15E+21	1.18E+15
B-6		L1P786	14.83	22303.70	1504.39	283.26	5.60E+14	27.81%	6.64E+21	8.57E+14
B-7		L1P590	15.59	15056.99	966.06	191.22	5.00E+14	26.37%	4.50E+21	5.81E+14
B-8		L1P465	15.84	12243.83	772.80	155.50	4.60E+14	27.49%	3.78E+21	4.88E+14
C-1	DUM	Blank	--	--	--	--	--	--	--	--
C-2		Blank	--	--	--	--	--	--	--	--
C-3		Blank	--	--	--	--	--	--	--	--
C-4		Blank	--	--	--	--	--	--	--	--
C-5		Blank	--	--	--	--	--	--	--	--
C-6		Blank	--	--	--	--	--	--	--	--
C-7		Blank	--	--	--	--	--	--	--	--
C-8		Blank	--	--	--	--	--	--	--	--
D-1	X2-2	L1P754	14.31	25372.83	1773.16	322.23	5.55E+14	33.57%	8.13E+21	1.05E+15
D-2		L1P755	15.10	19950.20	1321.41	253.37	4.98E+14	24.64%	5.86E+21	7.56E+14
D-3		L1P593	15.77	13504.89	856.42	171.51	4.48E+14	23.45%	3.99E+21	5.15E+14
D-4		L1P462	16.00	11037.25	689.80	140.17	4.09E+14	24.40%	3.34E+21	4.31E+14
D-5		L1P756	14.68	22679.32	1544.46	288.03	4.81E+14	29.29%	7.05E+21	9.10E+14
D-6		L1P758	15.40	17251.74	1120.20	219.10	4.31E+14	21.11%	5.00E+21	6.45E+14
D-7		L1P595	15.97	11716.82	733.58	148.80	3.83E+14	20.12%	3.41E+21	4.40E+14
D-8		L1P463	16.17	9669.87	598.02	122.81	3.53E+14	21.00%	2.86E+21	3.69E+14
Max				27681.13	1982.52	351.55	6.26E+14	37.57%	9.15E+21	1.18E+15

5.2 Gradients

The MCNP-calculated power gradients in the transverse and axial directions are represented by the beginning of life fission rate local-to-average ratios (L2ARs) as a function of position along the fuel foil. Figure 8 through Figure 11 depict the power gradient in the transverse direction and Figure 12 through Figure 15 depict the power gradient in the axial direction. The 2D gradient map for each plate can be found in Appendix B.

The L2ARs were also calculated at each time step for the first two cycles. The end of life depleted L2ARs can be found in Appendix C (Note: capsule A from cycle 146B is not included in these tables given that it was irradiated in RERTR-12 Insertion 2 campaign where depleted L2AR analysis was not performed).

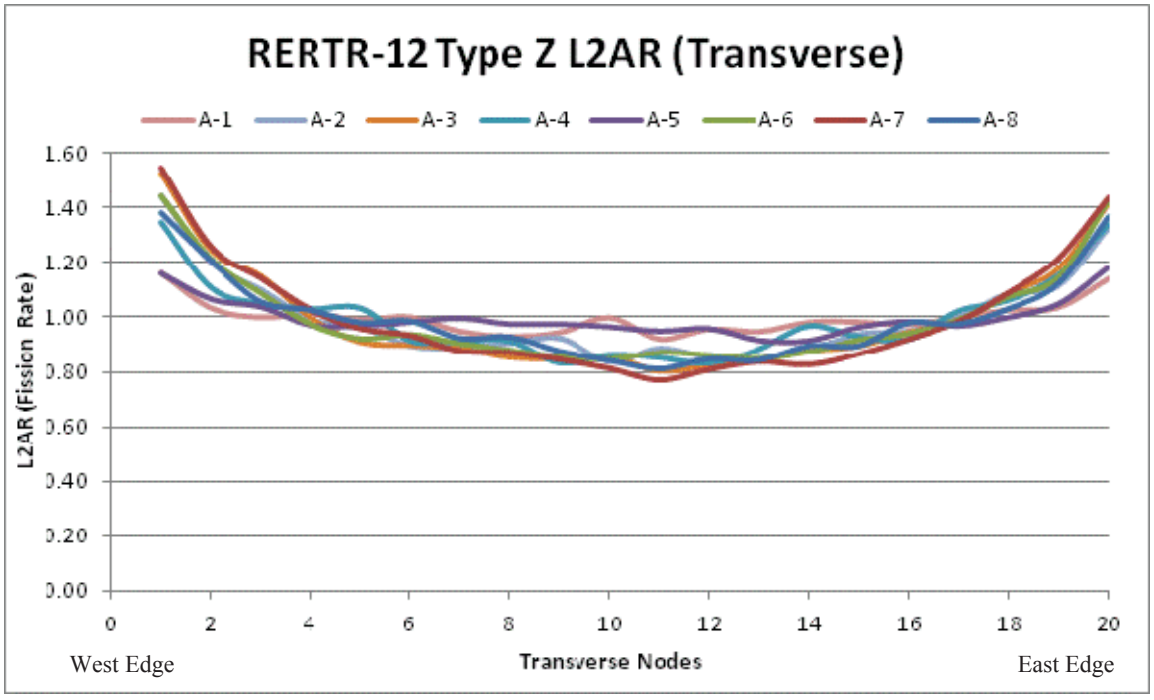

Figure 8: BOL fission rate local to average ratio in the transverse direction for a type Z capsule in the A capsule position.

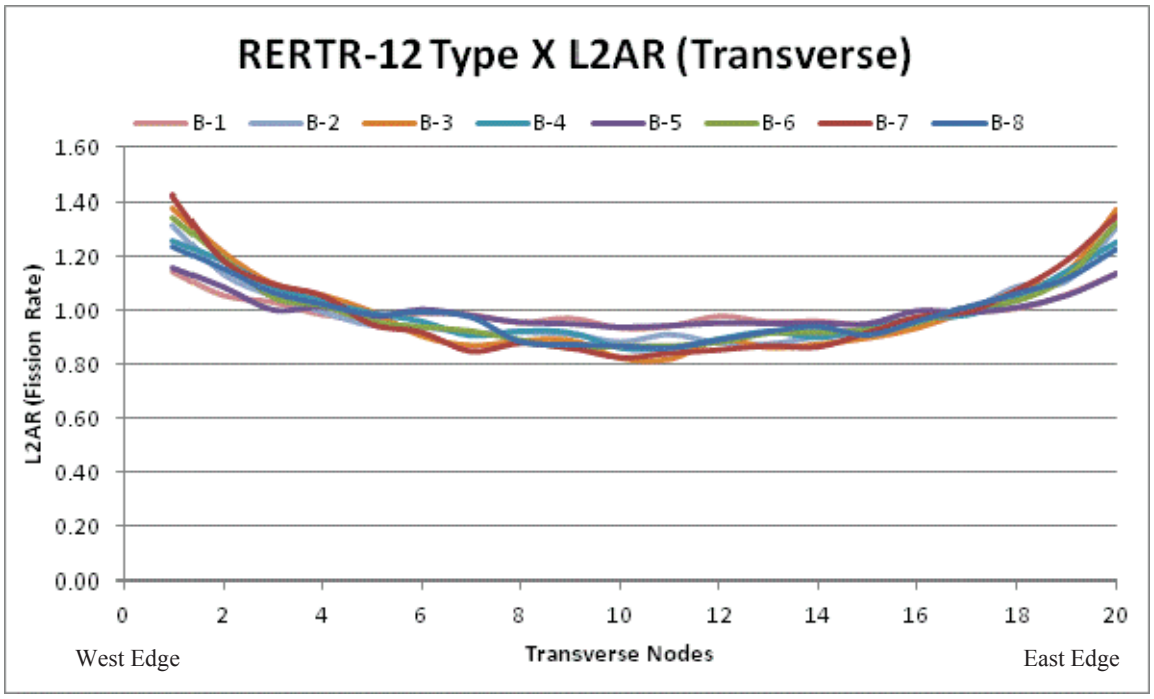

Figure 9: BOL fission rate local to average ratio in the transverse direction for a type X capsule in the B capsule position.

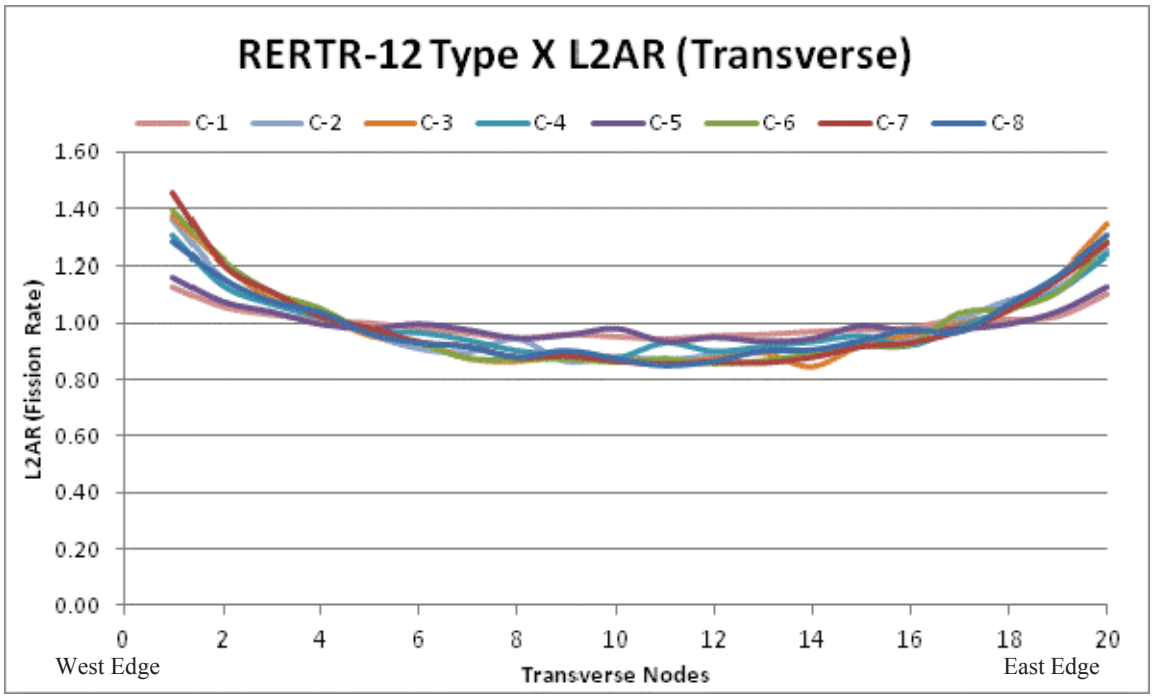

Figure 10: BOL fission rate local to average ratio in the transverse direction for a type X capsule in the C capsule position.

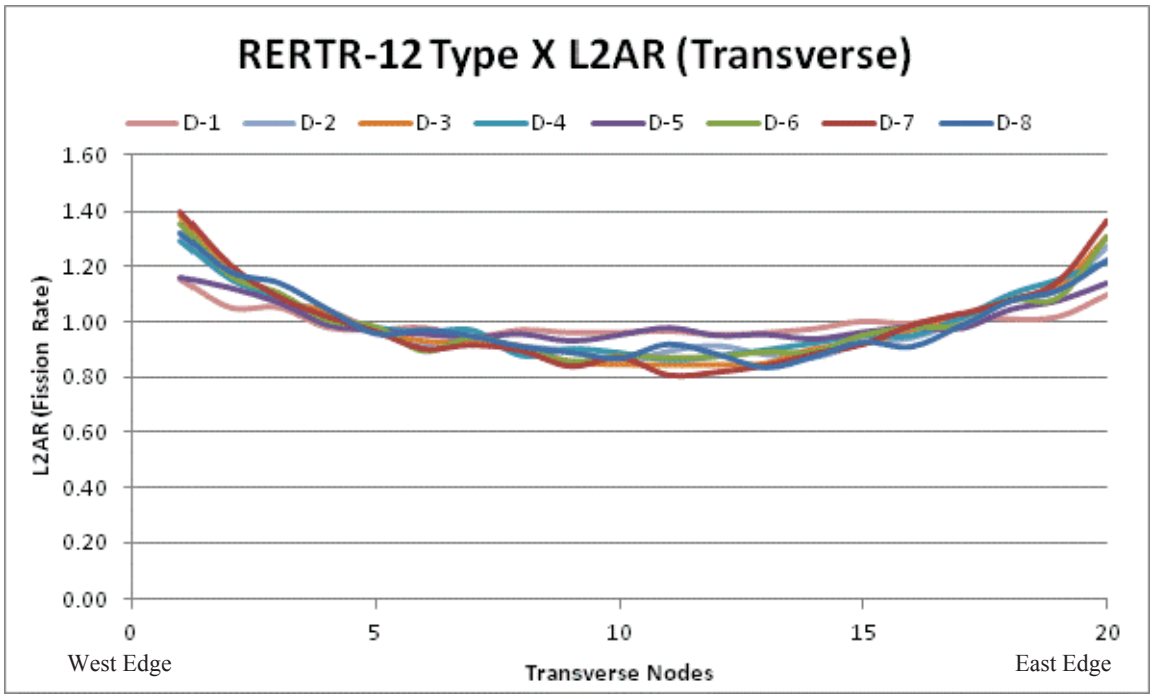

Figure 11: BOL fission rate local to average ratio in the transverse direction for a type X capsule in the D capsule position.

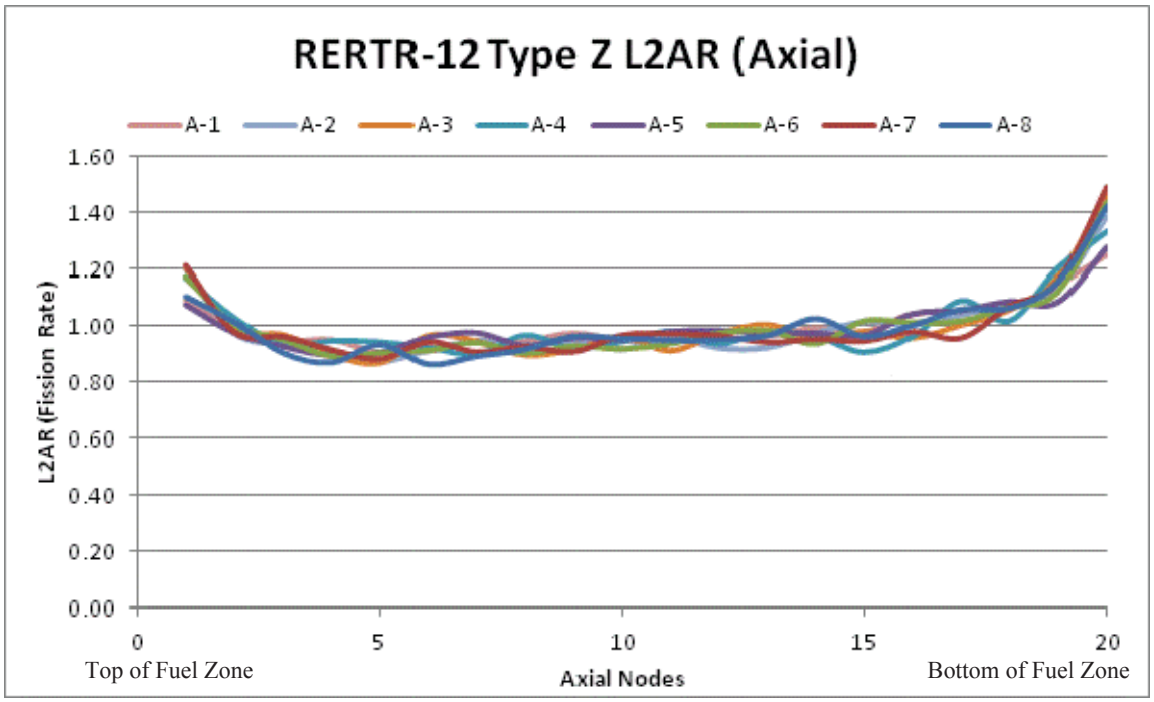

Figure 12: BOL fission rate local to average ratio in the axial direction for a type Z capsule in the A capsule position.

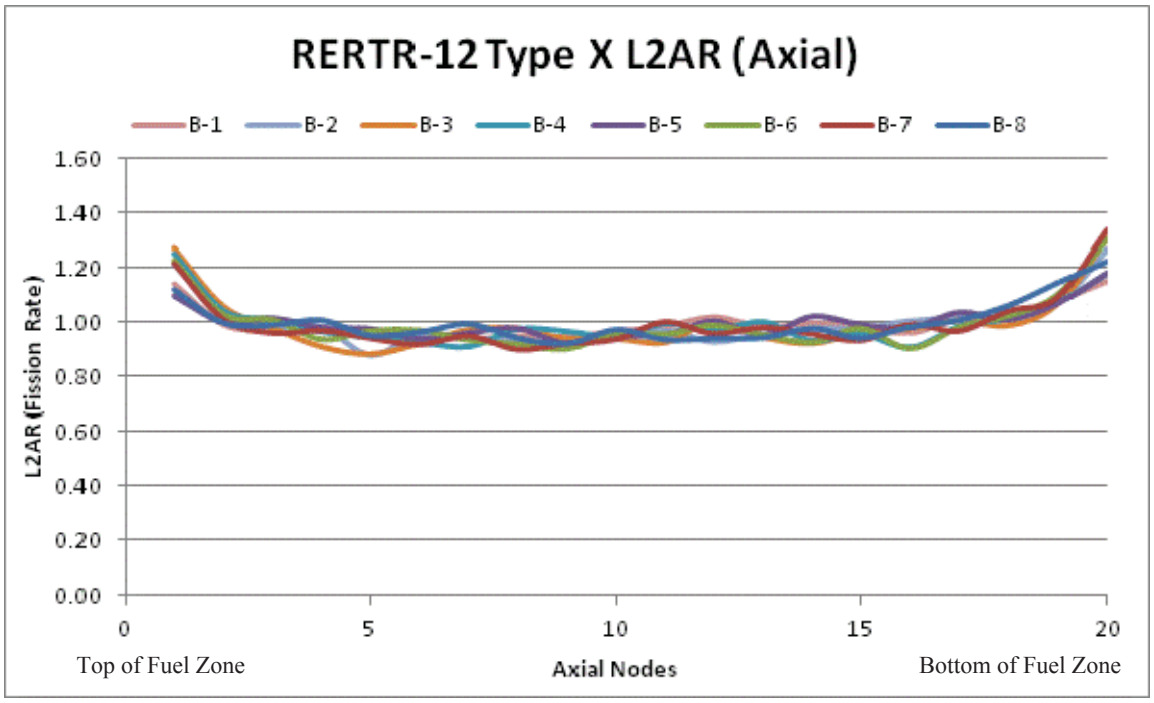

Figure 13: BOL fission rate local to average ratio in the axial direction for a type X capsule in the B capsule position.

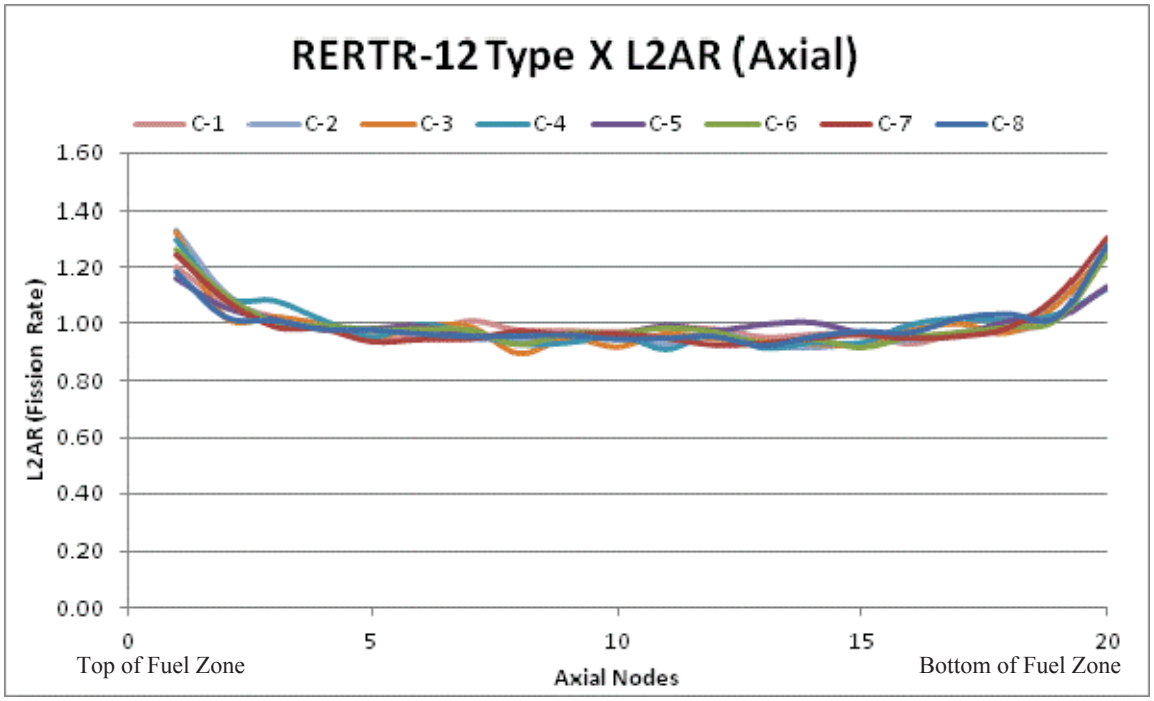

Figure 14: BOL fission rate local to average ratio in the axial direction for a type X capsule in the C capsule position.

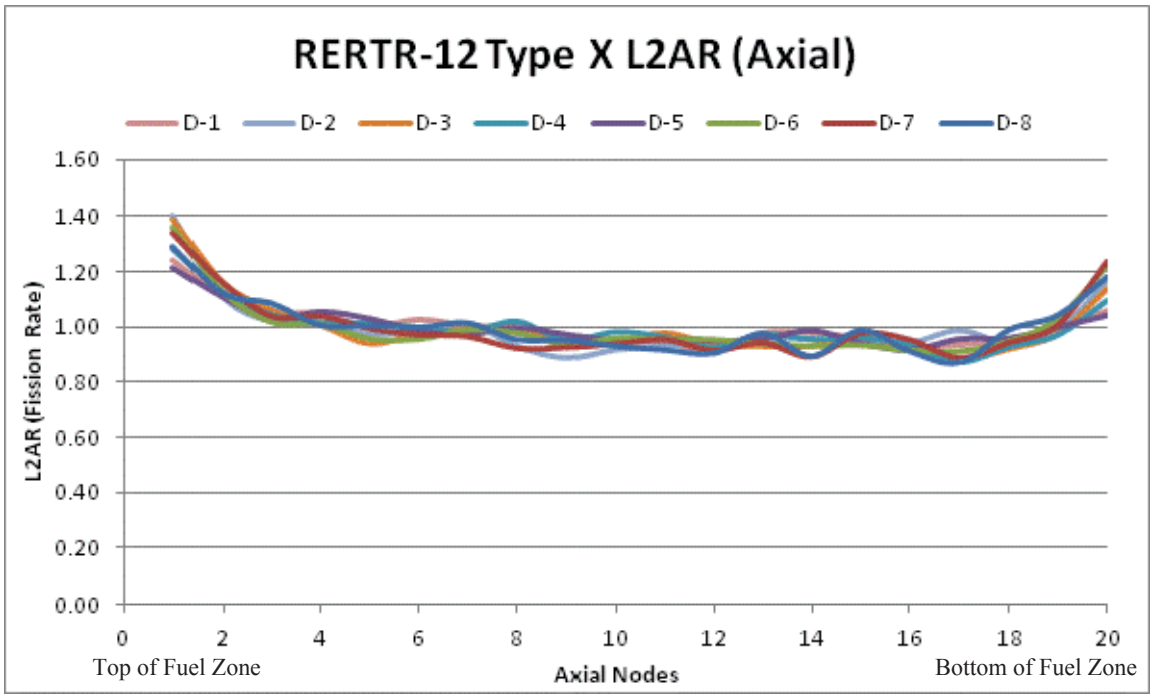

Figure 15: BOL fission rate local to average ratio in the axial direction for a type X capsule in the D capsule position.

6. HYDRAULIC TESTING

A fully assembled irradiation test vehicle (with simulated fuel plates) was used for testing. The test vehicle was fabricated such that the orifice plates could be easily changed. The hydraulic resistance of the RERTR Large B-Position irradiation test vehicle with various orifice plate sizes were calculated, the results are shown in Table 18.

Table 18: Loss Coefficients for the RERTR Irradiation Test Vehicle Components[4]

Orifice Dia. (mm)	K/A^2 ($1/m^4$)	ATR Coolant Flow Rate (cm^3/sec)
10	5.3041×10^8	1252
9	8.2181×10^8	1046
8	1.6961×10^9	757
7.32	2.9022×10^9	588
7	3.0058×10^9	579
6	4.0784×10^9	500
5	101743×10^{10}	298
Bypass	2.7958×10^8	--
Vehicle	1.4161×10^8	2727

Based on the results from the hydraulic testing, the orifice was removed leaving the capsule in the "Vehicle" configuration to provide an ATR coolant flow rate through the capsules of 2727 cm^3/sec.[5]

7. AS-RUN THERMAL ANALYSIS

The thermal as-run analysis was performed using the as-built geometry, MCNP-calculated surface heat flux (W/cm^2) and nominal coolant channel flow rate. ABAQUS[6] was used to calculate the coolant channel temperatures and plate surface temperatures.

The heat transfer correlation used to calculate these temperatures was calculated from the Colburn equation (equation 5-50c from Reference 7):

$$Nu = \frac{hD}{k} = 0.023 Re^{0.8} Pr^{0.3}$$

Where Nu is the Nusselt number, h is the heat transfer coefficient, D is the hydraulic diameter, k is the thermal conductivity, Re is the Reynolds number and Pr is the Prandlt number.

The thermal analysis was performed using the beginning of life L2ARs shown in Section 5.2.

7.1 Coolant Channel Temperature

The coolant temperature was analyzed at the five flow channels in the capsule (see Figure 16). For each interval, the coolant temperature was plotted as a function f location along the test assembly with 0.0 in. being at the top of the assembly[8]. These plots are shown in Figure 17 through Figure 24.

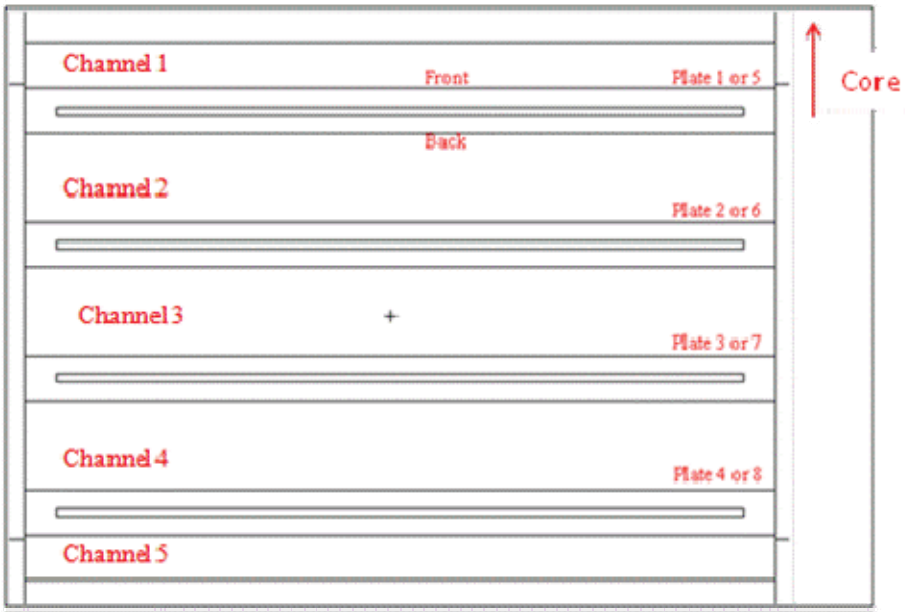

Figure 16: RERTR-12 capsule cross section with the front (side with plate ID) of plate 1 facing the core.

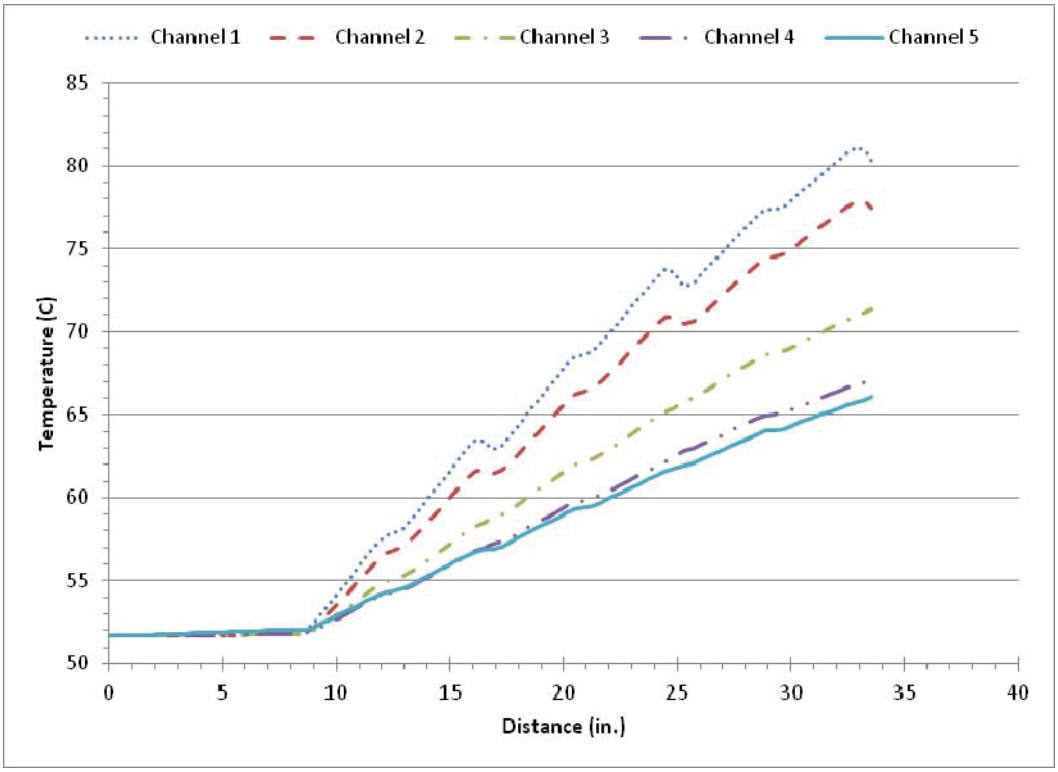

Figure 17: Coolant channel temperatures as a function of location along the RERTR-12 test assembly at BOC 146A (0.0 EFPD).

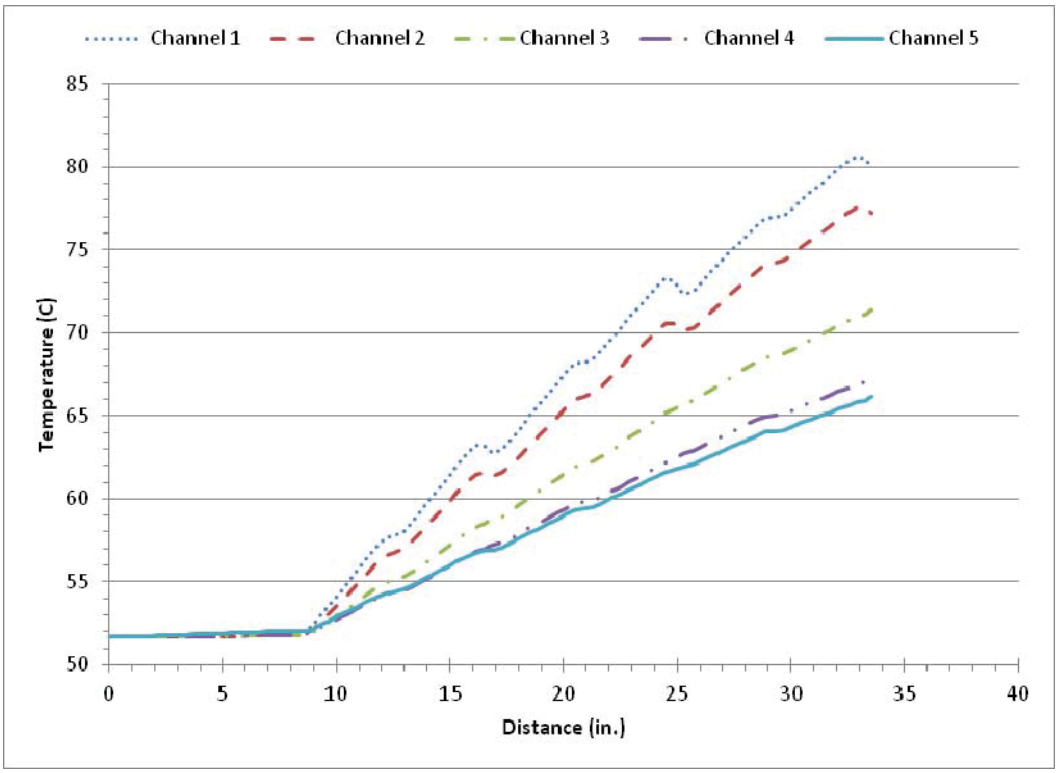

Figure 18: Coolant channel temperature as a function of location along the RERTR-12 test assembly at MOC1 146A (16.0 EFPD).

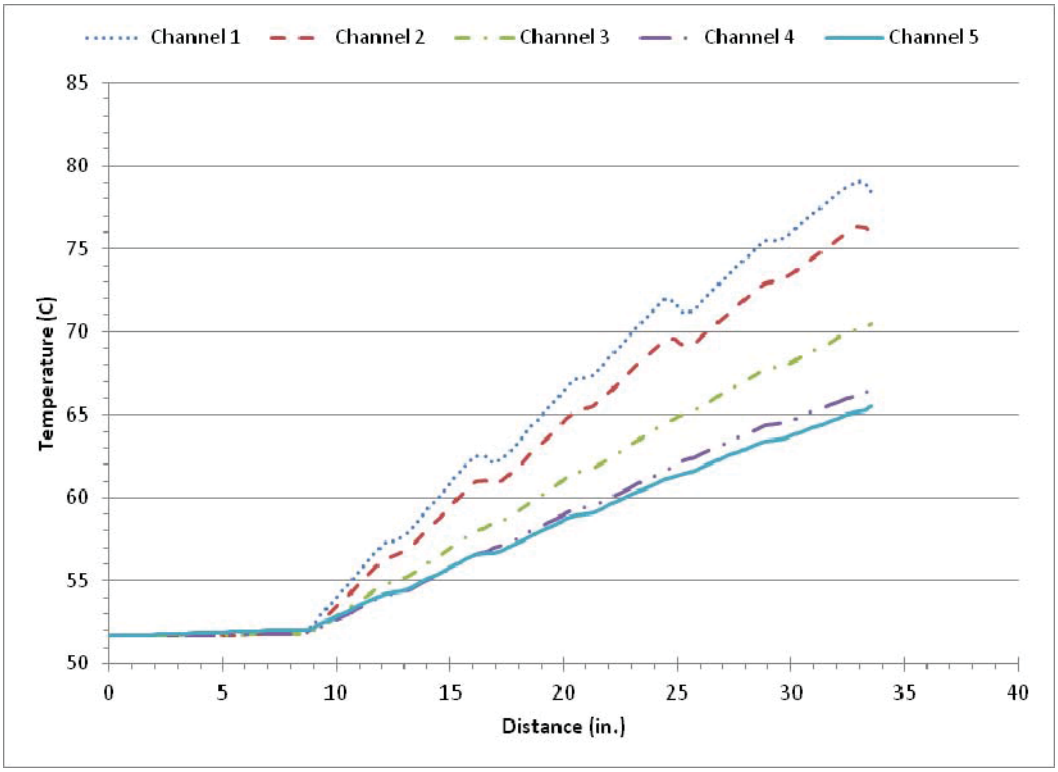

Figure 19: Coolant channel temperature as a function of location along the RERTR-12 test assembly at MOC2 146A (32.0 EFPD).

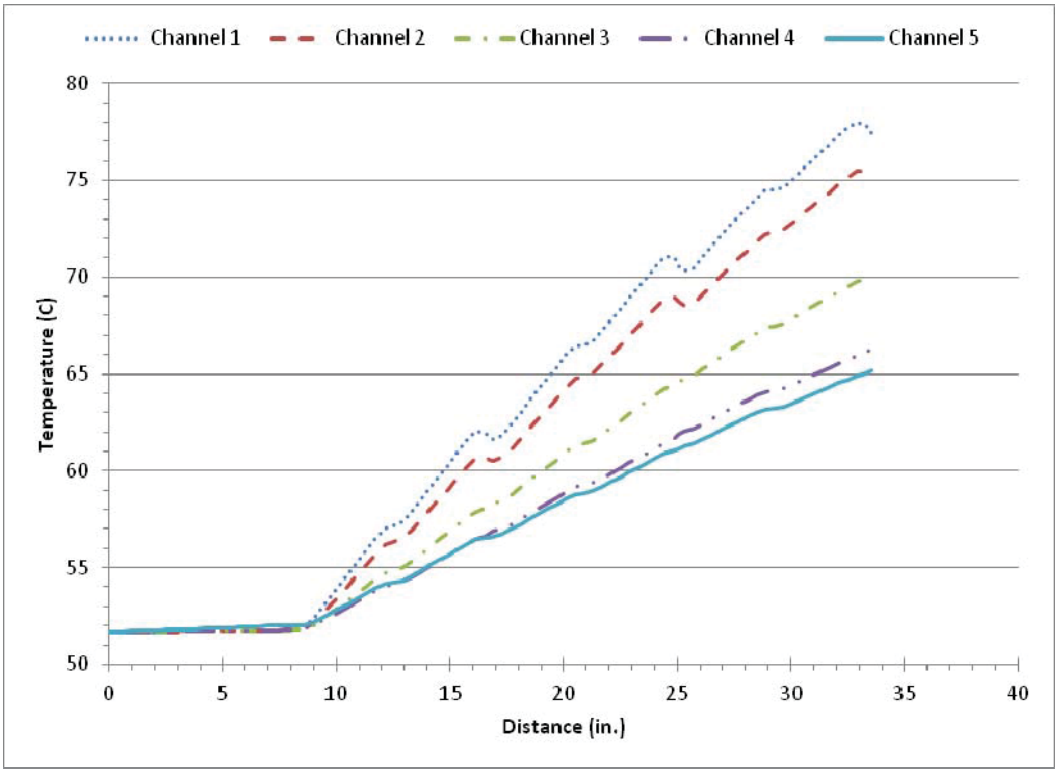

Figure 20: Coolant channel temperature as a function of location along the RERTR-12 test assembly at EOC 146A (50.5 EFPD).

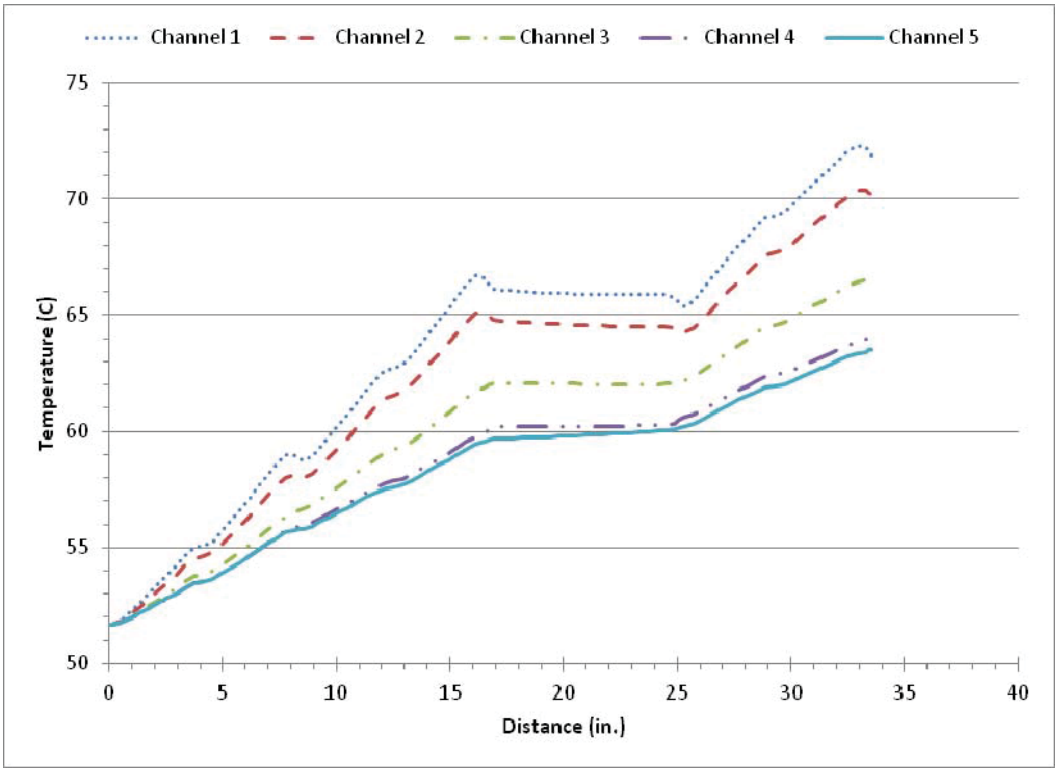

Figure 21: Coolant channel temperatures as a function of location along the RERTR-12 test assembly at BOC 146B (50.5 EFPD).

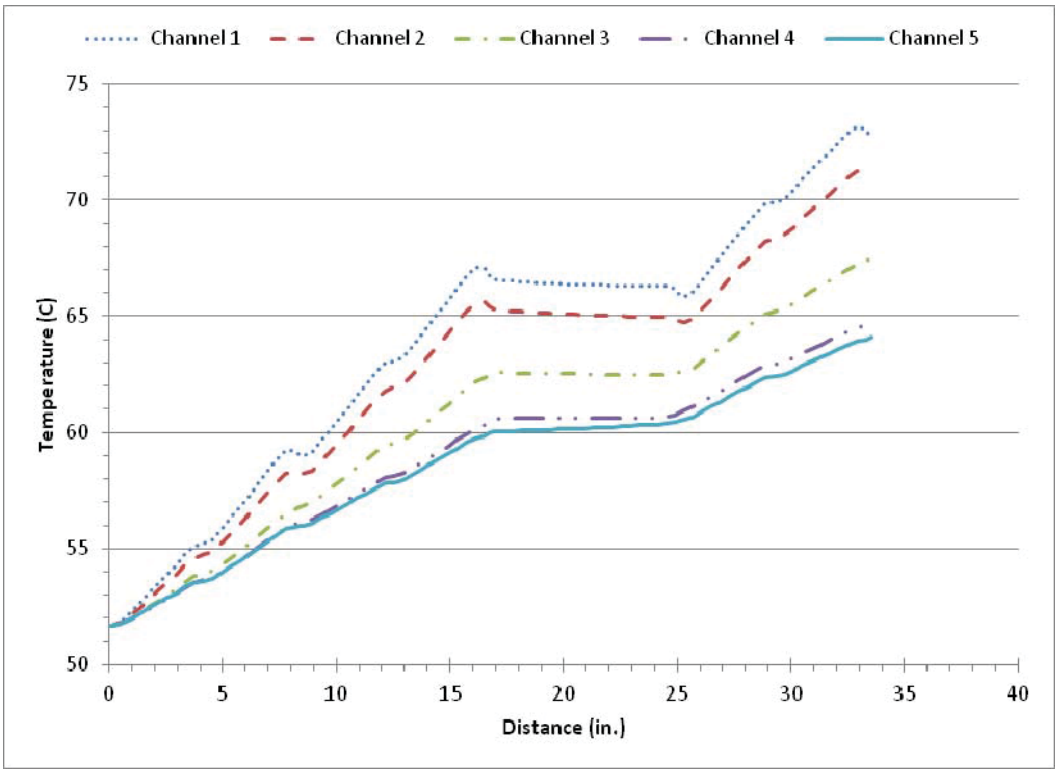

Figure 22: Coolant channel temperature as a function of location along the RERTR-12 test assembly at MOC1 146B (68.5 EFPD).

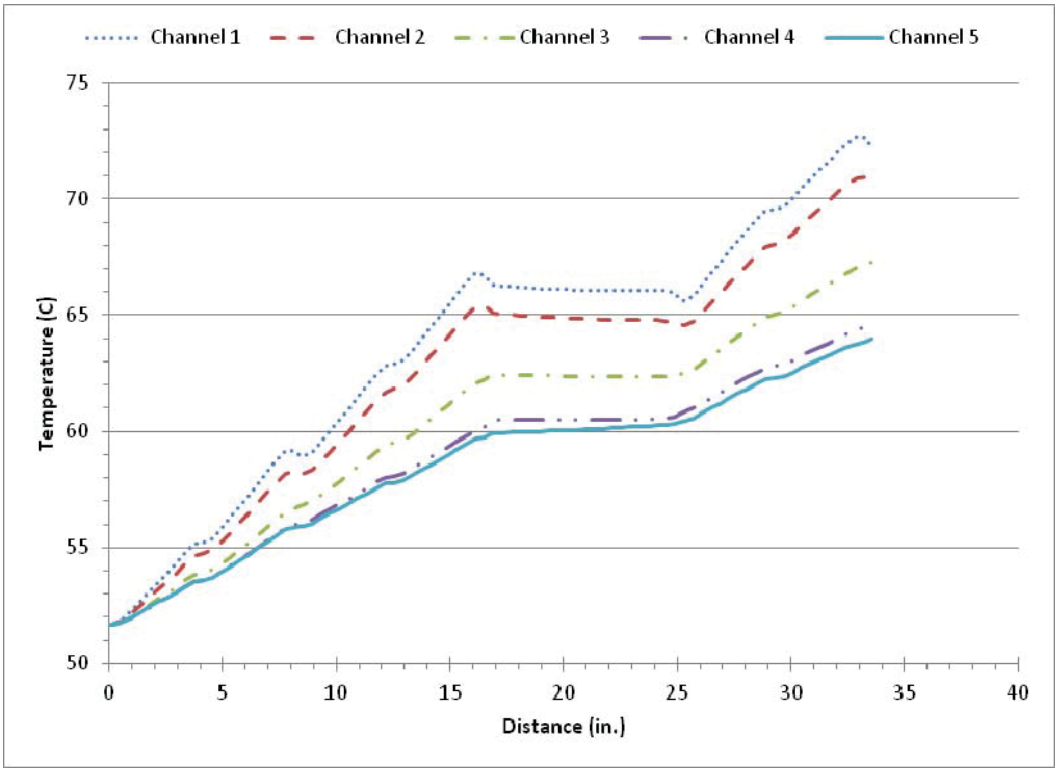

Figure 23: Coolant channel temperature as a function of location along the RERTR-12 test assembly at MOC2 146B (78.5 EFPD).

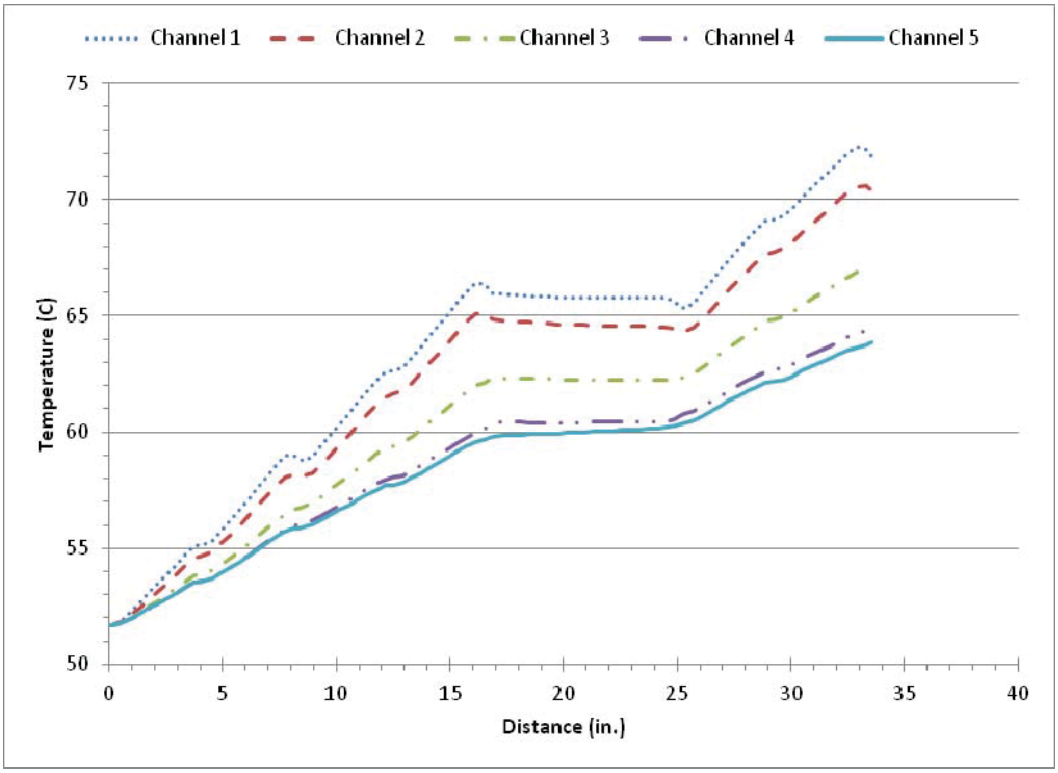

Figure 24: Coolant channel temperature as a function of location along the RERTR-12 test assembly at EOC 146B (89.7 EFPD).

7.2 Plate Surface Temperature

The minimum, maximum and average plate surface temperatures over the fuel zone on each side of the plate are shown in Table 19 through Table 34, where the plate ID side of the plate is facing the core[8] (see Figure 16).

