Entergy

Entergy Nuclear Northeast
Entergy Nuclear Operations, Inc.
James A. Fitzpatrick NPP
P.O. Box 110
Lycoming, NY 13093
Tel 315 342 3840

October, 16, 2006
JAFP 06-0150

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
Core Operating Limits Report
Revision 21 (Cycle 18)

Dear Sir or Madam:

Attached is Revision 21 to the James A. FitzPatrick Core Operating Limits Report (COLR). This report is submitted in accordance with Technical Specifications (TS) 5.6.5.

Revision 21 of the COLR incorporates reload analysis completed by Global Nuclear Fuel (GNF) for Cycle 18 operations. In addition, editorial corrections and administrative changes are included that do not alter the intent.

There are no commitments contained in this report.

Questions concerning this report may be addressed to Mr. William Drews, Reactor Engineering Superintendent, at (315) 349-6562.

Very truly yours,

(acting)

Rick Plasse
Regulatory Compliance Manager

RP/tp

Attachment as stated

cc: USNRC Regional Administrator, Region I
USNRC Project Manager
USNRC Resident Inspector

A001

Entergy
Nuclear Northeast

ENTERGY NUCLEAR OPERATIONS, INC.
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
REPORT

CORE OPERATING LIMITS REPORT
REVISION 21

APPROVED BY: William Drews DATE: 10/9/06
REACTOR ENGINEERING SUPERINTENDENT

APPROVED BY: Kevin Mulligan DATE: 10/9/06
GENERAL MANAGER – PLANT OPERATIONS

TABLE OF CONTENTS

1.0 PURPOSE

This report provides the cycle-specific operating limits for Cycle 18 of the James A. FitzPatrick Nuclear Power Plant. The following limits are addressed:

- Operating Limit Minimum Critical Power Ratio (MCPR)
- Flow Dependent MCPR Limits
- Average Planar Linear Heat Generation Rate (APLHGR)
- Linear Heat Generation Rate (LHGR)
- Flow-Biased Average Power Range Monitor (APRM) and Rod Block Monitor (RBM) Settings
- Stability Option ID Exclusion Region

2.0 APPLICABILITY

The plant shall be operated within the limits specified in this report. If any of these limits are exceeded, the corrective actions specified in the Technical Specifications shall be taken.

3.0 REFERENCES

3.1 EN-LI-113, Licensing Basis Document Change process

3.2 JAFNPP Technical Specifications.

3.3 Design Change Package ER-JF-06-13005, Cycle 18 Core Reload

3.4 ENN-DC-503, 3D Monicore New Cycle Update and Databank Maintenance.

3.5 Plant Operation Up To 100% Power With One Steam Line Isolated, JAF-SE-96-035.

3.6 James A. FitzPatrick Nuclear Power Plant K_f Curve Update, GE-NE-J11-03426-00-01, September 1998.

3.7 General Electric Standard Application for Reload Fuel, NEDE-24011-P-A-15

3.8 GNF Report, Supplemental Reload Licensing Report for James A. FitzPatrick Reload 17 Cycle 18, 0000-0049-7976SRLR, Rev.0, Class I, July, 2006.

3.9 JAF-SE-00-032, Rev.0, Extended Loadline Limit Analysis (ELLLA) Implementation.

3.10 JAF-RPT-MISC-04054, Rev.0, Operation under Extended Loadline Limit Analysis (ELLLA) and Power Uprate

3.11 GE Letter, R. Kingston to P. Lemberg, Scram Time Versus Notch Positions for Option B, REK-E: 02-009, May 28, 2002

3.12 GE Report, James A. FitzPatrick Nuclear Power Plant Final Feedwater Temperature Reduction NEDC-33077, September 2002.

3.13 JD-02-122, Final Feedwater Temperature Reduction Implementation.

3.14 GE Report, GE14 Fuel Design Cycle-Independent Analyses for J. A. Fitzpatrick Nuclear Power Plant, GE-NE-0000-0002-1752-01P, Rev. 0, DRF 0000-0002-1752, September 2002.

3.15 GNF Report, GNF Report, Fuel Bundle Information Report for James A. FitzPatrick Reload 17 Cycle 18, 0000-0049-7976FBIR, Revision 0, July 2006.

3.16 Not Used

3.17 Not Used

3.18 JF-03-00402, ARTS/MEOD Phase 1 Implementation

3.19 JAF-RPT-MISC-04489, Rev.2, Power-Flow Map Report

3.20 Not Used

3.21 Not Used

3.22 GE Letter, FitzPatrick APRM Flow Biased Rod Block and Scram Setpoints, NSA01-273, July 3, 2001

4.0 DEFINITIONS

4.1 Average Planar Linear Heat Generation Rate (APLHGR):
The APLHGR shall be applicable to a specific planar height and is equal to the sum of the heat generation rate per unit length of fuel rod for all the fuel rods in the specified assembly at the specified height divided by the number of fuel rods in the fuel assembly at the height.

4.2 Fraction of Limiting Power Density:
The ratio of the linear heat generation rate (LHGR) existing at a given location to the design LHGR. The design LHGR is given in Table 8.2.

4.3 Linear Heat Generation Rate(LHGR):
The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.

4.4 Maximum Fraction of Limiting Power Density (MFLPD):
The MFLPD shall be the largest value of the fraction of limiting power density in the core. The fraction of limiting power density shall be the LHGR existing at a given location divided by the specified LHGR limit for that bundle type.

4.5 Minimum critical power ratio (MCPR):
The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each type of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

4.6 Rated Recirculation Flow:
That drive flow which produces a core flow of 77.0 x 10^6 lb/hr.

5.0 RESPONSIBILITIES

NOTE: See EN-LI-113 (Reference 3.1)

5.1 Shift Manager:

Assure that the reactor is operated within the limits described herein.

5.2 Reactor Engineering Superintendent:

Assure that the limits described herein are properly installed in the 3D-Monicore databank used for thermal limit surveillance (Reference 3.4)

6.0 SPECIAL INSTRUCTIONS/REQUIREMENTS

Not Applicable

7.0 PROCEDURE

7.1 Operating Limit MCPR

During operation, with thermal power ≥ 25% of rated thermal power (RTP), the Operating Limit MCPR shall be equal to or greater than the limits given below.

