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NMC
Committed to Nuclear Excellence

Point Beach Nuclear Plant
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NPL 2000-0369

August 14, 2000

10 CFR 50.90

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Stop P1-137
Washington, DC 20555

Ladies and Gentlemen:

DOCKETS 50-266 AND 50-301
SUPPLEMENT 1 TO TECHNICAL SPECIFICATIONS CHANGE REQUEST 218
CORE OPERATING LIMITS REPORT IMPLEMENTATION
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

On March 1, 2000, Wisconsin Electric Power Company (WE), then licensee for the Point Beach Nuclear Plant (PBNP), submitted a proposal to amend Facility Operating Licenses DPR-24 and DPR-27 for PBNP Units 1 and 2, respectively (reference letter NPL 2000-0221). The purpose of the proposed amendments was to implement a Core Operating Limits Report (COLR) concurrent with implementation of Improved Standard Technical Specifications at the Point Beach Nuclear Plant (PBNP).

The application for conversion of the PBNP Technical Specifications to the Improved Standard Technical Specifications (submitted on November 15, 1999) reflected the incorporation of a COLR into the Limiting Conditions of Operation (LCO) with the exception of those changes detailed in WCAP-14483-A, recently approved for inclusion in the COLR. The March 1, 2000 application added those changes that were generically approved in WCAP-14483-A.

During a phone call with John Lamb, *et al,* of the NRC Staff on August 3, 2000, WE was requested to specifically identify the items in the current (custom) Technical Specifications (CTS) that are affected by the proposed changes (in the form of marked-up CTS pages). This information is provided in Attachment 1.

The March 1, 2000, COLR submittal requested that these amendments be reviewed and approved such that the COLR may be implemented with the improved TS at PBNP. As such, the marked-up CTS pages in Attachment 1 are provided only to document the specific CTS changes and relocation of requirements that are involved in the conversion from the PBNP CTS to the improved TS and COLR (and to facilitate the review process). Since the COLR will be implemented concurrently with the improved TS, no changes to the CTS will occur as a result of these amendments. The CTS will become

A001

superceded by the improved TS prior to implementation of the COLR, thereby obviating the need for any changes to the CTS. Consequently, no clean CTS pages are provided.

The attached marked-up CTS pages reflect the descriptions of change provided in the March 1, 2000 submittal. The page mark-ups follow the convention used in the conversion submittal. No new license changes are proposed in this supplement.

We have determined that this additional information for the proposed amendments does not involve a significant hazards consideration, authorize a significant change in the types or total amounts of effluent release, or result in any significant increase in individual or cumulative occupational radiation exposure. Therefore, we conclude that the proposed amendments meet the categorical exclusion requirements of 10 CFR 51.22(c)(9) and that an environmental impact appraisal need not be prepared.

If you have any questions or require additional information, please contact us.

Sincerely,

Mark E. Reddemann

Mark E. Reddemann
Site Vice President
Point Beach Nuclear Plant

JG/tat

Subscribed and sworn before me on
this 14th day of August, 2000.

Christine K. Pozorski

Notary Public, State of Wisconsin

My commission expires 8/25/2002.

cc: NRC Resident Inspector
NRC Regional Administrator
NRC Project Manger
PSCW

DOCKETS 50-266 AND 50-301
SUPPLEMENT 1 TO TECHNICAL SPECIFICATIONS CHANGE REQUEST 218
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POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

Marked-Up Custom Technical Specifications
(23 pages)

o. Dose Equivalent I-131

Dose Equivalent I-131 shall be that concentration of I-131 (microcurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table 2.1 of Federal Guidance Report No. 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," September 1988.

p. E - Average Disintegration Energy

E shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

ADD:

CORE OPERATING LIMITS REPORT (COLR)

The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 15.6.9.2.F. Plant operation within these limits is addressed in individual Specifications.

15.2.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

15.2.1 SAFETY LIMIT, REACTOR CORE

Applicability:

Applies to the limiting combinations of thermal power, reactor coolant system pressure, and coolant temperature during operation.

Objective:

Insert 1

To maintain the integrity of the fuel cladding.

Specification:

1. The combination of thermal power level, coolant pressure, and coolant temperature shall not exceed the limits ~~shown in Figure 15.2.1-1 or Figure 15.2.1-2 as applicable for Units 1 and 2.~~ The safety limit is exceeded if the point defined by the combination of reactor coolant system average temperature and power level is at any time above the appropriate pressure line.

Basis:

The restrictions of this safety limit prevent overheating of the fuel and possible cladding perforation which would result in the release of fission products to the reactor coolant. Overheating of the fuel cladding is prevented by restricting fuel operation to within the nucleate boiling regime where the heat transfer coefficient is large and the cladding surface temperature is slightly above the coolant saturation temperature.

Operation above the upper boundary of the nucleate boiling regime could result in excess cladding temperature because of the onset of departure from nucleate boiling (DNB) and the resultant sharp reduction in heat transfer coefficient. DNB is not a directly measurable parameter during operation and therefore thermal power and Reactor Coolant temperature and pressure have been related to DNB.

Insert 1

specified in the COLR in order to preserve the following fuel design criteria:

The departure from nucleate boiling ratio (DNBR) shall be maintained:

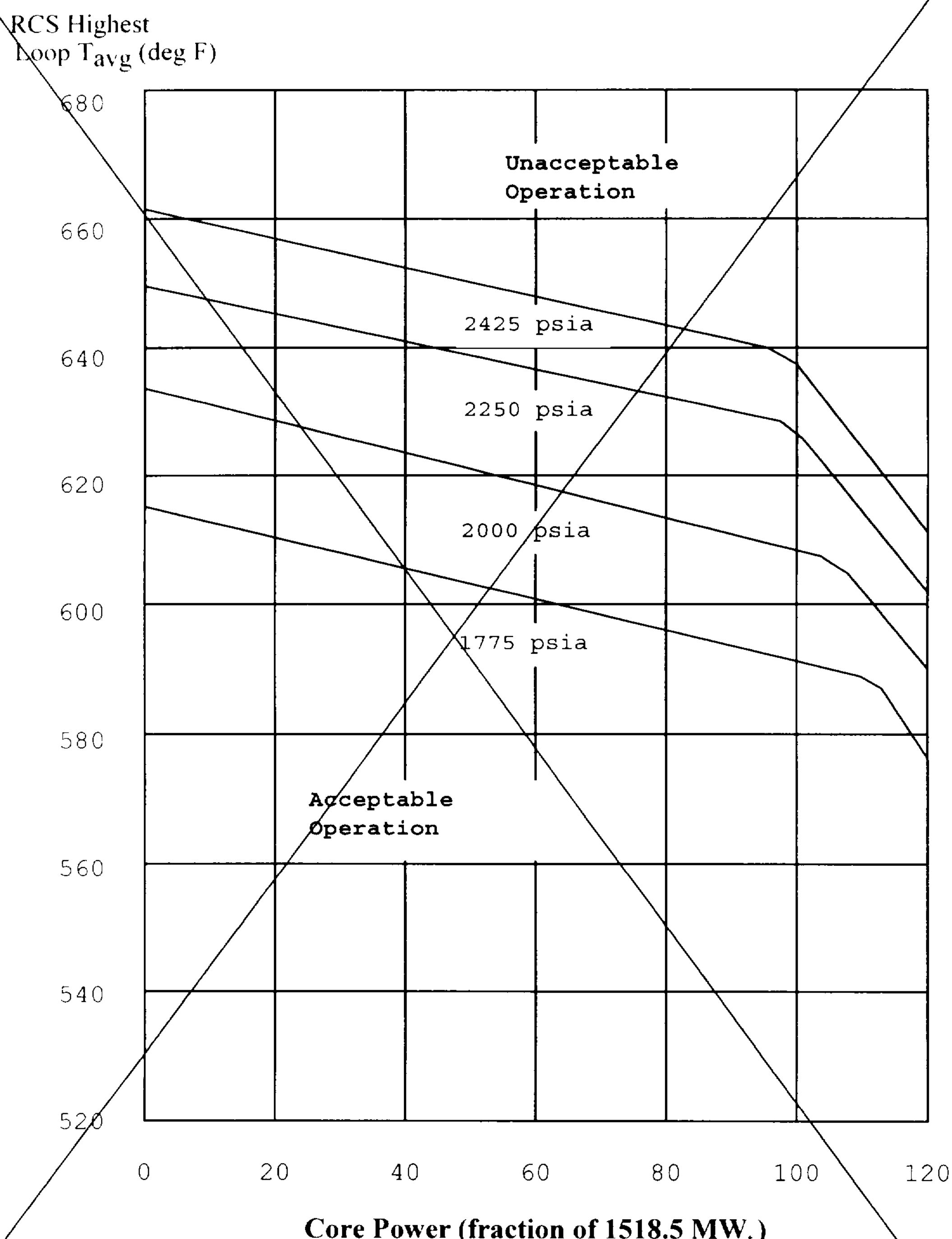
- ≥ 1.22/1.21 (typical/thimble) for the WRB-1 correlation – cores not containing 422V+ fuel.
- ≥ 1.24/1.23 (typical/thimble) for the WRB-1 correlation – cores containing 422V+ fuel

OR

- ≥ 1.30 for the W-3 correlation when system pressure is > 1000 psia
- ≥ 1.45 for the W-3 correlation when system pressure is ≥ 500 psia and ≤ 1000 psia

The peak fuel centerline temperature shall be maintained < 5080°F, decreasing by 58°F per 10,000 MWD/MTU of burnup.

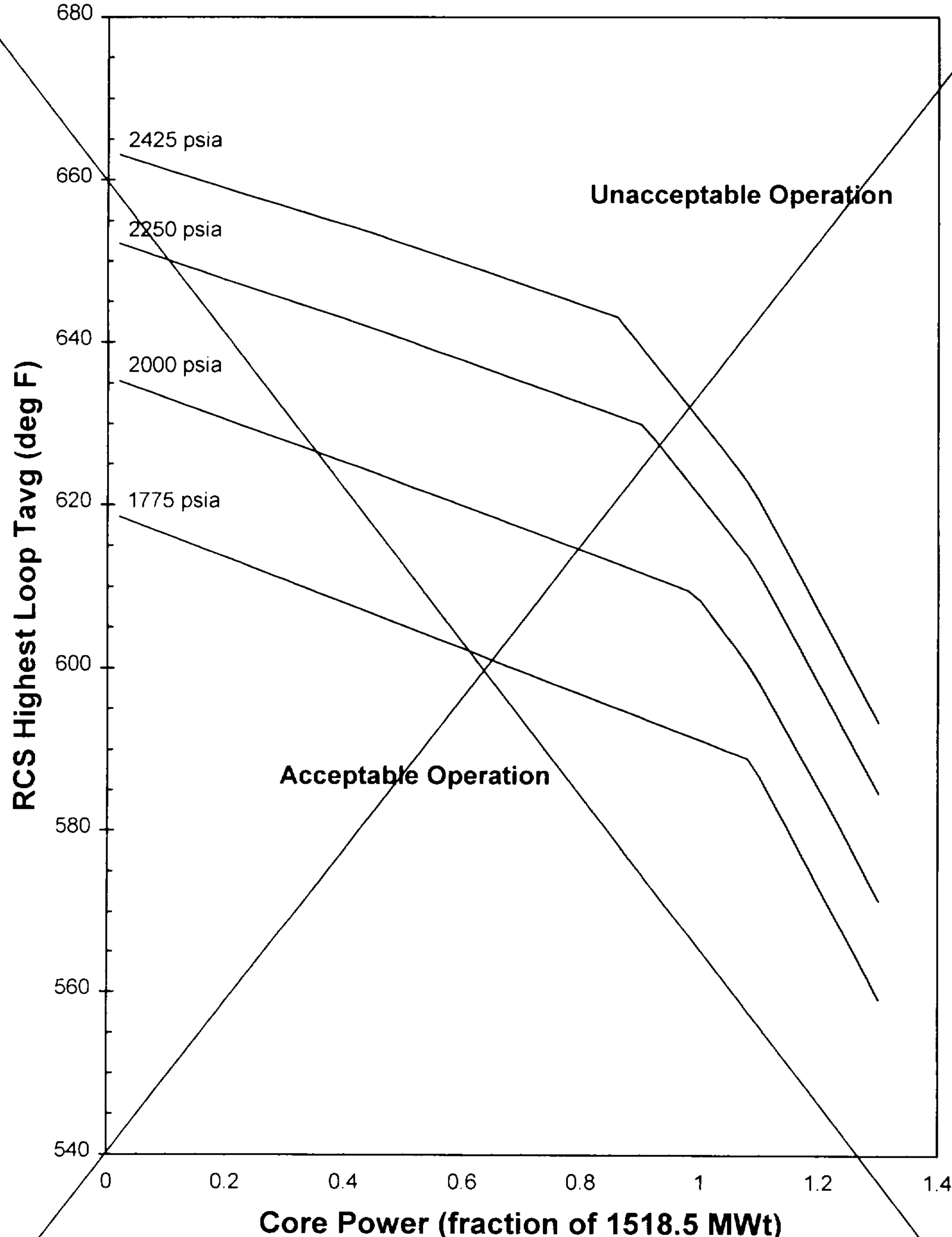
Figure 15.2.1-1*
POINT BEACH NUCLEAR PLANT UNITS 1 AND 2
REACTOR CORE SAFETY LIMITS



* This figure applies to core reloads with any combination of OFA and Upgraded OFA fuel assemblies.