Table 19: As-run minimum, maximum and average plate surface temperatures over fuel zone on the north side of the plate for capsules irradiated in Cycle 146A, BOC (0 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
B-1	L1P759	78.56	134.13	119.56
B-2	L1P784	72.92	113.23	98.67
B-3	L1P596	67.89	98.51	85.64
B-4	L1P464	65.40	89.81	81.76
B-5	L1P785	82.39	142.79	126.37
B-6	L1P786	77.17	123.17	104.23
B-7	L1P590	70.34	105.15	89.58
B-8	L1P465	66.59	94.99	85.16
C-1	L1P772	88.07	144.39	130.46
C-2	L1P773	81.66	123.27	107.60
C-3	L1P591	74.10	103.90	92.10
C-4	L1P460	70.69	95.79	87.49
C-5	L1P774	90.58	144.61	131.83
C-6	L1P776	83.60	127.53	109.77
C-7	L1P592	74.91	108.19	93.68
C-8	L1P461	71.74	98.63	88.40
D-1	L1P754	93.05	142.75	128.97
D-2	L1P755	86.82	125.06	108.65
D-3	L1P593	78.06	105.36	93.76
D-4	L1P462	73.66	95.67	88.21
D-5	L1P756	93.89	136.10	124.92
D-6	L1P758	86.68	118.30	105.83
D-7	L1P595	78.33	100.89	91.77
D-8	L1P463	73.77	93.33	86.22

Table 20: As-run minimum, maximum and average plate surface temperatures over fuel zone on the south side of the plate for capsules irradiated in Cycle 146A, BOC (0 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
B-1	L1P759	78.10	131.12	117.24
B-2	L1P784	72.90	112.76	98.43
B-3	L1P596	67.89	98.33	85.55
B-4	L1P464	65.65	91.04	82.73
B-5	L1P785	81.80	139.98	123.74
B-6	L1P786	76.95	122.27	103.48
B-7	L1P590	70.22	104.68	89.24
B-8	L1P465	66.82	96.28	86.13
C-1	L1P772	87.39	141.01	127.66
C-2	L1P773	81.29	122.50	106.52
C-3	L1P591	73.87	103.12	91.48
C-4	L1P460	70.88	96.94	88.35
C-5	L1P774	89.76	141.60	128.91
C-6	L1P776	82.93	125.75	108.14
C-7	L1P592	74.51	107.13	92.76
C-8	L1P461	71.89	99.43	89.16
D-1	L1P754	92.25	139.36	126.18
D-2	L1P755	85.82	123.62	106.89
D-3	L1P593	77.40	104.34	92.59
D-4	L1P462	73.74	96.56	88.75
D-5	L1P756	93.00	132.93	122.23
D-6	L1P758	85.62	116.23	103.59
D-7	L1P595	77.66	99.46	90.35
D-8	L1P463	73.77	93.98	86.57

Table 21: As-run minimum, maximum and average plate surface temperatures over fuel zone on the north side of the plate for capsules irradiated in Cycle 146A, MOC1 (16.0 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
B-1	L1P759	78.22	133.11	118.71
B-2	L1P784	72.87	113.08	98.56
B-3	L1P596	68.02	98.88	85.91
B-4	L1P464	65.40	89.81	81.75
B-5	L1P785	81.80	141.00	124.91
B-6	L1P786	77.06	122.84	103.99
B-7	L1P590	70.21	104.72	89.30
B-8	L1P465	66.60	94.99	85.16
C-1	L1P772	87.14	141.90	128.35
C-2	L1P773	81.44	122.76	107.18
C-3	L1P591	73.96	103.55	91.84
C-4	L1P460	70.64	95.67	87.39
C-5	L1P774	89.74	142.57	130.09
C-6	L1P776	83.33	126.94	109.31
C-7	L1P592	75.02	108.63	93.98
C-8	L1P461	71.70	98.55	88.33
D-1	L1P754	92.64	142.15	128.42
D-2	L1P755	86.77	125.27	108.71
D-3	L1P593	78.01	105.34	93.72
D-4	L1P462	73.75	95.96	88.42
D-5	L1P756	93.47	135.53	124.39
D-6	L1P758	86.98	119.56	106.65
D-7	L1P595	78.50	101.49	92.20
D-8	L1P463	74.04	94.17	86.84

Table 22: As-run minimum, maximum and average plate surface temperatures over fuel zone on the south side of the plate for capsules irradiated in Cycle 146A, MOC1 (16.0 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
B-1	L1P759	77.76	130.15	116.43
B-2	L1P784	72.86	112.63	98.33
B-3	L1P596	68.03	98.69	85.81
B-4	L1P464	65.64	91.03	82.72
B-5	L1P785	81.23	138.26	122.35
B-6	L1P786	76.85	121.97	103.27
B-7	L1P590	70.10	104.26	88.96
B-8	L1P465	66.82	96.27	86.13
C-1	L1P772	86.48	138.63	125.64
C-2	L1P773	81.08	122.02	106.14
C-3	L1P591	73.74	102.78	91.24
C-4	L1P460	70.84	96.82	88.26
C-5	L1P774	88.96	139.67	127.27
C-6	L1P776	82.69	125.24	107.75
C-7	L1P592	74.63	107.59	93.07
C-8	L1P461	71.85	99.35	89.10
D-1	L1P754	91.85	138.82	125.69
D-2	L1P755	85.79	123.89	107.03
D-3	L1P593	77.37	104.35	92.58
D-4	L1P462	73.83	96.86	88.98
D-5	L1P756	92.61	132.43	121.77
D-6	L1P758	85.96	117.58	104.50
D-7	L1P595	77.84	100.09	90.80
D-8	L1P463	74.05	94.85	87.21

Table 23: As-run minimum, maximum and average plate surface temperatures over fuel zone on the north side of the plate for capsules irradiated in Cycle 146A, MOC2 (32.0 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
B-1	L1P759	76.77	128.79	115.10
B-2	L1P784	72.20	111.09	97.09
B-3	L1P596	67.25	96.67	84.32
B-4	L1P464	64.79	88.15	80.43
B-5	L1P785	80.07	135.84	120.72
B-6	L1P786	76.02	119.89	101.84
B-7	L1P590	69.40	102.35	87.68
B-8	L1P465	65.88	92.96	83.57
C-1	L1P772	85.07	136.69	123.89
C-2	L1P773	80.27	120.06	105.04
C-3	L1P591	73.19	101.80	90.52
C-4	L1P460	69.70	93.44	85.62
C-5	L1P774	87.83	138.22	126.36
C-6	L1P776	82.09	124.13	107.14
C-7	L1P592	73.95	105.93	92.00
C-8	L1P461	70.75	96.21	86.58
D-1	L1P754	90.56	137.85	124.70
D-2	L1P755	85.45	122.93	106.81
D-3	L1P593	77.05	103.61	92.32
D-4	L1P462	72.74	93.89	86.75
D-5	L1P756	91.76	132.73	121.87
D-6	L1P758	85.66	117.40	104.83
D-7	L1P595	77.66	100.22	91.10
D-8	L1P463	73.21	92.75	85.65

Table 24: As-run minimum, maximum and average plate surface temperatures over fuel zone on the south side of the plate for capsules irradiated in Cycle 146A, MOC2 (32.0 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
B-1	L1P759	76.33	126.00	112.95
B-2	L1P784	72.18	110.67	96.87
B-3	L1P596	67.25	96.49	84.23
B-4	L1P464	65.02	89.32	81.36
B-5	L1P785	79.54	133.29	118.32
B-6	L1P786	75.82	119.09	101.17
B-7	L1P590	69.29	101.90	87.35
B-8	L1P465	66.10	94.19	84.50
C-1	L1P772	84.46	133.63	121.36
C-2	L1P773	79.95	119.37	104.09
C-3	L1P591	72.98	101.06	89.95
C-4	L1P460	69.88	94.57	86.43
C-5	L1P774	87.11	135.50	123.71
C-6	L1P776	81.50	122.57	105.71
C-7	L1P592	73.57	104.93	91.14
C-8	L1P461	70.89	96.97	87.31
D-1	L1P754	89.83	134.71	122.14
D-2	L1P755	84.54	121.66	105.26
D-3	L1P593	76.44	102.66	91.23
D-4	L1P462	72.82	94.75	87.28
D-5	L1P756	90.96	129.78	119.38
D-6	L1P758	84.73	115.57	102.83
D-7	L1P595	77.04	98.89	89.76
D-8	L1P463	73.22	93.42	86.02

Table 25: As-run minimum, maximum and average plate surface temperatures over fuel zone on the north side of the plate for capsules irradiated in Cycle 146A, EOC (50.5 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
B-1	L1P759	75.75	125.75	112.57
B-2	L1P784	71.94	110.31	96.52
B-3	L1P596	67.02	96.03	83.86
B-4	L1P464	64.49	87.33	79.78
B-5	L1P785	78.87	132.30	117.80
B-6	L1P786	75.64	118.82	101.05
B-7	L1P590	69.14	101.62	87.18
B-8	L1P465	65.55	92.00	82.83
C-1	L1P772	83.70	133.17	120.88
C-2	L1P773	79.80	119.02	104.19
C-3	L1P591	72.83	100.96	89.89
C-4	L1P460	69.30	92.50	84.87
C-5	L1P774	86.37	134.67	123.33
C-6	L1P776	81.57	123.04	106.28
C-7	L1P592	73.61	105.15	91.42
C-8	L1P461	70.35	95.25	85.85
D-1	L1P754	89.08	134.63	121.95
D-2	L1P755	84.74	121.79	105.85
D-3	L1P593	76.63	102.85	91.70
D-4	L1P462	72.32	93.05	86.07
D-5	L1P756	90.38	130.10	119.56
D-6	L1P758	84.99	116.39	103.93
D-7	L1P595	77.24	99.52	90.51
D-8	L1P463	72.80	91.98	85.03

Table 26: As-run minimum, maximum and average plate surface temperatures over fuel zone on the south side of the plate for capsules irradiated in Cycle 146A, EOC (50.5 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
B-1	L1P759	75.33	123.09	110.51
B-2	L1P784	71.93	109.92	96.32
B-3	L1P596	67.02	95.84	83.77
B-4	L1P464	64.72	88.48	80.69
B-5	L1P785	78.37	129.86	115.53
B-6	L1P786	75.45	118.08	100.43
B-7	L1P590	69.03	101.17	86.84
B-8	L1P465	65.76	93.20	83.73
C-1	L1P772	83.12	130.27	118.50
C-2	L1P773	79.49	118.38	103.31
C-3	L1P591	72.62	100.24	89.34
C-4	L1P460	69.48	93.62	85.67
C-5	L1P774	85.70	132.13	120.84
C-6	L1P776	81.03	121.60	104.96
C-7	L1P592	73.24	104.16	90.58
C-8	L1P461	70.49	95.98	86.56
D-1	L1P754	88.41	131.65	119.53
D-2	L1P755	83.91	120.61	104.41
D-3	L1P593	76.03	101.93	90.64
D-4	L1P462	72.40	93.89	86.59
D-5	L1P756	89.64	127.30	117.23
D-6	L1P758	84.14	114.70	102.08
D-7	L1P595	76.64	98.24	89.21
D-8	L1P463	72.82	92.64	85.39

Table 27: As-run minimum, maximum and average plate surface temperatures over fuel zone on the north side of the plate for capsules irradiated in Cycle 146B, BOC (50.5 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
A-1	L1P787	67.54	106.86	94.31
A-2	L2P481	64.96	94.13	83.26
A-3	L2P498	63.13	94.17	77.92
A-4	L1P789	62.35	85.89	76.23
A-5	L1P7A0	73.19	121.21	105.44
A-6	L2P482	69.75	113.05	91.20
A-7	L2P499	67.41	106.63	84.70
A-8	L1P7A1	65.50	96.77	82.57
B-1	L1P759	76.95	119.67	108.35
B-2	L1P784	73.24	105.86	94.24
B-3	L1P596	68.45	93.08	82.80
B-4	L1P464	65.88	85.21	78.83
B-5	L1P785	80.10	126.21	113.63
B-6	L1P786	76.79	113.91	98.72
B-7	L1P590	70.55	98.43	86.02
B-8	L1P465	67.00	89.53	81.67
D-1	L1P754	82.79	121.88	110.82
D-2	L1P755	79.17	110.56	96.94
D-3	L1P593	72.82	94.66	85.37
D-4	L1P462	69.73	87.13	81.20
D-5	L1P756	83.35	117.02	108.02
D-6	L1P758	79.13	105.12	94.74
D-7	L1P595	73.05	90.99	83.77
D-8	L1P463	69.80	85.46	79.76

Table 28: As-run minimum, maximum and average plate surface temperatures over fuel zone on the south side of the plate for capsules irradiated in Cycle 146B0, BOC (50.5 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
A-1	L1P787	67.28	104.96	92.95
A-2	L2P481	64.95	93.91	83.13
A-3	L2P498	63.13	94.07	77.86
A-4	L1P789	62.52	86.96	77.00
A-5	L1P7A0	72.82	119.20	103.65
A-6	L2P482	69.65	112.53	90.78
A-7	L2P499	67.36	106.39	84.53
A-8	L1P7A1	65.69	97.77	83.45
B-1	L1P759	76.53	117.25	106.45
B-2	L1P784	73.07	105.13	93.69
B-3	L1P596	68.35	92.68	82.49
B-4	L1P464	66.02	86.07	79.49
B-5	L1P785	79.59	123.86	111.53
B-6	L1P786	76.44	112.90	97.81
B-7	L1P590	70.33	97.78	85.49
B-8	L1P465	67.12	90.43	82.34
D-1	L1P754	82.28	119.45	108.87
D-2	L1P755	78.64	109.85	96.06
D-3	L1P593	72.44	94.11	84.74
D-4	L1P462	69.83	87.93	81.72
D-5	L1P756	82.79	114.77	106.13
D-6	L1P758	78.59	104.02	93.52
D-7	L1P595	72.66	90.20	82.93
D-8	L1P463	69.86	86.10	80.15

Table 29: As-run minimum, maximum and average plate surface temperatures over fuel zone on the north side of the plate for capsules irradiated in Cycle 146B, MOC1 (68.5 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
A-1	L1P787	68.11	108.81	95.78
A-2	L2P481	65.17	100.08	83.88
A-3	L2P498	63.56	95.69	78.85
A-4	L1P789	62.82	87.33	77.29
A-5	L1P7A0	73.79	123.04	106.86
A-6	L2P482	70.30	114.93	92.36
A-7	L2P499	67.88	108.27	85.65
A-8	L1P7A1	66.00	98.33	83.65
B-1	L1P759	77.72	121.69	110.06
B-2	L1P784	74.45	109.14	96.75
B-3	L1P596	69.27	95.24	84.38
B-4	L1P464	66.53	86.79	80.10
B-5	L1P785	80.71	127.57	114.79
B-6	L1P786	77.98	117.02	101.02
B-7	L1P590	71.52	101.02	87.83
B-8	L1P465	67.59	90.94	82.81
D-1	L1P754	83.94	124.54	113.09
D-2	L1P755	80.60	114.04	99.51
D-3	L1P593	74.00	97.39	87.38
D-4	L1P462	70.62	89.00	82.74
D-5	L1P756	84.84	120.43	110.92
D-6	L1P758	80.84	109.09	97.77
D-7	L1P595	74.40	93.90	85.99
D-8	L1P463	70.85	87.71	81.58

Table 30: As-run minimum, maximum and average plate surface temperatures over fuel zone on the south side of the plate for capsules irradiated in Cycle 146B, MOC1 (68.5 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
A-1	L1P787	67.84	106.83	94.36
A-2	L2P481	65.16	99.87	83.75
A-3	L2P498	63.56	95.59	78.80
A-4	L1P789	63.00	88.45	78.08
A-5	L1P7A0	73.40	120.98	105.02
A-6	L2P482	70.20	114.40	91.94
A-7	L2P499	67.84	108.02	85.48
A-8	L1P7A1	66.20	99.38	84.56
B-1	L1P759	77.28	119.22	108.11
B-2	L1P784	74.27	108.39	96.19
B-3	L1P596	69.17	94.82	84.06
B-4	L1P464	66.68	87.68	80.80
B-5	L1P785	80.20	125.24	112.68
B-6	L1P786	77.62	116.00	100.10
B-7	L1P590	71.29	100.34	87.27
B-8	L1P465	67.72	91.87	83.49
D-1	L1P754	83.42	122.04	111.08
D-2	L1P755	80.07	113.33	98.62
D-3	L1P593	73.60	96.82	86.72
D-4	L1P462	70.72	89.84	83.29
D-5	L1P756	84.27	118.09	108.98
D-6	L1P758	80.29	107.99	96.53
D-7	L1P595	73.99	93.04	85.11
D-8	L1P463	70.91	88.39	81.99

Table 31: As-run minimum, maximum and average plate surface temperatures over fuel zone on the north side of the plate for capsules irradiated in Cycle 146B, MOC2 (78.5 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
A-1	L1P787	68.18	109.05	95.96
A-2	L2P481	65.34	100.66	84.27
A-3	L2P498	63.53	95.59	78.79
A-4	L1P789	62.69	86.93	77.00
A-5	L1P7A0	73.42	121.74	105.87
A-6	L2P482	70.28	114.81	92.30
A-7	L2P499	67.92	108.42	85.74
A-8	L1P7A1	65.83	97.81	83.29
B-1	L1P759	77.15	120.01	108.66
B-2	L1P784	74.19	108.38	96.18
B-3	L1P596	69.06	94.63	83.94
B-4	L1P464	66.38	86.43	79.81
B-5	L1P785	80.02	125.56	113.12
B-6	L1P786	77.64	116.05	100.31
B-7	L1P590	71.16	99.95	87.10
B-8	L1P465	67.34	90.24	82.26
D-1	L1P754	83.23	122.75	111.59
D-2	L1P755	80.27	113.42	99.02
D-3	L1P593	73.75	96.89	87.00
D-4	L1P462	70.40	88.57	82.38
D-5	L1P756	84.25	119.19	109.85
D-6	L1P758	80.50	108.48	97.26
D-7	L1P595	74.26	93.75	85.85
D-8	L1P463	70.71	87.53	81.41

Table 32: As-run minimum, maximum and average plate surface temperatures over fuel zone on the south side of the plate for capsules irradiated in Cycle 146B, MOC2 (78.5 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
A-1	L1P787	67.92	107.07	94.54
A-2	L2P481	65.33	100.44	84.14
A-3	L2P498	63.52	95.47	78.73
A-4	L1P789	62.87	88.04	77.78
A-5	L1P7A0	73.04	119.73	104.07
A-6	L2P482	70.18	114.29	91.87
A-7	L2P499	67.87	108.16	85.56
A-8	L1P7A1	66.03	98.84	84.19
B-1	L1P759	76.73	117.61	106.77
B-2	L1P784	74.02	107.66	95.63
B-3	L1P596	68.95	94.20	83.61
B-4	L1P464	66.53	87.30	80.49
B-5	L1P785	79.52	123.28	111.08
B-6	L1P786	77.29	115.07	99.42
B-7	L1P590	70.93	99.26	86.54
B-8	L1P465	67.46	91.15	82.92
D-1	L1P754	82.72	120.32	109.64
D-2	L1P755	79.76	112.73	98.15
D-3	L1P593	73.36	96.33	86.35
D-4	L1P462	70.51	89.39	82.92
D-5	L1P756	83.70	116.91	107.96
D-6	L1P758	79.97	107.41	96.06
D-7	L1P595	73.85	92.91	84.98
D-8	L1P463	70.77	88.21	81.83

Table 33: As-run minimum, maximum and average plate surface temperatures over fuel zone on the north side of the plate for capsules irradiated in Cycle 146B, EOC (89.7 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
A-1	L1P787	67.90	108.08	95.23
A-2	L2P481	65.26	100.41	84.10
A-3	L2P498	63.49	95.46	78.71
A-4	L1P789	62.60	86.66	76.80
A-5	L1P7A0	73.00	120.40	104.82
A-6	L2P482	70.19	114.49	92.09
A-7	L2P499	67.87	108.25	85.64
A-8	L1P7A1	65.74	97.51	83.09
B-1	L1P759	76.52	118.26	107.19
B-2	L1P784	73.98	107.85	95.77
B-3	L1P596	68.91	94.24	83.65
B-4	L1P464	66.20	85.96	79.44
B-5	L1P785	79.30	123.59	111.47
B-6	L1P786	77.36	115.36	99.79
B-7	L1P590	71.01	99.54	86.81
B-8	L1P465	67.14	89.70	81.83
D-1	L1P754	82.55	121.16	110.25
D-2	L1P755	79.95	112.85	98.55
D-3	L1P593	73.55	96.51	86.70
D-4	L1P462	70.20	88.15	82.03
D-5	L1P756	83.60	117.82	108.67
D-6	L1P758	80.18	107.94	96.80
D-7	L1P595	74.07	93.43	85.58
D-8	L1P463	70.53	87.19	81.13

Table 34: As-run minimum, maximum and average plate surface temperatures over fuel zone on the south side of the plate for capsules irradiated in Cycle 146B, EOC (89.7 EFPD)

Plate Location	Plate ID	Minimum Temperature (C)	Maximum Temperature (C)	Average Temperature (C)
A-1	L1P787	67.63	106.14	93.83
A-2	L2P481	65.26	100.20	83.97
A-3	L2P498	63.49	95.34	78.65
A-4	L1P789	62.78	87.76	77.58
A-5	L1P7A0	72.64	118.44	103.07
A-6	L2P482	70.09	114.00	91.69
A-7	L2P499	67.82	107.99	85.46
A-8	L1P7A1	65.93	98.52	83.97
B-1	L1P759	76.11	115.94	105.36
B-2	L1P784	73.82	107.16	95.25
B-3	L1P596	68.80	93.82	83.33
B-4	L1P464	66.35	86.82	80.11
B-5	L1P785	78.83	121.37	109.52
B-6	L1P786	77.03	114.43	98.94
B-7	L1P590	70.77	98.86	86.26
B-8	L1P465	67.26	90.58	82.48
D-1	L1P754	82.06	118.80	108.36
D-2	L1P755	79.46	112.19	97.73
D-3	L1P593	73.16	95.96	86.07
D-4	L1P462	70.30	88.96	82.57
D-5	L1P756	83.07	115.60	106.84
D-6	L1P758	79.68	106.92	95.66
D-7	L1P595	73.67	92.61	84.74
D-8	L1P463	70.59	87.86	81.54

8. REFERENCES

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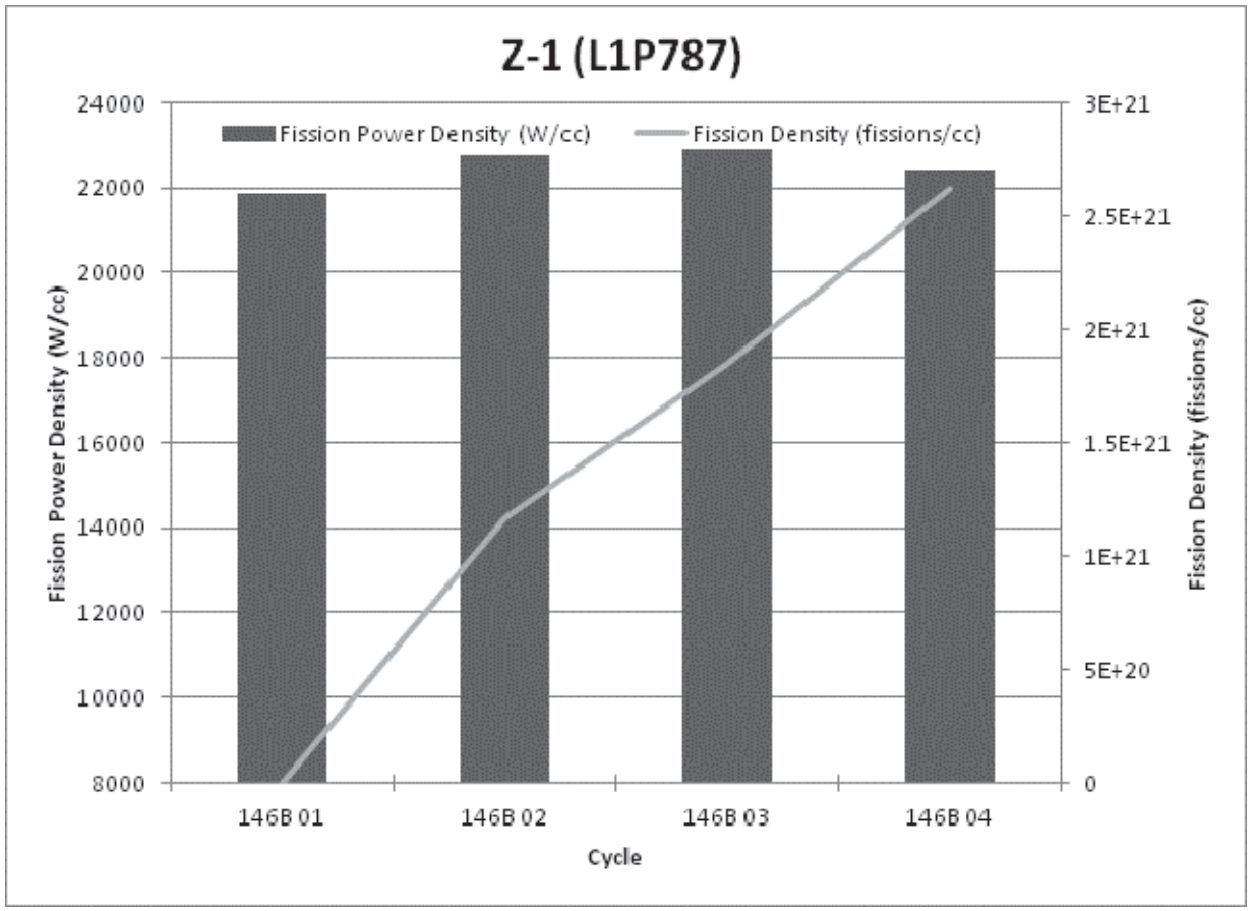
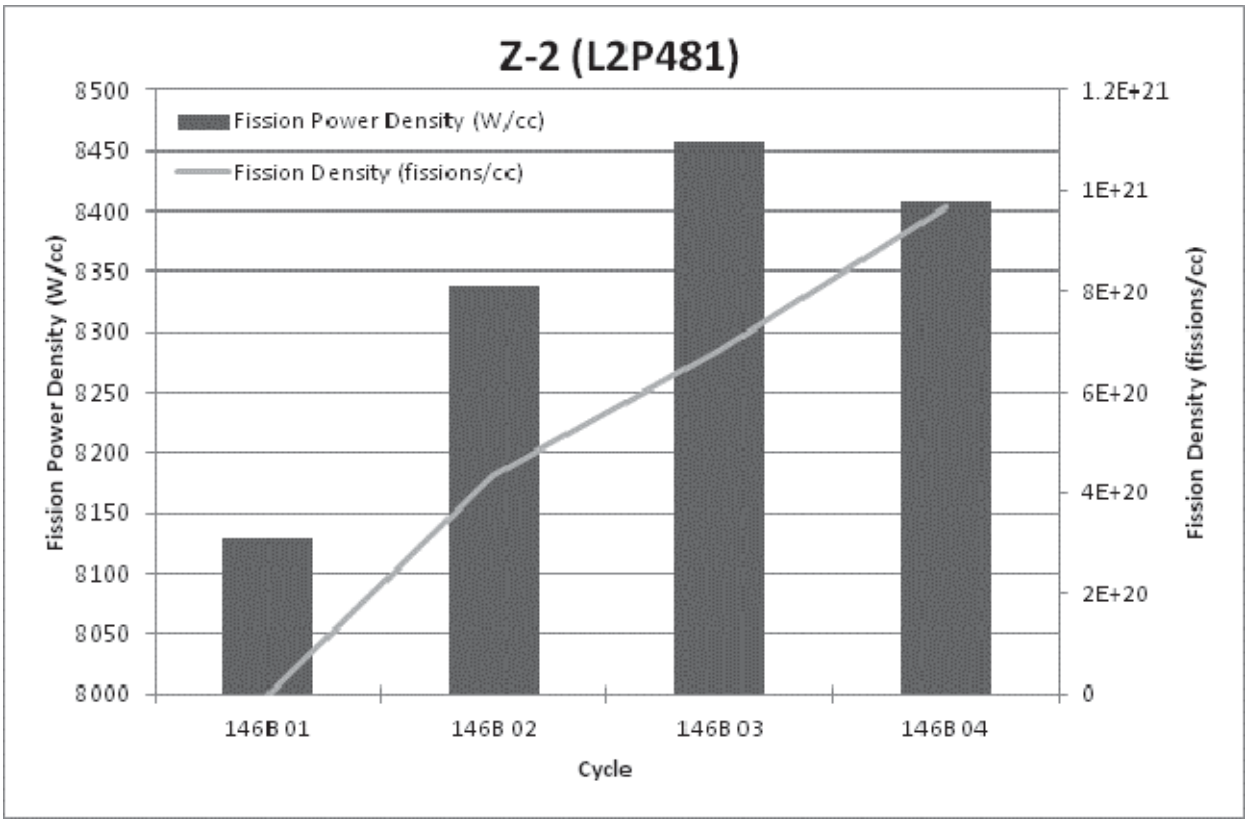
Appendix A

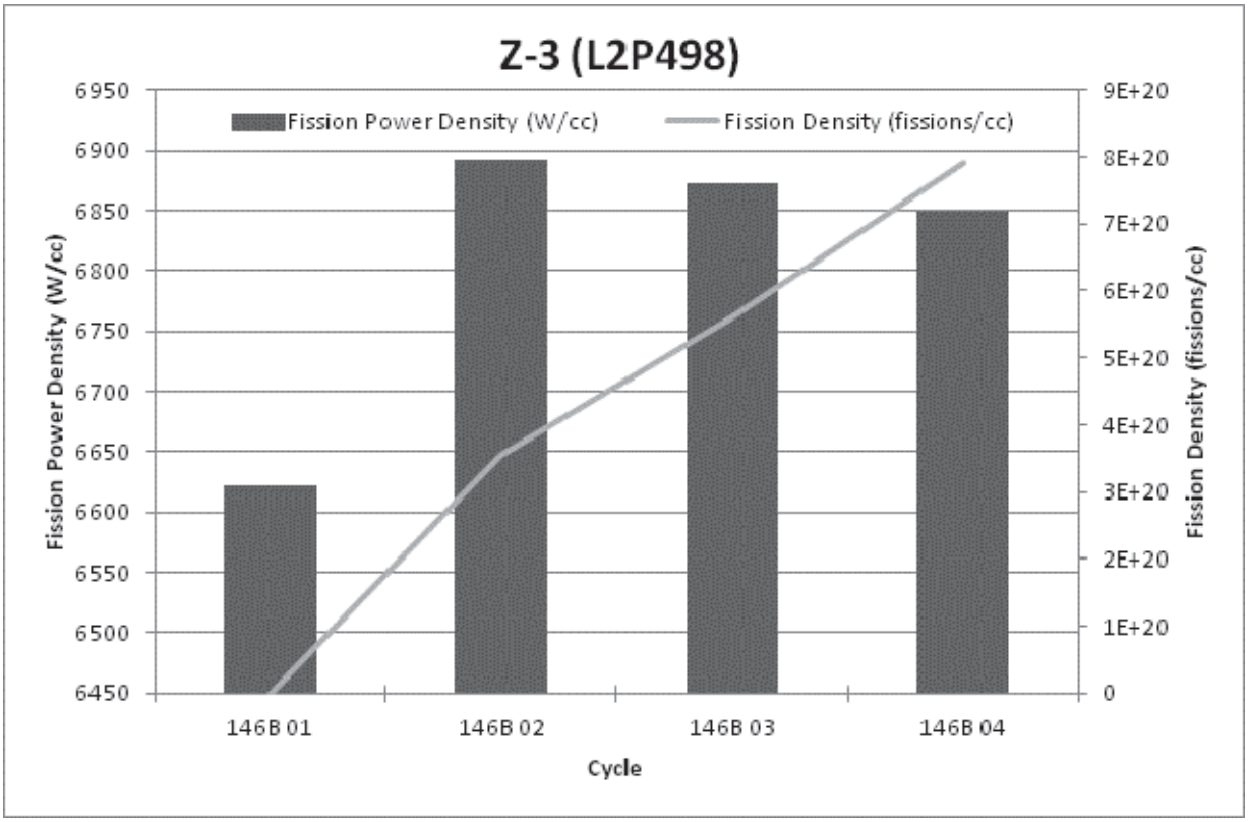
Individual Plate Power and Fission Density Plots

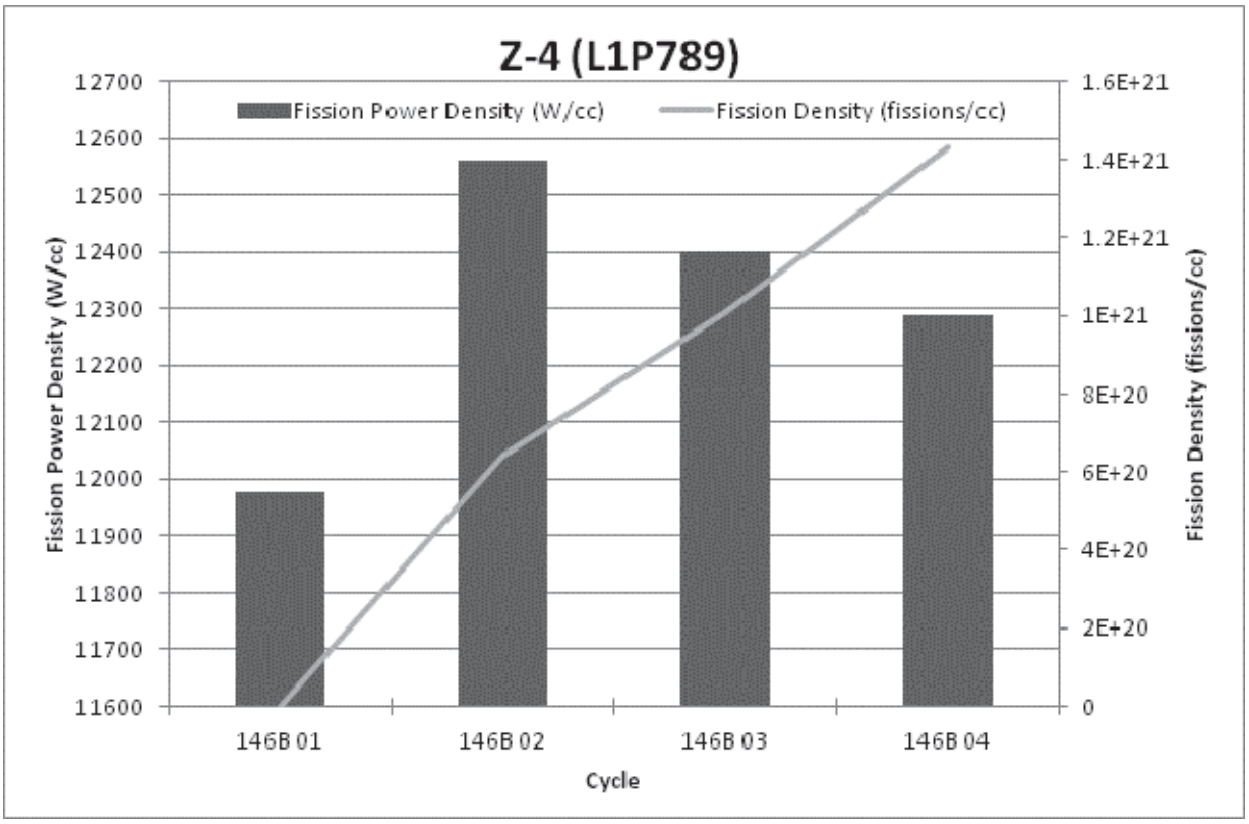
Appendix A
Individual Plate Power and Fission Density Plots

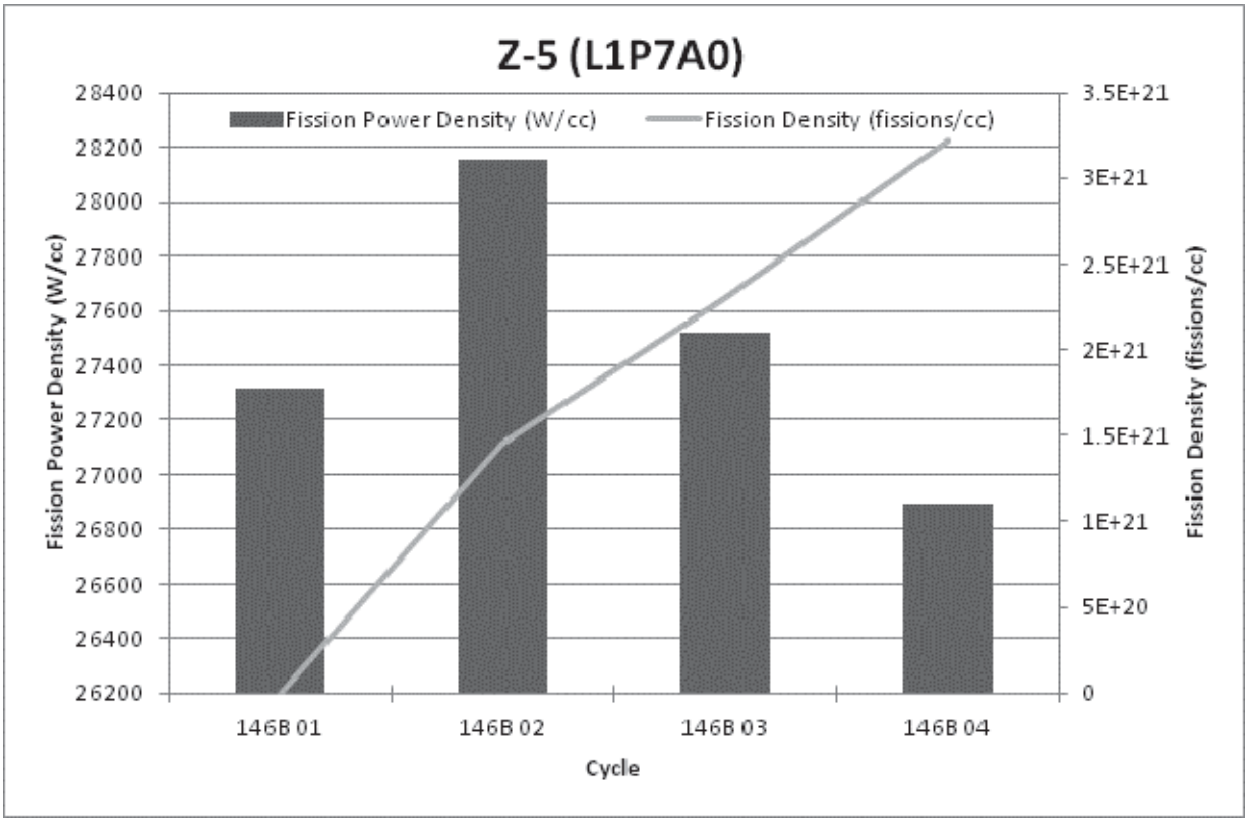
A-1. Capsule Z

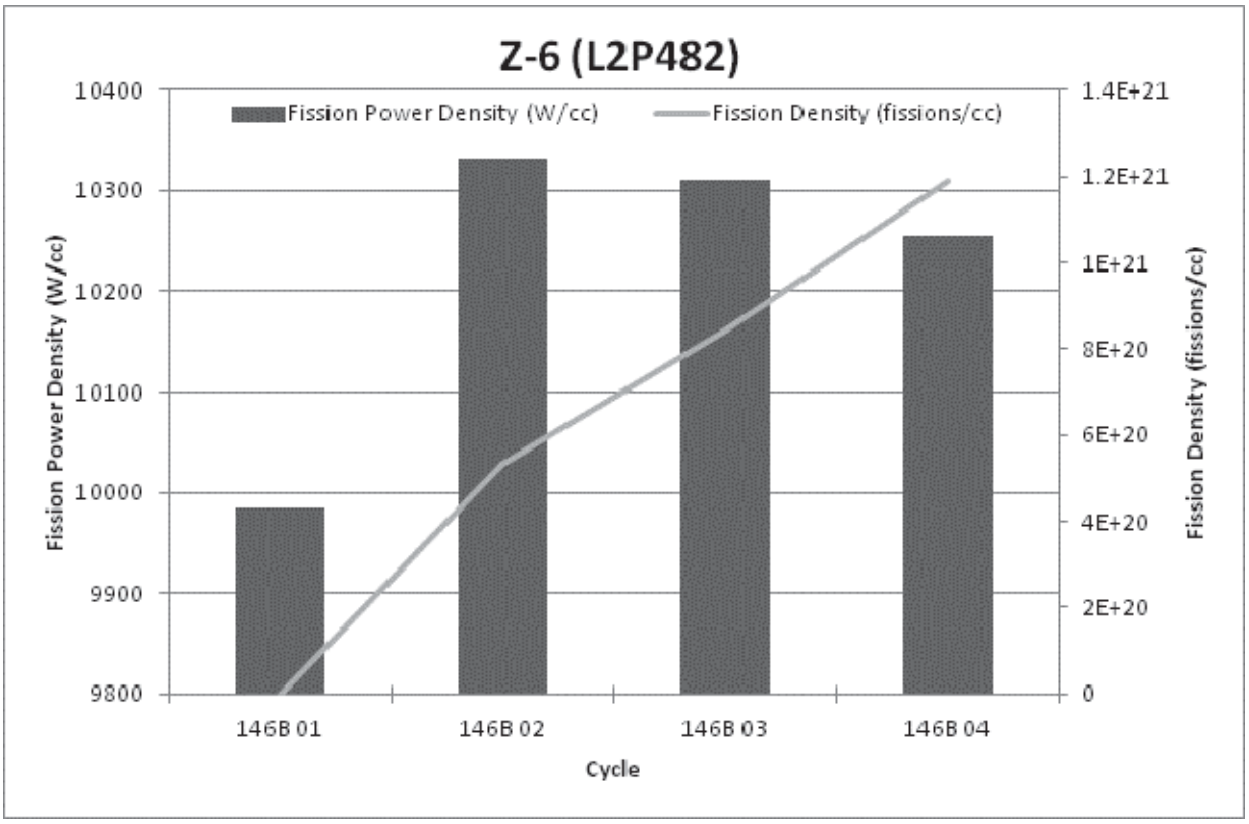


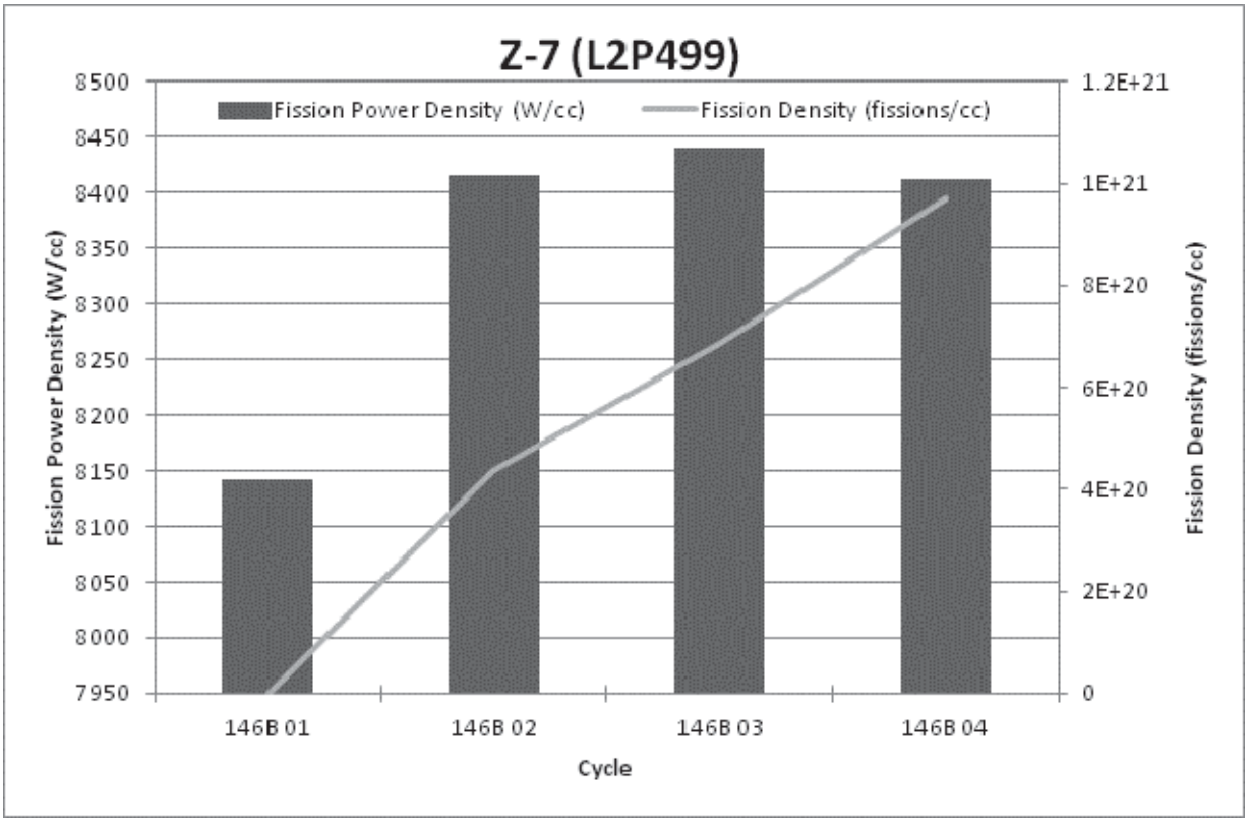

Z-2 (L2P481)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Cycle
146B 01
146B 02
146B 03
146B 04
8500
8450
8400
8350
8300
8250
8200
8150
8100
8050
8000
1.2E+21
1E+21
8E+20
6E+20
4E+20
2E+20
0

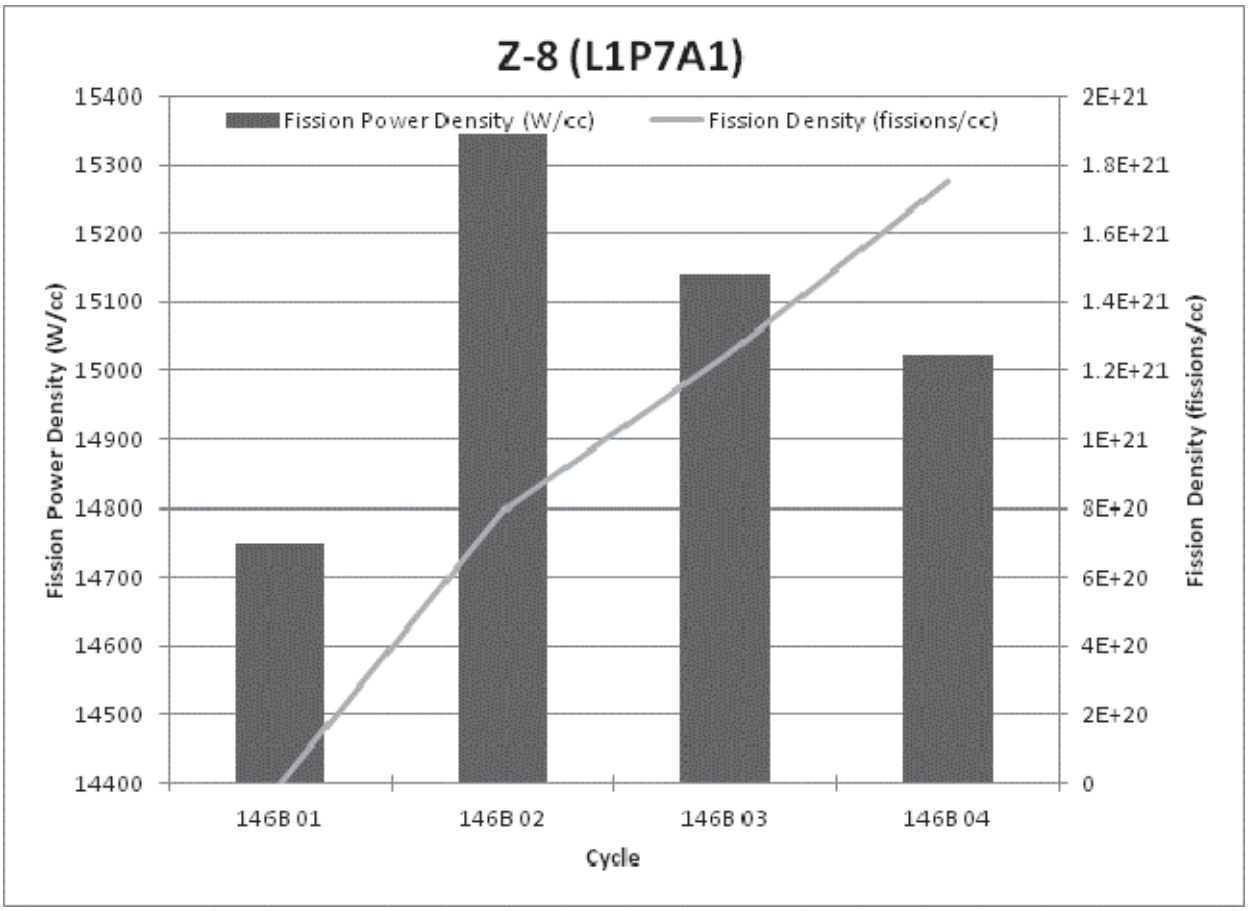

Z-3 (L2P498)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Cycle
146B 01
146B 02
146B 03
146B 04
6950
6900
6850
6800
6750
6700
6650
6600
6550
6500
6450
9E+20
8E+20
7E+20
6E+20
5E+20
4E+20
3E+20
2E+20
1E+20
0


Z-4 (L1P789)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
12700
12600
12500
12400
12300
12200
12100
12000
11900
11800
11700
11600
1.6E+21
1.4E+21
1.2E+21
1E+21
8E+20
6E+20
4E+20
2E+20
0
146B 01
146B 02
146B 03
146B 04
Cycle

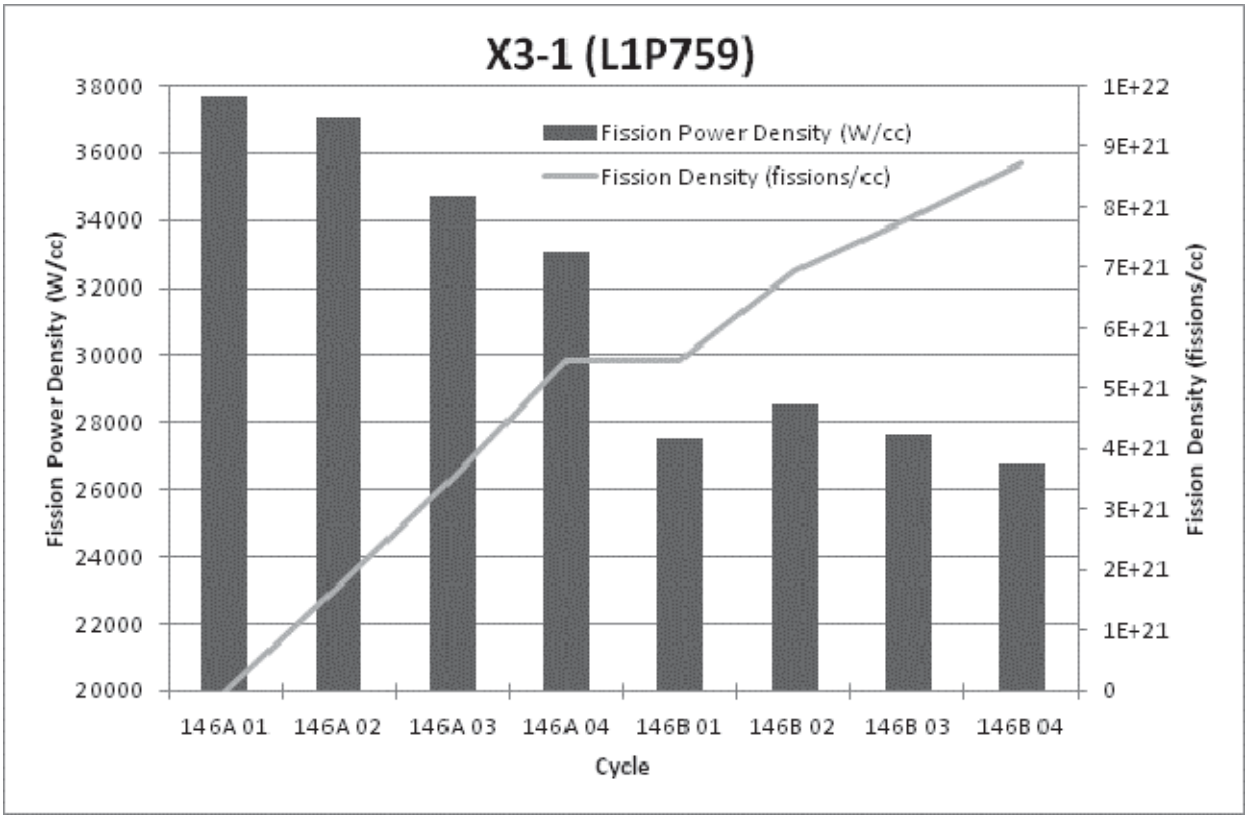

Z-5 (L1P7A0)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
28400
28200
28000
27800
27600
27400
27200
27000
26800
26600
26400
26200
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146B 01
146B 02
146B 03
146B 04
Cycle