7.1.1 Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

7.1.2 The Operating Limit MCPR shall be determined based on the following requirement:

7.1.2.1. The average scram time to notch position 36 shall be:

$$\tau_{AVE} \leq \tau_B$$

7.1.2.2. The average scram time to notch position 36 is determined as follows:

$$\tau_{AVE} = \frac{\sum_{i=1}^{n} N_i \tau_i}{\sum_{i=1}^{n} N_i}$$

WHERE:

n = Number of surveillance tests performed to date in the cycle,

N_i = Number of active rods measured in the surveillance i

τ_i = Average scram time to notch position 36 of all rods measured in surveillance test i.

7.1.2.3. The adjusted analysis mean scram time is calculated as follows:

$$\tau_B(\sec) = \mu + 1.65\sigma \left[\frac{N_1}{\sum_{i=1}^{n} N_i} \right]^{1/2}$$

WHERE:

μ = Mean of the distribution for the average scram insertion time to the dropout of notch position 36 = 0.830 sec.

σ = Standard deviation of the distribution for average scram insertion time to the dropout of notch position 36 = 0.019 sec.

N_1 = The total number of active rods measured in Technical Specification SR 3.1.4.4.

The number of rods to be scram tested and the test intervals are given in Technical Specification LCO 3.1.4, Control Rod Scram Times

7.1.3 When requirement of 7.1.2.1 is met, the Operating Limit MCPR shall not be less than that specified in Table 8.1, Table 8.1.A, Table 8.1.B or Table 8.1.C as applicable.

7.1.4 **WHEN** the requirement 7.1.2.1 <u>is not</u> met (i.e. $\tau_B < \tau_{AVE}$), **THEN** the Operating Limit MCPR values (as a function of τ) are given in Figure 8.1, Figure 8.1.A, Figure 8.1.B or Figure 8.1.C as applicable.

$$\tau = \frac{(\tau_{AVE} - \tau_B)}{(\tau_A - \tau_B)}$$

WHERE:

τ_{AVE} = The average scram time to notch position 36 as defined in 7.1.2.2.

τ_B = The adjusted analysis mean scram time as defined in 7.1.2.3.

τ_A = the scram time to notch position 36 as defined in Technical Specification Table 3.1.4-1.

NOTE: **IF** the operating limit MCPR obtained from these figures is determined to be less than the operating limit MCPR found in 7.1.3, **THEN** 7.1.3 shall apply.

7.1.5 During single-loop operation, the Operating Limit MCPR shall be increased by 0.02.

7.1.6 During reactor power operation with core flow less than 100 percent of rated, the Operating Limit MCPR shall be multiplied by the appropriate K_f specified in Figure 8.2.

7.2 Average Planar Linear Heat Generation Rate (APLHGR)

7.2.1 Technical Specification LCO 3.2.1, Average Planar Linear Heat Generation Rate (APLHGR)

7.2.2 During operation, with thermal power ≥ 25% rated thermal power (RTP), the APLHGR shall be within the limits given in Table 8. (Figure 8.3) for the appropriate fuel type.

7.2.3 During single loop operation, the APLHGR for each fuel type shall not exceed the values given in 7.2.2 above multiplied by the appropriate value (0.78 for GE14 fuel).

7.3 Linear Heat Generation Rate (LHGR)

7.3.1 Technical Specification LCO 3.2.3, Linear Heat Generation Rate (LHGR)

7.3.2 During operation, with thermal power ≥ 25% rated thermal power (RTP), the LHGR for each fuel rod as a function of axial location and exposure shall be within limits based on applicable LHGR limit values given in Table 8.2 for appropriate fuel and rod type.

7.3.3 During single loop operation, the LHGR for each fuel type shall not exceed the values given in 7.3.2 above multiplied by the appropriate value (0.78 for GE14 fuel).

7.4 APRM Trip Settings (Digital Flow Cards)

7.4.1 APRM Flow Referenced Flux Scram Trip Setting (Run Mode)

7.4.1.1. Technical Specifications:
LCO 3.2.4, Average Power Range Monitor (APRM) Gain and Setpoint
LCO 3.3.1.1, Reactor Protection System (RPS) Instrumentation

7.4.1.2. When operating in Mode 1, the APRM Neutron Flux-High (Flow Biased) Trip setting shall be for two loop operation:

$S \leq$ (% RTP) = 0.38*W+61.0%	$0 < W \leq 24.7\%$
$S \leq$ (% RTP) = 1.15*W+42.0%	$24.7 < W \leq 47.0\%$
$S \leq$ (% RTP) = 0.63*W+73.7%	$47.0 < W \leq 68.7\%$
$S \leq$ (% RTP) = 117.00% (Clamp)	$W > 68.7\%$

for single loop operation:

$S \leq$ (% RTP) = 0.38*W+57.9%	$0 < W \leq 32.7\%$
$S \leq$ (% RTP) = 1.15*W+32.8%	$32.7 < W \leq 50.1\%$
$S \leq$ (% RTP) = 0.58*W+61.3%	$50.1 < W \leq 95.9\%$
$S \leq$ (% RTP) = 117.00% (Clamp)	$W > 95.9\%$

WHERE:

S = Setting in percent of rated thermal power;

W = Recirculation flow in percent of rated;

NOTE: Compliance with the "Allowed Region of Operation" on the Power-Flow Map, Figure 3.7-1 of the FSAR is defined by the equation 0.58W + 50% and is individually controlled and assures boundaries are not exceeded during normal operation.