Figure 15.2.1-2*

POINT BEACH NUCLEAR PLANT UNITS 1 AND 2
REACTOR CORE SAFETY LIMITS



* This figure applies to core reloads with any combination of 422V+ fuel assemblies, burned OFA and burned Upgraded OFA fuel assemblies, or a full core of 422V+ fuel assemblies.

(3) Low pressurizer pressure - ≥1905 psig for operation at 2250 psia primary system pressure
≥1800 psig for operation at 2000 psia primary system pressure and cores not containing 422V+ fuel assemblies

(4) Overtemperature

$$\Delta T\left(\frac{1}{1+\tau_3 S}\right) \leq \Delta T_0 \left(K_1 - K_2\left(T\left(\frac{1}{1+\tau_4 S}\right) - T'\right)\left(\frac{1+\tau_1 S}{1+\tau_2 S}\right) + K_3(P - P') - f(\Delta I)\right)$$

where (values are applicable to operation at both 2000 psia and 2250 psia unless otherwise indicated)

[*]

ΔT_0	=	indicated ΔT at rated power, °F
T	=	average temperature, °F
T'	≤	569.0°F (for cores containing 422V+ fuel assemblies)
T'	≤	572.9°F (for cores not containing 422V+ fuel assemblies)
P	=	pressurizer pressure, psig
P'	=	2235 psig (for 2250 psia operation)
P'	=	1985 psig (for 2000 psia operation and cores not containing 422V+ fuel assemblies)
K_1	≤	1.16 (for 2250 psia operation and cores containing 422V+ fuel assemblies)
K_1	≤	1.19 (for 2250 psia operation and cores not containing 422V+ fuel assemblies)
K_1	≤	1.14 (for 2000 psia operation and cores not containing 422V+ fuel assemblies)
K_2	=	0.0149 (for 2250 psia operation and cores containing 422V+ fuel assemblies)
K_2	=	0.025 (for 2250 psia operation and cores not containing 422V+ fuel assemblies)
K_2	=	0.022 (for 2000 psia operation and cores not containing 422V+ fuel assemblies)
K_3	=	0.00072 (for 2250 psia operation and cores containing 422V+ fuel assemblies)
K_3	=	0.0013 (for 2250 psia operation and cores not containing 422V+ fuel assemblies)
K_3	=	0.001 (for 2000 psia operation and cores not containing 422V+ fuel assemblies)
τ_1	=	25 sec
τ_2	=	3 sec
τ_3	=	2 sec for Rosemont or equivalent RTD
	=	0 sec for Sostman or equivalent RTD
τ_4	=	2 sec for Rosemont or equivalent RTD
	=	0 sec for Sostman or equivalent RTD

and $f(\Delta I)$ is an even function of the indicated difference between top and bottom detectors of the power-range nuclear ion chambers; with gains to be selected based on measured instrument response during plant startup tests, where q_t and q_b are the percent power in the top and bottom halves of the core respectively, and $q_t + q_b$ is total core power in percent of rated power, such that:

[*]

(a) for $q_t - q_b$ within −17, +5 percent, $f(\Delta I) = 0$ for cores not containing 422V+ fuel assemblies;
for $q_t - q_b$ within −12, +5 percent, $f(\Delta I) = 0$ for cores containing 422V+ fuel assemblies.

(b) for each percent that the magnitude of q_t - q_b exceeds $\boxed{+5}$ ~~percent~~, the ΔT trip setpoint shall be automatically reduced by an equivalent of $\boxed{2.0}$ ~~percent of rated power for cores not containing~~ 422V+ fuel assemblies and reduced by an equivalent of $\boxed{2.12}$ ~~percent of rated power for cores~~ containing 422V+ fuel assemblies.

(c) for cores not containing 422V+ fuel assemblies, for each percent that the magnitude of q_t - q_b exceeds $\boxed{-17}$ percent, the ΔT trip setpoint shall be automatically reduced by an equivalent of $\boxed{2.0}$ ~~percent of rated power; for cores containing 422V+ fuel assemblies, for each percent that~~ the magnitude of q_t - q_b exceeds $\boxed{-12}$ percent, the ΔT trip setpoint shall be automatically reduced by an equivalent of $\boxed{2.0}$ ~~percent of rated power.~~

The values denoted with [*] are specified in the COLR.

[*]

(5) Overpower

$$\Delta T\left(\frac{1}{1+\tau_3 S}\right) \le \Delta T_o\left[K_4 - K_5\left(\frac{\tau_5 S}{\tau_5 S+1}\right)\left(\frac{1}{1+\tau_4 S}\right)T - K_6\left[T\left(\frac{1}{1+\tau_4 S}\right) - T'\right]\right]$$

where (values are applicable to operation at both 2000 psia and 2250 psia)

ΔT_o	=	indicated ΔT at rated power, °F	
T	=	average temperature, °F	
T'	≤	569.0°F	(for cores containing 422V+ fuel assemblies)
T'	≤	572.9°F	(for cores not containing 422V+ fuel assemblies)
K_4	≤	1.10	of rated power (for cores containing 422V+ fuel assemblies)
K_4	≤	1.09	of rated power (for cores not containing 422V+ fuel assemblies)
K_5	=	0.0262	for increasing T
	=	0.0	for decreasing T
K_6	=	0.00103	for T ≥ T' (for cores containing 422V+ fuel assemblies)
K_6	=	0.00123	for T ≥ T' (for cores not containing 422V+ fuel assemblies)
	=	0.0	for T < T'
τ_5	=	10 sec	
τ_3	=	2 sec	for Rosemont or equivalent RTD
		0 sec	for Sostman or equivalent RTD
τ_4	=	2 sec	for Rosemont or equivalent RTD
		0 sec	for Sostman or equivalent RTD

The values denoted with [*] are specified in the COLR.

(6) Undervoltage - ≥3120V

(7) Indicated reactor coolant flow per loop ≥90 percent of normal indicated loop flow

(8) Reactor coolant pump motor breaker open

(a) Low frequency set point ≥55.0 HZ

(b) Low voltage set point ≥3120V

G. OPERATIONAL LIMITATIONS

The following DNB related parameters shall be maintained within the limits shown during Rated Power operation:

1. T_{avg} shall be maintained ≥558.1°F and ≤574.0°F for cores containing 422V+ ~~fuel~~ assemblies. T_{avg} shall be maintained ≥557°F ~~and ≤573.9°F~~ for cores not containing 422V+ ~~fuel assemblies~~.