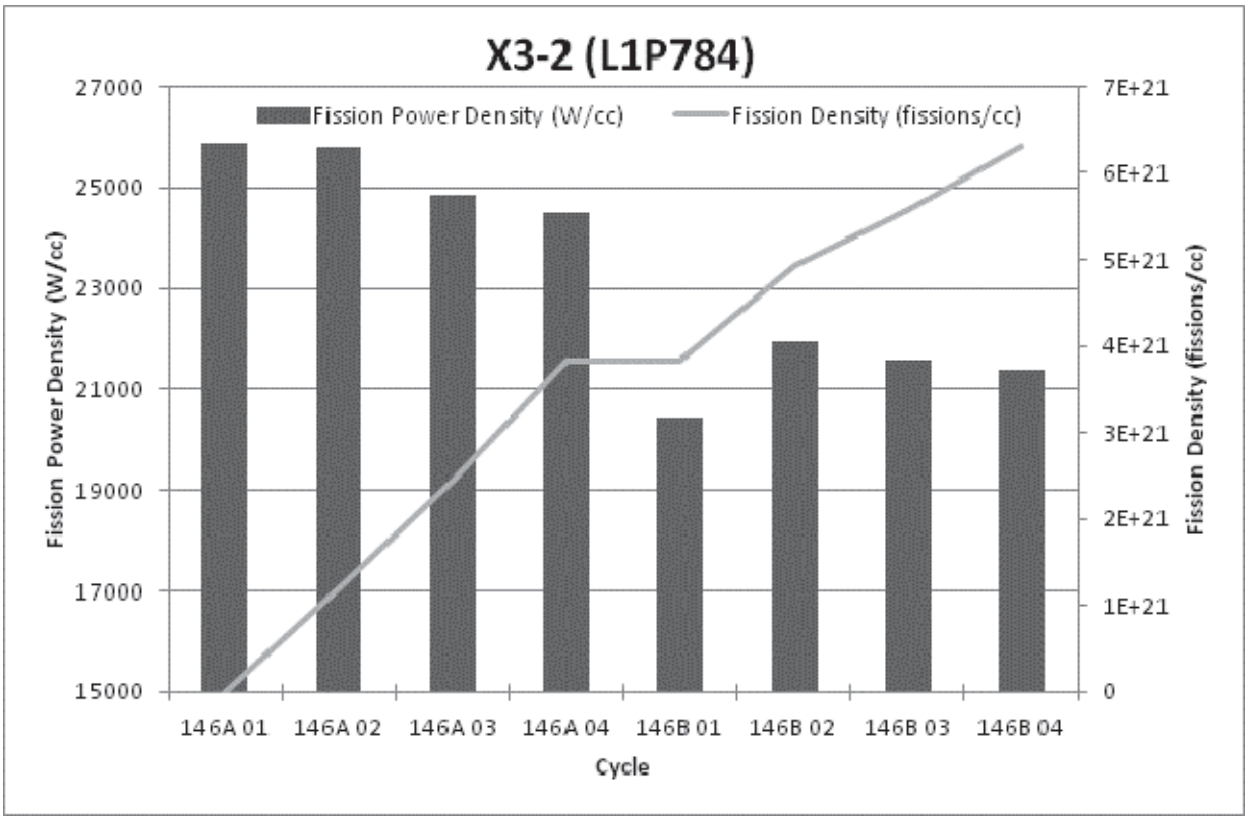

Z-6 (L2P482)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
10400
10300
10200
10100
10000
9900
9800
1.4E+21
1.2E+21
1E+21
8E+20
6E+20
4E+20
2E+20
0
146B 01
146B 02
146B 03
146B 04
Cycle

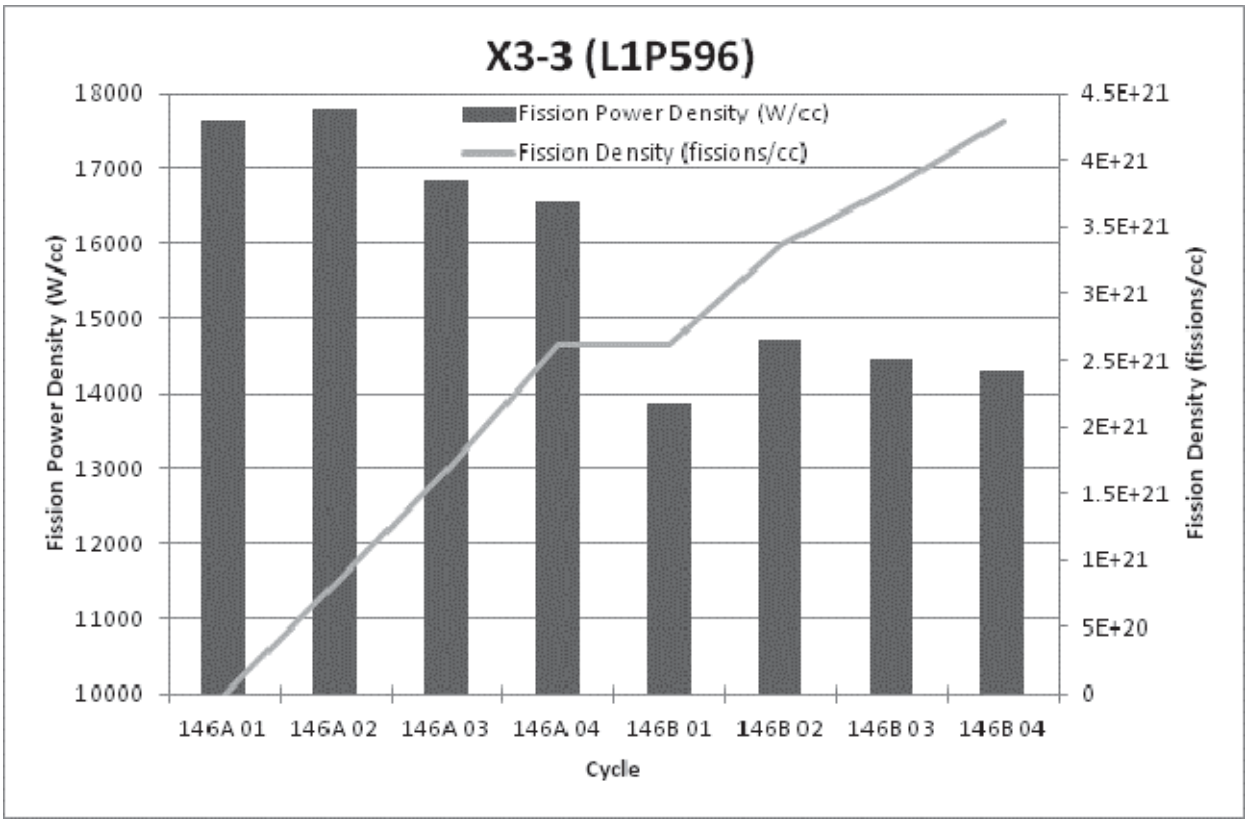

Z-7 (L2P499)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
8500
8450
8400
8350
8300
8250
8200
8150
8100
8050
8000
7950
1.2E+21
1E+21
8E+20
6E+20
4E+20
2E+20
0
146B 01
146B 02
146B 03
146B 04
Cycle

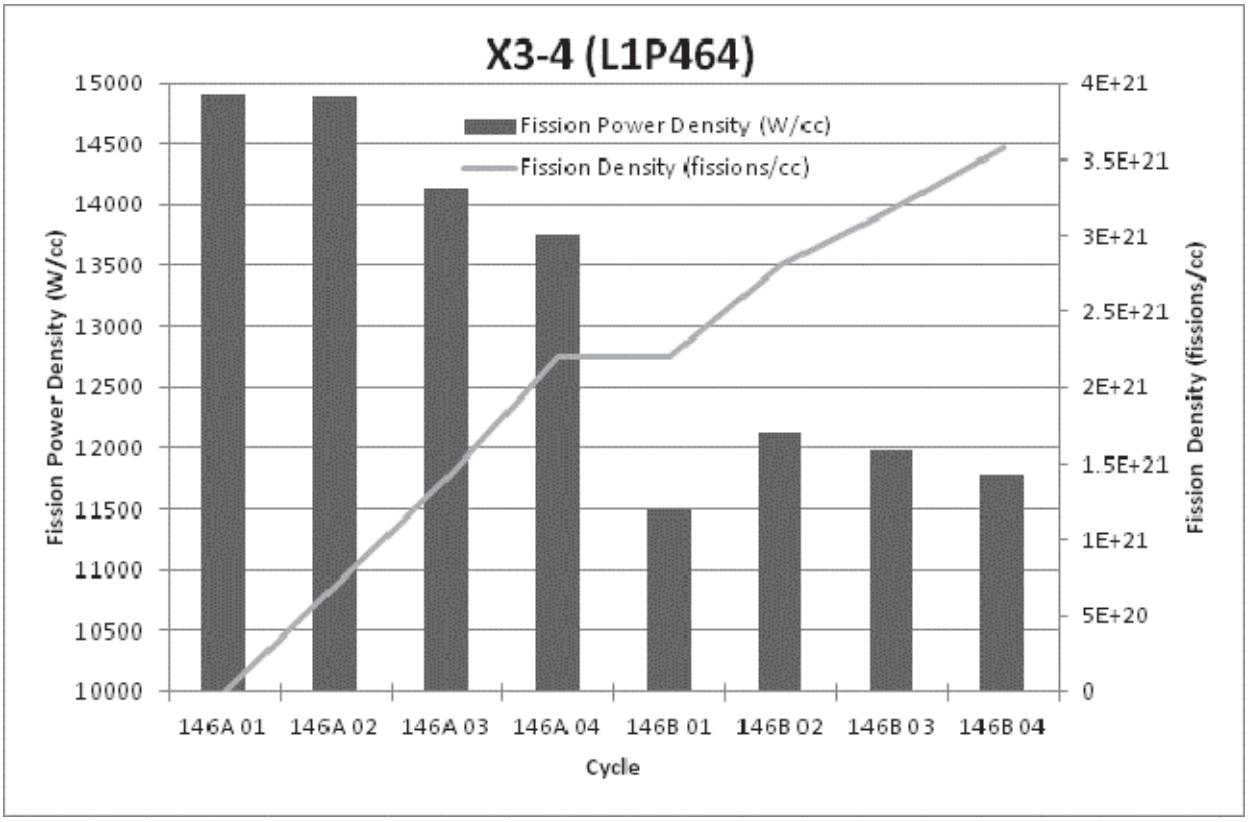

Z-8 (L1P7A1)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
15400
15300
15200
15100
15000
14900
14800
14700
14600
14500
14400
2E+21
1.8E+21
1.6E+21
1.4E+21
1.2E+21
1E+21
8E+20
6E+20
4E+20
2E+20
0
146B 01
146B 02
146B 03
146B 04
Cycle

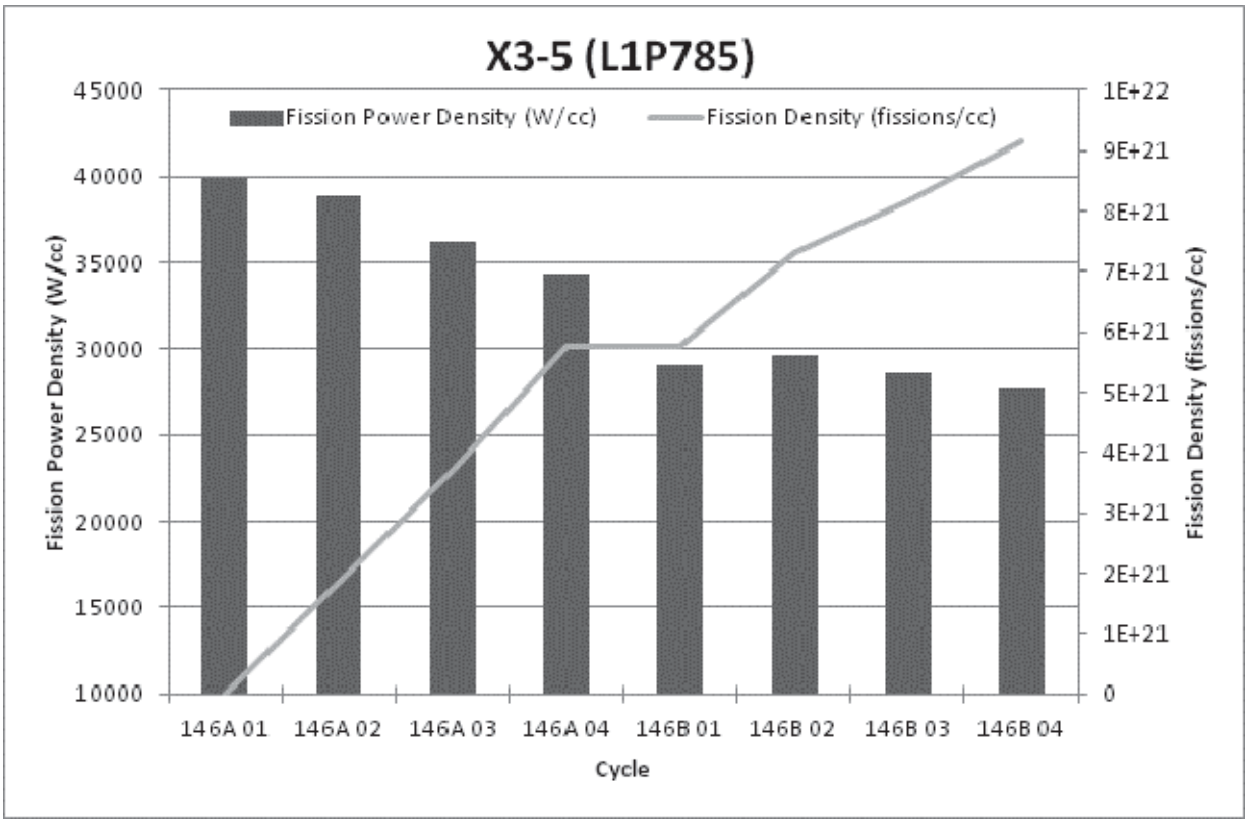
A-2. Capsule X-3

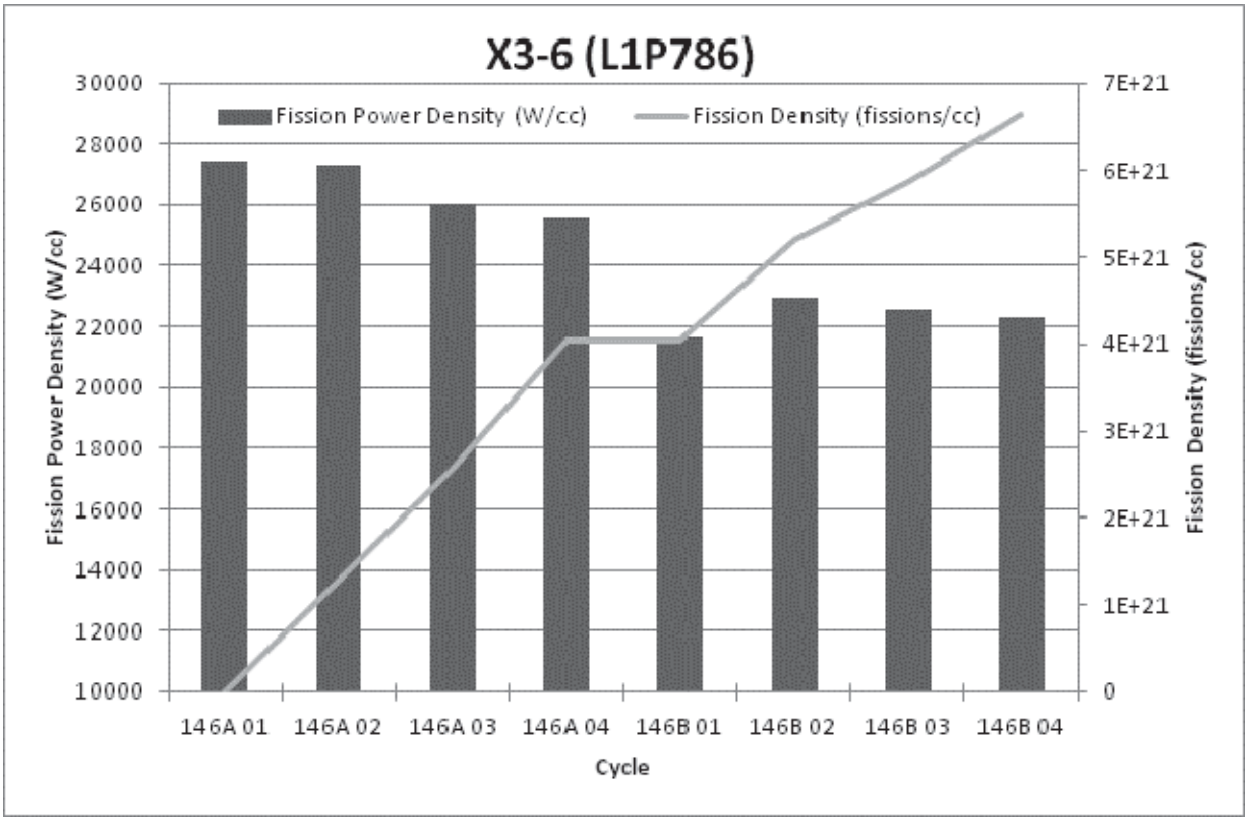


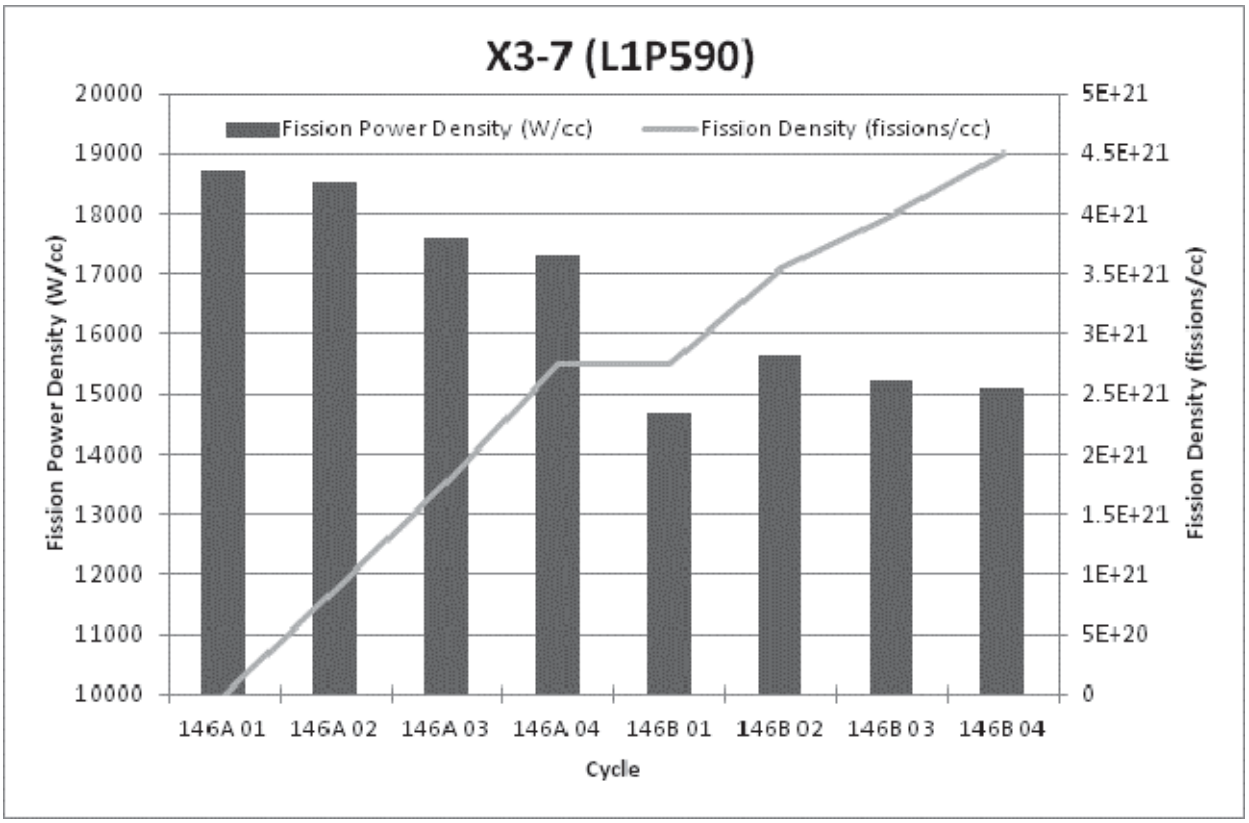


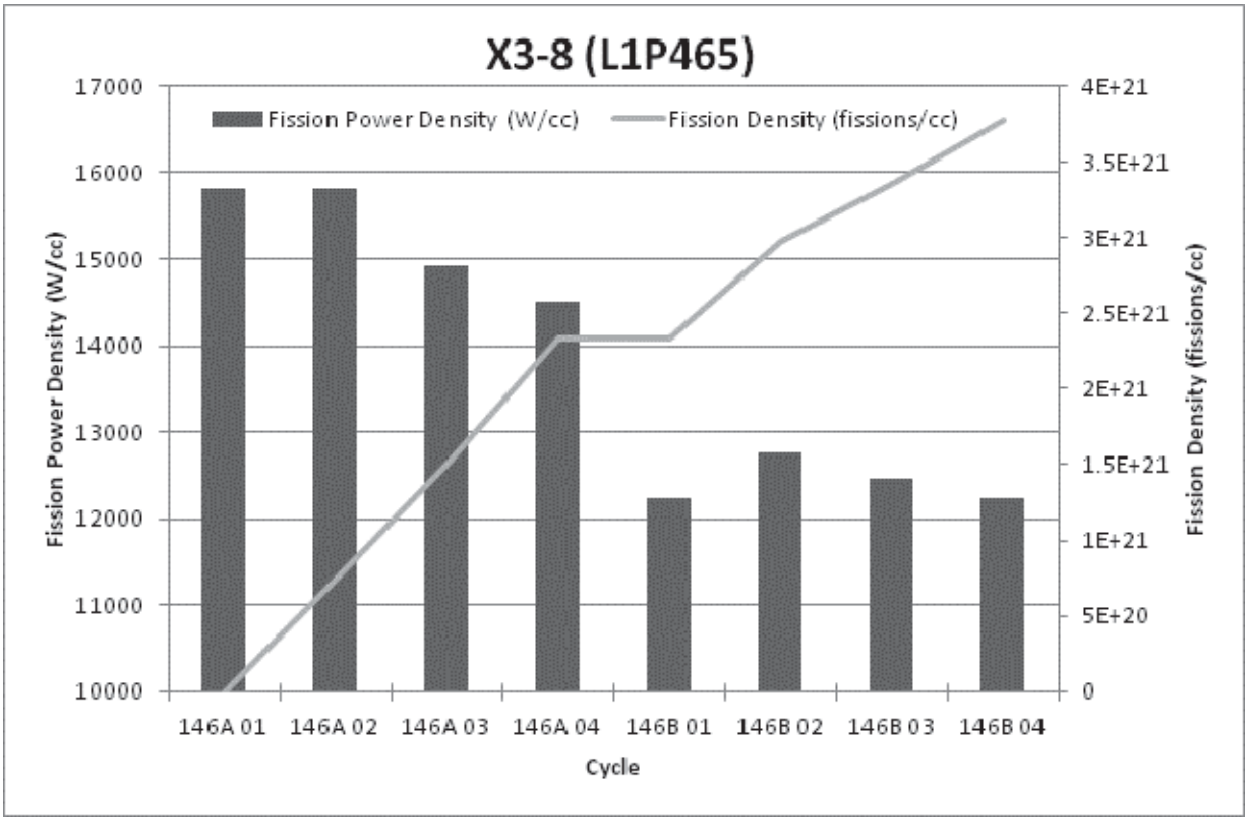

X3-3 (L1P596)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
18000
17000
16000
15000
14000
13000
12000
11000
10000
4.5E+21
4E+21
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle


X3-4 (L1P464)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
15000
14500
14000
13500
13000
12500
12000
11500
11000
10500
10000
4E+21
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle

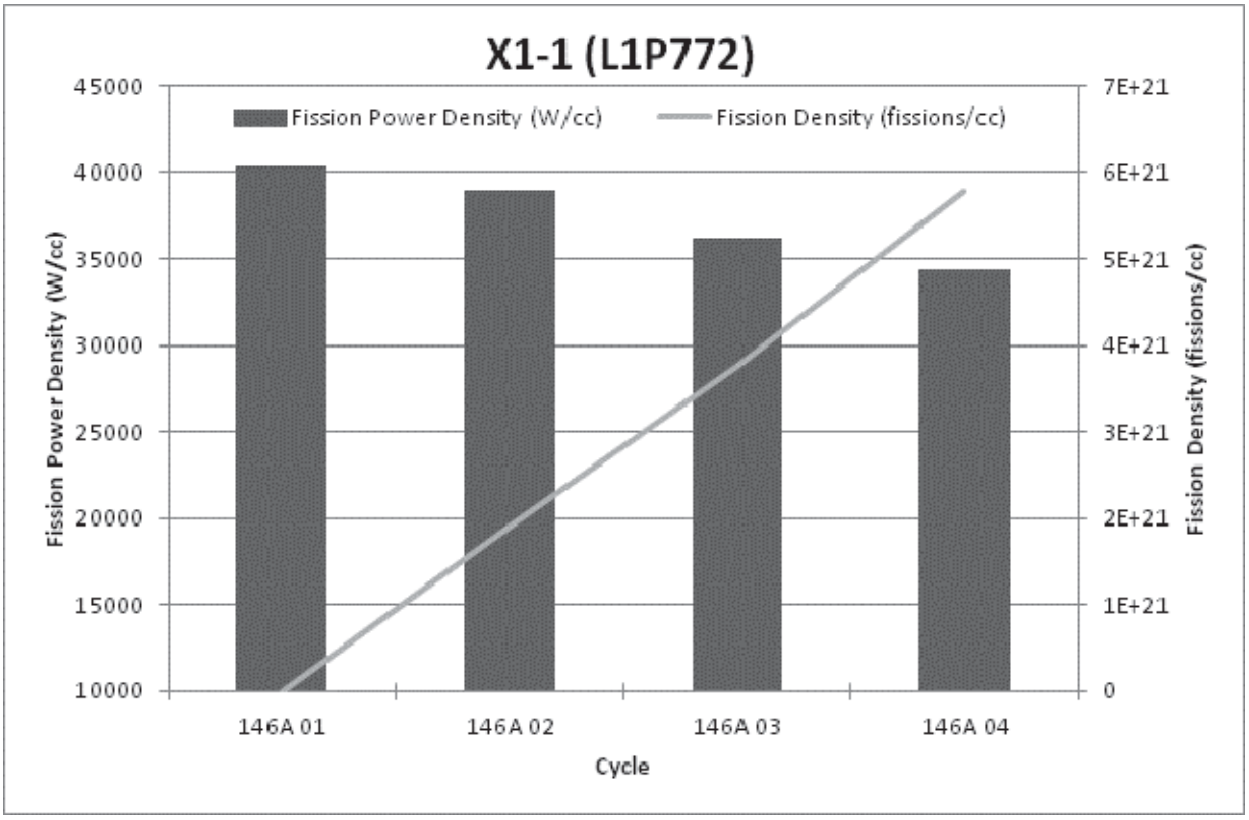

X3-5 (L1P785)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
45000
40000
35000
30000
25000
20000
15000
10000
1E+22
9E+21
8E+21
7E+21
6E+21
5E+21
4E+21
3E+21
2E+21
1E+21
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle

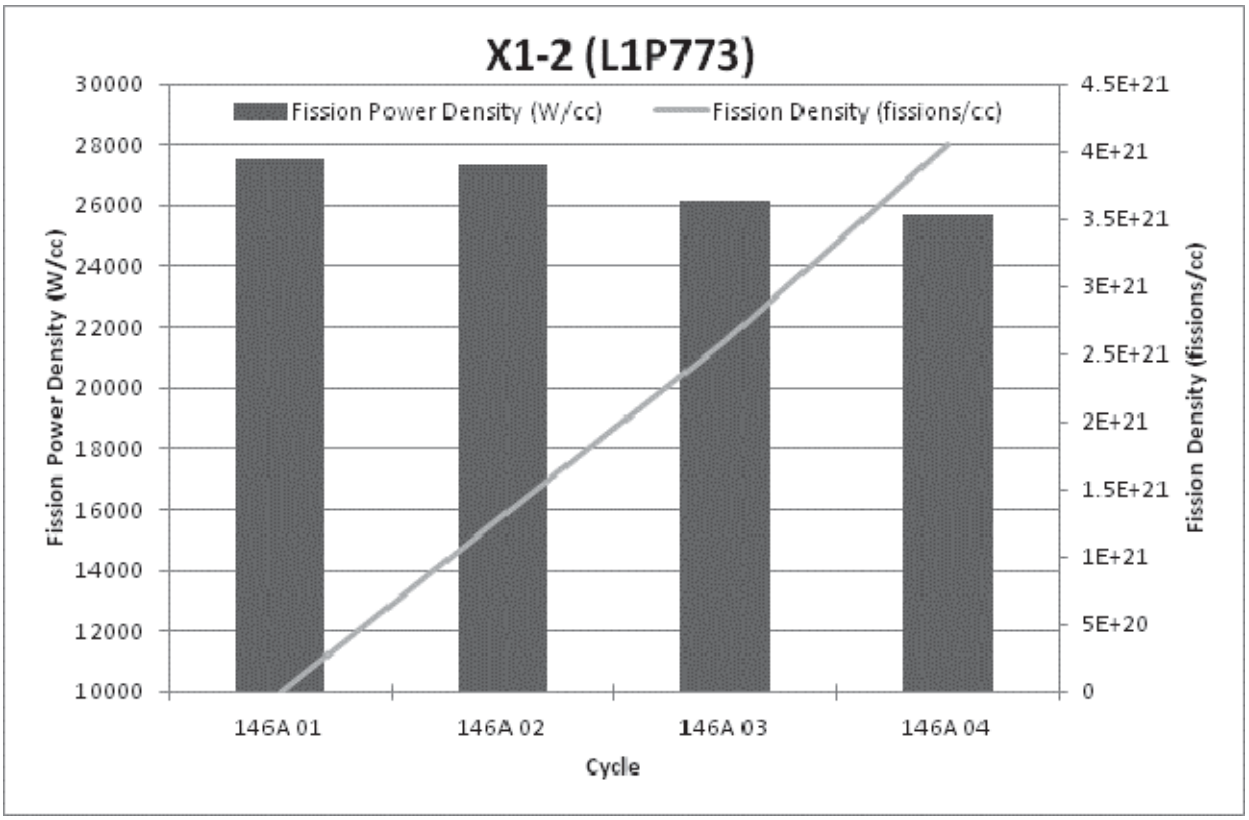

X3-6 (L1P786)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10000
7E+21
6E+21
5E+21
4E+21
3E+21
2E+21
1E+21
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle

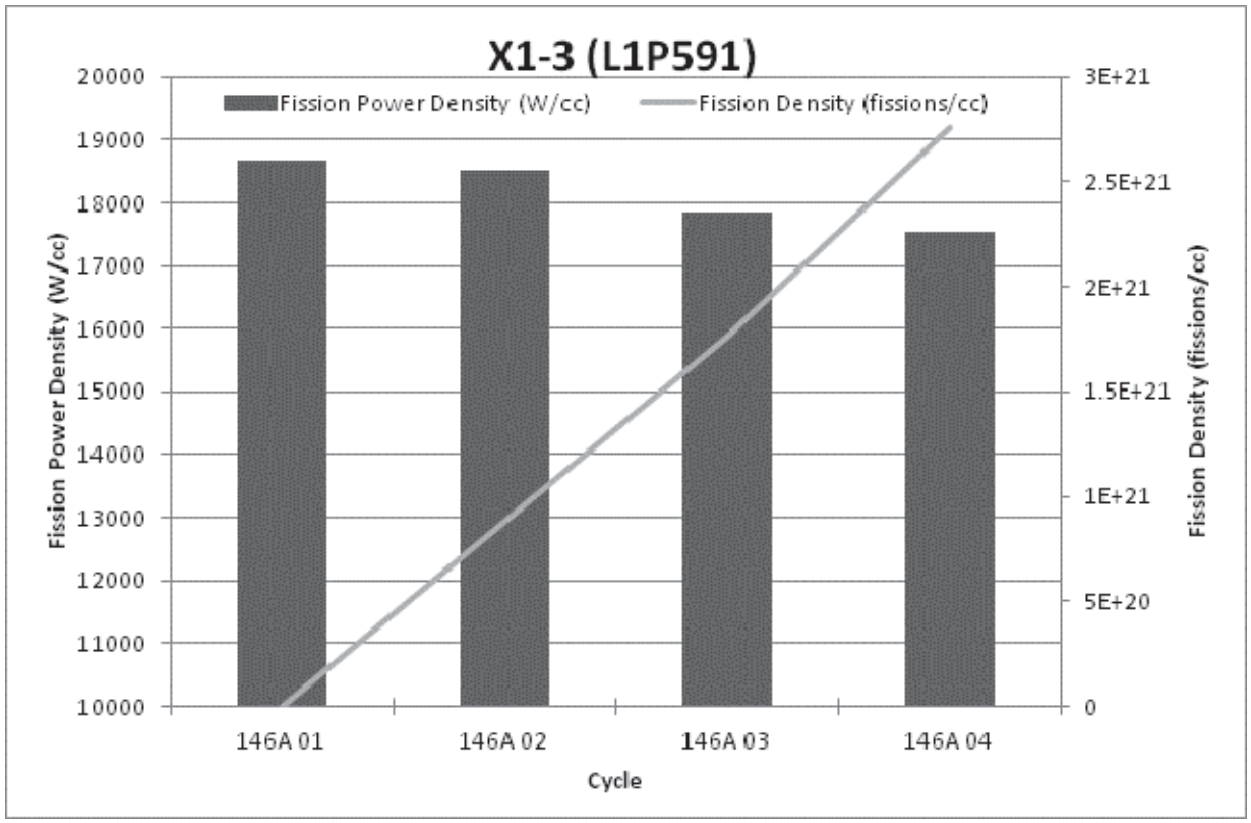

X3-7 (L1P590)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
5E+21
4.5E+21
4E+21
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle

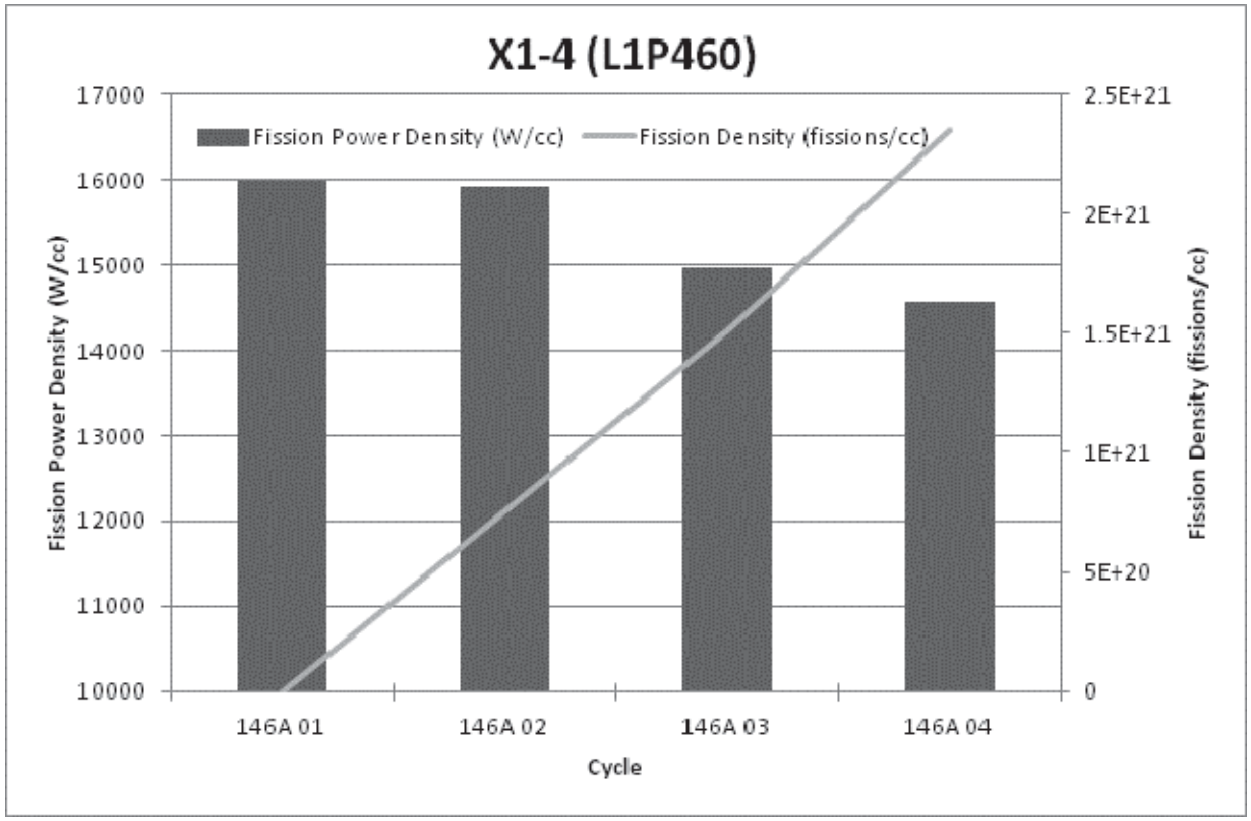

X3-8 (L1P465)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
17000
16000
15000
14000
13000
12000
11000
10000
4E+21
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle

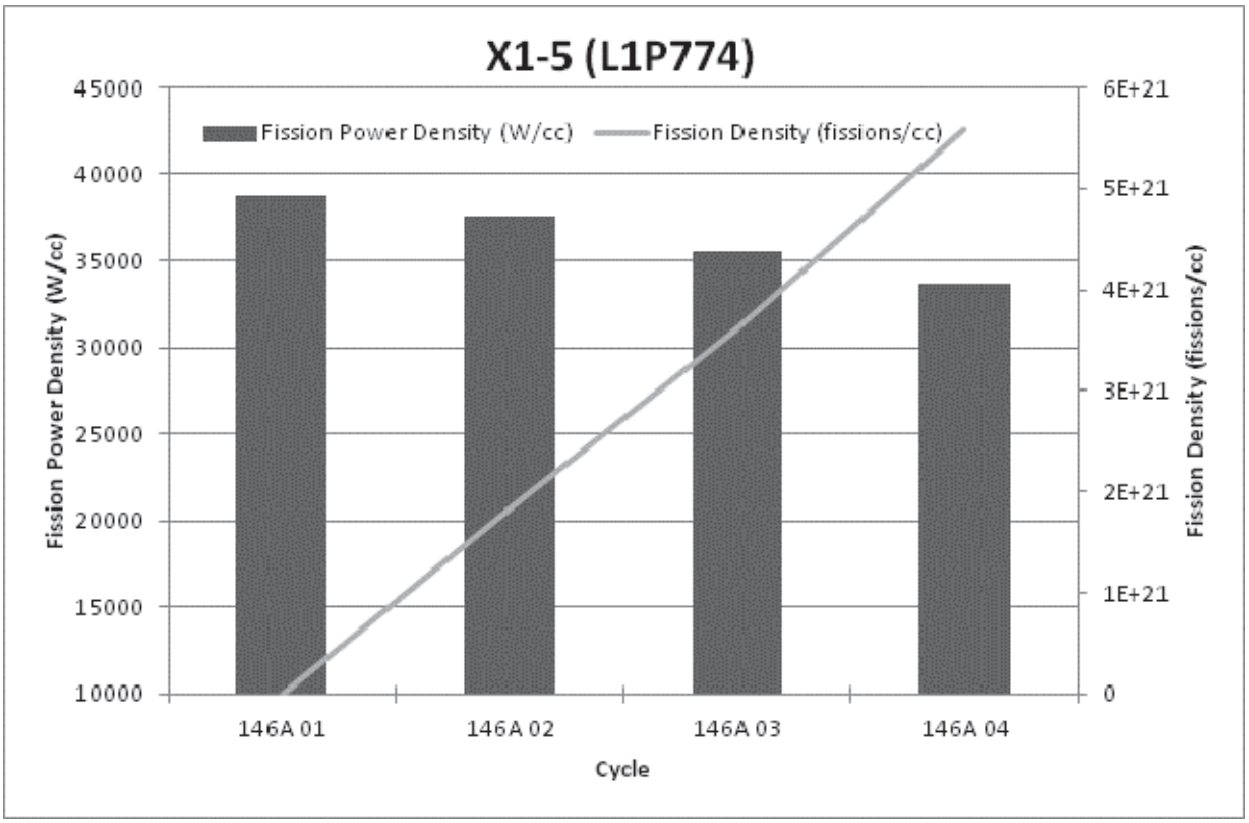
A-3. Capsule X-1

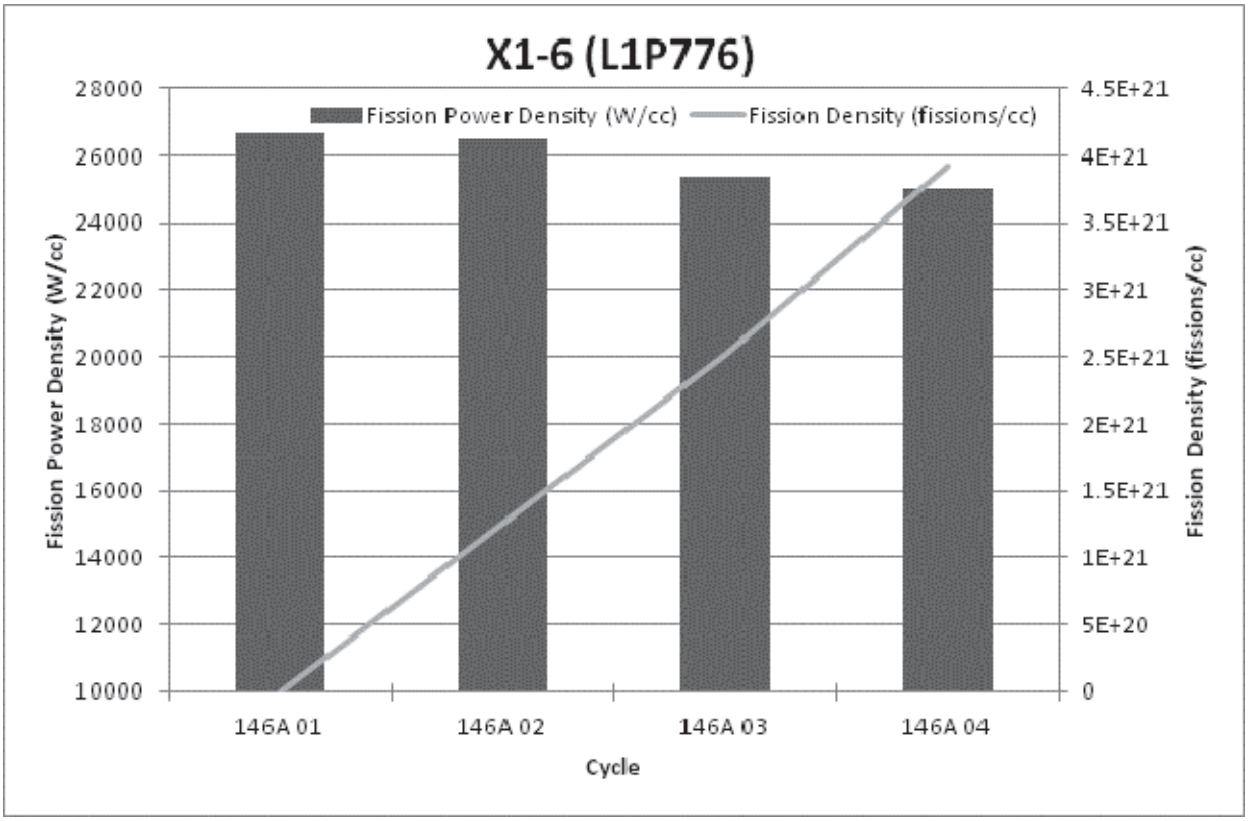


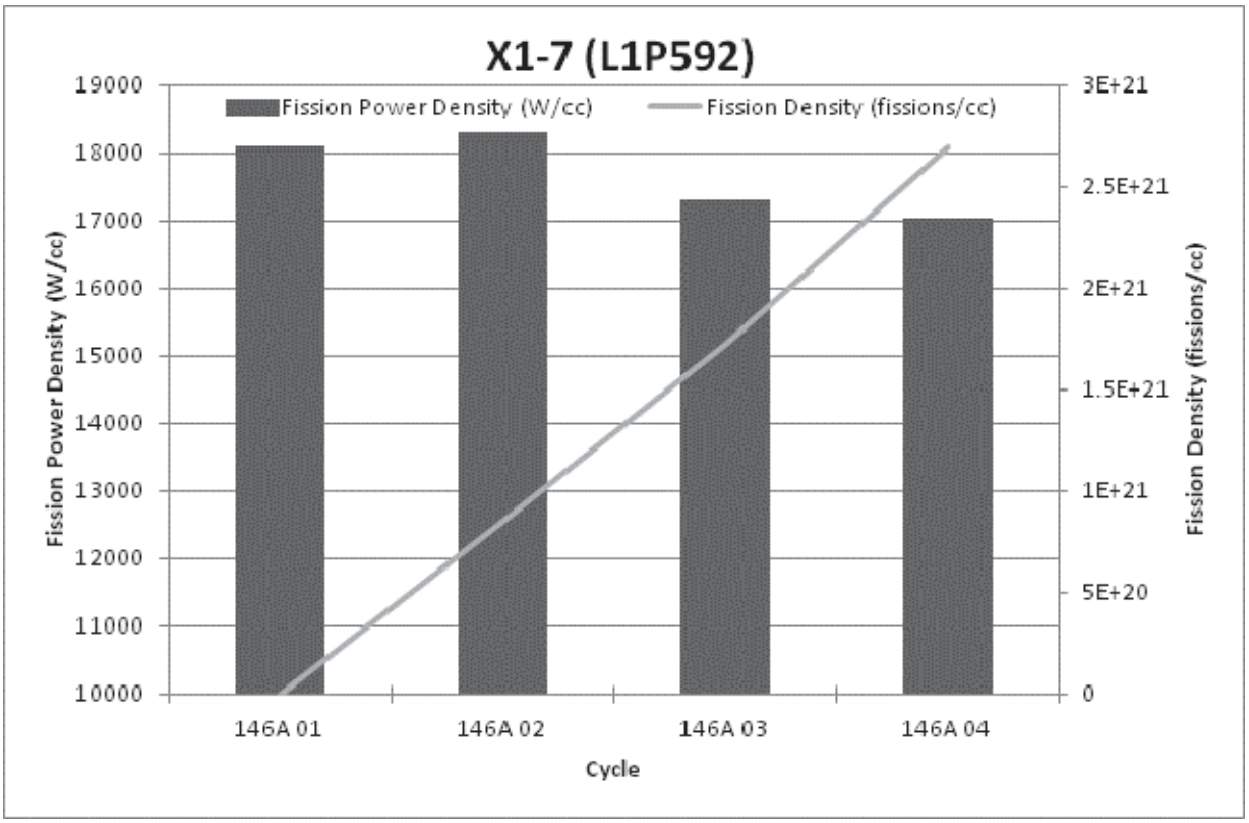


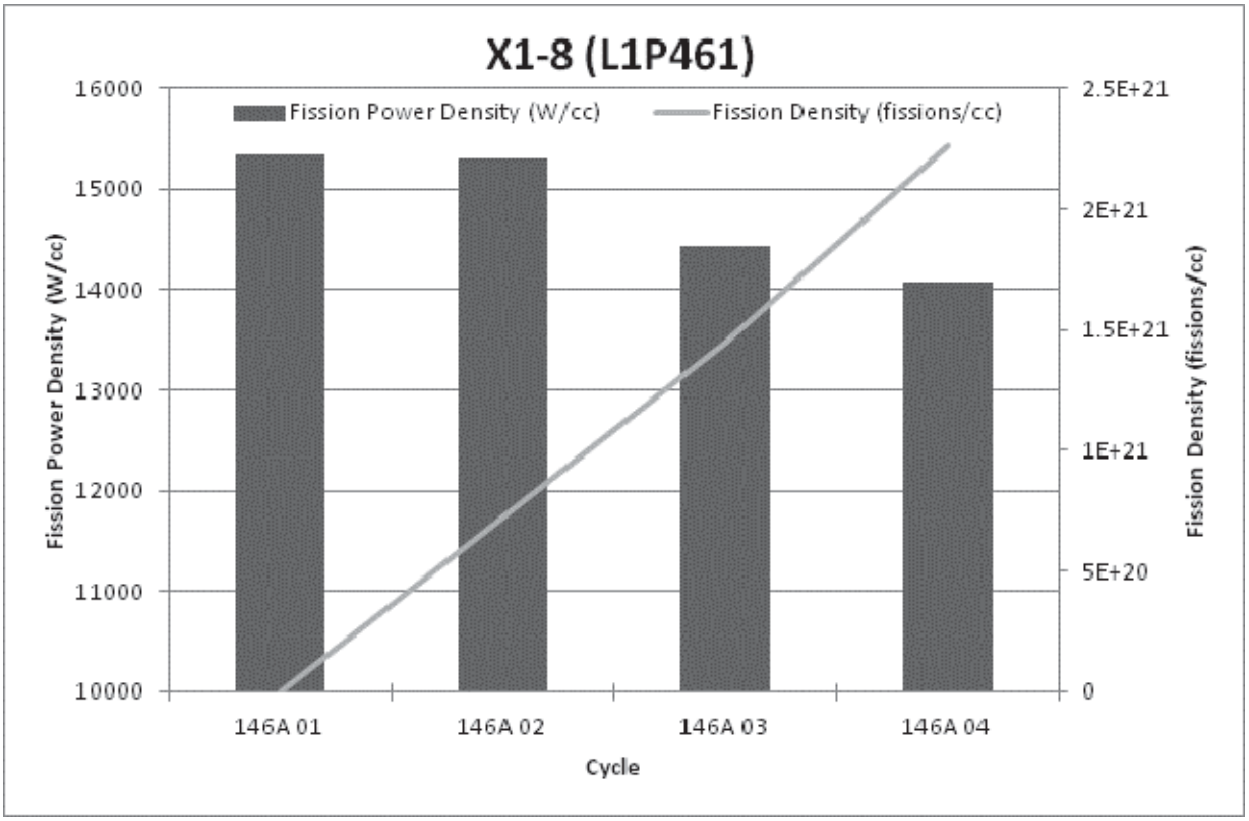

X1-3 (L1P591)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
Cycle


X1-4 (L1P460)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
17000
16000
15000
14000
13000
12000
11000
10000
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
Cycle