7.4.1.3. In the event of operation with a Maximum Fraction of Limiting Power Density (MFLPD) greater than the Fraction of Rated Power (FRP), the setting shall be modified as follows

for two loop operation:

$S \leq$ (% RTP) = (0.38*W+61.0%)(FRP/MFLPD)	$0 < W \leq 24.7\%$
$S \leq$ (% RTP) = (1.15*W+42.0%)(FRP/MFLPD)	$24.7 < W \leq 47.0\%$
$S \leq$ (% RTP) = (0.63*W+73.7%)(FRP/MFLPD)	$47.0 < W \leq 68.7\%$
$S \leq$ (% RTP) = (117.00%(Clamp))(FRP/MFLPD)	$W > 68.7\%$

for single loop operation:

$S \leq$ (% RTP) = (0.38*W_d+57.9%)(FRP/MFLPD)	$0 < W \leq 32.7\%$
$S \leq$ (% RTP) = (1.15*W_d+32.8%)(FRP/MFLPD)	$32.7 < W \leq 50.1\%$
$S \leq$ (% RTP) = (0.58*W_d+61.3%)(FRP/MFLPD)	$50.1 < W \leq 95.9\%$
$S \leq$ (% RTP) = (117.00% (Clamp))(FRP/MFLPD)	$W > 95.9\%$

WHERE:

FRP = Fraction of Rated Power;

MFLPD = Maximum Fraction Of Limiting Power Density, see Definition 4.4.

The ratio of FRP to MFLPD shall be set equal to 1.0 unless the actual operating value is less than the design value of 1.0, in which case the actual operating value will be used.

7.4.2 APRM Neutron Flux-High (Flow Biased) Rod Block Trip Setting (Relocated to the Technical Requirements Manual)

7.5 RBM Upscale Rod Block Trip Setting

7.5.1 Technical Specification LCO 3.3.2.1, Control Rod Block Instrumentation

7.5.2 The RBM upscale rod block trip setting shall be:

$S \leq 0.66W + K$ for two loop operation;

$S \leq 0.66W + K - 0.66\Delta W$ for single loop operation;

WHERE:

S = rod block setting in percent of initial;

W = Loop flow in percent of rated

K = Any intercept value may be used because the RBM intercept value <u>does not</u> effect the MCPR Operating Limit and the RBM is not assumed to function to protect the Safety Limit MCPR.

ΔW = Difference between two loop and single loop effective drive flow at the same core flow.

NOTE: If K can be any value, then $K - 0.66\Delta W$ can also be any value, and the trip setting adjustment for single loop operation is not necessary.

7.6 Stability Option 1-D Exclusion Region and Buffer Zone.

7.6.1 Technical Specification LCO 3.4.1, Recirculation Loops Operating

7.6.2 The reactor shall not be intentionally operated within the Exclusion Region given in Figure 8.4 when the SOLOMON Code is operable.

7.6.3 The reactor shall not be intentionally operated within the Buffer Zone given in Figure 8.4 when the SOLOMON Code is inoperable.

7.7 K_f – Flow Dependent MCPR Limit

Figure 8.2 is the K_f limit. Values of K_f are obtained using the following equation (see Reference 3.6):

$$K_f = MAX\ [1.0, A - SLOPE * WT]$$

WHERE:

WT = Core Flow as % of Rated, 30% $\leq$ WT $\leq$ 100%

SLOPE = $(A_F/100/OLMCPR) * (SLMCPR / SLMCPR_{generic})$

A = $(B_F/OLMCPR) * (SLMCPR / SLMCPR_{generic})$

$SLMCPR_{generic}$ = 1.07

SLMCPR = Technical Specification LCO 2.1.1, Reactor Core SLs

OLMCPR = The lowest value obtained from Figures 8.1, 8.1.A , 8.1.B and 8.1.C as per 7.1.4, or, if the note in 7.1.4 applies, then 7.1.3 requirement must be met.

A_F , B_F = Coefficients for the K_f curve listed below:

Scoop Tube Setpoint %	A_F	B_F
102.5	0.571	1.655
107.0	0.586	1.697
112.0	0.602	1.747
117.0	0.632	1.809

All coefficients apply to Manual Flow Control Mode

8.0 FIGURES AND TABLES

8.1 FIGURES

8.2 TABLES

9.0 EXHIBITS

NONE

TABLE 8.1

MCPR Operating Limit For Incremental Cycle Core Average Exposure

Cycle 18 Exposure Range	All Fuel Types
BOC to EOC	1.44
NA	NA

Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

For single loop operation, these limits shall be increased as given in Section 7.1.5.

NOTE: 1. When entering a new Exposure Range, check the current value of τ to assure adjustment per Step 7.1.4

2. Applicable for any value of K, see Step 7.5.2

TABLE 8.1.A

MCPR Operating Limit for Incremental Cycle Core Average Exposure for Operation above 75% of Rated Thermal Power with Three Steam Lines in Service

Cycle 18 Exposure Range	All Fuel Types
BOC to EOC	1.46
NA	NA

Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

For single loop operation, these limits shall be increased as given in Section 7.1.5.

NOTE: **1.** When entering a new Exposure Range, check the current value of τ to assure adjustment per Step 7.1.4

2. Applicable for any value of K, see Step 7.5.2

TABLE 8.1.B

MCPR Operating Limit for Operation with Turbine Bypass Valves Out of Service

Cycle 18 Exposure Range	All Fuel Types
ALL	1.48

Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

Technical Specification LCO 3.7.6, Main Turbine Bypass System

For single loop operation, these limits shall be increased as given in Section 7.1.5.

NOTE: **1.** When entering a new Exposure Range, check the current value of τ to assure adjustment per Step 7.1.4

2. Applicable for any value of K, see Step 7.5.2

TABLE 8.1.C

MCPR Operating Limit for Operation with Final Feedwater Temperature Reduction

Cycle 18 Exposure Range	All Fuel Types
At EOC only (see below)	1.44

Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

For single loop operation, these limits shall be increased as given in Section 7.1.5.

NOTE: 1. When entering a new Exposure Range, check the current value of τ to assure adjustment per Step 7.1.4

2. Applicable for any value of K, see Step 7.5.2

MCPR Operating Limits in this table apply when at reduced feedwater temperature near end-of-cycle, see JD-02-122 (Reference 3.13) for further information.

