

Lewis Sumner
Vice President
Hatch Project Support

**Southern Nuclear
Operating Company, Inc.**
40 Inverness Parkway
Post Office Box 1295
Birmingham, Alabama 35201

Tel 205.992.7279
Fax 205.992.0341



November 5, 2001

Docket No. 50-366

HL-6144

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Edwin I. Hatch Nuclear Plant - Unit 2
Unit 2 Cycle 17 Core Operating Limits Report (COLR)

Ladies and Gentlemen:

In accordance with Technical Specification 5.6.5, Southern Nuclear Operating Company hereby submits the Edwin I. Hatch Nuclear Plant Unit 2 Cycle 17 Core Operating Limits Report, Revision 0.

Should you have any questions in this regard, please contact this office.

Respectfully submitted,

A handwritten signature in cursive script that reads "Lewis Sumner".

H. L. Sumner, Jr.

IFL/eb

Enclosure: Unit 2 Cycle 17 Core Operating Limits Report, Revision 0

cc: Southern Nuclear Operating Company
Mr. P. H. Wells, Nuclear Plant General Manager
SNC Document Management (R-Type A02.001)

U. S. Nuclear Regulatory Commission, Washington, D. C.
Mr. L. N. Olshan, Project Manager - Hatch

U. S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. J. T. Munday, Senior Resident Inspector - Hatch

A001

**SOUTHERN NUCLEAR OPERATING COMPANY
EDWIN I. HATCH NUCLEAR PLANT**

**Unit 2 Cycle 17
CORE OPERATING LIMITS REPORT**

Revision 0

Southern Nuclear Operating Company
Post Office Box 1295
Birmingham, Alabama 35201

Edwin I. Hatch Nuclear Plant
Unit 2 Cycle 17
Core Operating Limits Report

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.0	Introduction	1
2.0	APLHGR Limits	1
3.0	MCPR Operating Limits	14
4.0	PBDA Amplitude Setpoint	27
5.0	References	28

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

TABLES

<u>Table No.</u>	<u>Title</u>	<u>Page</u>
2-1	APLHGR Operating Flexibility Options	3
3-1	MCPR Operating Flexibility Options	16

FIGURES

<u>Figure No.</u>	<u>Title</u>	<u>Page</u>
2-1	Flow-Dependent APLHGR Multiplier ($MAPFAC_F$) versus Core Flow	4
2-2A	Power-Dependent APLHGR Multiplier ($MAPFAC_P$) versus Core Power (<i>High Pressure Feedwater Heaters In Service and Pressure Regulator Operable</i>)	5
2-2B	Power-Dependent APLHGR Multiplier ($MAPFAC_P$) versus Core Power (<i>High Pressure Feedwater Heaters Out of Service and Pressure Regulator Operable</i>)	6
2-2C	Power-Dependent APLHGR Multiplier ($MAPFAC_P$) versus Core Power (<i>High Pressure Feedwater Heaters In Service and Pressure Regulator Inoperable</i>)	7
2-3	APLHGR Limit versus Average Planar Exposure (<i>GE13-P9HTB378-6G5.0/6G4.0/1G2.0-100T-146-T</i>)	8
2-4	APLHGR Limit versus Average Planar Exposure (<i>GE13-P9HTB355-12GZ-100T-146-T</i>)	9
2-5	APLHGR Limit versus Average Planar Exposure (<i>GE13-P9DTB378-6G5.0/6G4.0/1G2.0-100T-146-T</i>)	10
2-6	APLHGR Limit versus Average Planar Exposure (<i>GE14-P10HNAB348-6G6.0/5G5.0-100T-148-T-LUA</i>)	11
2-7	APLHGR Limit versus Average Planar Exposure (<i>GE13-P9DTB378-6G5.0/6G4.0/1G2.0-100T-146-T-2402</i>)	12
2-8	APLHGR Limit versus Average Planar Exposure (<i>GE13-P9DTB378-6G5.0/6G4.0-100T-146-T-2398</i>)	13

FIGURES (Continued)

<u>Figure No.</u>	<u>Title</u>	<u>Page</u>
3-1A	Power-Dependent MCPR Limit ($MCPR_P$) versus Core Power from 25% to 28% of Rated Core Power (<i>Bypass Valve System Operable</i>)	17
3-1B	Power-Dependent MCPR Limit ($MCPR_P$) versus Core Power from 25% to 28% of Rated Core Power (<i>Bypass Valve System Inoperable</i>)	18
3-2	Flow-Dependent MCPR Limit ($MCPR_F$) versus Core Flow	19
3-3A	Power-Dependent MCPR Multiplier (K_P) versus Core Power (<i>Pressure Regulator Operable</i>)	20
3-3B	Power-Dependent MCPR Multiplier (K_P) versus Core Power (<i>Pressure Regulator Inoperable</i>)	21
3-4A	MCPR Limits versus Average Scram Time (<i>BOC to EEOC-1500 with EOC-RPT System Operable and Bypass Valves Operable</i>)	22
3-4B	MCPR Limits versus Average Scram Time (<i>EEOC-1500 to EEOC with EOC-RPT System Operable and Bypass Valves Operable</i>)	23
3-4C	MCPR Limits versus Average Scram Time (<i>BOC to EEOC-1500 with EOC-RPT System Inoperable and Bypass Valves Operable</i>)	24
3-4D	MCPR Limits versus Average Scram Time (<i>EEOC-1500 to EEOC with EOC-RPT System Inoperable and Bypass Valves Operable</i>)	25
3-4E	MCPR Limits versus Average Scram Time (<i>BOC to EEOC with EOC-RPT System Operable and Bypass Valves Inoperable</i>)	26

1.0 INTRODUCTION

The Core Operating Limits Report (COLR) for Plant Hatch Unit 2 Cycle 17 is prepared in accordance with the requirements of Technical Specification 5.6.5. The core operating limits presented herein were developed using NRC-approved methods (Reference 1). Results from the fuel vendor's reload analysis for the fuel in Unit 2 Cycle 17 are documented in Reference 2. Core operating limits for operation with high pressure feedwater heaters out of service are presented in Reference 3.

The following core operating limits are included in this report:

- a. Average Planar Linear Heat Generation Rate (APLHGR) -- Technical Specification 3.2.1.
- b. Minimum Critical Power Ratio (MCPR) -- Technical Specification 3.2.2.
- c. Maximum allowable scram setpoints for the Period Based Detection Algorithm (PBDA) in the Oscillation Power Range Monitor (OPRM) system.

Operation with high pressure feedwater heaters out of service and a pressure regulator inoperable simultaneously is not an analyzed mode of operation. Similarly, operation with the end-of-cycle recirculation pump trip (EOC-RPT) system inoperable and the turbine bypass valve system inoperable simultaneously is not an analyzed mode of operation.

2.0 APLHGR LIMITS (Technical Specification 3.2.1)

The APLHGR limit for each fuel assembly is the applicable rated-power, rated-flow APLHGR limit taken from Figures 2-3 through 2-8, multiplied by the smaller of either:

- a. The flow-dependent multiplier, $MAPFAC_F$, from Figure 2-1
or
- b. The power-dependent multiplier, $MAPFAC_P$, as determined by Table 2-1.

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

Since every assembly in the core contains more than one enriched lattice, GESTAR-II (Reference 1) requires that the appropriate APLHGR limit from Figures 2-3 through 2-8 be applied to every axial location in the fuel assembly, when APLHGR values are hand-calculated. Note that the APLHGR limits shown in those Figures are the values for the most limiting enriched lattices as a function of average planar exposure.

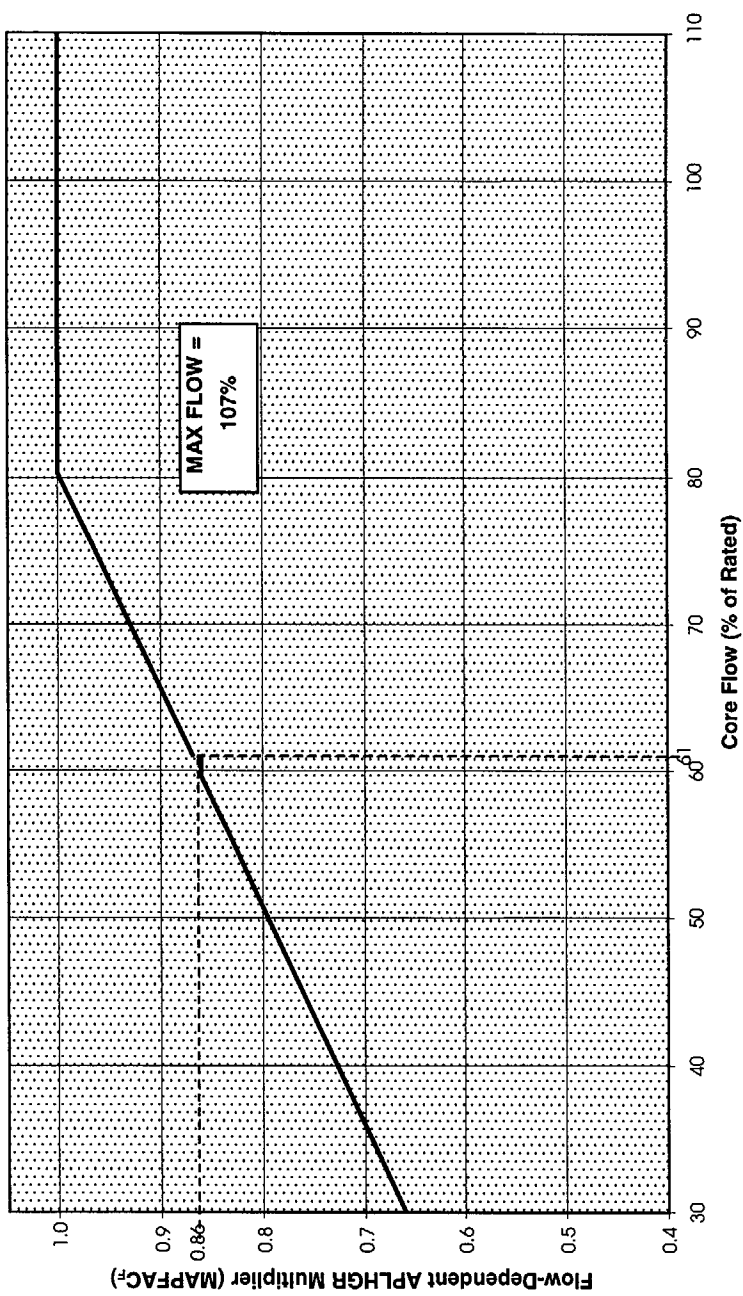
When APLHGR values are determined by the process computer, the lattice type-dependent APLHGR limits are used. Under these conditions, some axial locations may have APLHGR values exceeding the values shown in the figures.

