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AFIP-6 Mark II Irradiation Summary Report

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AFIP-6 Mark II Irradiation Summary Report

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September 2012

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SUMMARY

Due to the incompletion of the Advanced Test Reactor (ATR) Full size plate In center flux trap Position (AFIP) experiment AFIP-6, a second irradiation (named AFIP-6 Mark II) of identical plates was performed. AFIP-6 Mark II was designed to evaluate high-power large-scale performance of monolithic uranium-molybdenum (U-Mo) fuels[1].

The following report summarizes the life of the AFIP-6 MKII experiment through end of irradiation, including a brief description of the safety analysis, as-run neutronic analysis results, hydraulic testing results, and thermal analysis results.

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FIGURES

TABLES

ACRONYMS

Al	Aluminum
ATR	Advanced Test Reactor
AFIP	ATR Full-size plate In center flux trap Position
CFT	Center Flux Trap
DAS	Data Acquisition System
EFPD	Effective Full Power Days
GTRI	Global Threat Reduction Initiative
FD	Fuel Development
HIP	Hot Isostatic Pressing
MCNP	Monte Carlo N-Particle
Mo	Molybdenum
RERTR	Reduced Enrichment Research and Test Reactor
U	Uranium
U-Mo	Uranium-Molybdenum
Zr	Zirconium

AFIP-6 Mark II Irradiation Summary Report

1. EXPERIMENT GOALS

In support of the Global Threat Reduction Initiative (GTRI) Fuel Development (FD) program (historically known as Reduced Enrichment for Research and Test Reactors [RERTR]), the Advanced Test Reactor (ATR) Full size plate In center flux trap Position (AFIP) experiment AFIP-6 Mark II (referred to as AFIP-6 MKII throughout this report) was designed to evaluate high-power large-scale performance of monolithic uranium-molybdenum (U-Mo) fuels[1].

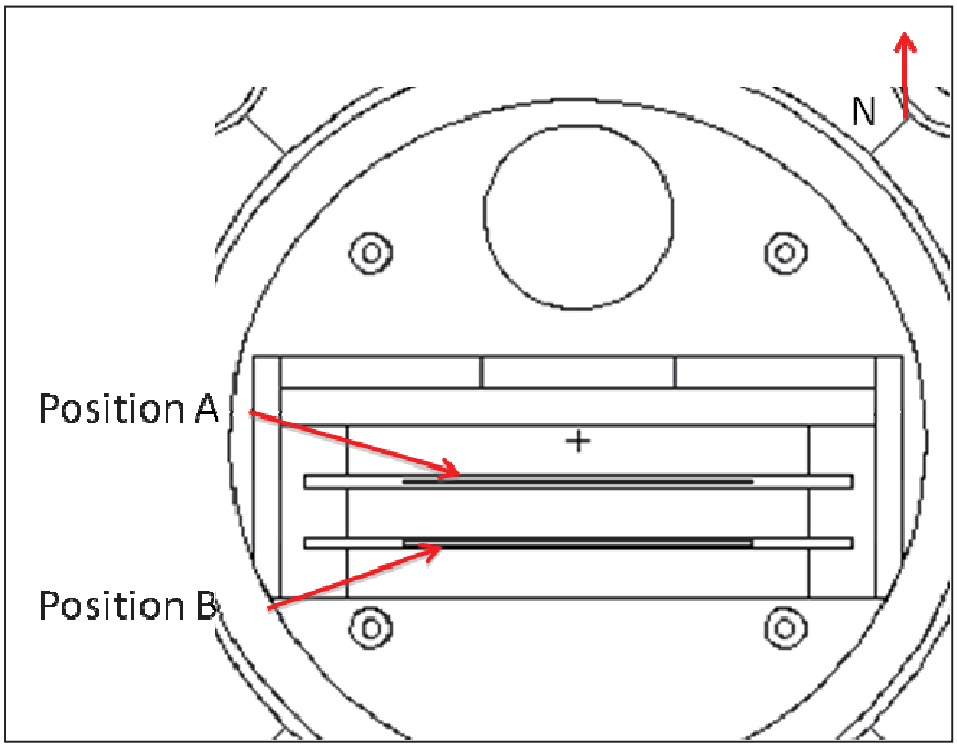

Figure 1: MCNP model X-Y view of the AFIP-6 MKII test assembly[2].

The AFIP-6 MKII experiment was irradiated in the ATR Center Flux Trap (CFT) position. The test assembly was designed to hold 2 full length fuel plates. Each plate is approximately 45 in. in length, 2.235 in. in width and 0.050 in. in thickness. The fuel zone was nominally 22.50 in. in length, 1.375 in. in width and 0.013 in. in thickness. A diffusion barrier of ~0.001 in. thick zirconium was bonded to the top and bottom surface of the fuel foil.

The AFIP-6 MKII experiment was originally designed to irradiate two plates, one plate was to be irradiated for two cycles and the other plate was to be irradiated for one cycle (such that the last cycle contained both plates). Due to structural challenges with a non-fueled component of the assembly, the AFIP-6 MKII experiment was pulled from the reactor resulting in the irradiation of only one plate for one cycle[3]. The original designed experiment matrix is shown in Table 1.

Table 1: Experiment matrix for AFIP-6 MKII with as-built enrichments.

AFIP-6 MKII Experiment Matrix	
Plate Position A	U-10 Mo 40.01% enrich. **6II-1**
Plate Position B	U-10 Mo 40.01% enrich. **6II-2**

2. CONSTITUENT MASSES AND DENSITIES

The constituent masses and densities for the 2 plates were obtained from the as-built data package[4] plate summary sheets. Table 2 summarizes the constituent masses for the plates and Table 3 summarizes the constituent densities for the plates.

Table 2: AFIP-6 MKII constituent masses[4].

Fuel Plate Location	Fuel Plate ID	Total-U (g)	U-238 (g)	U-235 (g)	Mo (g)	Zr (g)
A	6II-1	100.96	60.93	40.38	11.22	6.62
B	6II-2	102.33	60.81	40.94	11.17	5.66

Table 3: AFIP-6 MKII constituent densities.

		Fuel Foil					Interlayer	
Fuel Plate Location	Fuel Plate ID	Volume (cc)	Total-U (g/cc)	U-238 (g/cc)	U-235 (g/cc)	Mo (g/cc)	Volume (cc)	Zr (g/cc)
A	6II-1	6.59	15.32	9.24	6.13	1.70	1.01	6.53
B	6II-2	6.59	15.53	9.23	6.21	1.70	1.01	5.58

3. EXPERIMENT HARDWARE

The experiment hardware list for AFIP-6 MKII is shown in Table 4. The assembly retriever used for AFIP-1, -2, -3, -4 and -6 was also used for AFIP-6 MKII a new holder was designed to accommodate the new orifice design.

Table 4. AFIP-6 MKII Irradiation Hardware Drawing List.

Drawing Number	Drawing Title
635792, Rev 3	ATR Full Size Plate in Center Flux Trap Position (AFIP) Plate Holder Tube Assembly and Details
635793, Rev 1	ATR Full Size Plate in Center Flux Trap (AFIP) Test Train Assembly
759557, Rev 0	ATR Complex TRA-670 AFIP-6 Fuel Plate Assembly and Details
759558, Rev 0	ATR Complex TRA-670 AFIP-6 Fuel Plate Detail and Section

The AFIP-6 MKII test train assembly as shown in Figure 2 shows the main components of the test assembly, which includes the fuel plate assembly. Figure 3 shows the test train assembly with the retriever attached to the top. The retriever is used to get the test train assembly out of the reactor. Figure 4 has the specific fuel plate dimensions and nominal fuel foil dimensions. Figure 5 depicts the fuel element and Figure 6 is a radial cross section of the test train assembly and shows the locations of all the components.

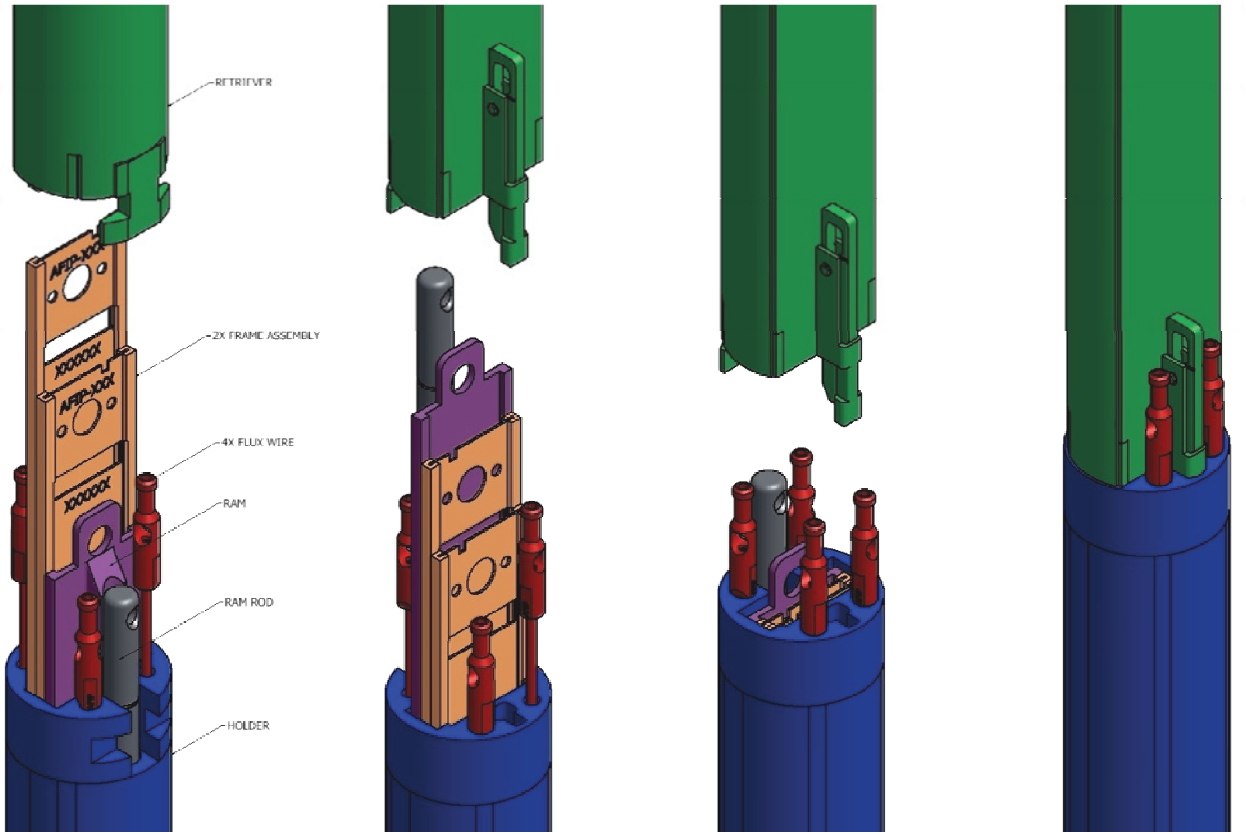

Figure 2: AFIP-6 MKII Test Train Assembly Details.

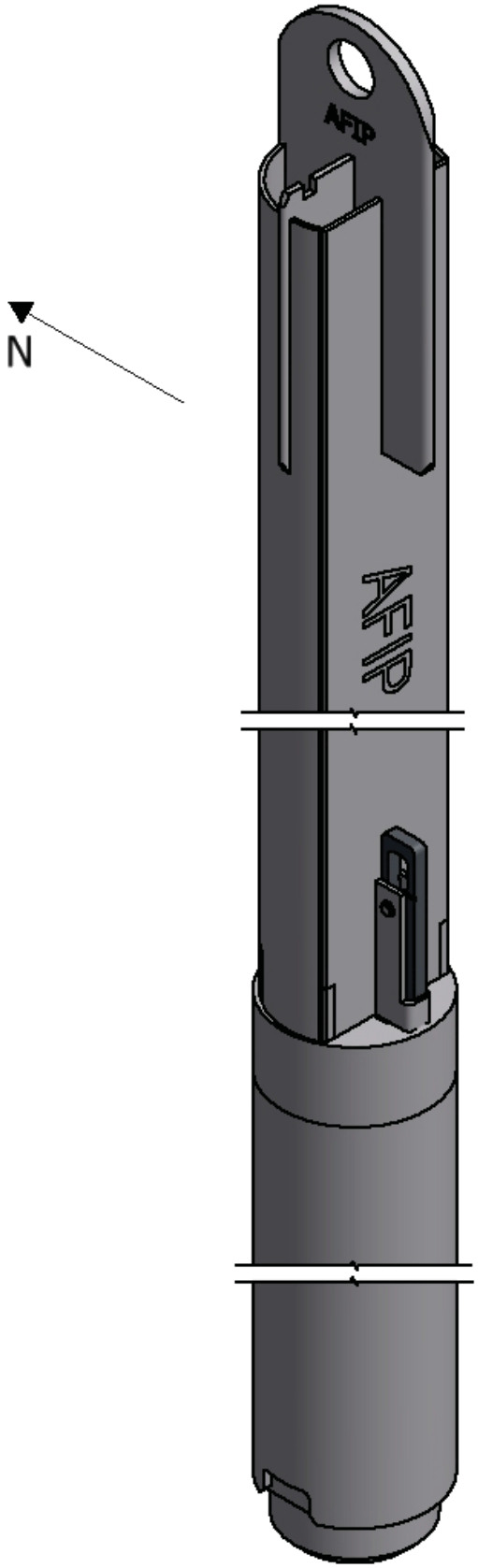

Figure 3: AFIP-6 MKII Test Train Assembly.

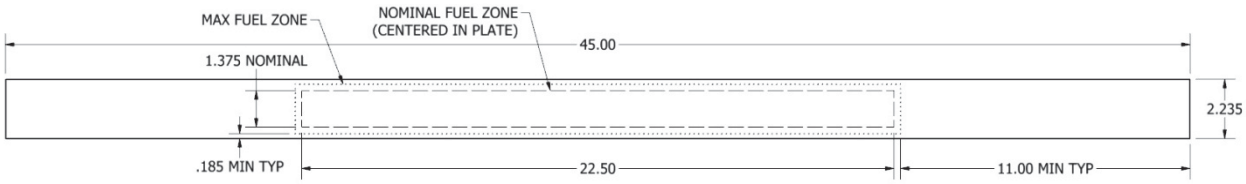

Figure 4: AFIP-6 MKII Plate Dimensions.

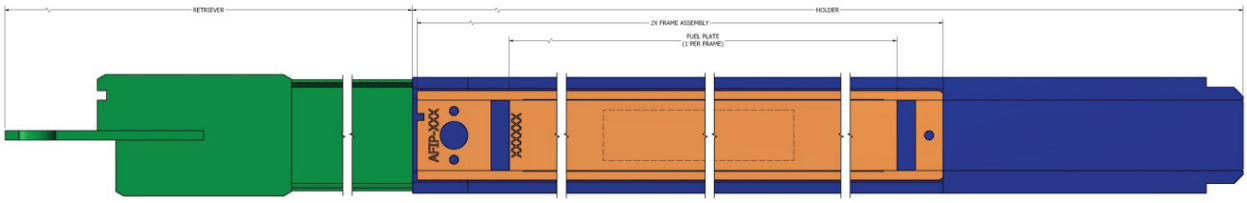

Figure 5: AFIP-6 MKII Fuel Element.

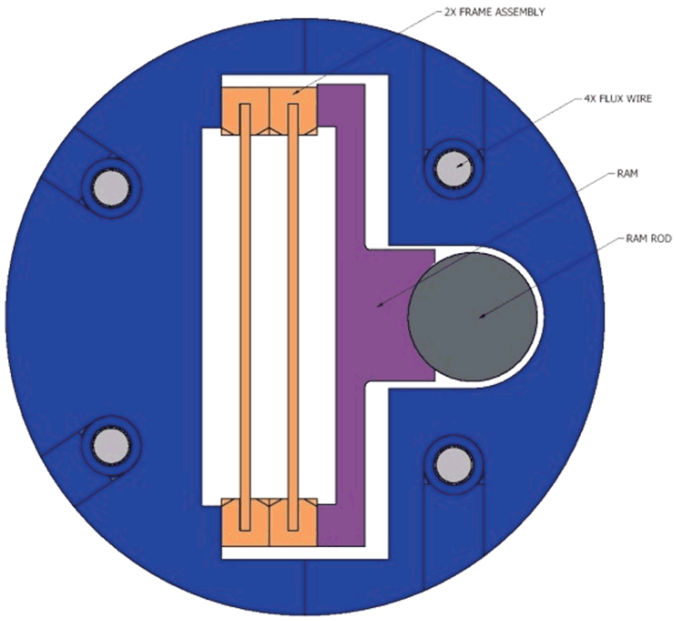

Figure 6: AFIP-6 MKII radial cross-section view.

4. SAFETY ANALYSIS

The safety analysis that was performed on the AFIP-6 MKII experiment includes thermal/hydraulic analysis, physics analysis, and structural analysis. Table 5 summarizes the safety analyses performed on the AFIP-6 MKII experiment.

Table 5: Summary table of the safety analyses done for the AFIP-6 MKII experiment.

ECAR Number	Description
ECAR-1577	ATR Physics Analysis of the AFIP-6 MKII Experiment in the Center Flux Trap
ECAR-1568	AFIP-6 MKII Test Train Structural Evaluations in ATR
ECAR-1641	AFIP-6 MKII Thermal Analysis
ECAR-121	Total Flow Evaluations for AFIP and Backups
ECAR-981	AFIP Half-Inch Backup Thermal Analysis

5. IRRADIATION HISTORY

The AFIP-6 MKII test assembly was irradiated during cycle151A in the ATR Center Flux Trap (CFT). Cycle 151A ran for 56.1 effective full power days (EFPDs) with an average center lobe power of 22.0 MW (total core average power of 101.7 MW). There was 1 mid-cycle scram with duration 3 days from 12/25/2011 – 12/28/2011. This information is summarized in Table 6.

Table 6: Irradiation history for AFIP-6 MKII.

ATR CYCLE	AFIP Test ID	Dates Irradiated	Cycle EFPDs	Mid-Cycle Scram Decay Days	Post-Cycle Decay Days	Center Flux Trap Power (MW)	Total Core Power (MW)
151A	AFIP-6 MKII	12/14/2011 – 02/11/2012	56.1	3	19	22.0	101.7

The hourly power history for cycle 151A is obtained as an ATR Surveillance Report from the ATR Data Acquisition System (DAS). The plot of each lobe power on an hourly basis is shown in Figure 7.