TABLE 8.2

Maximum LHGR – GE14

Peak Pellet Exposure	UO_2 LHGR Limit
GWd/ST	**kW/ft**
0.00	13.40
14.51	13.40
57.61	8.00
63.50	5.00

Peak Pellet Exposure	Most Limiting Gadolinia LHGR Limit
GWd/ST	**kW/ft**
0.00	12.26
12.28	12.26
55.00	7.32
60.84	4.57

Technical Specification LCO 3.2.3, Linear Heat Generation Rate (LHGR)

Design features of the fuel assemblies in the Cycle 18 core are provided in References 3.3, 3.15

For single loop operation these LHGR values shall be multiplied by 0.78

Linearly interpolate for LHGR at intermediate exposure

TABLE 8.3

Exposure Dependent APLHGR Limit for GE14 Fuel

Average Planar Exposure	APLHGR Limit
GWd/ST	kW/ft
0.00	12.82
14.51	12.82
19.13	12.82
57.61	8.00
63.50	5.00

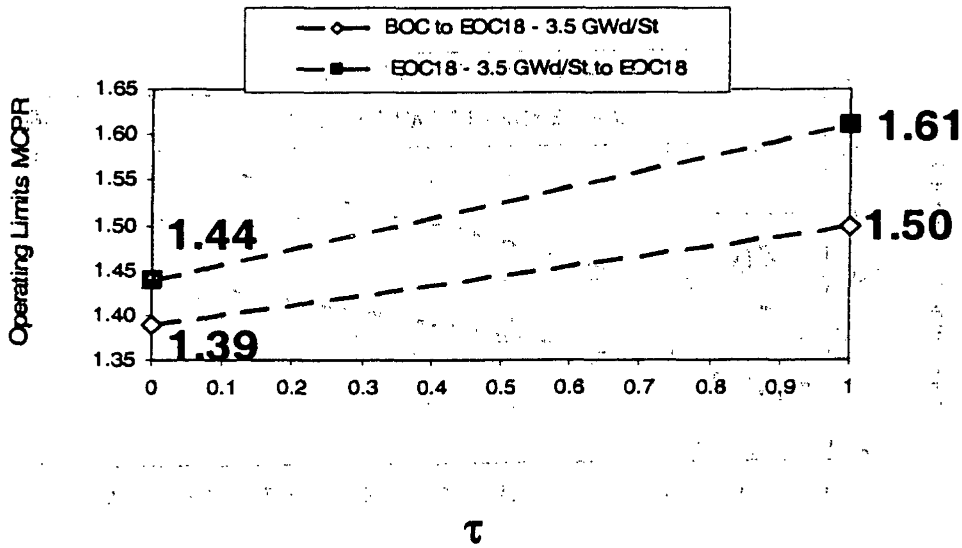
Technical Specification LCO 3.2.1, Average Planar Linear Heat Generation Rate (APLHGR)

For single loop operation these APLHGR values shall be multiplied by 0.78

Linearly interpolate for APLHGR at intermediate exposure

FIGURE 8.1

MCPR Operating Limit Versus τ
For All Fuel Types



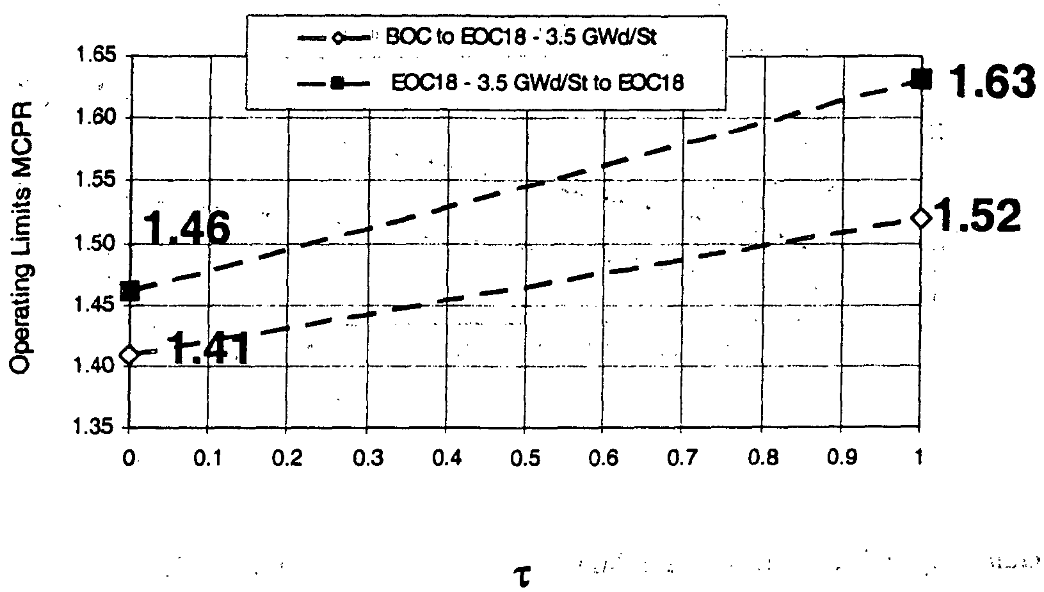
Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

For single loop operation, these limits shall be increased as given in Section 7.1.5.

NOTE: Should the operating limit MCPR obtained from this figure be less than the operating limit MCPR found in 7.1.3 for the applicable RBM Upscale Rod Block trip level setting then 7.1.3 shall apply.

FIGURE 8.1.A

MCPR Operating Limit Versus τ For Operating Above 75% of Rated Thermal Power with Three Steam Lines in Service For all Fuel Types



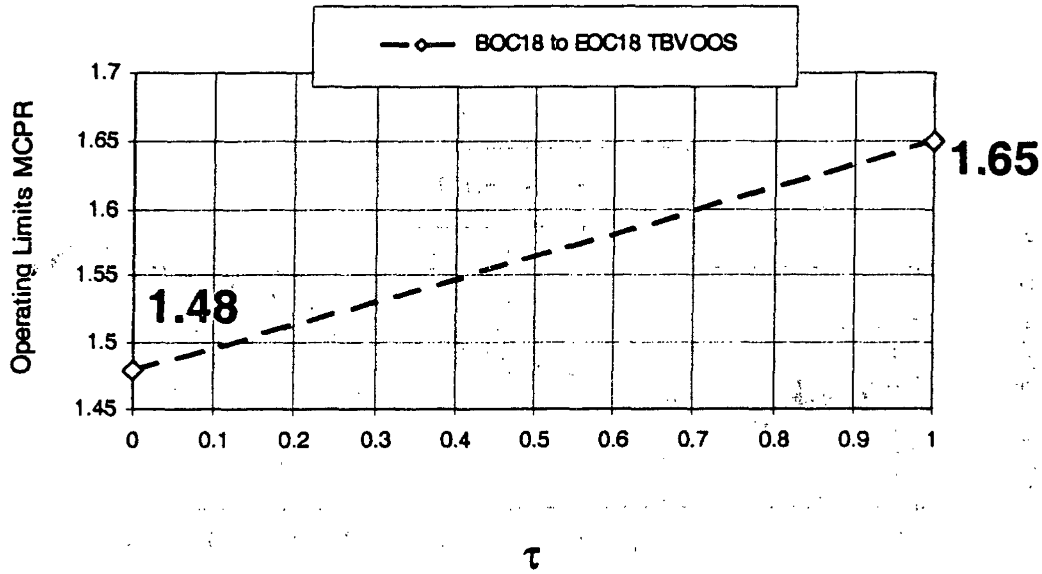
Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