TABLE 2-1
APLHGR Operating Flexibility Options

Cycle Average Exposure	High Pressure Feedwater Heaters	Pressure Regulator	MAPFAC _P
BOC to EEOC	In Service	Operable	Figure 2-2A
BOC to EEOC	Out of Service	Operable	Figure 2-2B
BOC to EEOC	In Service	Inoperable	Figure 2-2C

BOC = Beginning of Cycle
EEOC = Extended End of Cycle

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



MAPFAC_F = Minimum [1.0, (A + B*F), MAPMULT]

Maximum Core Flow (% of Rated)	A	B
107.0	0.4574	0.006758

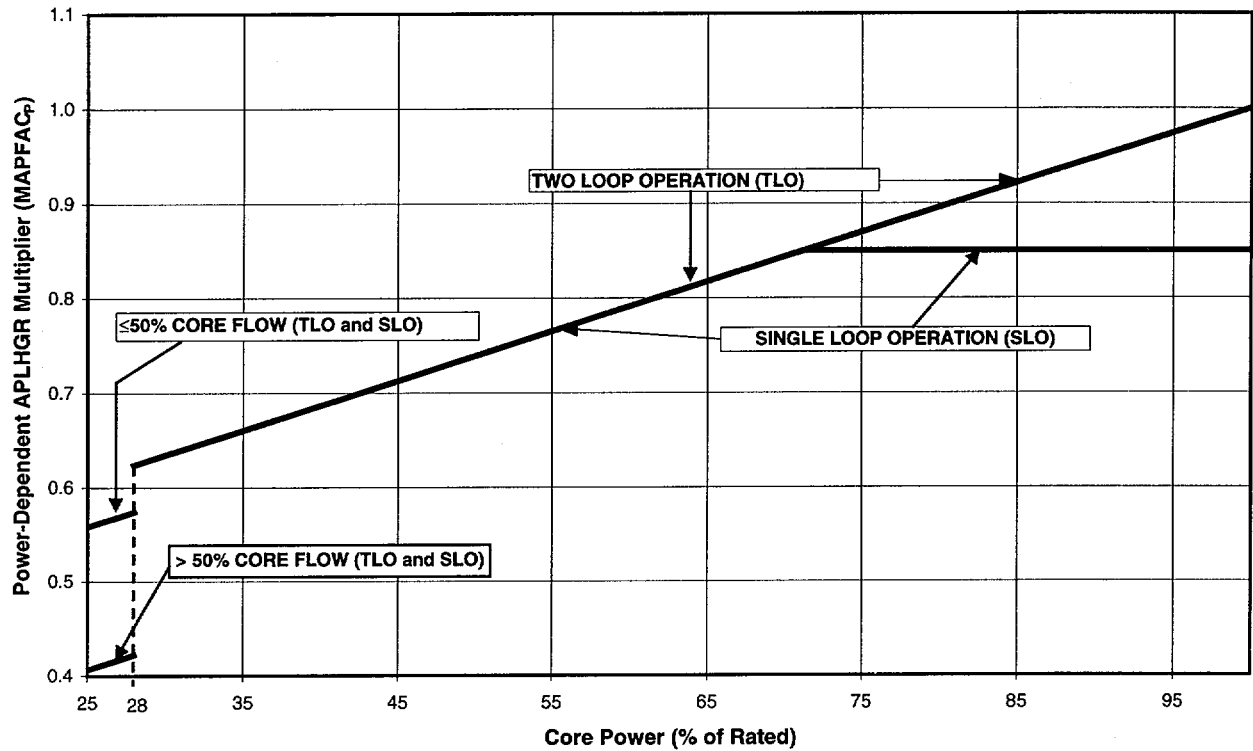
MAPMULT = 1.0 for F > 61.0
0.86 for F ≤ 61.0

F = Percent of Rated Core Flow

FIGURE 2-1

Flow-Dependent APLHGR Multiplier (MAPFAC_F) versus Core Flow

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



$$\text{MAPFAC}_P = A - B (P_0 - P)$$

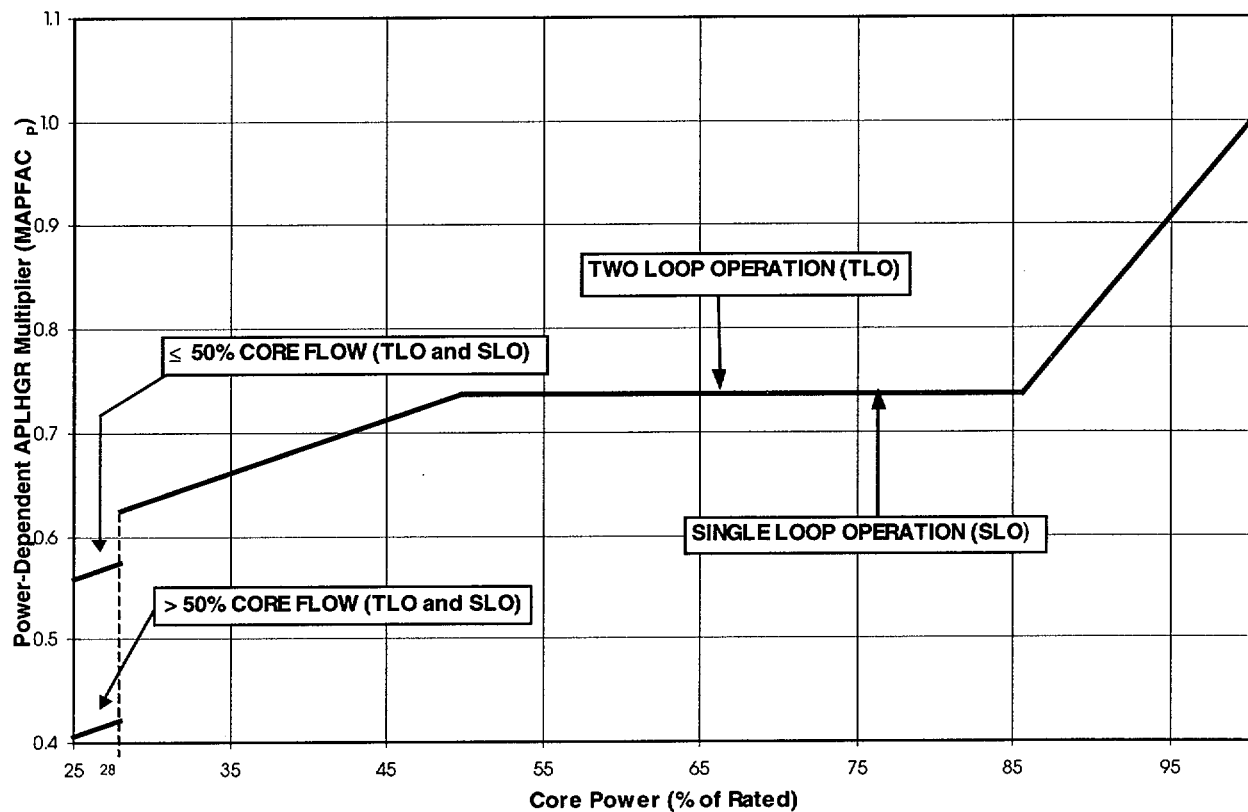
Operating Conditions			Values of Variables		
P	F	SLO / TLO	A	B	P ₀
25 ≤ P < 28	F ≤ 50	SLO / TLO	0.574	0.005224	28
25 ≤ P < 28	F > 50	SLO / TLO	0.422	0.005224	28
28 ≤ P < 71.29	All	SLO / TLO	1.000	0.005224	100
71.29 ≤ P	All	TLO	1.000	0.005224	100
71.29 ≤ P	All	SLO	0.85	0.000	-

P = Percent of Rated Core Power
F = Percent of Rated Core Flow

FIGURE 2-2A

Power-Dependent APLHGR Multiplier (MAPFAC_p) versus Core Power
(High Pressure Feedwater Heaters In Service and Pressure Regulator Operable)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



$$\text{MAPFAC}_P = A - B (P_0 - P)$$

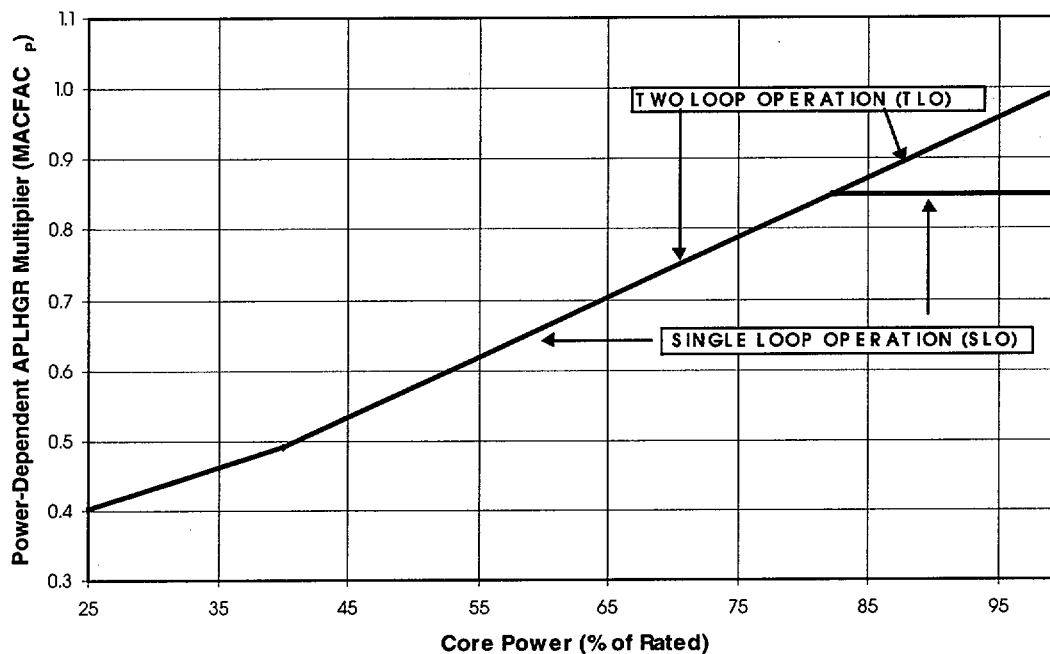
Operating Conditions			Values of Variables		
P	F	SLO / TLO	A	B	P ₀
25 ≤ P < 28	F ≤ 50	SLO / TLO	0.574	0.005224	28
25 ≤ P < 28	F > 50	SLO / TLO	0.422	0.005224	28
28 ≤ P < 49.68	All	SLO / TLO	1.000	0.005224	100
49.68 ≤ P < 85.59	All	SLO/TLO	0.737	0.000	N/A
85.59 ≤ P	All	TLO	1.000	0.01824	100

