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Dominion

MAY 11 2004

U.S. Nuclear Regulatory Commission
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DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
CORE OPERATING LIMITS REPORT, CYCLE 10

In accordance with the Millstone Unit 3 Technical Specifications, Section 6.9.1.6.d, Dominion Nuclear Connecticut, Inc., hereby submits, as Enclosure 1, the Cycle 10 Core Operating Limits Report (COLR).

The Millstone Unit 3 COLR has been revised to incorporate changes for Cycle 10 operation. The changes included revisions for Cycle 10 parameter changes, deletion of all reference to Four Loop Operation in accordance with Amendment 217, and addition of items removed from the Technical Specifications in accordance with Amendment 218.

The COLR has been incorporated into the Millstone Unit 3 Technical Requirements Manual.

If you have any questions or require additional information, please contact Mr. David W. Dodson at (860) 447-1791, extension 2346.

Very truly yours,

J. Alan Price
Site Vice President - Millstone

A001

Enclosures: (1)

Commitments made in this letter: None.

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Serial No. 04-291
Docket No. 50-423

Enclosure 1

Core Operating Limits Report, Cycle 10

Millstone Power Station Unit 3
Dominion Nuclear Connecticut, Inc. (DNC)

TECHNICAL REQUIREMENTS MANUAL

APPENDIX 8.1

CORE OPERATING LIMITS REPORT, CYCLE 10

MILLSTONE UNIT 3
CYCLE 10
CORE OPERATING LIMITS REPORT

TECHNICAL REQUIREMENTS MANUAL

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CORE OPERATING LIMITS REPORT, CYCLE 10

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CORE OPERATING LIMITS REPORT, CYCLE 10

Millstone Unit 3

Cycle 10

Core Operating Limits Report

1.0 Core Operating Limits Report

This Core Operating Limits Report (COLR) for Millstone Unit 3 Cycle 10 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.

2.2.1	Limiting Safety System Settings
3/4.1.1.1.1	Shutdown Margin – MODE 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	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 Limiting Safety System Settings (Specification 2.2.1)

2.1.1 Overtemperature ΔT

2.1.1.1 $K_1 \leq 1.20$

2.1.1.2 $K_2 \geq 0.02456 / °F$

2.1.1.3 $K_3 \geq 0.001311 / psi$

2.1.1.4 $\tau_1 \geq 8$ seconds

2.1.1.5 $\tau_2 \leq 3$ seconds

2.1.1.6 $\tau_4 \geq 20$ seconds

2.1.1.7 $\tau_5 \leq 4$ seconds

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

2.1.1.9 P' is nominal pressurizer pressure, ≥ 2250 psia

2.1.1.10 $f_1(\Delta I)$ 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 -26% and +3%, $f_1(\Delta I) \geq 0$, 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 -26%, the ΔT Trip Setpoint shall be automatically reduced by $\geq 3.55\%$ of its value at RATED THERMAL POWER.

(3) For each percent that the magnitude of $q_t - q_b$ exceeds +3%, the ΔT Trip Setpoint shall be automatically reduced by $\geq 1.98\%$ of its value at RATED THERMAL POWER.

2.1.2 Overpower ΔT

2.1.2.1 $K_4 \leq 1.09$

2.1.2.2 $K_5 \geq 0.02/$ °F for increasing T_{avg} and $K_5 \leq 0$ for decreasing T_{avg}

2.1.2.3 $K_6 \geq 0.00180/$ °F when T > T" and $K_6 \leq 0/$ °F when T ≤ T"

2.1.2.4 $\tau_1 \geq 8$ seconds

2.1.2.5 $\tau_2 \leq 3$ seconds

2.1.2.6 $\tau_7 \geq 10$ seconds

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

2.2 Shutdown Margin- MODE 1 and 2 (Specification 3/4.1.1.1.1)

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

2.3 Shutdown Margin- MODE 3, 4 and 5 Loops Filled (Specification 3/4.1.1.1.2)

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

2.4 Shutdown Margin- MODE 5 Loops Not Filled (Specification 3/4.1.1.2)

2.4.1 The SHUTDOWN MARGIN shall be greater than or equal to the limits shown in Figure 4 or the limits shown in Figure 3 with the chemical and volume control system (CVCS) aligned to preclude reactor coolant system boron concentration reduction.

2.5 Moderator Temperature Coefficient (Specification 3/4.1.1.3)

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

2.5.2 The EOL/ARO/RTP MTC shall be less negative than - 5.65 x 10^{-4} $\Delta k/k/°F$.

2.5.3 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.

2.6 Shutdown Rod Insertion Limit (Specification 3/4.1.3.5)

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

2.7 Control Rod Insertion Limits (Specification 3/4.1.3.6)

2.7.1 The control rod banks shall be limited in physical insertion as shown in Figure 5, and

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

2.8 Axial Flux Difference (Specification 3/4.2.1.1)

2.8.1 The Axial Flux Difference (AFD) limits are provided in Figure 6.

2.8.2 The AFD target band during base load operation is ± 5%.

2.8.3 The minimum allowable (nuclear design) power level for base load operation (APL^{ND}) is 80% of Rated Thermal Power.

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

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

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

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

2.9.1 $F^{RTP}_Q = 2.60$.

2.9.2 K(Z) is provided in Figure 7.

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

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

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

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 7.

2.10.3 W(Z) values for RAOC operation are provided in Table 1. Note that the W(Z) values at Axial Mesh 1 are at the top of the core. The Cycle 10 burnup dependent RAOC W(Z) values are valid over the range of burnup from 0 to 21,300 MWD/MTU. [1]

2.10.4 W(Z) values for Base Load (BL) operation are provided in Table 2. Note that the W(Z) values at Axial Mesh 1 are at the top of the core. The Cycle 10 burnup dependent BL W(Z) values are valid over the range of burnup from 0 to 21,300 MWD/MTU.

