

ATTACHMENT 1

Core Operating Limits Report

Braidwood Unit 2, Cycle 9A, Sequence Number 1

NUCLEAR FUEL MANAGEMENT DEPARTMENT
TRANSMITTAL OF DESIGN INFORMATION

- SAFETY RELATED
 NON-SAFETY RELATED
 REGULATORY RELATED

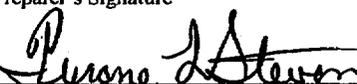
Originating Organization
 Nuclear Fuel Management
 Other (specify) _____

TODI No. NFM0100053
 Seq. No. 1
 Page 1 of 14

Station Braidwood Unit 2 Cycle 9A Generic _____

To: Lonnie K. Kepley - Braidwood

Subject Braidwood Unit 2 Cycle 9A Core Operating Limits Report in ITS Format and W(z) Function

| | | |
|----------------|---|-----------------|
| P. Moravek |  | <u>11-30-01</u> |
| Preparer | Preparer's Signature | Date |
| T. Stevens |  | <u>11/30/01</u> |
| Reviewer | Reviewer's Signature | Date |
| D. Redden |  | <u>11/30/01</u> |
| NFM Supervisor | NFM Supervisor's Signature | Date |

- Status of Information:
- Verified
 Unverified
 Engineering Judgement

Method and Schedule of Verification for Unverified TODIs: _____

Description of Information:

Attached is the Braidwood Unit 2 Cycle 9A Core Operating Limits Report (COLR) in the ITS format and W(z) function. **The Sequence 1 of this TODI supersedes Sequence 0.**

Purpose of Information:

The attached Core Operating Limits Report (COLR) for Braidwood Station Unit 2 Cycle 9A, with uprate values, has been prepared in accordance with the requirements of Technical Specification 5.6.5 (ITS). In this sequence, the following COLR Sections were revised:

- Section 2.2.2; the SDM limits for MODE 5, applicable for LCO 3.1.1,
- Section 2.3.4, the EOL/ARO/HFP-MTC Surveillance limit at 60 ppm, applicable for LCO 3.1.3,
- Section 2.5.1, the control bank insertion limits, applicable for LCO 3.1.6.
- Section 2.5.4, the control bank overlap limits, applicable for LCO 3.1.6.
- Section 2.13.2, the Reactor Coolant System boron concentration, applicable to TLCO 3.1.k.2)

Braidwood Station is requested to perform a plant review of this document. Upon completion of the plant review, Braidwood Station is to transmit the COLR portion to the Nuclear Regulatory Commission pursuant to Technical Specification 5.6.5. Please provide NFM (Tyrone L. Stevens) with a copy of Braidwood Station's completed plant review and COLR submittal to the NRC.

Source of Information:

Westinghouse Letter CAC-01-131, "Braidwood 2 Cycle 9A COLR data for 3586.6 MWt Operation, " dated April 12, 2001.
 NFM0100054, "RCS Average Temperature DNB Limit, " Seq. 0, dated April 14, 2001.

Supplemental Distribution: A. Ferko / L. S. Dworakowski (BR)

CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

1.0 CORE OPERATING LIMITS REPORT

This Core Operating Limits Report (COLR) for Braidwood Station Unit 2 Cycle 9A has been prepared in accordance with the requirements of Technical Specification 5.6.5 (ITS).

The Technical Specifications affected by this report are listed below:

| | | |
|-----|-------|---|
| SL | 2.1.1 | Reactor Core Safety Limits (SLs) |
| LCO | 3.1.1 | Shutdown Margin (SDM) |
| LCO | 3.1.3 | Moderator Temperature Coefficient |
| LCO | 3.1.4 | Rod Group Alignment Limits |
| LCO | 3.1.5 | Shutdown Bank Insertion Limits |
| LCO | 3.1.6 | Control Bank Insertion Limits |
| LCO | 3.1.8 | Physics Tests Exceptions – Mode 2 |
| LCO | 3.2.1 | Heat Flux Hot Channel Factor ($F_Q(Z)$) |
| LCO | 3.2.2 | Nuclear Enthalpy Rise Hot Channel Factor ($F_{\Delta H}^N$) |
| LCO | 3.2.3 | Axial Flux Difference (AFD) |
| LCO | 3.2.5 | Departure from Nucleate Boiling Ratio (DNBR) |
| LCO | 3.3.1 | Reactor Trip System (RTS) Instrumentation |
| LCO | 3.3.9 | Boron Dilution Protection System (BDPS) |
| LCO | 3.4.1 | Reactor Coolant System (RCS) DNB Parameters |
| LCO | 3.9.1 | Boron Concentration |

The portions of the Technical Requirements Manual affected by this report are listed below:

| | |
|----------------|---|
| TRM TLCO 3.1.b | Boration Flow Paths - Operating |
| TRM TLCO 3.1.d | Charging Pumps - Operating |
| TRM TLCO 3.1.f | Borated Water Sources - Operating |
| TRM TLCO 3.1.g | Position Indication System – Shutdown |
| TRM TLCO 3.1.h | Shutdown Margin (SDM) – MODE 1 and MODE 2 with $k_{eff} \geq 1.0$ |
| TRM TLCO 3.1.i | Shutdown Margin (SDM) – MODE 5 |
| TRM TLCO 3.1.j | Shutdown and Control Rods |
| TRM TLCO 3.1.k | Position Indication System – Shutdown (Special Test Exception) |

CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

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 are applicable for the entire cycle unless otherwise identified. These limits have been developed using the NRC-approved methodologies specified in Technical Specification 5.6.5.

2.1 Reactor Core Limits (SL 2.1.1)

2.1.1 In Modes 1 and 2, the combination of Thermal Power, Reactor Coolant System (RCS) highest loop average temperature, and pressurizer pressure shall not exceed the limits specified in Figure 2.1.1.