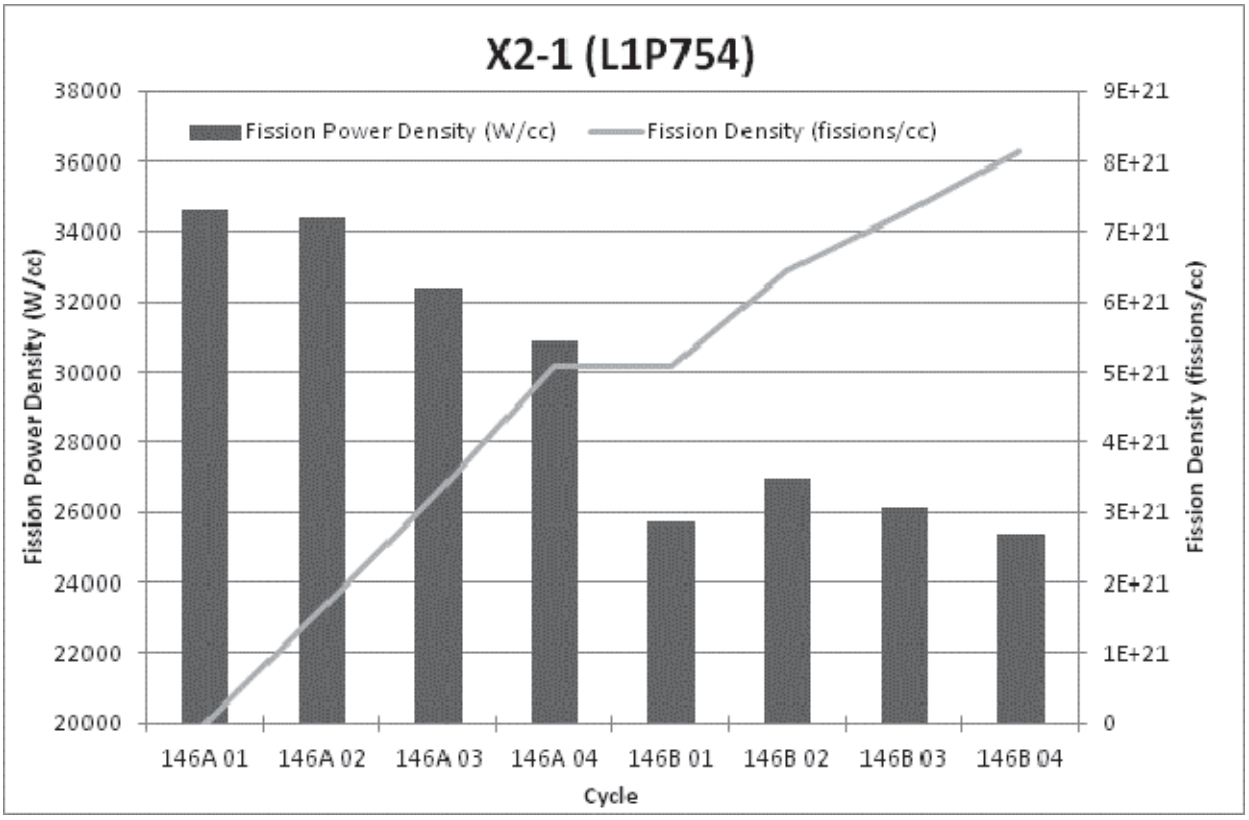

X1-5 (L1P774)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
45000
40000
35000
30000
25000
20000
15000
10000
6E+21
5E+21
4E+21
3E+21
2E+21
1E+21
0
146A 01
146A 02
146A 03
146A 04
Cycle

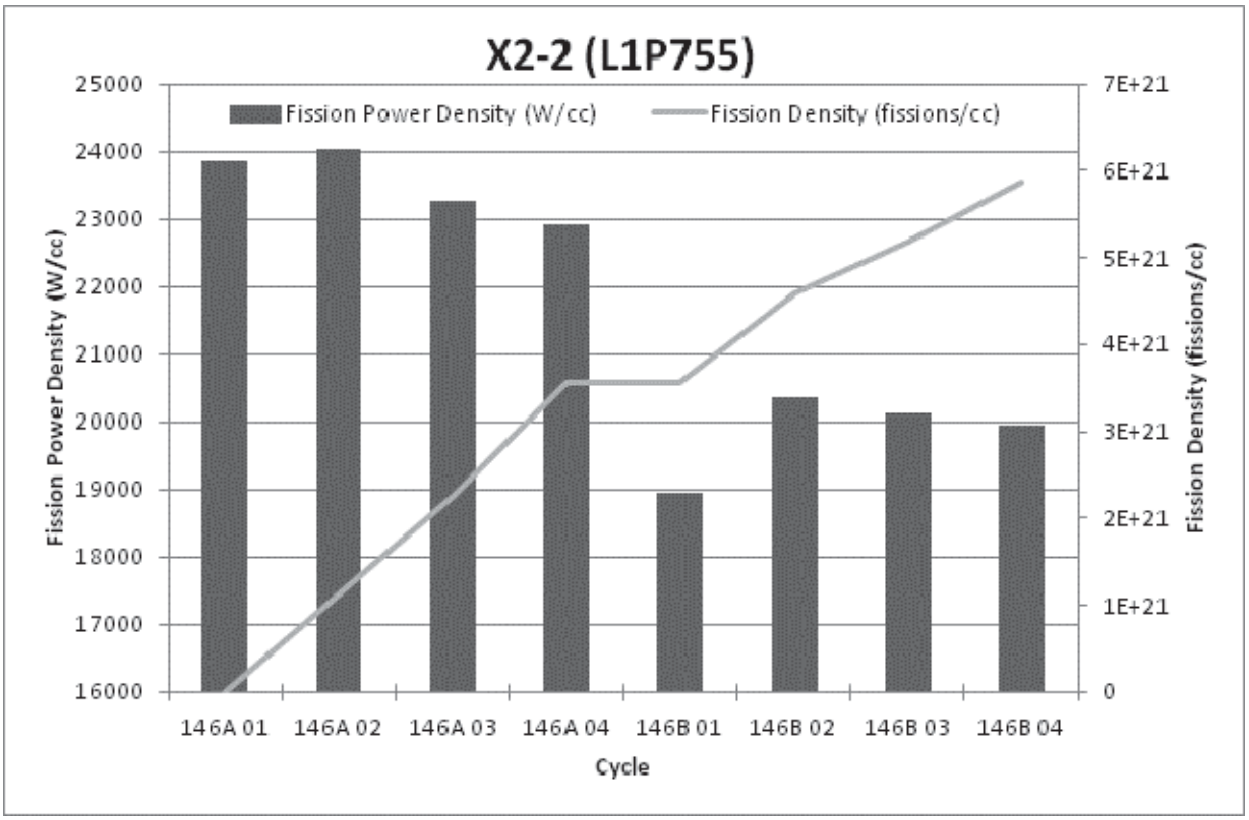

X1-6 (L1P776)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
28000
26000
24000
22000
20000
18000
16000
14000
12000
10000
4.5E+21
4E+21
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
Cycle

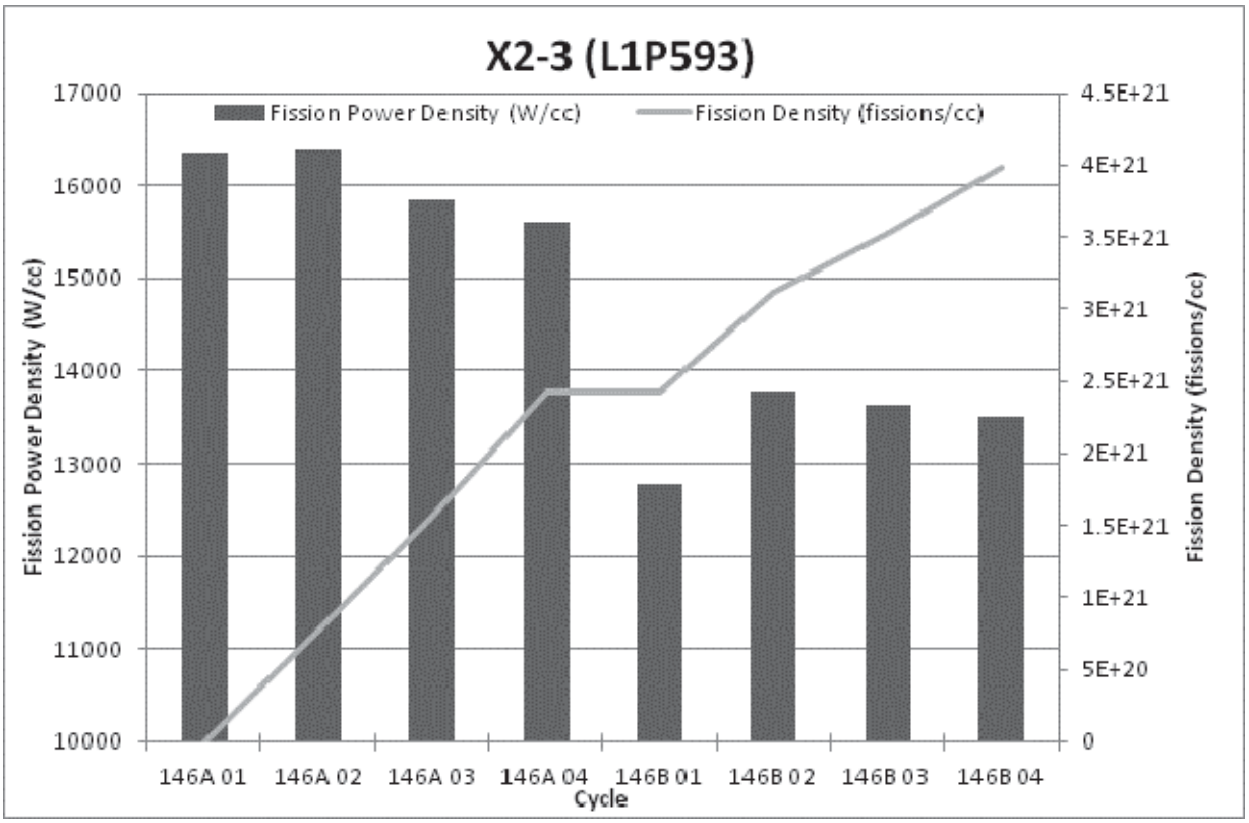

X1-7 (L1P592)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
Cycle

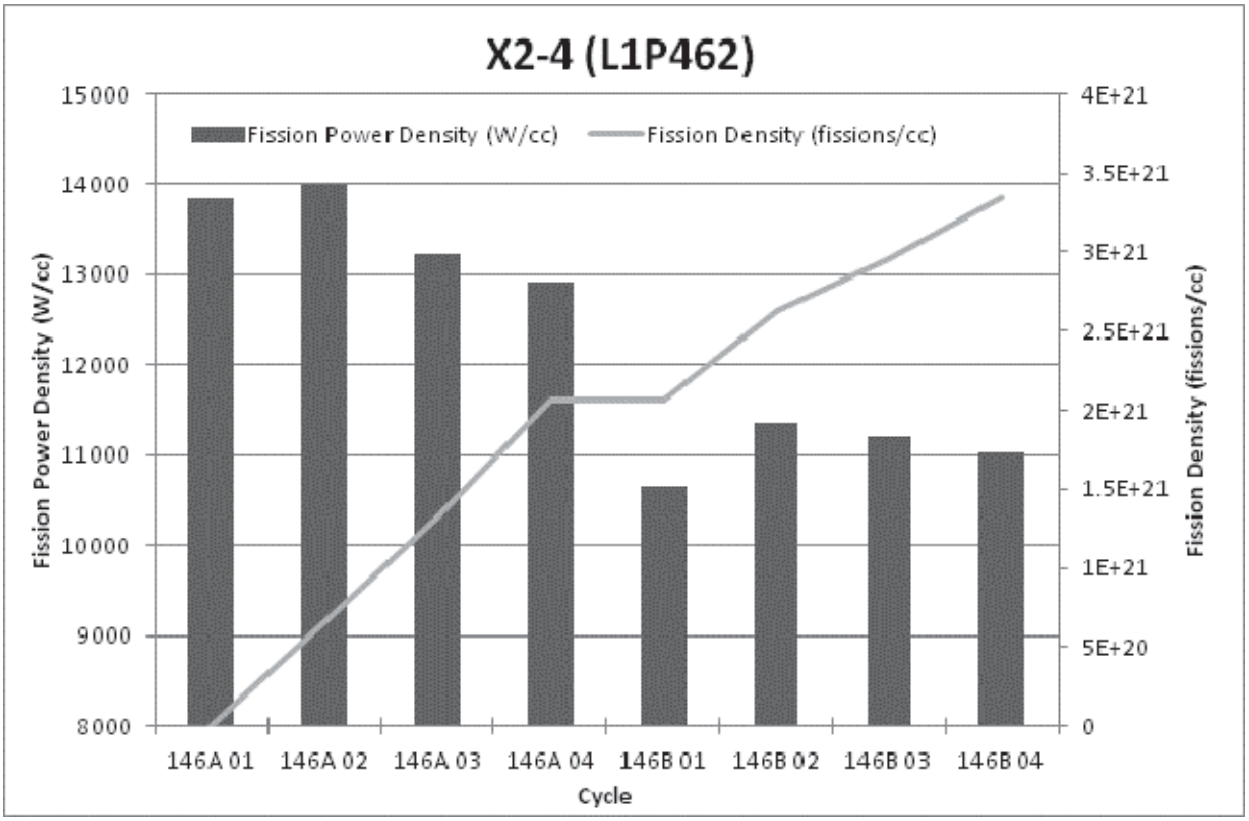

X1-8 (L1P461)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
16000
15000
14000
13000
12000
11000
10000
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
Cycle

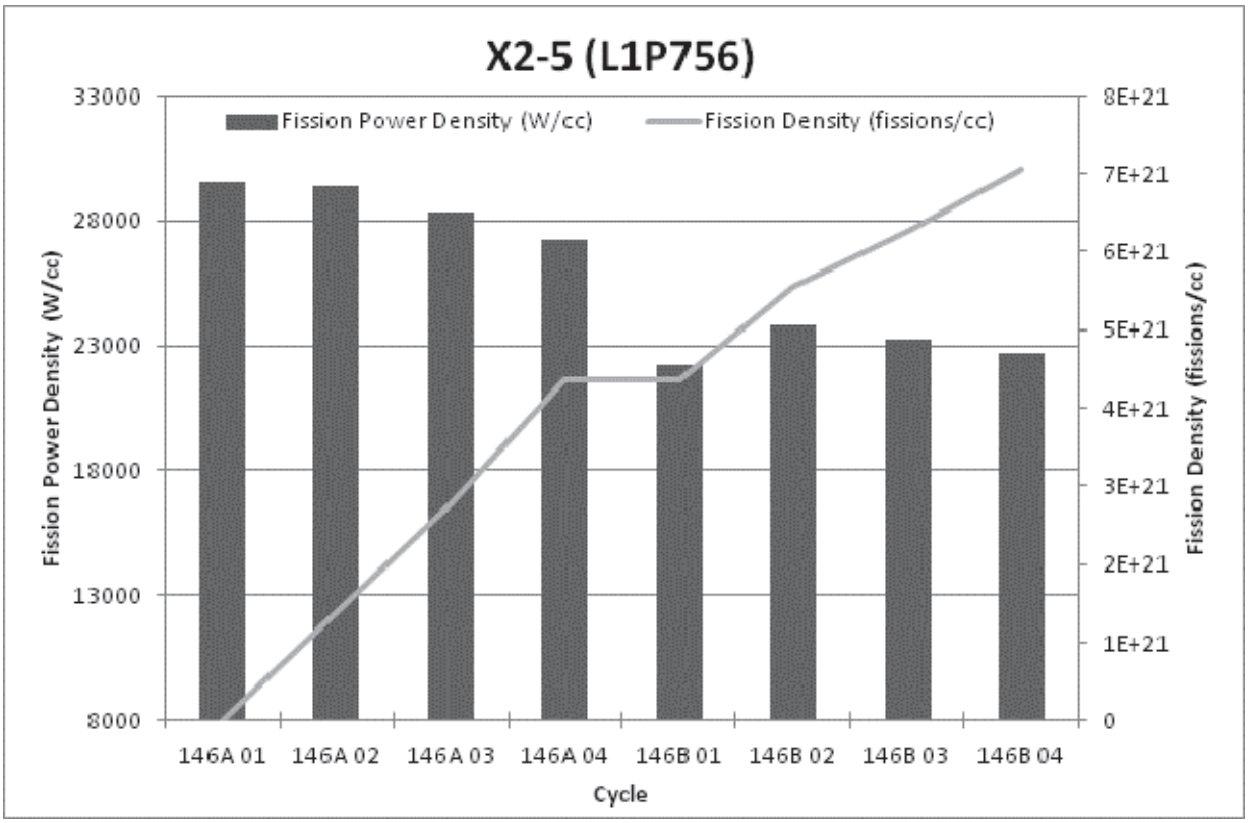
A-4. Capsule X-2

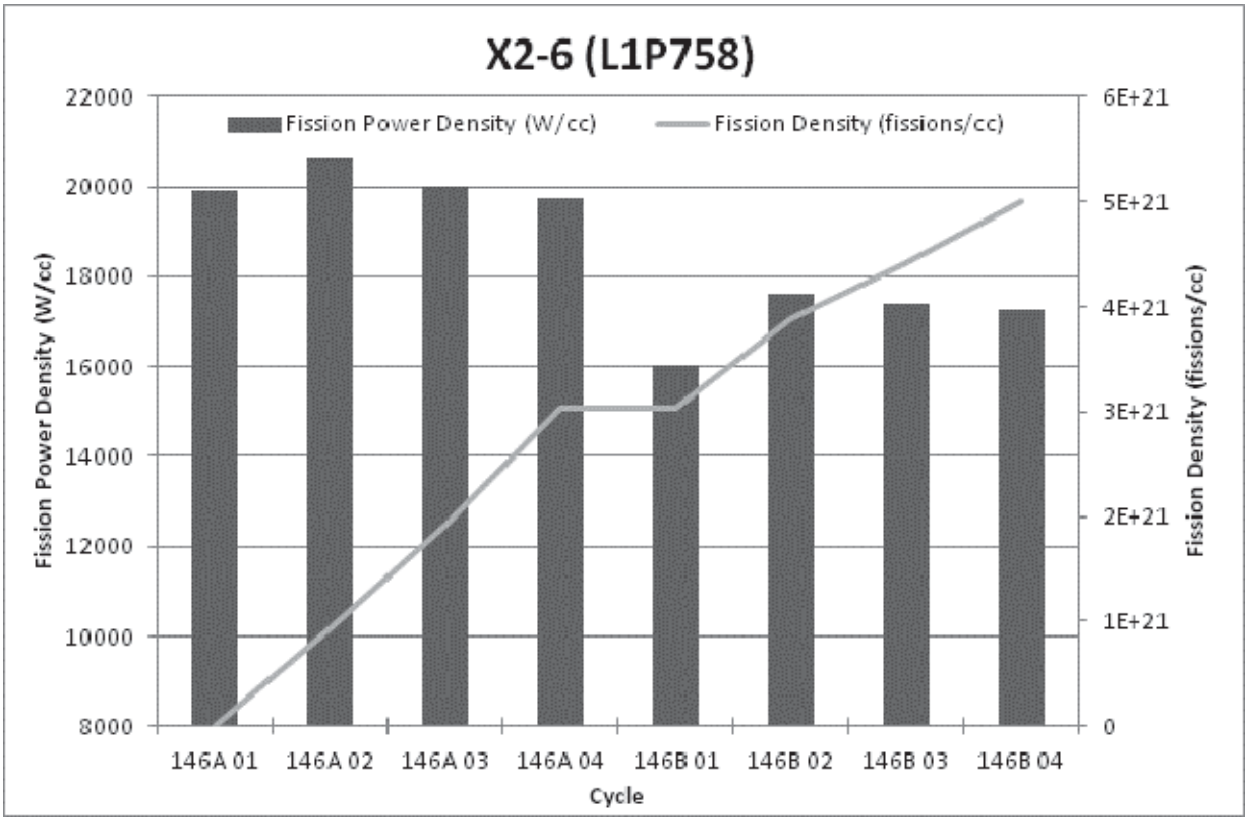


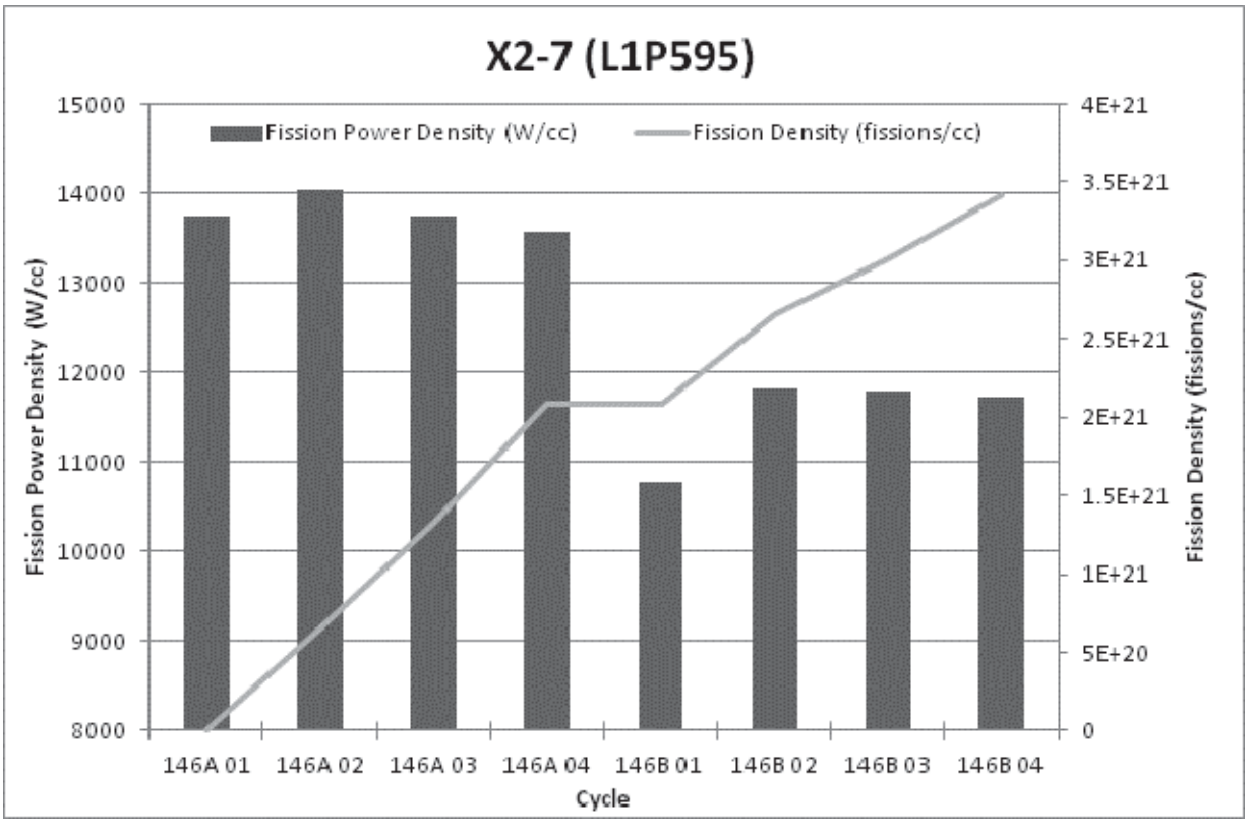


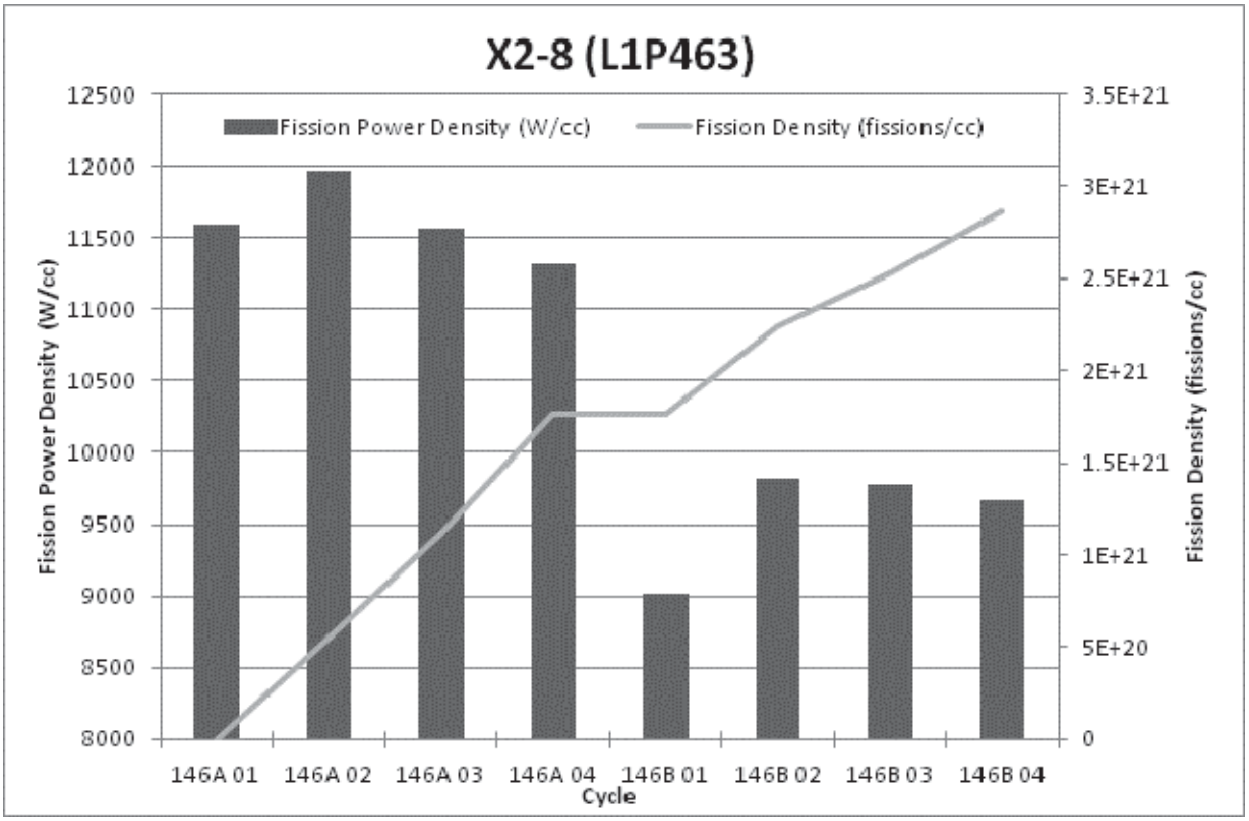

X2-3 (L1P593)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
17000
16000
15000
14000
13000
12000
11000
10000
4.5E+21
4E+21
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle


X2-4 (L1P462)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
15000
14000
13000
12000
11000
10000
9000
8000
4E+21
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle


X2-5 (L1P756)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
33000
28000
23000
18000
13000
8000
8E+21
7E+21
6E+21
5E+21
4E+21
3E+21
2E+21
1E+21
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle


X2-6 (L1P758)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
22000
20000
18000
16000
14000
12000
10000
8000
6E+21
5E+21
4E+21
3E+21
2E+21
1E+21
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04
Cycle


X2-7 (L1P595)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Cycle
15000
14000
13000
12000
11000
10000
9000
8000
4E+21
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04


X2-8 (L1P463)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Cycle
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
3.5E+21
3E+21
2.5E+21
2E+21
1.5E+21
1E+21
5E+20
0
146A 01
146A 02
146A 03
146A 04
146B 01
146B 02
146B 03
146B 04

Appendix B
Beginning of Life Fission Rate Local to Average Ratio 2D Gradient Maps

Appendix B
Beginning of Life Fission Rate Local to Average Ratio 2D Gradient Maps

Table B-1: 2D gradient map of plate A-1 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.27	1.13	1.09	1.11	1.08	1.09	1.03	1.01	1.03	1.09	1.00	1.04	1.03	1.07	1.07	1.06	1.09	1.12	1.13	1.25
2	1.15	1.02	0.99	1.00	0.98	0.99	0.94	0.92	0.94	0.99	0.91	0.95	0.94	0.97	0.97	0.96	0.99	1.02	1.03	1.13
3	1.10	0.98	0.95	0.96	0.94	0.95	0.90	0.88	0.90	0.95	0.87	0.91	0.90	0.93	0.93	0.92	0.95	0.97	0.98	1.08
4	1.11	0.98	0.95	0.96	0.94	0.95	0.90	0.88	0.90	0.95	0.88	0.91	0.90	0.93	0.94	0.93	0.95	0.98	0.99	1.09
5	1.05	0.94	0.91	0.92	0.90	0.91	0.86	0.84	0.86	0.90	0.83	0.87	0.86	0.89	0.89	0.88	0.91	0.93	0.94	1.03
6	1.06	0.94	0.91	0.92	0.90	0.91	0.86	0.85	0.86	0.91	0.84	0.87	0.86	0.90	0.90	0.89	0.91	0.94	0.94	1.04
7	1.11	0.98	0.95	0.96	0.94	0.95	0.90	0.88	0.90	0.95	0.87	0.91	0.90	0.93	0.93	0.92	0.95	0.98	0.98	1.09
8	1.10	0.98	0.95	0.96	0.94	0.95	0.90	0.88	0.89	0.95	0.87	0.91	0.90	0.93	0.93	0.92	0.95	0.97	0.98	1.08
9	1.13	1.01	0.98	0.99	0.97	0.98	0.92	0.91	0.92	0.97	0.90	0.93	0.92	0.96	0.96	0.95	0.98	1.00	1.01	1.11
10	1.11	0.98	0.95	0.96	0.94	0.95	0.90	0.88	0.90	0.95	0.87	0.91	0.90	0.93	0.93	0.92	0.95	0.97	0.98	1.08
11	1.11	0.98	0.95	0.96	0.94	0.95	0.90	0.88	0.90	0.95	0.88	0.91	0.90	0.93	0.94	0.93	0.95	0.98	0.99	1.09
12	1.10	0.98	0.95	0.96	0.94	0.95	0.90	0.88	0.90	0.95	0.87	0.91	0.90	0.93	0.93	0.92	0.95	0.97	0.98	1.08
13	1.12	1.00	0.97	0.98	0.96	0.97	0.91	0.90	0.91	0.96	0.89	0.92	0.91	0.95	0.95	0.94	0.97	0.99	1.00	1.10
14	1.16	1.03	0.99	1.01	0.98	1.00	0.94	0.92	0.94	0.99	0.91	0.95	0.94	0.98	0.98	0.97	0.99	1.02	1.03	1.14
15	1.14	1.01	0.98	0.99	0.97	0.98	0.93	0.91	0.93	0.98	0.90	0.94	0.93	0.96	0.96	0.95	0.98	1.01	1.02	1.12
16	1.21	1.08	1.04	1.06	1.03	1.04	0.99	0.97	0.98	1.04	0.96	1.00	0.99	1.02	1.02	1.01	1.04	1.07	1.08	1.19
17	1.22	1.09	1.05	1.07	1.04	1.05	1.00	0.98	0.99	1.05	0.97	1.01	1.00	1.03	1.03	1.02	1.05	1.08	1.09	1.20
18	1.23	1.10	1.06	1.07	1.05	1.06	1.00	0.98	1.00	1.06	0.98	1.01	1.00	1.04	1.04	1.03	1.06	1.09	1.10	1.21
19	1.33	1.18	1.15	1.16	1.14	1.15	1.09	1.06	1.08	1.14	1.05	1.10	1.09	1.13	1.13	1.11	1.15	1.18	1.19	1.31
20	1.45	1.29	1.25	1.26	1.24	1.25	1.18	1.16	1.18	1.25	1.15	1.19	1.18	1.23	1.23	1.21	1.25	1.28	1.29	1.43

Table B-2: 2D gradient map of plate A-2 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.73	1.44	1.32	1.19	1.15	1.07	1.06	1.08	1.11	1.00	1.06	1.02	1.01	1.06	1.12	1.14	1.20	1.30	1.34	1.59
2	1.41	1.17	1.08	0.97	0.94	0.87	0.87	0.88	0.90	0.82	0.87	0.83	0.83	0.86	0.92	0.93	0.97	1.06	1.09	1.30
3	1.35	1.12	1.03	0.93	0.90	0.84	0.83	0.84	0.86	0.78	0.83	0.79	0.79	0.82	0.88	0.89	0.93	1.01	1.04	1.24
4	1.30	1.08	0.99	0.90	0.87	0.81	0.80	0.82	0.83	0.75	0.80	0.77	0.76	0.80	0.85	0.86	0.90	0.98	1.01	1.20
5	1.26	1.05	0.96	0.87	0.84	0.78	0.78	0.79	0.81	0.73	0.77	0.74	0.74	0.77	0.82	0.83	0.87	0.95	0.97	1.16
6	1.32	1.10	1.01	0.91	0.88	0.82	0.81	0.83	0.84	0.76	0.81	0.78	0.77	0.81	0.86	0.87	0.91	0.99	1.02	1.21
7	1.37	1.14	1.04	0.94	0.91	0.85	0.84	0.86	0.87	0.79	0.84	0.81	0.80	0.84	0.89	0.90	0.95	1.03	1.06	1.26
8	1.35	1.12	1.02	0.92	0.90	0.83	0.83	0.84	0.86	0.78	0.82	0.79	0.79	0.82	0.87	0.88	0.93	1.01	1.04	1.24
9	1.36	1.13	1.04	0.94	0.91	0.84	0.84	0.85	0.87	0.79	0.84	0.80	0.80	0.83	0.88	0.89	0.94	1.02	1.05	1.25
10	1.33	1.10	1.01	0.91	0.88	0.82	0.81	0.83	0.85	0.77	0.81	0.78	0.78	0.81	0.86	0.87	0.92	1.00	1.02	1.22
11	1.39	1.15	1.06	0.95	0.92	0.86	0.85	0.87	0.89	0.80	0.85	0.82	0.81	0.85	0.90	0.91	0.96	1.04	1.07	1.27
12	1.33	1.11	1.02	0.92	0.89	0.83	0.82	0.83	0.85	0.77	0.82	0.79	0.78	0.81	0.86	0.87	0.92	1.00	1.03	1.23
13	1.34	1.11	1.02	0.92	0.89	0.83	0.82	0.83	0.85	0.77	0.82	0.79	0.78	0.81	0.87	0.88	0.92	1.00	1.03	1.23
14	1.41	1.17	1.07	0.97	0.94	0.87	0.87	0.88	0.90	0.82	0.86	0.83	0.83	0.86	0.91	0.93	0.97	1.06	1.09	1.30
15	1.47	1.22	1.12	1.01	0.98	0.91	0.90	0.92	0.94	0.85	0.90	0.86	0.86	0.89	0.95	0.96	1.01	1.10	1.13	1.35
16	1.45	1.21	1.11	1.00	0.97	0.90	0.89	0.91	0.93	0.84	0.89	0.86	0.85	0.89	0.94	0.95	1.00	1.09	1.12	1.33
17	1.50	1.25	1.14	1.03	1.00	0.93	0.92	0.94	0.96	0.87	0.92	0.88	0.88	0.92	0.97	0.99	1.04	1.13	1.16	1.38
18	1.56	1.30	1.19	1.07	1.04	0.97	0.96	0.98	1.00	0.90	0.96	0.92	0.91	0.95	1.01	1.02	1.08	1.17	1.20	1.43
19	1.63	1.36	1.24	1.12	1.09	1.01	1.00	1.02	1.04	0.95	1.00	0.96	0.96	1.00	1.06	1.07	1.13	1.23	1.26	1.50
20	2.00	1.66	1.52	1.37	1.33	1.24	1.23	1.25	1.28	1.16	1.23	1.18	1.17	1.22	1.30	1.31	1.38	1.51	1.54	1.84

Table B-3: 2D gradient map of plate A-3 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.83	1.49	1.38	1.20	1.09	1.08	1.06	1.02	1.01	1.02	0.96	0.99	1.01	1.05	1.07	1.13	1.18	1.30	1.41	1.70
2	1.51	1.23	1.13	0.98	0.89	0.88	0.87	0.84	0.83	0.84	0.79	0.81	0.83	0.86	0.88	0.93	0.97	1.07	1.16	1.40
3	1.47	1.20	1.11	0.96	0.88	0.86	0.85	0.82	0.82	0.82	0.77	0.79	0.81	0.84	0.86	0.91	0.95	1.05	1.13	1.37
4	1.36	1.11	1.03	0.89	0.81	0.80	0.79	0.76	0.76	0.76	0.71	0.73	0.75	0.78	0.80	0.84	0.88	0.97	1.05	1.27
5	1.32	1.08	0.99	0.86	0.78	0.77	0.76	0.73	0.73	0.74	0.69	0.71	0.73	0.76	0.77	0.82	0.85	0.94	1.02	1.22
6	1.47	1.20	1.11	0.96	0.87	0.86	0.85	0.82	0.81	0.82	0.77	0.79	0.81	0.84	0.86	0.91	0.95	1.04	1.13	1.36
7	1.44	1.17	1.08	0.94	0.85	0.84	0.83	0.80	0.80	0.80	0.75	0.77	0.79	0.82	0.84	0.89	0.92	1.02	1.11	1.33
8	1.36	1.11	1.03	0.89	0.81	0.80	0.79	0.76	0.75	0.76	0.71	0.73	0.75	0.78	0.80	0.84	0.88	0.97	1.05	1.26
9	1.39	1.14	1.05	0.91	0.83	0.82	0.81	0.78	0.77	0.78	0.73	0.75	0.77	0.80	0.81	0.86	0.90	0.99	1.07	1.29
10	1.46	1.19	1.10	0.95	0.87	0.86	0.85	0.81	0.81	0.82	0.77	0.79	0.81	0.84	0.85	0.90	0.94	1.04	1.13	1.36
11	1.39	1.13	1.04	0.90	0.82	0.81	0.80	0.77	0.77	0.77	0.73	0.75	0.76	0.79	0.81	0.86	0.89	0.99	1.07	1.29
12	1.48	1.21	1.11	0.97	0.88	0.87	0.86	0.82	0.82	0.83	0.77	0.80	0.81	0.85	0.86	0.92	0.95	1.05	1.14	1.37
13	1.53	1.25	1.15	1.00	0.91	0.90	0.88	0.85	0.85	0.85	0.80	0.82	0.84	0.88	0.89	0.95	0.98	1.09	1.18	1.42
14	1.45	1.18	1.09	0.94	0.86	0.85	0.84	0.81	0.80	0.81	0.76	0.78	0.80	0.83	0.85	0.90	0.93	1.03	1.11	1.34
15	1.49	1.21	1.12	0.97	0.89	0.88	0.86	0.83	0.82	0.83	0.78	0.80	0.82	0.85	0.87	0.92	0.96	1.06	1.15	1.38
16	1.46	1.19	1.10	0.95	0.87	0.86	0.84	0.81	0.81	0.81	0.76	0.78	0.80	0.83	0.85	0.90	0.94	1.04	1.12	1.35
17	1.53	1.24	1.15	1.00	0.91	0.90	0.88	0.85	0.85	0.85	0.80	0.82	0.84	0.88	0.89	0.94	0.98	1.09	1.18	1.42
18	1.61	1.31	1.21	1.05	0.96	0.94	0.93	0.90	0.89	0.90	0.84	0.87	0.89	0.92	0.94	0.99	1.03	1.14	1.24	1.49
19	1.79	1.46	1.35	1.17	1.06	1.05	1.03	1.00	0.99	1.00	0.94	0.96	0.98	1.02	1.04	1.11	1.15	1.27	1.38	1.66
20	2.23	1.82	1.68	1.45	1.32	1.31	1.29	1.24	1.23	1.24	1.17	1.20	1.23	1.28	1.30	1.38	1.43	1.58	1.72	2.07

Table B-4: 2D gradient map of plate A-4 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.58	1.30	1.23	1.20	1.21	1.07	1.07	1.07	0.97	1.01	1.00	0.97	1.03	1.13	1.09	1.08	1.20	1.24	1.35	1.57
2	1.39	1.14	1.08	1.06	1.06	0.94	0.94	0.94	0.86	0.89	0.88	0.86	0.91	1.00	0.96	0.95	1.05	1.09	1.19	1.38
3	1.26	1.03	0.98	0.96	0.96	0.85	0.85	0.85	0.77	0.80	0.79	0.77	0.82	0.90	0.86	0.86	0.95	0.99	1.07	1.25
4	1.28	1.05	0.99	0.97	0.98	0.87	0.86	0.86	0.79	0.82	0.81	0.79	0.84	0.92	0.88	0.87	0.97	1.00	1.09	1.27
5	1.27	1.04	0.99	0.97	0.97	0.86	0.86	0.86	0.78	0.81	0.80	0.78	0.83	0.91	0.88	0.87	0.96	1.00	1.09	1.26
6	1.24	1.02	0.97	0.95	0.95	0.84	0.84	0.84	0.77	0.80	0.79	0.77	0.81	0.89	0.86	0.85	0.94	0.98	1.06	1.24
7	1.21	0.99	0.94	0.92	0.93	0.82	0.82	0.82	0.75	0.77	0.76	0.75	0.79	0.87	0.83	0.83	0.92	0.95	1.03	1.20
8	1.30	1.07	1.02	1.00	1.00	0.88	0.88	0.88	0.80	0.83	0.82	0.80	0.85	0.94	0.90	0.89	0.99	1.03	1.11	1.30
9	1.24	1.02	0.97	0.95	0.95	0.84	0.84	0.84	0.77	0.80	0.78	0.77	0.81	0.89	0.86	0.85	0.94	0.98	1.06	1.23
10	1.27	1.05	0.99	0.97	0.98	0.86	0.86	0.86	0.79	0.81	0.80	0.79	0.83	0.91	0.88	0.87	0.97	1.00	1.09	1.27
11	1.32	1.08	1.03	1.01	1.01	0.90	0.89	0.89	0.81	0.85	0.83	0.81	0.87	0.95	0.91	0.90	1.00	1.04	1.13	1.31
12	1.26	1.04	0.98	0.96	0.97	0.86	0.85	0.85	0.78	0.81	0.80	0.78	0.83	0.91	0.87	0.86	0.96	0.99	1.08	1.25
13	1.32	1.08	1.03	1.01	1.01	0.89	0.89	0.89	0.81	0.84	0.83	0.81	0.86	0.95	0.91	0.90	1.00	1.04	1.13	1.31
14	1.30	1.07	1.01	0.99	1.00	0.88	0.88	0.88	0.80	0.83	0.82	0.80	0.85	0.93	0.89	0.89	0.99	1.02	1.11	1.29
15	1.22	1.00	0.95	0.93	0.94	0.83	0.83	0.83	0.75	0.78	0.77	0.75	0.80	0.88	0.84	0.83	0.93	0.96	1.04	1.21
16	1.30	1.07	1.01	0.99	0.99	0.88	0.88	0.88	0.80	0.83	0.82	0.80	0.85	0.93	0.89	0.89	0.98	1.02	1.11	1.29
17	1.47	1.21	1.14	1.12	1.13	1.00	0.99	0.99	0.91	0.94	0.93	0.91	0.96	1.05	1.01	1.00	1.11	1.16	1.26	1.46
18	1.37	1.13	1.07	1.05	1.05	0.93	0.93	0.93	0.85	0.88	0.87	0.85	0.90	0.98	0.94	0.94	1.04	1.08	1.17	1.36
19	1.62	1.33	1.26	1.24	1.24	1.10	1.10	1.10	1.00	1.04	1.02	1.00	1.06	1.16	1.12	1.11	1.23	1.28	1.39	1.61
20	1.80	1.48	1.40	1.37	1.38	1.22	1.22	1.22	1.11	1.15	1.13	1.11	1.18	1.29	1.24	1.23	1.36	1.42	1.54	1.79

Table B-5: 2D gradient map of plate A-5 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.25	1.15	1.12	1.05	1.04	1.06	1.07	1.05	1.05	1.04	1.02	1.03	0.99	0.99	1.04	1.06	1.04	1.08	1.13	1.27
2	1.13	1.04	1.01	0.95	0.95	0.96	0.97	0.95	0.95	0.94	0.93	0.94	0.90	0.90	0.94	0.96	0.95	0.98	1.02	1.15
3	1.08	0.99	0.96	0.90	0.90	0.91	0.93	0.91	0.91	0.90	0.88	0.89	0.85	0.85	0.90	0.92	0.90	0.93	0.97	1.10
4	1.04	0.96	0.93	0.87	0.87	0.88	0.89	0.88	0.88	0.87	0.85	0.86	0.82	0.82	0.87	0.88	0.87	0.90	0.94	1.06
5	1.05	0.96	0.94	0.88	0.88	0.89	0.90	0.88	0.88	0.88	0.86	0.87	0.83	0.83	0.87	0.89	0.88	0.91	0.95	1.07
6	1.11	1.02	1.00	0.94	0.93	0.95	0.96	0.94	0.94	0.93	0.91	0.92	0.88	0.88	0.93	0.95	0.93	0.96	1.01	1.13
7	1.13	1.04	1.01	0.95	0.95	0.96	0.97	0.95	0.95	0.94	0.93	0.94	0.90	0.90	0.94	0.96	0.95	0.98	1.02	1.15
8	1.08	0.99	0.97	0.91	0.90	0.92	0.93	0.91	0.91	0.90	0.89	0.89	0.86	0.85	0.90	0.92	0.90	0.93	0.98	1.10
9	1.11	1.02	1.00	0.93	0.93	0.94	0.96	0.94	0.94	0.93	0.91	0.92	0.88	0.88	0.93	0.95	0.93	0.96	1.00	1.13
10	1.10	1.01	0.99	0.93	0.92	0.94	0.95	0.93	0.93	0.92	0.91	0.91	0.87	0.87	0.92	0.94	0.92	0.95	1.00	1.12
11	1.14	1.05	1.02	0.96	0.95	0.97	0.98	0.96	0.96	0.95	0.93	0.94	0.90	0.90	0.95	0.97	0.95	0.98	1.03	1.16
12	1.14	1.05	1.02	0.96	0.96	0.97	0.98	0.96	0.96	0.95	0.94	0.95	0.91	0.90	0.95	0.97	0.96	0.99	1.03	1.16
13	1.13	1.04	1.01	0.95	0.94	0.96	0.97	0.95	0.95	0.94	0.93	0.94	0.89	0.89	0.94	0.96	0.94	0.97	1.02	1.15
14	1.13	1.04	1.01	0.95	0.95	0.96	0.97	0.95	0.95	0.94	0.93	0.94	0.90	0.90	0.94	0.96	0.95	0.98	1.02	1.15
15	1.12	1.03	1.00	0.94	0.94	0.95	0.96	0.94	0.94	0.94	0.92	0.93	0.89	0.89	0.93	0.95	0.94	0.97	1.01	1.14
16	1.21	1.11	1.08	1.02	1.01	1.03	1.04	1.02	1.02	1.01	0.99	1.00	0.96	0.96	1.01	1.03	1.01	1.04	1.09	1.23
17	1.22	1.13	1.10	1.03	1.02	1.04	1.05	1.03	1.03	1.02	1.00	1.01	0.97	0.97	1.02	1.04	1.02	1.06	1.11	1.25
18	1.26	1.16	1.13	1.06	1.05	1.07	1.08	1.06	1.06	1.05	1.03	1.04	1.00	1.00	1.05	1.07	1.05	1.09	1.14	1.28
19	1.26	1.16	1.13	1.05	1.05	1.07	1.08	1.06	1.06	1.05	1.03	1.04	1.00	0.99	1.05	1.07	1.05	1.08	1.14	1.28
20	1.48	1.36	1.32	1.24	1.24	1.25	1.27	1.25	1.25	1.23	1.21	1.23	1.17	1.17	1.23	1.26	1.24	1.28	1.34	1.51