2.10.5 A 2% factor shall be used for surveillance requirements 4.2.2.1.2 and 4.2.2.1.4.

2.11 Nuclear Enthalpy Rise Hot Channel Factor - $F^N_{\Delta H}$ (Specification 3/4.2.3.1)

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

where: $P = \dfrac{\text{Thermal Power}}{\text{Rated Thermal Power}}$

2.11.1 $F^{RTP}_{\Delta H}$ = 1.58 for Robust Fuel Assembly (RFA) and (RFA-2)
$F^{RTP}_{\Delta H}$ = 1.51 for NGF Lead Test Assemblies

2.11.2 $PF_{\Delta H}$ = 0.3 for $P < 1.0$.

2.12 DNB Parameters (Specification 3/4.2.5)

2.12.1 Indicated Reactor Coolant System T_{avg} shall be maintained $\leq$ 591.1 °F.

2.12.2 Indicated Pressurizer Pressure shall be maintained $\geq$ 2218 psia [2].

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

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[1] Sections 2.10.3 through 2.10.5 are prepared by Dominion.

[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.

[3] Section 2.13 was prepared by Dominion based on boron dilution analyses performed by Westinghouse.

2.13.1 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.

2.14 Refueling Boron Concentration (Specification 3/4.9.1.1)

2.14.1 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]

[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) during the Cycle 9/10 refueling outage.

