Dominion Nuclear Connecticut, Inc.
Rope Ferry Rd., Waterford, CT 06385
Mailing Address: P.O. Box 128
Waterford, CT 06385
dom.com

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U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Serial No.	16-399
NSS&L/MLC	R0
Docket No.	50-423
License No.	NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
UPDATE TO THE CYCLE 18 CORE OPERATING LIMITS REPORT

In accordance with the Millstone Power Station Unit 3 (MPS3) Technical Specifications (TSs), Section 6.9.1.6.d, Dominion Nuclear Connecticut, Inc., hereby submits, as Enclosure 1, an update to the Cycle 18 Core Operating Limits Report (COLR).

The MPS3 Cycle 18 COLR was updated to be consistent with changes to the MPS3 TSs that were recently approved by the NRC under License Amendment 268 (ADAMS Accession No. ML16131A728). License Amendment 268 revised the MPS3 technical specifications to:

(1) allow the use of Dominion nuclear safety and reload core design methods;

(2) allow the use of applicable departure from nucleate boiling ratio design limits for VIPRE-D;

(3) update the approved reference methodologies cited in TS 6.9.1.6.b;

(4) remove the base load mode of operation which is not a feature of the Dominion Relaxed Power Distribution Control power distribution control methodology; and

(5) address the issues identified in Westinghouse Nuclear Safety Advisory Letter (NSAL)-09-5, Rev. 1, Westinghouse Communication 06-IC-03, and NSAL-15-1

The MPS3 Cycle 18 COLR changes in support of License Amendment 268 include:

- Formatting changes related to Item (3) were made to the COLR Analytical Methods section to maintain consistency with TS 6.9.1.6.b changes approved under License Amendment 268.

- All references to base load operation were removed from the Cycle 18 COLR consistent with Item (4).

- The Cycle 18 COLR was updated to maintain consistency with the amended MPS3 TS Sections 3.2.1.1/4.2.1.1 (Axial Flux Difference) and 3.2.2.1/4.2.2.1 (Heat Flux Hot Channel Factor) related to Item (5). The associated Cycle 18 COLR limits were revised and new COLR items were added.

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The approved methodologies from Items (1) and (3) are not included in the updated Cycle 18 COLR since they were not used to support the current M3C18 reload cycle design. Item (2) does not require a COLR change.

The update to the Cycle 18 COLR has been incorporated into the MPS3 Technical Requirements Manual.

If you have any questions or require additional information, please contact Mr. Jeffry A. Langan at (860) 444-5544.

Sincerely,

B. L. Stanley
Director, Nuclear Station Safety and Licensing - Millstone

Enclosures: (1)

Commitments made in this letter: None.

cc: U.S. Nuclear Regulatory Commission
Region I
2100 Renaissance Blvd, Suite 100
King of Prussia, PA 19406-2713

R. V. Guzman
Senior Project Manager – Millstone Power Station
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop O8 C2
11555 Rockville Pike
Rockville, MD 20852-2738

NRC Senior Resident Inspector
Millstone Power Station

Serial No. 16-399
Docket No. 50-423

ENCLOSURE 1

UPDATE TO THE CYCLE 18 CORE OPERATING LIMITS REPORT

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3

TECHNICAL REQUIREMENTS MANUAL

APPENDIX 8.1

CORE OPERATING LIMITS REPORT

MILLSTONE UNIT 3

CYCLE 18

CORE OPERATING LIMITS REPORT

Table of Contents

List of Figures

List of Tables

Millstone Unit 3
Cycle 18
CORE OPERATING LIMITS REPORT

1.0 CORE OPERATING LIMITS REPORT

This CORE OPERATING LIMITS REPORT (COLR) for Millstone Unit 3 Cycle 18 has been prepared in accordance with the requirements of Technical Specification 6.9.1.6.a. The Technical Specifications affected by this report are listed below.

2.1.1	Safety Limits
2.2.1	Limiting Safety System Settings
3/4.1.1.1.1	SHUTDOWN MARGIN - MODES 1 and 2
3/4.1.1.1.2	SHUTDOWN MARGIN - MODES 3, 4 and 5 Loops Filled
3/4.1.1.2	SHUTDOWN MARGIN - MODE 5 Loops Not Filled
3/4.1.1.3	Moderator Temperature Coefficient
3/4.1.3.5	Shutdown Rod Insertion Limit
3/4.1.3.6	Control Rod Insertion Limits
3/4.2.1.1	AXIAL FLUX DIFFERENCE
3/4.2.2.1	Heat Flux Hot Channel Factor
3/4.2.3.1	RCS Total Flow Rate and Nuclear Enthalpy Rise Hot Channel Factor
3/4.2.5	DNB Parameters
3/4.3.5	Shutdown Margin Monitor Alarm Setpoint
3/4.9.1.1	REFUELING Boron Concentration

2.0 Operating Limits

The cycle-specific parameter limits for the specifications listed in Section 1.0 are presented in the following subsections. These limits have been developed using the NRC-approved methodologies specified in Technical Specification 6.9.1.6.b.

2.1 Safety Limits (Specification 2.1.1)

2.1.1 Reactor Core

The combination of THERMAL POWER, Reactor Coolant System highest loop average temperature, and pressurizer pressure shall not exceed the limits shown in Figure 1.

2.2 Limiting Safety System Settings (Specification 2.2.1)

2.2.1 Overtemperature ΔT

2.2.1.1 $K_1 \leq 1.20$

2.2.1.2 $K_2 \geq 0.025$ / °F

2.2.1.3 $K_3 \geq 0.00113$ / psi

2.2.1.4 $\tau_1 \geq 8$ seconds

2.2.1.5 $\tau_2 \leq 3$ seconds

2.2.1.6 $\tau_4 \geq 20$ seconds

2.2.1.7 $\tau_5 \leq 4$ seconds

2.2.1.8 T' is loop specific indicated T_{avg} at RATED THERMAL POWER, ≤ 587.1°F

2.2.1.9 P' is nominal pressurizer pressure, ≥ 2250 psia

2.2.1.10 $f_1(\Delta I)$ is a function of the indicated difference between top and bottom detectors of the power range neutron ion chambers; with nominal gains to be selected based on measured instrument response during plant startup tests calibrations such that:

(1) For $q_t - q_b$ between -18% and +10%, $f_1(\Delta I) \geq 0$, where q_t and q_b are percent RATED THERMAL POWER in the upper and lower halves of the core, respectively, and $q_t + q_b$ is the total THERMAL POWER in percent RATED THERMAL POWER;

(2) For each percent that the magnitude of $q_t - q_b$ exceeds -18%, the ΔT Trip Setpoint shall be automatically reduced by ≥ 3.75% of its value at RATED THERMAL POWER.

(3) For each percent that the magnitude of $q_t - q_b$ exceeds +10%, the ΔT Trip Setpoint shall be automatically reduced by ≥ 2.14% of its value at RATED THERMAL POWER.

2.2.2 Overpower ΔT

2.2.2.1 $K_4 \leq 1.10$

2.2.2.2 Deleted

2.2.2.3 $K_6 \geq 0.0015$ / °F when T > T" and $K_6 \leq 0$ / °F when T≤ T"

2.2.2.4 $\tau_1 \geq 8$ seconds

2.2.2.5 $\tau_2 \leq 3$ seconds

2.2.2.6 Deleted

2.2.2.7 T" is loop specific indicated T_{avg} at RATED THERMAL POWER, ≤ 587.1°F

2.3 SHUTDOWN MARGIN - MODES 1 and 2 (Specification 3/4.1.1.1.1)

2.3.1 The SHUTDOWN MARGIN shall be greater than or equal to 1.3% Δk/k.

2.4 SHUTDOWN MARGIN - MODES 3, 4 and 5 Loops Filled (Specification 3/4.1.1.1.2)

2.4.1 The SHUTDOWN MARGIN shall be greater than or equal to the limits shown in Figures 2, 3 and 4.[1]

2.5 SHUTDOWN MARGIN - MODE 5 Loops Not Filled (Specification 3/4.1.1.2)

2.5.1 The SHUTDOWN MARGIN shall be greater than or equal to the limits shown in Figure 5 or the limits shown in Figure 4 with the chemical and volume control system (CVCS) aligned to preclude reactor coolant system boron concentration reduction.[1]

2.6 Moderator Temperature Coefficient (Specification 3/4.1.1.3)

2.6.1 The BOL/ARO/0% - 70% RTP MTC shall be less positive than + 0.5 x 10^{-4} Δk/k/°F. Above 70% RTP, the MTC limit is a linear ramp to 0 Δk/k/°F at 100% RTP.

2.6.2 The EOL/ARO/RTP MTC shall be less negative than - 5.65 x 10^{-4} Δk/k/°F.

[1]The SHUTDOWN MARGIN requirements in Figures 2, 3, 4 and 5 are based on cycle-specific boron dilution analyses performed by Dominion.

2.6.3 The 300 ppm/ARO/RTP MTC should be less negative than or equal to - 4.9 x 10^{-4} $\Delta k/k/°F$,

where: BOL stands for Beginning Of Cycle Life

ARO stands for All Rods Out

HZP stands for Hot Zero Power

EOL stands for End Of Cycle Life

RTP stands for RATED THERMAL POWER.

2.7 Shutdown Rod Insertion Limit (Specification 3/4.1.3.5)

2.7.1 The shutdown rods shall be at least 220 steps withdrawn (inclusive).

2.8 Control Rod Insertion Limits (Specification 3/4.1.3.6)

2.8.1 The control rod banks shall be limited in physical insertion as shown in Figure 6, and

2.8.2 Control bank A shall be at least 220 steps withdrawn.

2.9 AXIAL FLUX DIFFERENCE (Specification 3/4.2.1.1)

2.9.1 The AXIAL FLUX DIFFERENCE (AFD) limits are provided in Figure 7.

2.9.2 Deleted

2.9.3 Deleted

2.10 Heat Flux Hot Channel Factor - $F_Q(Z)$ (Specification 3/4.2.2.1)

$$F_Q^M(Z) \leq \frac{F_Q^{RTP}}{P} \times K(Z) \quad \text{for } P > 0.5$$

$$F_Q^M(Z) \leq \frac{F_Q^{RTP}}{0.5} \times K(Z) \quad \text{for } P \leq 0.5$$

where: $$P = \frac{THERMAL\ POWER}{RATED\ THERMAL\ POWER}$$

2.10.1 $F^{RTP}_Q = 2.60$.