P = Percent of Rated Core Power
F = Percent of Rated Core Flow

FIGURE 2-2B

Power-Dependent APLHGR Multiplier (MAPFAC_P) versus Core Power
(High Pressure Feedwater Heaters Out of Service and Pressure Regulator Operable)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



$$\text{MAPFAC}_P = A - B (P_0 - P)$$

Operating Conditions		Values of Variables		
P	SLO/TLO	A	B	P ₀
25 ≤ P < 40	SLO/TLO	0.49	0.0058	40
40 ≤ P < 82.35	SLO/TLO	1.0	0.0085	100
82.35 ≤ P	TLO	1.0	0.0085	100
82.35 ≤ P	SLO	0.85	0.000	-

P = Percent of Rated Core Power

F = Percent of Rated Core Flow

FIGURE 2-2C

Power-Dependent APLHGR Multiplier (MAPFAC_P) versus Core Power (High Pressure Feedwater Heaters In Service and Pressure Regulator Inoperable)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

Average Planar Exposure	APLHGR Limit
0.00	10.51
0.20	10.57
1.00	10.73
2.00	10.97
3.00	11.24
4.00	11.48
5.00	11.73
6.00	11.92
7.00	12.06
8.00	12.21
9.00	12.36
10.00	12.49
12.50	12.60
15.00	12.42
17.50	12.05
20.00	11.69
25.00	10.97
30.00	10.27
35.00	9.60
40.00	8.93
45.00	8.28
50.00	7.62
55.00	6.94
57.53	6.59

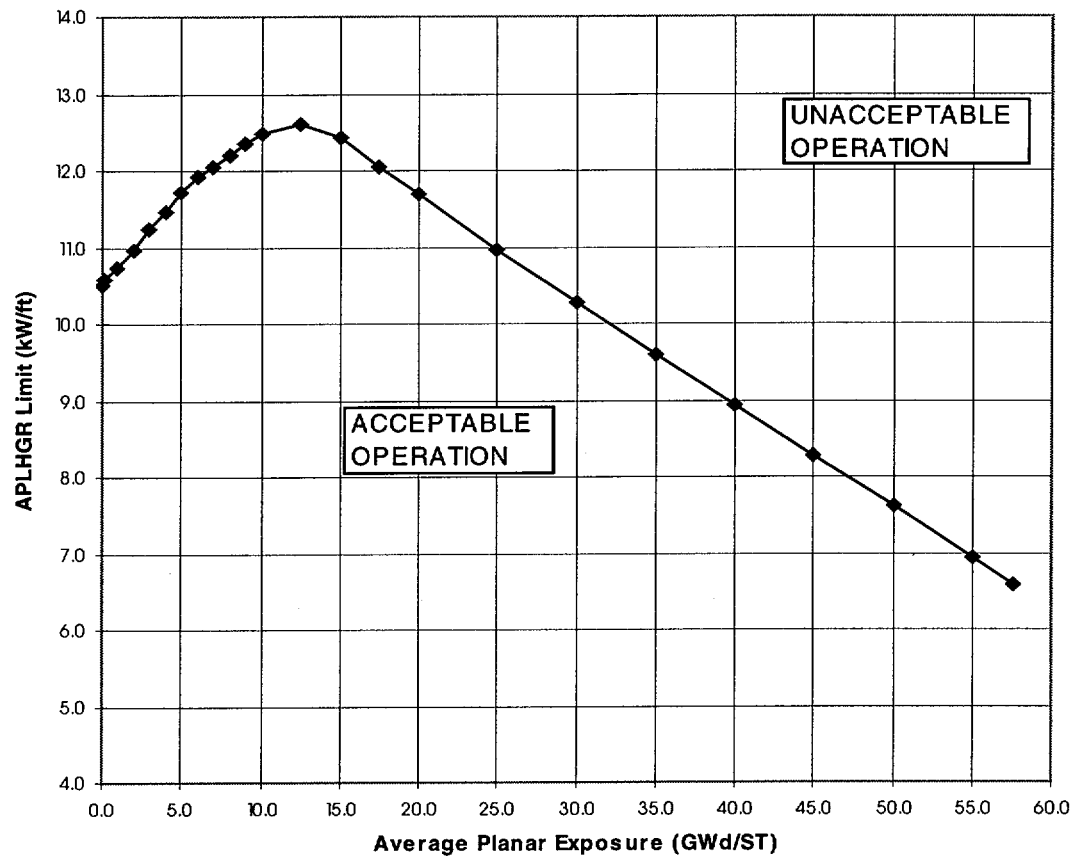


FIGURE 2-3

APLHGR Limit versus Average Planar Exposure
(Bundle Type: GE13-P9HTB378-6G5.0/6G4.0/1G2.0-100T-146-T)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

Average Planar Exposure	APLHGR Limit
0.00	11.08
0.20	11.12
1.00	11.21
2.00	11.33
3.00	11.45
4.00	11.57
5.00	11.69
6.00	11.81
7.00	11.92
8.00	12.04
9.00	12.16
10.00	12.30
12.50	12.48
15.00	12.22
17.50	11.87
20.00	11.48
25.00	10.71
30.00	9.98
35.00	9.29
40.00	8.63
45.00	8.00
50.00	7.38
55.00	6.70
56.53	6.49

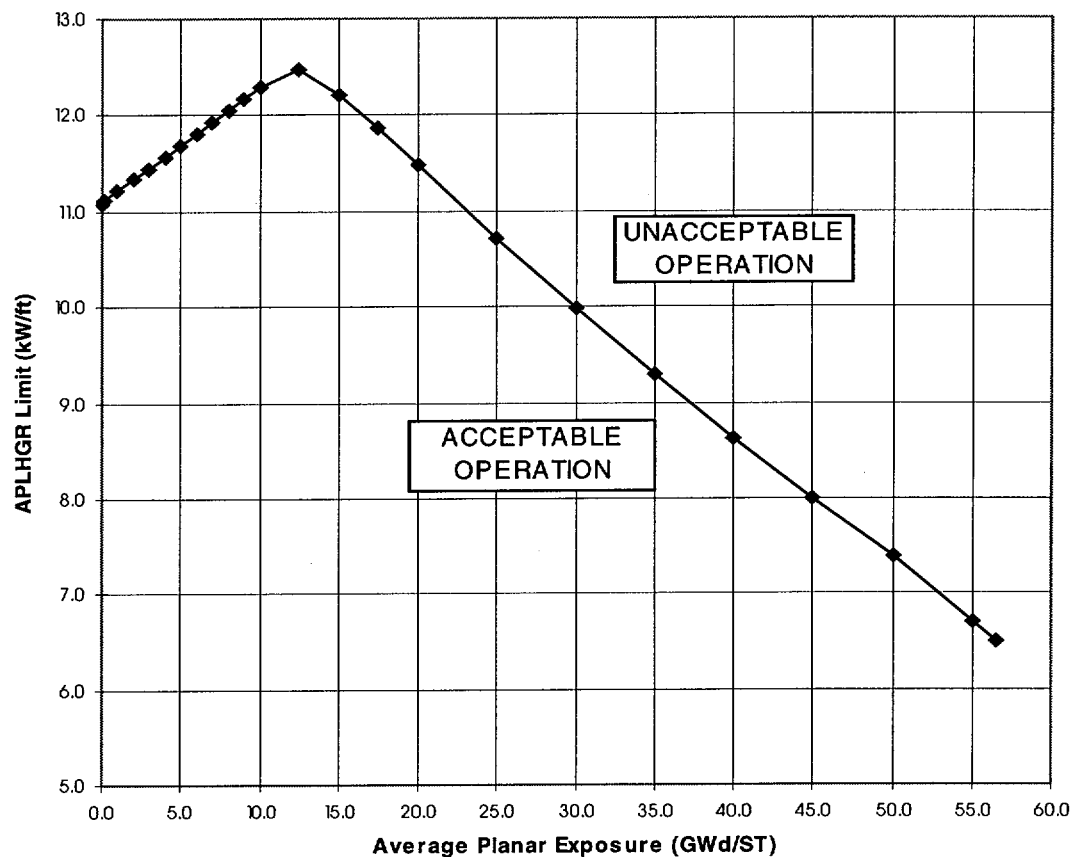


FIGURE 2-4

APLHGR Limit versus Average Planar Exposure
(Bundle Type: GE13-P9HTB355-12GZ-100T-146-T)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

Average Planar Exposure	APLHGR Limit
0.00	10.64
0.20	10.71
1.00	10.88
2.00	11.12
3.00	11.39
4.00	11.67
5.00	11.93
6.00	12.14
7.00	12.28
8.00	12.42
9.00	12.58
10.00	12.71
12.50	12.60
15.00	12.25
17.50	11.90
20.00	11.56
25.00	10.88
30.00	10.21
35.00	9.56
40.00	8.92
45.00	8.27
50.00	7.62
55.00	6.93
57.53	6.58