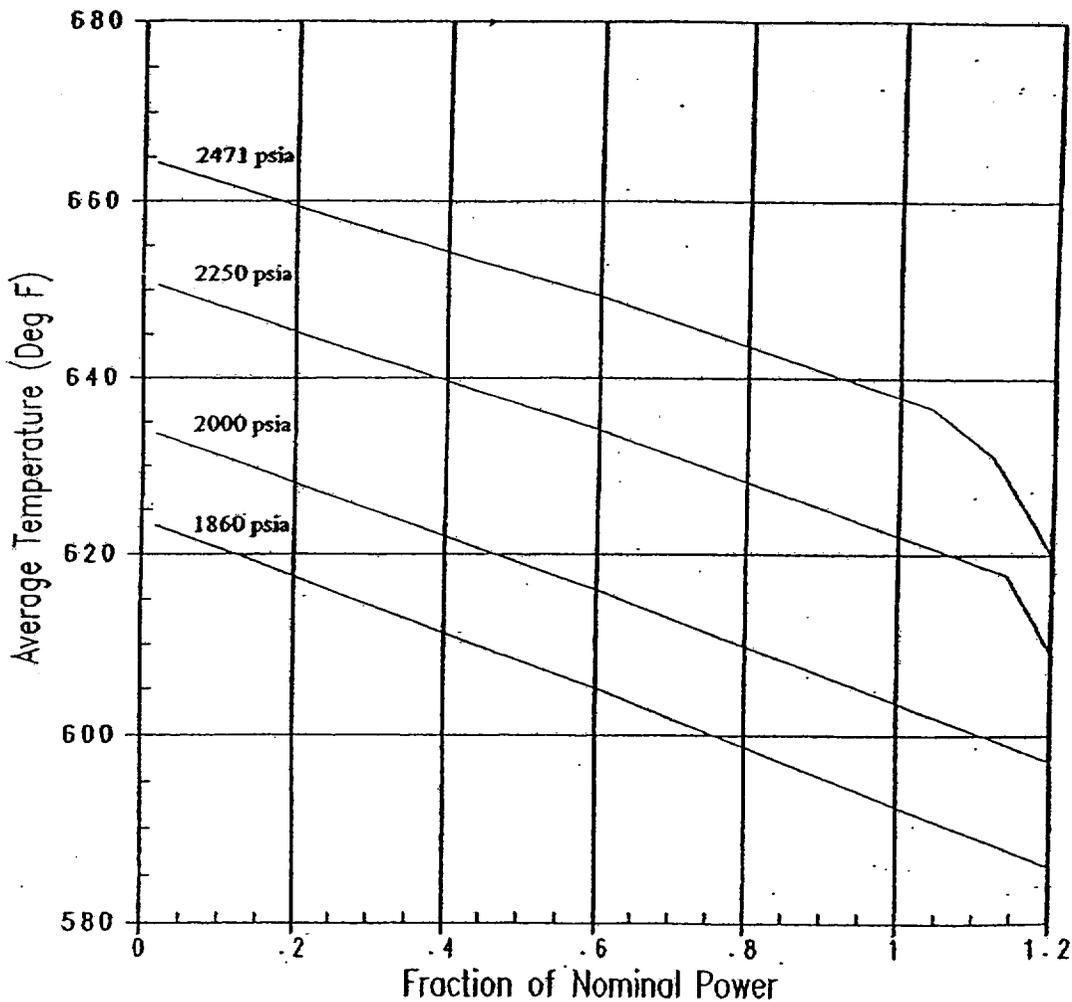


Figure 2.1.1: Reactor Core Limits

2.2 CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A
Shutdown Margin (SDM)

The SDM limit for MODES 1, 2, 3, and 4 is:

2.2.1 The SDM shall be greater than or equal to 1.3% $\Delta k/k$ (LCOs 3.1.1, 3.1.4, 3.1.5, 3.1.6, 3.1.8, 3.3.9; TRM TLCOs 3.1.b, 3.1.d, 3.1.f, 3.1.h, and 3.1.j).

The SDM limit for MODE 5 is:

2.2.2 SDM shall be greater than or equal to 1.3% $\Delta k/k$ (LCO 3.1.1, LCO 3.3.9; TRM TLCOs 3.1.i and 3.1.j).

2.3 Moderator Temperature Coefficient (LCO 3.1.3)

The Moderator Temperature Coefficient (MTC) limits are:

2.3.1 The BOL/ARO/HZP-MTC upper limit shall be $+4.1 \times 10^{-5} \Delta k/k/^{\circ}F$.

2.3.2 The EOL/ARO/HFP-MTC lower limit shall be $-4.6 \times 10^{-4} \Delta k/k/^{\circ}F$.

2.3.3 The EOL/ARO/HFP-MTC Surveillance limit at 300 ppm shall be $-3.7 \times 10^{-4} \Delta k/k/^{\circ}F$.

2.3.4 The EOL/ARO/HFP-MTC Surveillance limit at 60 ppm shall be $-4.3 \times 10^{-4} \Delta k/k/^{\circ}F$.

where: BOL stands for Beginning of Cycle Life
 ARO stands for All Rods Out
 HZP stands for Hot Zero Thermal Power
 EOL stands for End of Cycle Life
 HFP stands for Hot Full Thermal Power

2.4 Shutdown Bank Insertion Limit (LCO 3.1.5)

2.4.1 All shutdown banks shall be fully withdrawn to at least 224 steps.

2.5 Control Bank Insertion Limits (LCO 3.1.6)

2.5.1 The control banks, with the Bank A greater than or equal to 224 steps, shall be limited in physical insertion as shown in Figure 2.5.1.