2.10.2 K(Z) is provided in Figure 8.

2.11 Heat Flux Hot Channel Factor Surveillance - $F_Q(Z)$ (Specification 3/4.2.2.1.2)

$$F_Q^M(Z) \leq \frac{F_Q^{RTP} \times K(Z)}{P \times W(Z)} \quad \text{for } P > 0.5$$

$$F_Q^M(Z) \leq \frac{F_Q^{RTP} \times K(Z)}{0.5 \times W(Z)} \quad \text{for } P \leq 0.5$$

where: $P = \frac{THERMAL\ POWER}{RATED\ THERMAL\ POWER}$

2.11.1 $F^{RTP}_Q = 2.60$.

2.11.2 K(Z) is provided in Figure 8.

2.11.3 W(Z) values for RAOC operation are provided in Table 1. The Cycle 18 burnup dependent RAOC W(Z) values are valid over the range of burnup from 0 to 21,600 MWD/MTU.

2.11.4 Deleted.

2.11.5 W(Z) values for Part Power operation are provided in Table 3. The Cycle 18 burnup dependent Part Power W(Z) values are valid over the range of burnup from 0 to 150 MWD/MTU.

2.11.6 The factors in Table 4 shall be used for surveillance requirement 4.2.2.1.2. A 2% factor shall be used outside of the burnup range shown in Table 4.

2.11.7 The values provided in Table 5 shall be used to reduce the normal operating space for $F_Q(Z)$ exceeding its limits.

2.11.8 W(Z) values for RAOC operation for compensatory action at 97% RTP for 1% Transient F_Q Margin Gain are provided in Table 6. The Cycle 18 burnup dependent W(Z) values are valid over a range of burnup from 0 to 21,600 MWD/MTU.

2.11.9 W(Z) values for RAOC operation for compensatory action at 95% RTP for 2% Transient FQ Margin Gain are provided in Table 7. The Cycle 18 burnup dependent W(Z) values are valid over a range of burnup from 0 to 21,600 MWD/MTU.

2.11.10 W(Z) values for RAOC operation for compensatory action at 93% RTP for 3% Transient F_Q Margin Gain are provided in Table 8. The Cycle 18 burnup dependent W(Z) values are valid over a range of burnup from 0 to 21,600 MWD/MTU.

2.12 RCS Total Flow Rate and Nuclear Enthalpy Rise Hot Channel Factor - $F^N_{\Delta H}$ (Specification 3/4.2.3.1)

2.12.1 The RCS Total Flow Rate shall be greater than or equal to 379,200 gpm.

2.12.2 $F^N_{\Delta H} \leq F^{RTP}_{\Delta H} \times (1 + PF_{\Delta H} \times [1 - P])$

where: $P = \frac{THERMAL\ POWER}{RATED\ THERMAL\ POWER}$

2.12.2.1 $F^{RTP}_{\Delta H}$ = 1.586 for Robust Fuel Assemblies (RFA) and (RFA-2)

2.12.2.2 $PF_{\Delta H}$ = 0.3 for P < 1.0.

2.13 DNB Parameters (Specification 3/4.2.5)

The following DNB-related parameters shall be maintained within the limits specified below:

2.13.1 Reactor Coolant System T_{avg} shall be maintained ≤ 593.5°F.

2.13.2 Pressurizer Pressure shall be maintained ≥ 2204 psia [2].

[2] Limit not applicable during either a THERMAL POWER ramp in excess of 5% of RATED THERMAL POWER per minute or a THERMAL POWER step in excess of 10% of RATED THERMAL POWER.

2.14 Shutdown Margin Monitor Alarm Setpoint (Specification 3/4.3.5)[3]

2.14.1 The Shutdown Margin Monitor (SMM) minimum count rate and Alarm Ratio Setting to meet Limiting Condition for Operation (LCO) 3.3.5 shall be as shown below.

Tech. Spec. LCO	SMM Alarm Ratio Setting	Min. Count Rate (counts/sec)
3.3.5.a	1.50	1.0
	1.25	0.6
3.3.5.b.1	1.50	0.50
	1.25	0.35
3.3.5.b.2	1.50	0.35
	1.25	0.25

The combination of the SMM Alarm Ratio setting and minimum count rate accounts for the time lag between the indicated and actual count rates, as well as other uncertainties. The specified SMM Alarm Ratio setting ensures that the assumption that an alarm is generated at flux doubling in the Boron Dilution Event analysis remains valid. The count rate is displayed on the SMM.

2.15 Refueling Boron Concentration (Specification 3/4.9.1.1)

2.15.1 The boron concentration of all filled portions of the Reactor Coolant System and the refueling cavity shall be maintained at a boron concentration of greater than or equal to 2600 ppm.[4]

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[3] Section 2.14 is based on cycle-specific boron dilution analyses performed by Dominion.

[4] This boron concentration bounds the condition of $k_{eff} \leq 0.95$ (all rods in less the most reactive two rods) and subcriticality ($k_{eff} \leq 1.0$ with all rods out).