Figure 1 Required Shutdown Margin for MODE 3

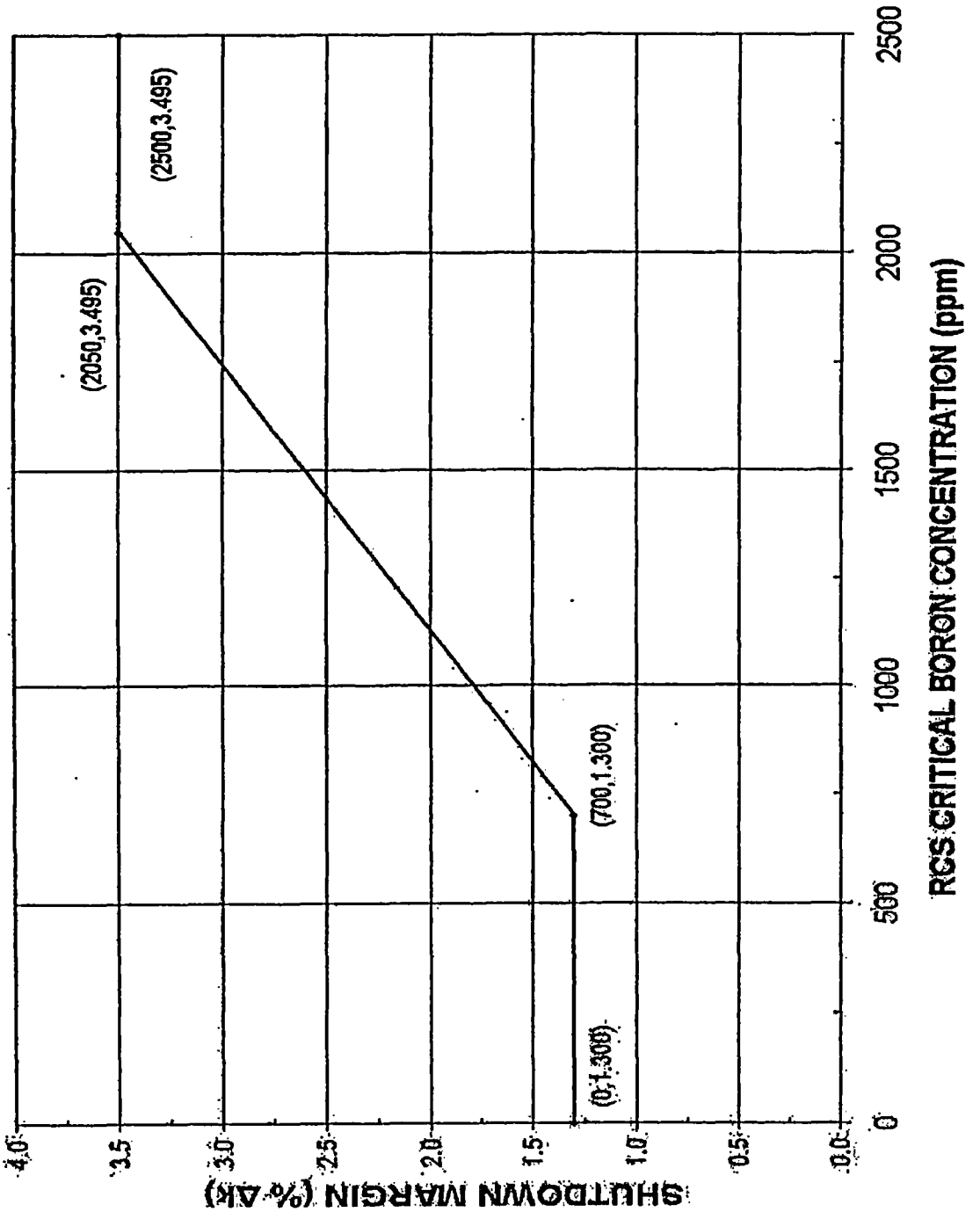


Figure 2 Required Shutdown Margin for MODE 4

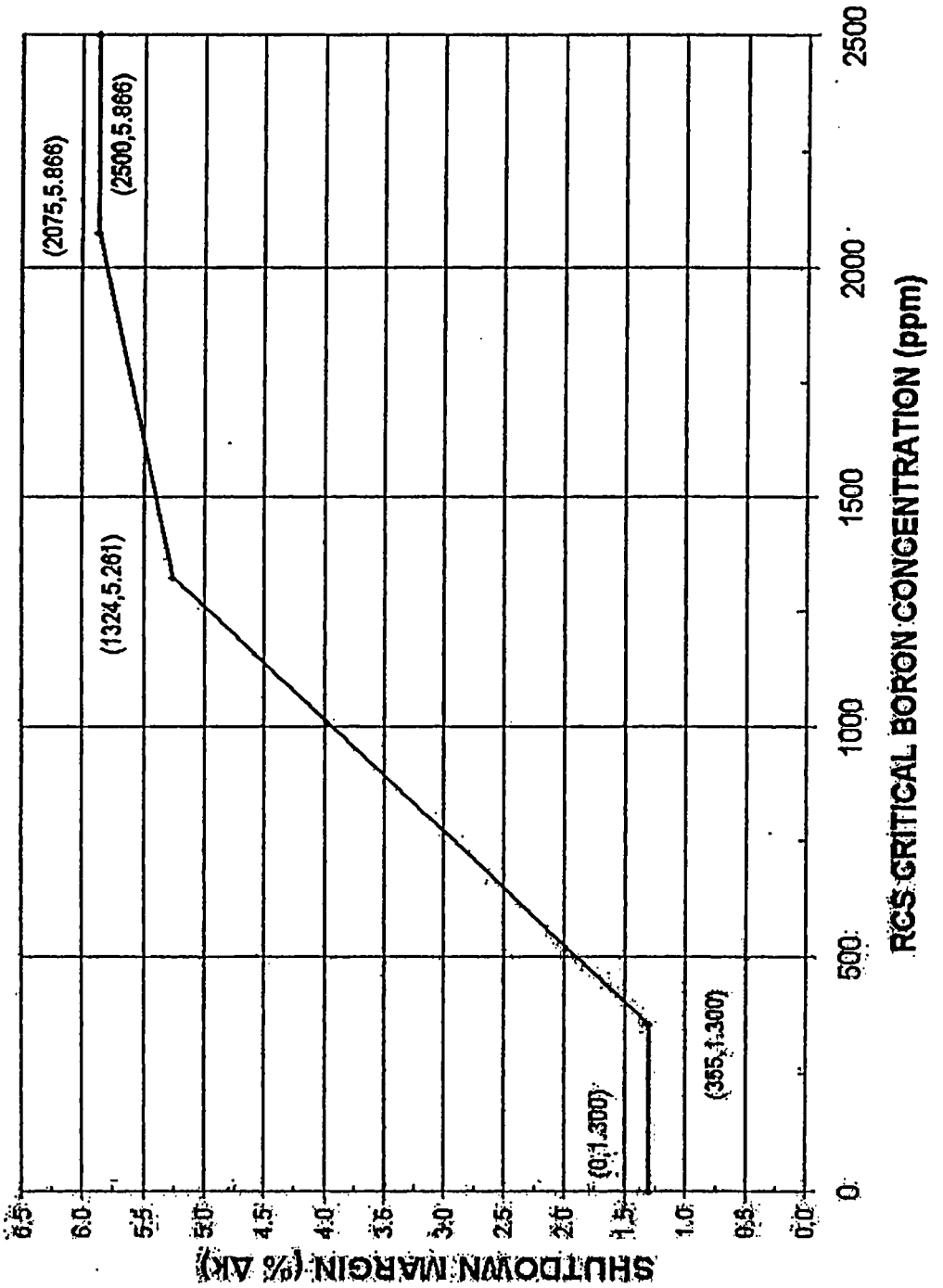