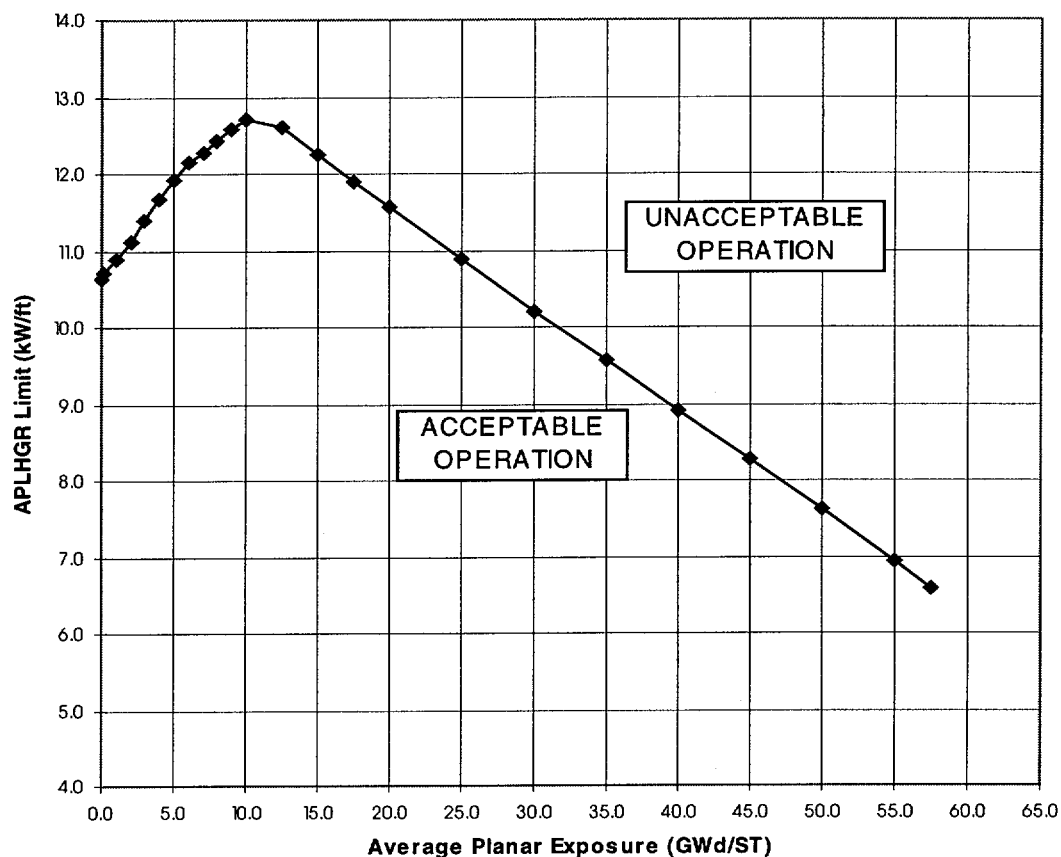


FIGURE 2-5

APLHGR Limit versus Average Planar Exposure
(Bundle Type: GE13-P9DTB378-6G5.0/6G4.0/1G2.0-100T-146-T)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

Average Planar Exposure	APLHGR Limit
0.00	9.02
0.20	9.02
1.00	9.07
2.00	9.14
3.00	9.22
4.00	9.32
5.00	9.42
6.00	9.53
7.00	9.61
8.00	9.67
9.00	9.75
10.00	9.84
11.00	9.95
12.00	10.04
13.00	10.13
14.00	10.21
15.00	10.28
17.00	10.41
20.00	10.52
25.00	10.21
30.00	9.57
35.00	8.96
40.00	8.38
45.00	7.80
50.00	7.22
55.00	6.64
56.27	6.45

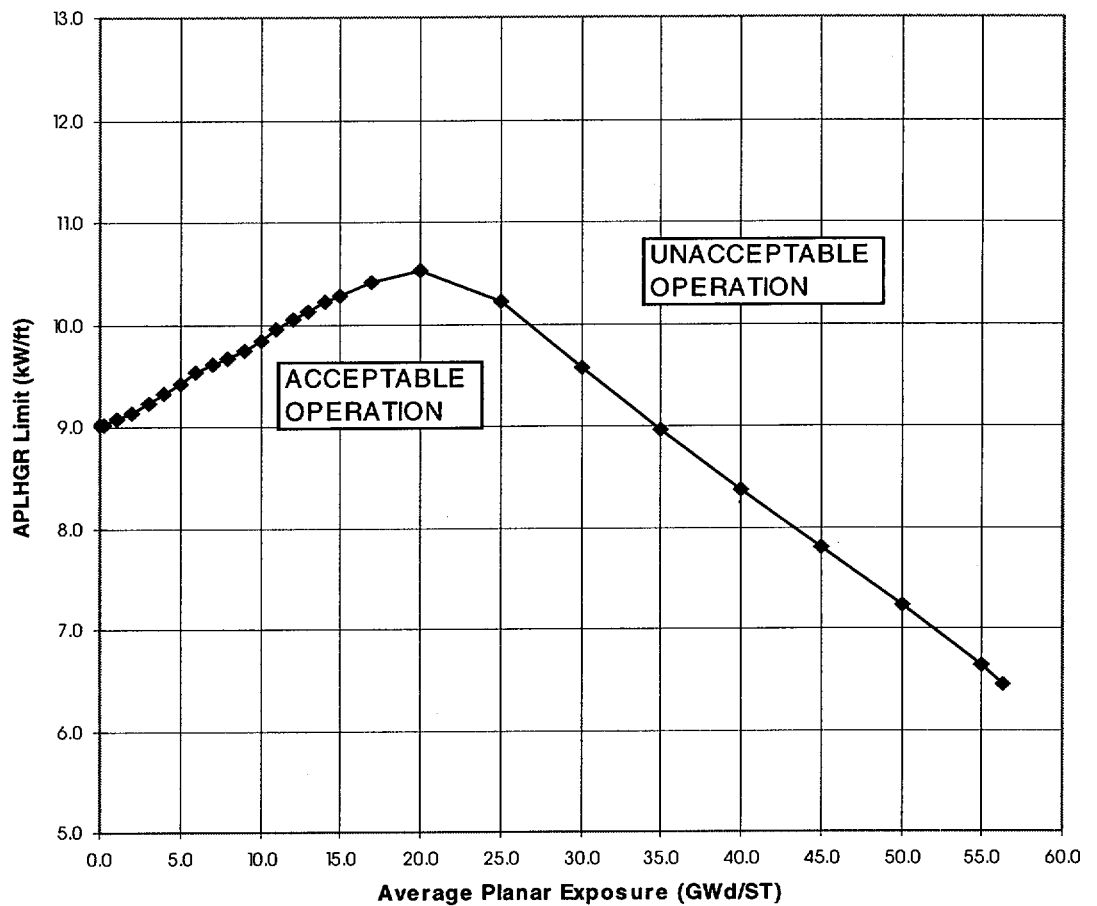


FIGURE 2-6

APLHGR Limit versus Average Planar Exposure
(Bundle Type: GE14-P10HNAB348-6G6.0/5G5.0-100T-148-T-LUA)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

Average Planar Exposure	APLHGR Limit
0.00	10.64
0.20	10.71
1.00	10.88
2.00	11.12
3.00	11.38
4.00	11.66
5.00	11.92
6.00	12.14
7.00	12.28
8.00	12.42
9.00	12.57
10.00	12.71
12.50	12.60
15.00	12.25
17.50	11.91
20.00	11.56
25.00	10.88
30.00	10.21
35.00	9.56
40.00	8.92
45.00	8.28
50.00	7.62
55.00	6.94
57.51	6.59

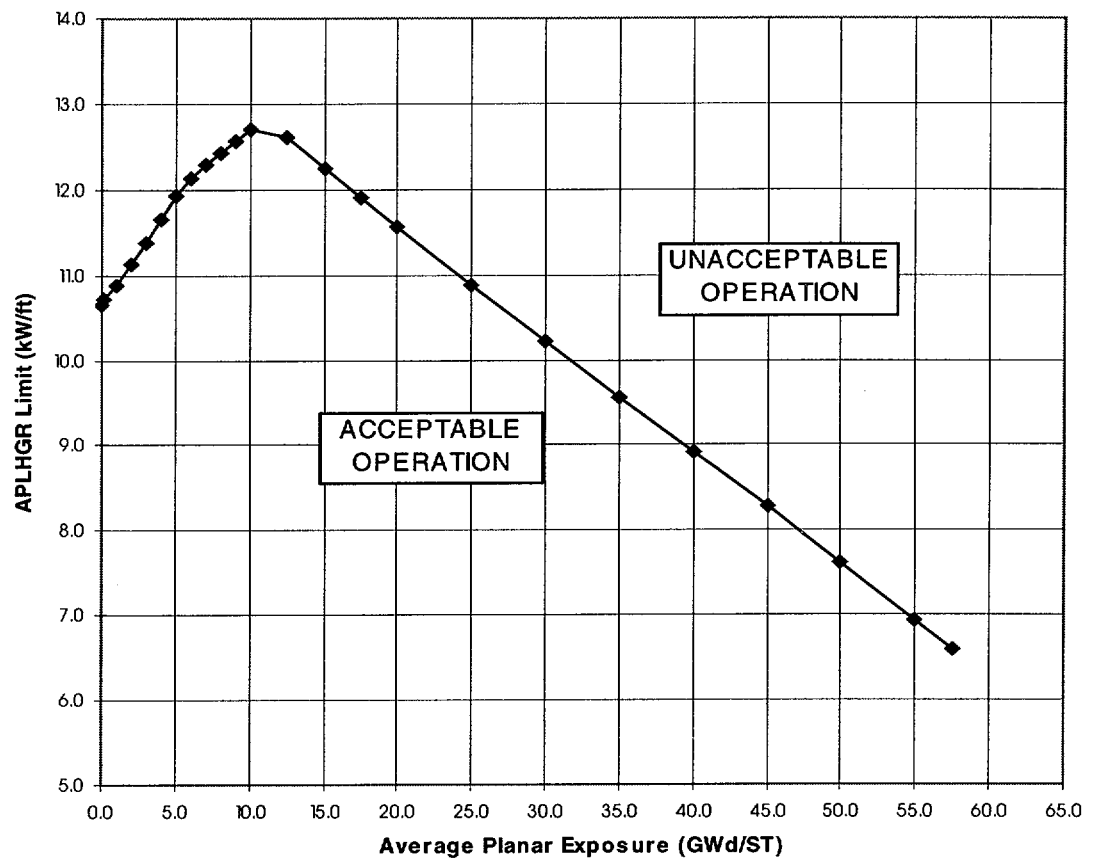


FIGURE 2-7

APLHGR Limit versus Average Planar Exposure
(Bundle Type: GE13-P9DTB378-6G5.0/6G4.0/1G2.0-100T-146-T-2402)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

Average Planar Exposure	APLHGR Limit
0.00	10.82
0.20	10.89
1.00	11.03
2.00	11.25
3.00	11.48
4.00	11.72
5.00	11.95
6.00	12.14
7.00	12.27
8.00	12.41
9.00	12.56
10.00	12.70
12.50	12.61
15.00	12.25
17.50	11.91
20.00	11.56
25.00	10.88
30.00	10.22
35.00	9.57
40.00	8.92
45.00	8.28
50.00	7.62
55.00	6.94
57.53	6.59