2. Reactor Coolant System (RCS) pressurizer pressure shall be maintained:
≥2205 psig during operation at 2250 psia, ~~or~~
≥1955 psig ~~during operation~~ at 2000 psia for cores not containing 422V+ fuel assemblies.

3. Reactor Coolant System raw measured Total Flow Rate shall be maintained ~~≥182,400~~gpm for cores containing 422V+ fuel ~~assemblies, or~~ ≥181,800 gpm for cores not containing 422V+ ~~fuel assemblies~~.

Pressurizer Pressure is greater than or equal to the limits specified in the COLR.

RCS total flow rate is ≥ 182,400 gpm and greater than or equal to the limit specified in the COLR.

RCS average temperature is within the limits specified in the COLR.

Basis:

The reactor coolant system total flow rate of 182,400 gpm ~~for cores containing 422V+ fuel assemblies~~ is based on an assumed measurement uncertainty of 2.4 percent over thermal design flow (178,000 gpm). ~~The reactor coolant system total flow rate of 181,800 gpm for cores not containing 422V+ fuel assemblies is based on an assumed measurement uncertainty of 2.1 percent over thermal design flow (178,000 gpm).~~ The raw measured flow is based upon the use of normalized elbow tap differential pressure which is calibrated against a precision flow calorimetric at the beginning of each cycle.

15.3.8 REFUELING

Applicability:

Applies to operating limitations during refueling operations.

Objective:

To ensure that no incident could occur during refueling operations that would affect public health and safety.

Specifications :

During refueling operations:

1. The equipment hatch shall be closed and the personnel locks shall be capable of being closed. A temporary third door on the outside of the personnel lock shall be in place whenever both doors in a personnel lock are open (except for initial core loading).

2. Radiation levels in fuel handling areas, the containment and spent fuel storage pool shall be monitored continuously.

3. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment available whenever core geometry is being changed. When core geometry is not being changed, at least one neutron flux monitor shall be in service.

4. At least one residual heat removal loop shall be in operation. However, if refueling operations are affected by the residual heat removal loop flow, the operating residual heat removal loop may be removed from operation for up to one hour per eight hour period.

5. During reactor vessel head removal and while loading and unloading fuel from the reactor, a minimum boron concentration of 2100 ppm* shall be maintained in the primary coolant system.

boron concentration shall be maintained within the limits specified in the COLR

* ~~This boron concentration value is in effect following U1R25 for Unit 1 and following U2R23 for Unit 2; and takes effect prior to loading fuel for those outages. Prior to U1R25, the Unit 1 boron concentration value of this specification is 1800 ppm. Prior to U2R23, the Unit 2 boron concentration value of this specification is 1800 ppm.~~

15.3.10 CONTROL ROD AND POWER DISTRIBUTION LIMITS

Applicability

Applies to the operation of the control rods and to core power distribution limits.

Objective

To insure (1) core subcriticality after a reactor trip, (2) a limit on potential reactivity insertions from a hypothetical rod cluster control assembly (RCCA) ejection, and (3) an acceptable core power distribution during power operation.

Specification

the COLR

A. SHUTDOWN MARGIN

1. The shutdown margin shall exceed the applicable value as shown in ~~Figure 15.3.10-2~~ under all steady-state operating conditions from 350^{O}F to full power. If the shutdown margin is less than the applicable value of ~~Figure 15.3.10-2,~~ within 15 minutes initiate boration to restore the shutdown margin.

specified in the COLR

the COLR

2. A shutdown margin ~~of at least 1% Δk/k~~ shall be maintained when the reactor coolant temperature is less than 350^{O}F. If the shutdown margin is less than this limit, within 15 minutes initiate boration to restore the shutdown margin.

B. ROD OPERABILITY AND BANK ALIGNMENT LIMITS

1. During power and low power operation, all shutdown and control rods shall be operable, with all individual indicated rod positions within twelve steps of their bank demand position, except when the bank demand position is ≤30 steps or ≥215 steps. In this case, all individual indicated rod positions shall be within 24 steps of their bank demand position.

   If an RCCA does not step in upon demand, up to six hours is allowed to determine whether the problem with stepping is an electrical problem. If the problem cannot be resolved within six hours, the RCCA shall be declared inoperable until it has been verified that it will step in or would drop upon demand.

   a. Rod Operability Requirements

      (1) If one rod is determined to be untrippable, perform the following actions

(a) Within one hour verify that the shutdown margin exceeds the applicable value ~~as shown in Figure 15.3.10-2~~;

provided in the COLR,

OR

(b) Within one hour restore the shutdown margin by boration;

~~OR~~

(c) Within six hours be in hot shutdown.

(2) If sustained power operation with an untrippable rod is desired, perform the following actions:

(a) Within one hour verify that the shutdown margin exceeds the applicable value ~~as shown in Figure 15.3.10-2~~; OR within one hour restore the shutdown margin by boration;

AND

provided in the COLR,

(b) Within six hours, adjust the insertion limits to reflect the worth of the untrippable rod.

(c) If the above actions and associated completion times are not met, be in hot shutdown within six hours.

(3) If more than one rod is determined to be untrippable, perform the following actions:

(a) Within one hour verify that the shutdown margin exceeds the applicable value ~~as shown in Figure 15.3.10-2~~; OR within one hour restore the shutdown margin by boration;

AND

(b) Within six hours be in hot shutdown.

b. Rod Bank Alignment Limits

provided in the COLR,

(1) If it has been determined that one rod is not within alignment limits, and the indicated misalignment is not being caused by malfunctioning rod position indication, within one hour restore the rod to within alignment limits; OR perform the following actions:

(a) Within one hour verify that the shutdown margin exceeds the applicable value ~~as shown in Figure 15.3.10-2~~; OR within one hour restore the shutdown margin by boration;

AND

provided in the COLR,

(b) Within eight hours reduce thermal power to ≤75 percent of rated thermal power;

AND

(c) Verify that the shutdown margin exceeds the applicable value ~~as shown in Figure 15.3.10-2~~ once per twelve hours;
provided in the COLR,
AND

(d) Within 72 hours verify that measured values of $F_Q(Z)$ are within limits;
AND

(e) Within 72 hours verify that $F^N_{\Delta H}$ is within limits;

(f) If the above actions and associated completion times are not met, be in hot shutdown within the following six hours.

(g) In order to subsequently increase thermal power above 75 percent of rated thermal power with the existing rod misalignment, perform an analysis to determine the hot channel factors and the resulting allowable power level in accordance with TS 15.3.10.E.