Figure 3 Required Shutdown Margin for MODE 5 with RCS Loops Filled

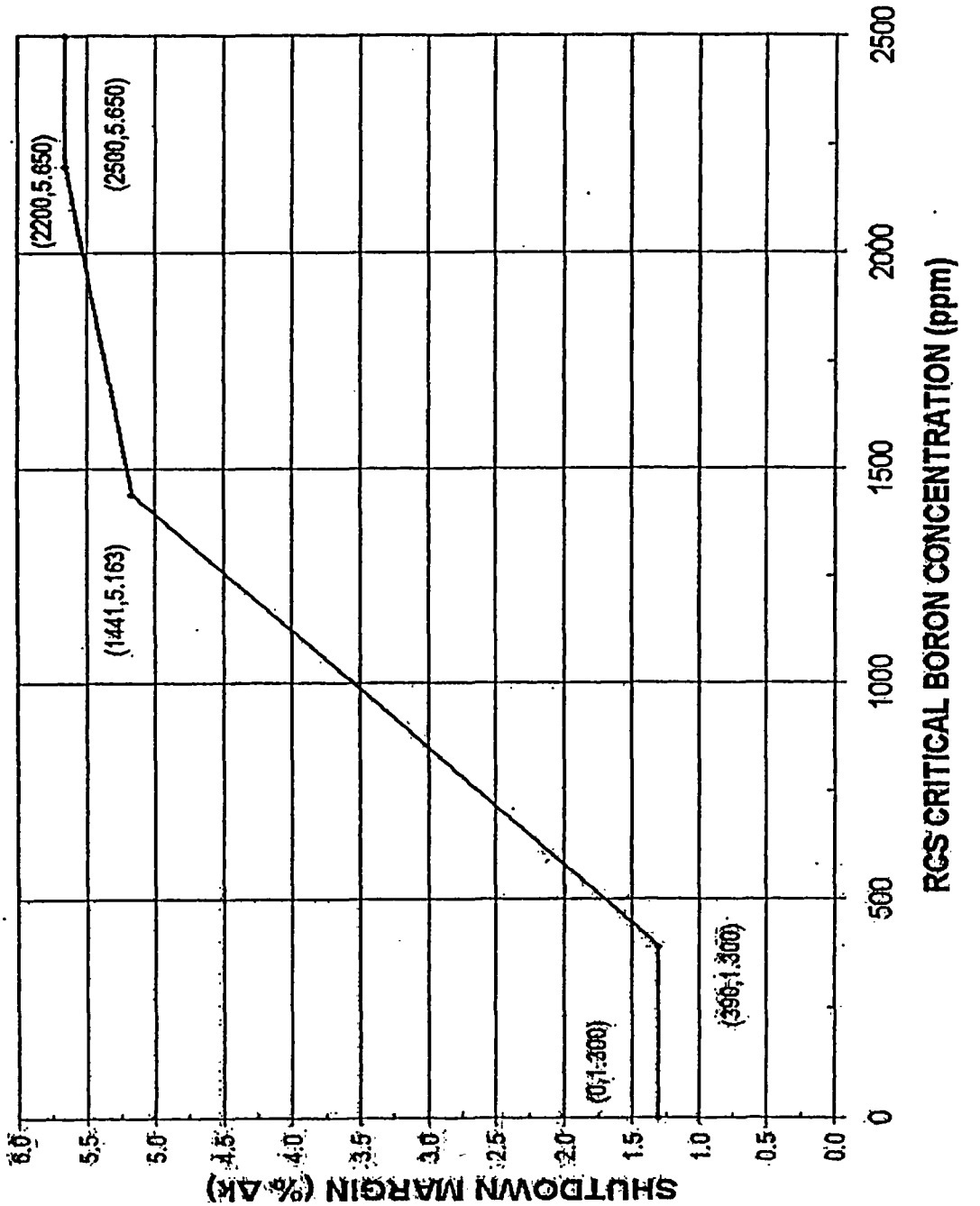


Figure 4 Required Shutdown Margin for MODE 5 with RCS Loops Not Filled