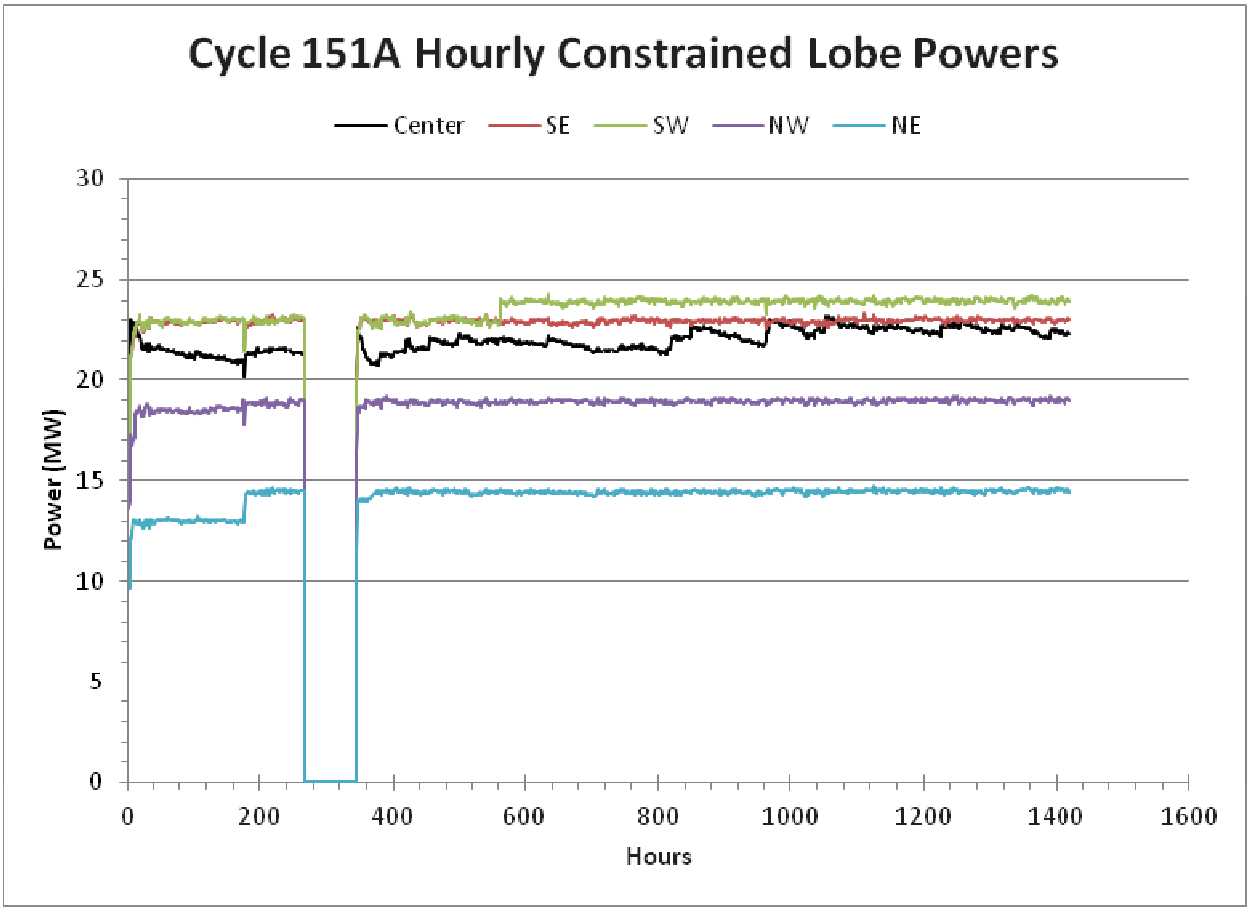

Figure 7: Hourly constrained lobe power history for Cycle 151A.

6. AS-RUN NUCLEAR ANALYSIS

6.1 Neutronics

The as-run calculations were performed using the irradiation history in Table 6, the Monte Carlo N-Particle (MCNP) code, ORIGEN2.2 and MCWO[2]. The calculated as-run fission heat rates, fission densities, and as-run U-235 burnup results for the fueled plates reported have an uncertainty band (1σ) of 2.5% [2]. The time intervals used to calculate the average plate power and burnup is shown in Table 7.

Table 7: Cycle breakdown.

Time Interval	151A (days)
BOC	0.0
MOC 1	15.0
MOC 2	19.0
EOC	22.1
Total EFPDs	56.1
Cumulative	56.1

The MCNP-calculated plate power and burnup for the time intervals for each cycle are shown in Table 8 through Table 11. The plots of the fission power density and fission density as a function of the ATR Cycle time interval are in Appendix A.

Table 8: Cycle 151A, MCNP-Calculated HGRs and Neutron Flux for AFIP-6 MKII, Plate 6II-1, 0 EFPD (BOC) Center Lobe Power at 22.8 MW. [2]

Node	Distance from Centerline (in.)	Fission Power Density (W/cc)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)
1	11	29760.15	491.34	9.59E+14
2	10.5	28295.36	467.16	9.84E+14
3	10	28736.31	474.44	1.00E+15
4	9.5	29046.13	479.55	1.01E+15
5	9	29723.63	490.74	1.04E+15
6	8.5	30380.47	501.58	1.05E+15
7	8	30636.54	505.81	1.06E+15
8	7.5	31289.00	516.58	1.09E+15
9	7	31612.15	521.92	1.09E+15
10	6.5	31813.56	525.24	1.10E+15
11	6	32087.32	529.76	1.12E+15
13	5.5	32407.15	535.04	1.13E+15
14	5	32448.26	535.72	1.13E+15
15	4.5	32567.71	537.69	1.13E+15
16	4	33024.34	545.23	1.14E+15
17	3.5	33024.80	545.24	1.15E+15
18	3	33482.58	552.80	1.16E+15
19	2.5	33344.99	550.53	1.16E+15
20	2	33904.99	559.77	1.17E+15
21	1.5	34385.51	567.70	1.17E+15
22	1	33815.99	558.30	1.18E+15
23	0.5	34134.99	563.57	1.17E+15
24	0	34639.55	571.90	1.17E+15
25	-0.5	34120.44	563.33	1.18E+15
26	-1	33798.31	558.01	1.17E+15
27	-1.5	34231.91	565.17	1.18E+15
28	-2	34396.07	567.88	1.18E+15
29	-2.5	34146.63	563.76	1.17E+15
30	-3	33997.65	561.30	1.17E+15
31	-3.5	34167.07	564.10	1.18E+15
32	-4	34117.54	563.28	1.17E+15
33	-4.5	33628.44	555.21	1.16E+15
34	-5	33138.04	547.11	1.16E+15
35	-5.5	33487.86	552.88	1.15E+15
36	-6	32776.77	541.14	1.14E+15
37	-6.5	33280.65	549.46	1.14E+15
38	-7	32834.64	542.10	1.13E+15
39	-7.5	32509.59	536.73	1.11E+15
40	-8	32120.95	530.32	1.11E+15
41	-8.5	31768.83	524.50	1.09E+15
42	-9	32030.59	528.83	1.08E+15
43	-9.5	30717.98	507.15	1.07E+15
44	-10	30332.55	500.79	1.05E+15
45	-10.5	30263.80	499.66	1.03E+15

Table 9: Cycle 151A, MCNP-Calculated HGRs, Neutron Flux, Depletion and Fission Density for AFIP-6 MKII, Plate 6II-1, 15 EFPD (MOC1) Center Lobe Power at 21.7 MW. [2]

Node	Distance from Centerline (in.)	Fission Power Density (W/cc)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)	Fission Density (fissions/cc)	U-235 Burnup (%)
1	11	21159.51	349.34	8.40E+14	1.23E+21	8.88%
2	10.5	19799.87	326.90	8.51E+14	1.17E+21	8.44%
3	10	20119.01	332.16	8.68E+14	1.19E+21	8.63%
4	9.5	20531.57	338.98	8.83E+14	1.20E+21	8.70%
5	9	20193.86	333.40	8.87E+14	1.23E+21	8.88%
6	8.5	20453.00	337.68	8.97E+14	1.26E+21	9.07%
7	8	20616.53	340.38	9.13E+14	1.27E+21	9.14%
8	7.5	20953.06	345.94	9.22E+14	1.29E+21	9.33%
9	7	21271.48	351.19	9.22E+14	1.31E+21	9.45%
10	6.5	21114.30	348.60	9.30E+14	1.31E+21	9.51%
11	6	21347.74	352.45	9.33E+14	1.33E+21	9.58%
13	5.5	21354.76	352.57	9.40E+14	1.34E+21	9.64%
14	5	21750.43	359.10	9.58E+14	1.34E+21	9.70%
15	4.5	21554.46	355.86	9.42E+14	1.35E+21	9.70%
16	4	21732.56	358.80	9.53E+14	1.36E+21	9.83%
17	3.5	22164.51	365.94	9.67E+14	1.36E+21	9.83%
18	3	21935.30	362.15	9.61E+14	1.38E+21	9.96%
19	2.5	21962.67	362.60	9.70E+14	1.38E+21	9.89%
20	2	22267.04	367.63	9.78E+14	1.40E+21	10.08%
21	1.5	21991.35	363.08	9.63E+14	1.42E+21	10.21%
22	1	22200.73	366.53	9.76E+14	1.40E+21	10.08%
23	0.5	21937.46	362.19	9.71E+14	1.41E+21	10.14%
24	0	22012.28	363.42	9.65E+14	1.43E+21	10.27%
25	-0.5	22009.23	363.37	9.79E+14	1.41E+21	10.14%
26	-1	22021.14	363.57	9.77E+14	1.40E+21	10.02%
27	-1.5	21880.17	361.24	9.76E+14	1.41E+21	10.14%
28	-2	22433.17	370.37	9.79E+14	1.42E+21	10.21%
29	-2.5	22074.61	364.45	9.61E+14	1.41E+21	10.14%
30	-3	22262.93	367.56	9.70E+14	1.41E+21	10.08%
31	-3.5	22189.44	366.35	9.71E+14	1.41E+21	10.14%
32	-4	22402.36	369.86	9.74E+14	1.41E+21	10.14%
33	-4.5	21890.66	361.41	9.64E+14	1.39E+21	9.96%
34	-5	21891.43	361.43	9.62E+14	1.37E+21	9.89%
35	-5.5	21663.97	357.67	9.52E+14	1.38E+21	9.96%
36	-6	21910.82	361.75	9.55E+14	1.35E+21	9.77%
37	-6.5	21839.81	360.58	9.47E+14	1.38E+21	9.89%
38	-7	21553.84	355.85	9.44E+14	1.36E+21	9.77%
39	-7.5	21195.11	349.93	9.34E+14	1.34E+21	9.70%
40	-8	21321.53	352.02	9.29E+14	1.33E+21	9.58%
41	-8.5	21245.98	350.77	9.21E+14	1.31E+21	9.51%
42	-9	21304.29	351.73	9.21E+14	1.32E+21	9.51%
43	-9.5	20849.74	344.23	9.02E+14	1.27E+21	9.20%
44	-10	21054.61	347.61	8.97E+14	1.25E+21	9.07%
45	-10.5	20979.90	346.38	8.86E+14	1.25E+21	9.01%

Table 10: Cycle 151A, MCNP-Calculated HGRs, Neutron Flux, Depletion and Fission Density for AFIP-6 MKII, Plate 6II-1, 34 EFPD (MOC2) Center Lobe Power at 22.5 MW. [2]

Node	Distance from Centerline (in.)	Fission Power Density (W/cc)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)	Fission Density (fissions/cc)	U-235 Burnup (%)
1	11	23744.85	392.03	8.91E+14	2.40E+21	17.33%
2	10.5	22422.25	370.19	8.98E+14	2.26E+21	16.38%
3	10	22738.26	375.41	9.12E+14	2.30E+21	16.64%
4	9.5	22879.16	377.74	9.27E+14	2.33E+21	16.89%
5	9	23138.93	382.02	9.37E+14	2.34E+21	16.95%
6	8.5	23634.97	390.21	9.55E+14	2.38E+21	17.27%
7	8	23647.91	390.43	9.73E+14	2.40E+21	17.39%
8	7.5	23609.92	389.80	9.75E+14	2.45E+21	17.71%
9	7	23964.65	395.66	9.74E+14	2.48E+21	17.96%
10	6.5	24107.11	398.01	9.84E+14	2.48E+21	17.90%
11	6	24177.32	399.17	9.94E+14	2.50E+21	18.08%
13	5.5	24455.46	403.76	9.96E+14	2.52E+21	18.15%
14	5	24354.30	402.09	1.00E+15	2.54E+21	18.34%
15	4.5	24539.57	405.15	1.00E+15	2.54E+21	18.27%
16	4	24661.65	407.16	1.01E+15	2.56E+21	18.46%
17	3.5	24802.30	409.49	1.02E+15	2.59E+21	18.65%
18	3	24996.93	412.70	1.01E+15	2.59E+21	18.65%
19	2.5	25019.45	413.07	1.02E+15	2.59E+21	18.65%
20	2	25345.22	418.45	1.04E+15	2.63E+21	18.90%
21	1.5	25169.13	415.54	1.03E+15	2.63E+21	18.97%
22	1	24969.87	412.25	1.02E+15	2.62E+21	18.84%
23	0.5	25401.95	419.39	1.03E+15	2.62E+21	18.84%
24	0	25300.50	417.71	1.03E+15	2.65E+21	19.03%
25	-0.5	25206.34	416.16	1.04E+15	2.62E+21	18.90%
26	-1	24924.95	411.51	1.02E+15	2.61E+21	18.78%
27	-1.5	25108.41	414.54	1.03E+15	2.62E+21	18.84%
28	-2	25291.40	417.56	1.03E+15	2.66E+21	19.16%
29	-2.5	25171.07	415.57	1.02E+15	2.63E+21	18.90%
30	-3	24896.27	411.04	1.02E+15	2.63E+21	18.97%
31	-3.5	24690.80	407.65	1.02E+15	2.64E+21	18.97%
32	-4	24691.61	407.66	1.01E+15	2.65E+21	19.03%
33	-4.5	24730.68	408.30	1.02E+15	2.60E+21	18.71%
34	-5	24790.46	409.29	1.01E+15	2.58E+21	18.59%
35	-5.5	24496.48	404.44	1.01E+15	2.58E+21	18.59%
36	-6	24550.03	405.32	1.00E+15	2.56E+21	18.46%
37	-6.5	24661.82	407.17	1.01E+15	2.58E+21	18.59%
38	-7	24546.04	405.26	9.96E+14	2.55E+21	18.40%
39	-7.5	24044.25	396.97	9.93E+14	2.51E+21	18.15%
40	-8	24181.86	399.24	9.82E+14	2.50E+21	18.08%
41	-8.5	23971.85	395.78	9.76E+14	2.49E+21	17.96%
42	-9	23853.55	393.82	9.75E+14	2.50E+21	18.02%
43	-9.5	23973.06	395.80	9.67E+14	2.42E+21	17.52%
44	-10	23981.65	395.94	9.60E+14	2.42E+21	17.45%
45	-10.5	23516.21	388.25	9.37E+14	2.41E+21	17.45%

Table 11: Cycle 151A, MCNP-Calculated HGRs, Neutron Flux, Depletion and Fission Density for AFIP-6 MKII, Plate 6II-1, 56.1 EFPD (EOC) Center Lobe Power at 23.9 MW. [2]

Node	Distance from Centerline (in.)	Fission Power Density (W/cc)	Surface Heat Flux (W/cm^2)	Neutron Flux (n/cm^2sec)	Fission Density (fissions/cc)	U-235 Burnup (%)
1	11	21120.13	348.69	8.71E+14	3.95E+21	28.10%
2	10.5	20089.19	331.67	8.80E+14	3.73E+21	26.65%
3	10	20257.74	334.46	8.92E+14	3.79E+21	27.03%
4	9.5	20417.17	337.09	9.05E+14	3.83E+21	27.35%
5	9	20575.07	339.69	9.14E+14	3.86E+21	27.54%
6	8.5	20886.12	344.83	9.31E+14	3.93E+21	28.04%
7	8	20971.77	346.24	9.49E+14	3.95E+21	28.17%
8	7.5	21002.81	346.76	9.51E+14	3.99E+21	28.48%
9	7	21275.14	351.25	9.50E+14	4.05E+21	28.86%
10	6.5	21352.66	352.53	9.57E+14	4.06E+21	28.86%
11	6	21351.21	352.51	9.67E+14	4.09E+21	29.11%
13	5.5	21563.51	356.01	9.67E+14	4.12E+21	29.24%
14	5	21526.58	355.40	9.79E+14	4.14E+21	29.36%
15	4.5	21659.45	357.60	9.75E+14	4.14E+21	29.43%
16	4	21748.67	359.07	9.88E+14	4.18E+21	29.62%
17	3.5	21903.17	361.62	9.92E+14	4.21E+21	29.87%
18	3	21958.46	362.53	9.85E+14	4.23E+21	29.99%
19	2.5	22011.74	363.41	9.92E+14	4.23E+21	29.99%
20	2	22247.28	367.30	1.01E+15	4.29E+21	30.37%
21	1.5	22136.46	365.47	1.00E+15	4.28E+21	30.31%
22	1	22015.27	363.47	9.91E+14	4.26E+21	30.18%
23	0.5	22299.65	368.17	1.00E+15	4.28E+21	30.31%
24	0	22171.71	366.05	1.00E+15	4.30E+21	30.43%
25	-0.5	22111.24	365.06	1.01E+15	4.27E+21	30.31%
26	-1	21942.29	362.27	9.95E+14	4.24E+21	30.12%
27	-1.5	22018.03	363.52	1.00E+15	4.26E+21	30.25%
28	-2	22218.18	366.82	1.00E+15	4.31E+21	30.56%
29	-2.5	22105.81	364.97	9.92E+14	4.28E+21	30.31%
30	-3	21982.25	362.93	9.96E+14	4.26E+21	30.18%
31	-3.5	21898.18	361.54	9.97E+14	4.25E+21	30.12%
32	-4	21790.72	359.76	9.89E+14	4.26E+21	30.18%
33	-4.5	21824.28	360.32	9.91E+14	4.22E+21	29.93%
34	-5	21837.40	360.54	9.86E+14	4.20E+21	29.80%
35	-5.5	21656.22	357.54	9.82E+14	4.18E+21	29.62%
36	-6	21690.03	358.10	9.76E+14	4.17E+21	29.62%
37	-6.5	21833.76	360.48	9.82E+14	4.19E+21	29.80%
38	-7	21672.74	357.82	9.69E+14	4.15E+21	29.49%
39	-7.5	21282.65	351.38	9.64E+14	4.09E+21	29.05%
40	-8	21361.39	352.68	9.57E+14	4.09E+21	29.05%
41	-8.5	21194.91	349.93	9.54E+14	4.05E+21	28.86%
42	-9	21179.77	349.68	9.50E+14	4.06E+21	28.86%
43	-9.5	21196.90	349.96	9.42E+14	3.99E+21	28.42%
44	-10	21231.97	350.54	9.34E+14	3.99E+21	28.42%
45	-10.5	20864.69	344.48	9.14E+14	3.95E+21	28.10%

6.2 Azimuthal Gradient

The MCNP-calculated power gradients in the axial and transverse directions are represented by the fission rate local-to-average ratios as a function of position along the fuel plate. The 2-D gradient map for Plate 6II-1 is shown in Table 12. Note: the L2ARs shown were calculated at the beginning of life (BOC 151A).