Table B-6: 2D gradient map of plate A-6 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.69	1.42	1.27	1.14	1.08	1.10	1.06	1.03	1.00	0.99	1.02	1.01	0.99	1.02	1.07	1.10	1.16	1.26	1.34	1.67
2	1.45	1.22	1.09	0.98	0.92	0.94	0.91	0.88	0.86	0.85	0.87	0.86	0.85	0.88	0.92	0.94	0.99	1.08	1.15	1.43
3	1.37	1.15	1.03	0.92	0.88	0.89	0.86	0.83	0.81	0.80	0.83	0.82	0.81	0.83	0.87	0.89	0.94	1.02	1.09	1.35
4	1.29	1.08	0.97	0.87	0.82	0.83	0.80	0.78	0.76	0.75	0.78	0.77	0.76	0.78	0.82	0.84	0.88	0.96	1.02	1.27
5	1.30	1.09	0.98	0.88	0.83	0.85	0.81	0.79	0.77	0.76	0.78	0.78	0.77	0.79	0.83	0.85	0.89	0.97	1.03	1.29
6	1.32	1.11	0.99	0.89	0.84	0.85	0.82	0.80	0.78	0.77	0.79	0.79	0.77	0.80	0.84	0.86	0.90	0.98	1.04	1.30
7	1.36	1.14	1.02	0.91	0.87	0.88	0.85	0.83	0.80	0.80	0.82	0.81	0.80	0.82	0.86	0.88	0.93	1.01	1.07	1.34
8	1.30	1.09	0.98	0.88	0.83	0.84	0.81	0.79	0.77	0.76	0.78	0.78	0.76	0.79	0.83	0.85	0.89	0.97	1.03	1.28
9	1.34	1.12	1.01	0.90	0.85	0.87	0.84	0.81	0.79	0.78	0.81	0.80	0.79	0.81	0.85	0.87	0.92	1.00	1.06	1.32
10	1.32	1.11	1.00	0.89	0.84	0.86	0.83	0.81	0.78	0.78	0.80	0.79	0.78	0.80	0.84	0.86	0.91	0.98	1.05	1.31
11	1.35	1.13	1.02	0.91	0.86	0.88	0.84	0.82	0.80	0.79	0.81	0.80	0.79	0.82	0.86	0.88	0.93	1.00	1.07	1.33
12	1.40	1.18	1.06	0.95	0.90	0.91	0.88	0.86	0.83	0.82	0.85	0.84	0.83	0.85	0.89	0.92	0.96	1.05	1.11	1.39
13	1.42	1.19	1.07	0.96	0.90	0.92	0.89	0.86	0.84	0.83	0.85	0.85	0.83	0.86	0.90	0.92	0.97	1.05	1.12	1.40
14	1.35	1.13	1.02	0.91	0.86	0.88	0.84	0.82	0.80	0.79	0.81	0.80	0.79	0.82	0.86	0.88	0.93	1.00	1.07	1.33
15	1.47	1.23	1.10	0.99	0.94	0.95	0.92	0.89	0.87	0.86	0.88	0.87	0.86	0.89	0.93	0.96	1.01	1.09	1.16	1.45
16	1.46	1.22	1.10	0.98	0.93	0.95	0.91	0.89	0.86	0.86	0.88	0.87	0.86	0.88	0.93	0.95	1.00	1.09	1.16	1.44
17	1.47	1.23	1.11	0.99	0.94	0.95	0.92	0.89	0.87	0.86	0.88	0.88	0.86	0.89	0.93	0.96	1.01	1.09	1.16	1.45
18	1.54	1.29	1.16	1.04	0.98	1.00	0.96	0.94	0.91	0.90	0.93	0.92	0.91	0.93	0.98	1.00	1.06	1.15	1.22	1.52
19	1.61	1.35	1.21	1.09	1.03	1.05	1.01	0.98	0.95	0.95	0.97	0.96	0.95	0.98	1.02	1.05	1.11	1.20	1.28	1.59
20	2.07	1.74	1.56	1.40	1.32	1.34	1.29	1.26	1.23	1.21	1.25	1.23	1.22	1.25	1.31	1.35	1.42	1.54	1.64	2.04

Table B-7: 2D gradient map of plate A-7 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.88	1.52	1.38	1.24	1.16	1.13	1.06	1.05	1.02	0.98	0.93	0.98	1.01	1.00	1.05	1.11	1.19	1.32	1.47	1.74
2	1.51	1.23	1.11	1.00	0.93	0.91	0.85	0.85	0.82	0.79	0.75	0.79	0.82	0.81	0.84	0.90	0.96	1.06	1.18	1.40
3	1.49	1.21	1.10	0.99	0.92	0.90	0.84	0.84	0.81	0.78	0.74	0.78	0.80	0.79	0.83	0.88	0.94	1.04	1.16	1.38
4	1.41	1.15	1.04	0.94	0.87	0.85	0.80	0.79	0.77	0.74	0.70	0.74	0.76	0.75	0.79	0.84	0.90	0.99	1.11	1.31
5	1.36	1.11	1.00	0.90	0.84	0.82	0.77	0.77	0.74	0.71	0.68	0.71	0.74	0.73	0.76	0.81	0.87	0.96	1.07	1.26
6	1.46	1.18	1.07	0.97	0.90	0.88	0.82	0.82	0.79	0.76	0.72	0.76	0.79	0.78	0.81	0.86	0.93	1.02	1.14	1.35
7	1.40	1.14	1.03	0.93	0.87	0.84	0.79	0.79	0.76	0.73	0.69	0.73	0.76	0.75	0.78	0.83	0.89	0.98	1.10	1.30
8	1.43	1.16	1.05	0.95	0.88	0.86	0.81	0.80	0.78	0.75	0.71	0.75	0.77	0.76	0.80	0.85	0.91	1.01	1.12	1.33
9	1.40	1.14	1.03	0.93	0.87	0.85	0.79	0.79	0.76	0.74	0.70	0.73	0.76	0.75	0.78	0.83	0.89	0.99	1.10	1.30
10	1.49	1.21	1.10	0.99	0.92	0.90	0.84	0.84	0.82	0.78	0.74	0.78	0.81	0.80	0.83	0.89	0.95	1.05	1.17	1.39
11	1.50	1.22	1.11	0.99	0.93	0.90	0.85	0.84	0.82	0.79	0.74	0.78	0.81	0.80	0.84	0.89	0.95	1.06	1.18	1.39
12	1.49	1.21	1.10	0.99	0.92	0.90	0.84	0.84	0.81	0.78	0.74	0.78	0.81	0.80	0.83	0.89	0.95	1.05	1.17	1.38
13	1.45	1.18	1.07	0.96	0.90	0.88	0.82	0.82	0.79	0.76	0.72	0.76	0.79	0.78	0.81	0.86	0.92	1.02	1.14	1.35
14	1.47	1.20	1.09	0.98	0.91	0.89	0.83	0.83	0.80	0.77	0.73	0.77	0.80	0.78	0.82	0.87	0.94	1.04	1.15	1.37
15	1.46	1.19	1.08	0.97	0.90	0.88	0.83	0.82	0.80	0.77	0.72	0.76	0.79	0.78	0.82	0.87	0.93	1.03	1.15	1.36
16	1.51	1.23	1.12	1.00	0.94	0.91	0.86	0.85	0.83	0.79	0.75	0.79	0.82	0.81	0.84	0.90	0.96	1.06	1.19	1.40
17	1.48	1.20	1.09	0.98	0.91	0.89	0.84	0.83	0.81	0.77	0.73	0.77	0.80	0.79	0.83	0.88	0.94	1.04	1.16	1.37
18	1.65	1.34	1.22	1.10	1.02	1.00	0.93	0.93	0.90	0.87	0.82	0.86	0.89	0.88	0.92	0.98	1.05	1.16	1.30	1.53
19	1.78	1.45	1.32	1.18	1.10	1.08	1.01	1.00	0.97	0.94	0.89	0.93	0.96	0.95	1.00	1.06	1.13	1.26	1.40	1.66
20	2.31	1.87	1.70	1.53	1.43	1.39	1.30	1.30	1.26	1.21	1.15	1.20	1.25	1.23	1.29	1.37	1.47	1.62	1.81	2.14

Table B-8: 2D gradient map of plate A-8 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.53	1.33	1.17	1.14	1.09	1.09	1.02	1.03	0.97	0.93	0.90	0.94	0.93	0.99	0.99	1.08	1.08	1.14	1.24	1.51
2	1.40	1.23	1.07	1.04	1.00	1.00	0.94	0.94	0.89	0.86	0.83	0.86	0.86	0.91	0.91	1.00	0.99	1.05	1.14	1.39
3	1.25	1.09	0.96	0.93	0.89	0.89	0.84	0.84	0.79	0.76	0.74	0.77	0.76	0.81	0.81	0.89	0.88	0.93	1.02	1.24
4	1.20	1.05	0.92	0.89	0.86	0.86	0.81	0.81	0.76	0.73	0.71	0.74	0.74	0.78	0.78	0.85	0.85	0.90	0.98	1.19
5	1.29	1.13	0.99	0.96	0.92	0.92	0.86	0.87	0.82	0.79	0.76	0.79	0.79	0.84	0.84	0.92	0.91	0.97	1.05	1.28
6	1.19	1.04	0.91	0.89	0.85	0.85	0.80	0.80	0.76	0.73	0.70	0.73	0.73	0.78	0.78	0.85	0.84	0.89	0.97	1.18
7	1.23	1.08	0.94	0.92	0.88	0.88	0.83	0.83	0.78	0.75	0.73	0.76	0.75	0.80	0.80	0.88	0.87	0.92	1.00	1.22
8	1.27	1.11	0.97	0.94	0.90	0.91	0.85	0.85	0.81	0.77	0.75	0.78	0.78	0.82	0.82	0.90	0.90	0.95	1.03	1.25
9	1.33	1.16	1.02	0.99	0.95	0.95	0.89	0.90	0.85	0.81	0.78	0.82	0.82	0.87	0.87	0.95	0.94	1.00	1.08	1.32
10	1.32	1.15	1.01	0.98	0.94	0.94	0.89	0.89	0.84	0.81	0.78	0.81	0.81	0.86	0.86	0.94	0.93	0.99	1.08	1.31
11	1.31	1.15	1.00	0.98	0.93	0.94	0.88	0.88	0.83	0.80	0.77	0.81	0.80	0.85	0.85	0.93	0.93	0.98	1.07	1.30
12	1.31	1.15	1.01	0.98	0.93	0.94	0.88	0.88	0.83	0.80	0.77	0.81	0.80	0.85	0.85	0.93	0.93	0.98	1.07	1.30
13	1.34	1.17	1.02	0.99	0.95	0.96	0.90	0.90	0.85	0.82	0.79	0.82	0.82	0.87	0.87	0.95	0.94	1.00	1.09	1.32
14	1.42	1.24	1.09	1.06	1.01	1.01	0.95	0.96	0.90	0.87	0.84	0.87	0.87	0.92	0.92	1.01	1.00	1.06	1.15	1.40
15	1.33	1.16	1.02	0.99	0.95	0.95	0.89	0.90	0.85	0.81	0.78	0.82	0.82	0.87	0.87	0.95	0.94	1.00	1.08	1.32
16	1.39	1.21	1.06	1.03	0.99	0.99	0.93	0.93	0.88	0.85	0.82	0.85	0.85	0.90	0.90	0.98	0.98	1.04	1.13	1.37
17	1.47	1.28	1.12	1.09	1.04	1.05	0.98	0.99	0.93	0.90	0.86	0.90	0.90	0.95	0.95	1.04	1.04	1.10	1.19	1.45
18	1.47	1.28	1.13	1.09	1.05	1.05	0.99	0.99	0.93	0.90	0.87	0.90	0.90	0.96	0.96	1.04	1.04	1.10	1.20	1.46
19	1.60	1.39	1.22	1.19	1.13	1.14	1.07	1.07	1.01	0.97	0.94	0.98	0.98	1.04	1.04	1.13	1.13	1.19	1.30	1.58
20	1.97	1.72	1.50	1.46	1.40	1.41	1.32	1.32	1.25	1.20	1.16	1.21	1.20	1.28	1.28	1.40	1.39	1.47	1.60	1.94

Table B-9: 2D gradient map of plate B-1 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.31	1.21	1.18	1.13	1.11	1.13	1.13	1.09	1.11	1.07	1.08	1.12	1.09	1.10	1.08	1.10	1.14	1.15	1.21	1.30
2	1.14	1.05	1.03	0.98	0.97	0.99	0.98	0.95	0.97	0.93	0.94	0.97	0.95	0.96	0.94	0.96	0.99	1.00	1.05	1.13
3	1.11	1.03	1.00	0.96	0.94	0.96	0.96	0.93	0.94	0.91	0.92	0.95	0.93	0.93	0.92	0.94	0.97	0.98	1.03	1.11
4	1.12	1.03	1.01	0.96	0.95	0.97	0.97	0.94	0.95	0.92	0.92	0.96	0.94	0.94	0.93	0.95	0.98	0.99	1.04	1.11
5	1.11	1.03	1.00	0.96	0.94	0.96	0.96	0.93	0.94	0.91	0.91	0.95	0.93	0.93	0.92	0.94	0.97	0.98	1.03	1.10
6	1.10	1.01	0.99	0.94	0.93	0.95	0.94	0.92	0.93	0.90	0.90	0.94	0.92	0.92	0.91	0.93	0.95	0.97	1.02	1.09
7	1.08	0.99	0.97	0.93	0.91	0.93	0.93	0.90	0.91	0.88	0.89	0.92	0.90	0.90	0.89	0.91	0.94	0.95	1.00	1.07
8	1.09	1.00	0.98	0.94	0.92	0.94	0.94	0.91	0.92	0.89	0.90	0.93	0.91	0.91	0.90	0.92	0.95	0.96	1.01	1.08
9	1.09	1.00	0.98	0.93	0.92	0.94	0.93	0.91	0.92	0.89	0.89	0.93	0.91	0.91	0.90	0.92	0.94	0.96	1.01	1.08
10	1.11	1.02	1.00	0.95	0.94	0.96	0.96	0.93	0.94	0.91	0.91	0.95	0.93	0.93	0.92	0.94	0.97	0.98	1.03	1.10
11	1.13	1.04	1.02	0.97	0.96	0.98	0.97	0.94	0.96	0.92	0.93	0.97	0.94	0.95	0.93	0.95	0.98	0.99	1.05	1.12
12	1.17	1.08	1.05	1.00	0.99	1.01	1.01	0.98	0.99	0.95	0.96	1.00	0.98	0.98	0.97	0.99	1.02	1.03	1.08	1.16
13	1.13	1.04	1.02	0.97	0.96	0.98	0.97	0.94	0.96	0.92	0.93	0.97	0.94	0.95	0.93	0.95	0.98	0.99	1.04	1.12
14	1.14	1.05	1.03	0.98	0.97	0.99	0.98	0.95	0.97	0.93	0.94	0.98	0.95	0.96	0.94	0.96	0.99	1.01	1.06	1.13
15	1.12	1.04	1.01	0.97	0.95	0.97	0.97	0.94	0.95	0.92	0.92	0.96	0.94	0.94	0.93	0.95	0.98	0.99	1.04	1.12
16	1.10	1.02	0.99	0.95	0.94	0.95	0.95	0.92	0.94	0.90	0.91	0.94	0.92	0.92	0.91	0.93	0.96	0.97	1.02	1.10
17	1.16	1.07	1.05	1.00	0.99	1.01	1.00	0.97	0.99	0.95	0.96	0.99	0.97	0.98	0.96	0.98	1.01	1.02	1.08	1.15
18	1.16	1.07	1.04	1.00	0.98	1.00	1.00	0.97	0.98	0.94	0.95	0.99	0.97	0.97	0.96	0.98	1.01	1.02	1.07	1.15
19	1.24	1.14	1.11	1.06	1.05	1.07	1.06	1.03	1.05	1.01	1.02	1.06	1.03	1.04	1.02	1.04	1.07	1.09	1.14	1.23
20	1.32	1.22	1.19	1.13	1.12	1.14	1.14	1.10	1.12	1.08	1.09	1.13	1.10	1.11	1.09	1.11	1.15	1.16	1.22	1.31

Table B-10: 2D gradient map of plate B-2 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.60	1.38	1.28	1.21	1.15	1.15	1.12	1.12	1.11	1.08	1.11	1.07	1.07	1.10	1.12	1.17	1.22	1.33	1.35	1.59
2	1.37	1.18	1.10	1.04	0.98	0.98	0.95	0.96	0.95	0.92	0.95	0.92	0.91	0.94	0.96	1.00	1.04	1.14	1.16	1.36
3	1.29	1.11	1.03	0.98	0.93	0.92	0.90	0.90	0.89	0.87	0.89	0.86	0.86	0.88	0.90	0.94	0.98	1.07	1.09	1.28
4	1.30	1.12	1.04	0.98	0.93	0.93	0.90	0.91	0.90	0.87	0.90	0.86	0.86	0.89	0.90	0.94	0.98	1.07	1.09	1.29
5	1.16	1.00	0.93	0.87	0.83	0.83	0.80	0.81	0.80	0.78	0.80	0.77	0.77	0.79	0.81	0.84	0.88	0.96	0.97	1.15
6	1.26	1.09	1.01	0.95	0.90	0.90	0.87	0.88	0.87	0.84	0.87	0.84	0.84	0.86	0.88	0.91	0.95	1.04	1.06	1.25
7	1.24	1.07	1.00	0.94	0.89	0.89	0.87	0.87	0.86	0.83	0.86	0.83	0.83	0.85	0.87	0.90	0.94	1.03	1.05	1.24
8	1.22	1.05	0.98	0.92	0.88	0.87	0.85	0.85	0.85	0.82	0.84	0.81	0.81	0.84	0.85	0.89	0.92	1.01	1.03	1.21
9	1.22	1.05	0.97	0.92	0.87	0.87	0.85	0.85	0.84	0.82	0.84	0.81	0.81	0.83	0.85	0.88	0.92	1.01	1.03	1.21
10	1.24	1.07	1.00	0.94	0.89	0.89	0.86	0.87	0.86	0.83	0.86	0.83	0.83	0.85	0.87	0.90	0.94	1.03	1.05	1.24
11	1.28	1.10	1.02	0.97	0.92	0.91	0.89	0.89	0.89	0.86	0.88	0.85	0.85	0.88	0.89	0.93	0.97	1.06	1.08	1.27
12	1.22	1.05	0.98	0.92	0.88	0.87	0.85	0.85	0.85	0.82	0.85	0.82	0.81	0.84	0.85	0.89	0.93	1.01	1.03	1.21
13	1.26	1.09	1.01	0.95	0.91	0.90	0.88	0.88	0.87	0.85	0.87	0.84	0.84	0.86	0.88	0.92	0.96	1.04	1.06	1.25
14	1.29	1.11	1.03	0.97	0.93	0.92	0.90	0.90	0.89	0.87	0.89	0.86	0.86	0.88	0.90	0.94	0.98	1.07	1.09	1.28
15	1.29	1.11	1.03	0.97	0.93	0.92	0.90	0.90	0.89	0.86	0.89	0.86	0.86	0.88	0.90	0.94	0.98	1.07	1.09	1.28
16	1.32	1.14	1.06	1.00	0.95	0.95	0.92	0.93	0.92	0.89	0.92	0.88	0.88	0.91	0.92	0.96	1.01	1.10	1.12	1.32
17	1.34	1.16	1.08	1.02	0.97	0.96	0.93	0.94	0.93	0.90	0.93	0.90	0.89	0.92	0.94	0.98	1.02	1.11	1.13	1.34
18	1.37	1.18	1.10	1.04	0.99	0.98	0.95	0.96	0.95	0.92	0.95	0.92	0.91	0.94	0.96	1.00	1.04	1.14	1.16	1.37
19	1.42	1.22	1.13	1.07	1.02	1.01	0.98	0.99	0.98	0.95	0.98	0.94	0.94	0.97	0.99	1.03	1.07	1.17	1.19	1.41
20	1.67	1.44	1.34	1.26	1.20	1.20	1.16	1.17	1.16	1.12	1.16	1.12	1.11	1.15	1.17	1.22	1.27	1.39	1.41	1.66

Table B-11: 2D gradient map of plate B-3 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.75	1.54	1.40	1.34	1.26	1.15	1.11	1.13	1.13	1.05	1.04	1.13	1.10	1.11	1.14	1.19	1.27	1.37	1.45	1.74
2	1.46	1.29	1.17	1.12	1.06	0.96	0.92	0.94	0.95	0.87	0.87	0.95	0.92	0.93	0.95	0.99	1.06	1.14	1.21	1.46
3	1.35	1.19	1.08	1.04	0.98	0.89	0.85	0.87	0.87	0.81	0.80	0.88	0.85	0.86	0.88	0.92	0.98	1.06	1.12	1.35
4	1.26	1.11	1.00	0.96	0.91	0.83	0.79	0.81	0.81	0.75	0.75	0.82	0.79	0.80	0.82	0.85	0.91	0.98	1.04	1.25
5	1.22	1.08	0.97	0.94	0.88	0.80	0.77	0.79	0.79	0.73	0.73	0.79	0.76	0.78	0.80	0.83	0.88	0.95	1.01	1.22
6	1.27	1.12	1.02	0.98	0.92	0.84	0.80	0.82	0.82	0.76	0.76	0.83	0.80	0.81	0.83	0.86	0.92	0.99	1.06	1.27
7	1.34	1.18	1.07	1.03	0.97	0.88	0.85	0.87	0.87	0.80	0.80	0.87	0.84	0.85	0.88	0.91	0.97	1.05	1.12	1.34
8	1.35	1.19	1.08	1.03	0.97	0.89	0.85	0.87	0.87	0.81	0.80	0.87	0.85	0.86	0.88	0.92	0.98	1.05	1.12	1.34
9	1.30	1.14	1.04	1.00	0.94	0.85	0.82	0.84	0.84	0.78	0.77	0.84	0.81	0.83	0.85	0.88	0.94	1.01	1.08	1.30
10	1.30	1.14	1.04	1.00	0.94	0.85	0.82	0.84	0.84	0.78	0.77	0.84	0.81	0.82	0.85	0.88	0.94	1.01	1.08	1.29
11	1.28	1.13	1.02	0.98	0.92	0.84	0.81	0.82	0.83	0.77	0.76	0.83	0.80	0.81	0.83	0.87	0.93	1.00	1.06	1.28
12	1.39	1.22	1.11	1.06	1.00	0.91	0.88	0.89	0.89	0.83	0.82	0.90	0.87	0.88	0.90	0.94	1.00	1.08	1.15	1.38
13	1.31	1.15	1.04	1.00	0.94	0.86	0.83	0.84	0.84	0.78	0.78	0.85	0.82	0.83	0.85	0.89	0.95	1.02	1.08	1.30
14	1.27	1.12	1.02	0.98	0.92	0.84	0.81	0.82	0.82	0.76	0.76	0.83	0.80	0.81	0.83	0.86	0.92	0.99	1.06	1.27
15	1.33	1.17	1.06	1.02	0.96	0.88	0.84	0.86	0.86	0.80	0.79	0.86	0.83	0.85	0.87	0.90	0.97	1.04	1.10	1.33
16	1.35	1.19	1.08	1.04	0.98	0.89	0.85	0.87	0.87	0.81	0.80	0.88	0.85	0.86	0.88	0.92	0.98	1.05	1.12	1.35
17	1.39	1.22	1.11	1.07	1.00	0.91	0.88	0.89	0.90	0.83	0.83	0.90	0.87	0.88	0.91	0.94	1.01	1.08	1.15	1.38
18	1.36	1.20	1.09	1.05	0.99	0.90	0.86	0.88	0.88	0.82	0.81	0.88	0.85	0.87	0.89	0.93	0.99	1.07	1.13	1.36
19	1.47	1.30	1.17	1.13	1.06	0.97	0.93	0.95	0.95	0.88	0.88	0.95	0.92	0.94	0.96	1.00	1.07	1.15	1.22	1.47
20	1.80	1.59	1.44	1.38	1.30	1.18	1.14	1.16	1.16	1.08	1.07	1.17	1.13	1.14	1.17	1.22	1.31	1.41	1.50	1.80

Table B-12: 2D gradient map of plate B-4 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.57	1.48	1.36	1.29	1.24	1.20	1.13	1.15	1.15	1.07	1.07	1.12	1.15	1.12	1.17	1.21	1.23	1.31	1.43	1.57
2	1.32	1.24	1.14	1.08	1.03	1.00	0.95	0.96	0.96	0.90	0.90	0.93	0.96	0.94	0.98	1.01	1.03	1.10	1.20	1.31
3	1.27	1.19	1.10	1.04	1.00	0.97	0.91	0.93	0.93	0.87	0.87	0.90	0.93	0.91	0.94	0.98	0.99	1.06	1.16	1.27
4	1.22	1.14	1.05	1.00	0.96	0.93	0.88	0.89	0.89	0.83	0.83	0.86	0.89	0.87	0.90	0.94	0.95	1.01	1.11	1.21
5	1.19	1.12	1.03	0.98	0.94	0.91	0.86	0.87	0.87	0.81	0.81	0.85	0.87	0.85	0.88	0.92	0.93	0.99	1.09	1.19
6	1.17	1.10	1.01	0.96	0.92	0.89	0.84	0.86	0.85	0.80	0.80	0.83	0.85	0.83	0.87	0.90	0.91	0.97	1.07	1.16
7	1.15	1.08	0.99	0.94	0.90	0.88	0.83	0.84	0.84	0.78	0.78	0.82	0.84	0.82	0.85	0.89	0.90	0.96	1.05	1.14
8	1.23	1.16	1.06	1.01	0.97	0.94	0.88	0.90	0.90	0.84	0.84	0.87	0.90	0.88	0.91	0.95	0.96	1.02	1.12	1.23
9	1.22	1.15	1.05	1.00	0.96	0.93	0.88	0.89	0.89	0.83	0.83	0.86	0.89	0.87	0.90	0.94	0.95	1.02	1.11	1.21
10	1.19	1.12	1.03	0.98	0.94	0.91	0.86	0.87	0.87	0.81	0.81	0.85	0.87	0.85	0.88	0.92	0.93	0.99	1.09	1.19
11	1.25	1.18	1.08	1.03	0.99	0.96	0.90	0.92	0.91	0.86	0.86	0.89	0.92	0.89	0.93	0.97	0.98	1.04	1.14	1.25
12	1.22	1.15	1.06	1.01	0.96	0.93	0.88	0.90	0.89	0.83	0.83	0.87	0.89	0.87	0.91	0.94	0.96	1.02	1.11	1.22
13	1.26	1.19	1.09	1.04	0.99	0.96	0.91	0.92	0.92	0.86	0.86	0.90	0.92	0.90	0.94	0.97	0.99	1.05	1.15	1.26
14	1.18	1.10	1.01	0.97	0.92	0.90	0.85	0.86	0.86	0.80	0.80	0.83	0.86	0.84	0.87	0.91	0.92	0.98	1.07	1.17
15	1.21	1.14	1.04	0.99	0.95	0.92	0.87	0.88	0.88	0.82	0.82	0.86	0.88	0.86	0.89	0.93	0.94	1.01	1.10	1.20
16	1.15	1.08	0.99	0.94	0.90	0.87	0.82	0.84	0.83	0.78	0.78	0.81	0.84	0.82	0.85	0.88	0.89	0.95	1.04	1.14
17	1.24	1.17	1.07	1.02	0.98	0.95	0.89	0.91	0.90	0.85	0.85	0.88	0.91	0.89	0.92	0.96	0.97	1.03	1.13	1.24
18	1.28	1.20	1.10	1.05	1.00	0.97	0.92	0.94	0.93	0.87	0.87	0.91	0.93	0.91	0.95	0.98	1.00	1.06	1.16	1.27
19	1.35	1.27	1.17	1.11	1.06	1.03	0.97	0.99	0.98	0.92	0.92	0.96	0.99	0.96	1.00	1.04	1.06	1.13	1.23	1.35
20	1.48	1.39	1.28	1.22	1.17	1.13	1.07	1.09	1.08	1.01	1.01	1.05	1.08	1.06	1.10	1.14	1.16	1.24	1.35	1.48

Table B-13: 2D gradient map of plate B-5 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.27	1.19	1.10	1.11	1.07	1.10	1.08	1.05	1.04	1.03	1.04	1.05	1.05	1.05	1.05	1.10	1.09	1.11	1.16	1.24
2	1.15	1.08	1.00	1.01	0.98	1.00	0.98	0.96	0.95	0.94	0.94	0.95	0.95	0.95	0.95	1.00	0.99	1.01	1.05	1.13
3	1.17	1.10	1.02	1.03	0.99	1.02	0.99	0.97	0.97	0.95	0.96	0.97	0.97	0.97	0.97	1.01	1.01	1.03	1.07	1.15
4	1.13	1.06	0.98	0.99	0.96	0.98	0.96	0.94	0.93	0.92	0.92	0.93	0.93	0.93	0.93	0.98	0.97	0.99	1.03	1.11
5	1.13	1.06	0.98	0.99	0.95	0.98	0.96	0.93	0.93	0.91	0.92	0.93	0.93	0.93	0.93	0.97	0.97	0.99	1.03	1.11
6	1.08	1.02	0.94	0.95	0.91	0.94	0.92	0.90	0.89	0.88	0.89	0.89	0.89	0.89	0.89	0.94	0.93	0.95	0.99	1.06
7	1.11	1.04	0.96	0.97	0.94	0.96	0.94	0.92	0.91	0.90	0.91	0.92	0.91	0.91	0.91	0.96	0.95	0.97	1.01	1.09
8	1.13	1.06	0.98	0.99	0.95	0.98	0.96	0.93	0.93	0.92	0.92	0.93	0.93	0.93	0.93	0.97	0.97	0.99	1.03	1.11
9	1.06	1.00	0.92	0.93	0.90	0.92	0.90	0.88	0.87	0.86	0.87	0.88	0.88	0.88	0.87	0.92	0.91	0.93	0.97	1.04
10	1.09	1.02	0.95	0.96	0.92	0.95	0.93	0.90	0.90	0.89	0.89	0.90	0.90	0.90	0.90	0.94	0.94	0.96	1.00	1.07
11	1.10	1.03	0.95	0.96	0.93	0.95	0.93	0.91	0.91	0.89	0.90	0.91	0.91	0.91	0.91	0.95	0.94	0.96	1.00	1.08
12	1.16	1.09	1.01	1.02	0.98	1.01	0.98	0.96	0.95	0.94	0.95	0.96	0.96	0.96	0.96	1.00	1.00	1.01	1.06	1.14
13	1.10	1.03	0.95	0.96	0.93	0.95	0.93	0.91	0.91	0.89	0.90	0.91	0.91	0.91	0.91	0.95	0.94	0.96	1.00	1.08
14	1.18	1.11	1.02	1.03	1.00	1.02	1.00	0.98	0.97	0.96	0.96	0.97	0.97	0.97	0.97	1.02	1.01	1.03	1.08	1.16
15	1.14	1.07	0.99	1.00	0.97	0.99	0.97	0.95	0.94	0.93	0.94	0.95	0.94	0.94	0.94	0.99	0.98	1.00	1.04	1.12
16	1.13	1.06	0.98	0.99	0.96	0.98	0.96	0.94	0.93	0.92	0.93	0.94	0.93	0.93	0.93	0.98	0.97	0.99	1.03	1.11
17	1.20	1.12	1.04	1.05	1.01	1.04	1.02	0.99	0.99	0.97	0.98	0.99	0.99	0.99	0.99	1.03	1.03	1.05	1.09	1.18
18	1.16	1.09	1.01	1.02	0.98	1.01	0.99	0.97	0.96	0.95	0.95	0.96	0.96	0.96	0.96	1.01	1.00	1.02	1.06	1.14
19	1.23	1.16	1.07	1.08	1.04	1.07	1.05	1.02	1.02	1.00	1.01	1.02	1.02	1.02	1.02	1.07	1.06	1.08	1.13	1.21
20	1.36	1.28	1.18	1.19	1.15	1.18	1.16	1.13	1.12	1.11	1.12	1.13	1.12	1.13	1.12	1.18	1.17	1.19	1.25	1.34

Table B-14: 2D gradient map of plate B-6 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.65	1.47	1.29	1.25	1.18	1.15	1.13	1.09	1.06	1.07	1.06	1.08	1.12	1.13	1.14	1.17	1.24	1.27	1.38	1.63
2	1.39	1.23	1.08	1.05	0.99	0.97	0.95	0.92	0.89	0.89	0.89	0.91	0.94	0.95	0.95	0.98	1.04	1.07	1.16	1.37
3	1.36	1.21	1.06	1.03	0.97	0.95	0.93	0.90	0.87	0.88	0.88	0.89	0.92	0.93	0.94	0.96	1.02	1.05	1.14	1.34
4	1.26	1.12	0.98	0.96	0.90	0.88	0.87	0.83	0.81	0.81	0.81	0.83	0.86	0.86	0.87	0.89	0.95	0.97	1.06	1.24
5	1.30	1.16	1.02	0.99	0.93	0.91	0.90	0.86	0.83	0.84	0.84	0.85	0.89	0.89	0.90	0.92	0.98	1.01	1.09	1.29
6	1.31	1.16	1.02	0.99	0.93	0.91	0.90	0.86	0.84	0.84	0.84	0.86	0.89	0.89	0.90	0.93	0.98	1.01	1.09	1.29
7	1.26	1.12	0.98	0.95	0.90	0.88	0.86	0.83	0.80	0.81	0.81	0.82	0.86	0.86	0.87	0.89	0.95	0.97	1.05	1.24
8	1.24	1.10	0.97	0.94	0.88	0.86	0.85	0.82	0.79	0.80	0.80	0.81	0.84	0.85	0.85	0.88	0.93	0.95	1.04	1.22
9	1.21	1.08	0.95	0.92	0.87	0.85	0.83	0.80	0.78	0.78	0.78	0.80	0.83	0.83	0.84	0.86	0.91	0.94	1.02	1.20
10	1.29	1.15	1.01	0.98	0.92	0.90	0.89	0.86	0.83	0.83	0.83	0.85	0.88	0.88	0.89	0.92	0.97	1.00	1.08	1.28
11	1.29	1.14	1.00	0.97	0.92	0.90	0.88	0.85	0.82	0.83	0.83	0.84	0.88	0.88	0.89	0.91	0.97	0.99	1.08	1.27
12	1.33	1.18	1.04	1.01	0.95	0.93	0.91	0.88	0.85	0.86	0.86	0.87	0.91	0.91	0.92	0.94	1.00	1.03	1.11	1.31
13	1.28	1.14	1.00	0.97	0.92	0.90	0.88	0.85	0.82	0.83	0.83	0.84	0.87	0.88	0.88	0.91	0.97	0.99	1.07	1.27
14	1.25	1.11	0.97	0.94	0.89	0.87	0.86	0.82	0.80	0.80	0.80	0.82	0.85	0.85	0.86	0.88	0.94	0.96	1.04	1.23
15	1.32	1.17	1.03	1.00	0.94	0.92	0.90	0.87	0.84	0.85	0.85	0.86	0.90	0.90	0.91	0.93	0.99	1.02	1.10	1.30
16	1.22	1.08	0.95	0.92	0.87	0.85	0.84	0.81	0.78	0.79	0.78	0.80	0.83	0.83	0.84	0.86	0.92	0.94	1.02	1.20
17	1.32	1.18	1.03	1.00	0.94	0.92	0.91	0.87	0.85	0.85	0.85	0.87	0.90	0.90	0.91	0.94	1.00	1.02	1.11	1.30
18	1.38	1.22	1.08	1.04	0.98	0.96	0.95	0.91	0.88	0.89	0.89	0.90	0.94	0.94	0.95	0.98	1.04	1.06	1.15	1.36
19	1.48	1.32	1.16	1.12	1.06	1.03	1.02	0.98	0.95	0.95	0.95	0.97	1.01	1.01	1.02	1.05	1.11	1.14	1.24	1.46
20	1.75	1.56	1.36	1.32	1.25	1.22	1.20	1.16	1.12	1.13	1.13	1.15	1.19	1.19	1.21	1.24	1.32	1.35	1.46	1.72

Table B-15: 2D gradient map of plate B-7 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.73	1.44	1.34	1.29	1.16	1.12	1.04	1.07	1.05	1.01	1.03	1.04	1.06	1.06	1.12	1.19	1.22	1.31	1.45	1.65
2	1.44	1.20	1.11	1.07	0.96	0.93	0.86	0.89	0.88	0.84	0.86	0.87	0.88	0.88	0.93	0.99	1.01	1.09	1.20	1.37
3	1.36	1.14	1.06	1.01	0.91	0.88	0.82	0.85	0.83	0.80	0.81	0.82	0.84	0.83	0.88	0.94	0.96	1.04	1.14	1.30
4	1.38	1.15	1.07	1.02	0.92	0.89	0.83	0.85	0.84	0.80	0.82	0.83	0.84	0.84	0.89	0.95	0.97	1.05	1.15	1.31
5	1.34	1.11	1.03	0.99	0.89	0.87	0.80	0.83	0.81	0.78	0.79	0.81	0.82	0.82	0.87	0.92	0.94	1.01	1.12	1.27
6	1.31	1.09	1.01	0.97	0.87	0.85	0.78	0.81	0.79	0.76	0.78	0.79	0.80	0.80	0.85	0.90	0.92	0.99	1.09	1.24
7	1.35	1.12	1.04	1.00	0.90	0.87	0.81	0.84	0.82	0.79	0.80	0.81	0.83	0.82	0.87	0.93	0.95	1.02	1.13	1.28
8	1.28	1.06	0.99	0.95	0.85	0.83	0.77	0.79	0.78	0.74	0.76	0.77	0.78	0.78	0.83	0.88	0.90	0.97	1.07	1.21
9	1.31	1.09	1.01	0.97	0.87	0.85	0.78	0.81	0.80	0.76	0.78	0.79	0.80	0.80	0.85	0.90	0.92	0.99	1.09	1.24
10	1.33	1.11	1.03	0.99	0.89	0.86	0.80	0.83	0.81	0.78	0.79	0.80	0.82	0.81	0.86	0.92	0.94	1.01	1.11	1.27
11	1.42	1.19	1.10	1.06	0.95	0.92	0.85	0.88	0.87	0.83	0.85	0.86	0.87	0.87	0.92	0.98	1.00	1.08	1.19	1.35
12	1.36	1.13	1.05	1.01	0.91	0.88	0.82	0.84	0.83	0.79	0.81	0.82	0.83	0.83	0.88	0.94	0.96	1.03	1.14	1.29
13	1.39	1.16	1.08	1.04	0.93	0.90	0.84	0.86	0.85	0.81	0.83	0.84	0.85	0.85	0.90	0.96	0.98	1.06	1.16	1.33
14	1.36	1.13	1.05	1.01	0.91	0.88	0.81	0.84	0.83	0.79	0.81	0.82	0.83	0.83	0.88	0.94	0.96	1.03	1.14	1.29
15	1.33	1.10	1.03	0.99	0.89	0.86	0.79	0.82	0.81	0.77	0.79	0.80	0.81	0.81	0.86	0.91	0.93	1.01	1.11	1.26
16	1.41	1.17	1.09	1.05	0.94	0.91	0.84	0.87	0.86	0.82	0.84	0.85	0.86	0.86	0.91	0.97	0.99	1.07	1.18	1.34
17	1.38	1.15	1.06	1.02	0.92	0.89	0.82	0.85	0.84	0.80	0.82	0.83	0.84	0.84	0.89	0.95	0.97	1.04	1.15	1.31
18	1.48	1.24	1.15	1.10	0.99	0.96	0.89	0.92	0.90	0.86	0.88	0.89	0.91	0.90	0.96	1.02	1.04	1.12	1.24	1.41
19	1.55	1.29	1.20	1.15	1.04	1.01	0.93	0.96	0.94	0.90	0.92	0.94	0.95	0.95	1.00	1.07	1.09	1.18	1.30	1.47
20	1.90	1.59	1.47	1.42	1.27	1.23	1.14	1.18	1.16	1.11	1.13	1.15	1.17	1.16	1.23	1.31	1.34	1.44	1.59	1.81

Table B-16: 2D gradient map of plate B-8 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.39	1.30	1.20	1.15	1.11	1.12	1.10	0.99	0.98	0.97	0.97	1.00	1.04	1.06	1.02	1.08	1.14	1.19	1.26	1.38
2	1.24	1.15	1.07	1.02	0.98	0.99	0.97	0.88	0.87	0.87	0.86	0.89	0.92	0.94	0.91	0.96	1.01	1.06	1.12	1.23
3	1.23	1.14	1.06	1.01	0.98	0.99	0.97	0.88	0.87	0.86	0.85	0.88	0.91	0.93	0.90	0.95	1.00	1.05	1.11	1.22
4	1.25	1.16	1.08	1.03	0.99	1.00	0.98	0.89	0.88	0.88	0.87	0.90	0.93	0.95	0.92	0.97	1.02	1.07	1.13	1.24
5	1.18	1.10	1.01	0.97	0.94	0.94	0.93	0.84	0.83	0.82	0.82	0.85	0.88	0.89	0.86	0.91	0.96	1.01	1.06	1.17
6	1.19	1.11	1.03	0.99	0.95	0.96	0.94	0.85	0.84	0.84	0.83	0.86	0.89	0.91	0.88	0.93	0.98	1.03	1.08	1.18
7	1.23	1.15	1.06	1.02	0.98	0.99	0.97	0.88	0.87	0.86	0.86	0.89	0.92	0.93	0.90	0.95	1.01	1.06	1.11	1.22
8	1.16	1.09	1.00	0.96	0.93	0.94	0.92	0.83	0.82	0.82	0.81	0.84	0.87	0.88	0.86	0.90	0.95	1.00	1.05	1.16
9	1.14	1.06	0.98	0.94	0.91	0.92	0.90	0.81	0.80	0.80	0.79	0.82	0.85	0.86	0.84	0.88	0.93	0.98	1.03	1.13
10	1.20	1.12	1.04	1.00	0.96	0.97	0.95	0.86	0.85	0.84	0.84	0.87	0.90	0.91	0.88	0.93	0.99	1.03	1.09	1.20
11	1.16	1.08	1.00	0.96	0.92	0.93	0.91	0.83	0.82	0.81	0.81	0.83	0.86	0.88	0.85	0.90	0.95	0.99	1.05	1.15
12	1.16	1.09	1.00	0.96	0.93	0.93	0.92	0.83	0.82	0.82	0.81	0.84	0.87	0.88	0.85	0.90	0.95	1.00	1.05	1.15
13	1.17	1.09	1.01	0.96	0.93	0.94	0.92	0.83	0.82	0.82	0.81	0.84	0.87	0.89	0.86	0.90	0.96	1.00	1.06	1.16
14	1.21	1.13	1.04	1.00	0.96	0.97	0.95	0.86	0.85	0.85	0.84	0.87	0.90	0.92	0.89	0.94	0.99	1.04	1.09	1.20
15	1.16	1.09	1.00	0.96	0.93	0.94	0.92	0.83	0.82	0.82	0.81	0.84	0.87	0.88	0.86	0.90	0.95	1.00	1.05	1.16
16	1.22	1.14	1.05	1.01	0.97	0.98	0.96	0.87	0.86	0.85	0.85	0.88	0.91	0.92	0.89	0.94	1.00	1.05	1.10	1.21
17	1.25	1.17	1.08	1.03	0.99	1.00	0.98	0.89	0.88	0.88	0.87	0.90	0.93	0.95	0.92	0.97	1.02	1.07	1.13	1.24
18	1.31	1.23	1.13	1.09	1.05	1.06	1.04	0.94	0.93	0.92	0.92	0.95	0.98	1.00	0.97	1.02	1.08	1.13	1.19	1.31
19	1.42	1.32	1.22	1.17	1.13	1.14	1.12	1.01	1.00	1.00	0.99	1.02	1.06	1.08	1.04	1.10	1.16	1.22	1.28	1.41
20	1.52	1.42	1.31	1.26	1.21	1.22	1.20	1.08	1.07	1.06	1.06	1.09	1.13	1.15	1.12	1.18	1.24	1.31	1.37	1.51

Table B-17: 2D gradient map of plate C-1 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.35	1.27	1.24	1.21	1.20	1.18	1.16	1.13	1.15	1.14	1.13	1.15	1.15	1.16	1.17	1.18	1.22	1.21	1.23	1.32
2	1.22	1.14	1.11	1.09	1.08	1.06	1.04	1.02	1.03	1.03	1.02	1.03	1.03	1.05	1.05	1.06	1.09	1.09	1.10	1.19
3	1.16	1.09	1.06	1.04	1.03	1.01	0.99	0.97	0.98	0.98	0.97	0.98	0.98	0.99	1.00	1.01	1.04	1.04	1.05	1.13
4	1.13	1.06	1.03	1.01	1.00	0.98	0.97	0.94	0.96	0.95	0.94	0.96	0.96	0.97	0.98	0.98	1.01	1.01	1.03	1.10
5	1.07	1.00	0.97	0.95	0.95	0.93	0.91	0.89	0.91	0.90	0.89	0.90	0.91	0.92	0.92	0.93	0.96	0.96	0.97	1.04
6	1.09	1.02	0.99	0.97	0.96	0.95	0.93	0.91	0.93	0.92	0.91	0.92	0.93	0.94	0.94	0.95	0.98	0.98	0.99	1.06
7	1.14	1.07	1.04	1.02	1.01	0.99	0.98	0.95	0.97	0.96	0.95	0.96	0.97	0.98	0.99	0.99	1.02	1.02	1.04	1.12
8	1.10	1.04	1.01	0.99	0.98	0.96	0.94	0.92	0.94	0.93	0.92	0.93	0.94	0.95	0.95	0.96	0.99	0.99	1.00	1.08
9	1.10	1.03	1.01	0.99	0.98	0.96	0.94	0.92	0.94	0.93	0.92	0.93	0.94	0.95	0.95	0.96	0.99	0.99	1.00	1.08
10	1.10	1.03	1.00	0.98	0.97	0.95	0.94	0.92	0.93	0.93	0.92	0.93	0.93	0.94	0.95	0.96	0.99	0.98	1.00	1.07
11	1.11	1.05	1.02	1.00	0.99	0.97	0.95	0.93	0.95	0.94	0.93	0.94	0.95	0.96	0.96	0.97	1.00	1.00	1.01	1.09
12	1.11	1.04	1.01	0.99	0.98	0.96	0.95	0.93	0.94	0.94	0.93	0.94	0.94	0.95	0.96	0.97	1.00	1.00	1.01	1.09
13	1.08	1.01	0.98	0.96	0.95	0.94	0.92	0.90	0.92	0.91	0.90	0.91	0.92	0.93	0.93	0.94	0.97	0.97	0.98	1.05
14	1.09	1.02	0.99	0.97	0.96	0.95	0.93	0.91	0.92	0.92	0.91	0.92	0.92	0.93	0.94	0.95	0.98	0.98	0.99	1.06
15	1.09	1.02	1.00	0.98	0.97	0.95	0.93	0.91	0.93	0.92	0.91	0.92	0.93	0.94	0.94	0.95	0.98	0.98	0.99	1.07
16	1.05	0.99	0.96	0.94	0.93	0.91	0.90	0.88	0.89	0.89	0.88	0.89	0.89	0.90	0.91	0.92	0.94	0.94	0.95	1.03
17	1.10	1.03	1.00	0.98	0.97	0.95	0.94	0.92	0.93	0.92	0.92	0.93	0.93	0.94	0.95	0.95	0.98	0.98	0.99	1.07
18	1.10	1.03	1.00	0.98	0.97	0.95	0.94	0.92	0.93	0.92	0.92	0.93	0.93	0.94	0.95	0.95	0.98	0.98	0.99	1.07
19	1.15	1.08	1.05	1.03	1.02	1.00	0.99	0.96	0.98	0.97	0.96	0.97	0.98	0.99	1.00	1.00	1.03	1.03	1.05	1.13
20	1.28	1.20	1.16	1.14	1.13	1.11	1.09	1.07	1.08	1.08	1.07	1.08	1.08	1.10	1.10	1.11	1.14	1.14	1.16	1.25

Table B-18: 2D gradient map of plate C-2 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.81	1.54	1.43	1.37	1.28	1.21	1.19	1.26	1.15	1.17	1.16	1.18	1.20	1.19	1.25	1.26	1.35	1.44	1.50	1.67
2	1.51	1.28	1.19	1.14	1.06	1.01	0.99	1.05	0.96	0.98	0.96	0.98	1.00	1.00	1.04	1.05	1.12	1.20	1.25	1.39
3	1.37	1.16	1.08	1.03	0.96	0.91	0.90	0.95	0.87	0.88	0.87	0.89	0.91	0.90	0.94	0.95	1.02	1.09	1.13	1.26
4	1.35	1.15	1.06	1.02	0.95	0.90	0.89	0.93	0.86	0.87	0.86	0.88	0.89	0.89	0.93	0.94	1.00	1.07	1.12	1.24
5	1.32	1.12	1.04	0.99	0.93	0.88	0.87	0.91	0.84	0.85	0.84	0.86	0.88	0.87	0.91	0.92	0.98	1.05	1.09	1.21
6	1.33	1.13	1.05	1.00	0.93	0.89	0.87	0.92	0.84	0.86	0.85	0.86	0.88	0.88	0.91	0.92	0.99	1.05	1.10	1.22
7	1.28	1.09	1.01	0.97	0.90	0.86	0.84	0.89	0.81	0.83	0.82	0.84	0.85	0.85	0.88	0.89	0.95	1.02	1.06	1.18
8	1.29	1.09	1.01	0.97	0.91	0.86	0.85	0.89	0.82	0.83	0.82	0.84	0.85	0.85	0.88	0.89	0.96	1.02	1.06	1.18
9	1.27	1.08	1.00	0.96	0.89	0.85	0.84	0.88	0.81	0.82	0.81	0.83	0.84	0.84	0.87	0.88	0.95	1.01	1.05	1.17
10	1.29	1.10	1.01	0.97	0.91	0.86	0.85	0.89	0.82	0.83	0.82	0.84	0.85	0.85	0.89	0.89	0.96	1.02	1.07	1.18
11	1.25	1.07	0.99	0.95	0.88	0.84	0.83	0.87	0.80	0.81	0.80	0.82	0.83	0.83	0.86	0.87	0.93	1.00	1.04	1.16
12	1.32	1.12	1.04	1.00	0.93	0.88	0.87	0.91	0.84	0.85	0.84	0.86	0.88	0.87	0.91	0.92	0.98	1.05	1.09	1.22
13	1.25	1.07	0.99	0.95	0.88	0.84	0.82	0.87	0.80	0.81	0.80	0.82	0.83	0.83	0.86	0.87	0.93	1.00	1.04	1.15
14	1.24	1.06	0.98	0.93	0.87	0.83	0.82	0.86	0.79	0.80	0.79	0.81	0.82	0.82	0.85	0.86	0.92	0.99	1.03	1.14
15	1.26	1.07	0.99	0.95	0.89	0.84	0.83	0.87	0.80	0.82	0.81	0.82	0.84	0.83	0.87	0.88	0.94	1.00	1.04	1.16
16	1.27	1.09	1.01	0.96	0.90	0.85	0.84	0.88	0.81	0.82	0.81	0.83	0.85	0.84	0.88	0.89	0.95	1.01	1.06	1.17
17	1.31	1.12	1.04	0.99	0.93	0.88	0.87	0.91	0.83	0.85	0.84	0.86	0.87	0.87	0.90	0.91	0.98	1.05	1.09	1.21
18	1.37	1.16	1.08	1.03	0.96	0.91	0.90	0.95	0.87	0.88	0.87	0.89	0.91	0.90	0.94	0.95	1.02	1.09	1.13	1.26
19	1.46	1.24	1.15	1.10	1.03	0.97	0.96	1.01	0.92	0.94	0.93	0.95	0.97	0.96	1.00	1.01	1.08	1.16	1.21	1.34
20	1.69	1.44	1.34	1.28	1.19	1.13	1.11	1.17	1.07	1.09	1.08	1.10	1.12	1.12	1.16	1.18	1.26	1.35	1.40	1.56