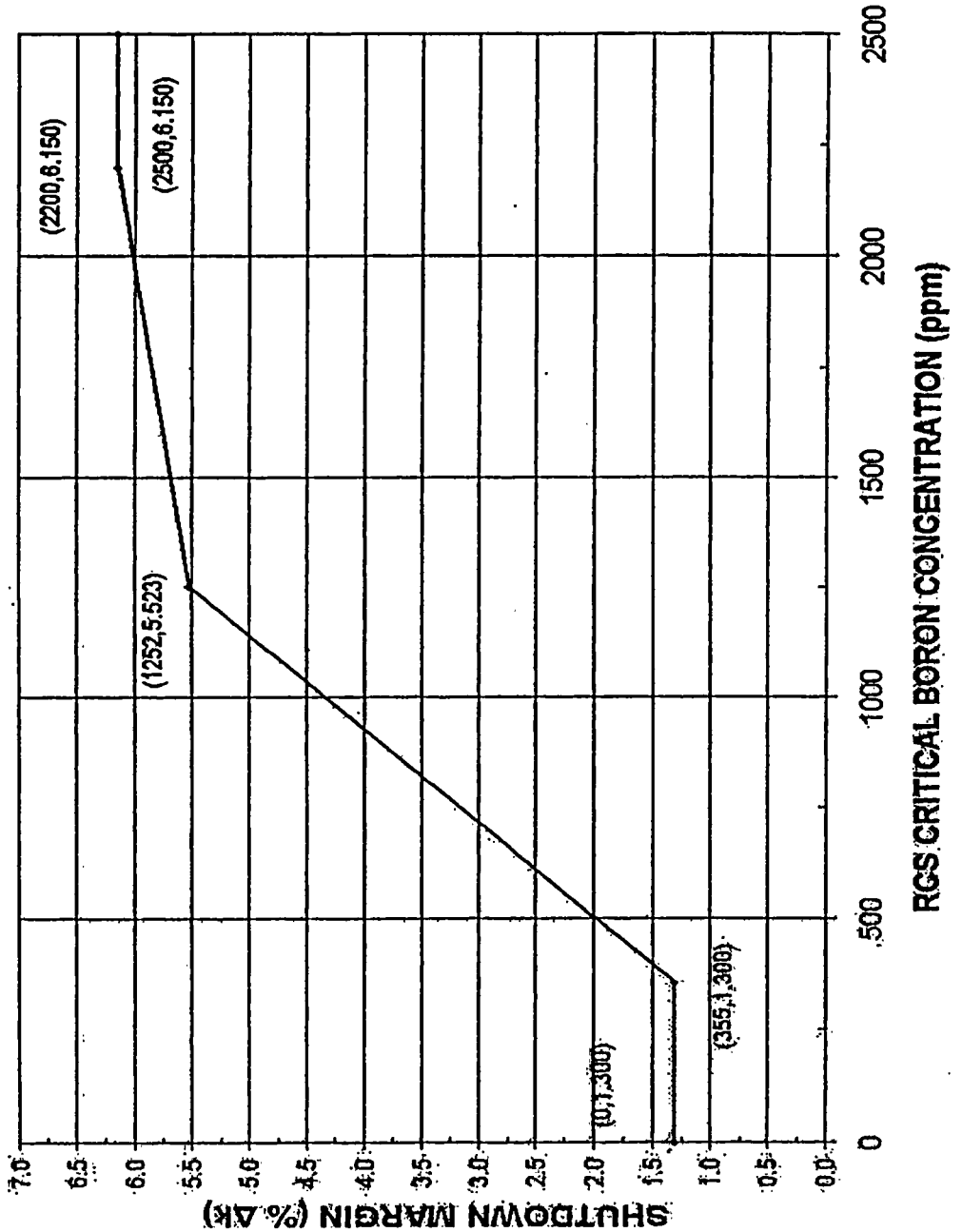


Figure 5 Control Rod Bank Insertion Limits versus Thermal Power

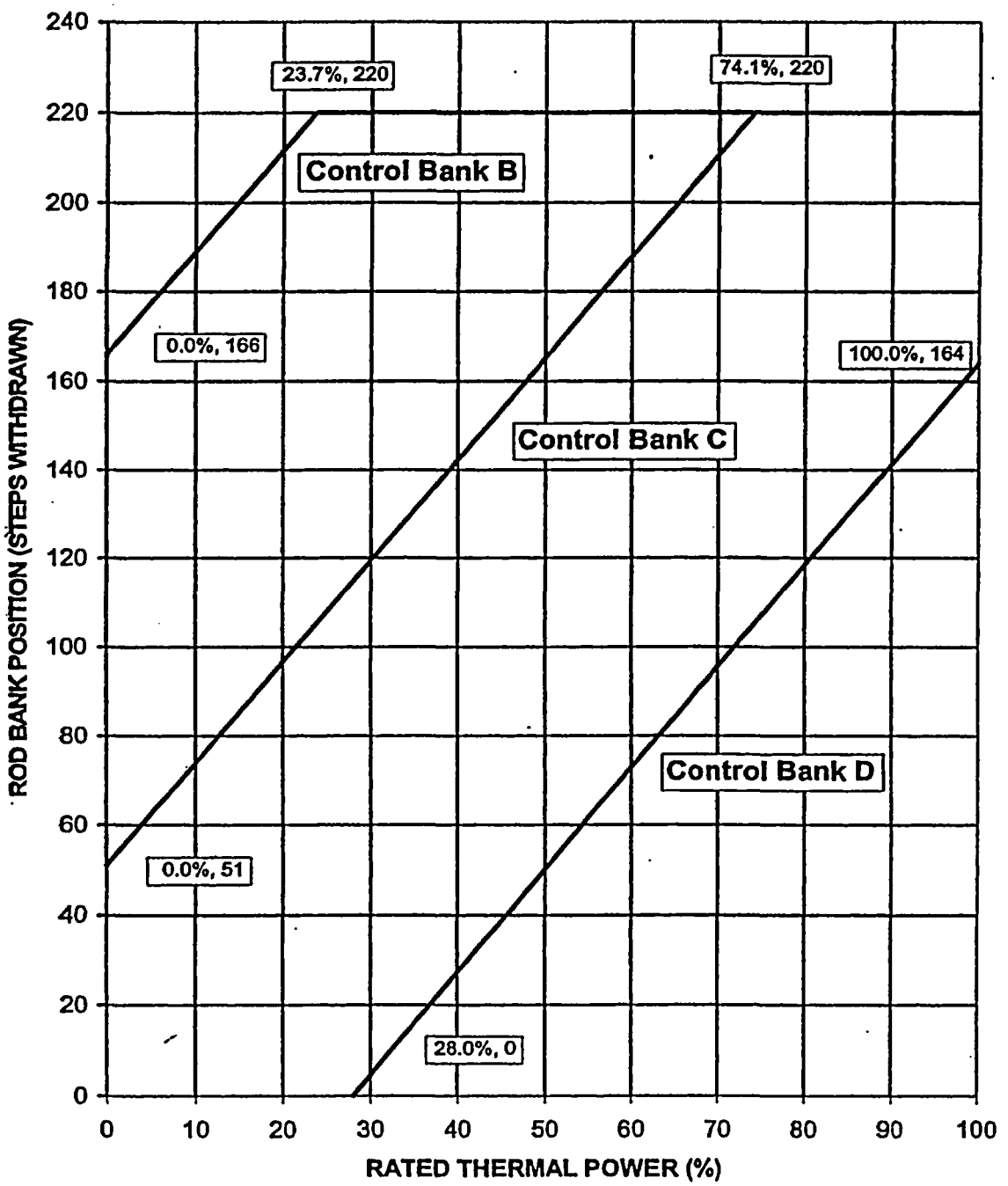