Table 12. Azimuthal L2AR for the AFIP-6 MKII Plate 6II-1 at BOC 151A.

	Distance from Left Edge of the Plate (%)																			
Distance from Centerline (inches)	2.5%	7.5%	12.5%	17.5%	22.5%	27.5%	32.5%	37.5%	42.5%	47.5%	52.5%	57.5%	62.5%	67.5%	72.5%	77.5%	82.5%	87.5%	92.5%	97.5%
11	1.04	1.02	0.95	1.00	0.98	0.99	1.03	1.02	0.94	0.98	0.98	1.00	0.93	1.01	1.04	0.98	1.02	1.03	1.02	1.05
10.5	1.04	0.99	1.02	1.00	1.01	0.99	1.05	0.97	1.01	0.96	0.97	1.01	0.98	0.96	0.93	0.97	0.99	1.04	1.05	1.04
10	1.15	1.03	1.04	1.03	0.96	0.99	0.92	0.96	0.94	0.97	0.96	0.90	0.95	0.96	0.97	1.02	1.01	1.00	1.09	1.15
9.5	1.13	1.03	1.00	1.03	1.01	1.01	0.98	1.02	0.96	0.95	0.99	0.97	0.93	1.00	0.98	0.99	0.91	1.00	1.05	1.07
9	1.12	0.97	1.02	1.02	0.99	1.01	0.95	0.99	1.01	0.95	0.96	0.96	1.01	1.01	0.96	1.00	0.96	0.98	1.05	1.08
8.5	1.08	1.05	1.04	1.02	1.03	1.00	0.99	0.97	0.96	0.97	0.94	0.99	0.94	0.93	1.00	1.01	1.01	1.02	1.02	1.02
8	1.13	1.05	1.00	1.05	0.98	0.98	0.97	0.99	0.97	1.00	0.90	0.98	0.95	0.99	0.94	0.98	0.98	1.02	1.07	1.06
7.5	1.11	1.08	1.03	0.98	1.00	1.01	0.94	0.96	0.98	0.99	0.94	0.91	0.93	1.01	1.01	0.95	0.99	1.06	1.05	1.07
7	1.10	1.00	0.99	0.97	0.98	1.04	0.95	1.02	0.98	0.97	1.00	0.96	0.93	0.98	0.96	1.05	0.99	1.02	1.01	1.11
6.5	1.09	1.06	1.03	1.00	0.99	0.98	1.03	0.95	0.93	0.97	1.00	1.00	1.01	1.00	0.95	1.00	0.98	0.93	1.02	1.07
6	1.05	1.05	0.98	0.99	0.98	0.97	0.96	0.98	0.95	0.99	0.94	0.96	0.99	0.97	1.01	1.05	1.01	1.03	1.04	1.09
5.5	1.06	1.06	1.06	1.01	1.00	0.96	1.00	0.93	1.01	1.03	0.94	0.98	0.93	0.95	0.99	0.99	0.98	1.00	1.07	1.06
5	1.08	1.04	1.03	0.95	1.00	1.00	1.02	0.97	0.92	0.96	1.02	1.00	0.95	0.98	0.97	0.93	1.02	1.04	1.04	1.08
4.5	1.08	1.00	1.01	0.99	1.01	0.96	0.95	1.03	0.98	0.94	0.97	0.97	1.00	0.93	1.03	1.02	1.01	0.98	1.03	1.10
4	1.14	1.05	1.06	1.04	1.00	0.94	0.96	0.95	0.95	1.00	0.95	0.97	0.97	0.97	0.97	0.97	1.02	0.98	0.97	1.13
3.5	1.05	1.01	1.01	1.01	1.03	0.96	1.03	0.97	0.98	0.97	1.01	0.96	0.95	0.92	0.99	0.98	1.04	1.06	1.07	1.03
3	1.06	1.03	1.00	0.97	1.00	1.01	1.03	0.99	0.97	0.97	0.99	0.95	0.94	0.94	0.94	1.01	1.01	1.06	1.07	1.09
2.5	1.06	1.00	1.00	1.05	1.02	1.01	1.02	0.93	0.94	0.96	0.98	0.95	1.00	0.98	0.99	0.98	1.01	1.00	1.03	1.08
2	1.09	1.02	1.05	1.02	0.96	0.96	0.93	0.99	0.99	0.99	0.98	0.94	0.97	0.98	0.98	0.99	1.02	1.00	1.00	1.14
1.5	1.09	1.06	1.01	1.03	0.98	0.98	1.00	1.01	0.94	0.97	0.96	0.95	0.95	0.99	0.96	0.98	1.01	1.02	1.04	1.07
1	1.09	1.04	1.01	0.97	1.01	1.02	0.96	0.99	0.99	0.95	0.98	0.93	0.98	0.94	1.01	0.95	0.98	1.05	1.01	1.12
0.5	1.07	1.00	1.02	1.06	0.97	0.97	1.01	0.92	1.01	0.97	0.93	0.95	0.95	0.99	0.98	1.00	1.06	0.99	1.02	1.12
0	1.09	1.05	0.98	1.02	1.05	0.98	0.99	0.98	1.00	1.00	0.96	0.97	0.94	0.96	0.93	0.90	1.02	1.03	1.05	1.09
-0.5	1.09	1.07	0.97	1.00	0.96	0.93	0.96	0.96	0.95	1.01	0.96	0.97	1.01	0.99	0.97	1.01	1.05	1.02	1.05	1.10
-1	1.10	1.05	1.05	0.99	0.97	0.96	0.96	0.98	0.99	1.01	0.98	0.94	1.01	0.95	1.03	0.97	0.98	0.99	1.03	1.07
-1.5	1.12	1.04	0.98	1.00	1.05	1.03	0.93	0.94	0.97	0.95	0.97	0.93	0.97	1.00	0.99	0.97	0.96	0.96	1.07	1.14
-2	1.10	1.01	1.02	1.00	0.96	0.97	1.01	1.01	0.99	0.97	1.00	0.93	0.97	1.00	1.00	1.01	0.97	0.91	1.08	1.10
-2.5	1.08	1.07	0.94	0.99	1.03	1.01	0.98	0.97	0.96	0.96	0.93	0.96	0.97	0.97	0.96	0.99	1.00	1.06	1.05	1.13
-3	1.09	1.05	1.00	0.98	1.00	0.98	0.96	0.98	0.95	0.94	0.99	1.01	1.00	0.96	0.97	1.01	1.01	1.01	1.01	1.11
-3.5	1.11	0.98	1.03	1.01	0.93	0.98	0.96	1.03	1.00	0.95	0.95	0.96	0.96	1.01	1.03	0.99	0.98	1.00	1.05	1.09
-4	1.09	1.00	0.99	0.96	0.96	0.93	1.01	1.02	1.03	0.94	1.00	0.94	0.92	1.03	1.00	1.02	1.00	1.05	1.03	1.08

	Distance from Left Edge of the Plate (%)																			
Distance from Centerline (inches)	2.5%	7.5%	12.5%	17.5%	22.5%	27.5%	32.5%	37.5%	42.5%	47.5%	52.5%	57.5%	62.5%	67.5%	72.5%	77.5%	82.5%	87.5%	92.5%	97.5%
-4.5	1.12	1.08	1.03	1.00	0.97	0.95	0.91	0.98	0.98	1.00	0.92	0.93	0.97	0.95	0.99	1.00	1.04	0.97	1.07	1.12
-5	1.13	1.03	0.96	0.98	1.00	0.99	0.97	0.97	0.98	0.97	0.95	0.95	0.91	1.00	1.00	1.00	1.02	1.04	1.04	1.11
-5.5	1.09	1.04	1.03	1.02	0.96	0.97	0.97	0.98	0.98	0.97	0.96	0.93	1.00	0.99	0.98	0.98	1.02	1.00	1.00	1.12
-6	1.10	1.02	1.04	0.98	0.99	0.99	0.96	1.02	0.96	0.98	0.98	0.97	0.95	0.96	0.97	0.96	1.00	0.99	1.10	1.10
-6.5	1.11	1.05	1.05	1.03	1.00	0.98	0.97	1.00	1.00	0.97	1.00	0.93	0.90	0.97	0.92	1.00	1.01	0.98	1.02	1.10
-7	1.10	1.00	0.93	0.98	0.96	0.98	0.95	0.97	1.01	1.00	1.00	1.00	0.95	0.99	0.94	0.98	1.08	1.02	1.07	1.09
-7.5	1.12	1.08	1.03	1.00	0.99	1.00	0.99	0.93	0.94	0.95	0.96	0.97	0.95	0.98	0.95	1.00	1.05	1.06	0.98	1.06
-8	1.10	1.06	1.01	1.01	0.94	0.96	0.91	0.95	0.94	0.97	0.99	1.04	0.94	0.95	1.02	1.02	1.04	0.97	1.05	1.13
-8.5	1.07	1.00	1.04	0.97	0.98	1.00	0.95	0.97	0.93	1.02	1.00	0.99	0.99	0.96	0.95	1.00	1.01	1.04	1.01	1.14
-9	1.05	0.98	1.00	0.96	1.02	0.95	0.98	0.96	0.95	0.96	0.98	1.01	0.96	1.01	0.97	1.03	0.98	1.05	1.07	1.11
-9.5	1.08	1.03	1.03	0.99	0.97	0.94	1.00	0.96	0.99	0.98	0.94	0.97	1.00	0.98	1.02	0.97	0.99	1.03	1.03	1.09
-10	1.12	1.04	1.05	0.99	0.94	1.00	1.01	0.96	0.99	0.98	0.94	0.98	1.01	0.93	0.98	1.02	0.99	1.03	0.99	1.06
-10.5	1.15	1.04	0.97	0.99	0.98	0.98	0.94	1.00	0.98	0.98	1.00	0.96	1.05	0.96	0.98	0.96	0.99	1.02	1.02	1.03
-11	1.08	1.05	1.00	1.02	0.99	0.96	0.96	0.95	0.98	1.01	0.94	1.01	0.98	0.96	0.96	1.04	1.02	1.01	0.99	1.10

7. HYDRAULIC TESTING

Flow tests were performed to characterize the test assembly designed to irradiate full-size plates for the RERTR program in the ATR. The holder assembly design was used for several plate tests that were conducted in the CFT position[5].

The test apparatus was designed and constructed to simulate the ATR CFT position geometry. The holder was fabricated such that the orifice plate on the bottom of the test train could be screwed on (rather than welded) to allow variation of the orifice diameter. The results of the flow tests were used to generate estimates of the coolant velocity and flow rate and are reported in Table 13[5].

Table 13. AFIP irradiation vehicle flow conditions for each orifice configuration[5].

Configuration	Total Internal Loss Coefficient	Total Holder Internal Flow (gpm)	Channel Coolant Flow (gpm)	Channel Coolant Velocity (m/s)
6 mm orifice	0.1709	20.8	6.6	1.7
7 mm orifice	0.1203	24.8	7.9	2.0
8 mm orifice	0.0869	29.2	9.3	2.4
8.1 mm orifice	0.0861	29.3	9.3	2.4
9 mm orifice	0.0680	33.0	10.5	2.7
10 mm orifice	0.0568	36.1	11.5	3.0
Open (no orifice)	0.00164	212.5	67.5	17.4

Based on the results from the hydraulic testing, and the results from the original AFIP-6 experiment, the orifice was removed to allow a flow rate of 18.2 m/s (59.6ft/s) through the coolant channels (see Figure 8 below)[6].

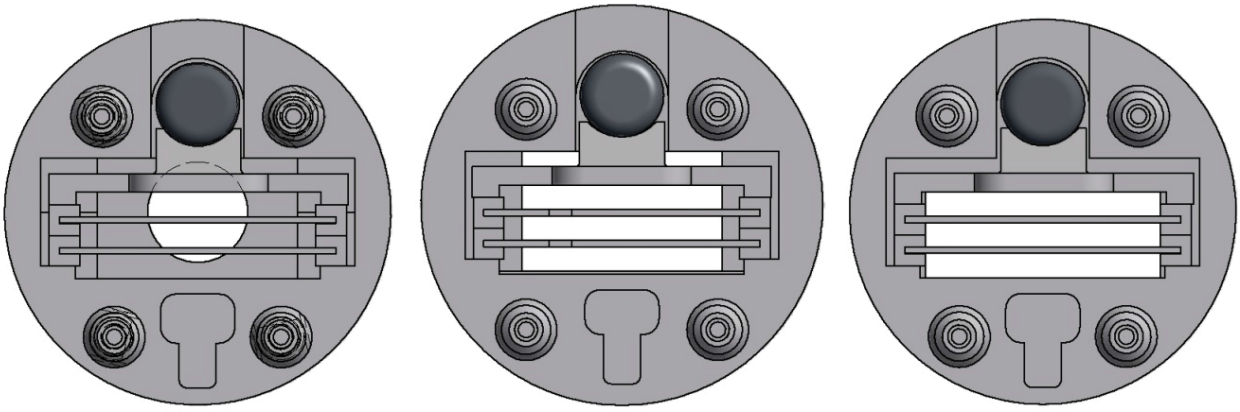

Figure 8. AFIP-6 Orifice Selection.

8. 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[7] 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 8):

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

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.

8.1 Coolant Channel Temperature

The coolant temperature was analyzed at the two flow channels surrounding the plate in position A in the test assembly. For each cycle interval, the coolant temperature was plotted as a function of location along the test assembly with 0.0 in. being at the top of the assembly. These plots are show in Figure 10 through Figure 13.

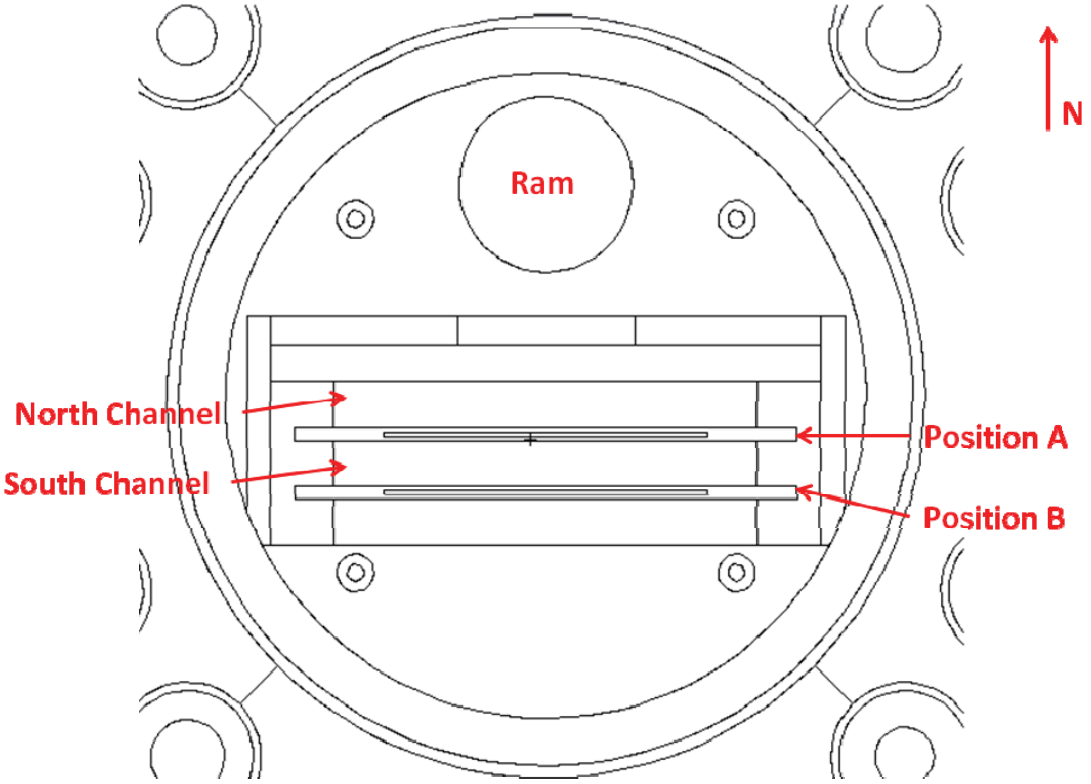

Figure 9. Coolant channel diagram.

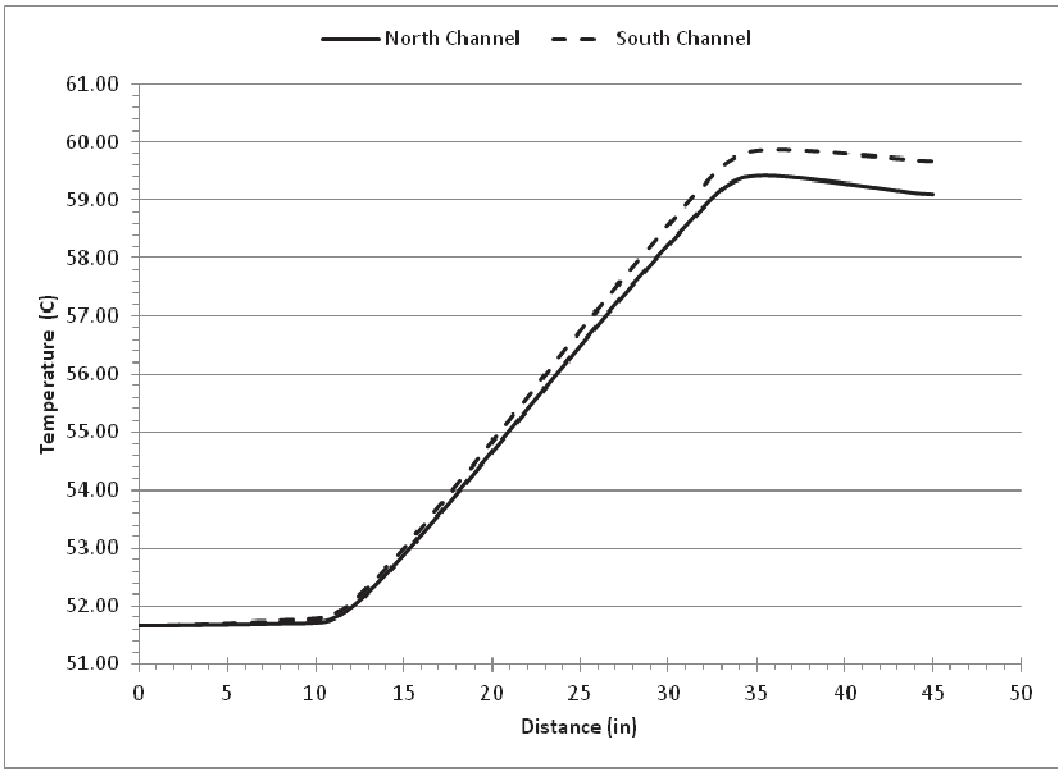

Figure 10: Coolant channel temperatures as a function of location along the AFIP-6 MKII test assembly at BOC 151A (0.0 EFPD).