2.5.2 Each control bank shall be considered fully withdrawn from the core at greater than or equal to 224 steps.

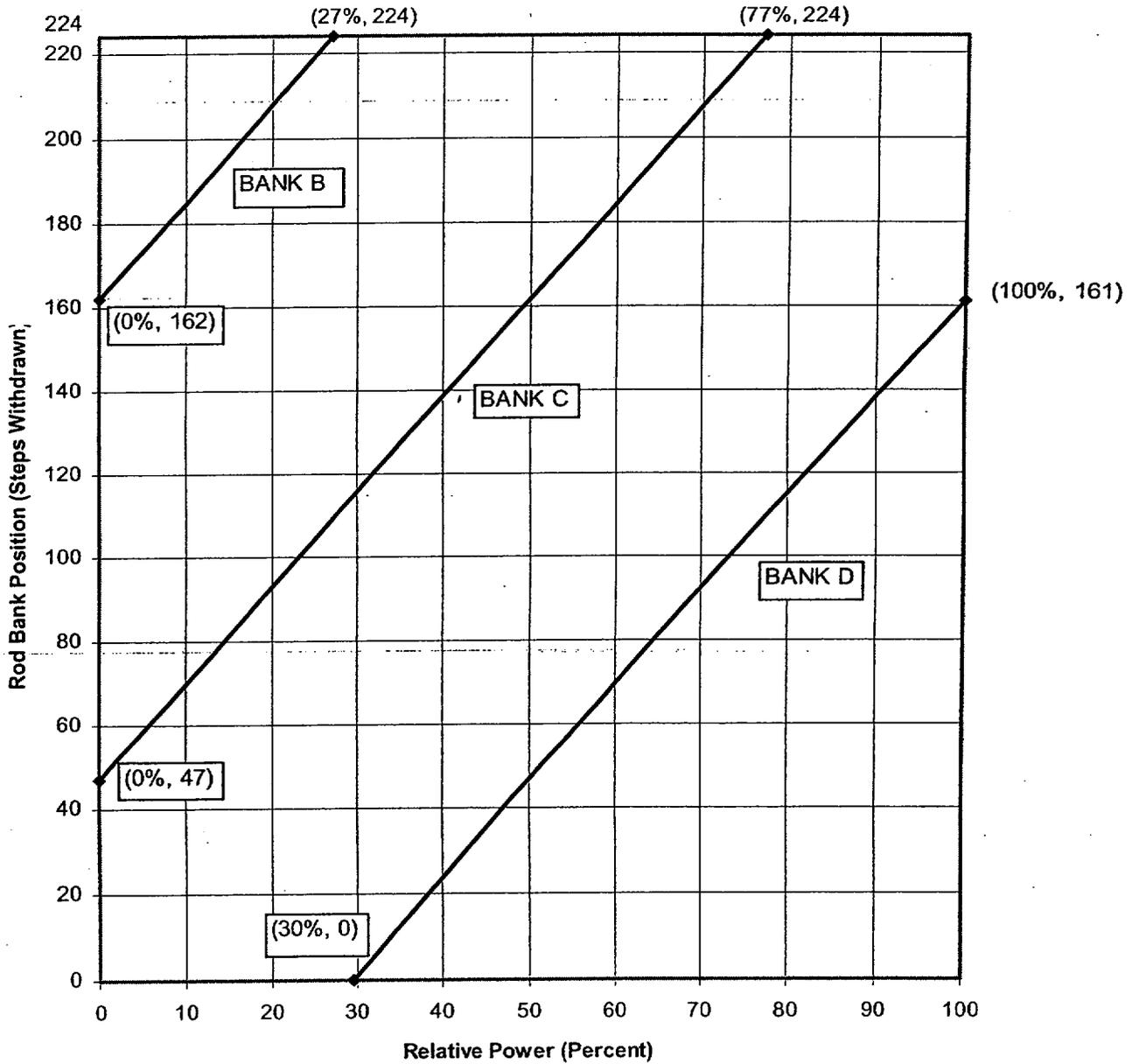
2.5.3 The control banks shall be operated in sequence by withdrawal of Bank A, Bank B, Bank C and Bank D. The control banks shall be sequenced in reverse order upon insertion.

2.5.4 Each control bank not fully withdrawn from the core shall be operated with the following overlap limits as a function of park position:

| Park Position (step) | Overlap Limit (step) |
|----------------------|----------------------|
| 225 | 110 |
| 226 | 111 |
| 227 | 112 |
| 228 | 113 |
| 229 | 114 |
| 231 | 116 |

CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

Figure 2.5.1:
Control Bank Insertion-Limits Versus Percent Rated Thermal Power



CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

2.6 Heat Flux Hot Channel Factor ($F_Q(Z)$) (LCO 3.2.1)

2.6.1

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

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

where: P = the ratio of THERMAL POWER to RATED THERMAL POWER

$$F_Q^{RTP} = 2.60$$

$K(Z)$ is provided in Figure 2.6.1.

2.6.2 $W(Z)$ Values:

a) When PDMS is OPERABLE, $W(Z) = 1.00000$ for all axial points.

b) When PDMS is Inoperable, $W(Z)$ is provided in Figures 2.6.2.a through 2.6.2.c

The normal operation $W(Z)$ values have been determined at burnups of 7901, 14000, and 18000 MWD/MTU.

For this cycle, the $F_Q^C(z)$ penalty factors are equal to 2% per 31 Effective Full Power Days (EFPD). These values shall be used to increase the $F_Q^W(z)$ as per Surveillance Requirement 3.2.1.2. A 2% penalty factor shall be used at all cycle burnups.

Multiplication Factor = 1.02

2.6.3 Uncertainty:

The uncertainty, U_{FQ} , to be applied to the Heat Flux Hot Channel Factor $F_Q(Z)$ shall be calculated by the following formula:

$$U_{FQ} = U_{qm} \cdot U_e$$

where:

U_{qm} = Base F_Q measurement uncertainty = 1.05 when PDMS is Inoperable

U_e = Engineering uncertainty factor = 1.03

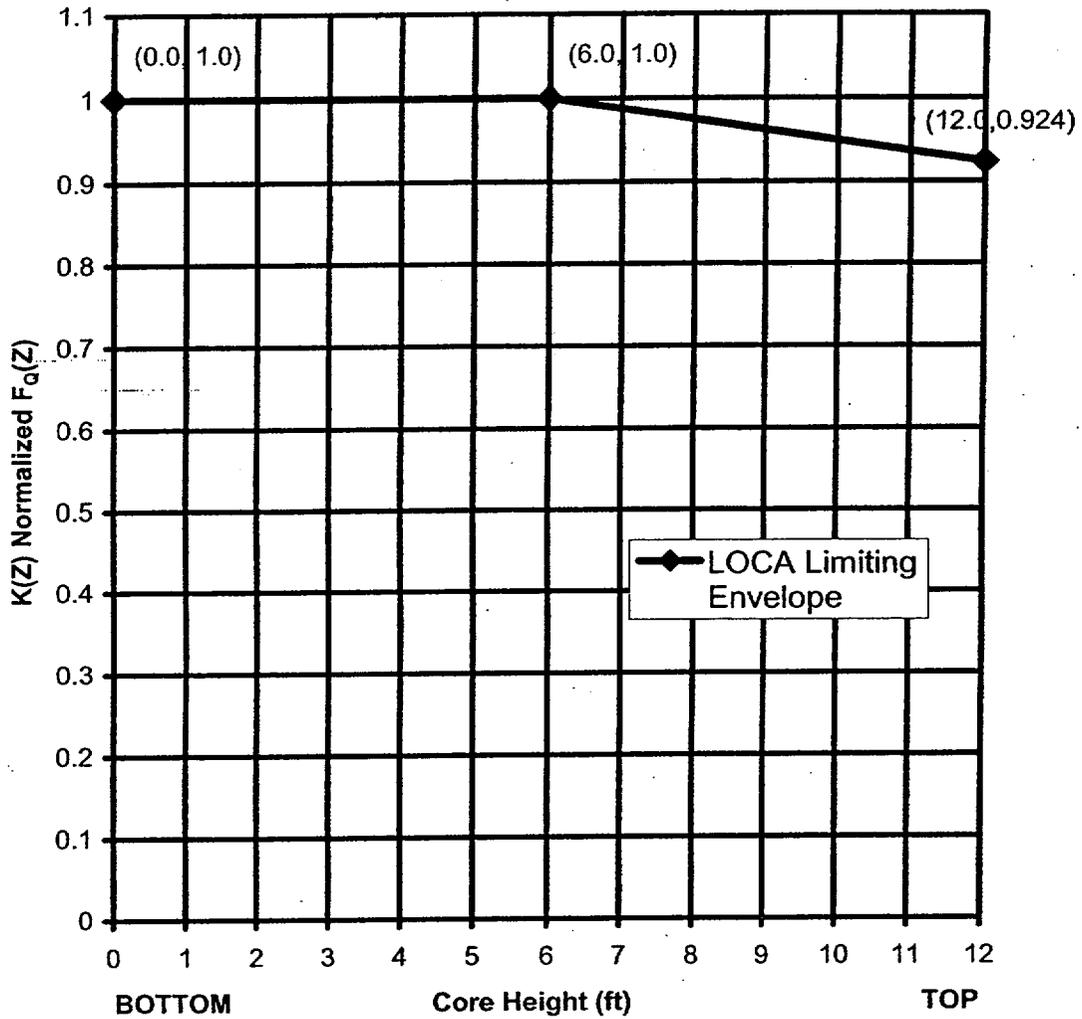
2.6.4 PDMS Alarms:

$F_Q(Z)$ Warning Setpoint $\geq 2\%$ of $F_Q(Z)$ Margin

$F_Q(Z)$ Alarm Setpoint $\geq 0\%$ of $F_Q(Z)$ Margin

CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

Figure 2.6.1: $K(Z)$ - Normalized $F_Q(Z)$ as a Function of Core Height



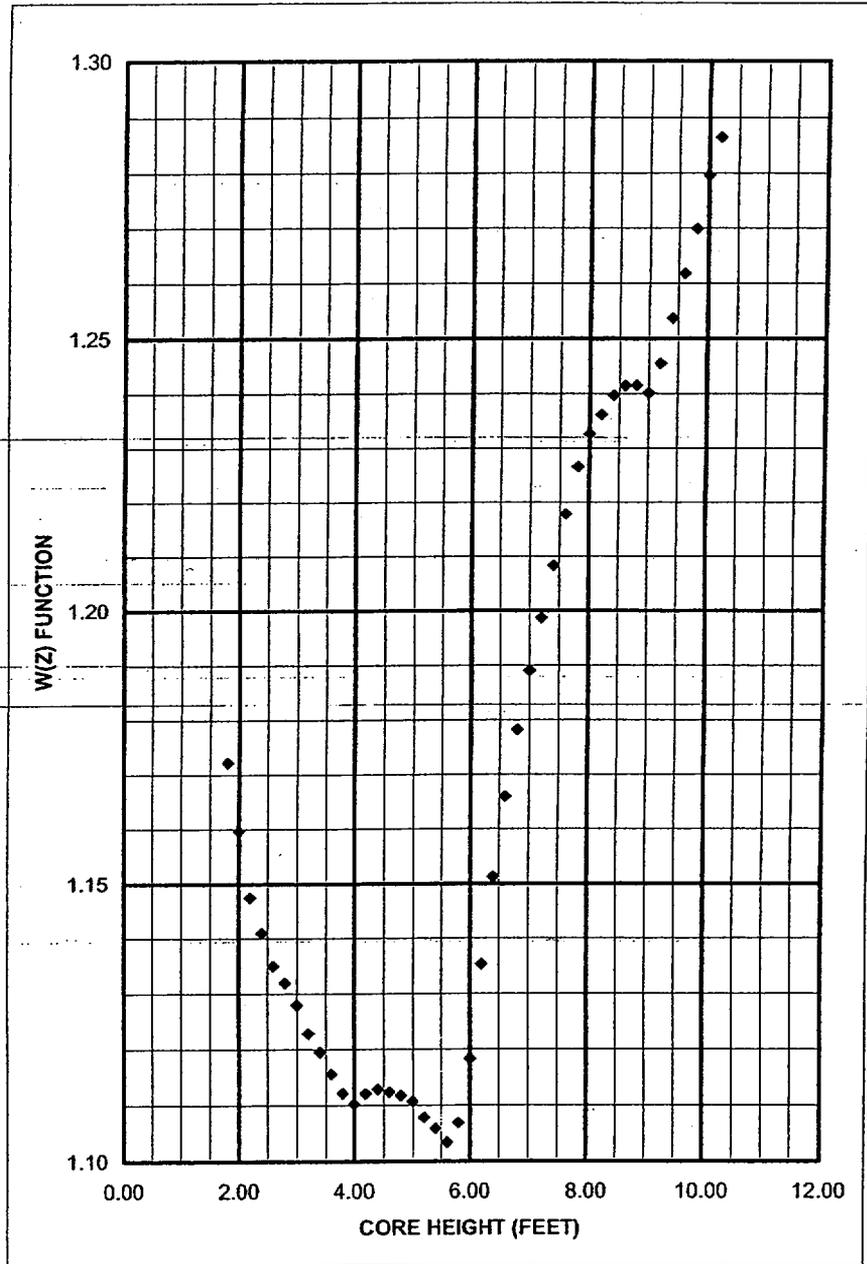
CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

| Height | MAXW(Z) |
|--------|---------|
| 0.00 | 1.0000 |
| 0.20 | 1.0000 |
| 0.40 | 1.0000 |
| 0.60 | 1.0000 |
| 0.80 | 1.0000 |
| 1.00 | 1.0000 |
| 1.20 | 1.0000 |
| 1.40 | 1.0000 |
| 1.60 | 1.0000 |
| 1.80 | 1.1722 |
| 2.00 | 1.1596 |
| 2.20 | 1.1476 |
| 2.40 | 1.1410 |
| 2.60 | 1.1351 |
| 2.80 | 1.1320 |
| 3.00 | 1.1280 |
| 3.20 | 1.1229 |
| 3.40 | 1.1195 |
| 3.60 | 1.1156 |
| 3.80 | 1.1121 |
| 4.00 | 1.1102 |
| 4.20 | 1.1120 |
| 4.40 | 1.1128 |
| 4.60 | 1.1123 |
| 4.80 | 1.1117 |
| 5.00 | 1.1107 |
| 5.20 | 1.1078 |
| 5.40 | 1.1058 |
| 5.60 | 1.1033 |
| 5.80 | 1.1068 |
| 6.00 | 1.1183 |
| 6.20 | 1.1354 |
| 6.40 | 1.1513 |
| 6.60 | 1.1659 |
| 6.80 | 1.1783 |
| 7.00 | 1.1891 |
| 7.20 | 1.1987 |
| 7.40 | 1.2083 |
| 7.60 | 1.2178 |
| 7.80 | 1.2265 |
| 8.00 | 1.2325 |
| 8.20 | 1.2361 |
| 8.40 | 1.2397 |
| 8.60 | 1.2414 |
| 8.80 | 1.2415 |
| 9.00 | 1.2401 |
| 9.20 | 1.2455 |
| 9.40 | 1.2537 |
| 9.60 | 1.2618 |
| 9.80 | 1.2699 |
| 10.00 | 1.2796 |
| 10.20 | 1.2864 |
| 10.40 | 1.0000 |
| 10.60 | 1.0000 |
| 10.80 | 1.0000 |
| 11.00 | 1.0000 |
| 11.20 | 1.0000 |
| 11.40 | 1.0000 |
| 11.60 | 1.0000 |
| 11.80 | 1.0000 |
| 12.00 | 1.0000 |