(2) If it has been determined that more than one rod is not within alignment limits and the misalignments are not being caused by malfunctioning rod position indication, perform the following actions:

provided in the COLR,

(a) Within one hour verify that the shutdown margin exceeds the applicable value ~~as shown in Figure 15.3.10-2~~ OR within one hour restore the shutdown margin by boration;
AND

(b) Be in hot shutdown within six hours.

C. ROD POSITION INDICATION

NOTE: Separate entry into TS 15.3.10.C.1.a, b, or c is allowed for each inoperable rod position indicator and each bank of demand position indication.

1. During power operation ≥10 percent of rated thermal power, the rod position indication system and the bank demand position indication system shall be operable.

a. If one or more rod position indicators (RPI) are determined to be inoperable, perform the following actions:

(1) Within eight hours verify the position of the rods with inoperable RPIs by using movable incore detectors;
AND

(2) Once per shift check the position of the rods with inoperable RPIs by using excore detectors, or thermocouples, or movable incore detectors;

(3) If the above actions and associated completion times are not met, perform the actions in accordance with TS 15.3.10.B.1.b.

b. If one or more rods with inoperable RPIs have been moved in excess of 24 steps in one direction since the last determination of the rod's position, perform the following actions:

(1) Within four hours check the position of the rods with inoperable RPIs by using excore detectors, or thermocouples, or movable incore detectors;

(2) If the above action and associated completion time is not met, perform the actions in accordance with TS 15.3.10.B.1.b.

c. If bank demand position indication, for one or more banks, is determined to be inoperable, perform the following actions:

(1) Once per shift verify that all RPIs for the affected banks are operable;
AND

(2) Once per shift verify that the most withdrawn rod and the least withdrawn rod of the affected banks are ≤12 steps apart, except when the bank demand position is ≤30 steps or ≥215 steps. In this case, once per shift verify that the most withdrawn rod and the least withdrawn rod of the affected banks are ≤24 steps apart;

(3) If the above actions and associated completion times are not met, perform the actions in accordance with TS 15.3.10.B.1.b.

D. BANK INSERTION LIMITS

1. When the reactor is critical, the shutdown banks shall be fully withdrawn. Fully withdrawn is defined as a bank position equal to or greater than 225 steps. This definition is applicable to shutdown and control banks.

If this condition is not met, perform the following actions:

a. Within one hour verify that the shutdown margin exceeds the applicable value as shown in ~~Figure 15.3.10-2;~~ the COLR OR within one hour restore the shutdown margin by boration;

AND

b. Within two hours fully withdraw the shutdown banks.

c. If the above actions and associated completion times are not met, be in hot shutdown within the following six hours.

2. When the reactor is critical, the control banks shall be inserted no further than the limits ~~shown by the lines on Figure 15.3.10-1~~. If this condition is not met, perform the following actions:

specified in the COLR.

a. Within one hour verify that the shutdown margin exceeds the applicable value ~~as shown in Figure 15.3.10-2~~; OR within one hour restore the shutdown margin by boration;

specified in the COLR.

AND

b. Within two hours restore the control banks to within limits.

c. If the above actions and associated completion times are not met, be in hot shutdown within the following six hours.

E. POWER DISTRIBUTION LIMITS

1. Hot Channel Factors

be within the limits specified in the COLR.

a. The hot channel factors defined in the basis shall ~~meet the following limits:~~

	~~For OFA and Upgraded OFA Fuel~~	~~For 422V+ Fuel~~
~~for P > 0.5~~	~~$F_Q(Z) \leq (2.50)/P \times K(Z)$~~	~~$F_Q(Z) \leq (2.60)/P \times K(Z)$~~
~~for P ≤ 0.5~~	~~$F_Q(Z) \leq 5.00 \times K(Z)$~~	~~$F_Q(Z) \leq 5.20 \times K(Z)$~~
	~~$F^N_{\Delta H} \leq 1.70 \times [1 + 0.3\ (1-P)]$~~	~~$F^N_{\Delta H} \leq 1.77 \times [1 + 0.3\ (1-P)]$~~

~~Where P is the fraction of full power at which the core is operating, K(Z) is the function in Figure 15.3.10-3 or Figure 15.3.10-3a, as applicable, and Z is the core height location of F_Q.~~

b. If $F_Q(Z)$ exceeds the limit of Specification 15.3.10.E.1.a, within fifteen minutes reduce thermal power until $F_Q(Z)$ limits are satisfied;

(1) After thermal power has been reduced in accordance with Specification 15.3.10.E.1.b, perform the following actions:

(7) If the above actions and associated completion times are not met, be in hot shutdown within the following six hours.

2. Axial Flux Difference

NOTE: The axial flux difference shall be considered outside limits when two or more operable excore channels indicate that axial flux difference is outside limits .

a. During power operation with thermal power ≥50 percent of rated thermal power, the axial flux difference shall be maintained within the limits specified in ~~Figure 15.3.10-4.~~ the COLR.

(1) If the axial flux difference is not within limits, within 15 minutes restore to within limits. If this action and associated completion time is not met, perform the following actions:

(a) Reduce thermal power until the axial flux difference is within limits;
OR
(b) Within three hours reduce thermal power to ≤50 percent of rated thermal power.

b. If it is necessary to restrict thermal power to ≤50 percent of rated thermal power, within the next four hours reduce the Power Range Neutron Flux - High Trip setpoints to ≤55 percent.

c. If the alarms used to monitor the axial flux difference are rendered inoperable, verify that the axial flux difference is within limits for each operable excore channel once within one hour and every hour thereafter.