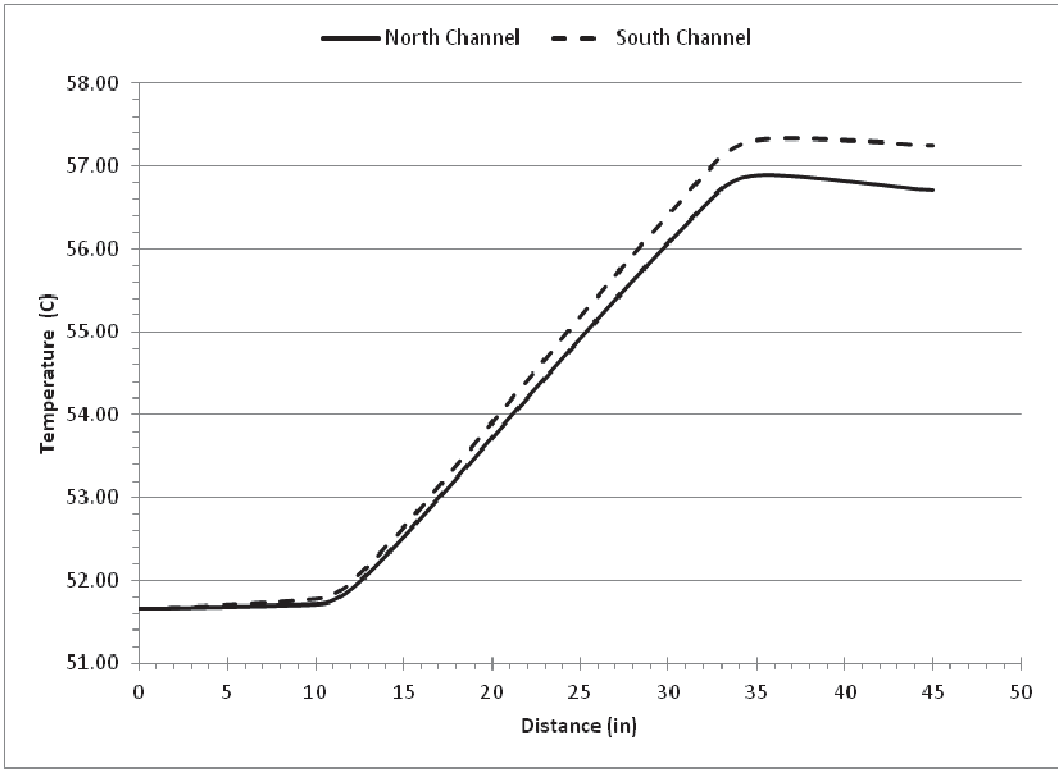

Figure 11: Coolant channel temperatures as a function of location along the AFIP-6 MKII test assembly at MOC1 151A (15.0 EFPD).

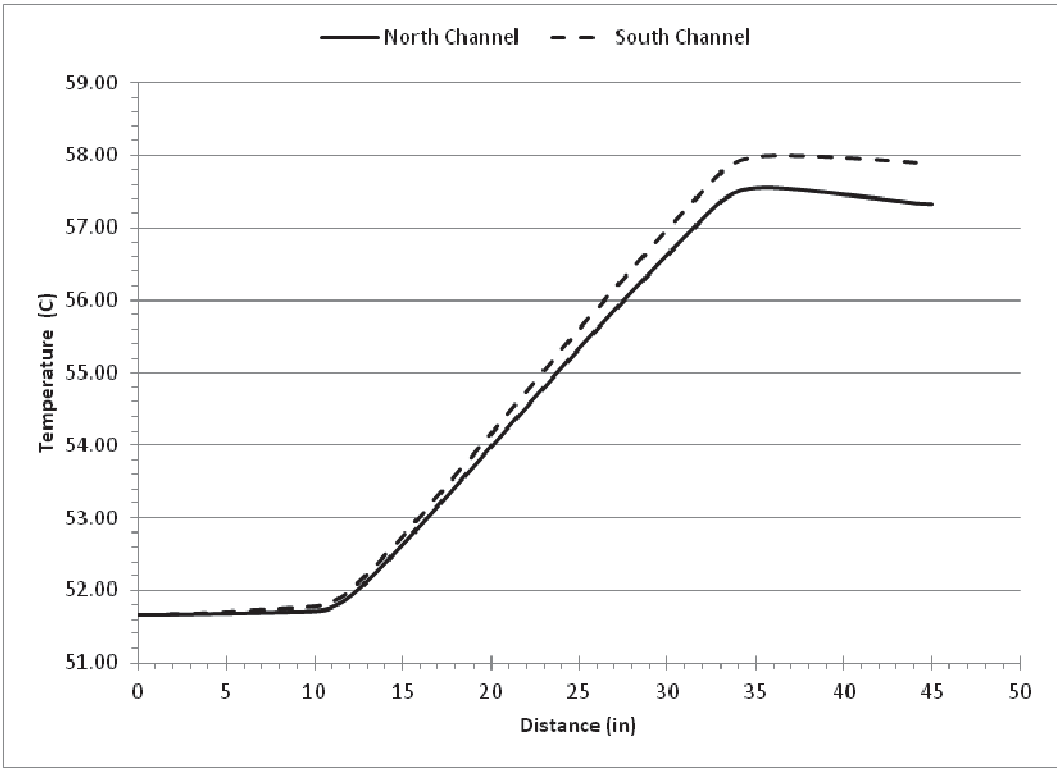

Figure 12: Coolant channel temperatures as a function of location along the AFIP-6 MKII test assembly at MOC2 151A (34.0 EFPD).

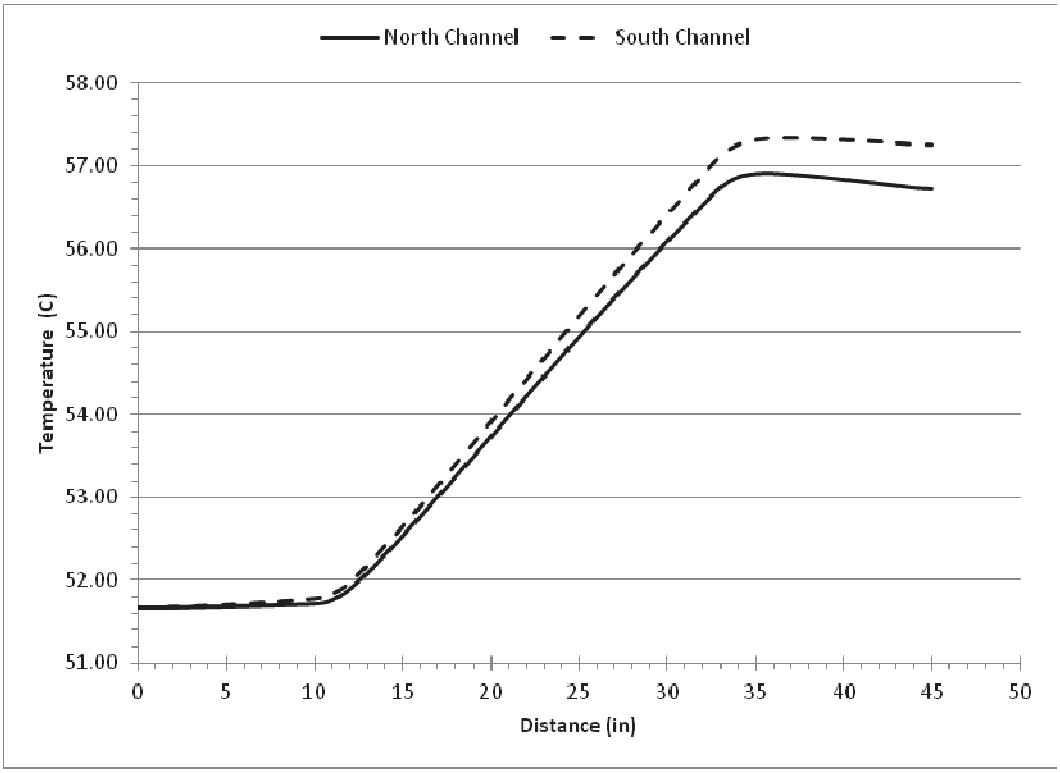

Figure 13: Coolant channel temperatures as a function of location along the AFIP-6 MKII test assembly at EOC 151A (56.1 EFPD).

8.2 Plate Surface Temperature

The plate surface temperatures were analyzed at each time step for each side of the plate, with the top side of the plate facing north. Table 14 through Table 21 tabulate the 2D map of the temperatures for each side of the plate at each time step for cycle 151A.

Table 14. Plate surface temperatures (Celsius) on the North side of plate 6II-1 in plate position A (BOC 151A 0 EFPD).

	0.00	**0.34**	**0.43**	**0.50**	**0.64**	**0.77**	**0.91**	**1.05**	**1.19**	**1.32**	**1.46**	**1.60**	**1.74**	**1.81**	**1.90**	**2.24**
0.0	52.5	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	52.5
11.0	54.5	52.3	52.4	52.4	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.5	52.4	52.3	54.6
11.1	54.6	53.5	55.0	56.1	57.6	57.7	57.7	57.7	57.7	57.7	57.8	57.7	56.2	55.1	53.5	54.6
11.3	54.6	56.6	72.1	87.4	90.4	90.9	91.6	90.2	90.7	90.5	91.6	91.8	87.8	72.3	56.6	54.6
11.4	54.7	59.5	87.7	117.5	121.6	122.5	123.9	121.1	122.3	121.8	123.9	124.3	118.3	88.0	59.6	54.7
11.5	54.7	60.5	89.3	119.5	124.3	125.2	126.6	123.8	125.0	124.5	126.6	127.0	120.3	89.6	60.6	54.7
12.0	54.8	60.4	87.8	116.6	123.4	123.5	123.7	122.3	122.4	121.6	120.4	123.7	118.3	88.3	60.5	54.8
12.5	54.9	61.3	91.4	121.4	125.6	122.9	121.2	121.7	120.5	121.4	123.9	125.0	122.6	91.5	61.3	54.9
13.0	55.0	61.4	91.3	121.5	125.9	125.7	124.8	123.0	123.7	123.3	124.1	122.9	120.4	89.9	61.0	55.0
13.5	55.1	61.5	91.6	121.3	127.5	126.7	125.4	125.5	124.7	126.8	125.7	125.4	122.2	91.1	61.3	55.1
14.0	55.2	61.6	91.9	123.9	130.0	129.2	127.3	126.2	126.2	125.0	128.4	129.2	121.4	90.2	61.2	55.2
14.5	55.3	62.1	93.6	125.7	130.3	128.1	128.0	127.8	125.7	127.0	126.7	129.3	124.7	92.0	61.6	55.3
15.0	55.4	62.2	94.0	127.4	131.1	130.4	128.1	129.2	126.4	128.6	129.7	131.6	125.8	92.7	61.9	55.4
15.5	55.4	62.3	93.8	125.8	130.0	131.4	130.9	130.3	129.8	128.6	131.5	131.6	126.3	94.0	62.3	55.5
16.0	55.5	62.4	94.1	127.7	132.8	131.4	131.0	129.4	132.1	132.1	130.5	129.4	125.7	93.4	62.2	55.5
16.5	55.6	62.3	93.4	126.8	132.0	131.3	130.7	130.7	130.1	131.7	134.0	134.0	127.8	94.4	62.5	55.7
17.0	55.7	62.5	94.1	128.3	135.6	132.6	131.5	134.0	131.3	130.1	132.3	132.9	128.2	94.1	62.5	55.7
17.5	55.8	62.7	94.8	128.6	133.5	133.6	132.9	130.6	133.8	131.6	130.9	135.1	128.5	94.7	62.7	55.8
18.0	55.9	62.8	94.6	127.5	133.9	133.1	133.2	132.1	132.5	132.3	135.1	134.0	128.9	95.5	62.9	55.9
18.5	56.0	63.4	97.2	131.9	137.8	133.7	132.3	133.3	133.0	133.3	133.5	134.8	129.1	96.5	63.3	56.0
19.0	56.1	62.9	94.6	128.0	135.7	135.1	135.0	133.8	134.0	131.6	134.3	137.9	129.5	94.5	62.8	56.1
19.5	56.2	63.2	95.6	129.8	135.4	136.5	136.9	134.8	134.2	132.4	134.8	138.3	132.0	96.5	63.4	56.2
20.0	56.3	63.2	95.3	128.9	137.4	137.3	134.8	133.3	134.3	135.7	135.6	136.3	130.3	96.0	63.3	56.3
20.5	56.4	63.7	97.0	131.8	138.8	134.9	135.2	136.9	135.3	136.0	136.7	137.8	132.3	98.0	63.9	56.4
21.0	56.4	63.9	97.8	133.9	139.6	137.9	138.4	136.0	135.7	136.4	136.9	139.3	132.6	97.1	63.7	56.4
21.5	56.6	63.9	97.3	132.3	137.0	138.2	136.6	136.0	135.1	135.2	136.1	138.0	132.4	97.8	64.0	56.5
22.0	56.6	63.9	96.8	131.2	139.9	137.3	136.6	137.3	134.8	136.4	138.2	139.7	133.1	98.3	64.2	56.6
22.5	56.7	64.2	98.1	134.0	139.9	140.6	138.6	139.6	137.5	136.0	134.6	140.5	134.3	98.3	64.2	56.7
23.0	56.8	64.2	97.7	133.4	137.5	135.4	135.9	137.0	137.1	138.2	138.3	140.5	133.5	98.0	64.2	56.8
23.5	56.9	64.3	97.8	133.3	139.0	136.0	136.3	138.1	136.4	136.9	137.6	136.8	131.6	96.9	64.1	56.9
24.0	56.9	64.6	98.8	134.1	139.0	140.9	135.8	136.9	136.4	137.9	137.8	136.9	135.5	99.7	64.8	56.9

24.5	57.0	64.6	98.3	133.2	139.5	137.9	140.2	138.6	137.6	138.5	139.5	136.7	134.4	98.6	64.6	57.0
25.0	57.1	64.6	97.9	133.5	137.7	140.1	137.8	136.6	135.9	137.1	137.7	140.8	135.2	99.4	64.9	57.1
25.5	57.2	64.7	98.1	133.5	138.2	138.1	137.0	136.2	139.0	138.0	138.3	139.5	133.0	98.5	64.8	57.1
26.0	57.2	64.9	98.5	132.5	139.8	137.0	139.3	138.2	136.9	138.7	140.0	138.9	134.1	98.5	64.8	57.2
26.5	57.3	64.9	98.2	132.6	137.3	136.7	140.2	139.2	137.5	137.9	140.2	140.8	133.5	98.2	64.8	57.3
27.0	57.4	65.2	99.2	135.0	139.4	136.2	135.6	138.0	134.9	136.4	138.5	138.8	134.4	99.0	65.1	57.3
27.5	57.4	65.1	98.6	132.6	136.0	137.4	136.3	136.3	134.9	135.4	137.9	139.3	132.6	98.0	65.0	57.4
28.0	57.5	65.1	98.1	133.0	139.7	136.8	137.1	137.3	135.7	138.2	137.8	138.9	132.6	98.7	65.2	57.5
28.5	57.6	65.0	97.5	131.4	137.7	136.5	136.6	135.9	135.8	134.8	135.3	137.0	133.2	97.8	65.0	57.5
29.0	57.6	65.4	98.6	133.7	140.5	138.2	137.9	138.1	136.1	134.5	136.0	137.7	132.3	98.2	65.2	57.6
29.5	57.7	65.2	97.7	130.7	134.7	135.8	135.8	138.2	137.7	136.1	136.2	140.0	132.6	97.6	65.2	57.6
30.0	57.7	65.4	98.3	133.1	138.0	136.8	135.0	134.2	135.2	135.2	136.1	139.4	129.4	96.4	65.0	57.7
30.5	57.8	65.3	97.3	131.3	136.4	133.7	132.4	134.3	137.3	134.2	137.5	136.8	131.9	98.2	65.5	57.7
31.0	57.8	65.1	96.0	128.5	135.6	134.9	133.7	134.9	135.9	134.5	134.5	136.7	130.6	97.8	65.5	57.8
31.5	57.9	65.1	95.8	128.0	134.9	135.5	134.9	134.4	136.4	136.0	136.6	137.6	132.2	97.9	65.5	57.8
32.0	57.9	65.1	95.4	127.6	134.0	131.8	133.1	133.3	132.0	133.7	133.9	134.2	128.0	95.7	65.1	57.9
32.5	58.0	65.4	96.2	128.5	133.6	131.9	133.0	132.7	131.7	131.8	133.0	133.2	125.4	94.3	64.9	57.9
33.0	58.0	65.6	96.8	128.7	132.0	132.1	132.0	132.8	133.1	133.6	131.8	132.9	125.5	93.9	64.9	58.0
33.5	58.0	65.6	97.4	131.4	137.5	136.1	135.2	137.0	136.4	135.9	137.2	137.8	130.5	97.7	65.7	58.0
33.6	58.0	64.6	95.7	129.3	134.7	133.4	132.5	134.3	133.7	133.2	134.5	135.0	128.5	96.0	64.7	58.0
33.8	58.0	61.6	79.0	96.2	100.7	100.3	100.0	101.0	100.7	100.4	100.9	100.9	95.7	79.1	61.6	58.0
33.9	58.0	58.4	60.9	62.8	65.9	66.5	66.8	67.1	67.1	66.9	66.6	65.9	62.8	60.8	58.3	57.9
45.0	57.6	57.4	57.8	58.2	59.0	59.7	60.2	60.5	60.5	60.2	59.7	59.0	58.2	57.7	57.3	57.5

Table 15. Plate surface temperatures (Celsius) on the South side of plate 6II-1 in plate position A (BOC 151A 0 EFPD).