Figure 1—Reactor Core Safety Limit

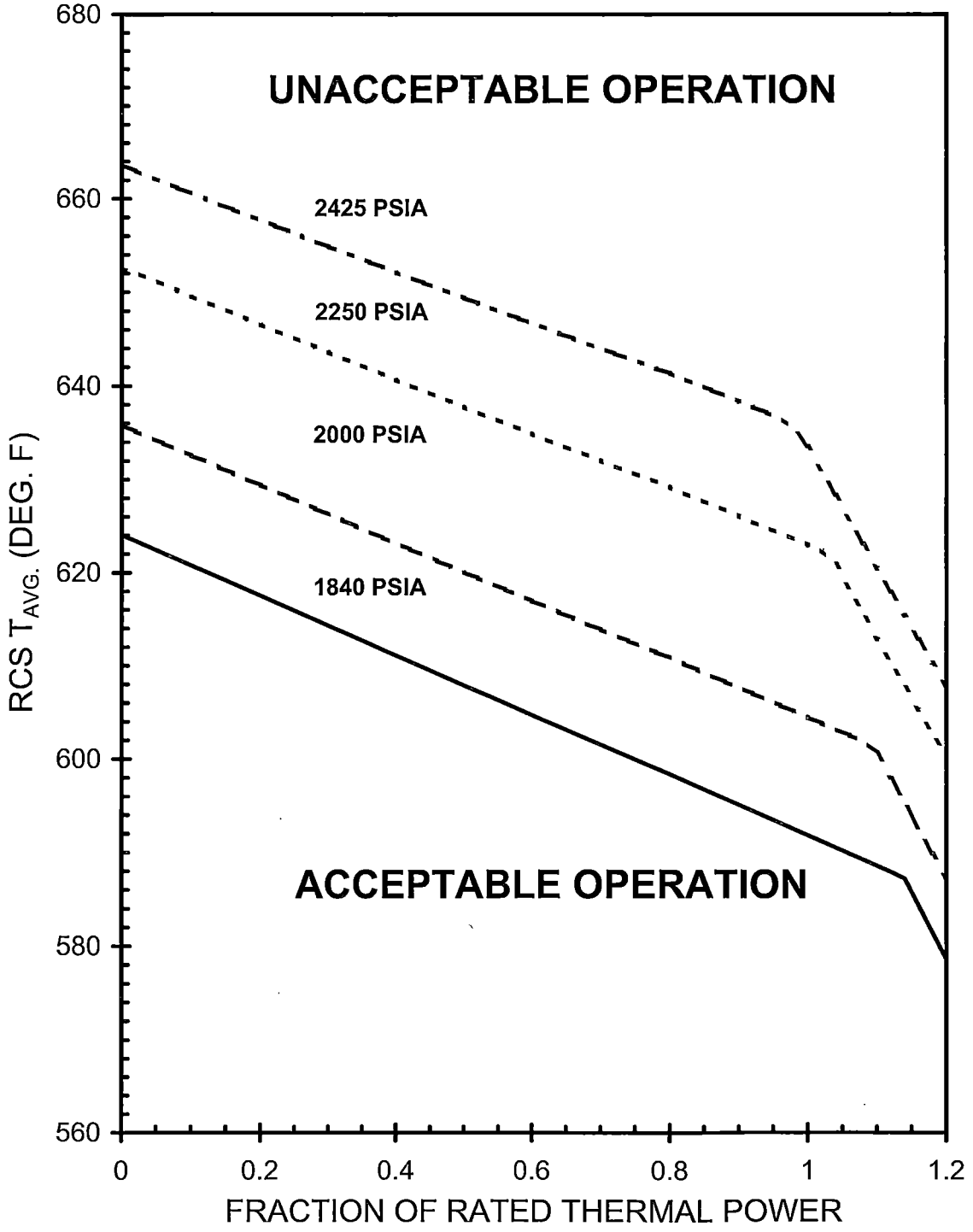

Figure 2—Required SHUTDOWN MARGIN for MODE 3

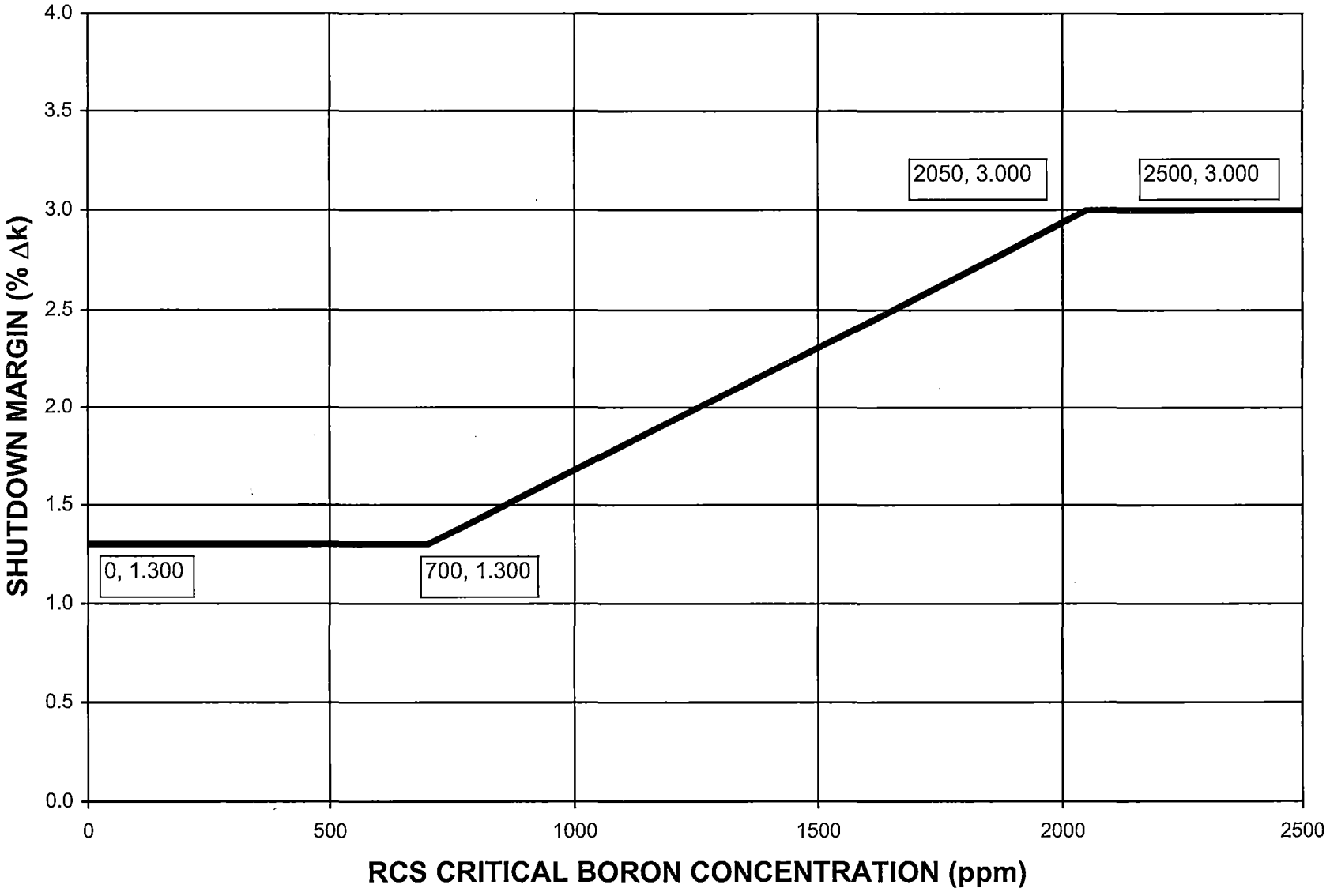

Figure 3—Required SHUTDOWN MARGIN for MODE 4

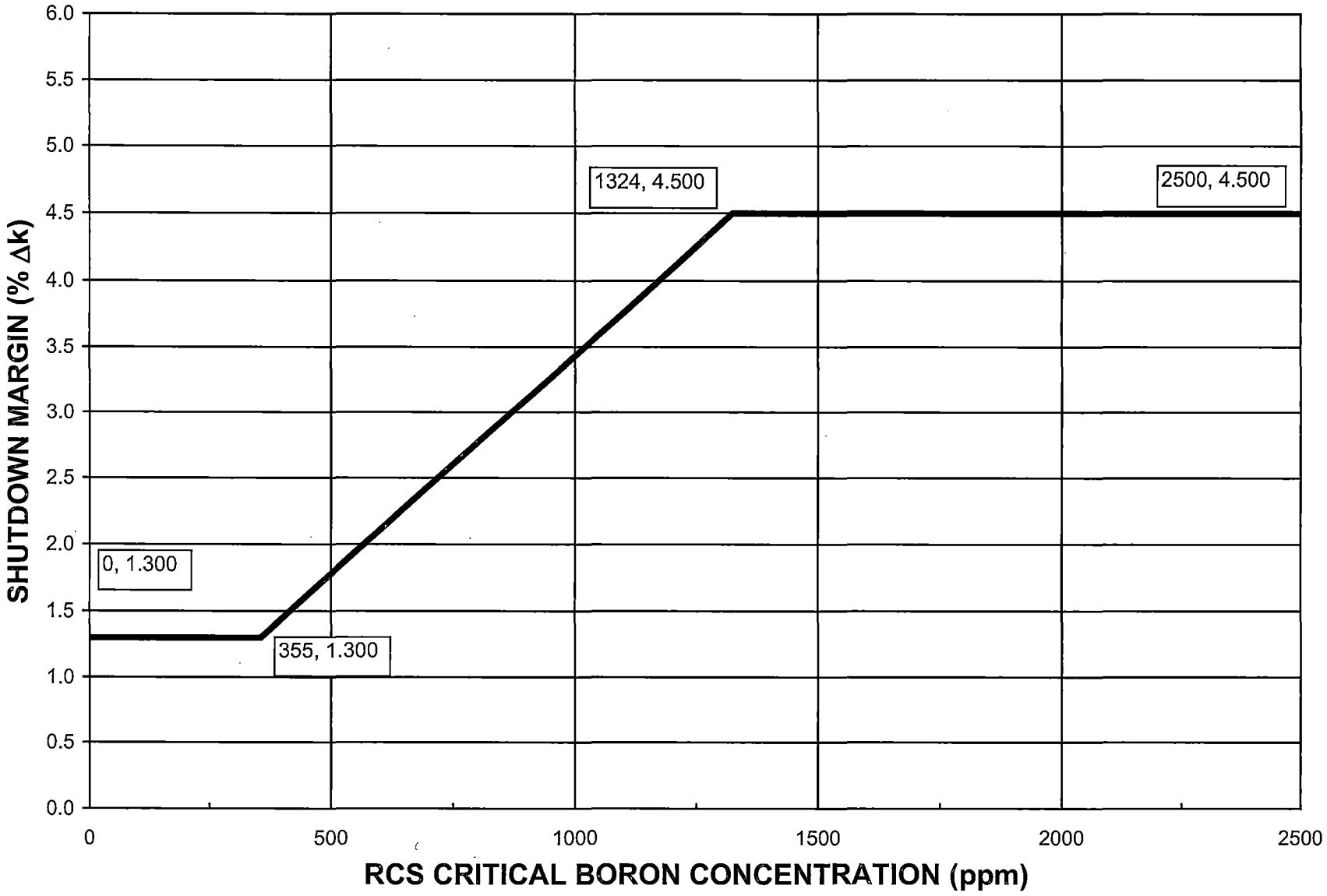

Figure 4—Required SHUTDOWN MARGIN for MODE 5 with RCS Loops Filled

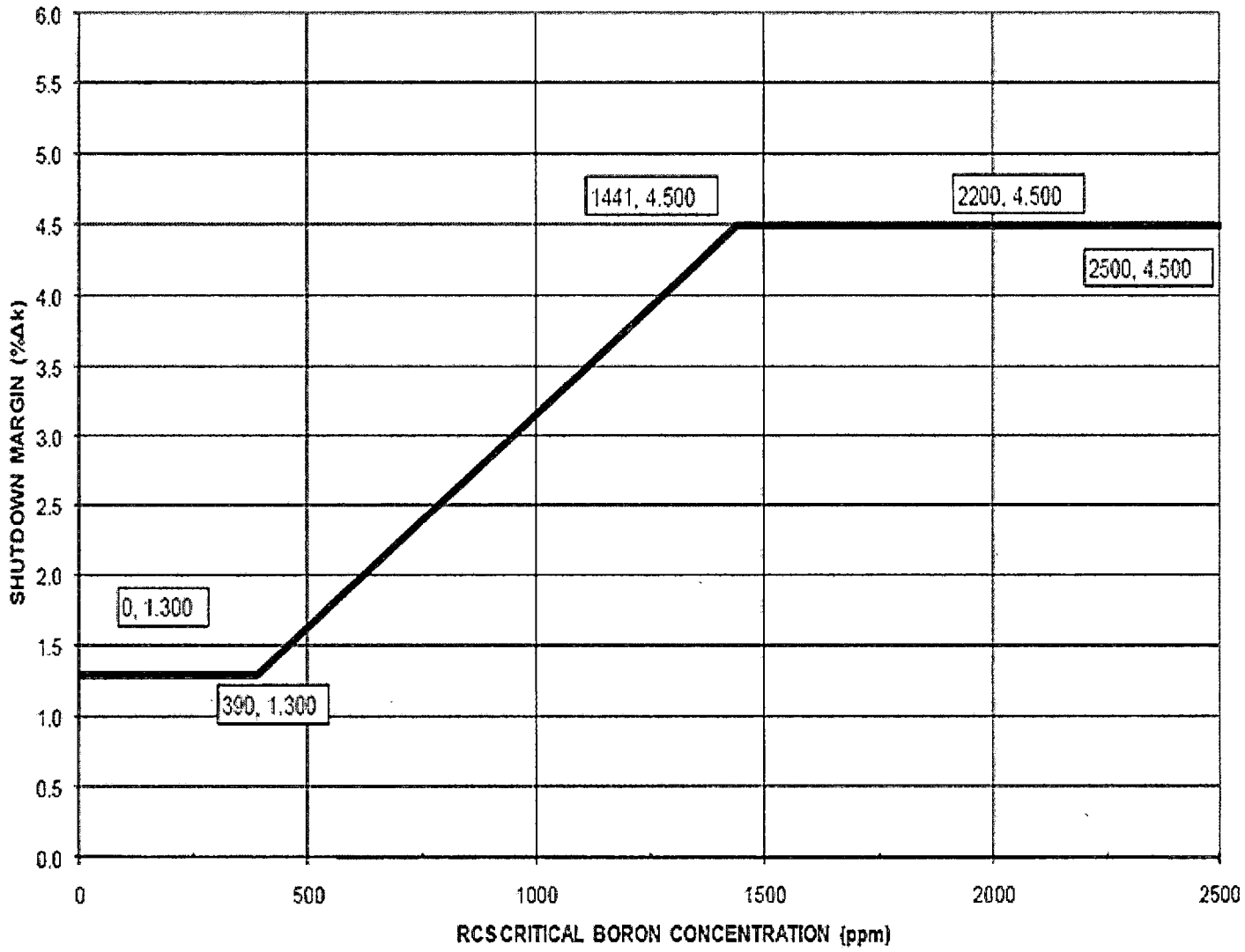

Figure 5—Required SHUTDOWN MARGIN for MODE 5 with RCS Loops Not Filled

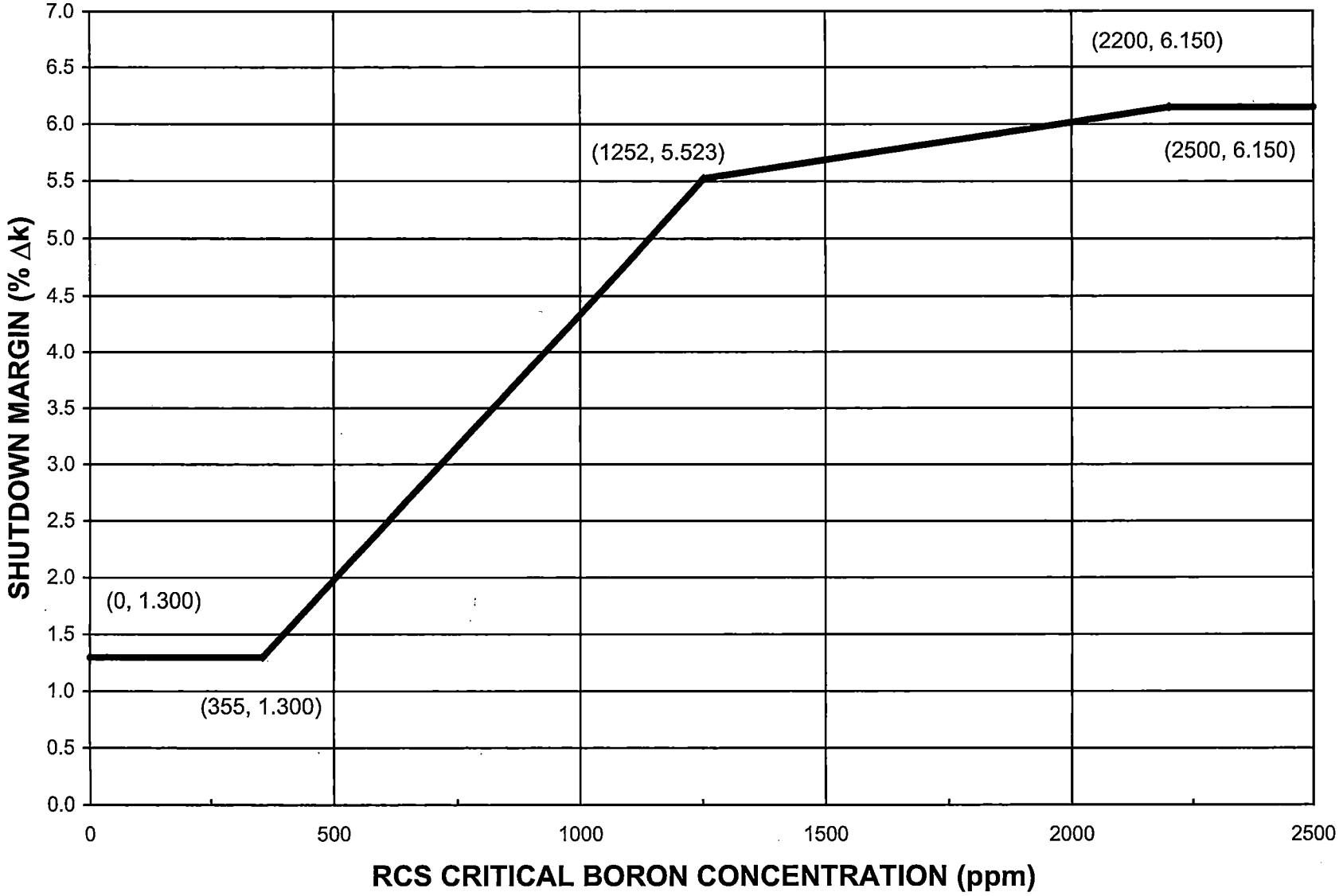

Figure 6—Control Rod Bank Insertion Limits versus THERMAL POWER

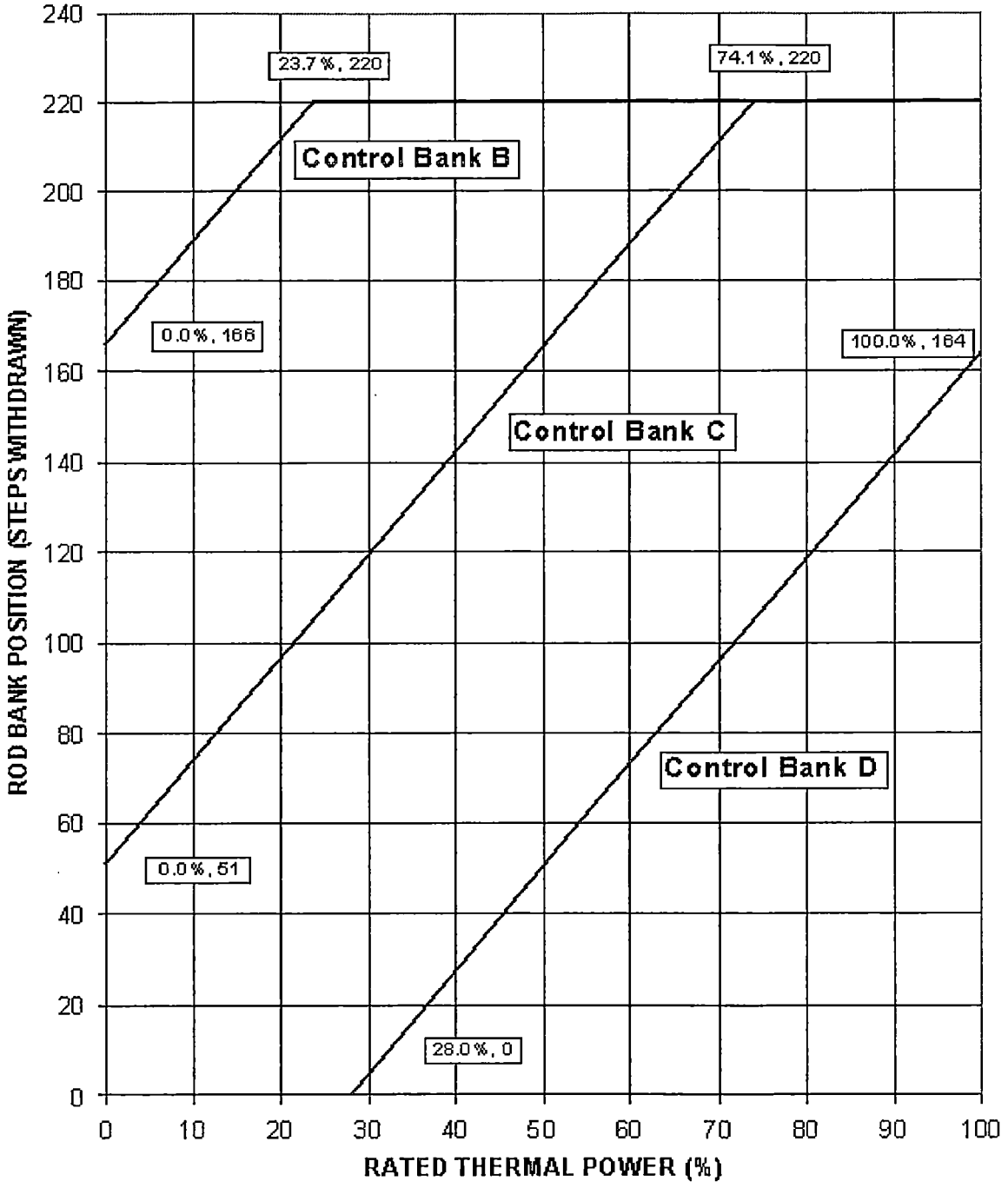

Figure 7—AXIAL FLUX DIFFERENCE Limits as a Function of RATED THERMAL POWER

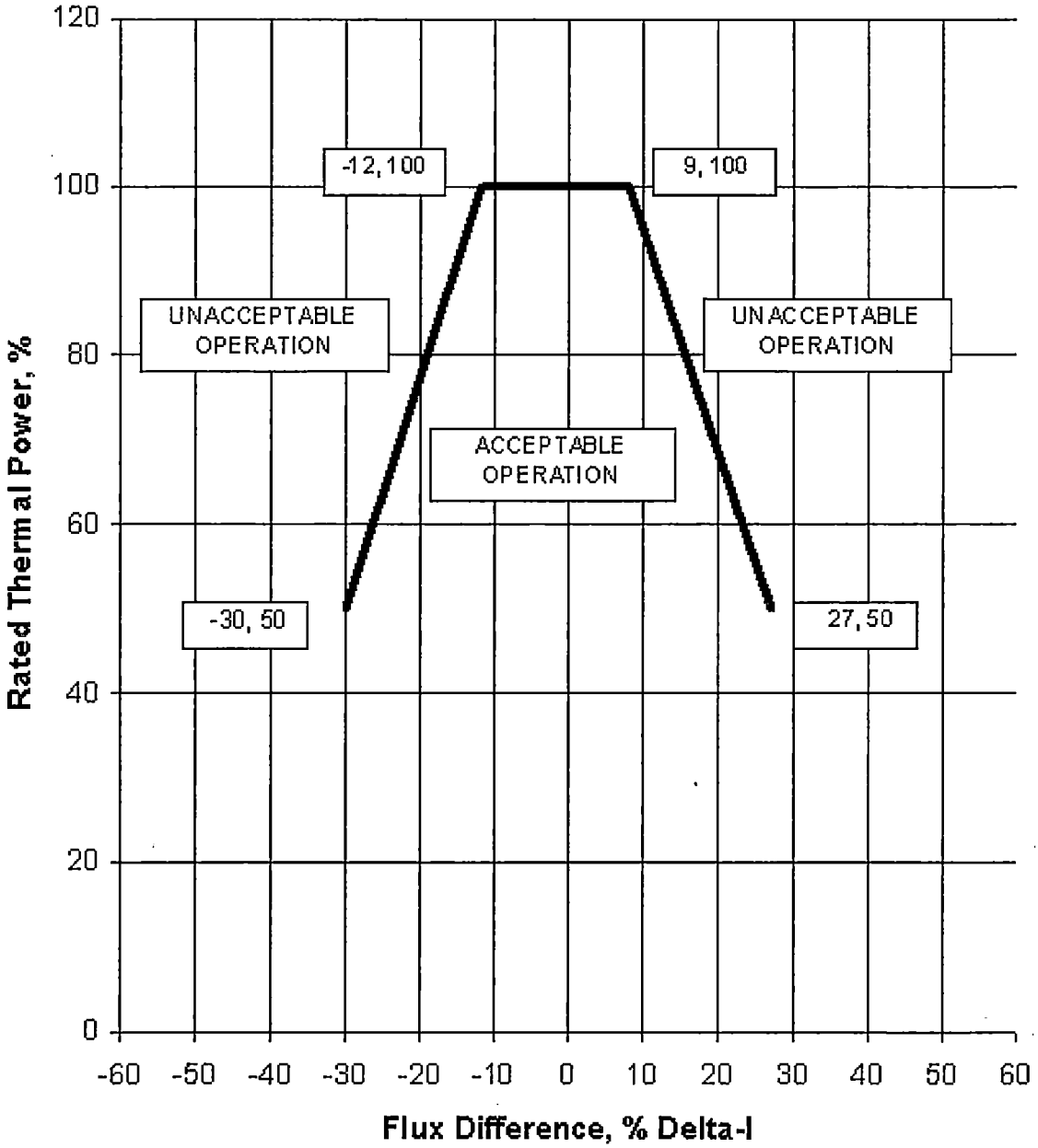

Figure 8—K(Z) - Normalized $F_Q(Z)$ as a Function of Core Height

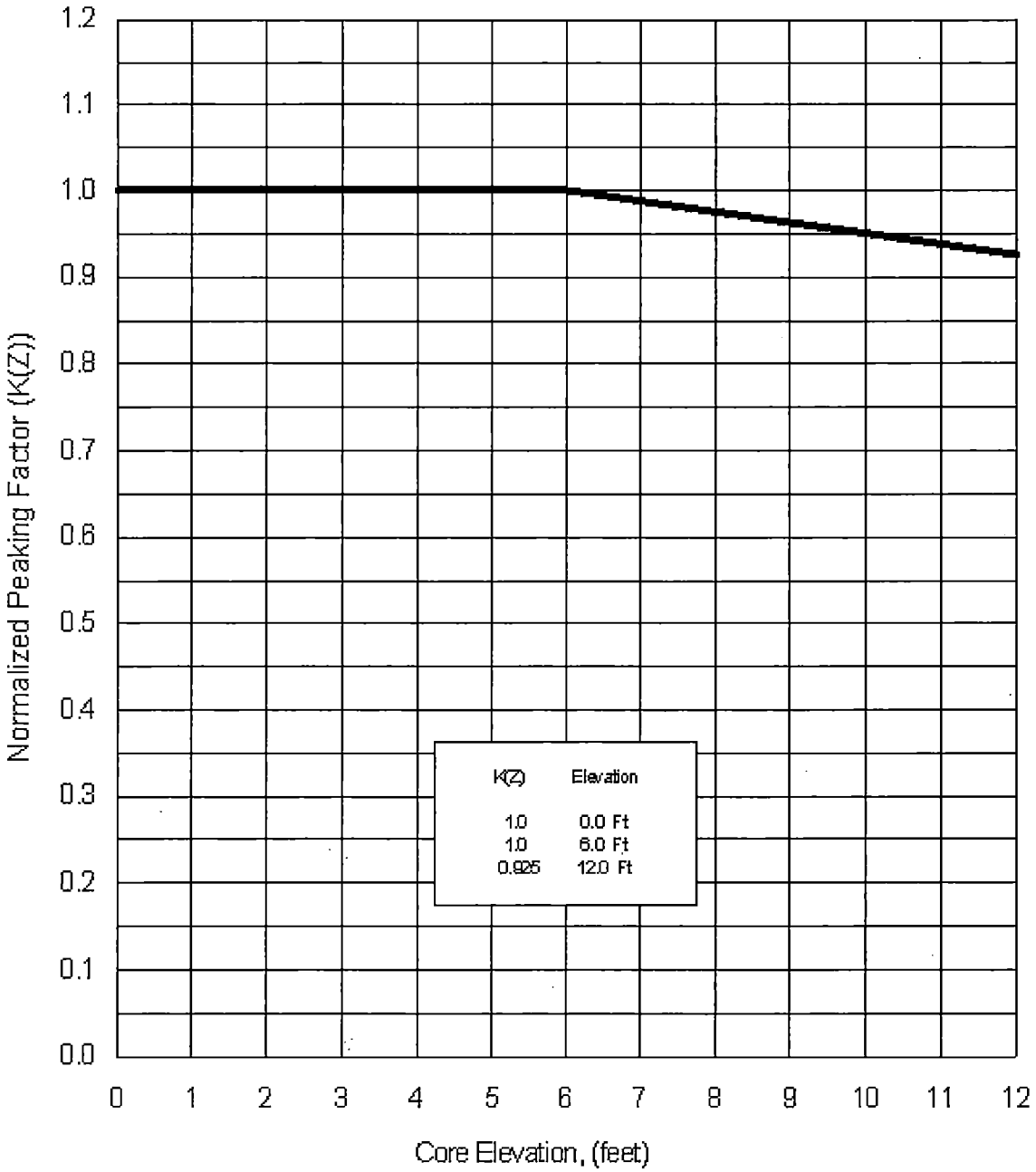

Table 1
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
-12/+9 AFD at 100% RTP

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
1	12.0778	1.0000	1.0000	1.0000	1.0000	1.0000
2	11.9100	1.0000	1.0000	1.0000	1.0000	1.0000
3	11.7423	1.0000	1.0000	1.0000	1.0000	1.0000
4	11.5745	1.0000	1.0000	1.0000	1.0000	1.0000