For single loop operation, these limits shall be increased as given in Section 7.1.5.

NOTE: Should the operating limit MCPR obtained from this figure be less than the operating limit MCPR found in 7.1.3 for the applicable RBM Upscale Rod Block trip level setting then 7.1.3 shall apply

FIGURE 8.1.B

MCPR Operating Limit Versus τ for Operation with Turbine Bypass Valves Out of Service



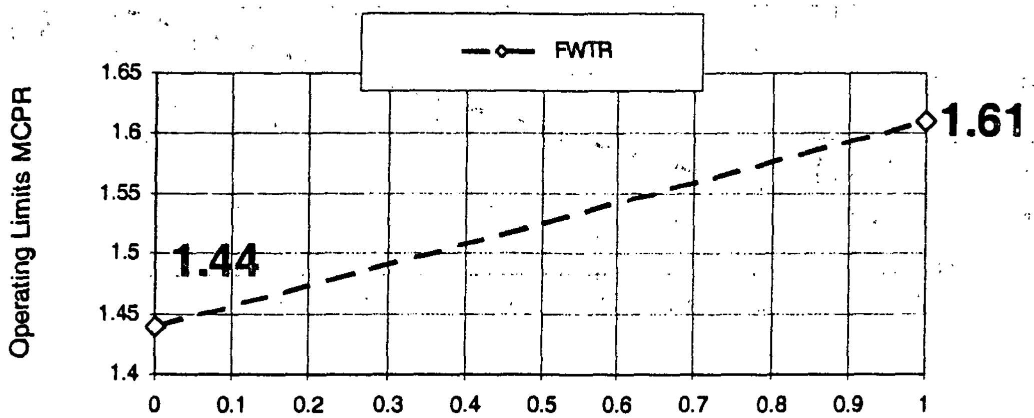
Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

For single loop operation, these limits shall be increased as given in Section 7.1.5.

NOTE: Should the operating limit MCPR obtained from this figure be less than the operating limit MCPR found in 7.1.3 for the applicable RBM Upscale Rod Block trip level setting then 7.1.3 shall apply

FIGURE 8.1.C

MCPR Operating Limit Versus τ for Operation with Final Feedwater Temperature Reduction



τ

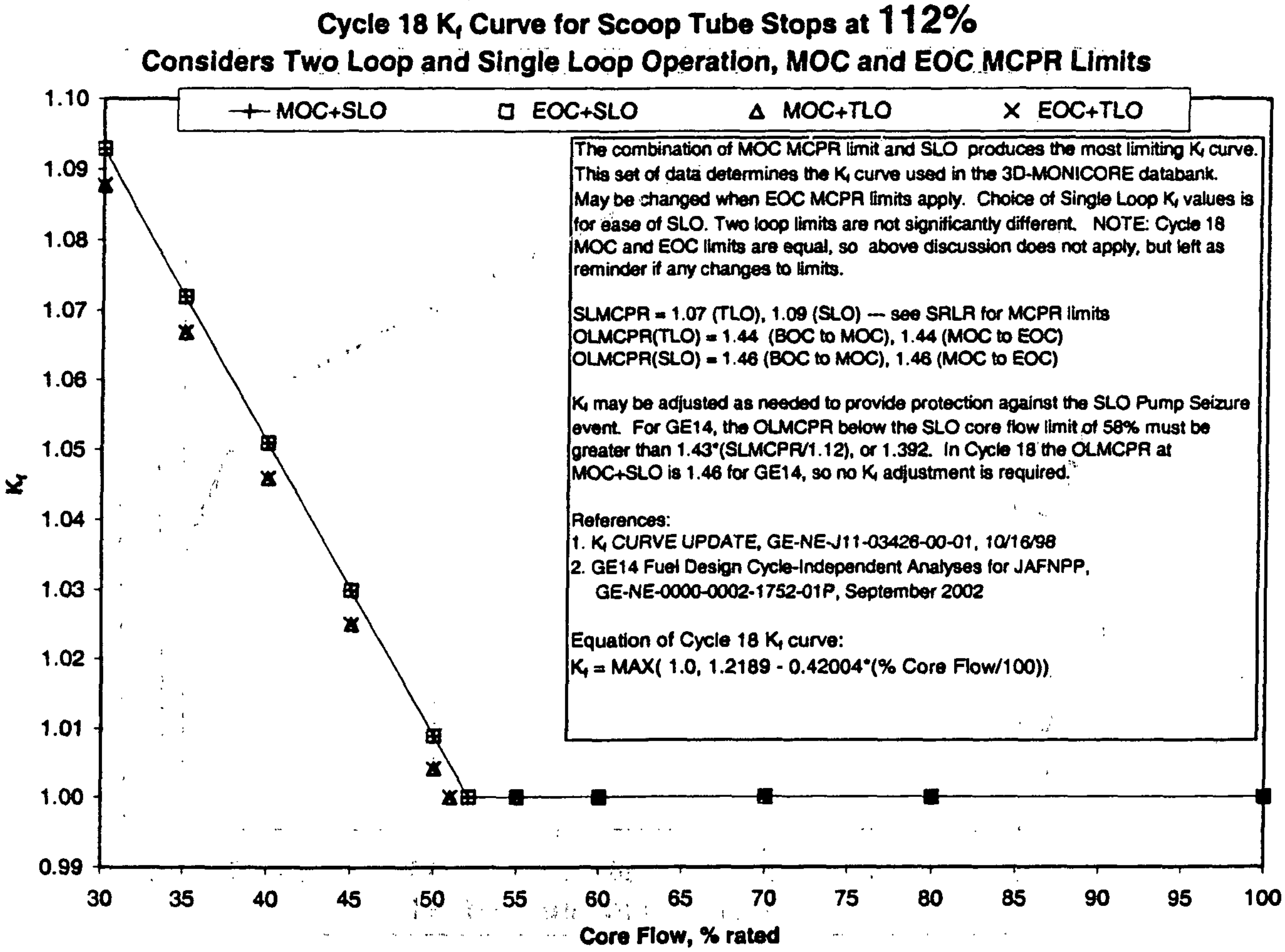
Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

For single loop operation, these limits shall be increased as given in Section 7.1.5.