	0.00	**0.34**	**0.43**	**0.50**	**0.64**	**0.77**	**0.91**	**1.05**	**1.19**	**1.32**	**1.46**	**1.60**	**1.74**	**1.81**	**1.90**	**2.24**
0.0	52.6	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	52.6
11.0	54.6	52.3	52.3	52.4	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.5	52.4	52.3	54.6
11.1	54.6	53.5	55.0	56.1	57.6	57.7	57.7	57.7	57.7	57.7	57.8	57.7	56.2	55.1	53.5	54.7
11.3	54.7	56.6	72.1	87.4	90.3	90.9	91.6	90.2	90.7	90.5	91.6	91.8	87.8	72.2	56.6	54.7
11.4	54.7	59.5	87.7	117.5	121.6	122.5	123.9	121.1	122.3	121.8	123.9	124.3	118.3	88.0	59.6	54.8
11.5	54.8	60.5	89.3	119.5	124.2	125.2	126.6	123.8	124.9	124.4	126.6	127.0	120.3	89.6	60.6	54.8
12.0	54.9	60.4	87.8	116.6	123.4	123.5	123.7	122.3	122.4	121.5	120.4	123.7	118.3	88.3	60.5	54.9
12.5	55.0	61.3	91.4	121.4	125.6	122.9	121.1	121.7	120.4	121.4	123.9	125.0	122.6	91.5	61.3	55.0
13.0	55.1	61.4	91.3	121.5	125.9	125.6	124.8	123.0	123.6	123.3	124.1	122.9	120.4	89.9	61.0	55.1
13.5	55.2	61.5	91.6	121.3	127.5	126.7	125.4	125.5	124.6	126.8	125.7	125.3	122.2	91.1	61.3	55.2
14.0	55.2	61.6	91.8	123.9	130.0	129.2	127.3	126.2	126.1	125.0	128.4	129.2	121.4	90.1	61.2	55.3
14.5	55.3	62.1	93.6	125.7	130.3	128.0	128.0	127.8	125.7	126.9	126.7	129.3	124.6	92.0	61.6	55.4
15.0	55.4	62.2	94.0	127.3	131.0	130.4	128.0	129.2	126.3	128.5	129.6	131.6	125.8	92.7	61.9	55.5
15.5	55.5	62.3	93.8	125.7	130.0	131.4	130.9	130.2	129.8	128.6	131.4	131.6	126.3	94.0	62.3	55.5
16.0	55.6	62.4	94.1	127.6	132.8	131.4	130.9	129.3	132.1	132.0	130.5	129.3	125.6	93.4	62.2	55.6
16.5	55.7	62.3	93.4	126.8	131.9	131.3	130.7	130.7	130.0	131.6	134.0	134.0	127.8	94.4	62.5	55.7
17.0	55.8	62.5	94.1	128.3	135.5	132.6	131.5	134.0	131.2	130.1	132.3	132.9	128.2	94.1	62.5	55.8
17.5	55.9	62.7	94.7	128.5	133.4	133.6	132.9	130.5	133.7	131.6	130.8	135.0	128.5	94.6	62.7	55.9
18.0	56.0	62.8	94.6	127.5	133.8	133.0	133.2	132.1	132.5	132.2	135.1	134.0	128.9	95.4	62.9	56.0
18.5	56.1	63.4	97.2	131.9	137.7	133.7	132.3	133.2	132.9	133.2	133.5	134.8	129.0	96.4	63.3	56.1
19.0	56.2	62.9	94.6	128.0	135.7	135.1	134.9	133.8	134.0	131.6	134.3	137.9	129.5	94.5	62.8	56.2
19.5	56.2	63.2	95.5	129.8	135.4	136.5	136.8	134.7	134.1	132.4	134.7	138.3	131.9	96.5	63.4	56.3
20.0	56.4	63.2	95.2	128.9	137.3	137.3	134.7	133.2	134.2	135.6	135.5	136.3	130.3	96.0	63.3	56.4
20.5	56.4	63.7	97.0	131.8	138.8	134.9	135.2	136.9	135.2	135.9	136.6	137.7	132.2	98.0	63.9	56.4
21.0	56.5	63.9	97.8	133.8	139.6	137.8	138.4	136.0	135.6	136.4	136.8	139.3	132.5	97.1	63.7	56.5
21.5	56.6	63.9	97.3	132.2	137.0	138.2	136.5	135.9	135.1	135.1	136.0	137.9	132.3	97.8	64.0	56.6
22.0	56.7	63.8	96.8	131.2	139.9	137.3	136.5	137.2	134.7	136.3	138.2	139.7	133.0	98.3	64.2	56.7
22.5	56.8	64.2	98.1	134.0	139.9	140.6	138.6	139.5	137.4	136.0	134.5	140.4	134.3	98.3	64.2	56.8
23.0	56.9	64.2	97.7	133.4	137.4	135.4	135.8	136.9	137.0	138.2	138.3	140.5	133.4	98.0	64.2	56.8
23.5	57.0	64.3	97.8	133.3	139.0	135.9	136.3	138.0	136.3	136.8	137.5	136.8	131.5	96.9	64.1	56.9
24.0	57.0	64.6	98.8	134.0	138.9	140.8	135.7	136.8	136.3	137.8	137.8	136.8	135.5	99.7	64.8	57.0
24.5	57.1	64.6	98.3	133.1	139.4	137.8	140.1	138.5	137.5	138.5	139.4	136.6	134.4	98.6	64.6	57.1
25.0	57.2	64.5	97.9	133.5	137.6	140.0	137.7	136.5	135.9	137.0	137.6	140.8	135.1	99.3	64.9	57.1
25.5	57.2	64.7	98.0	133.4	138.2	138.1	136.9	136.1	138.9	137.9	138.2	139.5	133.0	98.4	64.7	57.2
26.0	57.3	64.9	98.5	132.4	139.7	137.0	139.2	138.1	136.8	138.6	139.9	138.8	134.0	98.5	64.8	57.3
26.5	57.4	64.9	98.2	132.5	137.3	136.6	140.1	139.1	137.4	137.8	140.1	140.7	133.4	98.2	64.8	57.3
27.0	57.4	65.1	99.1	134.9	139.3	136.1	135.5	137.8	134.8	136.3	138.4	138.7	134.3	99.0	65.1	57.4

27.5	57.5	65.1	98.6	132.6	135.9	137.3	136.2	136.2	134.8	135.3	137.8	139.2	132.5	98.0	64.9	57.4
28.0	57.6	65.1	98.1	133.0	139.6	136.7	137.0	137.1	135.5	138.1	137.7	138.8	132.5	98.7	65.2	57.5
28.5	57.6	65.0	97.4	131.4	137.6	136.4	136.5	135.8	135.7	134.7	135.2	136.9	133.2	97.8	65.0	57.6
29.0	57.7	65.3	98.6	133.6	140.4	138.1	137.8	138.0	136.0	134.4	135.9	137.7	132.2	98.2	65.2	57.6
29.5	57.7	65.2	97.6	130.6	134.6	135.7	135.7	138.0	137.6	136.0	136.1	139.9	132.6	97.6	65.1	57.7
30.0	57.8	65.4	98.3	133.1	137.9	136.7	134.9	134.1	135.0	135.1	136.0	139.3	129.3	96.3	65.0	57.7
30.5	57.8	65.3	97.3	131.2	136.3	133.6	132.3	134.1	137.1	134.1	137.4	136.7	131.8	98.2	65.4	57.8
31.0	57.9	65.1	96.0	128.4	135.6	134.8	133.6	134.7	135.8	134.4	134.4	136.7	130.6	97.7	65.5	57.8
31.5	57.9	65.1	95.7	127.9	134.9	135.4	134.7	134.2	136.3	135.8	136.5	137.5	132.1	97.8	65.5	57.9
32.0	58.0	65.1	95.3	127.6	133.9	131.7	132.9	133.1	131.9	133.5	133.8	134.1	127.9	95.6	65.1	57.9
32.5	58.0	65.4	96.1	128.4	133.5	131.8	132.9	132.5	131.6	131.6	132.9	133.1	125.4	94.3	64.9	57.9
33.0	58.0	65.6	96.8	128.6	131.9	131.9	131.8	132.6	132.9	133.4	131.7	132.8	125.4	93.9	64.9	58.0
33.5	58.1	65.6	97.4	131.3	137.4	136.0	135.0	136.8	136.2	135.7	137.1	137.7	130.5	97.7	65.7	58.0
33.6	58.0	64.6	95.7	129.2	134.6	133.3	132.4	134.2	133.5	133.0	134.4	134.9	128.4	96.0	64.6	58.0
33.8	58.0	61.6	79.0	96.1	100.6	100.2	99.9	100.9	100.6	100.3	100.8	100.8	95.7	79.1	61.6	58.0
33.9	58.0	58.4	60.8	62.8	65.8	66.4	66.8	67.0	67.1	66.8	66.5	65.9	62.7	60.8	58.3	57.9
45.0	57.5	57.3	57.7	58.1	59.0	59.6	60.1	60.4	60.4	60.1	59.6	59.0	58.1	57.7	57.3	57.4

Table 16. Plate surface temperatures (Celsius) on the North side of plate 6II-1 in plate position A (MOC1 151A 15 EFPD).

	0.00	**0.34**	**0.43**	**0.50**	**0.64**	**0.77**	**0.91**	**1.05**	**1.19**	**1.32**	**1.46**	**1.60**	**1.74**	**1.81**	**1.90**	**2.24**
0.0	52.5	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	52.5
11.0	54.5	52.2	52.2	52.3	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.3	52.3	52.2	54.6
11.1	54.6	53.1	54.2	55.0	56.1	56.2	56.2	56.2	56.2	56.2	56.3	56.2	55.1	54.2	53.1	54.6
11.3	54.6	55.4	66.7	78.1	80.5	80.9	81.5	80.4	80.8	80.7	81.5	81.6	78.5	66.8	55.4	54.6
11.4	54.6	57.6	78.5	100.5	103.7	104.4	105.5	103.4	104.3	103.9	105.5	105.8	101.1	78.7	57.6	54.7
11.5	54.7	58.3	79.7	102.0	105.8	106.5	107.6	105.5	106.3	106.0	107.6	107.9	102.6	79.9	58.4	54.7
12.0	54.8	58.1	78.2	99.2	104.4	104.5	104.7	103.6	103.7	103.0	102.1	104.6	100.5	78.6	58.2	54.8
12.5	54.9	58.8	80.9	102.8	106.1	104.1	102.8	103.2	102.2	102.9	104.9	105.6	103.7	81.0	58.8	54.9
13.0	54.9	58.9	81.1	103.3	106.8	106.6	106.0	104.6	105.1	104.8	105.4	104.5	102.4	80.1	58.7	55.0
13.5	55.0	58.8	80.3	101.4	106.1	105.6	104.6	104.7	104.1	105.6	104.8	104.6	102.1	80.0	58.7	55.1
14.0	55.1	58.8	80.3	102.9	107.6	107.0	105.6	104.8	104.7	103.9	106.4	107.0	101.1	79.1	58.5	55.1
14.5	55.2	59.2	81.6	104.2	107.8	106.1	106.1	105.9	104.4	105.3	105.2	107.0	103.5	80.4	58.9	55.2
15.0	55.3	59.2	81.7	105.2	108.1	107.6	105.9	106.8	104.7	106.3	107.1	108.5	104.1	80.8	59.0	55.3
15.5	55.4	59.3	81.7	104.3	107.5	108.6	108.2	107.7	107.4	106.5	108.6	108.7	104.7	81.9	59.3	55.4
16.0	55.4	59.3	81.6	105.0	109.0	108.0	107.6	106.5	108.5	108.4	107.3	106.4	103.6	81.1	59.2	55.5
16.5	55.5	59.2	81.2	104.5	108.5	108.0	107.5	107.6	107.1	108.2	110.0	109.9	105.2	81.9	59.4	55.6
17.0	55.6	59.4	81.5	105.2	110.6	108.5	107.7	109.5	107.5	106.7	108.3	108.7	105.1	81.4	59.3	55.6
17.5	55.7	59.6	82.3	106.2	109.9	110.0	109.5	107.8	110.2	108.6	108.0	111.1	106.1	82.3	59.6	55.7
18.0	55.8	59.6	81.9	104.8	109.6	109.0	109.1	108.3	108.6	108.5	110.5	109.7	105.8	82.5	59.7	55.8
18.5	55.9	60.0	83.6	107.7	112.1	109.2	108.2	108.9	108.7	108.9	109.1	110.0	105.7	83.1	59.9	55.9
19.0	55.9	59.8	82.2	105.8	111.6	111.2	111.1	110.3	110.4	108.7	110.6	113.2	106.9	82.2	59.7	55.9
19.5	56.0	59.8	82.4	106.0	110.2	111.1	111.3	109.8	109.3	108.1	109.8	112.4	107.6	83.1	60.0	56.0
20.0	56.1	59.9	82.3	105.6	111.9	111.9	110.1	109.0	109.7	110.7	110.6	111.1	106.6	82.8	60.0	56.1
20.5	56.2	60.2	83.5	107.6	112.8	110.0	110.3	111.5	110.3	110.8	111.3	112.1	107.9	84.2	60.3	56.2
21.0	56.2	60.2	83.4	107.8	112.1	110.9	111.3	109.6	109.3	109.8	110.2	111.9	106.9	82.9	60.1	56.2
21.5	56.3	60.3	83.6	107.9	111.5	112.4	111.2	110.8	110.1	110.2	110.8	112.2	108.0	84.0	60.4	56.3
22.0	56.4	60.2	82.8	106.1	112.5	110.7	110.2	110.7	108.9	110.0	111.4	112.4	107.5	83.8	60.4	56.4
22.5	56.4	60.4	83.4	107.6	112.0	112.5	111.1	111.8	110.3	109.3	108.3	112.3	107.8	83.5	60.4	56.4
23.0	56.5	60.5	83.5	107.9	111.0	109.5	109.8	110.7	110.7	111.5	111.6	113.1	107.9	83.7	60.5	56.5
23.5	56.6	60.6	83.9	108.3	112.5	110.4	110.7	111.9	110.7	111.0	111.5	111.0	107.0	83.2	60.4	56.6
24.0	56.6	60.7	84.0	107.9	111.6	113.0	109.4	110.1	109.8	110.9	110.8	110.1	108.9	84.6	60.8	56.6
24.5	56.7	60.8	84.2	108.2	112.9	111.8	113.5	112.4	111.7	112.3	113.0	110.9	109.1	84.4	60.8	56.7
25.0	56.8	60.7	83.7	108.0	111.2	112.9	111.4	110.5	110.0	110.8	111.3	113.5	109.2	84.7	60.9	56.7
25.5	56.8	60.9	84.1	108.6	112.3	112.2	111.4	110.8	112.8	112.1	112.3	113.2	108.3	84.4	60.9	56.8
26.0	56.9	61.0	84.2	107.5	112.9	111.0	112.7	111.9	110.9	112.3	113.1	112.3	108.7	84.2	60.9	56.8
26.5	56.9	61.0	84.3	108.1	111.7	111.3	113.8	113.1	111.9	112.2	113.8	114.2	108.8	84.3	61.0	56.9
27.0	56.9	61.2	84.7	109.4	112.8	110.5	110.1	111.8	109.6	110.6	112.2	112.4	109.0	84.6	61.1	56.9

27.5	57.0	61.2	84.7	108.4	111.1	112.1	111.3	111.3	110.3	110.7	112.5	113.4	108.4	84.3	61.1	57.0
28.0	57.0	61.1	83.9	107.8	112.7	110.7	110.9	111.0	109.9	111.7	111.4	112.1	107.4	84.3	61.2	57.0
28.5	57.1	61.2	84.2	108.1	112.8	112.0	112.1	111.6	111.5	110.8	111.1	112.3	109.4	84.5	61.2	57.0
29.0	57.1	61.4	84.6	108.9	114.0	112.4	112.2	112.3	110.9	109.7	110.8	112.0	107.9	84.3	61.3	57.1
29.5	57.2	61.3	83.9	106.7	109.8	110.6	110.7	112.3	112.0	110.8	110.9	113.7	108.2	83.9	61.2	57.1
30.0	57.2	61.4	84.2	108.2	111.9	111.0	109.8	109.2	109.9	109.9	110.6	112.9	105.6	82.8	61.1	57.2
30.5	57.2	61.4	83.9	107.7	111.5	109.6	108.7	110.0	112.2	110.0	112.4	111.9	108.1	84.5	61.5	57.2
31.0	57.2	61.3	83.2	106.0	111.4	110.9	110.0	110.8	111.6	110.6	110.6	112.2	107.6	84.4	61.5	57.2
31.5	57.3	61.3	82.9	105.4	110.6	111.1	110.6	110.2	111.7	111.4	111.9	112.6	108.4	84.4	61.6	57.2
32.0	57.3	61.4	83.1	106.0	110.9	109.2	110.2	110.3	109.4	110.6	110.8	111.0	106.3	83.3	61.4	57.2
32.5	57.3	61.7	84.2	107.6	111.6	110.4	111.2	110.9	110.2	110.2	111.1	111.3	105.4	82.8	61.3	57.3
33.0	57.3	61.8	84.6	107.7	110.3	110.4	110.3	110.9	111.2	111.5	110.2	111.0	105.3	82.5	61.3	57.3
33.5	57.3	61.8	84.6	109.0	113.7	112.6	111.9	113.3	112.8	112.5	113.5	113.9	108.4	84.9	61.8	57.3
33.6	57.3	61.0	83.4	107.4	111.5	110.5	109.9	111.2	110.8	110.4	111.4	111.7	106.8	83.6	61.0	57.3
33.8	57.3	58.8	71.2	83.6	86.8	86.5	86.2	87.0	86.8	86.5	86.9	86.9	83.3	71.3	58.8	57.3
33.9	57.3	56.5	58.2	59.5	61.7	62.1	62.3	62.5	62.5	62.4	62.2	61.7	59.5	58.2	56.4	57.3
45.0	56.6	55.7	55.9	56.2	56.8	57.2	57.6	57.7	57.7	57.6	57.2	56.8	56.2	55.9	55.7	56.5

Table 17. Plate surface temperatures (Celsius) on the South side of plate 6II-1 in plate position A (MOC1 151A 15 EFPD).