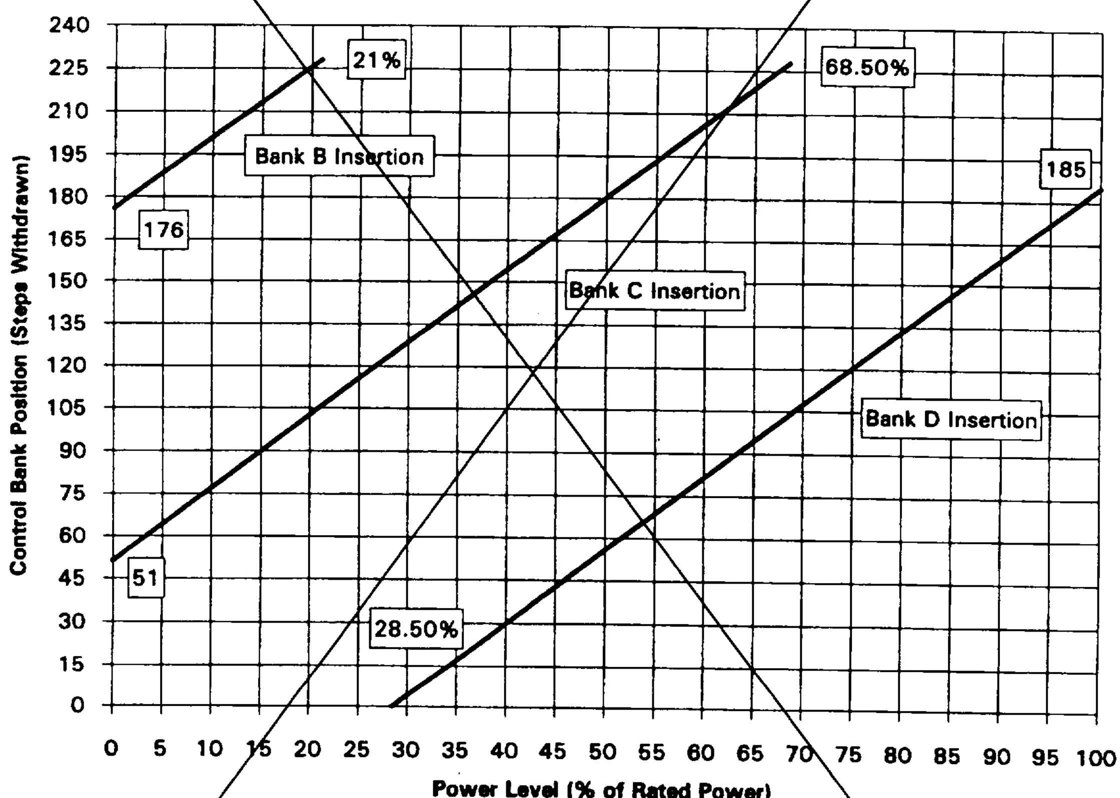
3. Quadrant Power Tilt

a. During power operation with thermal power greater than 50 percent of rated thermal power, the indicated quadrant power tilt shall not exceed 2 percent. If this condition is not met, perform the following actions:

(1) Within two hours, reduce thermal power ≥2 percent from rated thermal power for each 1 percent of indicated quadrant power tilt;
AND
(2) Within 24 hours and once per seven days thereafter, verify that $F_Q(Z)$ and $F^N_{\Delta H}$ are within the limits of Specification 15.3.10.E.1.a;
AND

FIGURE 15.3.10-1

CONTROL BANK INSERTION LIMITS
POINT BEACH UNITS 1 AND 2



Note: The "fully withdrawn" parking position range can be used without violating this Figure.