NOTE: Should the operating limit MCPR obtained from this figure be less than the operating limit MCPR found in 7.1.3 for the applicable RBM Upscale Rod Block trip level setting then 7.1.3 shall apply

FIGURE 8.2

K_f Factor



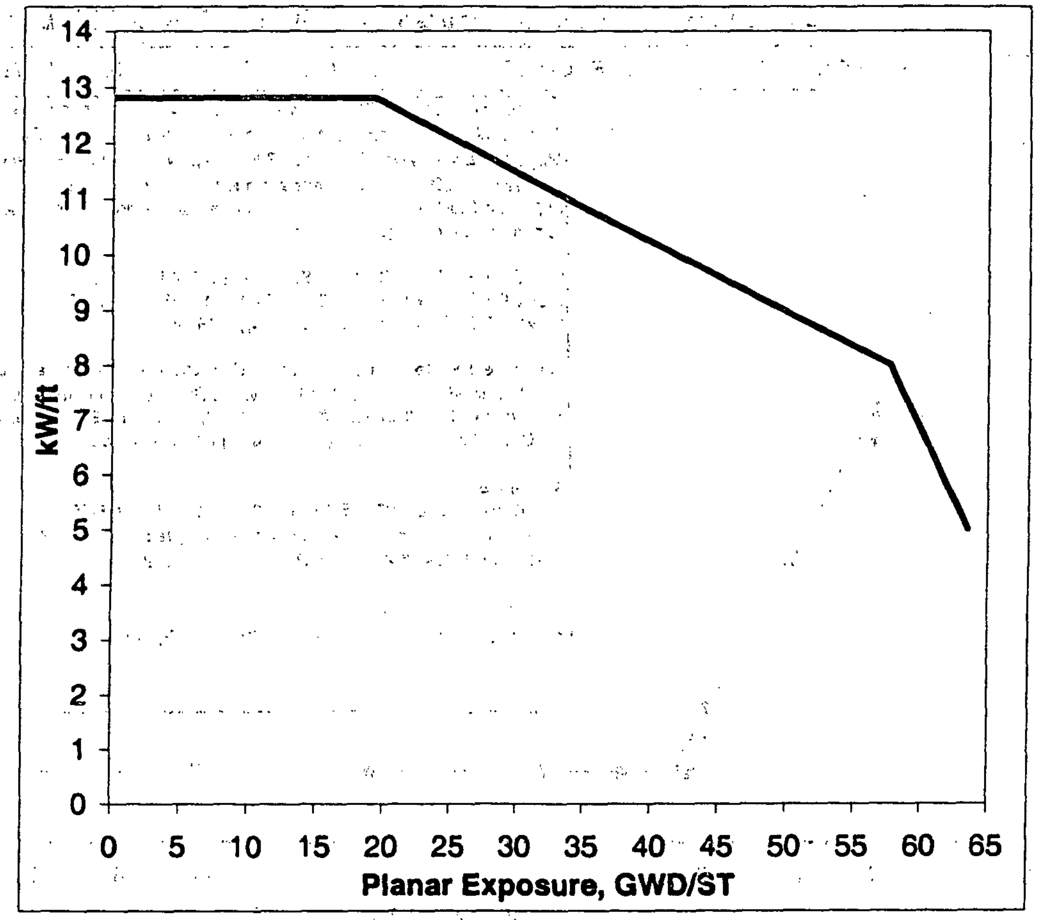
Technical Specification LCO 3.2.2, Minimum Critical Power Ratio (MCPR)

See Section 7.7

NOTE: K_f for Single Loop Operation is slightly greater than for Dual Loop Operation limits. Therefore, K_f calculated for Single Loop Operation is more conservative and will be applied to Dual Loop Operation as well.

FIGURE 8.3

Exposure Dependent APLHGR Limit for GE14 Fuel



Technical Specification LCO 3.2.1, Average Planar Linear Heat Generation Rate (APLHGR)

For single loop operation these APLHGR values shall be multiplied by 0.78.