	0.00	**0.34**	**0.43**	**0.50**	**0.64**	**0.77**	**0.91**	**1.05**	**1.19**	**1.32**	**1.46**	**1.60**	**1.74**	**1.81**	**1.90**	**2.24**
0.0	52.6	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	52.6
11.0	54.6	52.2	52.2	52.3	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.3	52.2	52.2	54.6
11.1	54.6	53.1	54.2	55.0	56.1	56.2	56.2	56.2	56.2	56.2	56.3	56.2	55.1	54.2	53.1	54.7
11.3	54.7	55.4	66.7	78.1	80.5	80.9	81.4	80.4	80.8	80.7	81.5	81.6	78.5	66.8	55.4	54.7
11.4	54.7	57.6	78.5	100.5	103.7	104.4	105.5	103.4	104.2	103.9	105.4	105.8	101.0	78.7	57.6	54.7
11.5	54.7	58.3	79.7	102.0	105.8	106.5	107.6	105.4	106.3	106.0	107.6	107.9	102.6	79.9	58.4	54.8
12.0	54.8	58.1	78.2	99.2	104.4	104.5	104.6	103.6	103.6	103.0	102.1	104.6	100.5	78.6	58.2	54.9
12.5	54.9	58.8	80.9	102.8	106.1	104.1	102.7	103.1	102.2	102.9	104.8	105.6	103.7	81.0	58.8	54.9
13.0	55.0	58.9	81.1	103.3	106.8	106.6	105.9	104.6	105.0	104.8	105.4	104.5	102.4	80.0	58.7	55.0
13.5	55.1	58.8	80.3	101.4	106.1	105.5	104.6	104.6	104.0	105.6	104.8	104.5	102.1	79.9	58.7	55.1
14.0	55.2	58.8	80.3	102.9	107.6	107.0	105.6	104.7	104.7	103.9	106.4	107.0	101.1	79.1	58.5	55.2
14.5	55.3	59.2	81.6	104.2	107.7	106.1	106.0	105.9	104.4	105.3	105.1	107.0	103.4	80.4	58.9	55.3
15.0	55.4	59.2	81.7	105.2	108.1	107.6	105.9	106.7	104.6	106.2	107.0	108.5	104.1	80.8	59.0	55.4
15.5	55.4	59.3	81.7	104.2	107.5	108.5	108.2	107.7	107.4	106.5	108.6	108.7	104.6	81.9	59.3	55.5
16.0	55.5	59.3	81.6	105.0	108.9	107.9	107.6	106.4	108.4	108.4	107.3	106.4	103.5	81.1	59.2	55.5
16.5	55.6	59.2	81.1	104.5	108.4	107.9	107.5	107.5	107.0	108.2	109.9	109.9	105.2	81.9	59.4	55.6
17.0	55.7	59.4	81.5	105.2	110.6	108.5	107.7	109.5	107.5	106.6	108.2	108.7	105.1	81.4	59.3	55.7
17.5	55.8	59.6	82.3	106.1	109.9	110.0	109.5	107.8	110.1	108.5	108.0	111.0	106.1	82.3	59.6	55.8
18.0	55.9	59.6	81.9	104.8	109.6	109.0	109.1	108.3	108.6	108.4	110.5	109.7	105.8	82.5	59.7	55.9
18.5	56.0	60.0	83.6	107.7	112.1	109.2	108.2	108.9	108.6	108.9	109.1	109.9	105.6	83.1	59.9	56.0
19.0	56.0	59.7	82.2	105.8	111.6	111.2	111.0	110.2	110.3	108.6	110.6	113.2	106.9	82.2	59.7	56.0
19.5	56.1	59.8	82.3	106.0	110.2	111.0	111.3	109.7	109.3	108.0	109.7	112.3	107.5	83.0	60.0	56.1
20.0	56.2	59.9	82.3	105.6	111.9	111.9	110.0	108.9	109.6	110.6	110.6	111.1	106.6	82.8	60.0	56.2
20.5	56.3	60.2	83.5	107.5	112.7	110.0	110.2	111.4	110.2	110.7	111.2	112.0	107.9	84.2	60.3	56.3
21.0	56.3	60.2	83.4	107.8	112.1	110.8	111.2	109.5	109.3	109.8	110.1	111.8	106.8	82.9	60.1	56.3
21.5	56.4	60.3	83.6	107.8	111.5	112.3	111.1	110.7	110.1	110.1	110.8	112.1	107.9	84.0	60.4	56.4
22.0	56.5	60.2	82.8	106.1	112.5	110.7	110.1	110.6	108.8	110.0	111.3	112.3	107.4	83.8	60.4	56.5
22.5	56.5	60.4	83.4	107.6	112.0	112.4	111.0	111.7	110.2	109.2	108.2	112.3	107.8	83.5	60.4	56.5
23.0	56.6	60.4	83.5	107.8	110.9	109.5	109.8	110.6	110.6	111.5	111.5	113.1	107.9	83.7	60.5	56.6
23.5	56.7	60.6	83.9	108.2	112.5	110.3	110.6	111.8	110.6	111.0	111.5	110.9	107.0	83.2	60.4	56.6
24.0	56.7	60.7	84.0	107.9	111.6	112.9	109.3	110.0	109.7	110.8	110.7	110.1	108.9	84.6	60.8	56.7
24.5	56.8	60.8	84.2	108.2	112.9	111.7	113.4	112.3	111.6	112.2	112.9	110.9	109.1	84.4	60.8	56.8
25.0	56.8	60.7	83.7	108.0	111.2	112.9	111.3	110.4	109.9	110.7	111.2	113.4	109.2	84.7	60.9	56.8
25.5	56.9	60.9	84.1	108.6	112.2	112.1	111.3	110.7	112.7	112.0	112.2	113.1	108.3	84.4	60.9	56.8
26.0	56.9	61.0	84.2	107.5	112.9	111.0	112.6	111.8	110.8	112.2	113.0	112.3	108.6	84.2	60.9	56.9
26.5	57.0	61.0	84.3	108.0	111.7	111.2	113.7	113.0	111.8	112.1	113.7	114.2	108.7	84.3	61.0	57.0
27.0	57.0	61.2	84.7	109.4	112.7	110.4	110.0	111.7	109.5	110.5	112.1	112.3	109.0	84.6	61.1	57.0

27.5	57.0	61.2	84.7	108.4	111.0	112.0	111.2	111.2	110.2	110.5	112.4	113.4	108.3	84.3	61.1	57.0
28.0	57.1	61.1	83.8	107.7	112.6	110.6	110.8	110.9	109.8	111.5	111.3	112.0	107.4	84.2	61.2	57.1
28.5	57.1	61.2	84.2	108.1	112.8	111.9	112.0	111.5	111.4	110.6	111.0	112.3	109.4	84.5	61.2	57.1
29.0	57.2	61.3	84.6	108.9	113.9	112.3	112.1	112.2	110.7	109.6	110.7	111.9	107.8	84.3	61.3	57.1
29.5	57.2	61.3	83.9	106.7	109.7	110.5	110.5	112.2	111.9	110.7	110.8	113.6	108.1	83.9	61.2	57.2
30.0	57.3	61.4	84.2	108.1	111.8	110.9	109.6	109.1	109.7	109.8	110.4	112.8	105.5	82.8	61.0	57.2
30.5	57.3	61.4	83.9	107.6	111.5	109.5	108.6	109.9	112.1	109.9	112.3	111.8	108.0	84.5	61.5	57.2
31.0	57.3	61.3	83.2	106.0	111.3	110.8	109.9	110.7	111.4	110.4	110.5	112.1	107.5	84.4	61.5	57.2
31.5	57.3	61.2	82.9	105.3	110.5	110.9	110.4	110.1	111.6	111.3	111.8	112.5	108.4	84.3	61.5	57.3
32.0	57.3	61.3	83.1	106.0	110.8	109.1	110.0	110.2	109.2	110.5	110.7	110.9	106.2	83.3	61.4	57.3
32.5	57.4	61.6	84.2	107.6	111.5	110.3	111.0	110.8	110.0	110.1	111.0	111.2	105.3	82.8	61.3	57.3
33.0	57.4	61.8	84.6	107.6	110.2	110.3	110.2	110.8	111.0	111.4	110.1	110.9	105.3	82.5	61.3	57.3
33.5	57.4	61.7	84.6	108.9	113.6	112.5	111.8	113.1	112.7	112.3	113.4	113.8	108.3	84.8	61.8	57.3
33.6	57.4	61.0	83.4	107.3	111.4	110.4	109.7	111.1	110.6	110.2	111.3	111.6	106.7	83.6	61.0	57.3
33.8	57.4	58.8	71.1	83.6	86.7	86.4	86.2	86.9	86.7	86.4	86.8	86.8	83.2	71.2	58.8	57.3
33.9	57.4	56.5	58.2	59.5	61.6	62.1	62.3	62.5	62.5	62.3	62.1	61.7	59.5	58.1	56.4	57.3
45.0	56.5	55.7	55.9	56.2	56.7	57.1	57.5	57.6	57.6	57.5	57.1	56.7	56.1	55.9	55.6	56.5

Table 18. Plate surface temperatures (Celsius) on the North side of plate 6II-1 in plate position A (MOC2 151A 34 EFPD).

	0.00	**0.34**	**0.43**	**0.50**	**0.64**	**0.77**	**0.91**	**1.05**	**1.19**	**1.32**	**1.46**	**1.60**	**1.74**	**1.81**	**1.90**	**2.24**
0.0	52.5	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	52.5
11.0	54.5	52.2	52.3	52.4	52.5	52.6	52.6	52.6	52.6	52.6	52.6	52.5	52.4	52.3	52.2	54.6
11.1	54.6	53.2	54.5	55.3	56.5	56.7	56.7	56.7	56.6	56.7	56.7	56.7	55.4	54.5	53.2	54.6
11.3	54.6	55.8	68.3	81.0	83.5	84.0	84.6	83.4	83.9	83.7	84.6	84.8	81.4	68.5	55.8	54.6
11.4	54.6	58.2	81.3	105.7	109.2	110.0	111.2	108.9	109.8	109.4	111.1	111.5	106.4	81.6	58.2	54.7
11.5	54.7	59.0	82.6	107.4	111.5	112.3	113.5	111.1	112.1	111.7	113.5	113.8	108.1	82.9	59.1	54.7
12.0	54.8	58.8	81.2	104.7	110.4	110.5	110.7	109.6	109.6	108.9	107.9	110.7	106.1	81.7	58.9	54.8
12.5	54.9	59.6	84.2	108.6	112.2	110.0	108.5	108.9	107.9	108.7	110.8	111.7	109.6	84.3	59.6	54.9
13.0	55.0	59.6	84.0	108.5	112.2	112.0	111.3	109.8	110.4	110.1	110.8	109.7	107.5	82.9	59.3	55.0
13.5	55.1	59.7	83.9	107.7	112.9	112.3	111.2	111.3	110.6	112.4	111.5	111.2	108.5	83.5	59.5	55.1
14.0	55.1	59.7	84.1	109.9	115.0	114.3	112.8	111.8	111.8	110.9	113.7	114.3	107.8	82.7	59.4	55.1
14.5	55.2	60.1	85.3	110.9	114.8	113.0	112.9	112.8	111.0	112.1	111.9	114.0	110.1	84.0	59.7	55.2
15.0	55.3	60.0	85.0	111.1	114.3	113.7	111.8	112.8	110.5	112.2	113.1	114.7	109.9	84.0	59.8	55.3
15.5	55.4	60.1	85.0	110.1	113.6	114.7	114.4	113.8	113.5	112.5	114.8	114.9	110.5	85.1	60.1	55.4
16.0	55.5	60.2	85.2	111.6	115.9	114.8	114.4	113.1	115.3	115.3	114.0	113.1	109.9	84.7	60.1	55.5
16.5	55.6	60.1	84.5	110.6	114.9	114.4	113.9	113.9	113.4	114.7	116.6	116.5	111.4	85.3	60.2	55.6
17.0	55.7	60.3	85.1	111.9	117.9	115.5	114.7	116.6	114.4	113.5	115.3	115.7	111.8	85.1	60.2	55.7
17.5	55.7	60.4	85.5	111.8	115.9	116.0	115.5	113.6	116.2	114.4	113.8	117.2	111.8	85.4	60.4	55.7
18.0	55.8	60.5	85.5	111.2	116.4	115.8	115.9	115.0	115.4	115.2	117.5	116.6	112.3	86.2	60.6	55.8
18.5	55.9	60.9	87.3	114.2	119.1	115.8	114.7	115.5	115.3	115.5	115.7	116.7	112.0	86.7	60.8	55.9
19.0	56.0	60.6	85.4	111.4	117.7	117.3	117.2	116.2	116.4	114.5	116.6	119.5	112.6	85.3	60.5	56.0
19.5	56.1	60.7	86.0	112.6	117.2	118.1	118.4	116.7	116.2	114.8	116.7	119.5	114.3	86.8	60.9	56.1
20.0	56.2	60.8	85.9	112.1	119.0	119.0	117.0	115.8	116.6	117.7	117.6	118.2	113.2	86.5	60.9	56.2
20.5	56.2	61.1	87.2	114.2	120.0	116.9	117.1	118.5	117.2	117.7	118.3	119.1	114.6	88.0	61.3	56.2
21.0	56.3	61.2	87.3	114.7	119.5	118.1	118.6	116.7	116.4	117.0	117.3	119.2	113.7	86.7	61.1	56.3
21.5	56.4	61.2	87.0	113.9	117.9	118.8	117.5	117.1	116.4	116.4	117.2	118.6	114.0	87.5	61.3	56.4
22.0	56.5	61.3	86.9	113.5	120.6	118.6	118.0	118.5	116.5	117.8	119.3	120.4	115.0	88.1	61.5	56.5
22.5	56.5	61.4	87.4	114.8	119.6	120.2	118.6	119.3	117.7	116.6	115.4	120.0	115.0	87.5	61.4	56.5
23.0	56.6	61.5	87.5	114.9	118.3	116.7	117.0	117.9	118.0	118.9	119.0	120.7	114.9	87.6	61.5	56.6
23.5	56.7	61.6	87.5	114.7	119.4	117.0	117.3	118.7	117.3	117.7	118.3	117.7	113.3	86.7	61.4	56.7
24.0	56.7	61.8	88.1	115.0	119.1	120.6	116.6	117.4	117.0	118.3	118.2	117.4	116.1	88.7	61.9	56.7
24.5	56.8	61.8	87.7	114.4	119.6	118.4	120.2	118.9	118.2	118.9	119.6	117.4	115.4	88.0	61.8	56.8
25.0	56.9	61.7	87.5	114.8	118.3	120.2	118.4	117.5	117.0	117.8	118.3	120.8	116.2	88.6	62.0	56.8
25.5	56.9	61.8	87.4	114.5	118.4	118.3	117.5	116.8	119.0	118.2	118.5	119.4	114.1	87.7	61.8	56.9
26.0	57.0	61.9	87.4	113.0	118.9	116.8	118.6	117.7	116.7	118.1	119.1	118.2	114.3	87.4	61.8	56.9
26.5	57.0	61.9	87.2	113.2	117.1	116.6	119.3	118.6	117.2	117.6	119.3	119.8	113.9	87.2	61.8	57.0
27.0	57.1	62.2	88.4	115.9	119.5	117.0	116.5	118.4	116.0	117.2	118.8	119.1	115.4	88.3	62.1	57.0

27.5	57.1	62.3	88.4	114.9	117.8	118.9	118.0	118.0	116.9	117.3	119.3	120.4	114.9	88.0	62.1	57.1
28.0	57.2	62.1	87.4	114.1	119.5	117.2	117.5	117.6	116.4	118.3	118.0	118.8	113.7	87.9	62.2	57.1
28.5	57.2	62.2	87.6	114.0	119.1	118.2	118.3	117.8	117.6	116.9	117.2	118.6	115.4	87.9	62.2	57.2
29.0	57.2	62.4	88.2	115.3	120.8	119.0	118.8	119.0	117.4	116.1	117.3	118.6	114.1	87.9	62.3	57.2
29.5	57.3	62.4	87.7	113.3	116.7	117.6	117.6	119.4	119.1	117.8	117.9	120.9	114.9	87.7	62.3	57.2
30.0	57.3	62.4	87.9	114.7	118.8	117.8	116.4	115.8	116.5	116.5	117.3	119.9	111.8	86.4	62.1	57.3
30.5	57.4	62.4	87.6	114.1	118.4	116.2	115.2	116.7	119.1	116.7	119.3	118.7	114.6	88.3	62.6	57.3
31.0	57.4	62.3	86.6	112.1	117.9	117.3	116.4	117.3	118.1	117.0	117.0	118.8	113.8	88.0	62.6	57.3
31.5	57.4	62.2	86.1	111.0	116.7	117.2	116.6	116.3	117.9	117.5	118.0	118.8	114.3	87.7	62.6	57.4
32.0	57.5	62.5	87.0	113.0	118.3	116.5	117.5	117.7	116.6	118.0	118.2	118.5	113.3	87.3	62.5	57.4
32.5	57.5	62.8	88.0	114.3	118.6	117.3	118.2	117.9	117.1	117.1	118.1	118.3	111.8	86.5	62.4	57.4
33.0	57.5	62.9	88.0	113.6	116.4	116.5	116.4	117.1	117.3	117.7	116.3	117.2	111.0	85.7	62.3	57.5
33.5	57.5	62.8	87.9	114.8	119.9	118.7	118.0	119.4	119.0	118.5	119.7	120.1	114.1	88.2	62.8	57.5
33.6	57.5	61.9	86.6	113.1	117.6	116.5	115.7	117.2	116.7	116.3	117.4	117.8	112.4	86.8	62.0	57.5
33.8	57.5	59.5	73.2	86.8	90.3	90.0	89.7	90.5	90.3	90.0	90.4	90.4	86.5	73.3	59.5	57.4
33.9	57.5	57.0	58.9	60.4	62.8	63.3	63.5	63.7	63.7	63.6	63.3	62.8	60.4	58.9	56.9	57.4
45.0	56.8	56.1	56.4	56.7	57.4	57.9	58.3	58.4	58.4	58.3	57.9	57.4	56.7	56.4	56.1	56.8

Table 19. Plate surface temperatures (Celsius) on the South side of plate 6II-1 in plate position A (MOC2 151A 34 EFPD).