Figure 6 Axial Flux Difference Limits as a Function of Rated Thermal Power

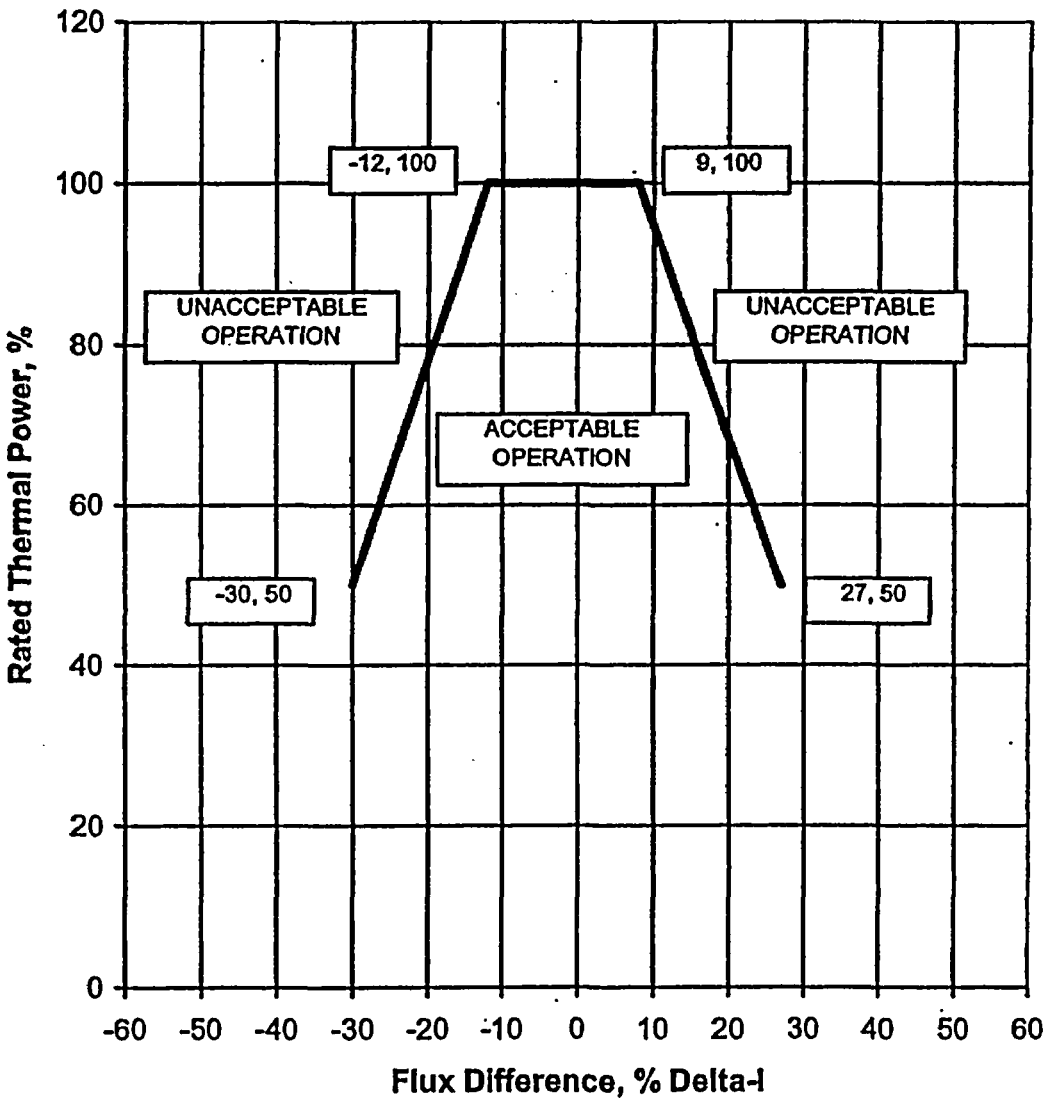
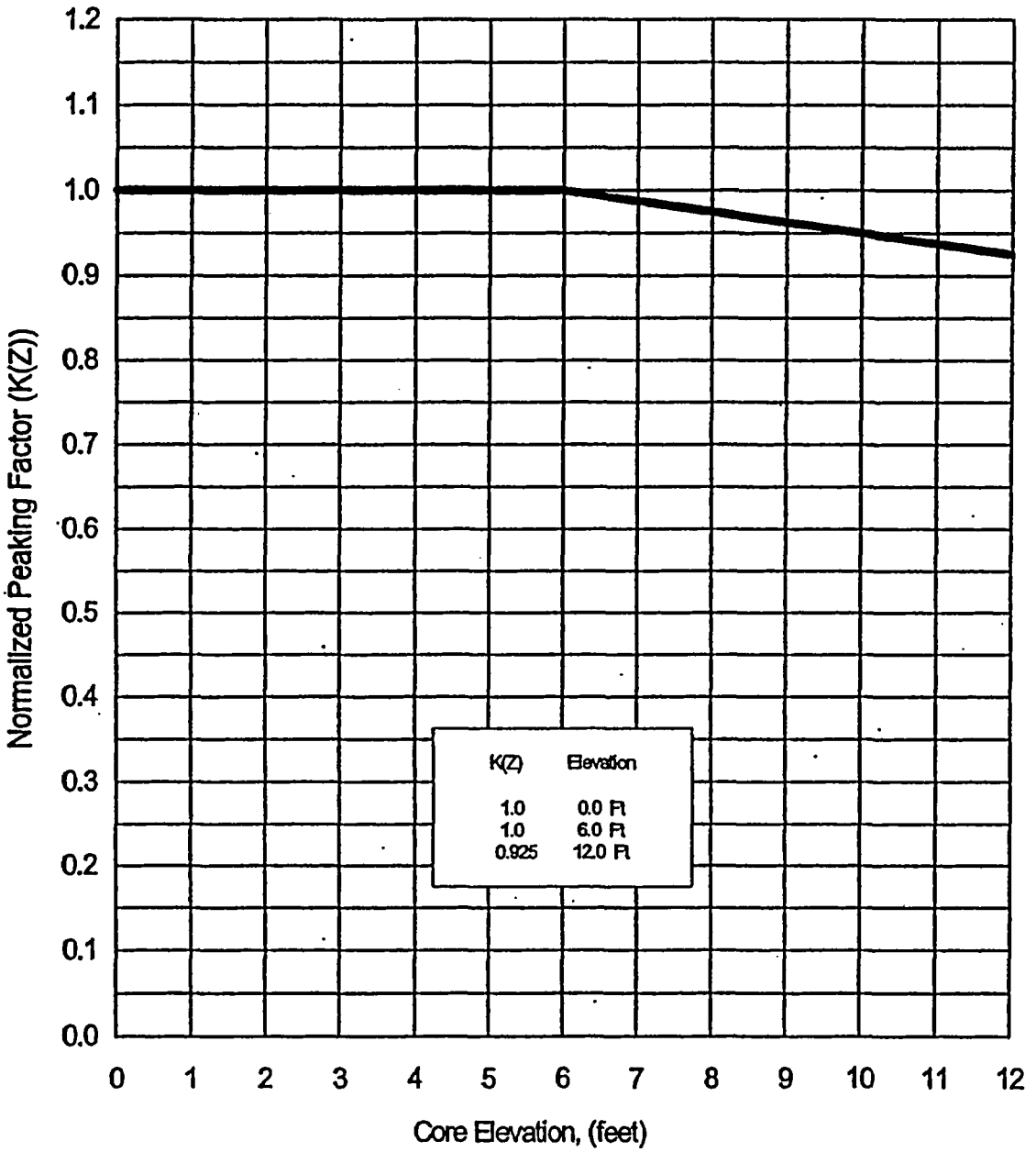