FIGURE 8.4

Stability Option 1-D Exclusion Region

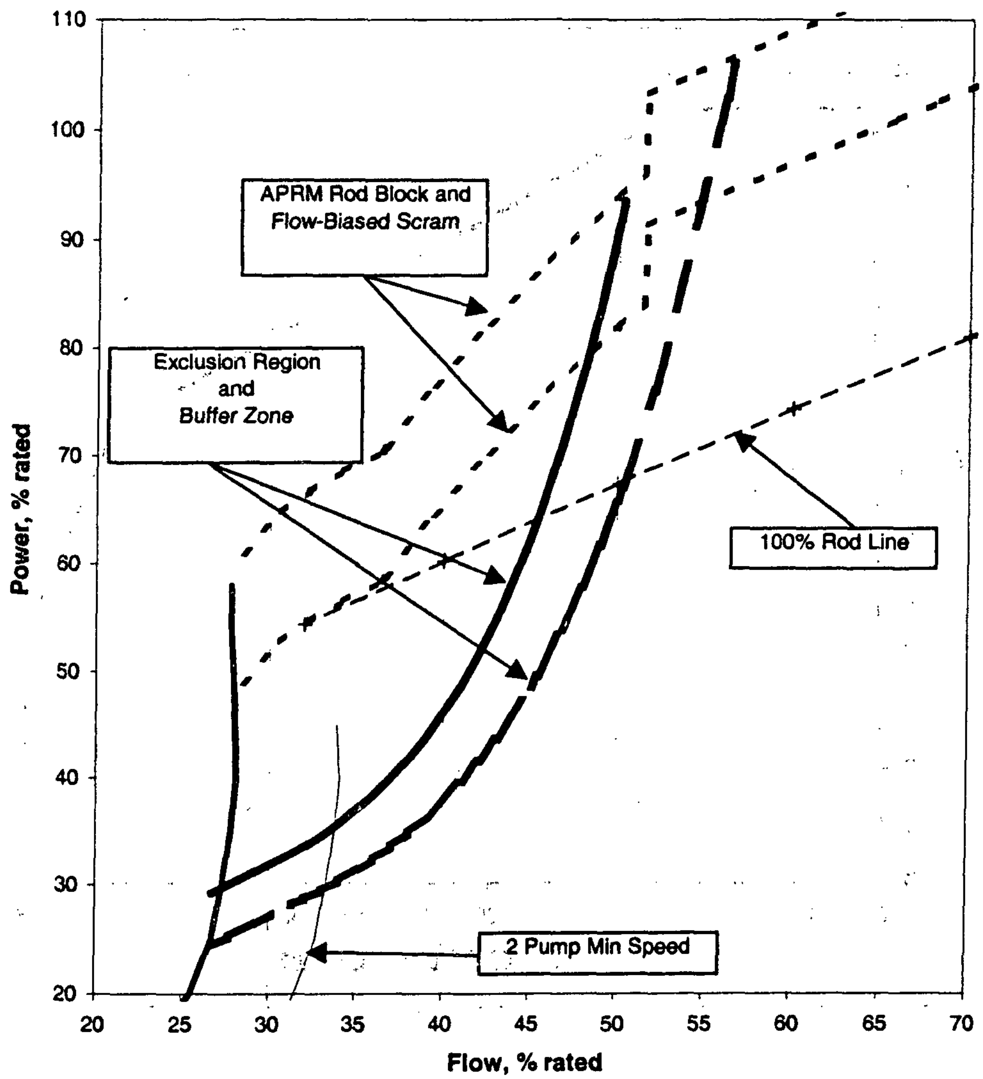
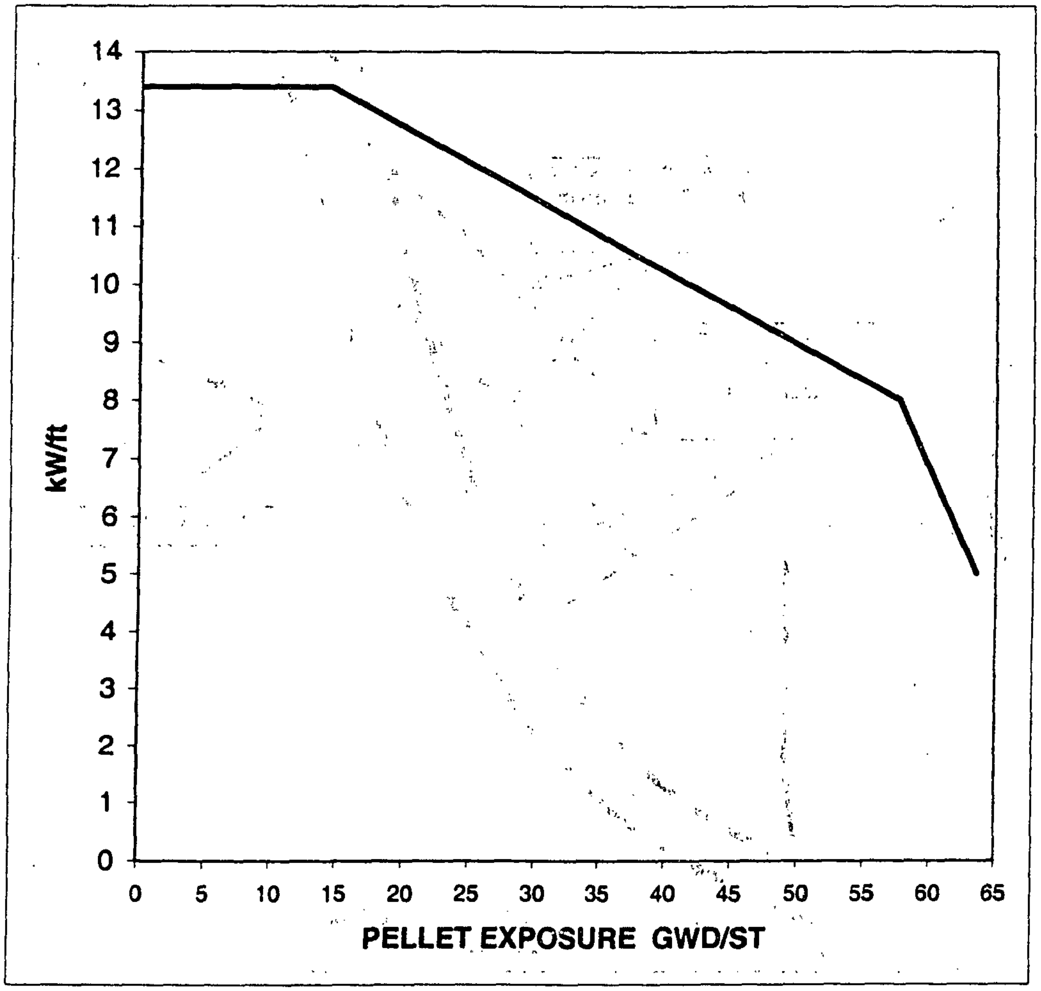