Braidwood Unit 2 Cycle 9A

Figure 2.6.2.a

Summary of W(Z) Function at 7901 MWD/MU
(Top and Bottom 15% Excluded per WC AP-10216)



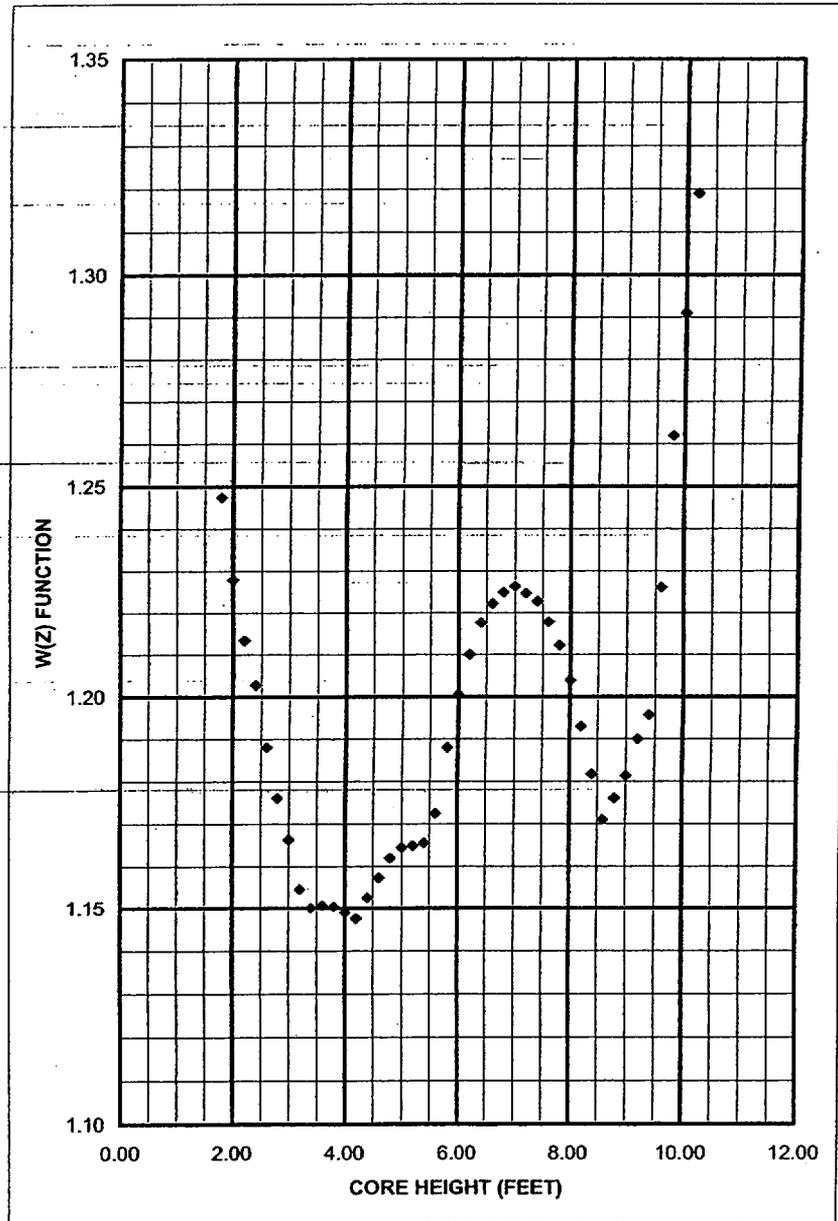
CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

| Height Feet | MAX W(Z) |
|-------------|----------|
| 0.00 | 1.0000 |
| 0.20 | 1.0000 |
| 0.40 | 1.0000 |
| 0.60 | 1.0000 |
| 0.80 | 1.0000 |
| 1.00 | 1.0000 |
| 1.20 | 1.0000 |
| 1.40 | 1.0000 |
| 1.60 | 1.0000 |
| 1.80 | 1.2474 |
| 2.00 | 1.2279 |
| 2.20 | 1.2133 |
| 2.40 | 1.2027 |
| 2.60 | 1.1881 |
| 2.80 | 1.1761 |
| 3.00 | 1.1664 |
| 3.20 | 1.1547 |
| 3.40 | 1.1501 |
| 3.60 | 1.1507 |
| 3.80 | 1.1504 |
| 4.00 | 1.1490 |
| 4.20 | 1.1475 |
| 4.40 | 1.1526 |
| 4.60 | 1.1574 |
| 4.80 | 1.1620 |
| 5.00 | 1.1645 |
| 5.20 | 1.1649 |
| 5.40 | 1.1656 |
| 5.60 | 1.1725 |
| 5.80 | 1.1880 |
| 6.00 | 1.2005 |
| 6.20 | 1.2100 |
| 6.40 | 1.2176 |
| 6.60 | 1.2222 |
| 6.80 | 1.2248 |
| 7.00 | 1.2262 |
| 7.20 | 1.2246 |
| 7.40 | 1.2227 |
| 7.60 | 1.2178 |
| 7.80 | 1.2122 |
| 8.00 | 1.2038 |
| 8.20 | 1.1929 |
| 8.40 | 1.1817 |
| 8.60 | 1.1710 |
| 8.80 | 1.1761 |
| 9.00 | 1.1813 |
| 9.20 | 1.1900 |
| 9.40 | 1.1957 |
| 9.60 | 1.2260 |
| 9.80 | 1.2620 |
| 10.00 | 1.2910 |
| 10.20 | 1.3190 |
| 10.40 | 1.0000 |
| 10.60 | 1.0000 |
| 10.80 | 1.0000 |
| 11.00 | 1.0000 |
| 11.20 | 1.0000 |
| 11.40 | 1.0000 |
| 11.60 | 1.0000 |
| 11.80 | 1.0000 |
| 12.00 | 1.0000 |