5	11.4068	1.0000	1.0000	1.0000	1.0000	1.0000
6	11.2390	1.0000	1.0000	1.0000	1.0000	1.0000
7	11.0713	1.3111	1.3639	1.3905	1.3433	1.2947
8	10.9035	1.2959	1.3538	1.3866	1.3378	1.2926
9	10.7358	1.2765	1.3357	1.3789	1.3280	1.2887
10	10.5680	1.2572	1.3218	1.3653	1.3162	1.2838
11	10.4003	1.2388	1.3084	1.3495	1.3031	1.2781
12	10.2325	1.2220	1.2930	1.3317	1.2907	1.2720
13	10.0648	1.2058	1.2792	1.3105	1.2847	1.2655
14	9.8971	1.1931	1.2701	1.2999	1.2778	1.2585
15	9.7293	1.1869	1.2625	1.2853	1.2674	1.2510
16	9.5616	1.1832	1.2548	1.2716	1.2579	1.2435
17	9.3938	1.1772	1.2453	1.2609	1.2471	1.2347
18	9.2261	1.1675	1.2361	1.2473	1.2336	1.2248
19	9.0583	1.1606	1.2189	1.2339	1.2245	1.2185
20	8.8906	1.1571	1.2015	1.2236	1.2158	1.2139
21	8.7228	1.1545	1.1913	1.2174	1.2030	1.2071
22	8.5551	1.1501	1.1793	1.2131	1.1918	1.2051
23	8.3873	1.1466	1.1684	1.2086	1.1930	1.2109
24	8.2196	1.1460	1.1630	1.2040	1.1952	1.2155
25	8.0518	1.1486	1.1613	1.2035	1.1978	1.2191

*Distance from bottom of active core (feet)

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 1
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
-12/+9 AFD at 100% RTP (Continued)

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