Table B-19: 2D gradient map of plate C-3 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.82	1.60	1.43	1.36	1.26	1.23	1.15	1.14	1.17	1.16	1.13	1.15	1.18	1.12	1.22	1.27	1.32	1.38	1.54	1.78
2	1.41	1.24	1.11	1.05	0.98	0.96	0.89	0.88	0.91	0.90	0.88	0.89	0.91	0.86	0.94	0.98	1.02	1.07	1.19	1.38
3	1.41	1.24	1.11	1.05	0.98	0.96	0.89	0.88	0.91	0.90	0.88	0.89	0.91	0.86	0.94	0.98	1.02	1.07	1.19	1.38
4	1.37	1.20	1.08	1.02	0.95	0.93	0.87	0.86	0.88	0.87	0.85	0.87	0.89	0.84	0.91	0.95	0.99	1.04	1.16	1.34
5	1.31	1.15	1.03	0.98	0.91	0.89	0.83	0.82	0.84	0.83	0.82	0.83	0.85	0.80	0.88	0.91	0.95	0.99	1.11	1.28
6	1.36	1.19	1.07	1.02	0.94	0.92	0.86	0.85	0.87	0.86	0.85	0.86	0.88	0.83	0.91	0.94	0.98	1.03	1.15	1.33
7	1.36	1.20	1.07	1.02	0.94	0.92	0.86	0.85	0.87	0.87	0.85	0.86	0.88	0.83	0.91	0.95	0.99	1.03	1.15	1.33
8	1.23	1.08	0.97	0.92	0.85	0.83	0.78	0.77	0.79	0.78	0.77	0.78	0.80	0.75	0.82	0.86	0.89	0.93	1.04	1.20
9	1.30	1.15	1.03	0.98	0.90	0.88	0.83	0.82	0.84	0.83	0.81	0.83	0.85	0.80	0.87	0.91	0.95	0.99	1.10	1.28
10	1.26	1.11	0.99	0.94	0.88	0.86	0.80	0.79	0.81	0.80	0.79	0.80	0.82	0.77	0.84	0.88	0.91	0.96	1.07	1.24
11	1.33	1.17	1.04	0.99	0.92	0.90	0.84	0.83	0.85	0.84	0.83	0.84	0.86	0.81	0.89	0.92	0.96	1.01	1.12	1.30
12	1.30	1.14	1.03	0.97	0.90	0.88	0.83	0.82	0.84	0.83	0.81	0.83	0.84	0.80	0.87	0.91	0.94	0.99	1.10	1.27
13	1.29	1.13	1.02	0.96	0.89	0.87	0.82	0.81	0.83	0.82	0.80	0.82	0.84	0.79	0.86	0.90	0.93	0.98	1.09	1.26
14	1.27	1.12	1.00	0.95	0.88	0.87	0.81	0.80	0.82	0.81	0.80	0.81	0.83	0.78	0.85	0.89	0.92	0.97	1.08	1.25
15	1.28	1.12	1.01	0.96	0.89	0.87	0.81	0.80	0.82	0.81	0.80	0.81	0.83	0.78	0.85	0.89	0.93	0.97	1.08	1.25
16	1.35	1.18	1.06	1.01	0.93	0.91	0.85	0.84	0.87	0.86	0.84	0.85	0.87	0.83	0.90	0.94	0.98	1.02	1.14	1.32
17	1.37	1.21	1.08	1.03	0.95	0.93	0.87	0.86	0.88	0.87	0.86	0.87	0.89	0.84	0.92	0.96	1.00	1.04	1.16	1.34
18	1.33	1.17	1.05	1.00	0.92	0.90	0.85	0.84	0.86	0.85	0.83	0.84	0.86	0.82	0.89	0.93	0.96	1.01	1.13	1.30
19	1.47	1.29	1.15	1.10	1.02	1.00	0.93	0.92	0.94	0.93	0.91	0.93	0.95	0.90	0.98	1.02	1.06	1.11	1.24	1.44
20	1.73	1.52	1.37	1.30	1.20	1.18	1.10	1.09	1.11	1.10	1.08	1.10	1.13	1.06	1.16	1.21	1.26	1.32	1.47	1.70

Table B-20: 2D gradient map of plate C-4 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.69	1.47	1.38	1.32	1.25	1.25	1.22	1.17	1.15	1.13	1.20	1.16	1.19	1.21	1.24	1.19	1.28	1.36	1.44	1.60
2	1.43	1.24	1.17	1.11	1.06	1.06	1.03	0.99	0.97	0.96	1.02	0.98	1.00	1.02	1.04	1.01	1.08	1.15	1.22	1.35
3	1.41	1.22	1.15	1.10	1.04	1.04	1.01	0.97	0.95	0.94	1.00	0.97	0.99	1.01	1.03	0.99	1.06	1.13	1.20	1.34
4	1.32	1.14	1.08	1.03	0.98	0.97	0.95	0.91	0.89	0.88	0.94	0.91	0.92	0.94	0.96	0.93	1.00	1.06	1.12	1.25
5	1.24	1.08	1.01	0.97	0.92	0.92	0.89	0.86	0.84	0.83	0.88	0.85	0.87	0.89	0.91	0.87	0.94	1.00	1.06	1.18
6	1.30	1.13	1.06	1.01	0.96	0.96	0.93	0.90	0.88	0.87	0.92	0.89	0.91	0.93	0.95	0.92	0.98	1.04	1.11	1.23
7	1.26	1.09	1.03	0.98	0.93	0.93	0.90	0.87	0.85	0.84	0.89	0.86	0.88	0.90	0.92	0.88	0.95	1.01	1.07	1.19
8	1.21	1.05	0.99	0.94	0.90	0.89	0.87	0.83	0.82	0.81	0.86	0.83	0.85	0.86	0.88	0.85	0.91	0.97	1.03	1.15
9	1.21	1.05	0.99	0.95	0.90	0.90	0.87	0.84	0.82	0.81	0.86	0.83	0.85	0.87	0.89	0.85	0.92	0.97	1.03	1.15
10	1.25	1.09	1.02	0.98	0.93	0.93	0.90	0.86	0.85	0.84	0.89	0.86	0.88	0.89	0.92	0.88	0.95	1.01	1.07	1.19
11	1.18	1.03	0.97	0.92	0.88	0.87	0.85	0.82	0.80	0.79	0.84	0.81	0.83	0.84	0.86	0.83	0.89	0.95	1.01	1.12
12	1.26	1.09	1.03	0.98	0.93	0.93	0.90	0.87	0.85	0.84	0.89	0.86	0.88	0.90	0.92	0.88	0.95	1.01	1.07	1.19
13	1.19	1.03	0.97	0.93	0.88	0.88	0.85	0.82	0.81	0.80	0.85	0.82	0.83	0.85	0.87	0.84	0.90	0.95	1.01	1.13
14	1.22	1.05	0.99	0.95	0.90	0.90	0.87	0.84	0.82	0.81	0.86	0.84	0.85	0.87	0.89	0.86	0.92	0.98	1.04	1.15
15	1.21	1.05	0.99	0.95	0.90	0.90	0.87	0.84	0.82	0.81	0.86	0.84	0.85	0.87	0.89	0.86	0.92	0.98	1.04	1.15
16	1.30	1.13	1.06	1.01	0.96	0.96	0.93	0.90	0.88	0.87	0.92	0.89	0.91	0.93	0.95	0.91	0.98	1.04	1.11	1.23
17	1.33	1.15	1.08	1.04	0.98	0.98	0.95	0.92	0.90	0.89	0.94	0.91	0.93	0.95	0.97	0.93	1.00	1.07	1.13	1.26
18	1.32	1.14	1.08	1.03	0.97	0.97	0.95	0.91	0.89	0.88	0.94	0.91	0.92	0.94	0.96	0.93	0.99	1.06	1.12	1.25
19	1.35	1.17	1.10	1.05	1.00	1.00	0.97	0.93	0.91	0.90	0.96	0.93	0.94	0.96	0.98	0.95	1.02	1.08	1.15	1.28
20	1.47	1.27	1.20	1.14	1.09	1.08	1.05	1.01	0.99	0.98	1.04	1.01	1.03	1.05	1.07	1.03	1.11	1.18	1.25	1.39

Table B-21: 2D gradient map of plate C-5 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.34	1.24	1.20	1.15	1.13	1.15	1.13	1.10	1.11	1.14	1.08	1.10	1.08	1.09	1.15	1.12	1.13	1.15	1.20	1.30
2	1.22	1.13	1.10	1.05	1.04	1.05	1.03	1.00	1.01	1.04	0.99	1.00	0.99	1.00	1.05	1.03	1.04	1.05	1.10	1.19
3	1.17	1.09	1.05	1.01	0.99	1.01	0.99	0.96	0.97	0.99	0.95	0.96	0.95	0.96	1.00	0.99	0.99	1.01	1.06	1.14
4	1.13	1.05	1.02	0.97	0.96	0.97	0.96	0.93	0.94	0.96	0.92	0.93	0.92	0.92	0.97	0.95	0.96	0.97	1.02	1.10
5	1.14	1.06	1.02	0.98	0.96	0.98	0.96	0.93	0.94	0.96	0.92	0.93	0.92	0.93	0.97	0.96	0.96	0.98	1.02	1.11
6	1.15	1.06	1.03	0.99	0.97	0.99	0.97	0.94	0.95	0.97	0.93	0.94	0.93	0.94	0.98	0.96	0.97	0.99	1.03	1.11
7	1.10	1.02	0.99	0.95	0.94	0.95	0.93	0.90	0.91	0.94	0.89	0.91	0.89	0.90	0.94	0.93	0.93	0.95	0.99	1.07
8	1.11	1.03	1.00	0.95	0.94	0.95	0.94	0.91	0.92	0.94	0.90	0.91	0.90	0.91	0.95	0.93	0.94	0.96	1.00	1.08
9	1.11	1.03	1.00	0.96	0.94	0.96	0.94	0.91	0.92	0.94	0.90	0.91	0.90	0.91	0.95	0.93	0.94	0.96	1.00	1.08
10	1.11	1.03	1.00	0.96	0.94	0.96	0.94	0.91	0.92	0.94	0.90	0.91	0.90	0.91	0.95	0.94	0.94	0.96	1.00	1.08
11	1.15	1.07	1.03	0.99	0.97	0.99	0.97	0.94	0.95	0.97	0.93	0.94	0.93	0.94	0.98	0.97	0.97	0.99	1.03	1.12
12	1.13	1.05	1.01	0.97	0.96	0.97	0.95	0.92	0.93	0.96	0.91	0.93	0.91	0.92	0.97	0.95	0.96	0.97	1.02	1.10
13	1.15	1.07	1.04	0.99	0.98	0.99	0.97	0.94	0.95	0.98	0.93	0.95	0.93	0.94	0.99	0.97	0.98	0.99	1.04	1.12
14	1.16	1.08	1.04	1.00	0.98	1.00	0.98	0.95	0.96	0.98	0.94	0.95	0.94	0.95	0.99	0.98	0.98	1.00	1.04	1.13
15	1.12	1.04	1.00	0.96	0.95	0.96	0.94	0.92	0.93	0.95	0.91	0.92	0.91	0.91	0.96	0.94	0.95	0.96	1.01	1.09
16	1.11	1.03	0.99	0.95	0.94	0.95	0.93	0.91	0.92	0.94	0.89	0.91	0.89	0.90	0.95	0.93	0.94	0.95	0.99	1.08
17	1.11	1.03	1.00	0.95	0.94	0.96	0.94	0.91	0.92	0.94	0.90	0.91	0.90	0.91	0.95	0.93	0.94	0.96	1.00	1.08
18	1.17	1.08	1.05	1.00	0.99	1.01	0.99	0.96	0.97	0.99	0.94	0.96	0.94	0.95	1.00	0.98	0.99	1.01	1.05	1.14
19	1.18	1.09	1.06	1.01	1.00	1.01	0.99	0.96	0.97	1.00	0.95	0.97	0.95	0.96	1.01	0.99	1.00	1.01	1.06	1.15
20	1.31	1.21	1.17	1.12	1.11	1.12	1.10	1.07	1.08	1.11	1.06	1.07	1.06	1.07	1.12	1.10	1.10	1.12	1.17	1.27

Table B-22: 2D gradient map of plate C-6 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.76	1.54	1.40	1.33	1.22	1.18	1.11	1.10	1.10	1.09	1.11	1.08	1.10	1.13	1.16	1.17	1.31	1.33	1.41	1.62
2	1.54	1.35	1.22	1.16	1.06	1.03	0.97	0.96	0.96	0.95	0.96	0.94	0.96	0.98	1.01	1.02	1.14	1.16	1.23	1.41
3	1.39	1.22	1.11	1.05	0.96	0.93	0.88	0.87	0.87	0.86	0.88	0.86	0.87	0.89	0.92	0.92	1.04	1.05	1.11	1.28
4	1.38	1.21	1.10	1.04	0.96	0.92	0.87	0.86	0.87	0.86	0.87	0.85	0.86	0.88	0.91	0.92	1.03	1.04	1.10	1.27
5	1.36	1.19	1.08	1.03	0.94	0.91	0.86	0.85	0.85	0.84	0.86	0.84	0.85	0.87	0.90	0.90	1.01	1.03	1.09	1.25
6	1.36	1.19	1.08	1.03	0.94	0.91	0.86	0.85	0.85	0.84	0.85	0.84	0.85	0.87	0.90	0.90	1.01	1.03	1.09	1.25
7	1.36	1.19	1.08	1.03	0.94	0.91	0.85	0.85	0.85	0.84	0.85	0.83	0.84	0.87	0.90	0.90	1.01	1.03	1.08	1.25
8	1.29	1.13	1.02	0.97	0.89	0.86	0.81	0.80	0.81	0.80	0.81	0.79	0.80	0.82	0.85	0.85	0.95	0.97	1.03	1.18
9	1.34	1.18	1.07	1.01	0.93	0.90	0.84	0.84	0.84	0.83	0.84	0.82	0.83	0.86	0.89	0.89	1.00	1.01	1.07	1.23
10	1.34	1.18	1.07	1.01	0.93	0.90	0.84	0.84	0.84	0.83	0.84	0.82	0.83	0.86	0.89	0.89	1.00	1.01	1.07	1.23
11	1.37	1.20	1.09	1.03	0.95	0.91	0.86	0.86	0.86	0.85	0.86	0.84	0.85	0.88	0.90	0.91	1.02	1.03	1.09	1.26
12	1.35	1.18	1.07	1.02	0.93	0.90	0.85	0.84	0.85	0.84	0.85	0.83	0.84	0.86	0.89	0.89	1.00	1.02	1.08	1.24
13	1.29	1.13	1.03	0.98	0.89	0.86	0.81	0.81	0.81	0.80	0.81	0.79	0.80	0.83	0.85	0.86	0.96	0.98	1.03	1.19
14	1.31	1.15	1.05	0.99	0.91	0.88	0.83	0.82	0.82	0.81	0.83	0.81	0.82	0.84	0.87	0.87	0.98	0.99	1.05	1.21
15	1.27	1.11	1.01	0.96	0.88	0.85	0.80	0.80	0.80	0.79	0.80	0.78	0.79	0.81	0.84	0.84	0.94	0.96	1.01	1.17
16	1.32	1.16	1.05	1.00	0.92	0.88	0.83	0.83	0.83	0.82	0.83	0.81	0.82	0.85	0.87	0.88	0.98	1.00	1.06	1.22
17	1.35	1.18	1.07	1.02	0.93	0.90	0.85	0.84	0.84	0.83	0.85	0.83	0.84	0.86	0.89	0.89	1.00	1.02	1.07	1.24
18	1.37	1.20	1.09	1.04	0.95	0.92	0.86	0.86	0.86	0.85	0.86	0.84	0.85	0.88	0.91	0.91	1.02	1.04	1.10	1.26
19	1.41	1.24	1.12	1.06	0.98	0.94	0.89	0.88	0.88	0.87	0.89	0.87	0.88	0.90	0.93	0.93	1.05	1.07	1.13	1.30
20	1.74	1.52	1.38	1.31	1.20	1.16	1.09	1.09	1.09	1.08	1.09	1.07	1.08	1.11	1.15	1.15	1.29	1.31	1.39	1.60

Table B-23: 2D gradient map of plate C-7 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.81	1.50	1.38	1.27	1.22	1.16	1.14	1.09	1.10	1.08	1.06	1.08	1.07	1.09	1.14	1.16	1.21	1.30	1.43	1.59
2	1.58	1.31	1.20	1.11	1.07	1.01	1.00	0.95	0.96	0.94	0.93	0.94	0.93	0.95	0.99	1.01	1.05	1.14	1.25	1.38
3	1.43	1.19	1.10	1.01	0.97	0.92	0.91	0.87	0.87	0.85	0.84	0.85	0.85	0.87	0.90	0.92	0.96	1.03	1.14	1.26
4	1.42	1.18	1.09	1.00	0.96	0.91	0.90	0.86	0.87	0.85	0.84	0.85	0.84	0.86	0.90	0.91	0.95	1.03	1.13	1.25
5	1.36	1.13	1.04	0.96	0.92	0.87	0.86	0.82	0.83	0.81	0.80	0.81	0.80	0.82	0.86	0.87	0.91	0.98	1.08	1.19
6	1.37	1.14	1.04	0.96	0.93	0.88	0.86	0.83	0.83	0.82	0.81	0.81	0.81	0.83	0.86	0.88	0.91	0.99	1.09	1.20
7	1.37	1.14	1.05	0.97	0.93	0.88	0.87	0.83	0.84	0.82	0.81	0.82	0.81	0.83	0.87	0.88	0.92	0.99	1.09	1.20
8	1.41	1.17	1.08	0.99	0.96	0.91	0.89	0.85	0.86	0.84	0.83	0.84	0.84	0.85	0.89	0.90	0.94	1.02	1.12	1.24
9	1.39	1.16	1.06	0.98	0.94	0.89	0.88	0.84	0.85	0.83	0.82	0.83	0.82	0.84	0.88	0.89	0.93	1.00	1.11	1.22
10	1.40	1.16	1.07	0.98	0.94	0.90	0.88	0.85	0.85	0.83	0.82	0.83	0.83	0.84	0.88	0.89	0.93	1.01	1.11	1.23
11	1.38	1.14	1.05	0.97	0.93	0.88	0.87	0.83	0.84	0.82	0.81	0.82	0.81	0.83	0.87	0.88	0.92	0.99	1.09	1.21
12	1.34	1.11	1.02	0.94	0.91	0.86	0.85	0.81	0.82	0.80	0.79	0.80	0.79	0.81	0.85	0.86	0.90	0.97	1.06	1.18
13	1.35	1.12	1.03	0.95	0.91	0.87	0.85	0.82	0.82	0.80	0.79	0.80	0.80	0.82	0.85	0.86	0.90	0.97	1.07	1.18
14	1.38	1.14	1.05	0.97	0.93	0.88	0.87	0.83	0.84	0.82	0.81	0.82	0.81	0.83	0.87	0.88	0.92	0.99	1.09	1.21
15	1.39	1.16	1.06	0.98	0.94	0.90	0.88	0.84	0.85	0.83	0.82	0.83	0.82	0.84	0.88	0.89	0.93	1.00	1.11	1.22
16	1.37	1.14	1.05	0.97	0.93	0.88	0.87	0.83	0.84	0.82	0.81	0.82	0.81	0.83	0.87	0.88	0.92	0.99	1.09	1.21
17	1.38	1.15	1.06	0.97	0.94	0.89	0.88	0.84	0.84	0.83	0.82	0.82	0.82	0.84	0.87	0.89	0.93	1.00	1.10	1.22
18	1.43	1.19	1.09	1.01	0.97	0.92	0.90	0.86	0.87	0.85	0.84	0.85	0.85	0.86	0.90	0.92	0.96	1.03	1.13	1.25
19	1.59	1.32	1.22	1.12	1.08	1.02	1.01	0.96	0.97	0.95	0.94	0.95	0.94	0.96	1.00	1.02	1.06	1.15	1.26	1.40
20	1.89	1.57	1.45	1.33	1.28	1.22	1.20	1.15	1.15	1.13	1.12	1.13	1.12	1.15	1.20	1.21	1.27	1.37	1.50	1.66

Table B-24: 2D gradient map of plate C-8 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.52	1.37	1.27	1.23	1.14	1.10	1.08	1.04	1.07	1.04	1.01	1.02	1.07	1.07	1.11	1.16	1.15	1.26	1.38	1.54
2	1.31	1.18	1.10	1.06	0.99	0.95	0.94	0.90	0.93	0.90	0.87	0.89	0.92	0.93	0.96	1.00	0.99	1.10	1.20	1.34
3	1.30	1.17	1.09	1.05	0.97	0.94	0.93	0.89	0.91	0.88	0.86	0.88	0.91	0.92	0.95	0.99	0.98	1.08	1.18	1.32
4	1.26	1.13	1.06	1.02	0.94	0.91	0.90	0.86	0.89	0.86	0.83	0.85	0.88	0.89	0.92	0.96	0.95	1.05	1.14	1.28
5	1.25	1.13	1.05	1.02	0.94	0.91	0.90	0.86	0.88	0.86	0.83	0.85	0.88	0.89	0.92	0.96	0.95	1.05	1.14	1.28
6	1.24	1.11	1.04	1.00	0.93	0.90	0.88	0.85	0.87	0.84	0.82	0.83	0.87	0.87	0.90	0.94	0.93	1.03	1.12	1.26
7	1.22	1.10	1.03	0.99	0.92	0.89	0.88	0.84	0.86	0.84	0.81	0.83	0.86	0.86	0.89	0.93	0.93	1.02	1.11	1.24
8	1.23	1.11	1.03	0.99	0.92	0.89	0.88	0.84	0.86	0.84	0.81	0.83	0.86	0.87	0.90	0.94	0.93	1.02	1.12	1.25
9	1.23	1.11	1.03	1.00	0.92	0.89	0.88	0.84	0.87	0.84	0.82	0.83	0.87	0.87	0.90	0.94	0.93	1.02	1.12	1.25
10	1.21	1.09	1.02	0.98	0.91	0.88	0.87	0.83	0.85	0.83	0.80	0.82	0.85	0.86	0.89	0.92	0.92	1.01	1.10	1.23
11	1.22	1.10	1.02	0.99	0.91	0.88	0.87	0.84	0.86	0.83	0.81	0.82	0.86	0.86	0.89	0.93	0.92	1.01	1.11	1.24
12	1.22	1.10	1.03	0.99	0.92	0.89	0.88	0.84	0.86	0.84	0.81	0.83	0.86	0.86	0.89	0.93	0.93	1.02	1.11	1.24
13	1.18	1.07	0.99	0.96	0.89	0.86	0.84	0.81	0.83	0.81	0.78	0.80	0.83	0.83	0.86	0.90	0.89	0.98	1.07	1.20
14	1.22	1.10	1.03	0.99	0.92	0.89	0.87	0.84	0.86	0.83	0.81	0.83	0.86	0.86	0.89	0.93	0.92	1.02	1.11	1.24
15	1.25	1.13	1.05	1.01	0.94	0.91	0.89	0.86	0.88	0.85	0.83	0.84	0.88	0.88	0.91	0.95	0.94	1.04	1.14	1.27
16	1.24	1.12	1.04	1.01	0.93	0.90	0.89	0.85	0.88	0.85	0.82	0.84	0.87	0.88	0.91	0.95	0.94	1.03	1.13	1.26
17	1.31	1.18	1.10	1.06	0.98	0.95	0.94	0.90	0.92	0.89	0.87	0.88	0.92	0.92	0.96	1.00	0.99	1.09	1.19	1.33
18	1.33	1.20	1.11	1.07	1.00	0.96	0.95	0.91	0.93	0.90	0.88	0.90	0.93	0.94	0.97	1.01	1.00	1.10	1.21	1.35
19	1.31	1.18	1.10	1.06	0.98	0.95	0.94	0.90	0.92	0.90	0.87	0.89	0.92	0.93	0.96	1.00	0.99	1.09	1.19	1.33
20	1.64	1.47	1.37	1.32	1.23	1.19	1.17	1.12	1.15	1.12	1.08	1.10	1.15	1.16	1.20	1.25	1.24	1.36	1.49	1.66

Table B-25: 2D gradient map of plate D-1 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.43	1.30	1.30	1.21	1.20	1.21	1.17	1.20	1.19	1.19	1.20	1.18	1.19	1.21	1.24	1.23	1.27	1.25	1.26	1.36
2	1.28	1.17	1.17	1.09	1.08	1.08	1.05	1.08	1.06	1.06	1.07	1.06	1.06	1.08	1.11	1.10	1.14	1.12	1.13	1.22
3	1.22	1.11	1.11	1.03	1.02	1.03	0.99	1.02	1.01	1.01	1.02	1.00	1.01	1.02	1.05	1.04	1.08	1.06	1.07	1.16
4	1.21	1.10	1.10	1.02	1.02	1.02	0.99	1.01	1.00	1.00	1.01	1.00	1.00	1.02	1.05	1.04	1.07	1.06	1.07	1.15
5	1.16	1.05	1.05	0.98	0.97	0.98	0.94	0.97	0.96	0.96	0.97	0.95	0.96	0.97	1.00	0.99	1.03	1.01	1.02	1.10
6	1.19	1.08	1.08	1.00	1.00	1.00	0.97	0.99	0.98	0.98	0.99	0.98	0.98	1.00	1.03	1.02	1.05	1.04	1.04	1.13
7	1.16	1.06	1.06	0.98	0.97	0.98	0.95	0.97	0.96	0.96	0.97	0.95	0.96	0.98	1.00	1.00	1.03	1.01	1.02	1.10
8	1.15	1.05	1.05	0.97	0.96	0.97	0.94	0.96	0.95	0.95	0.96	0.95	0.95	0.97	1.00	0.99	1.02	1.00	1.01	1.09
9	1.07	0.98	0.98	0.91	0.90	0.91	0.88	0.90	0.89	0.89	0.90	0.88	0.89	0.90	0.93	0.92	0.95	0.94	0.95	1.02
10	1.09	0.99	0.99	0.92	0.92	0.92	0.89	0.91	0.91	0.91	0.91	0.90	0.91	0.92	0.94	0.94	0.97	0.95	0.96	1.04
11	1.09	0.99	0.99	0.92	0.91	0.92	0.89	0.91	0.90	0.90	0.91	0.90	0.90	0.92	0.94	0.94	0.97	0.95	0.96	1.04
12	1.06	0.96	0.96	0.89	0.89	0.89	0.86	0.89	0.88	0.88	0.88	0.87	0.88	0.89	0.91	0.91	0.94	0.92	0.93	1.00
13	1.13	1.03	1.03	0.96	0.95	0.96	0.92	0.95	0.94	0.94	0.94	0.93	0.94	0.95	0.98	0.97	1.00	0.99	1.00	1.08
14	1.13	1.03	1.03	0.96	0.95	0.96	0.92	0.95	0.94	0.94	0.94	0.93	0.94	0.95	0.98	0.97	1.00	0.99	1.00	1.07
15	1.11	1.01	1.01	0.94	0.93	0.94	0.91	0.93	0.92	0.92	0.93	0.91	0.92	0.93	0.96	0.95	0.99	0.97	0.98	1.05
16	1.07	0.97	0.97	0.91	0.90	0.91	0.87	0.90	0.89	0.89	0.89	0.88	0.89	0.90	0.93	0.92	0.95	0.93	0.94	1.02
17	1.08	0.98	0.99	0.92	0.91	0.92	0.88	0.91	0.90	0.90	0.90	0.89	0.90	0.91	0.94	0.93	0.96	0.94	0.95	1.03
18	1.10	1.00	1.00	0.93	0.92	0.93	0.90	0.92	0.91	0.91	0.92	0.90	0.91	0.92	0.95	0.94	0.97	0.96	0.97	1.04
19	1.15	1.05	1.05	0.98	0.97	0.98	0.94	0.97	0.96	0.96	0.96	0.95	0.96	0.97	1.00	0.99	1.02	1.01	1.02	1.10
20	1.22	1.11	1.11	1.03	1.03	1.03	1.00	1.03	1.01	1.02	1.02	1.01	1.01	1.03	1.06	1.05	1.09	1.07	1.08	1.16

Table B-26: 2D gradient map of plate D-2 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.86	1.66	1.52	1.46	1.36	1.29	1.31	1.28	1.26	1.20	1.25	1.28	1.24	1.22	1.30	1.32	1.41	1.51	1.57	1.79
2	1.47	1.31	1.20	1.16	1.08	1.02	1.04	1.01	0.99	0.95	0.99	1.01	0.98	0.97	1.02	1.04	1.11	1.20	1.24	1.42
3	1.35	1.21	1.10	1.06	0.99	0.94	0.95	0.93	0.91	0.87	0.91	0.93	0.90	0.89	0.94	0.96	1.02	1.10	1.14	1.30
4	1.34	1.20	1.09	1.05	0.98	0.93	0.95	0.92	0.90	0.86	0.90	0.92	0.89	0.88	0.93	0.95	1.01	1.09	1.13	1.29
5	1.29	1.15	1.05	1.01	0.94	0.89	0.91	0.89	0.87	0.83	0.87	0.89	0.86	0.85	0.90	0.92	0.98	1.05	1.09	1.24
6	1.30	1.17	1.07	1.03	0.96	0.91	0.92	0.90	0.88	0.84	0.88	0.90	0.87	0.86	0.91	0.93	0.99	1.06	1.10	1.26
7	1.34	1.20	1.09	1.05	0.98	0.93	0.95	0.92	0.91	0.86	0.90	0.92	0.89	0.88	0.93	0.95	1.01	1.09	1.13	1.29
8	1.23	1.10	1.01	0.97	0.90	0.86	0.87	0.85	0.83	0.79	0.83	0.85	0.82	0.81	0.86	0.87	0.93	1.00	1.04	1.18
9	1.17	1.05	0.96	0.92	0.86	0.82	0.83	0.81	0.79	0.76	0.79	0.81	0.78	0.77	0.82	0.83	0.89	0.96	0.99	1.13
10	1.21	1.09	0.99	0.95	0.89	0.84	0.86	0.84	0.82	0.78	0.82	0.84	0.81	0.80	0.85	0.86	0.92	0.99	1.02	1.17
11	1.23	1.10	1.01	0.97	0.90	0.86	0.87	0.85	0.83	0.79	0.83	0.85	0.82	0.81	0.86	0.87	0.93	1.00	1.04	1.18
12	1.25	1.11	1.02	0.98	0.91	0.87	0.88	0.86	0.84	0.80	0.84	0.86	0.83	0.82	0.87	0.89	0.94	1.01	1.05	1.20
13	1.27	1.14	1.04	1.00	0.93	0.88	0.90	0.87	0.86	0.82	0.86	0.88	0.84	0.83	0.88	0.90	0.96	1.03	1.07	1.22
14	1.26	1.13	1.03	0.99	0.93	0.88	0.89	0.87	0.85	0.81	0.85	0.87	0.84	0.83	0.88	0.90	0.96	1.03	1.07	1.22
15	1.24	1.11	1.01	0.98	0.91	0.86	0.88	0.85	0.84	0.80	0.84	0.86	0.83	0.82	0.87	0.88	0.94	1.01	1.05	1.20
16	1.24	1.11	1.02	0.98	0.91	0.87	0.88	0.86	0.84	0.80	0.84	0.86	0.83	0.82	0.87	0.88	0.94	1.01	1.05	1.20
17	1.31	1.17	1.07	1.03	0.96	0.91	0.92	0.90	0.88	0.84	0.88	0.90	0.87	0.86	0.91	0.93	0.99	1.06	1.10	1.26
18	1.24	1.11	1.01	0.98	0.91	0.86	0.88	0.86	0.84	0.80	0.84	0.86	0.83	0.82	0.87	0.88	0.94	1.01	1.05	1.20
19	1.31	1.17	1.07	1.03	0.96	0.91	0.93	0.90	0.88	0.84	0.88	0.90	0.87	0.86	0.91	0.93	0.99	1.06	1.10	1.26
20	1.54	1.38	1.26	1.21	1.13	1.07	1.09	1.06	1.04	0.99	1.04	1.06	1.03	1.02	1.08	1.10	1.17	1.26	1.30	1.49

Table B-27: 2D gradient map of plate D-3 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.92	1.64	1.50	1.44	1.34	1.29	1.29	1.27	1.19	1.18	1.18	1.18	1.18	1.26	1.28	1.35	1.41	1.50	1.57	1.82
2	1.60	1.37	1.25	1.21	1.12	1.08	1.07	1.06	1.00	0.99	0.98	0.98	0.99	1.05	1.07	1.13	1.18	1.26	1.31	1.52
3	1.47	1.25	1.14	1.10	1.03	0.99	0.98	0.97	0.91	0.90	0.90	0.90	0.90	0.96	0.98	1.03	1.08	1.15	1.20	1.39
4	1.39	1.18	1.08	1.05	0.97	0.94	0.93	0.92	0.86	0.85	0.85	0.85	0.86	0.91	0.93	0.98	1.02	1.09	1.14	1.32
5	1.30	1.11	1.01	0.98	0.91	0.87	0.87	0.86	0.81	0.80	0.79	0.79	0.80	0.85	0.87	0.91	0.96	1.02	1.06	1.23
6	1.35	1.15	1.05	1.01	0.94	0.91	0.90	0.89	0.84	0.83	0.83	0.83	0.83	0.88	0.90	0.95	0.99	1.06	1.10	1.28
7	1.37	1.17	1.07	1.03	0.96	0.92	0.92	0.91	0.85	0.84	0.84	0.84	0.84	0.90	0.91	0.96	1.01	1.07	1.12	1.30
8	1.37	1.17	1.07	1.03	0.96	0.93	0.92	0.91	0.85	0.84	0.84	0.84	0.85	0.90	0.92	0.96	1.01	1.08	1.12	1.30
9	1.32	1.12	1.03	0.99	0.92	0.89	0.88	0.87	0.82	0.81	0.81	0.81	0.81	0.86	0.88	0.92	0.97	1.03	1.08	1.25
10	1.31	1.12	1.02	0.99	0.92	0.89	0.88	0.87	0.82	0.81	0.80	0.80	0.81	0.86	0.88	0.92	0.97	1.03	1.07	1.24
11	1.35	1.15	1.05	1.02	0.95	0.91	0.90	0.89	0.84	0.83	0.83	0.83	0.83	0.88	0.90	0.95	1.00	1.06	1.10	1.28
12	1.29	1.10	1.01	0.97	0.91	0.87	0.87	0.86	0.80	0.79	0.79	0.79	0.80	0.85	0.86	0.91	0.95	1.01	1.06	1.23
13	1.28	1.09	1.00	0.97	0.90	0.87	0.86	0.85	0.80	0.79	0.79	0.79	0.79	0.84	0.86	0.90	0.95	1.01	1.05	1.22
14	1.29	1.10	1.00	0.97	0.90	0.87	0.86	0.85	0.80	0.79	0.79	0.79	0.79	0.84	0.86	0.90	0.95	1.01	1.05	1.22
15	1.33	1.14	1.04	1.00	0.93	0.90	0.89	0.88	0.83	0.82	0.82	0.82	0.82	0.87	0.89	0.94	0.98	1.05	1.09	1.26
16	1.27	1.08	0.99	0.96	0.89	0.86	0.85	0.84	0.79	0.78	0.78	0.78	0.78	0.83	0.85	0.89	0.94	1.00	1.04	1.20
17	1.22	1.04	0.95	0.92	0.86	0.83	0.82	0.81	0.76	0.75	0.75	0.75	0.75	0.80	0.82	0.86	0.90	0.96	1.00	1.16
18	1.27	1.08	0.99	0.96	0.89	0.86	0.85	0.84	0.79	0.78	0.78	0.78	0.78	0.83	0.85	0.89	0.94	1.00	1.04	1.20
19	1.35	1.15	1.05	1.01	0.94	0.91	0.90	0.89	0.84	0.83	0.83	0.83	0.83	0.88	0.90	0.95	0.99	1.06	1.10	1.28
20	1.57	1.34	1.23	1.18	1.10	1.06	1.05	1.04	0.98	0.97	0.96	0.96	0.97	1.03	1.05	1.10	1.16	1.23	1.28	1.49

Table B-28: 2D gradient map of plate D-4 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.66	1.48	1.39	1.27	1.26	1.24	1.24	1.13	1.16	1.14	1.11	1.12	1.15	1.18	1.22	1.22	1.30	1.41	1.48	1.57
2	1.46	1.30	1.22	1.12	1.10	1.08	1.09	0.99	1.02	1.00	0.97	0.99	1.01	1.04	1.07	1.07	1.14	1.24	1.30	1.37
3	1.35	1.20	1.13	1.03	1.02	1.00	1.01	0.91	0.94	0.92	0.90	0.91	0.94	0.96	0.99	0.99	1.06	1.15	1.20	1.27
4	1.31	1.17	1.10	1.00	0.99	0.98	0.98	0.89	0.92	0.90	0.87	0.89	0.91	0.94	0.96	0.96	1.03	1.12	1.17	1.24
5	1.31	1.17	1.10	1.00	0.99	0.97	0.98	0.89	0.91	0.90	0.87	0.89	0.91	0.93	0.96	0.96	1.03	1.11	1.17	1.23
6	1.29	1.15	1.08	0.99	0.98	0.96	0.97	0.87	0.90	0.88	0.86	0.87	0.89	0.92	0.95	0.95	1.01	1.10	1.15	1.22
7	1.27	1.13	1.06	0.97	0.96	0.94	0.95	0.86	0.88	0.87	0.84	0.86	0.88	0.90	0.93	0.93	0.99	1.08	1.13	1.19
8	1.32	1.18	1.10	1.01	1.00	0.98	0.99	0.89	0.92	0.90	0.88	0.89	0.91	0.94	0.97	0.97	1.03	1.12	1.18	1.24
9	1.23	1.10	1.03	0.94	0.93	0.91	0.92	0.83	0.86	0.84	0.82	0.83	0.85	0.88	0.90	0.90	0.96	1.04	1.10	1.16
10	1.27	1.13	1.06	0.97	0.96	0.94	0.95	0.86	0.88	0.87	0.84	0.86	0.88	0.90	0.93	0.93	0.99	1.08	1.13	1.20
11	1.24	1.11	1.04	0.95	0.94	0.92	0.93	0.84	0.87	0.85	0.83	0.84	0.86	0.89	0.91	0.91	0.97	1.06	1.11	1.17
12	1.20	1.07	1.00	0.91	0.90	0.89	0.89	0.81	0.83	0.82	0.80	0.81	0.83	0.85	0.88	0.88	0.94	1.02	1.07	1.13
13	1.26	1.12	1.05	0.96	0.95	0.93	0.94	0.85	0.88	0.86	0.84	0.85	0.87	0.90	0.92	0.92	0.98	1.07	1.12	1.18
14	1.23	1.10	1.03	0.94	0.93	0.92	0.92	0.84	0.86	0.84	0.82	0.83	0.86	0.88	0.91	0.90	0.97	1.05	1.10	1.16
15	1.24	1.11	1.04	0.95	0.94	0.92	0.93	0.84	0.86	0.85	0.82	0.84	0.86	0.88	0.91	0.91	0.97	1.05	1.11	1.17
16	1.21	1.08	1.01	0.92	0.91	0.90	0.90	0.82	0.84	0.83	0.80	0.82	0.84	0.86	0.89	0.88	0.94	1.03	1.08	1.14
17	1.13	1.01	0.94	0.86	0.85	0.84	0.84	0.76	0.78	0.77	0.75	0.76	0.78	0.80	0.83	0.83	0.88	0.96	1.00	1.06
18	1.20	1.07	1.00	0.92	0.91	0.89	0.90	0.81	0.83	0.82	0.80	0.81	0.83	0.85	0.88	0.88	0.94	1.02	1.07	1.13
19	1.25	1.12	1.05	0.96	0.95	0.93	0.94	0.85	0.87	0.86	0.83	0.85	0.87	0.89	0.92	0.92	0.98	1.07	1.12	1.18
20	1.42	1.26	1.19	1.08	1.07	1.05	1.06	0.96	0.99	0.97	0.94	0.96	0.98	1.01	1.04	1.04	1.11	1.20	1.26	1.33

Table B-29: 2D gradient map of plate D-5 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.41	1.36	1.29	1.20	1.17	1.16	1.14	1.16	1.13	1.15	1.18	1.15	1.15	1.13	1.16	1.19	1.18	1.26	1.30	1.38
2	1.28	1.24	1.18	1.09	1.07	1.05	1.04	1.06	1.03	1.05	1.08	1.05	1.05	1.04	1.06	1.08	1.08	1.15	1.19	1.26
3	1.19	1.15	1.10	1.02	0.99	0.98	0.97	0.98	0.96	0.98	1.00	0.98	0.98	0.96	0.99	1.01	1.00	1.07	1.11	1.17
4	1.22	1.18	1.13	1.04	1.02	1.00	0.99	1.01	0.98	1.00	1.03	1.00	1.00	0.99	1.01	1.03	1.03	1.10	1.13	1.20
5	1.19	1.15	1.10	1.02	1.00	0.98	0.97	0.98	0.96	0.98	1.01	0.98	0.98	0.96	0.99	1.01	1.00	1.07	1.11	1.17
6	1.14	1.11	1.05	0.97	0.95	0.94	0.93	0.94	0.92	0.94	0.96	0.93	0.94	0.92	0.95	0.97	0.96	1.03	1.06	1.12
7	1.13	1.09	1.04	0.96	0.94	0.93	0.92	0.93	0.90	0.93	0.95	0.92	0.93	0.91	0.94	0.95	0.95	1.01	1.05	1.11
8	1.16	1.12	1.07	0.99	0.96	0.95	0.94	0.95	0.93	0.95	0.97	0.95	0.95	0.93	0.96	0.98	0.97	1.04	1.07	1.14
9	1.13	1.09	1.04	0.96	0.94	0.93	0.92	0.93	0.90	0.93	0.95	0.92	0.93	0.91	0.94	0.95	0.95	1.01	1.05	1.11
10	1.10	1.07	1.02	0.94	0.92	0.91	0.90	0.91	0.88	0.90	0.93	0.90	0.91	0.89	0.91	0.93	0.93	0.99	1.02	1.08
11	1.11	1.08	1.02	0.95	0.93	0.91	0.90	0.91	0.89	0.91	0.94	0.91	0.91	0.90	0.92	0.94	0.93	1.00	1.03	1.09
12	1.10	1.07	1.02	0.94	0.92	0.91	0.90	0.91	0.88	0.90	0.93	0.90	0.91	0.89	0.91	0.93	0.93	0.99	1.02	1.08
13	1.11	1.07	1.02	0.95	0.92	0.91	0.90	0.91	0.89	0.91	0.93	0.91	0.91	0.89	0.92	0.94	0.93	1.00	1.03	1.09
14	1.14	1.11	1.05	0.98	0.95	0.94	0.93	0.94	0.92	0.94	0.96	0.94	0.94	0.92	0.95	0.97	0.96	1.03	1.06	1.12
15	1.09	1.06	1.01	0.93	0.91	0.90	0.89	0.90	0.88	0.90	0.92	0.89	0.90	0.88	0.91	0.92	0.92	0.98	1.01	1.07
16	1.06	1.03	0.98	0.91	0.89	0.87	0.86	0.87	0.85	0.87	0.90	0.87	0.87	0.86	0.88	0.90	0.89	0.96	0.99	1.04
17	1.11	1.07	1.02	0.95	0.92	0.91	0.90	0.91	0.89	0.91	0.93	0.91	0.91	0.90	0.92	0.94	0.93	1.00	1.03	1.09
18	1.11	1.08	1.03	0.95	0.93	0.92	0.90	0.92	0.89	0.91	0.94	0.91	0.91	0.90	0.92	0.94	0.94	1.00	1.03	1.09
19	1.16	1.12	1.07	0.99	0.97	0.95	0.94	0.95	0.93	0.95	0.98	0.95	0.95	0.94	0.96	0.98	0.97	1.04	1.07	1.14
20	1.21	1.17	1.11	1.03	1.01	0.99	0.98	0.99	0.97	0.99	1.02	0.99	0.99	0.97	1.00	1.02	1.01	1.09	1.12	1.19

Table B-30: 2D gradient map of plate D-6 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.84	1.59	1.50	1.37	1.33	1.21	1.28	1.23	1.17	1.19	1.18	1.19	1.21	1.21	1.29	1.33	1.34	1.46	1.48	1.77
2	1.52	1.31	1.24	1.13	1.10	1.01	1.06	1.02	0.97	0.99	0.98	0.98	1.00	1.00	1.07	1.10	1.11	1.21	1.22	1.47
3	1.37	1.18	1.12	1.02	1.00	0.91	0.96	0.92	0.87	0.89	0.88	0.89	0.90	0.90	0.97	0.99	1.00	1.09	1.10	1.33
4	1.36	1.18	1.11	1.01	0.99	0.90	0.95	0.91	0.87	0.88	0.88	0.88	0.90	0.90	0.96	0.99	1.00	1.09	1.10	1.32
5	1.29	1.11	1.05	0.96	0.94	0.85	0.90	0.86	0.82	0.84	0.83	0.84	0.85	0.85	0.91	0.94	0.94	1.03	1.04	1.25
6	1.29	1.11	1.05	0.96	0.94	0.85	0.90	0.86	0.82	0.84	0.83	0.83	0.85	0.85	0.91	0.93	0.94	1.03	1.04	1.24
7	1.34	1.15	1.09	0.99	0.97	0.88	0.93	0.89	0.85	0.87	0.86	0.86	0.88	0.88	0.94	0.97	0.98	1.06	1.07	1.29
8	1.32	1.14	1.08	0.98	0.96	0.87	0.92	0.88	0.84	0.86	0.85	0.85	0.87	0.87	0.93	0.96	0.97	1.05	1.06	1.28
9	1.27	1.09	1.03	0.94	0.92	0.84	0.88	0.84	0.80	0.82	0.81	0.82	0.83	0.83	0.89	0.92	0.92	1.01	1.02	1.22
10	1.30	1.12	1.06	0.96	0.94	0.86	0.90	0.86	0.82	0.84	0.83	0.84	0.85	0.85	0.91	0.94	0.95	1.03	1.04	1.25
11	1.29	1.11	1.05	0.96	0.93	0.85	0.90	0.86	0.82	0.84	0.83	0.83	0.85	0.85	0.91	0.93	0.94	1.03	1.04	1.24
12	1.29	1.11	1.05	0.96	0.93	0.85	0.90	0.86	0.82	0.84	0.83	0.83	0.85	0.85	0.91	0.93	0.94	1.03	1.04	1.24
13	1.27	1.09	1.03	0.94	0.92	0.84	0.89	0.85	0.80	0.82	0.82	0.82	0.84	0.84	0.89	0.92	0.93	1.01	1.02	1.22
14	1.26	1.08	1.02	0.93	0.91	0.83	0.88	0.84	0.80	0.81	0.81	0.81	0.83	0.83	0.88	0.91	0.92	1.00	1.01	1.21
15	1.26	1.09	1.03	0.94	0.91	0.83	0.88	0.84	0.80	0.82	0.81	0.81	0.83	0.83	0.89	0.91	0.92	1.00	1.01	1.22
16	1.24	1.07	1.01	0.92	0.90	0.82	0.86	0.83	0.78	0.80	0.80	0.80	0.81	0.81	0.87	0.89	0.90	0.98	0.99	1.19
17	1.23	1.06	1.00	0.92	0.89	0.81	0.86	0.82	0.78	0.80	0.79	0.80	0.81	0.81	0.87	0.89	0.90	0.98	0.99	1.19
18	1.28	1.10	1.04	0.95	0.93	0.85	0.89	0.85	0.81	0.83	0.82	0.83	0.84	0.84	0.90	0.93	0.93	1.02	1.03	1.24
19	1.39	1.20	1.14	1.04	1.01	0.92	0.97	0.93	0.88	0.90	0.90	0.90	0.92	0.92	0.98	1.01	1.02	1.11	1.12	1.34
20	1.65	1.42	1.34	1.23	1.20	1.09	1.15	1.10	1.05	1.07	1.06	1.07	1.09	1.09	1.16	1.19	1.20	1.31	1.33	1.59

Table B-31: 2D gradient map of plate D-7 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.87	1.62	1.46	1.37	1.30	1.21	1.23	1.21	1.13	1.17	1.09	1.10	1.13	1.19	1.23	1.33	1.38	1.45	1.54	1.83
2	1.62	1.40	1.26	1.18	1.12	1.05	1.06	1.04	0.98	1.01	0.94	0.95	0.98	1.03	1.07	1.15	1.19	1.25	1.33	1.58
3	1.45	1.25	1.13	1.06	1.00	0.94	0.95	0.93	0.87	0.91	0.84	0.85	0.88	0.92	0.96	1.03	1.07	1.12	1.19	1.42
4	1.45	1.25	1.13	1.06	1.00	0.94	0.95	0.93	0.87	0.91	0.84	0.85	0.88	0.92	0.96	1.03	1.07	1.12	1.19	1.42
5	1.39	1.20	1.08	1.01	0.96	0.90	0.91	0.89	0.84	0.87	0.80	0.81	0.84	0.88	0.91	0.98	1.02	1.07	1.14	1.36
6	1.36	1.17	1.06	0.99	0.94	0.88	0.89	0.87	0.82	0.85	0.79	0.80	0.82	0.86	0.89	0.96	1.00	1.05	1.11	1.33
7	1.35	1.16	1.05	0.98	0.93	0.87	0.89	0.87	0.81	0.84	0.78	0.79	0.81	0.86	0.89	0.95	0.99	1.04	1.11	1.32
8	1.29	1.11	1.00	0.94	0.89	0.83	0.85	0.83	0.78	0.81	0.75	0.76	0.78	0.82	0.85	0.91	0.95	0.99	1.06	1.26
9	1.29	1.11	1.01	0.94	0.89	0.84	0.85	0.83	0.78	0.81	0.75	0.76	0.78	0.82	0.85	0.91	0.95	1.00	1.06	1.26
10	1.31	1.13	1.02	0.96	0.91	0.85	0.86	0.84	0.79	0.82	0.76	0.77	0.79	0.83	0.86	0.93	0.97	1.01	1.08	1.28
11	1.33	1.15	1.04	0.97	0.92	0.86	0.88	0.86	0.80	0.83	0.77	0.78	0.80	0.84	0.88	0.94	0.98	1.03	1.09	1.30
12	1.28	1.10	1.00	0.93	0.88	0.83	0.84	0.82	0.77	0.80	0.74	0.75	0.77	0.81	0.84	0.90	0.94	0.98	1.05	1.25
13	1.31	1.14	1.03	0.96	0.91	0.85	0.86	0.85	0.79	0.82	0.76	0.77	0.79	0.83	0.87	0.93	0.97	1.01	1.08	1.28
14	1.24	1.07	0.97	0.91	0.86	0.81	0.82	0.80	0.75	0.78	0.72	0.73	0.75	0.79	0.82	0.88	0.92	0.96	1.02	1.22
15	1.36	1.18	1.06	1.00	0.94	0.88	0.90	0.88	0.82	0.85	0.79	0.80	0.82	0.87	0.90	0.97	1.01	1.05	1.12	1.33
16	1.33	1.15	1.04	0.97	0.92	0.86	0.88	0.86	0.80	0.83	0.77	0.78	0.80	0.85	0.88	0.94	0.98	1.03	1.09	1.30
17	1.24	1.07	0.97	0.91	0.86	0.80	0.82	0.80	0.75	0.78	0.72	0.73	0.75	0.79	0.82	0.88	0.91	0.96	1.02	1.21
18	1.31	1.14	1.03	0.96	0.91	0.85	0.87	0.85	0.79	0.82	0.76	0.77	0.80	0.84	0.87	0.93	0.97	1.02	1.08	1.29
19	1.41	1.21	1.10	1.03	0.97	0.91	0.93	0.91	0.85	0.88	0.82	0.83	0.85	0.89	0.93	1.00	1.04	1.09	1.16	1.37
20	1.73	1.49	1.35	1.26	1.20	1.12	1.14	1.11	1.04	1.08	1.00	1.02	1.04	1.10	1.14	1.22	1.27	1.33	1.42	1.69