	0.00	**0.34**	**0.43**	**0.50**	**0.64**	**0.77**	**0.91**	**1.05**	**1.19**	**1.32**	**1.46**	**1.60**	**1.74**	**1.81**	**1.90**	**2.24**
0.0	52.6	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	52.6
11.0	54.6	52.2	52.3	52.4	52.5	52.6	52.6	52.6	52.6	52.6	52.6	52.5	52.4	52.3	52.2	54.6
11.1	54.6	53.2	54.4	55.3	56.5	56.7	56.7	56.7	56.6	56.7	56.7	56.7	55.4	54.5	53.2	54.7
11.3	54.7	55.8	68.3	81.0	83.5	84.0	84.6	83.4	83.9	83.7	84.6	84.7	81.4	68.5	55.8	54.7
11.4	54.7	58.2	81.3	105.7	109.2	110.0	111.2	108.8	109.8	109.4	111.1	111.5	106.4	81.6	58.2	54.7
11.5	54.7	59.0	82.6	107.4	111.5	112.3	113.4	111.1	112.1	111.7	113.4	113.8	108.1	82.9	59.0	54.8
12.0	54.8	58.8	81.2	104.6	110.4	110.5	110.7	109.5	109.6	108.9	107.9	110.7	106.1	81.7	58.9	54.9
12.5	54.9	59.6	84.2	108.6	112.2	109.9	108.5	108.9	107.9	108.7	110.8	111.7	109.6	84.3	59.6	55.0
13.0	55.0	59.6	84.0	108.4	112.2	112.0	111.3	109.8	110.3	110.0	110.7	109.7	107.5	82.9	59.3	55.1
13.5	55.1	59.7	83.9	107.7	112.9	112.3	111.2	111.3	110.6	112.4	111.5	111.2	108.5	83.5	59.5	55.2
14.0	55.2	59.7	84.1	109.8	115.0	114.3	112.7	111.8	111.8	110.9	113.7	114.3	107.8	82.7	59.4	55.2
14.5	55.3	60.1	85.3	110.9	114.8	113.0	112.9	112.7	111.0	112.0	111.9	114.0	110.0	84.0	59.7	55.3
15.0	55.4	60.0	85.0	111.1	114.2	113.7	111.8	112.7	110.5	112.2	113.1	114.7	109.8	84.0	59.8	55.4
15.5	55.4	60.1	85.0	110.0	113.6	114.7	114.3	113.8	113.5	112.5	114.8	114.9	110.5	85.1	60.1	55.5
16.0	55.5	60.2	85.2	111.6	115.8	114.7	114.3	113.1	115.3	115.2	114.0	113.1	109.9	84.7	60.1	55.6
16.5	55.6	60.1	84.5	110.6	114.9	114.3	113.8	113.9	113.3	114.6	116.5	116.5	111.4	85.3	60.2	55.7
17.0	55.7	60.3	85.1	111.9	117.9	115.5	114.6	116.6	114.4	113.5	115.2	115.7	111.8	85.1	60.2	55.7
17.5	55.8	60.4	85.5	111.8	115.9	116.0	115.4	113.5	116.1	114.4	113.8	117.1	111.8	85.4	60.4	55.8
18.0	55.9	60.5	85.5	111.1	116.4	115.7	115.9	115.0	115.3	115.1	117.4	116.5	112.3	86.2	60.6	55.9
18.5	56.0	60.9	87.3	114.2	119.0	115.8	114.7	115.5	115.2	115.4	115.7	116.6	111.9	86.7	60.8	56.0
19.0	56.1	60.6	85.4	111.4	117.7	117.3	117.1	116.2	116.3	114.4	116.6	119.5	112.6	85.3	60.5	56.1
19.5	56.1	60.7	86.0	112.5	117.1	118.1	118.3	116.6	116.1	114.7	116.6	119.5	114.2	86.8	60.9	56.1
20.0	56.2	60.8	85.9	112.1	119.0	119.0	116.9	115.7	116.5	117.6	117.5	118.1	113.2	86.5	60.9	56.2
20.5	56.3	61.1	87.2	114.2	119.9	116.8	117.1	118.4	117.1	117.7	118.2	119.1	114.6	88.0	61.3	56.3
21.0	56.4	61.2	87.3	114.7	119.4	118.1	118.5	116.6	116.3	116.9	117.3	119.2	113.7	86.7	61.1	56.4
21.5	56.5	61.2	87.0	113.9	117.9	118.8	117.5	117.0	116.3	116.4	117.1	118.6	114.0	87.4	61.3	56.5
22.0	56.5	61.2	86.9	113.5	120.5	118.5	117.9	118.4	116.5	117.7	119.2	120.4	115.0	88.1	61.5	56.5
22.5	56.6	61.4	87.4	114.7	119.6	120.1	118.5	119.3	117.6	116.5	115.4	119.9	114.9	87.5	61.4	56.6
23.0	56.7	61.5	87.4	114.9	118.2	116.6	116.9	117.8	117.9	118.8	118.9	120.6	114.9	87.6	61.5	56.7
23.5	56.8	61.6	87.5	114.7	119.3	116.9	117.2	118.6	117.2	117.6	118.2	117.6	113.3	86.7	61.4	56.7
24.0	56.8	61.7	88.0	115.0	119.0	120.5	116.5	117.3	117.0	118.2	118.1	117.4	116.1	88.7	61.9	56.8
24.5	56.9	61.7	87.7	114.4	119.5	118.3	120.1	118.9	118.1	118.8	119.6	117.3	115.4	88.0	61.7	56.8
25.0	56.9	61.7	87.5	114.8	118.2	120.1	118.3	117.4	116.9	117.8	118.3	120.8	116.1	88.6	62.0	56.9
25.5	57.0	61.8	87.4	114.4	118.3	118.3	117.4	116.7	118.9	118.1	118.4	119.3	114.1	87.7	61.8	56.9
26.0	57.0	61.9	87.4	113.0	118.8	116.7	118.5	117.6	116.6	118.0	119.0	118.1	114.2	87.4	61.8	57.0
26.5	57.1	61.9	87.2	113.1	117.0	116.5	119.2	118.5	117.1	117.5	119.2	119.7	113.8	87.2	61.8	57.1
27.0	57.1	62.2	88.3	115.8	119.5	116.9	116.4	118.3	115.9	117.1	118.8	119.0	115.4	88.2	62.1	57.1

27.5	57.2	62.3	88.4	114.8	117.7	118.8	117.9	117.9	116.7	117.2	119.2	120.3	114.8	87.9	62.1	57.1
28.0	57.2	62.1	87.4	114.0	119.4	117.1	117.4	117.5	116.2	118.2	117.9	118.7	113.6	87.8	62.2	57.2
28.5	57.3	62.2	87.6	113.9	119.1	118.1	118.2	117.7	117.5	116.7	117.1	118.5	115.4	87.9	62.2	57.2
29.0	57.3	62.4	88.2	115.2	120.7	118.9	118.7	118.9	117.3	116.0	117.2	118.6	114.1	87.8	62.3	57.2
29.5	57.3	62.3	87.6	113.2	116.6	117.5	117.5	119.3	118.9	117.7	117.8	120.8	114.8	87.6	62.3	57.3
30.0	57.4	62.4	87.9	114.7	118.7	117.7	116.3	115.6	116.4	116.4	117.2	119.8	111.7	86.4	62.1	57.3
30.5	57.4	62.4	87.6	114.1	118.3	116.1	115.1	116.5	118.9	116.5	119.2	118.7	114.5	88.2	62.5	57.4
31.0	57.4	62.3	86.6	112.0	117.8	117.2	116.2	117.1	118.0	116.9	116.9	118.7	113.7	88.0	62.6	57.4
31.5	57.5	62.2	86.1	110.9	116.6	117.0	116.5	116.1	117.7	117.4	117.9	118.7	114.2	87.7	62.5	57.4
32.0	57.5	62.5	87.0	112.9	118.2	116.3	117.4	117.5	116.5	117.9	118.1	118.4	113.2	87.2	62.5	57.4
32.5	57.5	62.8	88.0	114.2	118.5	117.2	118.0	117.7	116.9	117.0	118.0	118.2	111.7	86.5	62.4	57.5
33.0	57.6	62.8	88.0	113.5	116.3	116.4	116.3	116.9	117.2	117.6	116.2	117.1	110.9	85.7	62.3	57.5
33.5	57.6	62.7	87.9	114.7	119.8	118.6	117.8	119.3	118.8	118.4	119.5	120.0	114.0	88.1	62.8	57.5
33.6	57.6	61.9	86.6	113.0	117.5	116.3	115.6	117.1	116.5	116.2	117.3	117.7	112.3	86.8	62.0	57.5
33.8	57.6	59.5	73.2	86.8	90.3	89.9	89.6	90.4	90.2	89.9	90.4	90.4	86.5	73.3	59.5	57.5
33.9	57.5	57.0	58.9	60.4	62.7	63.2	63.5	63.6	63.7	63.5	63.2	62.8	60.3	58.8	56.9	57.5
45.0	56.8	56.1	56.4	56.7	57.3	57.8	58.2	58.4	58.4	58.2	57.8	57.3	56.7	56.4	56.1	56.7

Table 20. Plate surface temperatures (Celsius) on the North side of plate 6II-1 in plate position A (EOC 151A 56.1 EFPD).

	0.00	**0.34**	**0.43**	**0.50**	**0.64**	**0.77**	**0.91**	**1.05**	**1.19**	**1.32**	**1.46**	**1.60**	**1.74**	**1.81**	**1.90**	**2.24**
0.0	52.5	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	52.5
11.0	54.5	52.2	52.2	52.3	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.3	52.3	52.2	54.6
11.1	54.6	53.1	54.2	55.0	56.1	56.2	56.2	56.2	56.2	56.2	56.3	56.2	55.1	54.2	53.1	54.6
11.3	54.6	55.4	66.7	78.1	80.5	80.9	81.4	80.3	80.8	80.6	81.4	81.6	78.5	66.8	55.4	54.6
11.4	54.6	57.5	78.4	100.4	103.6	104.3	105.4	103.3	104.2	103.8	105.4	105.7	101.0	78.7	57.6	54.7
11.5	54.7	58.3	79.6	101.9	105.7	106.4	107.5	105.4	106.2	105.9	107.5	107.8	102.6	79.9	58.4	54.7
12.0	54.8	58.2	78.5	99.8	105.1	105.2	105.3	104.3	104.3	103.7	102.8	105.3	101.1	78.9	58.3	54.8
12.5	54.9	58.9	81.1	103.1	106.4	104.4	103.1	103.5	102.5	103.2	105.2	106.0	104.0	81.2	58.9	54.9
13.0	54.9	58.9	81.0	103.0	106.5	106.4	105.7	104.4	104.8	104.6	105.2	104.3	102.2	79.9	58.6	55.0
13.5	55.1	58.9	80.8	102.2	107.0	106.4	105.5	105.5	104.9	106.5	105.7	105.4	102.9	80.4	58.8	55.1
14.0	55.1	58.9	80.8	103.9	108.6	108.0	106.6	105.7	105.7	104.9	107.4	108.0	102.0	79.6	58.6	55.1
14.5	55.2	59.3	82.0	105.0	108.6	106.9	106.9	106.7	105.2	106.1	105.9	107.9	104.2	80.8	59.0	55.2
15.0	55.3	59.3	81.8	105.3	108.2	107.8	106.0	106.9	104.8	106.4	107.2	108.6	104.2	80.9	59.0	55.3
15.5	55.4	59.3	81.7	104.3	107.6	108.6	108.2	107.8	107.4	106.6	108.6	108.8	104.7	81.9	59.3	55.4
16.0	55.4	59.4	81.9	105.6	109.5	108.5	108.1	107.0	109.0	109.0	107.8	107.0	104.1	81.4	59.3	55.5
16.5	55.5	59.3	81.2	104.5	108.5	108.0	107.6	107.6	107.1	108.3	110.0	109.9	105.3	81.9	59.4	55.6
17.0	55.6	59.4	81.7	105.7	111.1	109.0	108.2	110.0	108.0	107.2	108.7	109.2	105.6	81.7	59.4	55.6
17.5	55.7	59.6	82.1	105.7	109.4	109.5	109.0	107.3	109.7	108.1	107.5	110.6	105.7	82.0	59.5	55.7
18.0	55.8	59.6	82.0	105.0	109.8	109.3	109.4	108.6	108.9	108.7	110.8	110.0	106.1	82.7	59.7	55.8
18.5	55.9	60.0	83.7	107.8	112.2	109.3	108.3	109.0	108.7	108.9	109.1	110.0	105.7	83.1	59.9	55.9
19.0	55.9	59.7	81.9	105.3	111.0	110.7	110.5	109.7	109.8	108.1	110.0	112.6	106.4	81.9	59.6	55.9
19.5	56.0	59.8	82.4	106.1	110.3	111.1	111.4	109.9	109.4	108.1	109.8	112.4	107.6	83.1	60.0	56.0
20.0	56.1	59.9	82.3	105.7	112.0	112.0	110.2	109.1	109.8	110.8	110.7	111.3	106.7	82.9	60.0	56.1
20.5	56.2	60.2	83.5	107.5	112.8	110.0	110.2	111.4	110.3	110.7	111.3	112.0	107.9	84.2	60.3	56.2
21.0	56.2	60.3	83.6	108.1	112.4	111.2	111.6	109.9	109.6	110.2	110.5	112.2	107.2	83.1	60.1	56.2
21.5	56.3	60.3	83.4	107.5	111.1	112.0	110.8	110.4	109.8	109.8	110.4	111.8	107.6	83.8	60.4	56.3
22.0	56.4	60.3	83.2	106.9	113.3	111.5	111.0	111.5	109.7	110.8	112.2	113.2	108.2	84.2	60.5	56.4
22.5	56.5	60.4	83.6	107.9	112.4	112.9	111.5	112.1	110.7	109.6	108.6	112.7	108.1	83.7	60.4	56.4
23.0	56.5	60.5	83.7	108.1	111.2	109.8	110.1	110.9	110.9	111.8	111.8	113.4	108.2	83.8	60.5	56.5
23.5	56.6	60.6	83.8	108.1	112.4	110.2	110.5	111.7	110.5	110.9	111.4	110.8	106.9	83.1	60.4	56.6
24.0	56.6	60.7	84.2	108.2	111.9	113.3	109.7	110.4	110.1	111.2	111.1	110.4	109.2	84.8	60.8	56.6
24.5	56.7	60.7	84.0	107.8	112.5	111.4	113.0	111.9	111.2	111.8	112.5	110.5	108.7	84.2	60.7	56.7
25.0	56.8	60.7	83.8	108.1	111.3	113.0	111.4	110.6	110.1	110.9	111.3	113.6	109.3	84.7	60.9	56.7
25.5	56.8	60.8	83.8	108.0	111.7	111.6	110.8	110.2	112.2	111.5	111.7	112.6	107.7	84.1	60.9	56.8
26.0	56.9	60.9	83.9	106.9	112.3	110.4	112.0	111.3	110.3	111.6	112.5	111.7	108.1	83.9	60.8	56.8
26.5	56.9	60.9	83.6	106.8	110.4	110.0	112.5	111.8	110.5	110.9	112.5	112.9	107.5	83.6	60.8	56.9
27.0	56.9	61.2	84.7	109.3	112.7	110.3	109.9	111.6	109.5	110.5	112.0	112.2	108.9	84.6	61.1	56.9

27.5	57.0	61.2	84.7	108.3	111.0	112.0	111.2	111.2	110.1	110.5	112.4	113.3	108.3	84.2	61.1	57.0
28.0	57.0	61.1	83.8	107.8	112.7	110.6	110.9	111.0	109.9	111.6	111.3	112.1	107.4	84.2	61.2	57.0
28.5	57.1	61.2	84.0	107.6	112.4	111.5	111.6	111.1	111.0	110.3	110.6	111.9	108.9	84.2	61.2	57.0
29.0	57.1	61.4	84.6	108.9	114.0	112.3	112.2	112.3	110.8	109.7	110.7	112.0	107.9	84.3	61.3	57.1
29.5	57.2	61.3	84.0	107.0	110.1	110.9	110.9	112.6	112.3	111.1	111.2	113.9	108.4	84.0	61.3	57.1
30.0	57.2	61.4	84.3	108.4	112.1	111.2	110.0	109.4	110.0	110.1	110.7	113.1	105.7	82.9	61.1	57.2
30.5	57.2	61.4	84.0	107.8	111.6	109.7	108.8	110.1	112.3	110.1	112.5	112.0	108.2	84.6	61.5	57.2
31.0	57.2	61.3	83.1	105.9	111.2	110.8	109.9	110.7	111.5	110.5	110.5	112.1	107.5	84.4	61.5	57.2
31.5	57.3	61.2	82.8	105.1	110.3	110.8	110.3	110.0	111.4	111.1	111.6	112.3	108.2	84.2	61.5	57.2
32.0	57.3	61.5	83.5	106.8	111.6	110.0	110.9	111.1	110.1	111.4	111.6	111.8	107.1	83.7	61.5	57.2
32.5	57.3	61.7	84.4	108.0	112.0	110.8	111.6	111.3	110.6	110.6	111.5	111.7	105.8	83.1	61.4	57.3
33.0	57.3	61.8	84.5	107.5	110.1	110.1	110.1	110.7	110.9	111.3	110.0	110.7	105.1	82.4	61.3	57.3
33.5	57.3	61.7	84.3	108.4	113.0	112.0	111.3	112.6	112.2	111.8	112.8	113.2	107.7	84.5	61.7	57.3
33.6	57.3	60.9	83.1	106.8	110.9	109.9	109.3	110.6	110.1	109.8	110.7	111.1	106.2	83.3	61.0	57.3
33.8	57.3	58.8	71.0	83.3	86.4	86.1	85.9	86.6	86.4	86.2	86.6	86.6	83.0	71.1	58.7	57.3
33.9	57.3	56.5	58.2	59.5	61.6	62.1	62.3	62.5	62.5	62.3	62.1	61.7	59.5	58.1	56.4	57.3
45.0	56.6	55.7	55.9	56.2	56.8	57.2	57.6	57.7	57.7	57.6	57.2	56.8	56.2	55.9	55.7	56.5

Table 21. Plate surface temperatures (Celsius) on the South side of plate 6II-1 in plate position A (EOC 151A 56.1 EFPD).