26	7.8841	1.1496	1.1608	1.2035	1.2000	1.2214
27	7.7163	1.1500	1.1597	1.2015	1.2007	1.2225
28	7.5486	1.1493	1.1574	1.1981	1.2002	1.2221
29	7.3809	1.1478	1.1540	1.1935	1.1985	1.2203
30	7.2131	1.1454	1.1495	1.1875	1.1955	1.2172
31	7.0454	1.1418	1.1442	1.1803	1.1915	1.2128
32	6.8776	1.1383	1.1378	1.1719	1.1861	1.2070
33	6.7099	1.1358	1.1306	1.1624	1.1796	1.1999
34	6.5421	1.1330	1.1239	1.1522	1.1737	1.1932
35	6.3744	1.1296	1.1185	1.1407	1.1681	1.1867
36	6.2066	1.1255	1.1139	1.1287	1.1618	1.1794
37	6.0389	1.1202	1.1081	1.1193	1.1544	1.1709
38	5.8711	1.1163	1.1039	1.1126	1.1464	1.1618
39	5.7034	1.1156	1.1031	1.1082	1.1401	1.1540
40	5.5356	1.1204	1.1064	1.1062	1.1394	1.1523
41	5.3679	1.1288	1.1120	1.1063	1.1417	1.1521
42	5.2001	1.1356	1.1164	1.1075	1.1431	1.1522
43	5.0324	1.1420	1.1204	1.1084	1.1437	1.1516
44	4.8647	1.1481	1.1242	1.1100	1.1436	1.1501
45	4.6969	1.1537	1.1275	1.1128	1.1430	1.1480
46	4.5292	1.1588	1.1304	1.1153	1.1417	1.1451
47	4.3614	1.1635	1.1332	1.1174	1.1399	1.1417
48	4.1937	1.1679	1.1358	1.1192	1.1376	1.1377
49	4.0259	1.1718	1.1382	1.1210	1.1350	1.1334
50	3.8582	1.1754	1.1404	1.1231	1.1320	1.1315