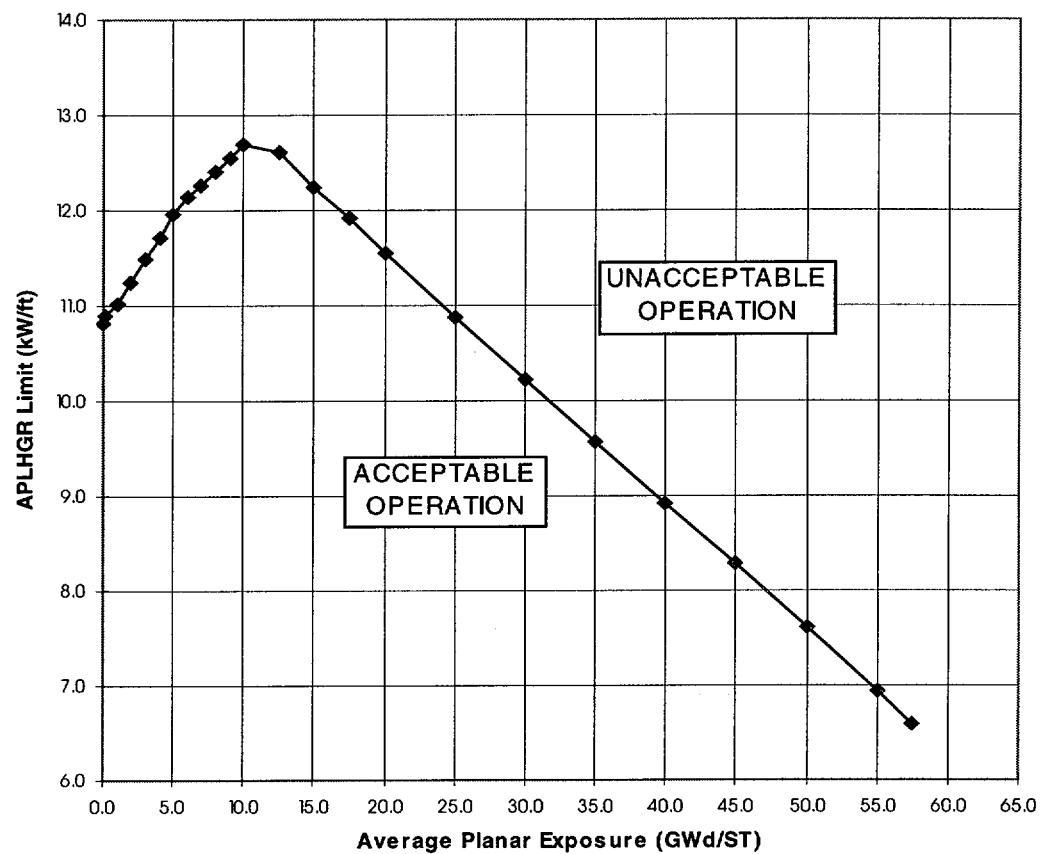


FIGURE 2-8

APLHGR Limit versus Average Planar Exposure
(Bundle Type: GE13-P9DTB378-6G5.0/6G4.0-100T-146-T-2398)

3.0 MCPR OPERATING LIMITS (Technical Specification 3.2.2)

The MCPR operating limit (OLMCPR) for each bundle type is a function of core power, core flow, average scram time, number of operating recirculation loops, operability of the EOC-RPT system, operability of the turbine bypass valve system, and whether both pressure regulators are operable.

With both recirculation pumps in operation (TLO), the OLMCPR for each fuel type is determined as follows:

- a. For $25\% \leq \text{power} < 28\%$, the power-dependent MCPR limit, MCPR_P , as determined by Table 3-1.
- b. For power $\geq 28\%$, the OLMCPR is the greater of either:
 - 1) The flow-dependent MCPR limit, MCPR_F , from Figure 3-2
 - or
 - 2) The product of the power-dependent multiplier, K_P , and the rated-power, rated-flow MCPR limit as determined by Table 3-1.

With only one recirculation pump in operation (SLO), the OLMCPR for each fuel type is the TLO OLMCPR plus 0.02.

These limits apply to all modes of operation with intermittent feedwater temperature reduction, as well as operation with normal feedwater temperatures.

In Figures 3-4A through 3-4E, Option A scram time MCPR limits correspond to $\tau = 1.0$, where τ is determined from scram time measurements performed in accordance with Technical Specifications Surveillance Requirements 3.1.4.1 and 3.1.4.2. Option B values correspond to $\tau = 0.0$. For scram times between Option A and Option B, the MCPR limit for each fuel type corresponds to τ . If τ has not been determined, Option A limits are to be used. Refer to Table 3-1 to determine the applicable set of fuel-type dependent curves.

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

The average scram time of the control rods, τ , is defined as:

$$\tau = 0, \text{ or } \frac{\tau_{ave} - \tau_B}{\tau_A - \tau_B}, \text{ whichever is greater.}$$

where: $\tau_A = 1.08$ sec (Technical Specification 3.1.4, Table 3.1.4-1, scram time limit to notch 36).

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

where: $\mu = 0.822$ sec (mean scram time used in the transient analysis).

$\sigma = 0.018$ sec (standard deviation of μ).

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

where: $n =$ number of surveillance tests performed to date in the cycle.

$N_i =$ number of active control rods measured in the i th surveillance test.

$\tau_i =$ average scram time to notch 36 of all rods in the i th surveillance test.

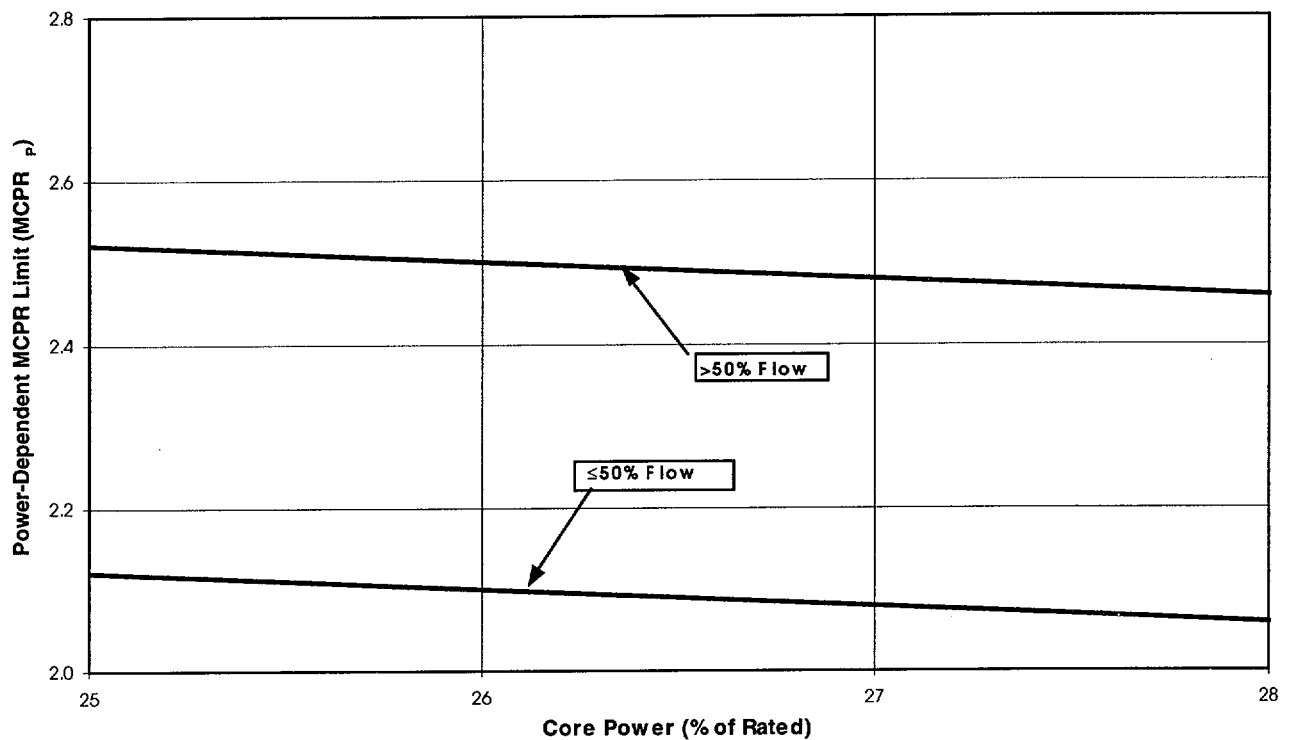
$N_I =$ total number of active rods measured in Technical Specifications Surveillance Requirement 3.1.4.1.

TABLE 3-1
MCPR Operating Flexibility Options

Cycle Average Exposure	EOC-RPT System	Turbine Bypass Valve System	Pressure Regulator System	MCPR _p Curve	K _p Curve	Rated-Power, Rated-Flow MCPR Limits
BOC to EEOC-1500	Operable	Operable	Operable	Figure 3-1A	Figure 3-3A	Figure 3-4A
BOC to EEOC-1500	Operable	Operable	Inoperable	Figure 3-1A	Figure 3-3B	Figure 3-4A
BOC to EEOC-1500	Inoperable	Operable	Inoperable	Figure 3-1A	Figure 3-3B	Figure 3-4C
BOC to EEOC-1500	Inoperable	Operable	Operable	Figure 3-1A	Figure 3-3A	Figure 3-4C
BOC to EEOC	Operable	Inoperable	Operable	Figure 3-1B	Figure 3-3A	Figure 3-4E
BOC to EEOC	Operable	Inoperable	Inoperable	Figure 3-1B	Figure 3-3B	Figure 3-4E
EEOC-1500 to EEOC	Operable	Operable	Operable	Figure 3-1A	Figure 3-3A	Figure 3-4B
EEOC-1500 to EEOC	Operable	Operable	Inoperable	Figure 3-1A	Figure 3-3B	Figure 3-4B
EEOC-1500 to EEOC	Inoperable	Operable	Operable	Figure 3-1A	Figure 3-3A	Figure 3-4D
EEOC-1500 to EEOC	Inoperable	Operable	Inoperable	Figure 3-1A	Figure 3-3B	Figure 3-4D