	0.00	**0.34**	**0.43**	**0.50**	**0.64**	**0.77**	**0.91**	**1.05**	**1.19**	**1.32**	**1.46**	**1.60**	**1.74**	**1.81**	**1.90**	**2.24**
0.0	52.6	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	52.6
11.0	54.6	52.2	52.2	52.3	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.3	52.2	52.2	54.6
11.1	54.6	53.1	54.2	55.0	56.1	56.2	56.2	56.2	56.2	56.2	56.3	56.2	55.0	54.2	53.1	54.7
11.3	54.7	55.4	66.7	78.1	80.4	80.9	81.4	80.3	80.8	80.6	81.4	81.6	78.5	66.8	55.4	54.7
11.4	54.7	57.5	78.4	100.4	103.6	104.3	105.4	103.3	104.2	103.8	105.4	105.7	101.0	78.6	57.6	54.7
11.5	54.7	58.3	79.6	101.9	105.7	106.4	107.5	105.4	106.2	105.9	107.5	107.8	102.6	79.9	58.4	54.8
12.0	54.8	58.2	78.5	99.8	105.1	105.1	105.3	104.3	104.3	103.7	102.8	105.3	101.1	78.9	58.3	54.9
12.5	54.9	58.9	81.1	103.1	106.4	104.4	103.0	103.4	102.5	103.2	105.1	105.9	104.0	81.2	58.9	54.9
13.0	55.0	58.9	81.0	103.0	106.5	106.3	105.7	104.3	104.8	104.5	105.2	104.2	102.2	79.9	58.6	55.0
13.5	55.1	58.9	80.8	102.2	107.0	106.4	105.4	105.5	104.9	106.5	105.7	105.4	102.9	80.4	58.8	55.1
14.0	55.2	58.9	80.8	103.9	108.6	108.0	106.5	105.7	105.7	104.9	107.4	108.0	102.0	79.6	58.6	55.2
14.5	55.3	59.3	82.0	105.0	108.6	106.9	106.8	106.7	105.1	106.1	105.9	107.8	104.2	80.8	59.0	55.3
15.0	55.4	59.3	81.8	105.3	108.2	107.7	106.0	106.8	104.8	106.3	107.2	108.6	104.2	80.9	59.0	55.4
15.5	55.4	59.3	81.7	104.3	107.5	108.6	108.2	107.7	107.4	106.5	108.6	108.7	104.7	81.9	59.3	55.5
16.0	55.5	59.4	81.9	105.5	109.5	108.5	108.1	106.9	109.0	108.9	107.8	106.9	104.0	81.4	59.2	55.5
16.5	55.6	59.2	81.2	104.5	108.4	108.0	107.5	107.5	107.1	108.2	109.9	109.9	105.2	81.9	59.4	55.6
17.0	55.7	59.4	81.7	105.6	111.1	108.9	108.1	109.9	107.9	107.1	108.7	109.1	105.5	81.7	59.4	55.7
17.5	55.8	59.6	82.1	105.7	109.4	109.5	109.0	107.3	109.6	108.0	107.5	110.5	105.6	82.0	59.5	55.8
18.0	55.9	59.6	82.0	105.0	109.8	109.2	109.3	108.5	108.8	108.7	110.7	109.9	106.0	82.6	59.7	55.9
18.5	56.0	60.0	83.6	107.7	112.1	109.2	108.2	108.9	108.7	108.9	109.1	110.0	105.7	83.1	59.9	56.0
19.0	56.0	59.7	81.9	105.3	111.0	110.6	110.5	109.6	109.8	108.1	110.0	112.6	106.3	81.9	59.6	56.0
19.5	56.1	59.8	82.4	106.0	110.2	111.1	111.3	109.8	109.3	108.1	109.8	112.4	107.6	83.1	60.0	56.1
20.0	56.2	59.9	82.3	105.7	112.0	112.0	110.1	109.0	109.8	110.8	110.7	111.2	106.7	82.9	60.0	56.2
20.5	56.3	60.2	83.4	107.5	112.7	109.9	110.2	111.4	110.2	110.7	111.2	112.0	107.8	84.2	60.3	56.3
21.0	56.3	60.2	83.6	108.1	112.4	111.2	111.5	109.8	109.6	110.1	110.4	112.2	107.2	83.0	60.1	56.3
21.5	56.4	60.3	83.4	107.4	111.1	111.9	110.7	110.3	109.7	109.7	110.4	111.7	107.5	83.8	60.4	56.4
22.0	56.5	60.3	83.2	106.9	113.3	111.5	110.9	111.4	109.6	110.7	112.1	113.2	108.2	84.2	60.5	56.5
22.5	56.5	60.4	83.6	107.9	112.3	112.8	111.4	112.1	110.6	109.5	108.6	112.7	108.1	83.7	60.4	56.5
23.0	56.6	60.5	83.6	108.1	111.2	109.7	110.0	110.8	110.9	111.7	111.8	113.3	108.1	83.8	60.5	56.6
23.5	56.7	60.6	83.8	108.1	112.3	110.2	110.4	111.7	110.5	110.8	111.3	110.8	106.8	83.1	60.4	56.7
24.0	56.7	60.7	84.2	108.2	111.9	113.2	109.6	110.3	110.0	111.1	111.0	110.4	109.2	84.8	60.8	56.7
24.5	56.8	60.7	83.9	107.7	112.4	111.3	112.9	111.8	111.1	111.8	112.4	110.4	108.6	84.2	60.7	56.8
25.0	56.8	60.7	83.8	108.1	111.2	112.9	111.3	110.5	110.0	110.8	111.3	113.5	109.3	84.7	60.9	56.8
25.5	56.9	60.8	83.8	108.0	111.6	111.5	110.7	110.1	112.1	111.4	111.6	112.5	107.7	84.1	60.8	56.8
26.0	56.9	60.9	83.9	106.9	112.2	110.3	111.9	111.2	110.2	111.5	112.4	111.6	108.0	83.9	60.8	56.9
26.5	57.0	60.9	83.6	106.8	110.3	109.9	112.4	111.7	110.4	110.8	112.4	112.8	107.4	83.6	60.8	57.0
27.0	57.0	61.1	84.6	109.2	112.6	110.3	109.8	111.5	109.3	110.4	111.9	112.2	108.8	84.5	61.1	57.0

27.5	57.0	61.2	84.6	108.3	110.9	111.9	111.1	111.1	110.0	110.4	112.3	113.2	108.2	84.2	61.1	57.0
28.0	57.1	61.1	83.8	107.7	112.6	110.5	110.8	110.9	109.7	111.5	111.3	112.0	107.3	84.2	61.2	57.1
28.5	57.1	61.2	83.9	107.6	112.3	111.4	111.5	111.0	110.9	110.2	110.5	111.8	108.9	84.2	61.2	57.1
29.0	57.2	61.3	84.6	108.8	113.9	112.2	112.0	112.2	110.7	109.6	110.6	111.9	107.8	84.3	61.3	57.1
29.5	57.2	61.3	84.0	106.9	110.0	110.8	110.8	112.5	112.1	111.0	111.1	113.8	108.3	84.0	61.2	57.2
30.0	57.3	61.4	84.3	108.3	112.0	111.1	109.8	109.2	109.9	110.0	110.6	113.0	105.7	82.9	61.1	57.2
30.5	57.3	61.4	83.9	107.7	111.5	109.6	108.6	110.0	112.2	110.0	112.4	111.9	108.1	84.6	61.5	57.2
31.0	57.3	61.2	83.1	105.8	111.2	110.6	109.8	110.6	111.3	110.3	110.3	112.0	107.4	84.3	61.5	57.2
31.5	57.3	61.2	82.7	105.1	110.2	110.7	110.2	109.8	111.3	111.0	111.5	112.2	108.1	84.2	61.5	57.3
32.0	57.4	61.4	83.5	106.7	111.6	109.9	110.8	110.9	110.0	111.3	111.4	111.7	107.0	83.7	61.4	57.3
32.5	57.4	61.7	84.4	108.0	111.9	110.6	111.4	111.1	110.4	110.5	111.4	111.6	105.7	83.0	61.4	57.3
33.0	57.4	61.8	84.5	107.4	110.0	110.0	109.9	110.5	110.8	111.1	109.9	110.6	105.0	82.3	61.2	57.3
33.5	57.4	61.7	84.3	108.3	112.9	111.9	111.2	112.5	112.0	111.7	112.7	113.1	107.7	84.5	61.7	57.3
33.6	57.4	60.9	83.0	106.7	110.8	109.8	109.1	110.4	110.0	109.6	110.6	111.0	106.1	83.3	60.9	57.3
33.8	57.4	58.7	71.0	83.2	86.4	86.1	85.8	86.6	86.3	86.1	86.5	86.5	82.9	71.0	58.7	57.3
33.9	57.4	56.4	58.1	59.5	61.6	62.0	62.2	62.4	62.4	62.3	62.1	61.6	59.5	58.1	56.4	57.3
45.0	56.5	55.7	55.9	56.2	56.7	57.2	57.5	57.6	57.6	57.5	57.1	56.7	56.2	55.9	55.6	56.5

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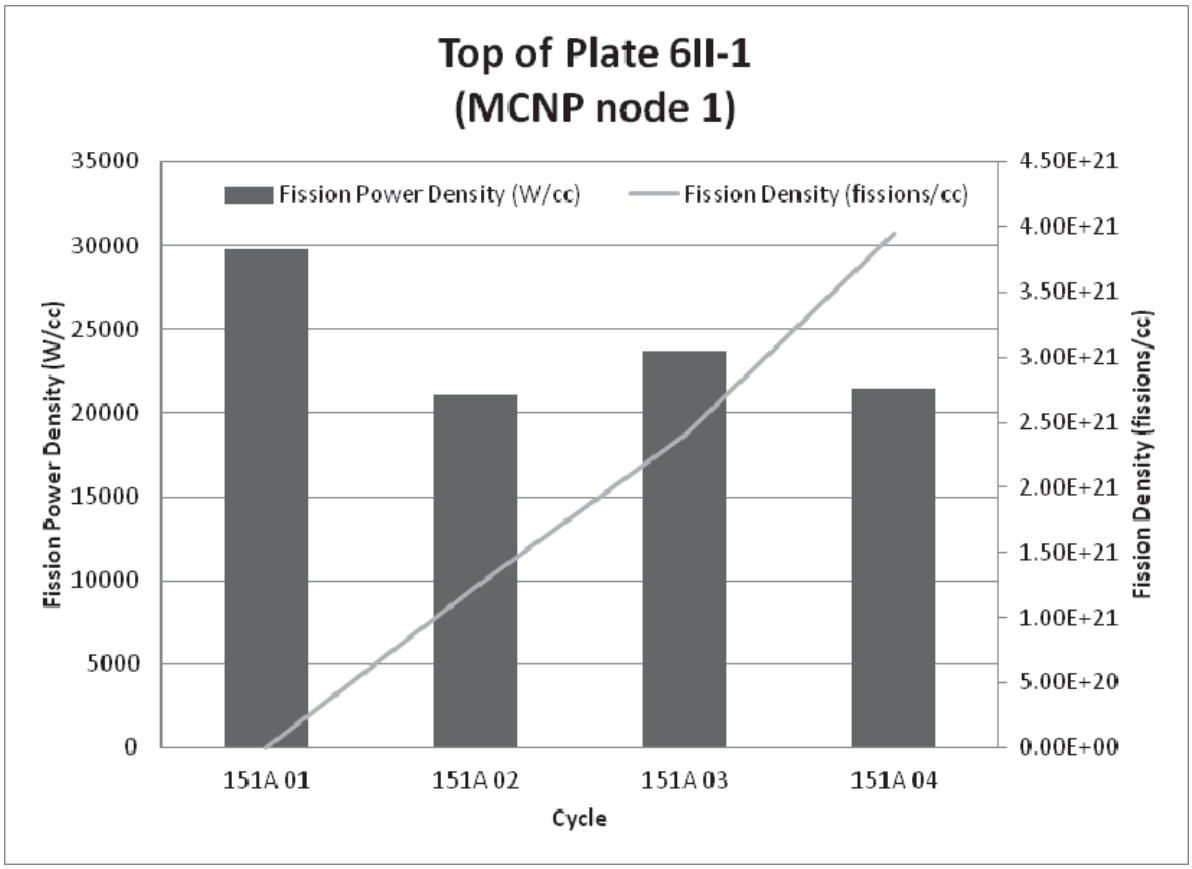
Appendix A:
Individual Plate Power and Fission Density Plots


Top of Plate 6II-1
(MCNP node 1)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
35000
30000
25000
20000
15000
10000
5000
0
4.50E+21
4.00E+21
3.50E+21
3.00E+21
2.50E+21
2.00E+21
1.50E+21
1.00E+21
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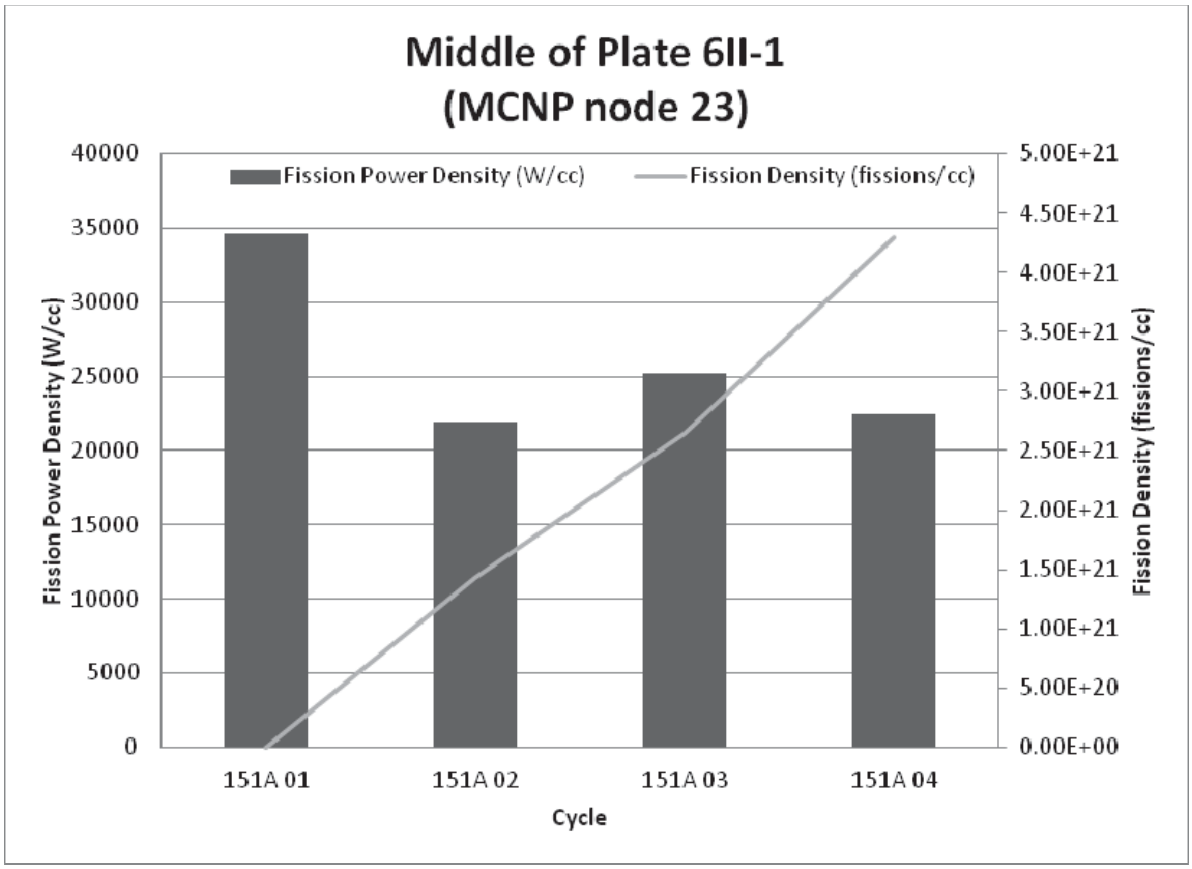
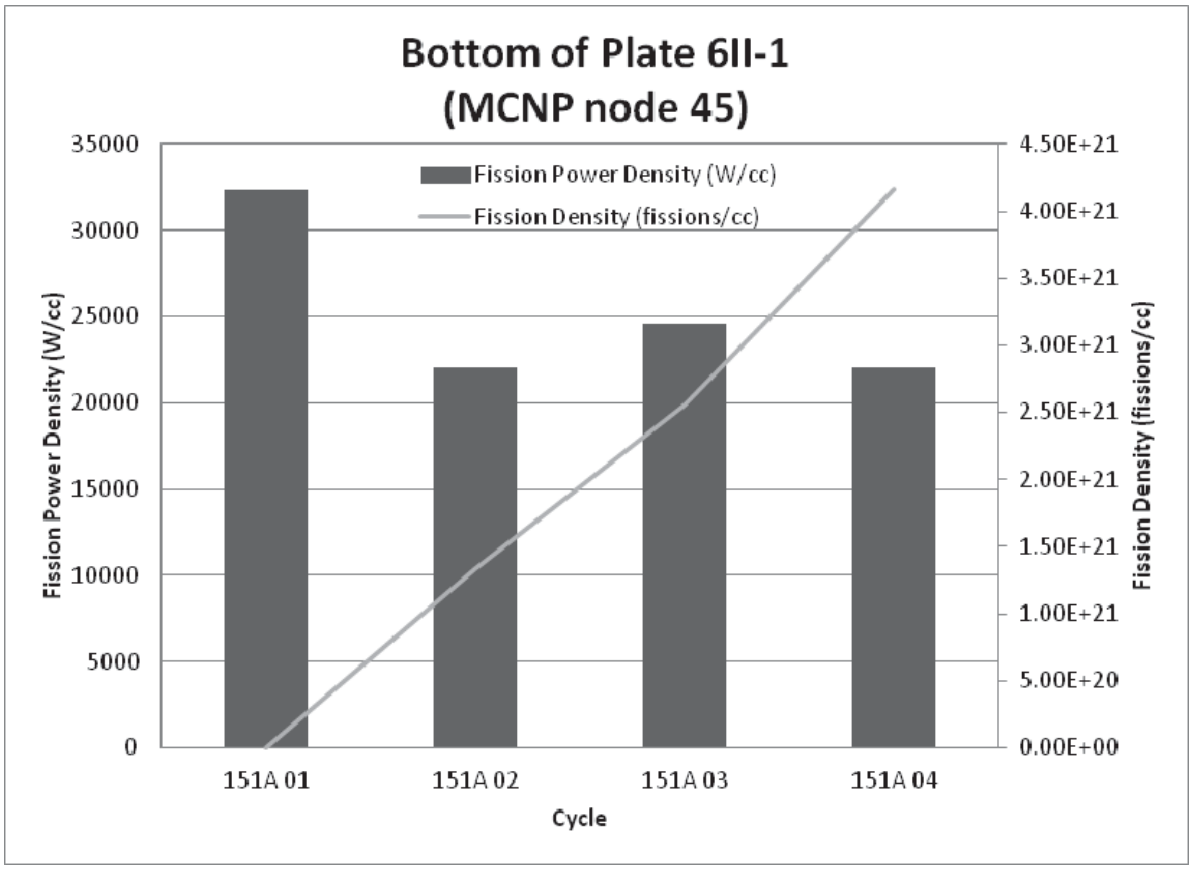
0.00E+00
151A 01
151A 02
151A 03
151A 04
Cycle


Middle of Plate 6II-1
(MCNP node 23)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
40000
35000
30000
25000
20000
15000
10000
5000
0
5.00E+21
4.50E+21
4.00E+21
3.50E+21
3.00E+21
2.50E+21
2.00E+21
1.50E+21
1.00E+21
5.00E+20
0.00E+00
151A 01
151A 02
151A 03
151A 04
Cycle


Bottom of Plate 6II-1
(MCNP node 45)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
Fission Power Density (W/cc)
Fission Density (fissions/cc)
35000
30000
25000
20000
15000
10000
5000
0
4.50E+21
4.00E+21
3.50E+21
3.00E+21
2.50E+21
2.00E+21
1.50E+21
1.00E+21
5.00E+20
0.00E+00
151A 01
151A 02
151A 03
151A 04
Cycle