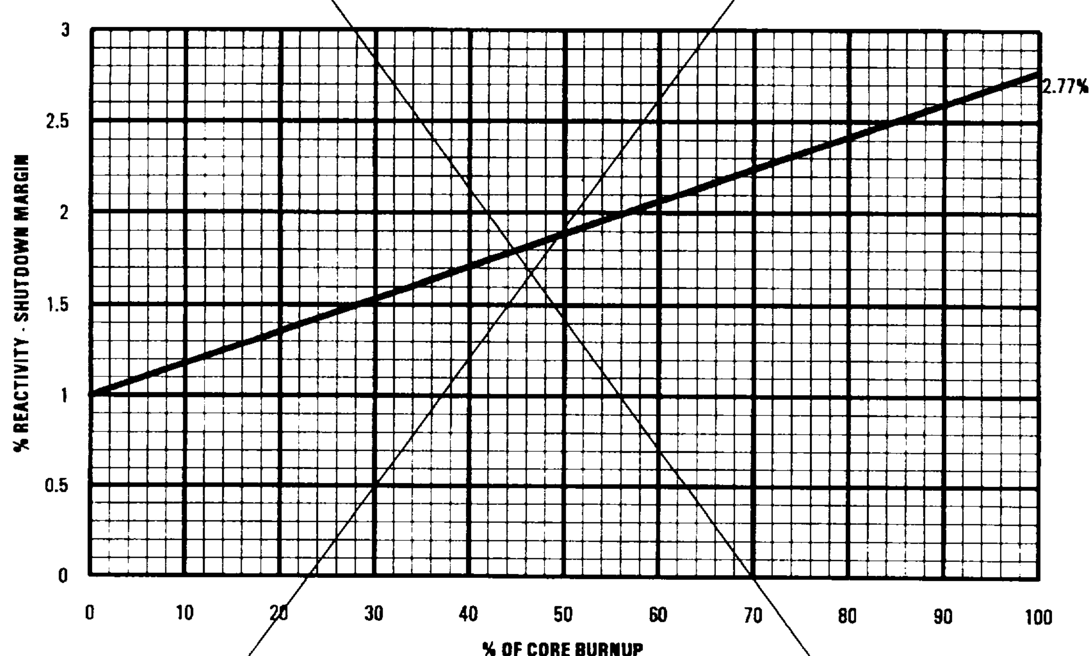


FIGURE 15.3.10-2

REQUIRED SHUTDOWN MARGIN

FIGURE 15.3.10-3

**POINT BEACH UNITS 1 AND 2
HOT CHANNEL FACTOR NORMALIZED OPERATING ENVELOPE FOR OFA AND UPGRADED OFA FUEL**

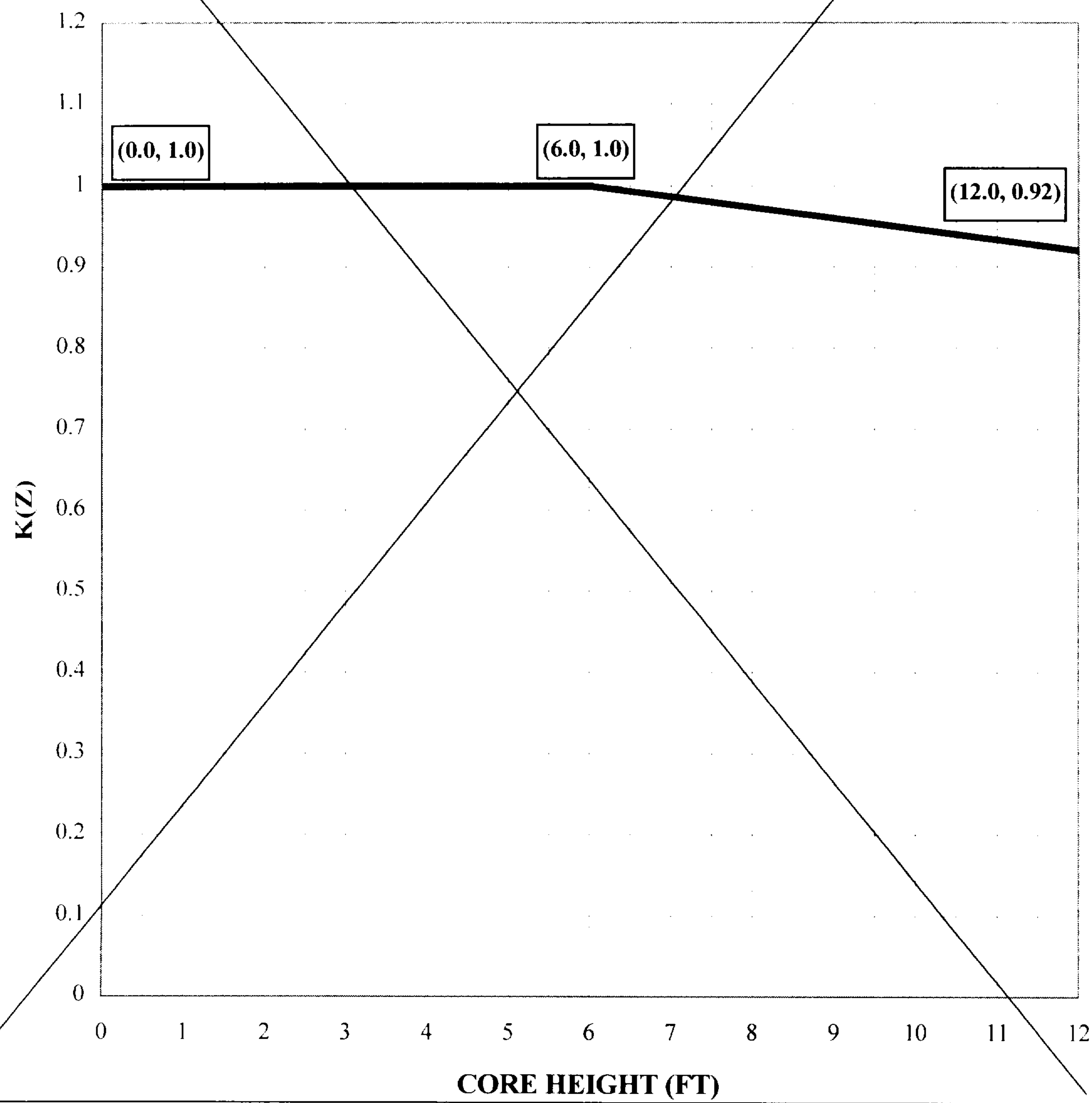


FIGURE 15.3.10-3A

POINT BEACH UNITS 1 AND 2
HOT CHANNEL FACTOR NORMALIZED OPERATING ENVELOPE FOR 422V+ FUEL

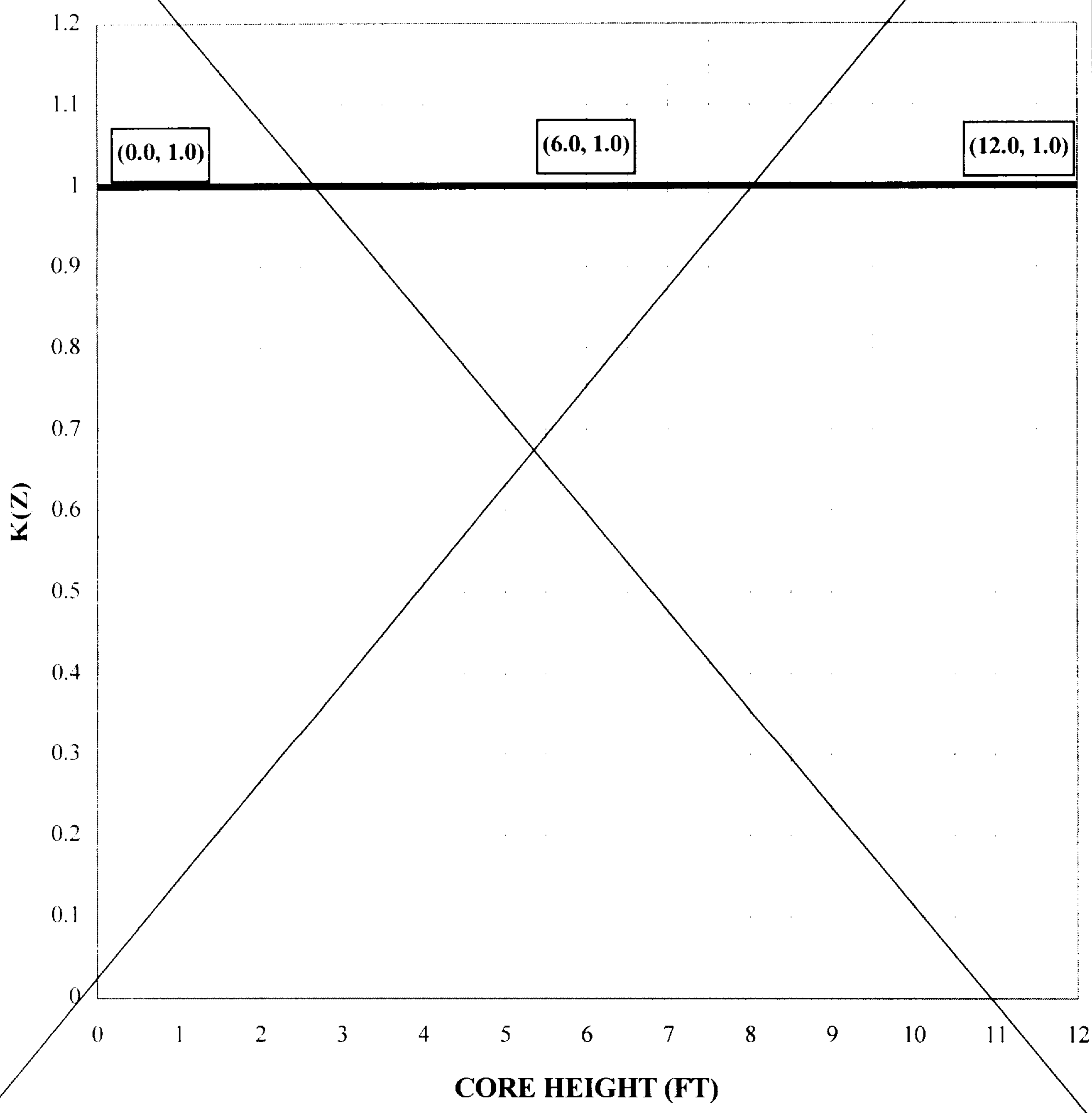
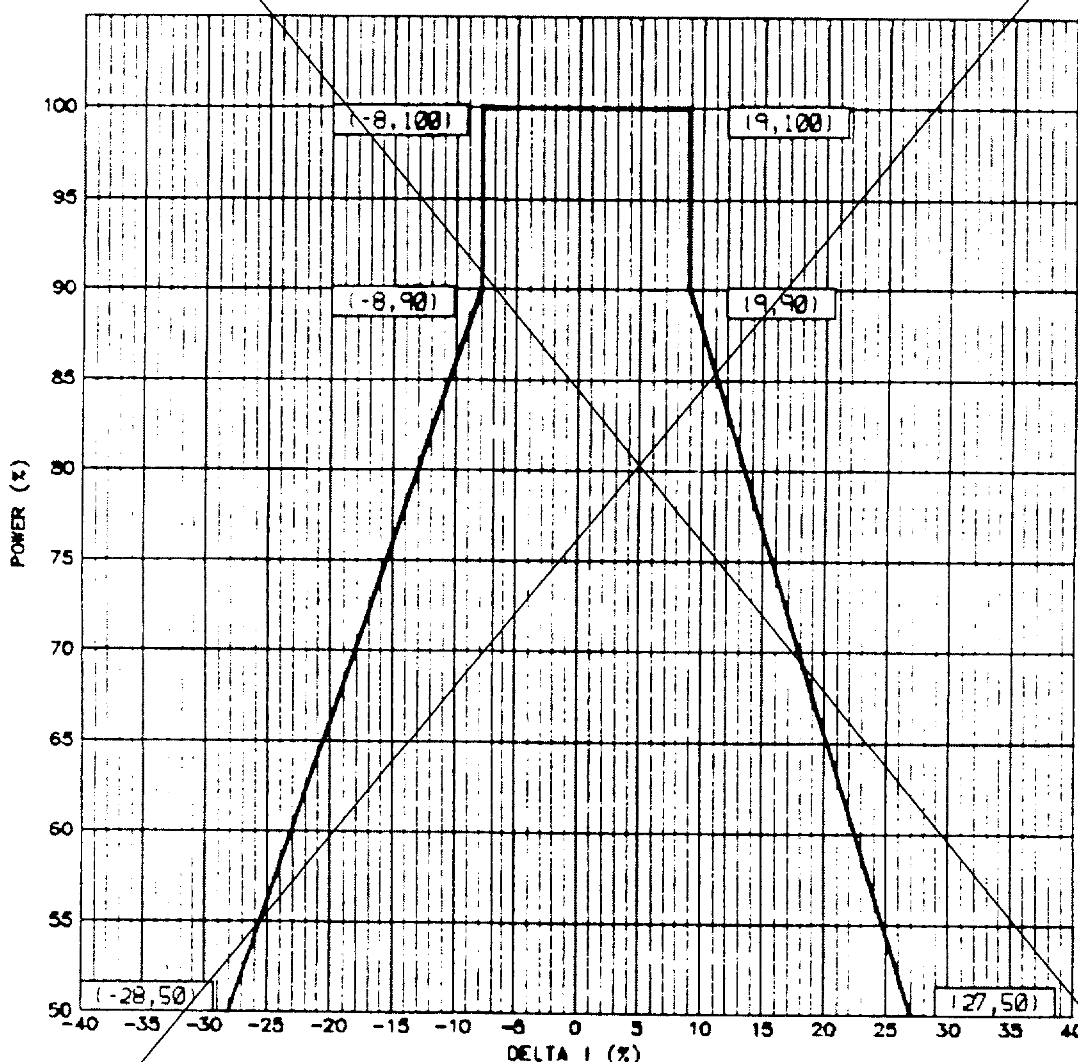