Braidwood Unit 2 Cycle 9A

Figure 2.6.2.b

Summary of W(Z) Function at 14000 MWD/MIU
(Top and Bottom 15% Excluded per WCAP-10216)



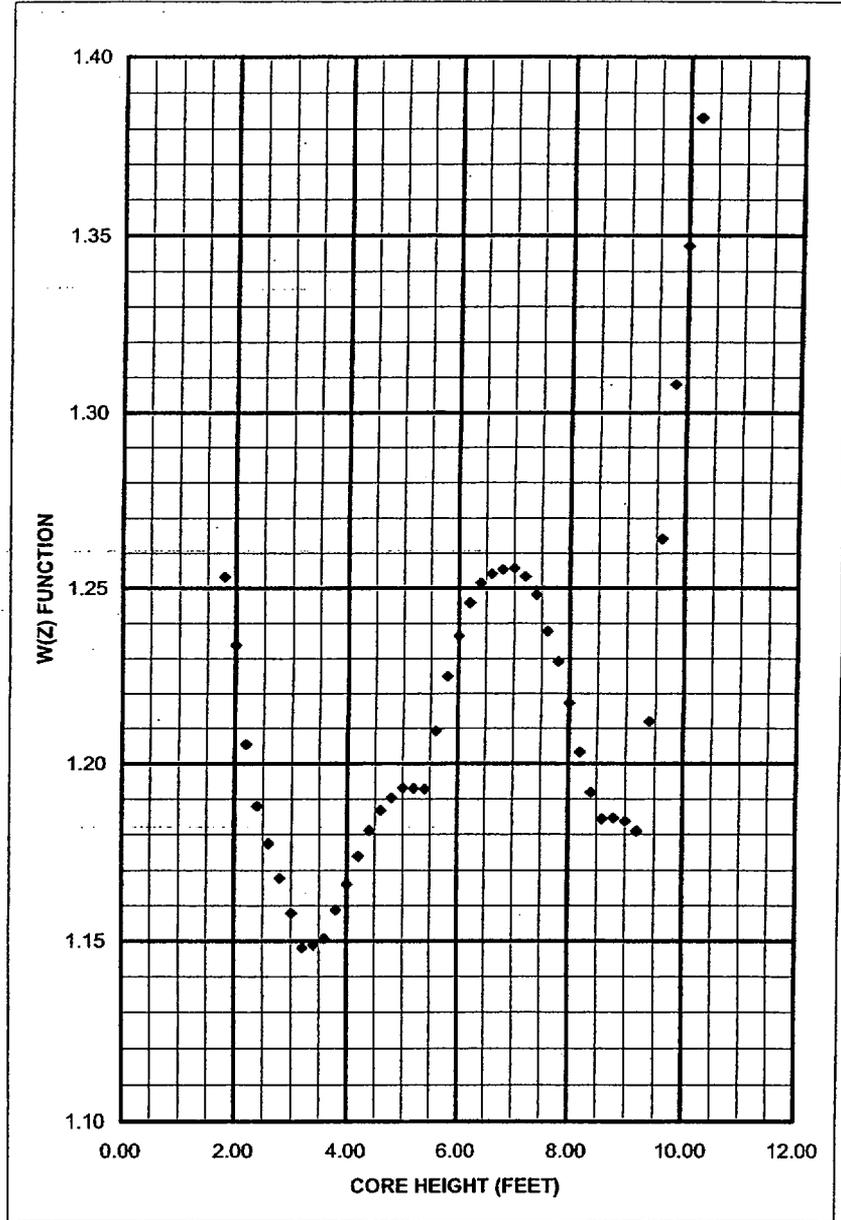
CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

| Height Feet | MAX WZ |
|----------------|--------|
| 0.00 | 1.0000 |
| 0.20 | 1.0000 |
| 0.40 | 1.0000 |
| 0.60 | 1.0000 |
| 0.80 | 1.0000 |
| 1.00 | 1.0000 |
| 1.20 | 1.0000 |
| 1.40 | 1.0000 |
| 1.60 | 1.0000 |
| 1.80 | 1.2532 |
| 2.00 | 1.2338 |
| 2.20 | 1.2055 |
| 2.40 | 1.1881 |
| 2.60 | 1.1776 |
| 2.80 | 1.1677 |
| 3.00 | 1.1578 |
| 3.20 | 1.1482 |
| 3.40 | 1.1489 |
| 3.60 | 1.1507 |
| 3.80 | 1.1588 |
| 4.00 | 1.1659 |
| 4.20 | 1.1741 |
| 4.40 | 1.1812 |
| 4.60 | 1.1868 |
| 4.80 | 1.1904 |
| 5.00 | 1.1931 |
| 5.20 | 1.1929 |
| 5.40 | 1.1928 |
| 5.60 | 1.2093 |
| 5.80 | 1.2248 |
| 6.00 | 1.2364 |
| 6.20 | 1.2459 |
| 6.40 | 1.2515 |
| 6.60 | 1.2541 |
| 6.80 | 1.2553 |
| 7.00 | 1.2557 |
| 7.20 | 1.2533 |
| 7.40 | 1.2481 |
| 7.60 | 1.2377 |
| 7.80 | 1.2292 |
| 8.00 | 1.2173 |
| 8.20 | 1.2033 |
| 8.40 | 1.1919 |
| 8.60 | 1.1844 |
| 8.80 | 1.1846 |
| 9.00 | 1.1837 |
| 9.20 | 1.1810 |
| 9.40 | 1.2120 |
| 9.60 | 1.2640 |
| 9.80 | 1.3080 |
| 10.00 | 1.3470 |
| 10.20 | 1.3830 |
| 10.40 | 1.0000 |
| 10.60 | 1.0000 |
| 10.80 | 1.0000 |
| 11.00 | 1.0000 |
| 11.20 | 1.0000 |
| 11.40 | 1.0000 |
| 11.60 | 1.0000 |
| 11.80 | 1.0000 |
| 12.00 | 1.0000 |

Braidwood Unit 2 Cycle 9A

Figure 2.6.2.c

Summary of W(Z) Function at 18000 MWD/MTU
(Top and Bottom 15% Excluded per WC AP-10216)



CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

2.7 Nuclear Enthalpy Rise Hot Channel Factor ($F_{\Delta H}^N$) (LCO 3.2.2)

2.7.1
$$F_{\Delta H}^N \leq F_{\Delta H}^{RTP} [1.0 + PF_{\Delta H}(1.0 - P)]$$

where: P = the ratio of THERMAL POWER to RATED THERMAL POWER

$$F_{\Delta H}^{RTP} = 1.70$$

$$PF_{\Delta H} = 0.3$$

2.7.2 Uncertainty when PDMS is inoperable:

The uncertainty, $U_{F_{\Delta H}}$, to be applied to the Nuclear Enthalpy Rise Hot Channel Factor $F_{\Delta H}^N$ shall be calculated by the following formula:

$$U_{F_{\Delta H}} = U_{F_{\Delta Hm}}$$

where:

$$U_{F_{\Delta Hm}} = \text{Base } F_{\Delta H}^N \text{ measurement uncertainty} = 1.04$$

2.7.3 PDMS Alarms:

$F_{\Delta H}^N$ Warning Setpoint $\geq 2\%$ of $F_{\Delta H}^N$ Margin

$F_{\Delta H}^N$ Alarm Setpoint $\geq 0\%$ of $F_{\Delta H}^N$ Margin

2.8 Axial Flux Difference (AFD) (LCO 3.2.3)

2.8.1 When PDMS is Inoperable, the AXIAL FLUX DIFFERENCE (AFD) Acceptable Operation Limits are provided in Figure 2.8.1 or the latest valid PDMS Surveillance Report, whichever is more conservative.

2.8.2 When PDMS is OPERABLE, no AFD Acceptable Operation Limits are applicable.

2.9 Departure from Nucleate Boiling Ratio (DNBR) (LCO 3.2.5)

2.9.1
$$DNBR_{APSL} \geq 1.536$$

The Axial Power Shape Limiting DNBR ($DNBR_{APSL}$) is applicable with THERMAL POWER $\geq 50\%$ RTP when PDMS is OPERABLE.

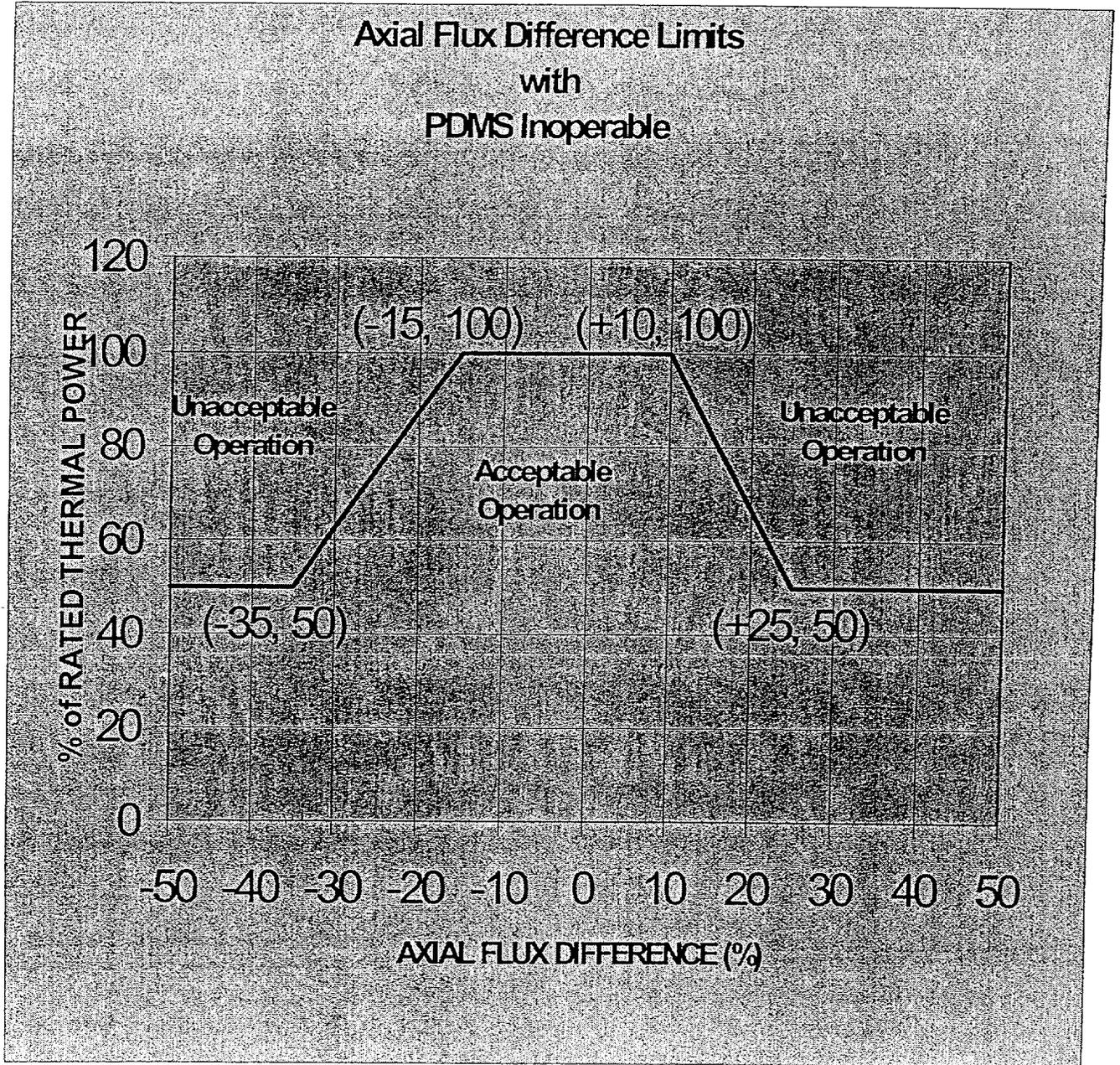
2.9.2 PDMS Alarms:

DNBR Warning Setpoint $\geq 2\%$ of DNBR Margin

DNBR Alarm Setpoint $\geq 0\%$ of DNBR Margin

CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

Figure 2.8.1 Axial Flux Difference Limits as a Function of Rated Thermal Power



CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

- 2.10 Reactor Trip System Overtemperature ΔT Setpoint Parameter Values (LCO 3.3.1)
- 2.10.1 The Overtemperature ΔT reactor trip setpoint K_1 shall be equal to 1.325.
- 2.10.2 The Overtemperature ΔT reactor trip setpoint T_{avg} coefficient K_2 shall be equal to 0.0297 / °F.
- 2.10.3 The Overtemperature ΔT reactor trip setpoint pressure coefficient K_3 shall be equal to 0.00181 / psig.
- 2.10.4 The nominal T_{avg} at RTP (indicated) T' shall be less than or equal to 588.0 °F.
- 2.10.5 The nominal RCS operating pressure (indicated) P' shall be equal to 2235 psig.
- 2.10.6 The measured reactor vessel ΔT lead/lag time constant τ_1 shall be equal to 8 sec.
- 2.10.7 The measured reactor vessel ΔT lead/lag time constant τ_2 shall be equal to 3 sec.
- 2.10.8 The measured reactor vessel ΔT lag time constant τ_3 shall be less than or equal to 2 sec.
- 2.10.9 The measured reactor vessel average temperature lead/lag time constant τ_4 shall be equal to 33 sec.
- 2.10.10 The measured reactor vessel average temperature lead/lag time constant τ_5 shall be equal to 4 sec.
- 2.10.11 The measured reactor vessel average temperature lag time constant τ_6 shall be less than or equal to 2 sec.
- 2.10.12 The $f_1(\Delta I)$ "positive" breakpoint shall be +10% ΔI .
- 2.10.13 The $f_1(\Delta I)$ "negative" breakpoint shall be -18% ΔI .
- 2.10.14 The $f_1(\Delta I)$ "positive" slope shall be +3.47% / % ΔI .
- 2.10.15 The $f_1(\Delta I)$ "negative" slope shall be -2.61% / % ΔI .
- 2.11 Reactor Trip System Overpower ΔT Setpoint Parameter Values (LCO 3.3.1)
- 2.11.1 The Overpower ΔT reactor trip setpoint K_4 shall be equal to 1.072.
- 2.11.2 The Overpower ΔT reactor trip setpoint T_{avg} rate/lag coefficient K_5 shall be equal to 0.02 / °F for increasing T_{avg} .
- 2.11.3 The Overpower ΔT reactor trip setpoint T_{avg} rate/lag coefficient K_5 shall be equal to 0 / °F for decreasing T_{avg} .

CORE OPERATING LIMITS REPORT (COLR) for BRAIDWOOD UNIT 2 CYCLE 9A

- 2.11.4 The Overpower ΔT reactor trip setpoint T_{avg} heatup coefficient K_6 shall be equal to 0.00245 / °F when $T > T''$.
- 2.11.5 The Overpower ΔT reactor trip setpoint T_{avg} heatup coefficient K_6 shall be equal to 0 / °F when $T \leq T''$.
- 2.11.6 The nominal T_{avg} at RTP (indicated) T'' shall be less than or equal to 588.0 °F.
- 2.11.7 The measured reactor vessel ΔT lead/lag time constant τ_1 shall be equal to 8 sec.
- 2.11.8 The measured reactor vessel ΔT lead/lag time constant τ_2 shall be equal to 3 sec.
- 2.11.9 The measured reactor vessel ΔT lag time constant τ_3 shall be less than or equal to 2 sec.
- 2.11.10 The measured reactor vessel average temperature lag time constant τ_6 shall be less than or equal to 2 sec.
- 2.11.11 The measured reactor vessel average temperature rate/lag time constant τ_7 shall be equal to 10 sec.
- 2.11.12 The $f_2(\Delta I)$ "positive" breakpoint shall be 0 for all ΔI .
- 2.11.13 The $f_2(\Delta I)$ "negative" breakpoint shall be 0 for all ΔI .
- 2.11.14 The $f_2(\Delta I)$ "positive" slope shall be 0 for all ΔI .
- 2.11.15 The $f_2(\Delta I)$ "negative" slope shall be 0 for all ΔI .
- 2.12 Reactor Coolant System (RCS) DNB Parameter Limits (LCO 3.4.1)
- 2.12.1 The pressurizer pressure shall be greater than or equal to 2209 psig.
- 2.12.2 The RCS average temperature (T_{avg}) shall be less than or equal to 593.1 °F.
- 2.12.3 The RCS total flow rate shall be greater than or equal to 386,000 gpm.
- 2.13 Boron Concentration
- 2.13.1 The refueling boron concentration shall be greater than or equal to 2000 ppm (LCO 3.9.1).
- 2.13.2 The Reactor Coolant System boron concentration, with all shutdown and control rods fully withdrawn, shall be greater than or equal to 2143 ppm to maintain adequate shutdown margin for MODES 3, 4, and 5 during performance of rod drop time measurements and during the surveillance of Digital Rod Position Indication (DRPI) for OPERABILITY (TLCO 3.1.g and TLCO 3.1.k.2).

W/O Task: 99222769 01

Status: READY 02/08/02

Desc : EM 2AF01EA-1 BATTERY CHGR CLEAN & INSPECT PM

| * Fac | Type | Sub | Document Number | Sheet | Prt | Ole | Image | |
|--------------------------|------|----------|---|-------|-----|--------------------------|-------|--|
| <input type="checkbox"/> | BRW | DWGC | 20E-2-4030AF02 | | Y | <input type="checkbox"/> | | |
| | | | Title: SCHEMATIC DIAGRAM AUXILIARY FEEDWATER PUMP 2B (DIE | | | | | |
| <input type="checkbox"/> | BRW | DWGC | 20E-2-4030AF12 | | Y | <input type="checkbox"/> | | |
| | | | Title: SCHEMATIC DIAGRAM AUXILIARY BUILDING PUMP 2B | | | | | |
| <input type="checkbox"/> | BRW | DWGC | 20E-2-4030AF19 | | Y | <input type="checkbox"/> | | |
| | | | Title: SCHEMATIC DIAGRAM 32V DC BATTERY CHARGER 2AF01EA-1 | | | | | |
| <input type="checkbox"/> | BRW | DWGC | 20E-2-4469F | | Y | <input type="checkbox"/> | | |
| | | | Title: EXTERNAL WIRING DIAGRAM AUXILIARY FEEDWATER PUMP 2 | | | | | |
| <input type="checkbox"/> | BRW | DWGC | 20E-2-4469H | | Y | <input type="checkbox"/> | | |
| | | | Title: INTERNAL WIRING DIAGRAM BATTERY CHARGER 2AF01EA-1 | | | | | |
| <input type="checkbox"/> | BRW | PROC STN | BWHS 4002-089 | | Y | <input type="checkbox"/> | | |
| | | | Title: AUXILIARY FEEDWATER DIESEL BATTERY CHARGER AC INPU | | | | | |

More:

Use Execute with Select to create Markup.