FIGURE 8.5

Exposure Dependent LHGR Limit for GE14 Fuel



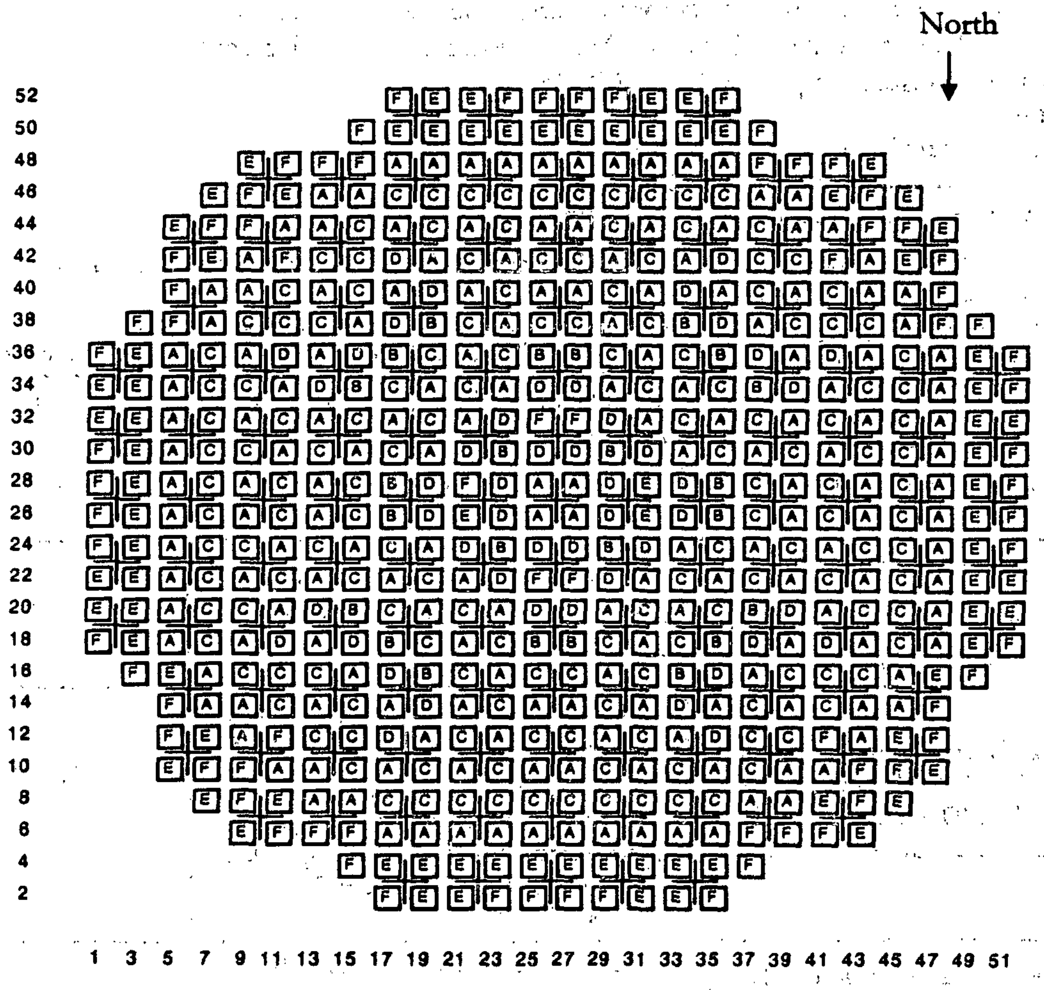
Technical Specification LCO 3.2.3, Linear Heat Generation Rate (LHGR)

This curve represents the limiting exposure dependent LHGR values per Reference 3.15

Design features of the fuel assemblies in the Cycle 18 core are provided in Reference 3.3

FIGURE 8.6

Cycle 18 Loading Pattern by Bundle Design



Fuel Type	
A=GE14-P10DNAB405-16GZ-100T-150-T6-2794 (Cycle 17) B=GE14-P10DNAB405-15G6.0-100T-150-T6-2793 (Cycle 17) C=GE14-P10DNAB402-10G6.0/4G5.0/1G2.0-100T-150-T6-2905 (Cycle 18)	D=GE14-P10DNAB4G5-16GZ-100T-150-T6-2906 (Cycle 18) E=GE14-P10DNAB405-16GZ-100T-150-T6-2562 (Cycle 16) F=GE14-P10DNAB405-16GZ-100T-150-T6-2563 (Cycle 16)

FIGURE 8.7

USERS GUIDE

The COLR defines thermal limits for the various operating conditions expected during the cycle. At the start of the cycle the 3D-Monicore databank contains limits for;

- Cycle exposure range of BOC to EOC18
- $\tau = 0$
- Dual recirculation pump operation
- Four steam line operation, and
- Final Feedwater Temperature Reduction

The following is a table that offers a check to assure the correct limits are applied when operating states or conditions change.

Change in Operating State	Change in Limits	Procedure Reference
Cycle Exposure = EOC18 – 3.5 GWD/ST OLMCPR changes to EOC values at cycle exposure of 12.0 GWD/ST	See Table 8.1 or Figure 8.1 for $\tau \neq 0$ for change in MCPR. K_f limit may be changed in recognition of higher OLMCPR.	None
Scram Time Test Results such that $\tau \neq 0$ Option B limits for OLMCPR must be interpolated with Option A limits	Use new τ and see Figure 8.. K_f limit may be changed in recognition of higher OLMCPR.	RAP-7.4.1
Single Loop Operation The SLMCPR increases by 0.02 and therefore OLMCPR limits increase by 0.02. MFLPD and MAPLHGR are reduced by a multiplier in SLO.	Increase MCPR Limits by 0.02, or change acceptance criterion in ST-5E to 0.98. K_f does not change. Verify that 3D-Monicore has recognized the idle recirculation loop and is applying the SLO MFLPD and MAPLHGR multiplier of 0.78.	ST-5E,
Three Steam Line Operation (3SL) OLMCPR values increase by 0.02 when operating on 3SL	Increase OLMCPR according to Table 8.1.A or Figure 8.1.A($\tau \neq 0$). K_f limit may be changed in recognition of higher OLMCPR.	None
Operation with Turbine Bypass Valves Out-of-Service OLMCPR values increase, no LHGR change required	Increase OLMCPR according to Table 8.1.B or Figure 8.1.B($\tau \neq 0$). K_f limit may be changed in recognition of higher OLMCPR.	None
Operation under Final Feedwater Temperature Reduction OLMCPR values increase, no LHGR change required	Increase OLMCPR according to Table 8.1.C or Figure 8.1.C($\tau \neq 0$). K_f limit may be changed in recognition of higher OLMCPR.	None