*Distance from bottom of active core (feet)

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 1
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
-12/+9 AFD at 100% RTP (Continued)

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
51	3.6904	1.1786	1.1424	1.1281	1.1288	1.1321
52	3.5227	1.1813	1.1437	1.1328	1.1256	1.1334
53	3.3549	1.1844	1.1469	1.1374	1.1272	1.1340
54	3.1872	1.1883	1.1539	1.1416	1.1293	1.1345
55	3.0194	1.1919	1.1630	1.1449	1.1342	1.1361
56	2.8517	1.2007	1.1761	1.1498	1.1426	1.1452
57	2.6839	1.2185	1.1903	1.1585	1.1536	1.1581
58	2.5162	1.2384	1.2046	1.1689	1.1648	1.1713
59	2.3485	1.2579	1.2209	1.1796	1.1759	1.1839
60	2.1807	1.2774	1.2395	1.1902	1.1884	1.1966
61	2.0130	1.2963	1.2578	1.2005	1.2006	1.2091
62	1.8452	1.3146	1.2756	1.2104	1.2125	1.2212
63	1.6775	1.3321	1.2927	1.2212	1.2239	1.2327
64	1.5097	1.3483	1.3086	1.2327	1.2345	1.2434
65	1.3420	1.3631	1.3232	1.2430	1.2443	1.2533
66	1.1742	1.3759	1.3360	1.2517	1.2525	1.2617
67	1.0065	1.3857	1.3458	1.2577	1.2581	1.2675
68	0.8387	1.0000	1.0000	1.0000	1.0000	1.0000
69	0.6710	1.0000	1.0000	1.0000	1.0000	1.0000
70	0.5032	1.0000	1.0000	1.0000	1.0000	1.0000
71	0.3355	1.0000	1.0000	1.0000	1.0000	1.0000
72	0.1678	1.0000	1.0000	1.0000	1.0000	1.0000
73	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000

*Distance from bottom of active core (feet)

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 2
Deleted

TABLE 2 INTENTIONALLY DELETED.

Table 3
Part Power (74% RTP, 150 MWD/MTU) RAOC W(Z) Function
Millstone Unit 3 - Cycle 18

Mesh No	Height*	W(z)
1	12.0778	1.0000
2	11.9100	1.0000
3	11.7423	1.0000
4	11.5745	1.0000
5	11.4068	1.0000
6	11.2390	1.0000
7	11.0713	1.1829
8	10.9035	1.1633
9	10.7358	1.1432
10	10.5680	1.1259
11	10.4003	1.1101
12	10.2325	1.0972
13	10.0648	1.0857
14	9.8971	1.0772
15	9.7293	1.0745
16	9.5616	1.0741
17	9.3938	1.0715
18	9.2261	1.0652
19	9.0583	1.0611
20	8.8906	1.0602
21	8.7228	1.0634
22	8.5551	1.0682
23	8.3873	1.0739
24	8.2196	1.0800
25	8.0518	1.0876

*Distance from bottom of active core (feet)

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 3
Part Power (74% RTP, 150 MWD/MTU) RAOC W(Z) Function
Millstone Unit 3 - Cycle 18 (Continued)

Mesh No	Height*	W(z)
26	7.8841	1.0934
27	7.7163	1.0987
28	7.5486	1.1031
29	7.3809	1.1066
30	7.2131	1.1092
31	7.0454	1.1106
32	6.8776	1.1121
33	6.7099	1.1146
34	6.5421	1.1167
35	6.3744	1.1183
36	6.2066	1.1192
37	6.0389	1.1189
38	5.8711	1.1199
39	5.7034	1.1241
40	5.5356	1.1337
41	5.3679	1.1471
42	5.2001	1.1588
43	5.0324	1.1699
44	4.8647	1.1808
45	4.6969	1.1912
46	4.5292	1.2011
47	4.3614	1.2106
48	4.1937	1.2199
49	4.0259	1.2286
50	3.8582	1.2370

*Distance from bottom of active core (feet)

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 3
Part Power (74% RTP, 150 MWD/MTU) RAOC W(Z) Function
Millstone Unit 3 - Cycle 18 (Continued)

Mesh No	Height*	W(z)
51	3.6904	1.2450
52	3.5227	1.2523
53	3.3549	1.2601
54	3.1872	1.2688
55	3.0194	1.2773
56	2.8517	1.2915
57	2.6839	1.3153
58	2.5162	1.3413
59	2.3485	1.3672
60	2.1807	1.3930
61	2.0130	1.4182
62	1.8452	1.4430
63	1.6775	1.4670
64	1.5097	1.4897
65	1.3420	1.5113
66	1.1742	1.5312
67	1.0065	1.5482
68	0.8387	1.0000
69	0.6710	1.0000
70	0.5032	1.0000
71	0.3355	1.0000
72	0.1678	1.0000
73	0.0000	1.0000

*Distance from bottom of active core (feet)

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 4
Burnup Penalty for Incore
Millstone Unit 3 - Cycle 18*

Burnup (MWD/MTU)	Penalty
0	1.032
150	1.032
311	1.036
471	1.039
632	1.040
793	1.036
954	1.031
1114	1.027
1275	1.022
1436	1.020

*Note: A Penalty of 1.02 shall be used outside of the burnup range shown in Table 4.

Table 5
Required Normal Operating Space Reductions for $F_Q(Z)$ Exceeding Its Non-Equilibrium Limits

Required Non-Equilibrium $F_Q(Z)$ Margin Improvement (%)	Required THERMAL POWER Limit (%RTP)	Required Negative Band AFD Reduction (%AFD)	Required Positive Band AFD Reduction (%AFD)
$\leq$ 1%	$\leq$ 97%	$\geq$ 2%	$\geq$ 4%
> 1% and $\leq$ 2%	$\leq$ 95%	$\geq$ 3%	$\geq$ 5%
> 2% and $\leq$ 3%	$\leq$ 93%	$\geq$ 4%	$\geq$ 6%
> 3%	$\leq$ 50%	N/A	N/A

Table 6
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
Compensatory Action at 97% RTP for 1% Transient F_Q Margin Gain+

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
1	12.0778	1.0000	1.0000	1.0000	1.0000	1.0000
2	11.9100	1.0000	1.0000	1.0000	1.0000	1.0000
3	11.7423	1.0000	1.0000	1.0000	1.0000	1.0000
4	11.5745	1.0000	1.0000	1.0000	1.0000	1.0000
5	11.4068	1.0000	1.0000	1.0000	1.0000	1.0000
6	11.2390	1.0000	1.0000	1.0000	1.0000	1.0000
7	11.0713	1.2467	1.2596	1.2682	1.2372	1.2252
8	10.9035	1.2317	1.2525	1.2685	1.2353	1.2176
9	10.7358	1.2127	1.2390	1.2676	1.2312	1.2113
10	10.5680	1.1946	1.2250	1.2622	1.2264	1.2059
11	10.4003	1.1769	1.2142	1.2516	1.2214	1.1996
12	10.2325	1.1595	1.2067	1.2417	1.2163	1.1926
13	10.0648	1.1453	1.2013	1.2346	1.2111	1.1877
14	9.8971	1.1335	1.1964	1.2262	1.2055	1.1822
15	9.7293	1.1235	1.1910	1.2145	1.1997	1.1743
16	9.5616	1.1147	1.1866	1.2057	1.1943	1.1691
17	9.3938	1.1048	1.1790	1.1959	1.1868	1.1644
18	9.2261	1.0958	1.1654	1.1820	1.1756	1.1577
19	9.0583	1.1005	1.1509	1.1740	1.1634	1.1536
20	8.8906	1.1094	1.1405	1.1682	1.1512	1.1478
21	8.7228	1.1109	1.1360	1.1580	1.1393	1.1370
22	8.5551	1.1103	1.1316	1.1456	1.1323	1.1310
23	8.3873	1.1075	1.1265	1.1332	1.1372	1.1376
24	8.2196	1.1019	1.1205	1.1264	1.1403	1.1412
25	8.0518	1.1005	1.1169	1.1262	1.1455	1.1460

*Distance from bottom of active core (feet)

+W(Z) functions were calculated assuming a Full Power Steady State $F_Q(Z)$ shape that will need to be adjusted for surveillance specific conditions.

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 6
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
Compensatory Action at 97% RTP for 1% Transient F_Q Margin Gain$^+$ (Continued)

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
26	7.8841	1.1012	1.1141	1.1286	1.1514	1.1511
27	7.7163	1.1048	1.1106	1.1296	1.1553	1.1547
28	7.5486	1.1074	1.1100	1.1295	1.1576	1.1594
29	7.3809	1.1086	1.1098	1.1282	1.1587	1.1638
30	7.2131	1.1089	1.1080	1.1257	1.1583	1.1661
31	7.0454	1.1082	1.1049	1.1222	1.1566	1.1667
32	6.8776	1.1066	1.1011	1.1177	1.1536	1.1659
33	6.7099	1.1040	1.0962	1.1121	1.1494	1.1635
34	6.5421	1.1011	1.0915	1.1055	1.1438	1.1597
35	6.3744	1.0982	1.0881	1.0985	1.1375	1.1545
36	6.2066	1.0952	1.0846	1.0921	1.1309	1.1480
37	6.0389	1.0914	1.0802	1.0880	1.1237	1.1400
38	5.8711	1.0875	1.0754	1.0845	1.1167	1.1314
39	5.7034	1.0852	1.0720	1.0807	1.1112	1.1244
40	5.5356	1.0885	1.0730	1.0797	1.1095	1.1235
41	5.3679	1.0959	1.0767	1.0798	1.1093	1.1238
42	5.2001	1.1014	1.0804	1.0813	1.1082	1.1239
43	5.0324	1.1065	1.0838	1.0826	1.1063	1.1230
44	4.8647	1.1113	1.0867	1.0832	1.1038	1.1215
45	4.6969	1.1157	1.0892	1.0836	1.1010	1.1196
46	4.5292	1.1196	1.0919	1.0843	1.0986	1.1174
47	4.3614	1.1231	1.0947	1.0851	1.0964	1.1150
48	4.1937	1.1262	1.0973	1.0855	1.0939	1.1118
49	4.0259	1.1296	1.0995	1.0858	1.0910	1.1083
50	3.8582	1.1332	1.1016	1.0859	1.0877	1.1042

*Distance from bottom of active core (feet)

$^+$W(Z) functions were calculated assuming a Full Power Steady State $F_Q(Z)$ shape that will need to be adjusted for surveillance specific conditions.