BOC = Beginning of Cycle
EEOC = Extended End of Cycle

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



$$MCPR_p = A + B (28 - P)$$

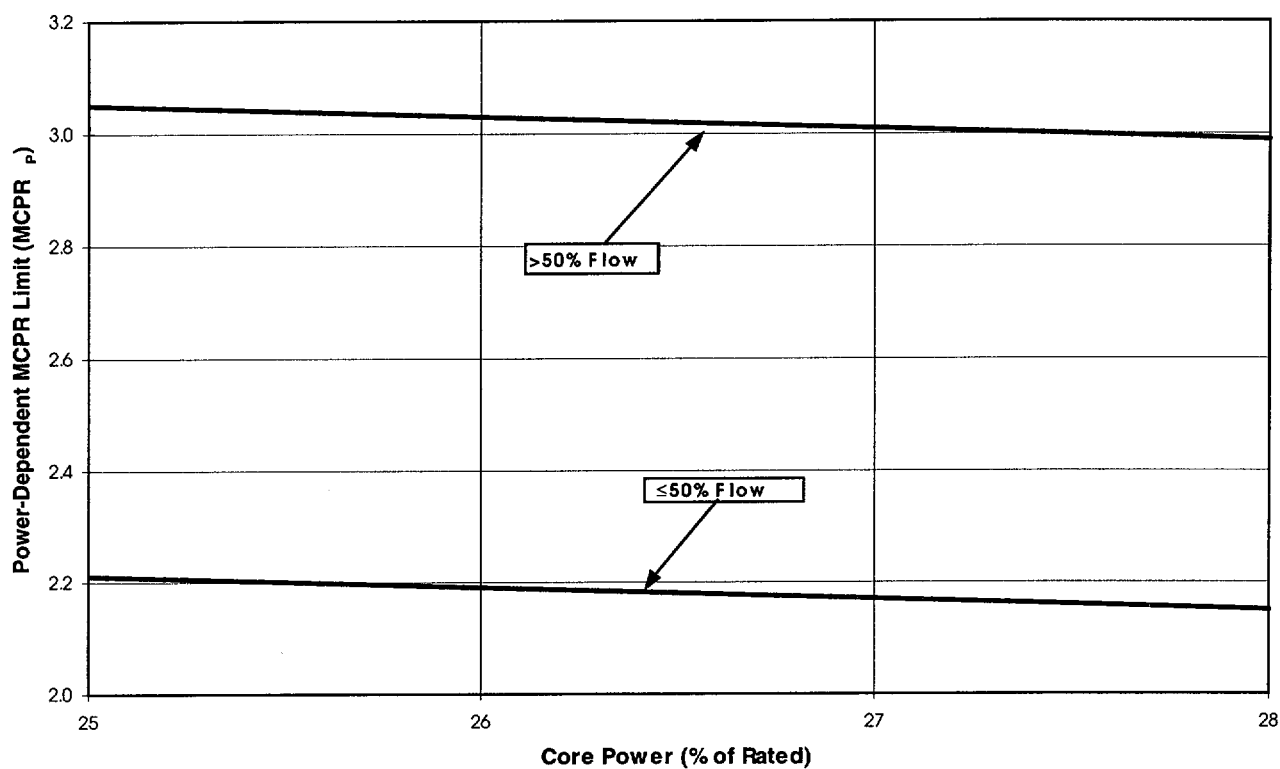
F	A	B
F ≤ 50	2.06	0.0202
F > 50	2.46	0.0202

P = Percent of Rated Core Power
F = Percent of Rated Core Flow

FIGURE 3-1A

**Power-Dependent MCPR Limit (MCPR_p) versus Core Power
from 25% to 28% of Rated Core Power
(Bypass Valve System Operable)**

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



$$MCPR_P = A + B (28 - P)$$

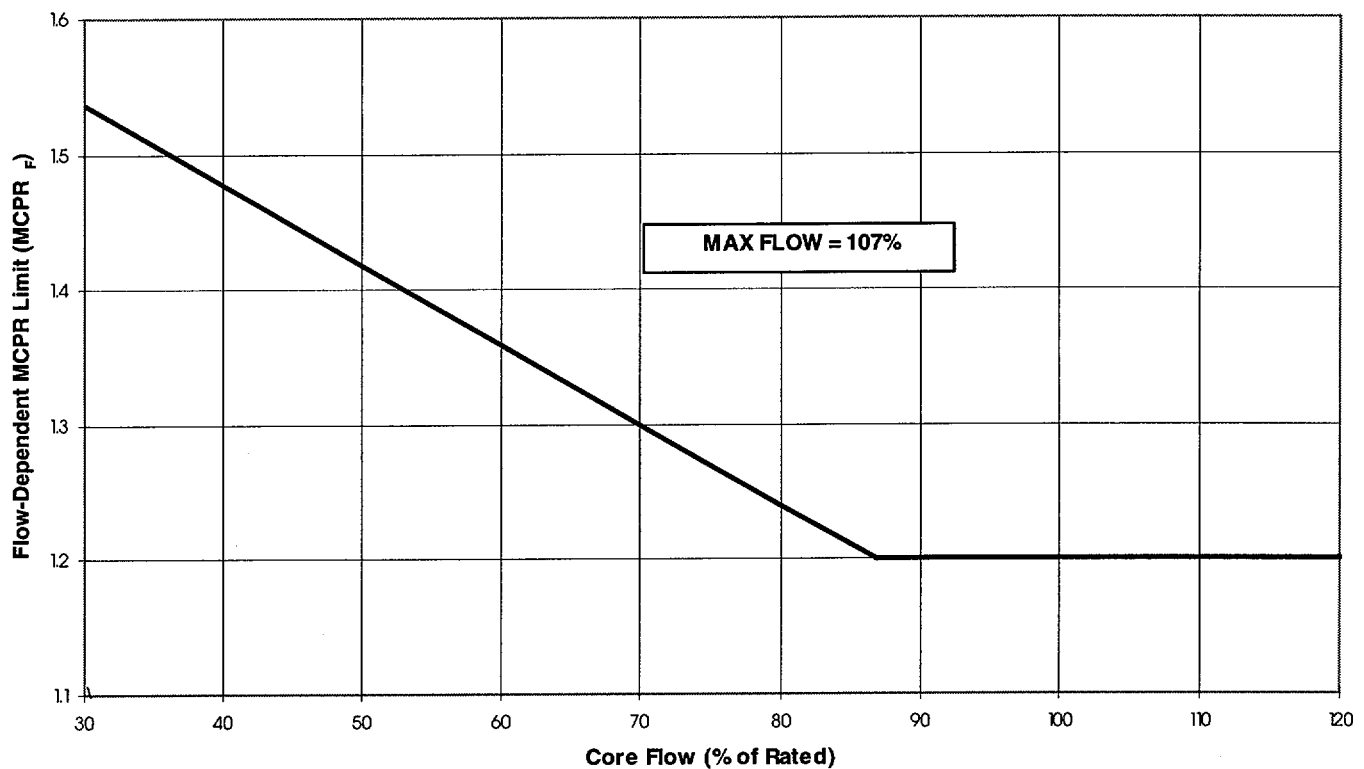
F	A	B
F ≤ 50	2.15	0.0202
F > 50	2.99	0.0202

P = Percent of Rated Core Power
F = Percent of Rated Core Flow

FIGURE 3-1B

**Power-Dependent MCPR Limit (MCPR_P) versus Core Power
from 25% to 28% of Rated Core Power
(Bypass Valve System Inoperable)**

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



$$MCPR_F = \text{Maximum} [1.20, (A \cdot F + B)]$$

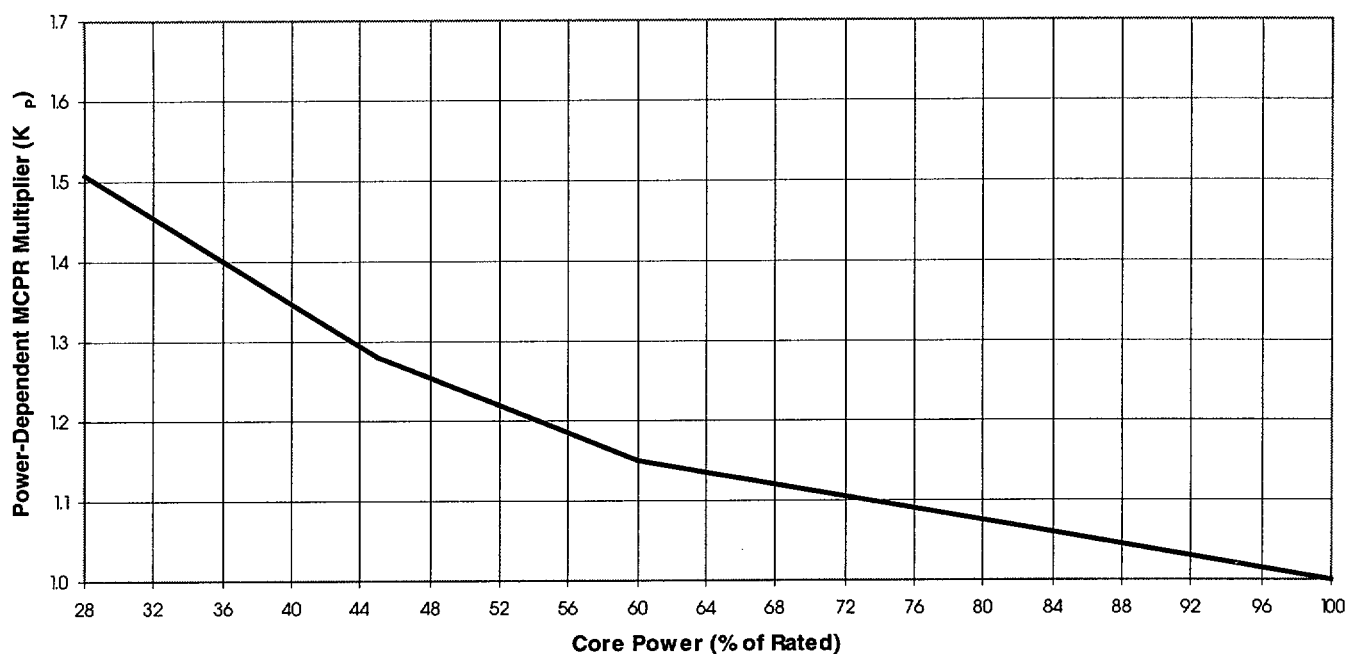
Operating Conditions	Values of Variables	
Maximum Core Flow (% of Rated)	A	B
107.0	-0.00591	1.713