Table B-32: 2D gradient map of plate D-8 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.70	1.52	1.47	1.35	1.23	1.25	1.22	1.18	1.15	1.12	1.19	1.14	1.08	1.13	1.20	1.17	1.27	1.39	1.44	1.57
2	1.48	1.32	1.28	1.17	1.07	1.09	1.06	1.02	1.00	0.98	1.03	0.99	0.94	0.98	1.04	1.02	1.10	1.21	1.25	1.37
3	1.43	1.28	1.24	1.13	1.04	1.05	1.03	0.99	0.96	0.94	1.00	0.96	0.91	0.95	1.01	0.99	1.07	1.17	1.21	1.32
4	1.32	1.19	1.15	1.05	0.96	0.98	0.95	0.92	0.89	0.87	0.92	0.89	0.84	0.88	0.93	0.92	0.99	1.08	1.12	1.23
5	1.32	1.18	1.14	1.05	0.96	0.97	0.95	0.91	0.89	0.87	0.92	0.89	0.84	0.88	0.93	0.91	0.99	1.08	1.12	1.23
6	1.32	1.18	1.14	1.04	0.96	0.97	0.95	0.91	0.89	0.87	0.92	0.88	0.83	0.87	0.93	0.91	0.98	1.07	1.11	1.22
7	1.33	1.19	1.15	1.06	0.97	0.98	0.96	0.92	0.90	0.88	0.93	0.89	0.85	0.89	0.94	0.92	1.00	1.09	1.13	1.24
8	1.26	1.12	1.09	1.00	0.91	0.93	0.91	0.87	0.85	0.83	0.88	0.84	0.80	0.83	0.88	0.87	0.94	1.03	1.06	1.16
9	1.25	1.12	1.08	0.99	0.91	0.92	0.90	0.87	0.85	0.83	0.87	0.84	0.79	0.83	0.88	0.87	0.94	1.02	1.06	1.16
10	1.23	1.10	1.06	0.97	0.89	0.90	0.88	0.85	0.83	0.81	0.86	0.82	0.78	0.81	0.86	0.85	0.92	1.00	1.04	1.14
11	1.21	1.08	1.04	0.96	0.88	0.89	0.87	0.83	0.82	0.80	0.84	0.81	0.77	0.80	0.85	0.83	0.90	0.98	1.02	1.12
12	1.19	1.07	1.03	0.95	0.87	0.88	0.86	0.82	0.81	0.79	0.83	0.80	0.76	0.79	0.84	0.82	0.89	0.97	1.01	1.10
13	1.29	1.15	1.11	1.02	0.93	0.95	0.93	0.89	0.87	0.85	0.90	0.86	0.82	0.85	0.91	0.89	0.96	1.05	1.09	1.19
14	1.18	1.05	1.02	0.93	0.86	0.87	0.85	0.81	0.80	0.78	0.82	0.79	0.75	0.78	0.83	0.81	0.88	0.96	1.00	1.09
15	1.30	1.16	1.12	1.03	0.95	0.96	0.94	0.90	0.88	0.86	0.91	0.87	0.82	0.86	0.92	0.90	0.97	1.06	1.10	1.21
16	1.20	1.08	1.04	0.95	0.87	0.89	0.87	0.83	0.81	0.79	0.84	0.81	0.76	0.80	0.85	0.83	0.90	0.98	1.02	1.11
17	1.15	1.03	0.99	0.91	0.83	0.85	0.83	0.79	0.77	0.76	0.80	0.77	0.73	0.76	0.81	0.79	0.86	0.94	0.97	1.06
18	1.30	1.17	1.13	1.03	0.95	0.96	0.94	0.90	0.88	0.86	0.91	0.87	0.83	0.87	0.92	0.90	0.97	1.06	1.10	1.21
19	1.37	1.23	1.19	1.09	1.00	1.01	0.99	0.95	0.93	0.91	0.96	0.92	0.87	0.91	0.97	0.95	1.03	1.12	1.16	1.27
20	1.56	1.39	1.34	1.23	1.13	1.15	1.12	1.08	1.05	1.03	1.09	1.04	0.99	1.03	1.09	1.07	1.16	1.27	1.31	1.44

Appendix C
End of Life Depleted Fission Rate Local to Average Ratio 2D Gradient Maps

Appendix C
End of Life Depleted Fission Rate Local to Average Ratio 2D Gradient Maps

Table C- 1: 2D gradient map of plate B-1 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.16	1.13	1.10	1.07	1.04	1.11	1.09	1.03	1.07	1.07	1.09	1.09	1.08	1.11	1.12	1.11	1.14	1.13	1.15	1.23
2	1.05	1.02	0.99	0.96	0.93	1.00	0.99	0.93	0.96	0.97	0.98	0.98	0.98	1.00	1.01	1.00	1.02	1.02	1.04	1.11
3	1.01	0.99	0.96	0.93	0.90	0.97	0.95	0.90	0.93	0.94	0.95	0.95	0.94	0.96	0.97	0.97	0.99	0.99	1.00	1.07
4	1.02	0.99	0.96	0.94	0.91	0.97	0.96	0.90	0.94	0.94	0.95	0.95	0.95	0.97	0.98	0.97	0.99	0.99	1.01	1.07
5	1.05	1.02	0.99	0.96	0.93	1.00	0.98	0.93	0.96	0.97	0.98	0.98	0.97	1.00	1.00	1.00	1.02	1.02	1.04	1.11
6	0.99	0.97	0.94	0.91	0.88	0.95	0.93	0.88	0.91	0.92	0.93	0.93	0.92	0.94	0.95	0.95	0.97	0.97	0.98	1.05
7	1.02	0.99	0.97	0.94	0.91	0.97	0.96	0.90	0.94	0.94	0.95	0.95	0.95	0.97	0.98	0.98	1.00	0.99	1.01	1.08
8	1.02	0.99	0.97	0.94	0.91	0.97	0.96	0.90	0.94	0.94	0.95	0.95	0.95	0.97	0.98	0.98	1.00	0.99	1.01	1.08
9	1.02	0.99	0.97	0.94	0.91	0.98	0.96	0.91	0.94	0.94	0.95	0.96	0.95	0.97	0.98	0.98	1.00	1.00	1.01	1.08
10	1.02	0.99	0.96	0.93	0.90	0.97	0.95	0.90	0.93	0.94	0.95	0.95	0.94	0.97	0.97	0.97	0.99	0.99	1.00	1.07
11	1.01	0.99	0.96	0.93	0.90	0.97	0.95	0.90	0.93	0.94	0.95	0.95	0.94	0.96	0.97	0.97	0.99	0.99	1.00	1.07
12	1.06	1.03	1.00	0.97	0.94	1.01	0.99	0.93	0.97	0.97	0.99	0.99	0.98	1.00	1.01	1.01	1.03	1.03	1.04	1.12
13	1.03	1.00	0.98	0.95	0.92	0.99	0.97	0.91	0.95	0.95	0.96	0.96	0.96	0.98	0.99	0.99	1.01	1.01	1.02	1.09
14	1.04	1.01	0.98	0.96	0.93	0.99	0.98	0.92	0.96	0.96	0.97	0.97	0.97	0.99	1.00	1.00	1.02	1.01	1.03	1.10
15	1.03	1.00	0.97	0.94	0.91	0.98	0.96	0.91	0.94	0.95	0.96	0.96	0.95	0.98	0.98	0.98	1.00	1.00	1.01	1.08
16	1.06	1.03	1.00	0.98	0.94	1.01	1.00	0.94	0.97	0.98	0.99	0.99	0.99	1.01	1.02	1.02	1.04	1.03	1.05	1.12
17	1.05	1.02	0.99	0.97	0.93	1.00	0.99	0.93	0.96	0.97	0.98	0.98	0.98	1.00	1.01	1.00	1.02	1.02	1.04	1.11
18	1.09	1.06	1.03	1.01	0.97	1.04	1.03	0.97	1.01	1.01	1.02	1.02	1.02	1.04	1.05	1.05	1.07	1.06	1.08	1.15
19	1.11	1.08	1.05	1.02	0.99	1.06	1.04	0.98	1.02	1.02	1.03	1.03	1.03	1.05	1.06	1.06	1.08	1.08	1.09	1.17
20	1.20	1.16	1.13	1.10	1.07	1.14	1.13	1.06	1.10	1.11	1.12	1.12	1.11	1.14	1.15	1.15	1.17	1.17	1.18	1.27

Table C- 2: 2D gradient map of plate B-2 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.42	1.29	1.21	1.20	1.17	1.15	1.12	1.07	1.06	1.11	1.07	1.09	1.15	1.14	1.14	1.16	1.22	1.28	1.33	1.50
2	1.25	1.14	1.07	1.06	1.03	1.02	0.99	0.94	0.93	0.98	0.95	0.96	1.01	1.01	1.01	1.03	1.07	1.13	1.18	1.33
3	1.17	1.07	1.00	0.99	0.97	0.95	0.93	0.88	0.87	0.92	0.88	0.90	0.95	0.94	0.95	0.96	1.00	1.06	1.10	1.24
4	1.15	1.04	0.98	0.97	0.95	0.93	0.91	0.86	0.85	0.90	0.87	0.88	0.93	0.92	0.92	0.94	0.98	1.03	1.08	1.21
5	1.17	1.06	1.00	0.99	0.97	0.95	0.92	0.88	0.87	0.91	0.88	0.90	0.95	0.94	0.94	0.96	1.00	1.06	1.10	1.24
6	1.11	1.01	0.95	0.94	0.92	0.90	0.88	0.84	0.83	0.87	0.84	0.85	0.90	0.89	0.90	0.91	0.95	1.00	1.04	1.17
7	1.10	1.00	0.94	0.93	0.91	0.89	0.87	0.83	0.82	0.86	0.83	0.84	0.89	0.89	0.89	0.90	0.94	0.99	1.04	1.17
8	1.12	1.02	0.96	0.95	0.93	0.91	0.89	0.85	0.84	0.88	0.85	0.86	0.91	0.90	0.91	0.92	0.96	1.01	1.06	1.19
9	1.19	1.08	1.01	1.00	0.98	0.96	0.94	0.89	0.88	0.93	0.90	0.91	0.96	0.95	0.96	0.97	1.02	1.07	1.12	1.26
10	1.11	1.01	0.94	0.93	0.91	0.90	0.88	0.83	0.83	0.87	0.84	0.85	0.90	0.89	0.89	0.91	0.95	1.00	1.04	1.17
11	1.12	1.02	0.95	0.94	0.92	0.91	0.88	0.84	0.83	0.87	0.84	0.86	0.90	0.90	0.90	0.92	0.96	1.01	1.05	1.18
12	1.10	1.00	0.94	0.93	0.91	0.89	0.87	0.83	0.82	0.86	0.83	0.85	0.89	0.89	0.89	0.90	0.95	1.00	1.04	1.17
13	1.13	1.03	0.96	0.95	0.93	0.92	0.89	0.85	0.84	0.88	0.85	0.87	0.91	0.91	0.91	0.93	0.97	1.02	1.06	1.20
14	1.13	1.03	0.97	0.96	0.94	0.92	0.90	0.85	0.84	0.89	0.86	0.87	0.92	0.91	0.91	0.93	0.97	1.02	1.07	1.20
15	1.17	1.07	1.00	0.99	0.97	0.95	0.93	0.88	0.87	0.92	0.88	0.90	0.95	0.94	0.95	0.96	1.00	1.06	1.10	1.24

16	1.18	1.08	1.01	1.00	0.98	0.96	0.93	0.89	0.88	0.92	0.89	0.91	0.96	0.95	0.95	0.97	1.01	1.07	1.11	1.25
17	1.17	1.07	1.00	0.99	0.97	0.95	0.93	0.89	0.88	0.92	0.89	0.90	0.95	0.94	0.95	0.96	1.01	1.06	1.10	1.24
18	1.22	1.11	1.04	1.03	1.01	0.99	0.97	0.92	0.91	0.96	0.92	0.94	0.99	0.98	0.99	1.00	1.05	1.11	1.15	1.30
19	1.30	1.18	1.11	1.10	1.07	1.05	1.03	0.98	0.97	1.02	0.98	1.00	1.05	1.04	1.05	1.06	1.11	1.17	1.22	1.38
20	1.44	1.31	1.23	1.21	1.19	1.17	1.14	1.08	1.07	1.12	1.09	1.10	1.16	1.16	1.16	1.18	1.23	1.30	1.35	1.52

Table C- 3: 2D gradient map of plate B-3 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the at end of life.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.45	1.32	1.26	1.19	1.17	1.12	1.08	1.10	1.03	1.05	1.06	1.06	1.07	1.08	1.14	1.18	1.22	1.29	1.37	1.51
2	1.32	1.21	1.14	1.09	1.06	1.02	0.98	1.00	0.94	0.96	0.97	0.96	0.98	0.98	1.04	1.07	1.11	1.17	1.25	1.37
3	1.25	1.15	1.09	1.03	1.01	0.97	0.93	0.95	0.89	0.91	0.92	0.91	0.93	0.93	0.98	1.02	1.06	1.11	1.18	1.30
4	1.18	1.08	1.02	0.97	0.95	0.91	0.88	0.89	0.84	0.85	0.86	0.86	0.87	0.88	0.92	0.96	0.99	1.04	1.11	1.22
5	1.18	1.08	1.02	0.97	0.95	0.91	0.88	0.89	0.84	0.85	0.87	0.86	0.87	0.88	0.93	0.96	0.99	1.05	1.12	1.23
6	1.18	1.08	1.02	0.97	0.95	0.91	0.88	0.89	0.84	0.86	0.87	0.86	0.87	0.88	0.93	0.96	1.00	1.05	1.12	1.23
7	1.13	1.03	0.98	0.93	0.91	0.88	0.84	0.85	0.80	0.82	0.83	0.82	0.84	0.84	0.89	0.92	0.95	1.00	1.07	1.17
8	1.17	1.07	1.02	0.97	0.94	0.91	0.87	0.89	0.83	0.85	0.86	0.86	0.87	0.87	0.92	0.95	0.99	1.04	1.11	1.22
9	1.17	1.07	1.02	0.97	0.95	0.91	0.87	0.89	0.83	0.85	0.86	0.86	0.87	0.87	0.92	0.95	0.99	1.04	1.11	1.22
10	1.17	1.07	1.01	0.96	0.94	0.91	0.87	0.89	0.83	0.85	0.86	0.85	0.87	0.87	0.92	0.95	0.99	1.04	1.11	1.22
11	1.14	1.05	0.99	0.94	0.92	0.89	0.85	0.87	0.81	0.83	0.84	0.84	0.85	0.85	0.90	0.93	0.97	1.02	1.08	1.19
12	1.19	1.08	1.03	0.98	0.96	0.92	0.88	0.90	0.84	0.86	0.87	0.87	0.88	0.88	0.93	0.96	1.00	1.05	1.12	1.23
13	1.18	1.08	1.02	0.97	0.95	0.92	0.88	0.90	0.84	0.86	0.87	0.86	0.88	0.88	0.93	0.96	1.00	1.05	1.12	1.23
14	1.19	1.09	1.03	0.98	0.96	0.92	0.89	0.90	0.85	0.86	0.87	0.87	0.88	0.89	0.94	0.97	1.00	1.06	1.13	1.24
15	1.18	1.08	1.02	0.97	0.95	0.92	0.88	0.89	0.84	0.86	0.87	0.86	0.88	0.88	0.93	0.96	1.00	1.05	1.12	1.23
16	1.18	1.08	1.02	0.97	0.95	0.92	0.88	0.90	0.84	0.86	0.87	0.86	0.88	0.88	0.93	0.96	1.00	1.05	1.12	1.23
17	1.17	1.07	1.01	0.96	0.94	0.91	0.87	0.89	0.83	0.85	0.86	0.85	0.87	0.87	0.92	0.95	0.99	1.04	1.11	1.22
18	1.24	1.14	1.08	1.02	1.00	0.96	0.93	0.94	0.88	0.90	0.91	0.91	0.92	0.93	0.98	1.01	1.05	1.10	1.18	1.29
19	1.23	1.13	1.07	1.02	0.99	0.96	0.92	0.93	0.88	0.89	0.90	0.90	0.91	0.92	0.97	1.00	1.04	1.09	1.17	1.28
20	1.49	1.37	1.30	1.23	1.20	1.16	1.11	1.13	1.06	1.08	1.10	1.09	1.11	1.11	1.17	1.21	1.26	1.33	1.41	1.55

Table C- 4: 2D gradient map of plate B-4 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.26	1.20	1.18	1.12	1.10	1.05	1.08	1.05	1.04	1.04	1.01	1.01	1.04	1.08	1.10	1.09	1.17	1.22	1.26	1.36
2	1.19	1.14	1.12	1.06	1.04	0.99	1.02	0.99	0.98	0.98	0.96	0.96	0.98	1.02	1.04	1.03	1.10	1.15	1.20	1.29
3	1.13	1.08	1.06	1.01	0.99	0.94	0.97	0.94	0.94	0.93	0.91	0.91	0.94	0.97	0.99	0.98	1.05	1.10	1.14	1.22
4	1.15	1.10	1.08	1.03	1.01	0.96	0.99	0.96	0.95	0.95	0.93	0.92	0.95	0.98	1.01	1.00	1.06	1.11	1.15	1.24
5	1.10	1.05	1.04	0.98	0.96	0.92	0.94	0.92	0.91	0.91	0.89	0.88	0.91	0.94	0.96	0.96	1.02	1.07	1.11	1.19
6	1.08	1.03	1.02	0.96	0.95	0.90	0.93	0.90	0.89	0.89	0.87	0.87	0.89	0.93	0.95	0.94	1.00	1.05	1.09	1.17
7	1.09	1.04	1.03	0.97	0.95	0.91	0.94	0.91	0.90	0.90	0.88	0.88	0.90	0.93	0.95	0.95	1.01	1.06	1.10	1.18
8	1.07	1.02	1.00	0.95	0.93	0.88	0.91	0.89	0.88	0.88	0.86	0.85	0.88	0.91	0.93	0.92	0.98	1.03	1.07	1.15
9	1.08	1.03	1.01	0.96	0.94	0.89	0.92	0.90	0.89	0.89	0.87	0.86	0.89	0.92	0.94	0.93	1.00	1.04	1.08	1.16
10	1.07	1.02	1.00	0.95	0.93	0.89	0.91	0.89	0.88	0.88	0.86	0.86	0.88	0.91	0.93	0.93	0.99	1.03	1.07	1.15
11	1.10	1.05	1.03	0.98	0.96	0.91	0.94	0.91	0.91	0.90	0.88	0.88	0.90	0.94	0.96	0.95	1.01	1.06	1.10	1.18
12	1.05	1.00	0.99	0.94	0.92	0.87	0.90	0.88	0.87	0.87	0.85	0.84	0.87	0.90	0.92	0.91	0.97	1.02	1.05	1.13
13	1.06	1.01	0.99	0.94	0.92	0.88	0.90	0.88	0.87	0.87	0.85	0.85	0.87	0.90	0.92	0.92	0.98	1.02	1.06	1.14

14	1.09	1.04	1.02	0.97	0.95	0.90	0.93	0.90	0.90	0.89	0.87	0.87	0.90	0.93	0.95	0.94	1.00	1.05	1.09	1.17
15	1.09	1.04	1.02	0.97	0.95	0.90	0.93	0.91	0.90	0.90	0.88	0.87	0.90	0.93	0.95	0.95	1.01	1.05	1.09	1.18
16	1.12	1.07	1.05	1.00	0.98	0.93	0.96	0.93	0.93	0.92	0.90	0.90	0.92	0.96	0.98	0.97	1.03	1.08	1.12	1.21
17	1.11	1.06	1.04	0.99	0.97	0.92	0.95	0.92	0.91	0.91	0.89	0.89	0.91	0.95	0.97	0.96	1.02	1.07	1.11	1.19
18	1.14	1.09	1.07	1.02	1.00	0.95	0.98	0.95	0.94	0.94	0.92	0.92	0.94	0.98	1.00	0.99	1.05	1.10	1.14	1.23
19	1.19	1.13	1.11	1.05	1.03	0.98	1.01	0.99	0.98	0.98	0.95	0.95	0.98	1.01	1.03	1.03	1.09	1.14	1.19	1.28
20	1.28	1.22	1.20	1.14	1.12	1.06	1.10	1.07	1.06	1.06	1.03	1.03	1.06	1.09	1.12	1.11	1.18	1.24	1.28	1.38

Table C- 5: 2D gradient map of plate B-5 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.16	1.11	1.08	1.06	1.04	1.05	1.04	1.02	1.04	1.06	1.06	1.04	1.07	1.05	1.08	1.08	1.11	1.14	1.13	1.19
2	1.07	1.02	1.00	0.98	0.96	0.97	0.96	0.94	0.96	0.98	0.98	0.97	0.99	0.98	1.00	1.00	1.03	1.05	1.05	1.10
3	1.07	1.02	0.99	0.98	0.96	0.97	0.96	0.94	0.96	0.97	0.98	0.96	0.99	0.97	0.99	0.99	1.02	1.05	1.04	1.10
4	1.06	1.01	0.98	0.97	0.95	0.96	0.95	0.93	0.95	0.97	0.97	0.95	0.98	0.96	0.98	0.99	1.02	1.04	1.04	1.09
5	1.05	1.00	0.97	0.96	0.94	0.95	0.94	0.92	0.94	0.96	0.96	0.94	0.97	0.95	0.97	0.98	1.00	1.03	1.02	1.08
6	1.06	1.01	0.98	0.97	0.95	0.96	0.95	0.93	0.95	0.97	0.97	0.95	0.98	0.96	0.98	0.99	1.02	1.04	1.04	1.09
7	1.01	0.97	0.94	0.93	0.91	0.92	0.91	0.89	0.91	0.93	0.93	0.92	0.94	0.92	0.94	0.95	0.98	1.00	0.99	1.05
8	1.04	0.99	0.97	0.95	0.93	0.94	0.94	0.91	0.93	0.95	0.95	0.94	0.96	0.95	0.97	0.97	1.00	1.02	1.02	1.07
9	1.03	0.98	0.96	0.95	0.92	0.93	0.93	0.90	0.92	0.94	0.94	0.93	0.95	0.94	0.96	0.96	0.99	1.01	1.01	1.06
10	1.03	0.99	0.96	0.95	0.92	0.94	0.93	0.91	0.92	0.94	0.94	0.93	0.95	0.94	0.96	0.96	0.99	1.01	1.01	1.06
11	1.03	0.99	0.96	0.95	0.92	0.94	0.93	0.91	0.92	0.94	0.94	0.93	0.95	0.94	0.96	0.96	0.99	1.01	1.01	1.06
12	1.03	0.98	0.95	0.94	0.92	0.93	0.92	0.90	0.92	0.94	0.94	0.93	0.95	0.93	0.95	0.96	0.99	1.01	1.01	1.06
13	1.07	1.03	1.00	0.99	0.96	0.97	0.97	0.94	0.96	0.98	0.98	0.97	0.99	0.98	1.00	1.00	1.03	1.05	1.05	1.11
14	1.05	1.00	0.98	0.96	0.94	0.95	0.94	0.92	0.94	0.96	0.96	0.95	0.97	0.96	0.98	0.98	1.01	1.03	1.03	1.08
15	1.07	1.02	1.00	0.98	0.96	0.97	0.96	0.94	0.96	0.98	0.98	0.97	0.99	0.98	1.00	1.00	1.03	1.05	1.05	1.10
16	1.08	1.03	1.00	0.99	0.97	0.98	0.97	0.95	0.97	0.98	0.99	0.97	1.00	0.98	1.00	1.00	1.03	1.06	1.06	1.11
17	1.08	1.03	1.00	0.99	0.97	0.98	0.97	0.95	0.96	0.98	0.99	0.97	1.00	0.98	1.00	1.00	1.03	1.06	1.05	1.11
18	1.10	1.05	1.02	1.01	0.99	1.00	0.99	0.97	0.99	1.01	1.01	0.99	1.02	1.00	1.02	1.03	1.06	1.08	1.08	1.13
19	1.15	1.10	1.07	1.05	1.03	1.04	1.03	1.01	1.03	1.05	1.05	1.03	1.06	1.04	1.07	1.07	1.10	1.13	1.12	1.18
20	1.21	1.16	1.12	1.11	1.08	1.10	1.09	1.06	1.08	1.11	1.11	1.09	1.12	1.10	1.12	1.13	1.16	1.19	1.18	1.25

Table C- 6: 2D gradient map of plate B-6 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.35	1.24	1.20	1.13	1.09	1.09	1.04	1.05	1.05	1.02	1.05	1.08	1.11	1.08	1.10	1.12	1.21	1.26	1.32	1.44
2	1.18	1.09	1.05	0.99	0.95	0.96	0.91	0.92	0.92	0.90	0.92	0.95	0.97	0.94	0.97	0.98	1.06	1.11	1.15	1.26
3	1.15	1.06	1.02	0.96	0.93	0.93	0.89	0.89	0.90	0.87	0.89	0.92	0.94	0.92	0.94	0.95	1.03	1.07	1.12	1.22
4	1.13	1.05	1.01	0.95	0.92	0.92	0.88	0.88	0.89	0.86	0.88	0.91	0.93	0.91	0.93	0.94	1.02	1.06	1.11	1.21
5	1.11	1.03	0.99	0.94	0.90	0.90	0.86	0.87	0.87	0.85	0.87	0.89	0.91	0.89	0.91	0.92	1.00	1.04	1.09	1.19
6	1.10	1.02	0.98	0.93	0.89	0.89	0.85	0.86	0.86	0.84	0.86	0.88	0.90	0.88	0.90	0.91	0.99	1.03	1.08	1.18
7	1.15	1.06	1.03	0.97	0.93	0.93	0.89	0.89	0.90	0.87	0.89	0.92	0.94	0.92	0.94	0.95	1.04	1.08	1.12	1.23
8	1.10	1.01	0.98	0.92	0.89	0.89	0.85	0.85	0.86	0.83	0.86	0.88	0.90	0.88	0.90	0.91	0.99	1.03	1.07	1.17
9	1.11	1.02	0.99	0.93	0.90	0.90	0.86	0.86	0.87	0.84	0.86	0.89	0.91	0.89	0.91	0.92	1.00	1.04	1.08	1.18
10	1.08	1.00	0.97	0.91	0.88	0.88	0.84	0.84	0.85	0.82	0.84	0.87	0.89	0.87	0.89	0.90	0.98	1.02	1.06	1.16
11	1.12	1.04	1.00	0.94	0.91	0.91	0.87	0.87	0.88	0.85	0.87	0.90	0.92	0.90	0.92	0.93	1.01	1.05	1.10	1.20

12	1.12	1.03	1.00	0.94	0.90	0.91	0.87	0.87	0.88	0.85	0.87	0.90	0.92	0.90	0.92	0.93	1.01	1.05	1.09	1.20
13	1.13	1.04	1.01	0.95	0.91	0.91	0.87	0.88	0.88	0.86	0.88	0.90	0.92	0.90	0.92	0.94	1.01	1.05	1.10	1.20
14	1.14	1.05	1.01	0.96	0.92	0.92	0.88	0.88	0.89	0.86	0.88	0.91	0.93	0.91	0.93	0.94	1.02	1.06	1.11	1.21
15	1.14	1.05	1.02	0.96	0.92	0.92	0.88	0.89	0.89	0.87	0.89	0.91	0.94	0.91	0.93	0.95	1.03	1.07	1.11	1.22
16	1.17	1.08	1.04	0.98	0.94	0.95	0.90	0.91	0.91	0.89	0.91	0.94	0.96	0.93	0.95	0.97	1.05	1.09	1.14	1.25
17	1.15	1.07	1.03	0.97	0.93	0.94	0.89	0.90	0.90	0.88	0.90	0.93	0.95	0.92	0.94	0.96	1.04	1.08	1.13	1.23
18	1.17	1.08	1.05	0.99	0.95	0.95	0.91	0.91	0.92	0.89	0.91	0.94	0.96	0.94	0.96	0.97	1.05	1.10	1.14	1.25
19	1.29	1.19	1.15	1.09	1.04	1.05	1.00	1.00	1.01	0.98	1.00	1.04	1.06	1.03	1.06	1.07	1.16	1.21	1.26	1.38
20	1.50	1.39	1.34	1.26	1.21	1.22	1.16	1.17	1.17	1.14	1.17	1.20	1.23	1.20	1.23	1.25	1.35	1.41	1.47	1.60

Table C- 7: 2D gradient map of plate B-7 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.37	1.29	1.19	1.17	1.12	1.11	1.08	1.04	1.03	1.01	1.03	1.02	1.04	1.09	1.14	1.17	1.23	1.29	1.39	1.47
2	1.20	1.12	1.04	1.02	0.98	0.97	0.95	0.91	0.90	0.89	0.90	0.89	0.91	0.96	0.99	1.02	1.07	1.12	1.21	1.29
3	1.14	1.07	0.98	0.97	0.93	0.92	0.90	0.86	0.86	0.84	0.85	0.84	0.86	0.91	0.94	0.97	1.02	1.07	1.15	1.22
4	1.15	1.08	0.99	0.98	0.94	0.93	0.90	0.87	0.86	0.85	0.86	0.85	0.87	0.91	0.95	0.98	1.03	1.08	1.16	1.23
5	1.17	1.10	1.01	1.00	0.96	0.95	0.92	0.89	0.88	0.86	0.88	0.87	0.89	0.93	0.97	0.99	1.05	1.10	1.18	1.25
6	1.08	1.01	0.93	0.92	0.88	0.88	0.85	0.82	0.81	0.80	0.81	0.80	0.82	0.86	0.89	0.92	0.97	1.01	1.09	1.16
7	1.13	1.06	0.98	0.97	0.92	0.92	0.89	0.86	0.85	0.84	0.85	0.84	0.86	0.90	0.94	0.96	1.01	1.06	1.14	1.22
8	1.15	1.08	1.00	0.99	0.94	0.94	0.91	0.88	0.87	0.85	0.87	0.86	0.88	0.92	0.96	0.98	1.03	1.08	1.17	1.24
9	1.15	1.08	1.00	0.98	0.94	0.93	0.91	0.87	0.87	0.85	0.86	0.85	0.87	0.92	0.95	0.98	1.03	1.08	1.16	1.24
10	1.09	1.03	0.95	0.94	0.90	0.89	0.86	0.83	0.83	0.81	0.82	0.81	0.83	0.87	0.91	0.93	0.98	1.03	1.11	1.18
11	1.13	1.06	0.98	0.97	0.93	0.92	0.90	0.86	0.86	0.84	0.85	0.84	0.86	0.91	0.94	0.97	1.02	1.07	1.15	1.22
12	1.17	1.10	1.01	1.00	0.96	0.95	0.92	0.89	0.88	0.86	0.88	0.87	0.89	0.93	0.97	0.99	1.05	1.10	1.18	1.26
13	1.15	1.08	0.99	0.98	0.94	0.93	0.91	0.87	0.87	0.85	0.86	0.85	0.87	0.92	0.95	0.98	1.03	1.08	1.16	1.23
14	1.10	1.03	0.95	0.94	0.90	0.89	0.87	0.84	0.83	0.81	0.83	0.82	0.83	0.88	0.91	0.94	0.99	1.03	1.11	1.18
15	1.12	1.06	0.97	0.96	0.92	0.91	0.89	0.85	0.85	0.83	0.84	0.83	0.85	0.90	0.93	0.96	1.01	1.06	1.14	1.21
16	1.15	1.08	0.99	0.98	0.94	0.93	0.91	0.87	0.87	0.85	0.86	0.85	0.87	0.92	0.95	0.98	1.03	1.08	1.16	1.23
17	1.11	1.04	0.96	0.95	0.91	0.90	0.88	0.85	0.84	0.82	0.83	0.83	0.84	0.89	0.92	0.95	1.00	1.04	1.12	1.20
18	1.21	1.14	1.05	1.04	0.99	0.98	0.96	0.92	0.91	0.90	0.91	0.90	0.92	0.97	1.00	1.03	1.09	1.14	1.22	1.30
19	1.32	1.24	1.14	1.13	1.08	1.07	1.04	1.00	1.00	0.98	0.99	0.98	1.00	1.05	1.09	1.12	1.18	1.24	1.33	1.42
20	1.46	1.37	1.26	1.25	1.20	1.19	1.15	1.11	1.10	1.08	1.10	1.08	1.11	1.17	1.21	1.25	1.31	1.37	1.48	1.57

Table C- 8: 2D gradient map of plate B-8 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.29	1.15	1.13	1.06	1.04	1.03	1.05	1.01	1.01	0.98	0.99	1.04	1.03	1.04	1.05	1.14	1.14	1.19	1.23	1.31
2	1.23	1.10	1.08	1.01	0.99	0.99	1.01	0.96	0.97	0.94	0.95	0.99	0.99	1.00	1.00	1.09	1.09	1.13	1.18	1.25
3	1.10	0.99	0.97	0.90	0.89	0.88	0.90	0.86	0.86	0.84	0.85	0.89	0.88	0.89	0.90	0.98	0.97	1.01	1.05	1.11
4	1.15	1.03	1.01	0.94	0.93	0.92	0.94	0.90	0.90	0.87	0.88	0.92	0.92	0.93	0.94	1.02	1.01	1.06	1.10	1.16
5	1.10	0.99	0.97	0.91	0.90	0.89	0.91	0.87	0.87	0.84	0.85	0.89	0.89	0.90	0.90	0.98	0.98	1.02	1.06	1.12
6	1.12	1.01	0.99	0.93	0.91	0.90	0.92	0.88	0.88	0.86	0.87	0.91	0.90	0.91	0.92	1.00	0.99	1.04	1.08	1.14
7	1.12	1.01	0.99	0.92	0.91	0.90	0.92	0.88	0.88	0.86	0.87	0.90	0.90	0.91	0.92	1.00	0.99	1.04	1.08	1.14
8	1.10	0.99	0.97	0.91	0.90	0.89	0.91	0.87	0.87	0.84	0.85	0.89	0.89	0.90	0.90	0.98	0.98	1.02	1.06	1.12
9	1.13	1.01	0.99	0.93	0.91	0.91	0.92	0.88	0.89	0.86	0.87	0.91	0.91	0.92	0.92	1.00	1.00	1.04	1.08	1.14

10	1.16	1.04	1.02	0.96	0.94	0.93	0.95	0.91	0.91	0.89	0.90	0.94	0.93	0.94	0.95	1.03	1.03	1.07	1.11	1.18
11	1.13	1.01	0.99	0.93	0.91	0.91	0.92	0.88	0.89	0.86	0.87	0.91	0.91	0.91	0.92	1.00	1.00	1.04	1.08	1.14
12	1.13	1.01	0.99	0.93	0.91	0.90	0.92	0.88	0.89	0.86	0.87	0.91	0.90	0.91	0.92	1.00	1.00	1.04	1.08	1.14
13	1.15	1.03	1.01	0.95	0.93	0.92	0.94	0.90	0.90	0.88	0.89	0.92	0.92	0.93	0.94	1.02	1.01	1.06	1.10	1.16
14	1.11	1.00	0.98	0.92	0.90	0.90	0.91	0.87	0.88	0.85	0.86	0.90	0.90	0.90	0.91	0.99	0.99	1.03	1.07	1.13
15	1.17	1.05	1.03	0.97	0.95	0.94	0.96	0.92	0.92	0.90	0.91	0.95	0.94	0.95	0.96	1.04	1.04	1.08	1.13	1.19
16	1.14	1.03	1.00	0.94	0.93	0.92	0.94	0.90	0.90	0.87	0.88	0.92	0.92	0.93	0.93	1.02	1.01	1.05	1.10	1.16
17	1.18	1.06	1.04	0.97	0.95	0.95	0.97	0.92	0.93	0.90	0.91	0.95	0.95	0.96	0.96	1.05	1.04	1.09	1.13	1.20
18	1.21	1.09	1.06	1.00	0.98	0.97	0.99	0.95	0.95	0.92	0.93	0.98	0.97	0.98	0.99	1.07	1.07	1.12	1.16	1.23
19	1.28	1.15	1.13	1.06	1.04	1.03	1.05	1.01	1.01	0.98	0.99	1.04	1.03	1.04	1.05	1.14	1.14	1.19	1.23	1.30
20	1.46	1.31	1.28	1.20	1.18	1.17	1.20	1.15	1.15	1.11	1.13	1.18	1.17	1.18	1.19	1.30	1.29	1.35	1.40	1.48

Table C- 9: 2D gradient map of plate C-1 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.21	1.16	1.17	1.16	1.12	1.13	1.12	1.09	1.12	1.08	1.13	1.12	1.11	1.13	1.15	1.14	1.14	1.16	1.21	1.29
2	1.09	1.04	1.06	1.04	1.01	1.01	1.01	0.98	1.01	0.98	1.02	1.00	1.00	1.02	1.04	1.03	1.02	1.05	1.09	1.16
3	1.11	1.07	1.08	1.06	1.03	1.03	1.03	1.00	1.03	0.99	1.04	1.02	1.02	1.04	1.06	1.05	1.04	1.07	1.11	1.19
4	1.05	1.01	1.02	1.00	0.97	0.98	0.97	0.94	0.97	0.94	0.98	0.97	0.96	0.98	1.00	0.99	0.99	1.01	1.05	1.12
5	1.03	0.98	1.00	0.98	0.95	0.96	0.95	0.92	0.95	0.92	0.96	0.95	0.94	0.96	0.98	0.97	0.96	0.99	1.03	1.10
6	1.04	1.00	1.01	1.00	0.97	0.97	0.97	0.94	0.96	0.93	0.97	0.96	0.96	0.97	0.99	0.98	0.98	1.00	1.05	1.11
7	1.05	1.01	1.02	1.00	0.97	0.98	0.98	0.95	0.97	0.94	0.98	0.97	0.97	0.98	1.00	0.99	0.99	1.01	1.05	1.12
8	1.01	0.97	0.98	0.96	0.93	0.94	0.94	0.91	0.93	0.90	0.94	0.93	0.93	0.94	0.96	0.95	0.95	0.97	1.01	1.08
9	1.02	0.98	0.99	0.98	0.94	0.95	0.95	0.92	0.94	0.91	0.95	0.94	0.94	0.95	0.97	0.96	0.96	0.98	1.02	1.09
10	1.01	0.97	0.98	0.97	0.94	0.94	0.94	0.91	0.93	0.90	0.94	0.93	0.93	0.94	0.96	0.95	0.95	0.97	1.01	1.08
11	1.00	0.96	0.97	0.96	0.93	0.93	0.93	0.90	0.93	0.90	0.94	0.93	0.92	0.94	0.96	0.95	0.94	0.97	1.01	1.07
12	1.07	1.02	1.03	1.02	0.98	0.99	0.99	0.96	0.98	0.95	0.99	0.98	0.98	0.99	1.01	1.00	1.00	1.02	1.07	1.14
13	1.04	1.00	1.01	0.99	0.96	0.97	0.96	0.93	0.96	0.93	0.97	0.96	0.95	0.97	0.99	0.98	0.98	1.00	1.04	1.11
14	1.05	1.00	1.02	1.00	0.97	0.98	0.97	0.94	0.97	0.94	0.98	0.97	0.96	0.98	1.00	0.99	0.98	1.01	1.05	1.12
15	1.01	0.97	0.98	0.97	0.94	0.94	0.94	0.91	0.93	0.91	0.94	0.93	0.93	0.94	0.96	0.96	0.95	0.98	1.02	1.08
16	1.01	0.97	0.98	0.97	0.94	0.94	0.94	0.91	0.93	0.91	0.94	0.93	0.93	0.94	0.96	0.95	0.95	0.97	1.01	1.08
17	1.03	0.99	1.00	0.99	0.96	0.96	0.96	0.93	0.95	0.92	0.96	0.95	0.95	0.96	0.98	0.97	0.97	0.99	1.04	1.10
18	1.03	0.99	1.00	0.98	0.95	0.96	0.95	0.92	0.95	0.92	0.96	0.95	0.94	0.96	0.98	0.97	0.97	0.99	1.03	1.10
19	1.08	1.04	1.05	1.04	1.00	1.01	1.01	0.97	1.00	0.97	1.01	1.00	1.00	1.01	1.03	1.02	1.02	1.04	1.09	1.16
20	1.15	1.10	1.12	1.10	1.06	1.07	1.07	1.03	1.06	1.03	1.07	1.06	1.06	1.07	1.09	1.08	1.08	1.11	1.15	1.23

Table C- 10: 2D gradient map of plate C-2 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.45	1.33	1.28	1.24	1.22	1.16	1.14	1.10	1.11	1.11	1.14	1.15	1.12	1.16	1.17	1.20	1.22	1.32	1.38	1.49
2	1.27	1.15	1.12	1.08	1.06	1.01	0.99	0.95	0.97	0.97	0.99	1.00	0.97	1.01	1.02	1.05	1.07	1.15	1.20	1.30
3	1.24	1.13	1.10	1.06	1.04	0.99	0.97	0.94	0.95	0.95	0.97	0.98	0.95	0.99	1.00	1.03	1.05	1.13	1.18	1.28
4	1.16	1.06	1.03	1.00	0.97	0.93	0.91	0.88	0.89	0.89	0.91	0.92	0.89	0.93	0.93	0.96	0.98	1.06	1.11	1.20
5	1.17	1.07	1.04	1.01	0.98	0.94	0.92	0.89	0.90	0.90	0.92	0.93	0.90	0.93	0.94	0.97	0.99	1.07	1.12	1.21
6	1.16	1.06	1.02	0.99	0.97	0.93	0.91	0.87	0.88	0.88	0.91	0.92	0.89	0.92	0.93	0.96	0.98	1.05	1.10	1.19

7	1.18	1.07	1.04	1.01	0.98	0.94	0.92	0.89	0.90	0.90	0.92	0.93	0.90	0.94	0.94	0.97	0.99	1.07	1.12	1.21
8	1.13	1.03	1.00	0.97	0.95	0.91	0.89	0.85	0.86	0.86	0.89	0.90	0.87	0.90	0.91	0.94	0.95	1.03	1.08	1.16
9	1.11	1.01	0.98	0.95	0.93	0.89	0.87	0.84	0.85	0.85	0.87	0.88	0.85	0.88	0.89	0.92	0.93	1.01	1.05	1.14
10	1.13	1.03	1.00	0.97	0.95	0.91	0.88	0.85	0.86	0.86	0.89	0.90	0.87	0.90	0.91	0.93	0.95	1.03	1.07	1.16
11	1.11	1.01	0.98	0.95	0.93	0.89	0.87	0.83	0.84	0.84	0.87	0.88	0.85	0.88	0.89	0.91	0.93	1.01	1.05	1.14
12	1.16	1.06	1.03	1.00	0.97	0.93	0.91	0.88	0.89	0.89	0.91	0.92	0.89	0.92	0.93	0.96	0.98	1.06	1.11	1.20
13	1.13	1.04	1.00	0.97	0.95	0.91	0.89	0.86	0.87	0.87	0.89	0.90	0.87	0.90	0.91	0.94	0.96	1.03	1.08	1.17
14	1.12	1.02	0.99	0.96	0.94	0.90	0.87	0.84	0.85	0.85	0.88	0.89	0.86	0.89	0.90	0.92	0.94	1.02	1.06	1.15
15	1.12	1.03	0.99	0.96	0.94	0.90	0.88	0.85	0.86	0.86	0.88	0.89	0.86	0.89	0.90	0.93	0.95	1.02	1.07	1.16
16	1.09	1.00	0.97	0.94	0.92	0.88	0.86	0.83	0.84	0.84	0.86	0.87	0.84	0.87	0.88	0.90	0.92	1.00	1.04	1.12
17	1.17	1.07	1.03	1.00	0.98	0.94	0.91	0.88	0.89	0.89	0.92	0.93	0.90	0.93	0.94	0.97	0.99	1.06	1.11	1.20
18	1.16	1.06	1.03	1.00	0.97	0.93	0.91	0.88	0.89	0.89	0.91	0.92	0.89	0.92	0.93	0.96	0.98	1.06	1.10	1.19
19	1.23	1.12	1.09	1.05	1.03	0.99	0.96	0.93	0.94	0.94	0.97	0.98	0.95	0.98	0.99	1.02	1.04	1.12	1.17	1.27
20	1.43	1.30	1.26	1.22	1.19	1.14	1.12	1.08	1.09	1.09	1.12	1.13	1.10	1.13	1.15	1.18	1.20	1.30	1.36	1.47

Table C- 11: 2D gradient map of plate C-3 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.44	1.40	1.33	1.27	1.21	1.14	1.17	1.15	1.13	1.11	1.10	1.15	1.18	1.24	1.22	1.27	1.26	1.37	1.43	1.61
2	1.27	1.22	1.16	1.11	1.06	1.00	1.03	1.01	0.99	0.98	0.96	1.01	1.04	1.08	1.07	1.12	1.10	1.20	1.26	1.41
3	1.16	1.12	1.06	1.01	0.97	0.91	0.94	0.92	0.90	0.89	0.88	0.92	0.95	0.99	0.98	1.02	1.01	1.10	1.15	1.29
4	1.13	1.09	1.04	0.99	0.95	0.89	0.92	0.90	0.88	0.87	0.86	0.90	0.93	0.97	0.96	1.00	0.98	1.07	1.12	1.26
5	1.14	1.10	1.04	1.00	0.95	0.90	0.92	0.91	0.89	0.88	0.87	0.91	0.93	0.97	0.96	1.00	0.99	1.08	1.13	1.27
6	1.13	1.10	1.04	0.99	0.95	0.89	0.92	0.90	0.88	0.87	0.86	0.90	0.93	0.97	0.96	1.00	0.99	1.07	1.13	1.26
7	1.11	1.08	1.02	0.97	0.93	0.88	0.90	0.88	0.87	0.86	0.85	0.89	0.91	0.95	0.94	0.98	0.97	1.05	1.10	1.24
8	1.08	1.05	1.00	0.95	0.91	0.86	0.88	0.86	0.84	0.84	0.82	0.86	0.89	0.93	0.92	0.96	0.94	1.03	1.08	1.21
9	1.09	1.06	1.00	0.96	0.91	0.86	0.89	0.87	0.85	0.84	0.83	0.87	0.90	0.94	0.93	0.96	0.95	1.04	1.09	1.22
10	1.10	1.07	1.01	0.97	0.92	0.87	0.90	0.88	0.86	0.85	0.84	0.88	0.90	0.95	0.94	0.97	0.96	1.05	1.10	1.23
11	1.09	1.05	1.00	0.95	0.91	0.86	0.88	0.87	0.85	0.84	0.83	0.87	0.89	0.93	0.92	0.96	0.95	1.03	1.08	1.21
12	1.10	1.07	1.01	0.97	0.92	0.87	0.90	0.88	0.86	0.85	0.84	0.88	0.90	0.95	0.94	0.97	0.96	1.05	1.10	1.23
13	1.08	1.05	1.00	0.95	0.91	0.86	0.88	0.86	0.84	0.84	0.82	0.86	0.89	0.93	0.92	0.96	0.94	1.03	1.08	1.21
14	1.09	1.05	1.00	0.95	0.91	0.86	0.88	0.86	0.85	0.84	0.83	0.87	0.89	0.93	0.92	0.96	0.94	1.03	1.08	1.21
15	1.09	1.06	1.00	0.96	0.91	0.86	0.89	0.87	0.85	0.84	0.83	0.87	0.89	0.93	0.93	0.96	0.95	1.03	1.08	1.22
16	1.08	1.04	0.99	0.94	0.90	0.85	0.87	0.86	0.84	0.83	0.82	0.86	0.88	0.92	0.91	0.95	0.94	1.02	1.07	1.20
17	1.10	1.06	1.01	0.96	0.92	0.87	0.89	0.87	0.86	0.85	0.83	0.88	0.90	0.94	0.93	0.97	0.96	1.04	1.09	1.22
18	1.11	1.07	1.02	0.97	0.93	0.88	0.90	0.88	0.87	0.86	0.85	0.89	0.91	0.95	0.94	0.98	0.97	1.05	1.10	1.24
19	1.20	1.16	1.10	1.05	1.01	0.95	0.97	0.96	0.94	0.93	0.91	0.96	0.98	1.03	1.02	1.06	1.05	1.14	1.19	1.34
20	1.34	1.30	1.23	1.18	1.12	1.06	1.09	1.07	1.05	1.04	1.02	1.07	1.10	1.15	1.14	1.18	1.17	1.27	1.33	1.50

Table C- 12: 2D gradient map of plate C-4 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.34	1.24	1.17	1.13	1.12	1.09	1.07	1.09	1.09	1.06	1.06	1.09	1.06	1.11	1.13	1.14	1.19	1.22	1.34	1.41
2	1.24	1.15	1.08	1.05	1.04	1.01	0.99	1.01	1.01	0.98	0.98	1.01	0.98	1.03	1.04	1.06	1.10	1.13	1.24	1.31