FIGURE 15.3.10-4

FLUX DIFFERENCE

OPERATING ENVELOPE

POINT BEACH UNITS 1 AND 2



Unit 1 - Amendment No. 120 May 8, 1989

Unit 2 - Amendment No. 123 November 1, 1989

D. Failure of Containment High-Range Radiation Monitor

A minimum of two in-containment radiation-level monitors with a maximum range of 10^8 rad/hr (10^7/hr for photons only) should be operable at all times except for cold shutdown and refueling outages. This is specified in Table 15.3.5-5, item 7. If the minimum number of operable channels are not restored to operable condition within seven days after failure, a special report shall be submitted to the NRC within thirty days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.

E. Failure of Main Steam Line Radiation Monitors

If a main steam line radiation monitor (SA-11) fails and cannot be restored to operability in seven days, prepare a special report within thirty days of the event, outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the channel to operable status.

Insert COLR

Insert:

F. CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

(1) TS 15.2.1.1, "Safety Limits (SLs)"
(2) TS 15.3.10.A, "Shutdown Margin (SDM)"
(3) TS 15.3.1.F, "Moderator Temperature Coefficient (MTC)"
(4) TS 15.3.10.D.1, "Shutdown Bank Insertion Limits"
(5) TS 15.3.10.D.2, "Control Bank Insertion Limits"
(6) TS 15.3.10.E.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$)"
(7) TS 15.3.10.E.1.a, "Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)"
(8) TS 15.3.10.E.2.a, "Axial Flux Difference (AFD)"
(9) TS 15.2.3.1.B.4, "Reactor Protection System (RPS) Instrumentation - Overtemperature ΔT"
(10) TS 15.2.3.1.B.5, "Reactor Protection System (RPS) Instrumentation - Overpower ΔT"
(11) TS 15.3.1.G, "RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits"
(12) TS 15.3.8.5, "Boron Concentration"

b. 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:

(1) WCAP-14449-P-A, "Application of Best Estimate Large Break LOCA Methodology to Westinghouse PWR's with Upper Plenum Injection," Revision 1, October 1999. (cores containing 422V+ fuel)

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

(3) WCAP-11397-P-A, "Revised Thermal Design Procedure," April 1989.

(4) WCAP-14787-P, "Westinghouse Revised Thermal Design Procedures Instrument Uncertainty Methodology, Wisconsin Electric Power Company, Point Beach Unit 1 and 2," April 1999 (approved by NRC Safety Evaluation, February 8, 2000).

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

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

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

(8) WCAP-10216-P-A, "Relaxation of Constant Axial Offset Control," Revision 1A, February 1994.

(9) WCAP-10924-P-A, "Large Break LOCA Best Estimate Methodology, Volume 2: Application to Two-Loop PWRs Equipped with Upper Plenum Injection," and Addenda, December 1988. (cores not containing 422 V+ fuel)

(10) WCAP-10924-P-A, "LBLOCA Best Estimate Methodology: Model Description and Validation: Model Revisions," Volume 1, Addendum 4, August 1990. (cores not containing 422 V+ fuel)

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.