F = Percent of Rated Core Flow

FIGURE 3-2

Flow-Dependent MCPR Limit (MCPR_F) versus Core Flow

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



$$K_p = A + B (P_0 - P)$$

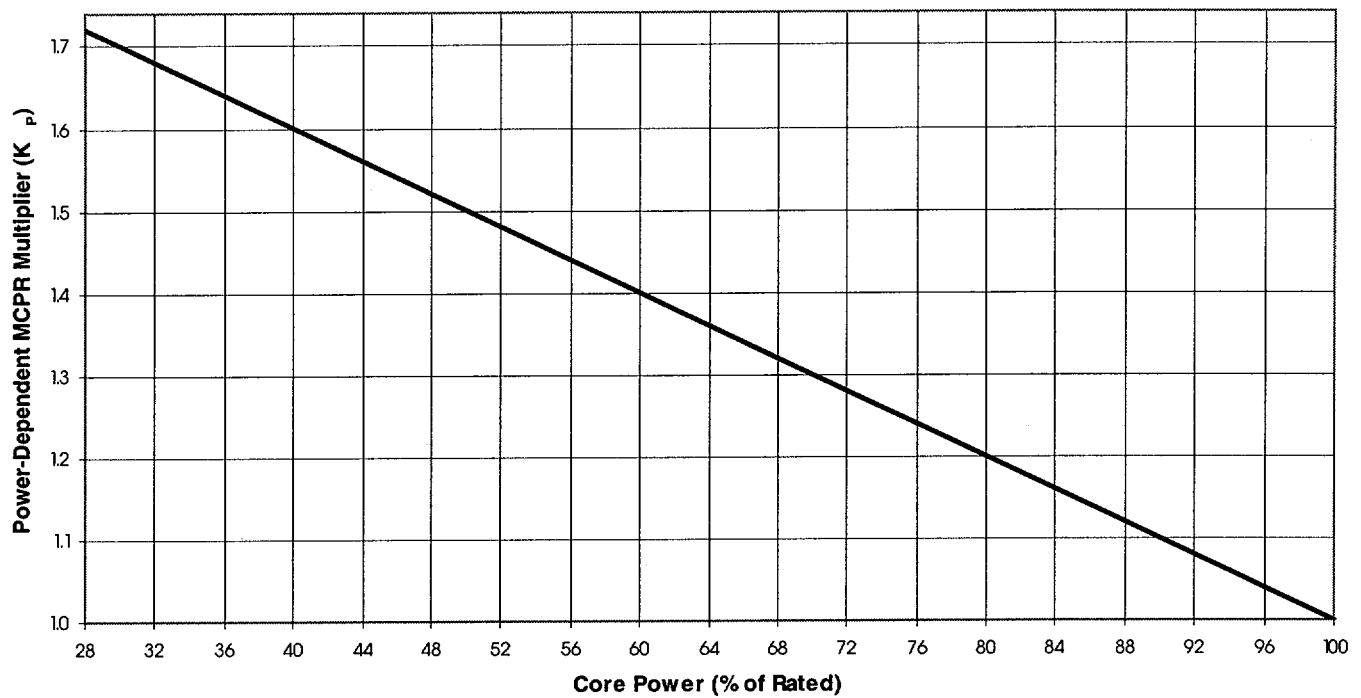
P	A	B	P ₀
28 ≤ P < 45	1.28	0.01340	45
45 ≤ P < 60	1.15	0.00867	60
60 ≤ P	1.00	0.00375	100

P = Percent of Rated Core Power

FIGURE 3-3A

Power-Dependent MCPR Multiplier (K_p) versus Core Power
(Pressure Regulator Operable)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



$$K_P = A + B (P_0 - P)$$

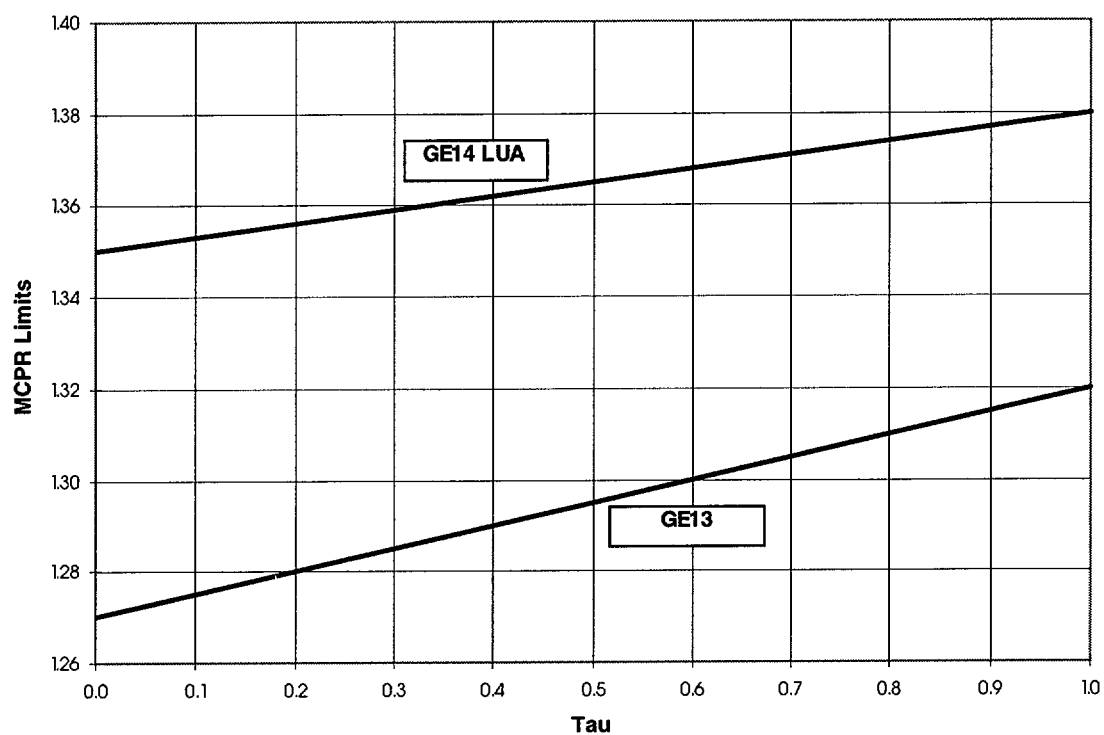
P	A	B	P ₀
28 ≤ P	1.0	0.01000	100

P = Percent of Rated Core Power

FIGURE 3-3B

Power-Dependent MCPR Multiplier (K_p) versus Core Power
(Pressure Regulator Inoperable)

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

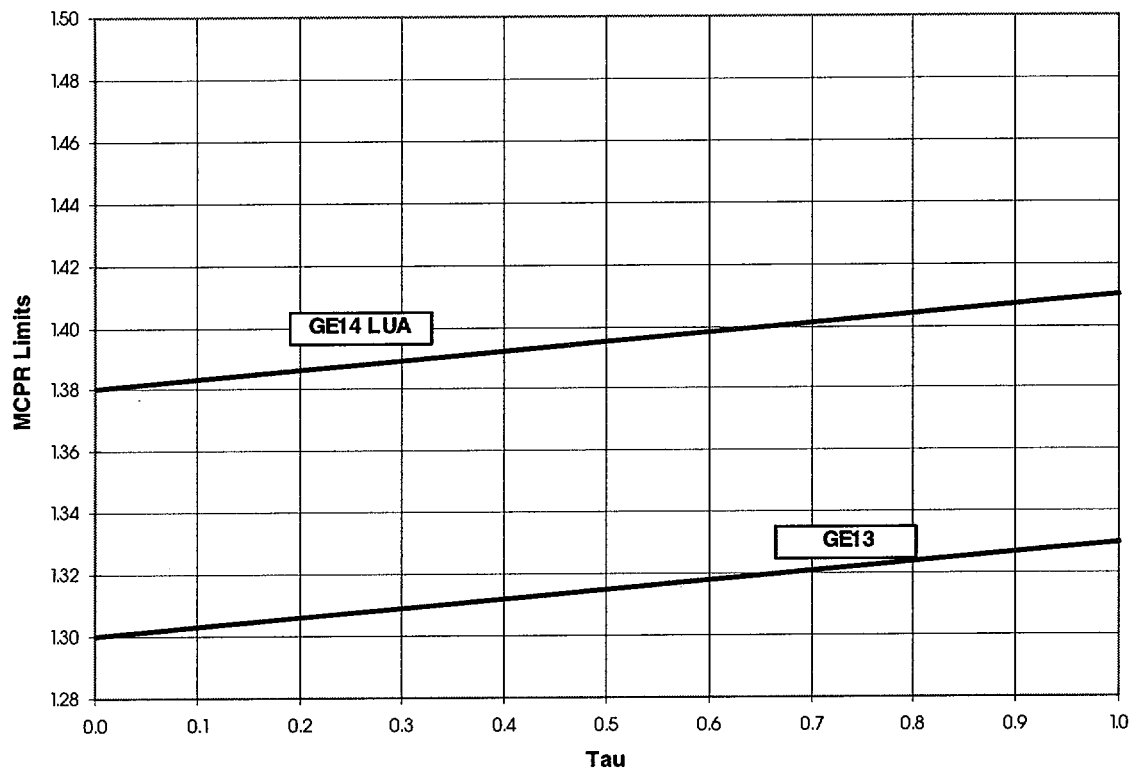


Tau	GE14 LUAs	GE13
1.0	1.38	1.32
0.0	1.35	1.27

FIGURE 3-4A

MCPR Limits versus Average Scram Time
*(BOC to EEOC-1500 with EOC-RPT System Operable
and Bypass Valves Operable)*