3	1.22	1.13	1.07	1.03	1.02	1.00	0.98	1.00	1.00	0.97	0.97	1.00	0.97	1.02	1.03	1.04	1.09	1.12	1.23	1.29
4	1.14	1.05	0.99	0.96	0.95	0.93	0.91	0.93	0.93	0.90	0.90	0.93	0.90	0.95	0.96	0.97	1.01	1.04	1.14	1.20
5	1.12	1.04	0.98	0.95	0.94	0.92	0.90	0.92	0.91	0.89	0.89	0.92	0.89	0.93	0.94	0.96	1.00	1.02	1.12	1.18
6	1.14	1.05	0.99	0.96	0.95	0.93	0.91	0.93	0.93	0.90	0.90	0.93	0.90	0.95	0.96	0.97	1.01	1.04	1.14	1.20
7	1.10	1.02	0.96	0.93	0.92	0.90	0.88	0.90	0.90	0.87	0.87	0.90	0.87	0.91	0.93	0.94	0.98	1.01	1.10	1.16
8	1.11	1.03	0.97	0.94	0.93	0.91	0.89	0.91	0.90	0.87	0.88	0.90	0.88	0.92	0.93	0.95	0.99	1.01	1.11	1.17
9	1.11	1.03	0.97	0.93	0.93	0.91	0.89	0.90	0.90	0.87	0.88	0.90	0.88	0.92	0.93	0.95	0.99	1.01	1.11	1.17
10	1.14	1.05	0.99	0.96	0.95	0.93	0.91	0.93	0.92	0.90	0.90	0.93	0.90	0.94	0.96	0.97	1.01	1.04	1.14	1.20
11	1.15	1.06	1.00	0.97	0.96	0.94	0.92	0.94	0.94	0.91	0.91	0.94	0.91	0.95	0.97	0.98	1.02	1.05	1.15	1.21
12	1.14	1.06	1.00	0.96	0.96	0.93	0.91	0.93	0.93	0.90	0.91	0.93	0.90	0.95	0.96	0.98	1.02	1.04	1.15	1.20
13	1.12	1.04	0.98	0.95	0.94	0.92	0.90	0.92	0.92	0.89	0.89	0.92	0.89	0.93	0.95	0.96	1.00	1.03	1.13	1.18
14	1.12	1.04	0.98	0.95	0.94	0.92	0.90	0.92	0.91	0.89	0.89	0.92	0.89	0.93	0.94	0.96	1.00	1.02	1.12	1.18
15	1.08	1.01	0.95	0.92	0.91	0.89	0.87	0.89	0.88	0.86	0.86	0.89	0.86	0.90	0.91	0.93	0.97	0.99	1.09	1.14
16	1.12	1.04	0.98	0.95	0.94	0.92	0.90	0.92	0.92	0.89	0.89	0.92	0.89	0.93	0.95	0.96	1.00	1.03	1.13	1.18
17	1.12	1.04	0.98	0.95	0.94	0.92	0.90	0.92	0.91	0.88	0.89	0.91	0.89	0.93	0.94	0.96	1.00	1.02	1.12	1.18
18	1.13	1.05	0.99	0.96	0.95	0.93	0.91	0.93	0.92	0.89	0.90	0.92	0.90	0.94	0.95	0.97	1.01	1.03	1.14	1.19
19	1.16	1.07	1.01	0.98	0.97	0.95	0.93	0.95	0.94	0.92	0.92	0.95	0.92	0.96	0.98	0.99	1.03	1.06	1.16	1.22
20	1.30	1.21	1.14	1.10	1.09	1.07	1.04	1.06	1.06	1.03	1.03	1.06	1.03	1.08	1.10	1.11	1.16	1.19	1.31	1.37

Table C- 13: 2D gradient map of plate C-5 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.20	1.11	1.08	1.10	1.06	1.07	1.06	1.07	1.07	1.06	1.05	1.08	1.07	1.07	1.04	1.11	1.08	1.13	1.20	1.28
2	1.13	1.04	1.02	1.03	0.99	1.00	1.00	1.00	1.00	0.99	0.99	1.01	1.00	1.00	0.98	1.05	1.01	1.06	1.13	1.21
3	1.10	1.02	0.99	1.01	0.97	0.98	0.97	0.98	0.98	0.97	0.96	0.99	0.98	0.98	0.96	1.02	0.99	1.04	1.10	1.18
4	1.11	1.03	1.00	1.02	0.98	0.99	0.98	0.99	0.99	0.98	0.97	1.00	0.99	0.99	0.97	1.03	1.00	1.05	1.11	1.19
5	1.06	0.98	0.95	0.97	0.93	0.94	0.93	0.94	0.94	0.93	0.93	0.95	0.94	0.94	0.92	0.98	0.95	1.00	1.06	1.13
6	1.09	1.01	0.98	1.00	0.96	0.97	0.96	0.97	0.97	0.96	0.96	0.98	0.97	0.97	0.95	1.01	0.98	1.03	1.09	1.17
7	1.06	0.98	0.96	0.97	0.93	0.94	0.94	0.95	0.94	0.93	0.93	0.95	0.94	0.94	0.92	0.99	0.95	1.00	1.06	1.14
8	1.05	0.97	0.95	0.96	0.92	0.93	0.93	0.94	0.93	0.92	0.92	0.94	0.93	0.93	0.91	0.98	0.94	0.99	1.05	1.12
9	1.07	0.99	0.96	0.98	0.94	0.95	0.95	0.95	0.95	0.94	0.94	0.96	0.95	0.95	0.93	1.00	0.96	1.01	1.07	1.15
10	1.04	0.96	0.93	0.95	0.91	0.92	0.91	0.92	0.92	0.91	0.91	0.93	0.92	0.92	0.90	0.96	0.93	0.98	1.04	1.11
11	1.03	0.95	0.93	0.94	0.91	0.92	0.91	0.92	0.92	0.91	0.90	0.92	0.92	0.92	0.90	0.96	0.92	0.97	1.03	1.10
12	1.06	0.98	0.96	0.97	0.93	0.94	0.94	0.94	0.94	0.93	0.93	0.95	0.94	0.94	0.92	0.99	0.95	1.00	1.06	1.14
13	1.06	0.98	0.95	0.97	0.93	0.94	0.93	0.94	0.94	0.93	0.92	0.95	0.94	0.94	0.92	0.98	0.95	1.00	1.06	1.13
14	1.04	0.96	0.93	0.95	0.91	0.92	0.91	0.92	0.92	0.91	0.91	0.93	0.92	0.92	0.90	0.96	0.93	0.98	1.04	1.11
15	1.09	1.00	0.98	0.99	0.95	0.97	0.96	0.97	0.96	0.96	0.95	0.97	0.96	0.97	0.94	1.01	0.97	1.02	1.09	1.16
16	1.09	1.01	0.98	0.99	0.96	0.97	0.96	0.97	0.96	0.96	0.95	0.97	0.97	0.97	0.94	1.01	0.97	1.02	1.09	1.16
17	1.10	1.01	0.99	1.00	0.96	0.97	0.97	0.98	0.97	0.96	0.96	0.98	0.97	0.97	0.95	1.02	0.98	1.03	1.10	1.17
18	1.15	1.06	1.03	1.05	1.01	1.02	1.01	1.02	1.01	1.01	1.00	1.02	1.02	1.02	0.99	1.06	1.03	1.08	1.14	1.22
19	1.14	1.06	1.03	1.04	1.00	1.02	1.01	1.02	1.01	1.01	1.00	1.02	1.01	1.02	0.99	1.06	1.02	1.08	1.14	1.22
20	1.21	1.11	1.08	1.10	1.06	1.07	1.06	1.07	1.07	1.06	1.05	1.08	1.07	1.07	1.04	1.12	1.08	1.13	1.20	1.29

Table C- 14: 2D gradient map of plate C-6 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.43	1.33	1.25	1.20	1.17	1.17	1.11	1.10	1.07	1.13	1.08	1.10	1.17	1.13	1.16	1.22	1.30	1.32	1.40	1.56
2	1.26	1.17	1.10	1.05	1.03	1.03	0.97	0.97	0.94	0.99	0.95	0.97	1.03	0.99	1.02	1.07	1.15	1.16	1.23	1.37
3	1.18	1.10	1.03	0.99	0.97	0.97	0.92	0.91	0.88	0.93	0.89	0.91	0.97	0.94	0.96	1.01	1.08	1.09	1.16	1.29
4	1.18	1.10	1.03	0.99	0.96	0.97	0.91	0.91	0.88	0.93	0.89	0.91	0.96	0.93	0.96	1.01	1.08	1.09	1.16	1.28
5	1.10	1.02	0.96	0.92	0.90	0.90	0.85	0.85	0.82	0.87	0.83	0.85	0.90	0.87	0.89	0.94	1.00	1.02	1.08	1.20
6	1.10	1.03	0.96	0.92	0.90	0.90	0.85	0.85	0.82	0.87	0.83	0.85	0.90	0.87	0.90	0.94	1.01	1.02	1.08	1.20
7	1.12	1.04	0.98	0.94	0.92	0.92	0.87	0.86	0.83	0.88	0.84	0.86	0.91	0.89	0.91	0.95	1.02	1.03	1.10	1.22
8	1.08	1.00	0.94	0.90	0.88	0.88	0.84	0.83	0.80	0.85	0.81	0.83	0.88	0.85	0.88	0.92	0.98	1.00	1.06	1.17
9	1.07	1.00	0.93	0.90	0.88	0.88	0.83	0.82	0.80	0.84	0.81	0.83	0.87	0.85	0.87	0.91	0.98	0.99	1.05	1.17
10	1.13	1.05	0.98	0.94	0.92	0.92	0.87	0.86	0.84	0.89	0.85	0.87	0.92	0.89	0.91	0.96	1.03	1.04	1.10	1.23
11	1.16	1.08	1.02	0.98	0.95	0.96	0.90	0.90	0.87	0.92	0.88	0.90	0.95	0.92	0.95	0.99	1.06	1.08	1.14	1.27
12	1.11	1.04	0.97	0.93	0.91	0.91	0.86	0.85	0.83	0.88	0.84	0.86	0.91	0.88	0.90	0.95	1.02	1.03	1.09	1.21
13	1.10	1.03	0.96	0.92	0.90	0.90	0.85	0.85	0.82	0.87	0.83	0.85	0.90	0.87	0.89	0.94	1.01	1.02	1.08	1.20
14	1.12	1.04	0.98	0.94	0.92	0.92	0.87	0.86	0.84	0.88	0.85	0.86	0.92	0.89	0.91	0.96	1.02	1.04	1.10	1.22
15	1.14	1.06	1.00	0.96	0.93	0.94	0.89	0.88	0.85	0.90	0.86	0.88	0.93	0.90	0.93	0.97	1.04	1.06	1.12	1.24
16	1.15	1.07	1.01	0.97	0.94	0.95	0.89	0.89	0.86	0.91	0.87	0.89	0.94	0.91	0.94	0.98	1.05	1.07	1.13	1.26
17	1.14	1.06	1.00	0.96	0.94	0.94	0.89	0.88	0.85	0.90	0.86	0.88	0.93	0.90	0.93	0.98	1.04	1.06	1.12	1.25
18	1.21	1.13	1.06	1.02	0.99	1.00	0.94	0.93	0.91	0.96	0.92	0.94	0.99	0.96	0.99	1.04	1.11	1.12	1.19	1.32
19	1.24	1.15	1.08	1.04	1.01	1.01	0.96	0.95	0.92	0.97	0.93	0.95	1.01	0.98	1.00	1.05	1.13	1.14	1.21	1.35
20	1.41	1.31	1.23	1.18	1.15	1.15	1.09	1.08	1.05	1.11	1.06	1.08	1.15	1.11	1.14	1.20	1.28	1.30	1.38	1.53

Table C- 15: 2D gradient map of plate C-7 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.35	1.28	1.21	1.16	1.16	1.11	1.06	1.05	1.05	1.04	1.03	1.02	1.04	1.06	1.16	1.15	1.21	1.29	1.36	1.51
2	1.20	1.14	1.08	1.04	1.03	0.99	0.94	0.93	0.93	0.93	0.92	0.91	0.93	0.94	1.03	1.02	1.08	1.15	1.21	1.34
3	1.15	1.08	1.03	0.98	0.98	0.94	0.90	0.89	0.89	0.88	0.87	0.87	0.88	0.90	0.98	0.97	1.02	1.09	1.16	1.28
4	1.19	1.13	1.07	1.02	1.02	0.98	0.93	0.92	0.92	0.92	0.90	0.90	0.92	0.93	1.02	1.01	1.06	1.13	1.20	1.33
5	1.14	1.08	1.03	0.98	0.98	0.94	0.90	0.89	0.89	0.88	0.87	0.87	0.88	0.89	0.98	0.97	1.02	1.09	1.15	1.28
6	1.11	1.05	0.99	0.95	0.95	0.91	0.87	0.86	0.86	0.85	0.84	0.84	0.86	0.87	0.95	0.94	0.99	1.06	1.12	1.24
7	1.10	1.04	0.98	0.94	0.94	0.90	0.86	0.85	0.85	0.85	0.83	0.83	0.85	0.86	0.94	0.93	0.98	1.05	1.11	1.22
8	1.12	1.06	1.01	0.96	0.96	0.92	0.88	0.87	0.87	0.86	0.85	0.85	0.87	0.88	0.96	0.95	1.00	1.07	1.13	1.25
9	1.12	1.06	1.00	0.96	0.96	0.92	0.88	0.87	0.87	0.86	0.85	0.85	0.86	0.87	0.96	0.95	1.00	1.07	1.13	1.25
10	1.07	1.01	0.96	0.92	0.92	0.88	0.84	0.83	0.83	0.82	0.81	0.81	0.82	0.84	0.91	0.91	0.96	1.02	1.08	1.19
11	1.12	1.06	1.01	0.97	0.96	0.93	0.88	0.87	0.87	0.87	0.85	0.85	0.87	0.88	0.96	0.96	1.00	1.07	1.13	1.25
12	1.12	1.06	1.00	0.96	0.96	0.92	0.88	0.87	0.87	0.86	0.85	0.85	0.86	0.88	0.96	0.95	1.00	1.07	1.13	1.25
13	1.08	1.02	0.97	0.93	0.93	0.89	0.85	0.84	0.84	0.83	0.82	0.82	0.83	0.85	0.92	0.92	0.97	1.03	1.09	1.21
14	1.11	1.05	0.99	0.95	0.95	0.91	0.87	0.86	0.86	0.85	0.84	0.84	0.85	0.86	0.95	0.94	0.99	1.05	1.11	1.23
15	1.10	1.04	0.99	0.95	0.94	0.91	0.86	0.85	0.85	0.85	0.84	0.83	0.85	0.86	0.94	0.94	0.98	1.05	1.11	1.23
16	1.10	1.04	0.98	0.94	0.94	0.91	0.86	0.85	0.85	0.85	0.84	0.83	0.85	0.86	0.94	0.93	0.98	1.05	1.11	1.23
17	1.17	1.10	1.05	1.00	1.00	0.96	0.92	0.90	0.91	0.90	0.89	0.88	0.90	0.91	1.00	0.99	1.04	1.11	1.18	1.30

18	1.17	1.11	1.05	1.01	1.01	0.97	0.92	0.91	0.91	0.90	0.89	0.89	0.91	0.92	1.00	1.00	1.05	1.12	1.18	1.31
19	1.26	1.20	1.13	1.09	1.08	1.04	0.99	0.98	0.98	0.97	0.96	0.96	0.98	0.99	1.08	1.08	1.13	1.20	1.27	1.41
20	1.42	1.34	1.27	1.22	1.22	1.17	1.11	1.10	1.10	1.09	1.08	1.08	1.10	1.11	1.21	1.21	1.27	1.35	1.43	1.59

Table C- 16: 2D gradient map of plate C-8 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.32	1.21	1.21	1.12	1.10	1.11	1.05	1.04	1.04	0.99	1.02	1.05	1.07	1.09	1.14	1.14	1.16	1.24	1.28	1.41
2	1.24	1.14	1.14	1.05	1.04	1.04	0.99	0.97	0.97	0.93	0.95	0.99	1.00	1.02	1.07	1.07	1.09	1.16	1.20	1.33
3	1.21	1.11	1.10	1.02	1.01	1.01	0.96	0.95	0.95	0.90	0.93	0.96	0.97	0.99	1.04	1.04	1.06	1.13	1.17	1.29
4	1.18	1.08	1.08	0.99	0.98	0.99	0.94	0.92	0.92	0.88	0.90	0.94	0.95	0.97	1.01	1.01	1.03	1.10	1.14	1.26
5	1.16	1.06	1.05	0.97	0.96	0.97	0.92	0.90	0.91	0.87	0.89	0.92	0.93	0.95	0.99	0.99	1.01	1.08	1.12	1.23
6	1.16	1.06	1.06	0.98	0.97	0.97	0.92	0.91	0.91	0.87	0.89	0.92	0.93	0.95	1.00	1.00	1.02	1.09	1.12	1.24
7	1.11	1.01	1.01	0.93	0.92	0.93	0.88	0.87	0.87	0.83	0.85	0.88	0.89	0.91	0.95	0.95	0.97	1.04	1.07	1.18
8	1.11	1.02	1.01	0.94	0.92	0.93	0.88	0.87	0.87	0.83	0.85	0.88	0.89	0.91	0.95	0.95	0.97	1.04	1.07	1.19
9	1.12	1.02	1.02	0.94	0.93	0.94	0.89	0.88	0.88	0.84	0.86	0.89	0.90	0.92	0.96	0.96	0.98	1.05	1.08	1.20
10	1.12	1.03	1.02	0.94	0.93	0.94	0.89	0.88	0.88	0.84	0.86	0.89	0.90	0.92	0.96	0.96	0.98	1.05	1.08	1.20
11	1.12	1.03	1.03	0.95	0.94	0.94	0.89	0.88	0.88	0.84	0.86	0.89	0.91	0.92	0.97	0.97	0.98	1.05	1.09	1.20
12	1.08	0.99	0.99	0.91	0.90	0.91	0.86	0.85	0.85	0.81	0.83	0.86	0.87	0.89	0.93	0.93	0.95	1.01	1.05	1.15
13	1.13	1.04	1.03	0.96	0.94	0.95	0.90	0.89	0.89	0.85	0.87	0.90	0.91	0.93	0.97	0.97	0.99	1.06	1.10	1.21
14	1.11	1.01	1.01	0.93	0.92	0.93	0.88	0.87	0.87	0.83	0.85	0.88	0.89	0.91	0.95	0.95	0.97	1.03	1.07	1.18
15	1.13	1.03	1.03	0.95	0.94	0.94	0.90	0.88	0.88	0.84	0.86	0.89	0.91	0.92	0.97	0.97	0.99	1.05	1.09	1.20
16	1.11	1.02	1.02	0.94	0.93	0.93	0.89	0.87	0.87	0.83	0.85	0.88	0.90	0.91	0.96	0.96	0.98	1.04	1.08	1.19
17	1.15	1.06	1.05	0.97	0.96	0.97	0.92	0.90	0.90	0.86	0.89	0.92	0.93	0.95	0.99	0.99	1.01	1.08	1.12	1.23
18	1.18	1.08	1.08	1.00	0.99	0.99	0.94	0.93	0.93	0.89	0.91	0.94	0.95	0.97	1.02	1.02	1.04	1.11	1.15	1.26
19	1.22	1.11	1.11	1.03	1.01	1.02	0.97	0.95	0.95	0.91	0.93	0.96	0.98	1.00	1.05	1.05	1.07	1.14	1.18	1.30
20	1.28	1.17	1.17	1.08	1.07	1.07	1.02	1.00	1.00	0.96	0.98	1.02	1.03	1.05	1.10	1.10	1.12	1.20	1.24	1.37

Table C- 17: 2D gradient map of plate D-1 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.27	1.22	1.17	1.17	1.19	1.19	1.19	1.17	1.13	1.13	1.15	1.17	1.19	1.23	1.21	1.19	1.24	1.29	1.29	1.34
2	1.12	1.08	1.04	1.03	1.05	1.05	1.05	1.03	1.00	1.00	1.02	1.03	1.05	1.09	1.07	1.05	1.09	1.14	1.14	1.19
3	1.12	1.08	1.04	1.03	1.05	1.05	1.05	1.03	1.00	0.99	1.02	1.03	1.05	1.09	1.07	1.05	1.09	1.14	1.14	1.18
4	1.10	1.06	1.01	1.01	1.03	1.02	1.03	1.01	0.97	0.97	0.99	1.01	1.02	1.06	1.05	1.03	1.07	1.11	1.12	1.16
5	1.08	1.04	1.00	1.00	1.02	1.01	1.02	1.00	0.96	0.96	0.98	1.00	1.01	1.05	1.04	1.02	1.06	1.10	1.10	1.15
6	1.04	1.00	0.96	0.95	0.97	0.97	0.97	0.95	0.92	0.92	0.94	0.95	0.97	1.00	0.99	0.97	1.01	1.05	1.05	1.09
7	1.05	1.01	0.97	0.96	0.98	0.98	0.98	0.96	0.93	0.93	0.95	0.96	0.98	1.01	1.00	0.98	1.02	1.06	1.07	1.11
8	1.02	0.99	0.95	0.94	0.96	0.96	0.96	0.94	0.91	0.91	0.93	0.94	0.96	0.99	0.98	0.96	1.00	1.04	1.04	1.08
9	1.07	1.03	0.99	0.98	1.00	1.00	1.00	0.98	0.95	0.95	0.97	0.98	1.00	1.03	1.02	1.00	1.04	1.08	1.09	1.13
10	1.02	0.99	0.95	0.94	0.96	0.96	0.96	0.94	0.91	0.91	0.93	0.94	0.96	0.99	0.98	0.96	1.00	1.04	1.04	1.08
11	0.99	0.96	0.92	0.91	0.93	0.93	0.93	0.91	0.88	0.88	0.90	0.91	0.93	0.96	0.95	0.93	0.97	1.01	1.01	1.05
12	1.01	0.97	0.93	0.93	0.94	0.94	0.95	0.93	0.90	0.90	0.92	0.93	0.94	0.98	0.96	0.95	0.98	1.02	1.03	1.07
13	0.97	0.94	0.90	0.89	0.91	0.91	0.91	0.89	0.86	0.86	0.88	0.89	0.91	0.94	0.93	0.91	0.95	0.99	0.99	1.03

14	1.00	0.97	0.93	0.92	0.94	0.94	0.94	0.92	0.89	0.89	0.91	0.92	0.94	0.97	0.96	0.94	0.98	1.02	1.02	1.06
15	1.04	1.00	0.96	0.95	0.97	0.97	0.97	0.95	0.92	0.92	0.94	0.95	0.97	1.00	0.99	0.97	1.01	1.05	1.06	1.10
16	0.99	0.95	0.91	0.91	0.93	0.92	0.93	0.91	0.88	0.88	0.90	0.91	0.92	0.96	0.95	0.93	0.96	1.00	1.01	1.05
17	0.97	0.93	0.90	0.89	0.91	0.91	0.91	0.89	0.86	0.86	0.88	0.89	0.91	0.94	0.93	0.91	0.94	0.98	0.99	1.02
18	1.08	1.04	1.00	0.99	1.01	1.01	1.01	0.99	0.96	0.96	0.98	0.99	1.01	1.04	1.03	1.01	1.05	1.10	1.10	1.14
19	1.01	0.97	0.93	0.92	0.94	0.94	0.94	0.93	0.89	0.89	0.91	0.92	0.94	0.98	0.96	0.94	0.98	1.02	1.03	1.06
20	1.11	1.07	1.03	1.02	1.04	1.04	1.04	1.02	0.99	0.99	1.01	1.02	1.04	1.07	1.06	1.04	1.08	1.13	1.13	1.17

Table C- 18: 2D gradient map of plate D-2 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.61	1.42	1.31	1.28	1.25	1.24	1.23	1.22	1.20	1.24	1.18	1.20	1.18	1.17	1.26	1.29	1.33	1.39	1.45	1.63
2	1.36	1.20	1.11	1.08	1.06	1.05	1.04	1.04	1.01	1.05	1.00	1.01	1.00	0.99	1.07	1.09	1.12	1.18	1.23	1.38
3	1.34	1.17	1.08	1.06	1.04	1.03	1.02	1.01	0.99	1.03	0.97	0.99	0.98	0.97	1.04	1.07	1.10	1.15	1.20	1.35
4	1.26	1.10	1.02	1.00	0.98	0.96	0.96	0.95	0.93	0.97	0.92	0.93	0.92	0.91	0.98	1.00	1.04	1.08	1.13	1.27
5	1.16	1.02	0.94	0.92	0.90	0.89	0.89	0.88	0.86	0.89	0.85	0.86	0.85	0.84	0.91	0.93	0.96	1.00	1.04	1.17
6	1.17	1.03	0.95	0.93	0.91	0.90	0.89	0.89	0.87	0.90	0.85	0.87	0.86	0.85	0.91	0.93	0.97	1.01	1.05	1.18
7	1.20	1.05	0.97	0.95	0.93	0.92	0.92	0.91	0.89	0.92	0.88	0.89	0.88	0.87	0.94	0.96	0.99	1.04	1.08	1.21
8	1.20	1.06	0.98	0.95	0.93	0.92	0.92	0.91	0.89	0.93	0.88	0.89	0.88	0.87	0.94	0.96	0.99	1.04	1.08	1.21
9	1.28	1.12	1.04	1.01	0.99	0.98	0.98	0.97	0.95	0.98	0.93	0.95	0.94	0.93	1.00	1.02	1.06	1.11	1.15	1.29
10	1.20	1.06	0.98	0.95	0.93	0.92	0.92	0.91	0.89	0.92	0.88	0.89	0.88	0.87	0.94	0.96	0.99	1.04	1.08	1.21
11	1.16	1.02	0.94	0.92	0.90	0.89	0.89	0.88	0.86	0.89	0.85	0.86	0.85	0.84	0.91	0.93	0.96	1.00	1.04	1.17
12	1.19	1.04	0.97	0.94	0.92	0.91	0.91	0.90	0.88	0.91	0.87	0.88	0.87	0.86	0.93	0.95	0.98	1.03	1.07	1.20
13	1.16	1.01	0.94	0.92	0.90	0.89	0.88	0.88	0.86	0.89	0.84	0.86	0.85	0.84	0.90	0.92	0.95	1.00	1.04	1.17
14	1.16	1.02	0.94	0.92	0.90	0.89	0.88	0.88	0.86	0.89	0.85	0.86	0.85	0.84	0.90	0.92	0.96	1.00	1.04	1.17
15	1.15	1.01	0.93	0.91	0.89	0.88	0.88	0.87	0.85	0.88	0.84	0.85	0.84	0.83	0.90	0.92	0.95	0.99	1.03	1.16
16	1.16	1.02	0.94	0.92	0.90	0.89	0.88	0.88	0.86	0.89	0.85	0.86	0.85	0.84	0.90	0.92	0.96	1.00	1.04	1.17
17	1.18	1.04	0.96	0.94	0.92	0.91	0.90	0.90	0.88	0.91	0.86	0.88	0.87	0.86	0.92	0.95	0.98	1.02	1.06	1.19
18	1.15	1.01	0.93	0.91	0.89	0.88	0.88	0.87	0.85	0.88	0.84	0.85	0.84	0.83	0.90	0.92	0.95	0.99	1.03	1.16
19	1.24	1.09	1.01	0.98	0.96	0.95	0.95	0.94	0.92	0.95	0.91	0.92	0.91	0.90	0.97	0.99	1.02	1.07	1.12	1.25
20	1.41	1.24	1.15	1.12	1.10	1.09	1.08	1.07	1.05	1.09	1.03	1.05	1.04	1.02	1.10	1.13	1.17	1.22	1.27	1.43

Table C- 19: 2D gradient map of plate D-3 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.66	1.48	1.35	1.34	1.30	1.24	1.26	1.23	1.23	1.18	1.18	1.24	1.26	1.29	1.29	1.32	1.39	1.50	1.61	1.76
2	1.36	1.21	1.11	1.10	1.06	1.02	1.03	1.01	1.01	0.97	0.97	1.02	1.03	1.06	1.06	1.08	1.14	1.23	1.32	1.45
3	1.29	1.15	1.05	1.04	1.01	0.96	0.98	0.95	0.95	0.92	0.92	0.97	0.98	1.00	1.00	1.02	1.08	1.16	1.25	1.37
4	1.25	1.11	1.01	1.01	0.97	0.93	0.94	0.92	0.92	0.89	0.89	0.93	0.94	0.97	0.97	0.99	1.04	1.12	1.21	1.33
5	1.28	1.14	1.04	1.03	1.00	0.95	0.97	0.94	0.94	0.91	0.91	0.96	0.97	0.99	0.99	1.01	1.07	1.15	1.24	1.36
6	1.24	1.10	1.00	1.00	0.97	0.92	0.94	0.91	0.91	0.88	0.88	0.93	0.94	0.96	0.96	0.98	1.03	1.12	1.20	1.32
7	1.21	1.08	0.98	0.98	0.94	0.90	0.92	0.89	0.89	0.86	0.86	0.91	0.92	0.94	0.94	0.96	1.01	1.09	1.17	1.29
8	1.18	1.05	0.95	0.95	0.92	0.88	0.89	0.87	0.87	0.84	0.84	0.88	0.89	0.91	0.91	0.93	0.98	1.06	1.14	1.25
9	1.11	0.99	0.90	0.90	0.86	0.82	0.84	0.82	0.82	0.79	0.79	0.83	0.84	0.86	0.86	0.88	0.92	1.00	1.07	1.18

10	1.17	1.04	0.95	0.95	0.91	0.87	0.89	0.86	0.87	0.83	0.83	0.88	0.89	0.91	0.91	0.93	0.98	1.06	1.14	1.25
11	1.15	1.03	0.94	0.93	0.90	0.86	0.87	0.85	0.85	0.82	0.82	0.86	0.87	0.89	0.90	0.91	0.96	1.04	1.12	1.23
12	1.13	1.00	0.91	0.91	0.88	0.84	0.85	0.83	0.83	0.80	0.80	0.84	0.85	0.87	0.88	0.89	0.94	1.02	1.09	1.20
13	1.14	1.01	0.92	0.92	0.89	0.85	0.86	0.84	0.84	0.81	0.81	0.85	0.86	0.88	0.88	0.90	0.95	1.03	1.10	1.21
14	1.13	1.01	0.92	0.92	0.88	0.84	0.86	0.84	0.84	0.81	0.81	0.85	0.86	0.88	0.88	0.90	0.95	1.02	1.10	1.20
15	1.15	1.03	0.93	0.93	0.90	0.86	0.87	0.85	0.85	0.82	0.82	0.86	0.87	0.89	0.90	0.91	0.96	1.04	1.12	1.23
16	1.13	1.01	0.92	0.91	0.88	0.84	0.86	0.83	0.84	0.81	0.81	0.85	0.86	0.88	0.88	0.90	0.94	1.02	1.10	1.20
17	1.16	1.03	0.94	0.94	0.90	0.86	0.88	0.85	0.86	0.83	0.83	0.87	0.88	0.90	0.90	0.92	0.97	1.04	1.12	1.23
18	1.18	1.05	0.95	0.95	0.92	0.88	0.89	0.87	0.87	0.84	0.84	0.88	0.89	0.91	0.91	0.93	0.98	1.06	1.14	1.25
19	1.16	1.03	0.94	0.94	0.90	0.86	0.88	0.86	0.86	0.83	0.83	0.87	0.88	0.90	0.90	0.92	0.97	1.05	1.13	1.23
20	1.45	1.29	1.17	1.17	1.13	1.08	1.10	1.07	1.07	1.03	1.03	1.09	1.10	1.12	1.13	1.15	1.21	1.31	1.41	1.54

Table C- 20: 2D gradient map of plate D-4 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.40	1.29	1.25	1.19	1.17	1.15	1.15	1.09	1.11	1.14	1.07	1.06	1.13	1.12	1.16	1.21	1.23	1.27	1.37	1.40
2	1.36	1.25	1.21	1.15	1.13	1.11	1.11	1.06	1.07	1.10	1.03	1.03	1.09	1.08	1.12	1.17	1.19	1.22	1.32	1.35
3	1.23	1.13	1.09	1.04	1.02	1.00	1.01	0.95	0.97	0.99	0.93	0.93	0.99	0.98	1.01	1.05	1.07	1.10	1.20	1.22
4	1.22	1.12	1.09	1.04	1.01	1.00	1.00	0.95	0.96	0.99	0.93	0.92	0.98	0.97	1.01	1.05	1.07	1.10	1.19	1.22
5	1.17	1.08	1.04	0.99	0.97	0.96	0.96	0.91	0.92	0.95	0.89	0.88	0.94	0.93	0.97	1.01	1.02	1.05	1.14	1.17
6	1.23	1.13	1.10	1.04	1.02	1.00	1.01	0.96	0.97	0.99	0.94	0.93	0.99	0.98	1.02	1.06	1.07	1.11	1.20	1.23
7	1.14	1.05	1.02	0.97	0.95	0.93	0.94	0.89	0.90	0.92	0.87	0.86	0.92	0.91	0.94	0.98	0.99	1.03	1.11	1.14
8	1.16	1.07	1.03	0.98	0.96	0.95	0.95	0.90	0.91	0.94	0.88	0.88	0.93	0.92	0.96	1.00	1.01	1.04	1.13	1.16
9	1.09	1.01	0.97	0.93	0.91	0.89	0.90	0.85	0.86	0.88	0.83	0.82	0.88	0.87	0.90	0.94	0.95	0.98	1.07	1.09
10	1.14	1.05	1.02	0.97	0.95	0.93	0.94	0.89	0.90	0.92	0.87	0.86	0.92	0.91	0.94	0.98	1.00	1.03	1.11	1.14
11	1.13	1.04	1.01	0.96	0.94	0.92	0.93	0.88	0.89	0.91	0.86	0.85	0.91	0.90	0.94	0.97	0.99	1.02	1.10	1.13
12	1.07	0.99	0.96	0.91	0.89	0.88	0.88	0.83	0.85	0.87	0.82	0.81	0.86	0.86	0.89	0.92	0.94	0.97	1.05	1.07
13	1.08	0.99	0.96	0.92	0.90	0.88	0.89	0.84	0.85	0.87	0.82	0.82	0.87	0.86	0.89	0.93	0.94	0.97	1.05	1.08
14	1.09	1.01	0.97	0.93	0.91	0.89	0.90	0.85	0.86	0.88	0.83	0.83	0.88	0.87	0.90	0.94	0.95	0.98	1.07	1.09
15	1.11	1.02	0.99	0.94	0.92	0.91	0.91	0.87	0.88	0.90	0.85	0.84	0.90	0.89	0.92	0.96	0.97	1.00	1.09	1.11
16	1.12	1.03	1.00	0.95	0.93	0.91	0.92	0.87	0.88	0.90	0.85	0.84	0.90	0.89	0.92	0.96	0.98	1.01	1.09	1.11
17	1.13	1.04	1.01	0.96	0.94	0.92	0.93	0.88	0.89	0.92	0.86	0.86	0.91	0.90	0.94	0.97	0.99	1.02	1.11	1.13
18	1.13	1.04	1.01	0.96	0.94	0.92	0.93	0.88	0.89	0.91	0.86	0.85	0.91	0.90	0.94	0.97	0.99	1.02	1.10	1.13
19	1.17	1.07	1.04	0.99	0.97	0.95	0.96	0.91	0.92	0.94	0.89	0.88	0.94	0.93	0.97	1.00	1.02	1.05	1.14	1.16
20	1.27	1.17	1.13	1.08	1.06	1.04	1.04	0.99	1.00	1.03	0.97	0.96	1.02	1.01	1.05	1.09	1.11	1.14	1.24	1.27

Table C- 21: 2D gradient map of plate D-5 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.34	1.22	1.20	1.15	1.11	1.13	1.12	1.11	1.13	1.19	1.14	1.15	1.14	1.12	1.10	1.13	1.22	1.20	1.25	1.36
2	1.22	1.11	1.09	1.05	1.01	1.03	1.02	1.01	1.03	1.08	1.04	1.05	1.04	1.02	1.00	1.03	1.11	1.10	1.14	1.25
3	1.18	1.08	1.06	1.01	0.98	1.00	0.99	0.98	1.00	1.05	1.00	1.02	1.01	0.99	0.97	1.00	1.08	1.06	1.10	1.20
4	1.16	1.05	1.03	0.99	0.96	0.98	0.97	0.96	0.98	1.03	0.98	1.00	0.98	0.97	0.95	0.98	1.05	1.04	1.08	1.18
5	1.17	1.07	1.05	1.00	0.97	0.99	0.98	0.97	0.99	1.04	0.99	1.01	1.00	0.98	0.96	0.99	1.07	1.05	1.09	1.19

6	1.10	1.00	0.99	0.94	0.91	0.93	0.92	0.91	0.93	0.98	0.94	0.95	0.94	0.92	0.91	0.93	1.00	0.99	1.03	1.12
7	1.10	1.00	0.99	0.94	0.91	0.93	0.92	0.91	0.93	0.98	0.94	0.95	0.94	0.92	0.91	0.93	1.00	0.99	1.03	1.12
8	1.13	1.02	1.01	0.96	0.93	0.95	0.94	0.93	0.95	1.00	0.95	0.97	0.96	0.94	0.92	0.95	1.02	1.01	1.05	1.15
9	1.13	1.03	1.01	0.97	0.94	0.96	0.95	0.94	0.96	1.01	0.96	0.98	0.97	0.95	0.93	0.96	1.03	1.02	1.06	1.16
10	1.08	0.98	0.96	0.92	0.89	0.91	0.90	0.89	0.91	0.96	0.91	0.93	0.92	0.90	0.89	0.91	0.98	0.97	1.00	1.10
11	1.11	1.01	0.99	0.95	0.92	0.94	0.93	0.92	0.94	0.99	0.94	0.96	0.95	0.93	0.91	0.94	1.01	1.00	1.03	1.13
12	1.07	0.97	0.95	0.91	0.88	0.90	0.89	0.88	0.90	0.95	0.91	0.92	0.91	0.89	0.88	0.90	0.97	0.96	0.99	1.09
13	1.10	1.00	0.98	0.94	0.91	0.93	0.92	0.91	0.93	0.98	0.93	0.95	0.94	0.92	0.90	0.93	1.00	0.99	1.02	1.12
14	1.10	1.00	0.98	0.94	0.91	0.93	0.92	0.91	0.93	0.97	0.93	0.94	0.93	0.92	0.90	0.93	1.00	0.99	1.02	1.12
15	1.12	1.02	1.00	0.95	0.92	0.94	0.93	0.92	0.94	0.99	0.95	0.96	0.95	0.93	0.92	0.94	1.02	1.00	1.04	1.14
16	1.11	1.01	0.99	0.95	0.91	0.93	0.93	0.92	0.93	0.98	0.94	0.95	0.94	0.93	0.91	0.93	1.01	0.99	1.03	1.13
17	1.09	1.00	0.98	0.94	0.90	0.92	0.92	0.91	0.92	0.97	0.93	0.94	0.93	0.92	0.90	0.92	1.00	0.98	1.02	1.11
18	1.09	0.99	0.98	0.93	0.90	0.92	0.91	0.90	0.92	0.97	0.93	0.94	0.93	0.91	0.90	0.92	0.99	0.98	1.02	1.11
19	1.15	1.05	1.03	0.99	0.95	0.97	0.96	0.95	0.97	1.02	0.98	0.99	0.98	0.96	0.95	0.97	1.05	1.03	1.07	1.17
20	1.24	1.13	1.11	1.06	1.03	1.05	1.04	1.03	1.05	1.10	1.05	1.07	1.06	1.04	1.02	1.05	1.13	1.12	1.16	1.27

Table C- 22: 2D gradient map of plate D-6 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.59	1.42	1.34	1.29	1.29	1.30	1.20	1.15	1.18	1.16	1.13	1.19	1.15	1.21	1.23	1.28	1.30	1.37	1.48	1.70
2	1.33	1.18	1.12	1.08	1.08	1.08	1.00	0.96	0.98	0.97	0.94	0.99	0.96	1.01	1.03	1.07	1.09	1.14	1.23	1.42
3	1.28	1.14	1.07	1.04	1.04	1.04	0.96	0.92	0.95	0.94	0.91	0.96	0.93	0.97	0.99	1.03	1.05	1.10	1.19	1.37
4	1.23	1.10	1.04	1.00	1.01	1.01	0.93	0.89	0.91	0.90	0.88	0.92	0.90	0.94	0.95	0.99	1.01	1.06	1.15	1.32
5	1.18	1.05	0.99	0.96	0.96	0.96	0.89	0.85	0.87	0.86	0.84	0.88	0.86	0.90	0.91	0.95	0.97	1.02	1.10	1.26
6	1.16	1.04	0.98	0.95	0.95	0.95	0.88	0.84	0.86	0.85	0.83	0.87	0.85	0.89	0.90	0.94	0.96	1.01	1.09	1.25
7	1.19	1.06	1.00	0.96	0.97	0.97	0.90	0.86	0.88	0.87	0.85	0.89	0.86	0.90	0.92	0.96	0.97	1.02	1.11	1.27
8	1.15	1.03	0.97	0.93	0.94	0.94	0.87	0.83	0.85	0.84	0.82	0.86	0.84	0.88	0.89	0.93	0.95	0.99	1.07	1.23
9	1.17	1.05	0.99	0.95	0.95	0.96	0.88	0.85	0.87	0.86	0.83	0.88	0.85	0.89	0.91	0.94	0.96	1.01	1.09	1.25
10	1.21	1.08	1.02	0.98	0.99	0.99	0.91	0.88	0.90	0.89	0.86	0.91	0.88	0.92	0.94	0.98	1.00	1.05	1.13	1.30
11	1.09	0.97	0.92	0.88	0.89	0.89	0.82	0.79	0.81	0.80	0.78	0.82	0.79	0.83	0.84	0.88	0.90	0.94	1.02	1.17
12	1.19	1.06	1.00	0.96	0.97	0.97	0.90	0.86	0.88	0.87	0.85	0.89	0.86	0.91	0.92	0.96	0.98	1.03	1.11	1.27
13	1.17	1.05	0.99	0.95	0.95	0.96	0.88	0.85	0.87	0.86	0.83	0.88	0.85	0.89	0.91	0.94	0.96	1.01	1.09	1.25
14	1.15	1.03	0.97	0.94	0.94	0.94	0.87	0.83	0.85	0.84	0.82	0.86	0.84	0.88	0.89	0.93	0.95	0.99	1.07	1.23
15	1.16	1.04	0.98	0.94	0.95	0.95	0.88	0.84	0.86	0.85	0.83	0.87	0.84	0.89	0.90	0.94	0.96	1.00	1.08	1.24
16	1.16	1.04	0.98	0.94	0.95	0.95	0.88	0.84	0.86	0.85	0.83	0.87	0.84	0.89	0.90	0.94	0.96	1.00	1.08	1.24
17	1.15	1.03	0.97	0.94	0.94	0.94	0.87	0.83	0.86	0.85	0.82	0.86	0.84	0.88	0.89	0.93	0.95	1.00	1.08	1.24
18	1.17	1.05	0.99	0.95	0.96	0.96	0.88	0.85	0.87	0.86	0.84	0.88	0.85	0.89	0.91	0.94	0.96	1.01	1.09	1.25
19	1.26	1.13	1.06	1.02	1.03	1.03	0.95	0.91	0.94	0.93	0.90	0.95	0.92	0.96	0.98	1.02	1.04	1.09	1.18	1.35
20	1.47	1.31	1.24	1.19	1.20	1.20	1.11	1.06	1.09	1.08	1.05	1.10	1.07	1.12	1.14	1.18	1.21	1.27	1.37	1.57

Table C- 23: 2D gradient map of plate D-7 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.61	1.46	1.37	1.30	1.26	1.23	1.11	1.16	1.13	1.11	1.15	1.22	1.22	1.21	1.18	1.30	1.34	1.40	1.48	1.66

2	1.42	1.29	1.21	1.15	1.12	1.09	0.98	1.02	1.00	0.98	1.01	1.08	1.07	1.07	1.04	1.15	1.19	1.24	1.30	1.47
3	1.31	1.18	1.11	1.05	1.02	1.00	0.90	0.94	0.92	0.90	0.93	0.99	0.98	0.98	0.96	1.05	1.09	1.14	1.20	1.34
4	1.23	1.12	1.05	0.99	0.97	0.94	0.85	0.88	0.87	0.85	0.88	0.93	0.93	0.92	0.90	0.99	1.03	1.07	1.13	1.27
5	1.21	1.10	1.03	0.97	0.95	0.92	0.83	0.87	0.85	0.83	0.86	0.92	0.91	0.91	0.89	0.97	1.01	1.05	1.11	1.25
6	1.22	1.11	1.04	0.98	0.96	0.93	0.84	0.88	0.86	0.84	0.87	0.93	0.92	0.92	0.90	0.98	1.02	1.06	1.12	1.26
7	1.20	1.09	1.02	0.97	0.94	0.91	0.83	0.86	0.84	0.83	0.85	0.91	0.90	0.90	0.88	0.96	1.00	1.04	1.10	1.23
8	1.15	1.04	0.97	0.93	0.90	0.88	0.79	0.82	0.81	0.79	0.82	0.87	0.87	0.86	0.84	0.92	0.96	1.00	1.05	1.18
9	1.21	1.10	1.03	0.98	0.95	0.92	0.83	0.87	0.85	0.83	0.86	0.92	0.91	0.91	0.89	0.97	1.01	1.05	1.11	1.25
10	1.20	1.09	1.02	0.97	0.94	0.91	0.83	0.86	0.84	0.83	0.85	0.91	0.90	0.90	0.88	0.97	1.00	1.04	1.10	1.24
11	1.16	1.05	0.99	0.94	0.91	0.89	0.80	0.84	0.82	0.80	0.83	0.88	0.88	0.87	0.85	0.94	0.97	1.01	1.07	1.20
12	1.16	1.05	0.98	0.94	0.91	0.89	0.80	0.83	0.82	0.80	0.82	0.88	0.88	0.87	0.85	0.93	0.97	1.01	1.06	1.20
13	1.17	1.06	0.99	0.94	0.91	0.89	0.80	0.84	0.82	0.80	0.83	0.88	0.88	0.87	0.85	0.94	0.97	1.01	1.07	1.20
14	1.22	1.11	1.04	0.98	0.96	0.93	0.84	0.88	0.86	0.84	0.87	0.93	0.92	0.92	0.89	0.98	1.02	1.06	1.12	1.26
15	1.17	1.06	0.99	0.94	0.92	0.89	0.80	0.84	0.82	0.81	0.83	0.89	0.88	0.88	0.86	0.94	0.97	1.02	1.07	1.20
16	1.17	1.06	0.99	0.94	0.91	0.89	0.80	0.84	0.82	0.80	0.83	0.89	0.88	0.88	0.86	0.94	0.97	1.01	1.07	1.20
17	1.17	1.06	0.99	0.94	0.92	0.89	0.81	0.84	0.82	0.81	0.83	0.89	0.88	0.88	0.86	0.94	0.98	1.02	1.07	1.21
18	1.16	1.05	0.98	0.93	0.91	0.88	0.80	0.83	0.82	0.80	0.82	0.88	0.87	0.87	0.85	0.93	0.97	1.01	1.06	1.19
19	1.30	1.18	1.11	1.05	1.02	0.99	0.90	0.94	0.92	0.90	0.93	0.99	0.98	0.98	0.96	1.05	1.09	1.13	1.19	1.34
20	1.46	1.32	1.23	1.17	1.14	1.11	1.00	1.05	1.02	1.00	1.03	1.10	1.10	1.09	1.07	1.17	1.21	1.27	1.33	1.50

Table C- 24: 2D gradient map of plate D-8 where point (1, 1) is the top west corner of the plate and point (20, 20) is the bottom east corner of the plate at end of life

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1.42	1.35	1.26	1.20	1.17	1.08	1.13	1.10	1.11	1.09	1.07	1.13	1.12	1.19	1.16	1.21	1.22	1.28	1.39	1.48
2	1.33	1.27	1.19	1.13	1.11	1.02	1.07	1.03	1.05	1.03	1.01	1.07	1.05	1.12	1.09	1.14	1.14	1.20	1.31	1.39
3	1.28	1.22	1.14	1.08	1.06	0.97	1.02	0.99	1.00	0.98	0.96	1.02	1.01	1.07	1.04	1.09	1.10	1.15	1.25	1.33
4	1.14	1.09	1.02	0.97	0.94	0.87	0.91	0.88	0.89	0.88	0.86	0.91	0.90	0.96	0.93	0.97	0.98	1.03	1.12	1.19
5	1.15	1.10	1.03	0.98	0.95	0.88	0.92	0.89	0.90	0.89	0.87	0.92	0.91	0.97	0.94	0.98	0.99	1.04	1.13	1.20
6	1.15	1.10	1.03	0.98	0.96	0.88	0.92	0.89	0.90	0.89	0.87	0.92	0.91	0.97	0.94	0.98	0.99	1.04	1.13	1.20
7	1.10	1.05	0.98	0.93	0.91	0.84	0.88	0.85	0.86	0.84	0.83	0.88	0.87	0.92	0.90	0.94	0.94	0.99	1.08	1.14
8	1.10	1.05	0.98	0.93	0.91	0.84	0.88	0.85	0.86	0.84	0.83	0.88	0.87	0.92	0.90	0.94	0.94	0.99	1.08	1.14
9	1.11	1.06	0.99	0.94	0.92	0.85	0.89	0.86	0.87	0.85	0.84	0.89	0.88	0.93	0.91	0.95	0.95	1.00	1.09	1.16
10	1.11	1.06	0.99	0.95	0.92	0.85	0.89	0.86	0.87	0.86	0.84	0.89	0.88	0.94	0.91	0.95	0.96	1.00	1.09	1.16
11	1.12	1.07	1.00	0.95	0.93	0.85	0.90	0.87	0.88	0.86	0.85	0.89	0.88	0.94	0.92	0.96	0.96	1.01	1.10	1.17
12	1.16	1.10	1.03	0.98	0.96	0.88	0.92	0.89	0.91	0.89	0.87	0.92	0.91	0.97	0.94	0.99	0.99	1.04	1.14	1.20
13	1.09	1.04	0.97	0.93	0.90	0.83	0.87	0.84	0.86	0.84	0.82	0.87	0.86	0.92	0.89	0.93	0.94	0.98	1.07	1.14
14	1.12	1.07	1.00	0.95	0.93	0.85	0.89	0.86	0.88	0.86	0.84	0.89	0.88	0.94	0.91	0.95	0.96	1.01	1.10	1.16
15	1.11	1.06	0.99	0.94	0.92	0.85	0.89	0.86	0.87	0.85	0.84	0.89	0.88	0.93	0.91	0.95	0.95	1.00	1.09	1.16
16	1.09	1.04	0.98	0.93	0.91	0.83	0.87	0.85	0.86	0.84	0.83	0.87	0.86	0.92	0.89	0.93	0.94	0.99	1.07	1.14
17	1.18	1.13	1.05	1.00	0.98	0.90	0.94	0.91	0.93	0.91	0.89	0.94	0.93	0.99	0.97	1.01	1.01	1.06	1.16	1.23
18	1.15	1.09	1.02	0.97	0.95	0.87	0.92	0.89	0.90	0.88	0.86	0.91	0.90	0.96	0.94	0.98	0.98	1.03	1.13	1.19
19	1.23	1.18	1.10	1.05	1.02	0.94	0.99	0.95	0.97	0.95	0.93	0.99	0.97	1.04	1.01	1.05	1.06	1.11	1.21	1.29
20	1.32	1.26	1.18	1.12	1.10	1.01	1.06	1.02	1.04	1.02	1.00	1.05	1.04	1.11	1.08	1.13	1.13	1.19	1.30	1.38