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 6
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
Compensatory Action at 97% RTP for 1% Transient F_Q Margin Gain$^+$ (Continued)

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
51	3.6904	1.1366	1.1033	1.0868	1.0868	1.0998
52	3.5227	1.1393	1.1048	1.0907	1.0898	1.0962
53	3.3549	1.1426	1.1074	1.0944	1.0924	1.0944
54	3.1872	1.1471	1.1117	1.0978	1.0950	1.0941
55	3.0194	1.1512	1.1208	1.1012	1.0981	1.0951
56	2.8517	1.1592	1.1349	1.1061	1.1025	1.1026
57	2.6839	1.1737	1.1481	1.1135	1.1096	1.1121
58	2.5162	1.1892	1.1617	1.1220	1.1219	1.1224
59	2.3485	1.2051	1.1767	1.1312	1.1342	1.1329
60	2.1807	1.2221	1.1942	1.1413	1.1463	1.1438
61	2.0130	1.2388	1.2115	1.1534	1.1580	1.1550
62	1.8452	1.2548	1.2283	1.1655	1.1694	1.1657
63	1.6775	1.2703	1.2444	1.1768	1.1801	1.1760
64	1.5097	1.2847	1.2594	1.1872	1.1899	1.1856
65	1.3420	1.2979	1.2731	1.1966	1.1988	1.1942
66	1.1742	1.3093	1.2850	1.2045	1.2063	1.2016
67	1.0065	1.3180	1.2941	1.2099	1.2113	1.2065
68	0.8387	1.0000	1.0000	1.0000	1.0000	1.0000
69	0.6710	1.0000	1.0000	1.0000	1.0000	1.0000
70	0.5032	1.0000	1.0000	1.0000	1.0000	1.0000
71	0.3355	1.0000	1.0000	1.0000	1.0000	1.0000
72	0.1678	1.0000	1.0000	1.0000	1.0000	1.0000
73	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000

*Distance from bottom of active core (feet)

$^+$W(Z) functions were calculated assuming a Full Power Steady State $F_Q(Z)$ shape that will need to be adjusted for surveillance specific conditions.

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 7
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
Compensatory Action at 95% RTP for 2% Transient F_Q Margin Gain+

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
1	12.0778	1.0000	1.0000	1.0000	1.0000	1.0000
2	11.9100	1.0000	1.0000	1.0000	1.0000	1.0000
3	11.7423	1.0000	1.0000	1.0000	1.0000	1.0000
4	11.5745	1.0000	1.0000	1.0000	1.0000	1.0000
5	11.4068	1.0000	1.0000	1.0000	1.0000	1.0000
6	11.2390	1.0000	1.0000	1.0000	1.0000	1.0000
7	11.0713	1.1960	1.2566	1.2648	1.2133	1.2023
8	10.9035	1.1829	1.2488	1.2608	1.2067	1.2002
9	10.7358	1.1686	1.2349	1.2528	1.1985	1.1963
10	10.5680	1.1540	1.2246	1.2440	1.1918	1.1921
11	10.4003	1.1389	1.2116	1.2328	1.1871	1.1878
12	10.2325	1.1242	1.1976	1.2247	1.1820	1.1830
13	10.0648	1.1122	1.1834	1.2169	1.1771	1.1778
14	9.8971	1.1037	1.1738	1.2089	1.1699	1.1725
15	9.7293	1.1000	1.1678	1.2006	1.1596	1.1670
16	9.5616	1.0967	1.1614	1.1923	1.1523	1.1615
17	9.3938	1.0906	1.1533	1.1830	1.1460	1.1563
18	9.2261	1.0819	1.1459	1.1736	1.1376	1.1507
19	9.0583	1.0754	1.1325	1.1693	1.1310	1.1416
20	8.8906	1.0751	1.1218	1.1647	1.1232	1.1296
21	8.7228	1.0802	1.1206	1.1541	1.1121	1.1171
22	8.5551	1.0817	1.1168	1.1416	1.1042	1.1142
23	8.3873	1.0793	1.1109	1.1293	1.1037	1.1196
24	8.2196	1.0769	1.1052	1.1224	1.1046	1.1229
25	8.0518	1.0782	1.0984	1.1152	1.1057	1.1261

*Distance from bottom of active core (feet)

+W(Z) functions were calculated assuming a Full Power Steady State $F_Q(Z)$ shape that will need to be adjusted for surveillance specific conditions.

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 7
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
Compensatory Action at 95% RTP for 2% Transient F_Q Margin Gain$^+$ (Continued)

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
26	7.8841	1.0820	1.0928	1.1111	1.1085	1.1301
27	7.7163	1.0852	1.0898	1.1116	1.1127	1.1346
28	7.5486	1.0873	1.0863	1.1116	1.1157	1.1377
29	7.3809	1.0883	1.0839	1.1095	1.1183	1.1401
30	7.2131	1.0883	1.0830	1.1066	1.1213	1.1429
31	7.0454	1.0874	1.0811	1.1027	1.1228	1.1440
32	6.8776	1.0855	1.0778	1.0977	1.1226	1.1433
33	6.7099	1.0827	1.0741	1.0918	1.1211	1.1411
34	6.5421	1.0791	1.0701	1.0848	1.1183	1.1373
35	6.3744	1.0760	1.0666	1.0773	1.1141	1.1322
36	6.2066	1.0737	1.0637	1.0706	1.1088	1.1258
37	6.0389	1.0706	1.0600	1.0670	1.1020	1.1179
38	5.8711	1.0675	1.0561	1.0643	1.0952	1.1096
39	5.7034	1.0658	1.0534	1.0610	1.0905	1.1033
40	5.5356	1.0672	1.0533	1.0606	1.0897	1.1030
41	5.3679	1.0720	1.0564	1.0611	1.0894	1.1038
42	5.2001	1.0780	1.0602	1.0629	1.0884	1.1039
43	5.0324	1.0837	1.0635	1.0644	1.0868	1.1030
44	4.8647	1.0887	1.0664	1.0653	1.0842	1.1015
45	4.6969	1.0933	1.0690	1.0659	1.0809	1.0991
46	4.5292	1.0975	1.0713	1.0661	1.0792	1.0960
47	4.3614	1.1013	1.0732	1.0660	1.0785	1.0922
48	4.1937	1.1048	1.0749	1.0657	1.0773	1.0879
49	4.0259	1.1079	1.0764	1.0653	1.0758	1.0831
50	3.8582	1.1105	1.0779	1.0646	1.0739	1.0779

*Distance from bottom of active core (feet)

$^+$W(Z) functions were calculated assuming a Full Power Steady State $F_Q(Z)$ shape that will need to be adjusted for surveillance specific conditions.

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 7
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
Compensatory Action at 95% RTP for 2% Transient F_Q Margin Gain$^+$ (Continued)

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
51	3.6904	1.1128	1.0791	1.0685	1.0717	1.0725
52	3.5227	1.1158	1.0805	1.0722	1.0696	1.0666
53	3.3549	1.1209	1.0859	1.0757	1.0695	1.0665
54	3.1872	1.1277	1.0916	1.0789	1.0717	1.0671
55	3.0194	1.1331	1.1009	1.0818	1.0738	1.0715
56	2.8517	1.1414	1.1146	1.0848	1.0810	1.0791
57	2.6839	1.1566	1.1315	1.0901	1.0929	1.0881
58	2.5162	1.1744	1.1488	1.1023	1.1048	1.0977
59	2.3485	1.1924	1.1660	1.1148	1.1166	1.1080
60	2.1807	1.2101	1.1832	1.1271	1.1283	1.1188
61	2.0130	1.2274	1.2003	1.1392	1.1397	1.1294
62	1.8452	1.2441	1.2168	1.1508	1.1506	1.1396
63	1.6775	1.2599	1.2326	1.1619	1.1609	1.1493
64	1.5097	1.2745	1.2474	1.1720	1.1704	1.1583
65	1.3420	1.2879	1.2609	1.1812	1.1790	1.1665
66	1.1742	1.2993	1.2726	1.1889	1.1862	1.1734
67	1.0065	1.3076	1.2815	1.1941	1.1909	1.1779
68	0.8387	1.0000	1.0000	1.0000	1.0000	1.0000
69	0.6710	1.0000	1.0000	1.0000	1.0000	1.0000
70	0.5032	1.0000	1.0000	1.0000	1.0000	1.0000
71	0.3355	1.0000	1.0000	1.0000	1.0000	1.0000
72	0.1678	1.0000	1.0000	1.0000	1.0000	1.0000
73	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000

*Distance from bottom of active core (feet)

$^+$W(Z) functions were calculated assuming a Full Power Steady State $F_Q(Z)$ shape that will need to be adjusted for surveillance specific conditions.