Figure 7 K(Z) - Normalized $F_Q(Z)$ as a Function of Core Height



TECHNICAL REQUIREMENTS MANUAL

APPENDIX 8.1

CORE OPERATING LIMITS REPORT, CYCLE 10

Table 1 RAOC W(Z) Function, Millstone Unit 3 - Cycle 10

-12/+9 AFD at 100% RTP

Mesh No.	Axial* Height	Burnup 150 MWD/MTU	Burnup 3000 MWD/MTU	Burnup 10000 MWD/MTU	Burnup 18000 MWD/MTU
1	12.0000	1.0000	1.0000	1.0000	1.0000
2	11.8333	1.0000	1.0000	1.0000	1.0000
3	11.6667	1.0000	1.0000	1.0000	1.0000
4	11.5000	1.0000	1.0000	1.0000	1.0000
5	11.3333	1.0000	1.0000	1.0000	1.0000
6	11.1667	1.0000	1.0000	1.0000	1.0000
7	11.0000	1.0000	1.0000	1.0000	1.0000
8	10.8333	1.0000	1.0000	1.0000	1.0000
9	10.6667	1.0000	1.0000	1.0000	1.0000
10	10.5000	1.3432	1.3583	1.3407	1.3248
11	10.3333	1.3248	1.3506	1.3258	1.3152
12	10.1667	1.3079	1.3470	1.3057	1.3040
13	10.0000	1.2960	1.3400	1.2835	1.2916
14	9.8333	1.2852	1.3277	1.2659	1.2775
15	9.6667	1.2753	1.3124	1.2509	1.2625
16	9.5000	1.2673	1.2971	1.2344	1.2488
17	9.3333	1.2554	1.2792	1.2254	1.2394
18	9.1667	1.2395	1.2599	1.2243	1.2328
19	9.0000	1.2240	1.2430	1.2240	1.2252
20	8.8333	1.2120	1.2301	1.2223	1.2177
21	8.6667	1.2027	1.2210	1.2200	1.2141
22	8.5000	1.1935	1.2141	1.2187	1.2165
23	8.3333	1.1839	1.2064	1.2156	1.2192
24	8.1667	1.1765	1.1991	1.2111	1.2212
25	8.0000	1.1744	1.1954	1.2082	1.2259
26	7.8333	1.1725	1.1913	1.2043	1.2299
27	7.6667	1.1686	1.1854	1.1997	1.2313
28	7.5000	1.1639	1.1785	1.1968	1.2311
29	7.3333	1.1585	1.1706	1.1930	1.2296
30	7.1667	1.1522	1.1619	1.1872	1.2265
31	7.0000	1.1449	1.1525	1.1802	1.2220
32	6.8333	1.1382	1.1415	1.1720	1.2160
33	6.6667	1.1320	1.1309	1.1625	1.2086
34	6.5000	1.1253	1.1244	1.1521	1.1998
35	6.3333	1.1208	1.1221	1.1404	1.1903
36	6.1667	1.1191	1.1218	1.1283	1.1805
37	6.0000	1.1183	1.1205	1.1182	1.1702
38	5.8333	1.1170	1.1180	1.1149	1.1602
39	5.6667	1.1158	1.1159	1.1146	1.1534

* Distance from bottom of active core (feet)

Table 1 (continued)
RAOC W(Z) Function
Millstone Unit 3 - Cycle 10
-12/+9 AFD at 100% RTP

Mesh No.	Axial* Height	Burnup 150 MWD/MTU	Burnup 3000 MWD/MTU	Burnup 10000 MWD/MTU	Burnup 18000 MWD/MTU
40	5.5000	1.1166	1.1162	1.1153	1.1535
41	5.3333	1.1188	1.1178	1.1159	1.1548
42	5.1667	1.1213	1.1196	1.1171	1.1539
43	5.0000	1.1233	1.1210	1.1189	1.1523
44	4.8333	1.1247	1.1219	1.1206	1.1508
45	4.6667	1.1259	1.1225	1.1218	1.1492
46	4.5000	1.1272	1.1227	1.1226	1.1469
47	4.3333	1.1300	1.1227	1.1232	1.1440
48	4.1667	1.1343	1.1224	1.1235	1.1404
49	4.0000	1.1380	1.1217	1.1241	1.1361
50	3.8333	1.1413	1.1218	1.1264	1.1328
51	3.6667	1.1444	1.1237	1.1306	1.1316
52	3.5000	1.1474	1.1265	1.1349	1.1319
53	3.3333	1.1502	1.1291	1.1383	1.1317
54	3.1667	1.1535	1.1321	1.1418	1.1315
55	3.0000	1.1594	1.1380	1.1487	1.1369
56	2.8333	1.1667	1.1483	1.1596	1.1475
57	2.6667	1.1756	1.1621	1.1730	1.1597
58	2.5000	1.1899	1.1759	1.1864	1.1718
59	2.3333	1.2063	1.1893	1.1995	1.1838
60	2.1667	1.2217	1.2028	1.2126	1.1956
61	2.0000	1.2368	1.2161	1.2253	1.2072
62	1.8333	1.2515	1.2288	1.2375	1.2184
63	1.6667	1.2653	1.2407	1.2489	1.2290
64	1.5000	1.0000	1.0000	1.0000	1.0000
65	1.3333	1.0000	1.0000	1.0000	1.0000
66	1.1667	1.0000	1.0000	1.0000	1.0000
67	1.0000	1.0000	1.0000	1.0000	1.0000
68	0.8333	1.0000	1.0000	1.0000	1.0000
69	0.6667	1.0000	1.0000	1.0000	1.0000
70	0.5000	1.0000	1.0000	1.0000	1.0000
71	0.3333	1.0000	1.0000	1.0000	1.0000
72	0.1667	1.0000	1.0000	1.0000	1.0000
73	0.0000	1.0000	1.0000	1.0000	1.0000

* Distance from bottom of active core (feet)

Table 2 Base Load W(Z) Function, Millstone Unit 3 - Cycle 10

Mesh No.	Axial* Height	Burnup 150 MWD/MTU	Burnup 1200 MWD/MTU	Burnup 3000 MWD/MTU	Burnup 10000 MWD/MTU	Burnup 18000 MWD/MTU
1	12.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	11.8333	1.0000	1.0000	1.0000	1.0000	1.0000
3	11.6667	1.0000	1.0000	1.0000	1.0000	1.0000
4	11.5000	1.0000	1.0000	1.0000	1.0000	1.0000
5	11.3333	1.0000	1.0000	1.0000	1.0000	1.0000
6	11.1667	1.0000	1.0000	1.0000	1.0000	1.0000
7	11.0000	1.0000	1.0000	1.0000	1.0000	1.0000
8	10.8333	1.0000	1.0000	1.0000	1.0000	1.0000
9	10.6667	1.0000	1.0000	1.0000	1.0000	1.0000
10	10.5000	1.2306	1.2315	1.2348	1.1769	1.1551
11	10.3333	1.2258	1.2267	1.2299	1.1778	1.1546
12	10.1667	1.2207	1.2217	1.2249	1.1753	1.1556
13	10.0000	1.2128	1.2139	1.2174	1.1703	1.1579
14	9.8333	1.2039	1.2050	1.2085	1.1637	1.1576
15	9.6667	1.1962	1.1970	1.1999	1.1583	1.1559
16	9.5000	1.1905	1.1904	1.1919	1.1566	1.1545
17	9.3333	1.1808	1.1801	1.1804	1.1555	1.1506
18	9.1667	1.1682	1.1673	1.1672	1.1536	1.1463
19	9.0000	1.1581	1.1574	1.1578	1.1521	1.1453
20	8.8333	1.1528	1.1521	1.1524	1.1523	1.1408
21	8.6667	1.1506	1.1496	1.1493	1.1542	1.1364
22	8.5000	1.1474	1.1463	1.1459	1.1562	1.1403
23	8.3333	1.1428	1.1415	1.1408	1.1563	1.1465
24	8.1667	1.1388	1.1371	1.1356	1.1555	1.1520
25	8.0000	1.1377	1.1353	1.1328	1.1562	1.1592
26	7.8333	1.1361	1.1334	1.1302	1.1561	1.1661
27	7.6667	1.1346	1.1316	1.1279	1.1554	1.1713
28	7.5000	1.1362	1.1326	1.1280	1.1565	1.1752
29	7.3333	1.1375	1.1335	1.1281	1.1568	1.1777
30	7.1667	1.1369	1.1327	1.1269	1.1553	1.1790
31	7.0000	1.1353	1.1309	1.1249	1.1526	1.1791
32	6.8333	1.1329	1.1287	1.1229	1.1489	1.1780
33	6.6667	1.1294	1.1258	1.1211	1.1440	1.1757
34	6.5000	1.1247	1.1223	1.1196	1.1382	1.1723
35	6.3333	1.1210	1.1196	1.1187	1.1313	1.1676
36	6.1667	1.1191	1.1182	1.1181	1.1237	1.1625
37	6.0000	1.1183	1.1171	1.1167	1.1171	1.1586
38	5.8333	1.1171	1.1156	1.1145	1.1149	1.1556
39	5.6667	1.1156	1.1138	1.1122	1.1146	1.1531