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

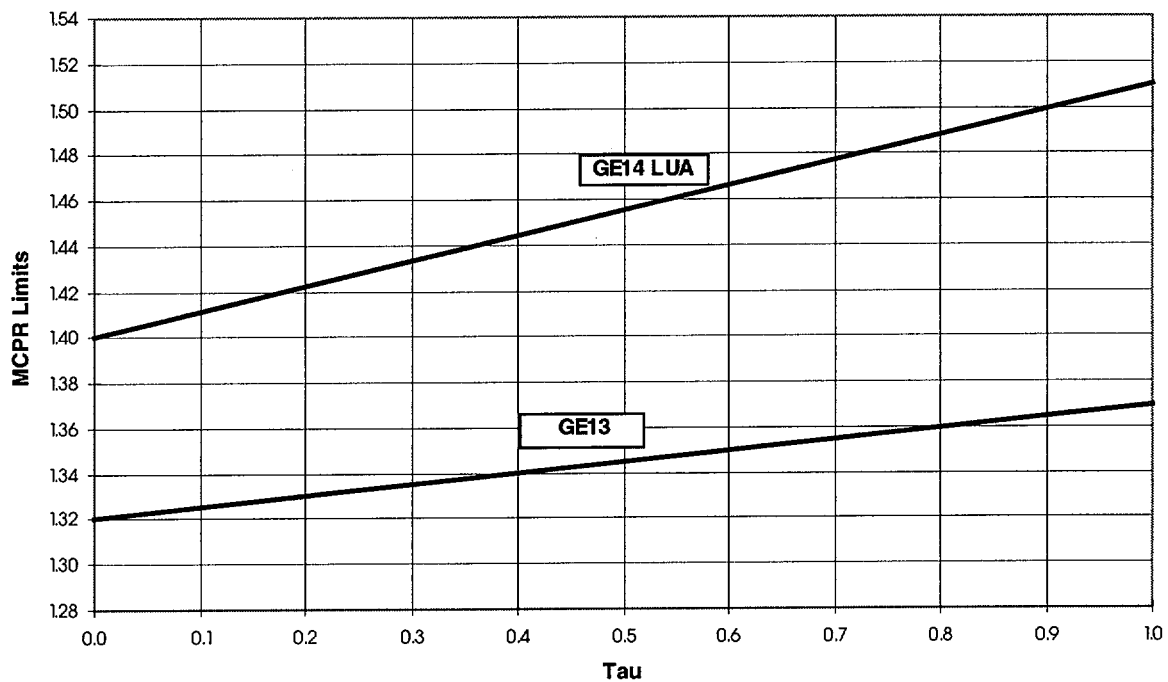


Tau	GE14 LUAs	GE13
1.0	1.41	1.33
0.0	1.38	1.30

FIGURE 3-4B

MCPR Limits versus Average Scram Time
*(EOC-1500 to EEOC with EOC-RPT System Operable
and Bypass Valves Operable)*

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

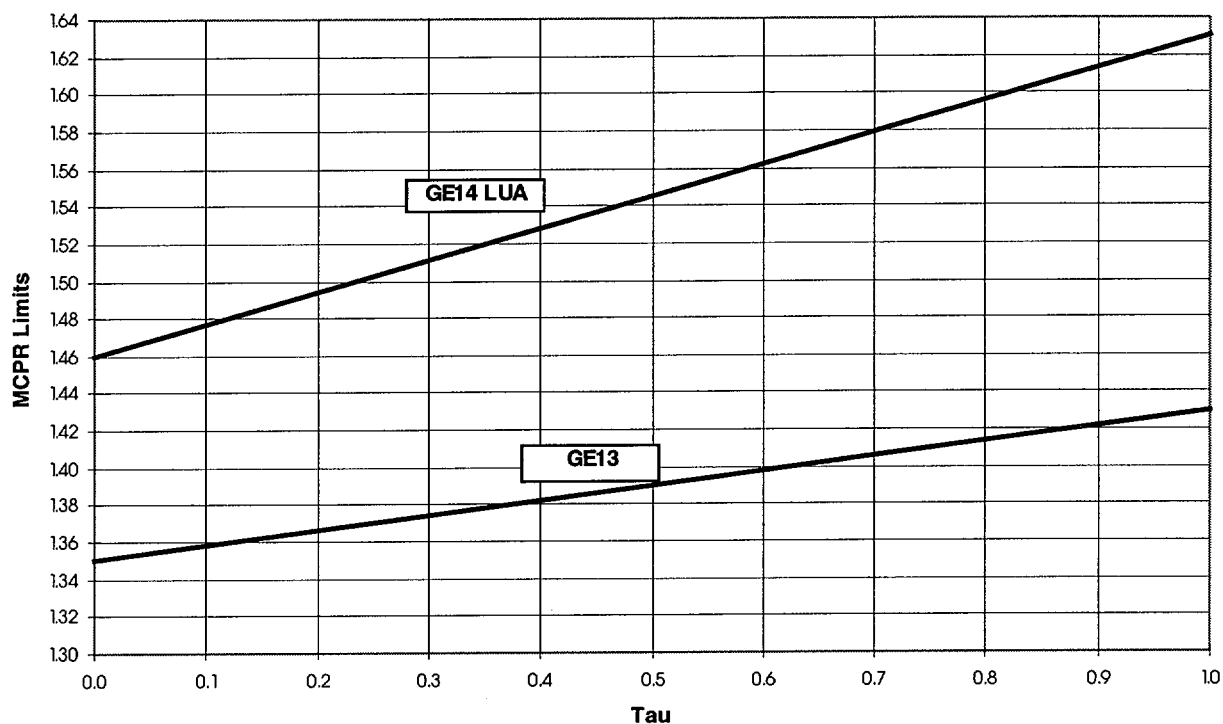


Tau	GE14 LUAs	GE13
1.0	1.51	1.37
0.0	1.40	1.32

FIGURE 3-4C

MCPR Limits versus Average Scram Time
*(BOC to EEOC-1500 with EOC-RPT System Inoperable
and Bypass Valves Operable)*

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report

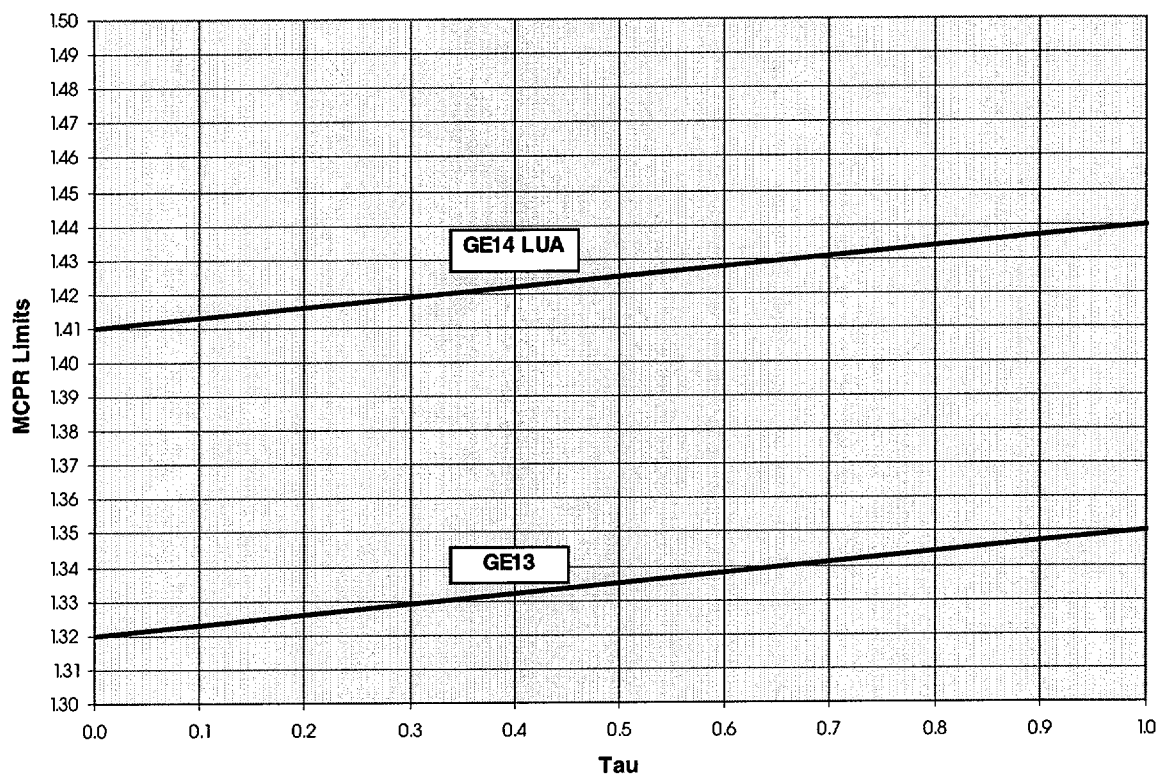


Tau	GE14 LUAs	GE13
1.0	1.63	1.43
0.0	1.46	1.35

FIGURE 3-4D

MCPR Limits versus Average Scram Time
*(EEOC-1500 to EEOC with EOC-RPT System Inoperable
and Bypass Valves Operable)*

Plant Hatch Unit 2 Cycle 17
Core Operating Limits Report



Tau	GE14 LUAs	GE13
1.0	1.44	1.35
0.0	1.41	1.32

FIGURE 3-4E

MCPR Limits versus Average Scram Time
*(BOC to EEOC with EOC-RPT System Operable
and Bypass Valves Inoperable)*

4.0 PBDA AMPLITUDE SETPOINT

The amplitude trip setpoint in the Period Based Detection Algorithm in the OPRM system shall not exceed the values reported in the Table below. This applies to instruments 2C51K615 A, B, C, and D. These are the nominal trip setpoint values, not the allowable values. Projected Figure of Merit (FOM) value(s) throughout the cycle will be supplied by the Hatch Core Analysis Group.

FOM >	FOM ≤	$1.27 \leq \text{OLMCPR} < 1.30$	$1.30 \leq \text{OLMCPR} < 1.32$	$1.32 \leq \text{OLMCPR} < 1.35$	$\text{OLMCPR} \geq 1.35$
0.0	92.1	1.10	1.11	1.11	1.13
92.1	96.9	1.08	1.09	1.10	1.11
96.9	102.4	1.07	1.08	1.08	1.09
102.4	108.0	1.06	1.07	1.08	1.08

5.0 REFERENCES

1. "General Electric Standard Application for Reactor Fuel," NEDE-24011-P-A-14, June 2000, and the US Supplement, NEDE-24011-P-A-14-US, June 2000.
2. Global Nuclear Fuel document J11-03922SRLR, "Supplemental Reload Licensing Report for Edwin I. Hatch Nuclear Power Plant Unit 2, Reload 16 Cycle 17," Revision 0, October 2001.
3. SNC Memo CAH-NF-2339, W. R. Mertz to B. Quintero-Leyva, "Hatch-2 Cycle 17 Power-Dependent APLHGR Multipliers for Operation With High Pressure Feedwater Heaters Out of Service," October 15, 2001.