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 8
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
Compensatory Action at 93% RTP for 3% Transient F_Q Margin Gain[+]

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
1	12.0778	1.0000	1.0000	1.0000	1.0000	1.0000
2	11.9100	1.0000	1.0000	1.0000	1.0000	1.0000
3	11.7423	1.0000	1.0000	1.0000	1.0000	1.0000
4	11.5745	1.0000	1.0000	1.0000	1.0000	1.0000
5	11.4068	1.0000	1.0000	1.0000	1.0000	1.0000
6	11.2390	1.0000	1.0000	1.0000	1.0000	1.0000
7	11.0713	1.1857	1.2526	1.2639	1.2074	1.1748
8	10.9035	1.1692	1.2440	1.2587	1.2034	1.1722
9	10.7358	1.1510	1.2357	1.2500	1.1956	1.1680
10	10.5680	1.1321	1.2262	1.2419	1.1860	1.1634
11	10.4003	1.1128	1.2114	1.2264	1.1749	1.1583
12	10.2325	1.0952	1.1957	1.2102	1.1624	1.1530
13	10.0648	1.0787	1.1812	1.1934	1.1525	1.1487
14	9.8971	1.0676	1.1656	1.1760	1.1475	1.1430
15	9.7293	1.0651	1.1474	1.1606	1.1427	1.1344
16	9.5616	1.0641	1.1299	1.1520	1.1380	1.1280
17	9.3938	1.0609	1.1154	1.1439	1.1333	1.1220
18	9.2261	1.0551	1.1123	1.1339	1.1284	1.1145
19	9.0583	1.0498	1.1106	1.1288	1.1240	1.1087
20	8.8906	1.0489	1.1073	1.1244	1.1175	1.1016
21	8.7228	1.0529	1.1039	1.1153	1.1077	1.0914
22	8.5551	1.0544	1.1011	1.1045	1.1003	1.0890
23	8.3873	1.0534	1.0979	1.0939	1.0992	1.0899
24	8.2196	1.0515	1.0916	1.0856	1.1002	1.0916
25	8.0518	1.0499	1.0842	1.0823	1.1012	1.0947

*Distance from bottom of active core (feet)

[+]W(Z) functions were calculated assuming a Full Power Steady State $F_Q(Z)$ shape that will need to be adjusted for surveillance specific conditions.

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 8
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
Compensatory Action at 93% RTP for 3% Transient F_Q Margin Gain$^+$ (Continued)

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
26	7.8841	1.0498	1.0764	1.0810	1.1031	1.0994
27	7.7163	1.0518	1.0691	1.0805	1.1057	1.1049
28	7.5486	1.0537	1.0673	1.0788	1.1071	1.1091
29	7.3809	1.0555	1.0662	1.0768	1.1081	1.1117
30	7.2131	1.0576	1.0645	1.0753	1.1094	1.1131
31	7.0454	1.0591	1.0620	1.0736	1.1093	1.1131
32	6.8776	1.0596	1.0584	1.0710	1.1076	1.1119
33	6.7099	1.0590	1.0541	1.0671	1.1045	1.1094
34	6.5421	1.0574	1.0495	1.0623	1.1000	1.1057
35	6.3744	1.0549	1.0452	1.0561	1.0944	1.1008
36	6.2066	1.0515	1.0413	1.0490	1.0875	1.0952
37	6.0389	1.0480	1.0374	1.0448	1.0789	1.0903
38	5.8711	1.0454	1.0346	1.0421	1.0712	1.0851
39	5.7034	1.0441	1.0337	1.0389	1.0677	1.0799
40	5.5356	1.0464	1.0367	1.0385	1.0687	1.0795
41	5.3679	1.0516	1.0421	1.0390	1.0712	1.0816
42	5.2001	1.0565	1.0462	1.0406	1.0719	1.0822
43	5.0324	1.0609	1.0499	1.0418	1.0718	1.0818
44	4.8647	1.0649	1.0532	1.0423	1.0711	1.0808
45	4.6969	1.0684	1.0560	1.0425	1.0696	1.0790
46	4.5292	1.0715	1.0585	1.0422	1.0675	1.0764
47	4.3614	1.0742	1.0606	1.0418	1.0648	1.0732
48	4.1937	1.0766	1.0624	1.0410	1.0616	1.0693
49	4.0259	1.0787	1.0638	1.0397	1.0579	1.0651
50	3.8582	1.0801	1.0651	1.0403	1.0539	1.0602

*Distance from bottom of active core (feet)

$^+$W(Z) functions were calculated assuming a Full Power Steady State $F_Q(Z)$ shape that will need to be adjusted for surveillance specific conditions.

Note: Surveillance exclusion zone is 8% top, 8% bottom.

Table 8
RAOC W(Z) Function, Millstone Unit 3 - Cycle 18
Compensatory Action at 93% RTP for 3% Transient F_Q Margin Gain$^+$ (Continued)

		Burnup Step (MWD/MTU)				
Mesh No.	**Height***	**150**	**4000**	**10000**	**16000**	**18000**
51	3.6904	1.0815	1.0661	1.0447	1.0497	1.0550
52	3.5227	1.0865	1.0669	1.0488	1.0449	1.0512
53	3.3549	1.0935	1.0682	1.0526	1.0425	1.0495
54	3.1872	1.1000	1.0708	1.0561	1.0437	1.0491
55	3.0194	1.1083	1.0724	1.0590	1.0481	1.0504
56	2.8517	1.1185	1.0802	1.0636	1.0563	1.0596
57	2.6839	1.1300	1.0949	1.0714	1.0669	1.0706
58	2.5162	1.1426	1.1116	1.0806	1.0776	1.0817
59	2.3485	1.1556	1.1277	1.0899	1.0880	1.0925
60	2.1807	1.1681	1.1440	1.0990	1.0985	1.1032
61	2.0130	1.1798	1.1601	1.1078	1.1086	1.1136
62	1.8452	1.1925	1.1757	1.1163	1.1185	1.1237
63	1.6775	1.2074	1.1906	1.1243	1.1278	1.1332
64	1.5097	1.2212	1.2045	1.1315	1.1364	1.1420
65	1.3420	1.2335	1.2172	1.1379	1.1442	1.1500
66	1.1742	1.2440	1.2280	1.1447	1.1506	1.1565
67	1.0065	1.2514	1.2360	1.1490	1.1543	1.1603
68	0.8387	1.0000	1.0000	1.0000	1.0000	1.0000
69	0.6710	1.0000	1.0000	1.0000	1.0000	1.0000
70	0.5032	1.0000	1.0000	1.0000	1.0000	1.0000
71	0.3355	1.0000	1.0000	1.0000	1.0000	1.0000
72	0.1678	1.0000	1.0000	1.0000	1.0000	1.0000
73	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000

*Distance from bottom of active core (feet)

$^+$W(Z) functions were calculated assuming a Full Power Steady State $F_Q(Z)$ shape that will need to be adjusted for surveillance specific conditions.

Note: Surveillance exclusion zone is 8% top, 8% bottom.

3.0 Analytical Methods

The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents.

3.1 WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology," July 1985 (Westinghouse Proprietary).

Methodology for Specifications:

- 2.1.1 Reactor Core Safety Limits
- 3.1.1.1.1 SHUTDOWN MARGIN – MODES 1 AND 2
- 3.1.1.1.2 SHUTDOWN MARGIN – MODES 3, 4, and 5 Loops Filled
- 3.1.1.2 SHUTDOWN MARGIN – Cold Shutdown – Loops Not Filled
- 3.1.1.3 Moderator Temperature Coefficient
- 3.1.3.5 Shutdown Rod Insertion Limit
- 3.1.3.6 Control Rod Insertion Limits
- 3.2.1.1 AXIAL FLUX DIFFERENCE
- 3.2.2.1 Heat Flux Hot Channel Factor
- 3.2.3.1 RCS Total Flow Rate, Nuclear Enthalpy Rise Hot Channel Factor
- 3.2.5 DNB Parameters
- 3.3.5 Shutdown Margin Monitor
- 3.9.1.1 REFUELING Boron Concentration

3.2 WCAP-10216-P-A-R1A, "Relaxation of Constant Axial Offset Control F_Q Surveillance Technical Specification," Rev. 1, February 1994 (Westinghouse Proprietary).

Methodology for Specifications:

- 3.2.1.1 AXIAL FLUX DIFFERENCE
- 3.2.2.1 Heat Flux Hot Channel Factor

3.3 WCAP-12945-P-A, Volume 1 (Revision 2) and Volumes 2 through 5 (Revision 1), "Code Qualification Document for Best Estimate LOCA Analysis," March 1998 (Westinghouse Proprietary).

Methodology for Specification:

- 3.2.2.1 Heat Flux Hot Channel Factor

3.4 WCAP-16009-P-A, "Realistic Large-Break LOCA Evaluation Methodology Using the Automated Statistical Treatment of Uncertainty Method (ASTRUM)," January 2005 (Westinghouse Proprietary).

Methodology for Specification:

- 3.2.2.1 Heat Flux Hot Channel Factor

3.5 WCAP-11946, "Safety Evaluation Supporting a More Negative EOL Moderator Temperature Coefficient Technical Specification for the Millstone Nuclear Power Station Unit 3," September 1988 (Westinghouse Proprietary).

Methodology for Specification:
- 3.1.1.3 Moderator Temperature Coefficient

3.6 WCAP-10054-P-A, "Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code," August 1985 (Westinghouse Proprietary).

Methodology for Specification
- 3.2.2.1 Heat Flux Hot Channel Factor

3.7 WCAP-10079-P-A, "NOTRUMP - A Nodal Transient Small Break and General Network Code," August 1985 (Westinghouse Proprietary).

Methodology for Specification:
- 3.2.2.1 Heat Flux Hot Channel Factor.

3.8 WCAP-12610-P-A, "VANTAGE+ Fuel Assembly Report," April 1995 (Westinghouse Proprietary).

Methodology for Specification:
- 3.2.2.1 Heat Flux Hot Channel Factor.

3.9 WCAP-8301, "LOCTA-IV Program: Loss-of Coolant Transient Analysis," June 1974 (Westinghouse Proprietary).

Methodology for Specification:
- 3.2.2.1 Heat Flux Hot Channel Factor.

3.10 WCAP-10054-P-A, Addendum 2, Revision 1, "Addendum to the Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code: Safety Injection into the Broken Loop and COSI Condensation Model," July 1997 (Westinghouse Proprietary).

Methodology for Specification:
- 3.2.2.1 Heat Flux Hot Channel Factor

3.11 WCAP-8745-P-A, "Design Bases for the Thermal Overpower ΔT and Thermal Overtemperature ΔT Trip Functions," September 1986 (Westinghouse Proprietary).

Methodology for Specification:
- 2.2.1 Overtemperature ΔT and Overpower ΔT Setpoints

3.12 WCAP-12610-P-A & CENPD-404-P-A, Addendum 1-A, "Optimized ZIRLO™," July 2006 (Westinghouse Proprietary).

Methodology for Specification:
- 3.2.2.1 Heat Flux Hot Channel Factor