* Distance from bottom of active core (feet)

Table 2 (continued)
Base Load W(Z) Function
Millstone Unit 3 - Cycle 10

Mesh No.	Axial* Height	Burnup 150 MWD/MTU	Burnup 1200 MWD/MTU	Burnup 3000 MWD/MTU	Burnup 10000 MWD/MTU	Burnup 18000 MWD/MTU
40	5.5000	1.1149	1.1128	1.1108	1.1140	1.1512
41	5.3333	1.1140	1.1117	1.1092	1.1137	1.1488
42	5.1667	1.1124	1.1098	1.1070	1.1137	1.1454
43	5.0000	1.1104	1.1076	1.1042	1.1133	1.1414
44	4.8333	1.1081	1.1051	1.1013	1.1123	1.1372
45	4.6667	1.1053	1.1020	1.0979	1.1111	1.1330
46	4.5000	1.1023	1.0988	1.0943	1.1095	1.1280
47	4.3333	1.0989	1.0960	1.0926	1.1076	1.1226
48	4.1667	1.0953	1.0937	1.0923	1.1055	1.1166
49	4.0000	1.0917	1.0913	1.0920	1.1033	1.1099
50	3.8333	1.0907	1.0904	1.0913	1.1006	1.1042
51	3.6667	1.0927	1.0915	1.0908	1.0981	1.1005
52	3.5000	1.0943	1.0928	1.0917	1.0982	1.0981
53	3.3333	1.0949	1.0934	1.0923	1.0988	1.0953
54	3.1667	1.0959	1.0943	1.0929	1.1003	1.0926
55	3.0000	1.0997	1.0986	1.0981	1.1033	1.0938
56	2.8333	1.1052	1.1048	1.1055	1.1110	1.1001
57	2.6667	1.1112	1.1113	1.1129	1.1237	1.1100
58	2.5000	1.1176	1.1183	1.1211	1.1365	1.1198
59	2.3333	1.1268	1.1283	1.1323	1.1489	1.1293
60	2.1667	1.1392	1.1413	1.1465	1.1616	1.1389
61	2.0000	1.1513	1.1541	1.1605	1.1741	1.1485
62	1.8333	1.1628	1.1663	1.1738	1.1862	1.1577
63	1.6667	1.1738	1.1779	1.1866	1.1976	1.1665
64	1.5000	1.0000	1.0000	1.0000	1.0000	1.0000
65	1.3333	1.0000	1.0000	1.0000	1.0000	1.0000
66	1.1667	1.0000	1.0000	1.0000	1.0000	1.0000
67	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
68	0.8333	1.0000	1.0000	1.0000	1.0000	1.0000
69	0.6667	1.0000	1.0000	1.0000	1.0000	1.0000
70	0.5000	1.0000	1.0000	1.0000	1.0000	1.0000
71	0.3333	1.0000	1.0000	1.0000	1.0000	1.0000
72	0.1667	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)

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 (W Proprietary).

3.2 WCAP-10216-P-A-R1A, "RELAXATION OF CONSTANT AXIAL OFFSET CONTROL FQ SURVEILLANCE TECHNICAL SPECIFICATION," Rev. 1, February 1994 (W Proprietary).

3.3 WCAP-9561-P-A, ADD. 3, Rev. 1, "BART A-1: A COMPUTER CODE FOR THE BEST ESTIMATE ANALYSIS OF REFLOOD TRANSIENTS-SPECIAL REPORT: THIMBLE MODELING W ECCS EVALUATION MODEL," July 1986 (W Proprietary).

3.4 WCAP-10266-P-A, Addendum 1, Rev. 2-P-A, "THE 1981 VERSION OF THE WESTINGHOUSE ECCS EVALUATION MODEL USING THE BASH CODE," March 1987 (W Proprietary).

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 (W Proprietary).

3.6 WCAP-10054-P-A, "WESTINGHOUSE SMALL BREAK ECCS EVALUATION MODEL.17 USING THE NOTRUMP CODE," August 1985 (W Proprietary).

3.7 WCAP-10079-P-A, "NOTRUMP – A NODAL TRANSIENT SMALL BREAK AND GENERAL NETWORK CODE," August 1985 (W Proprietary).

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

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

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 (W Proprietary).

3.11 WCAP-8745-P-A, "DESIGN BASES FOR THE THERMAL OVERPOWER ΔT AND THERMAL OVERTEMPERATURE ΔT TRIP FUNCTIONS," September 1986 (W Proprietary).