



PECO NUCLEAR

A Unit of PECO Energy

PECO Energy Company
200 Exelon Way
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September 8, 2000

Docket No. 50-353

License No. NPF-85

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

Subject: Limerick Generating Station, Unit 2
Issuance of the Core Operating Limits Report
for Reload 5, Cycle 6, Revision 1

Dear Sir/Madam:

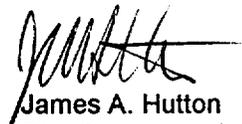
Enclosed is a copy of the Core Operating Limits Report (COLR) Revision 1 for Limerick Generating Station (LGS) Unit 2, Reload 5, Cycle 6. This COLR provides the cycle-specific parameter limits for: Maximum Average Planar Linear Heat Generation Rate (MAPLHGR); Minimum Critical Power Ratio (MCPR); ARTS MCPR thermal limit adjustments and multipliers; ARTS MAPLHGR thermal limit multipliers; Rod Block Monitor (RBM) setpoints; MAPLHGR single loop operation (SLO) reduction factor; Linear Heat Generation Rate (LHGR); Turbine Bypass Valve parameters; and Reactor Coolant System Recirculation Flow Upscale Trips. These values have been determined using NRC-approved methodology and are established such that all applicable limits of the plant safety analysis are met.

Technical Specifications (TS) Amendment Number 104 to License No. NPF-85, issued on May 8, 2000, allowed the removal of the TS requirement to document the MG set scoop tube stop settings in the COLR. Therefore, Revision 1 of the COLR for LGS Unit 2, Reload 5, Cycle 6 removes the paragraph "Recirculation Pump-Motor-Generator (MG) Set Scoop Tube Stops" and Table 6, which lists the values for the MG Set Scoop Tube Stops, from the COLR.

This COLR Revision was implemented on September 5, 2000, and is being provided to the NRC in accordance with LGS, Unit 2 Technical Specifications (TS) Section 6.9.1.12.

If you have any questions, please do not hesitate to contact us.

Very truly yours,

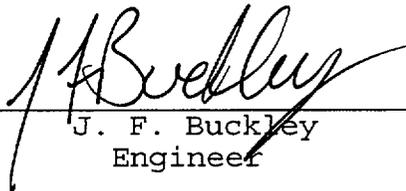

James A. Hutton
Director - Licensing

Enclosure

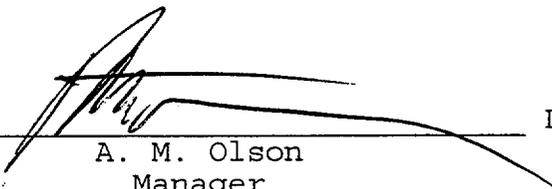
cc: (w/encl) H. J. Miller, Administrator, Region 1, USNRC
" A. L. Burritt, USNRC Senior Resident Inspector, LGS

A001

CORE OPERATING LIMITS REPORT
FOR
LIMERICK GENERATING STATION UNIT 2
RELOAD 5, CYCLE 6

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INTRODUCTION AND SUMMARY

This report provides the following cycle-specific parameter limits for Limerick Generating Station Unit 2 Cycle 6:

- Maximum Average Planar Linear Heat Generation Rate (MAPLHGR)
- Minimum Critical Power Ratio (MCPR)
- ARTS MCPR thermal limit adjustments and multipliers
- ARTS MAPLHGR thermal limit multipliers
- Rod Block Monitor (RBM) setpoints
- MAPLHGR single loop operation (SLO) reduction factor
- Linear Heat Generation Rate (LHGR)
- Turbine Bypass Valve parameters
- Reactor Coolant System Recirculation Flow Upscale Trips

These values have been determined using NRC-approved methodology, Reference 19, and are established such that all applicable limits of the plant safety analysis are met.

This report is submitted in accordance with Technical Specification 6.9.1.9 of Reference 1. Preparation of this report was performed in accordance with PECO Nuclear, Fuel & Services Division Procedure FM-300.

The data presented in this report is valid for all points and domains on the operating map, including:

- Maximum Extended Load Line Limit (MELLL) down to 81% of rated core flow during full power operation
- Increased Core Flow (ICF) up to 110% of rated core flow
- Feedwater Temperature Reduction (FWTR) up to 105°F during cycle extension operation
- Feedwater Heater Out of Service (FWHOOS) up to 60°F feedwater temperature reduction at any time during the cycle prior to cycle extension.

MAPLHGR LIMITS

The limiting MAPLHGR value for the most limiting lattice (excluding natural uranium) of each fuel type as a function of average planar exposure is given in Figures 1 through 8, References 3, 4, 5, and 6. These figures are used when hand calculations are required as specified in Technical Specification 3.2.1.

For single loop operation, a reduction factor is used which is shown in Table 3 (Reference 13).

MCPR LIMITS

The MCPR value for use in Technical Specification 3.2.3 for each fuel type is given in Table 1, Reference 2. This table is valid for all Cycle 6 fuel types and operating domains. Information regarding the treatment of these MCPR limits for SLO is also provided.

Bounding MCPR values are also provided for inoperable Recirculation Pump Trip (RPTOOS) or inoperable Steam Bypass System (TBVOOS). These two options represent the Equipment Out of Service (EOOS) condition.

Note that in Table 1 the term "EOR" refers to the cycle exposure at which operation at "rated conditions" is no longer possible (i.e., the cycle exposure at which cycle extension begins). The cycle exposure which represents "EOR" is given in the latest verified and approved Cycle Management Report. This value can change during the cycle due to changes in operating strategy.

ARTS THERMAL LIMIT ADMINISTRATION

ARTS provides for power- and flow-dependent thermal limit adjustments and multipliers which allow for a more reliable administration of the MCPR and MAPLHGR thermal limits. The flow-dependent adjustment MCPR(F) is sufficiently generic to apply to all fuel types and operating domains, Reference 18. However, there are two sets of flow-dependent MAPFAC(F) multipliers for dual-loop and single-loop operation, References 18 and 11, respectively. In addition, there are also two sets of power-dependent MAPLHGR multipliers for with- and without-EOOS conditions, References 9 and 7, respectively. Finally, there are two sets of power-dependent MCPR adjustments and multipliers for with- and without-EOOS conditions, Reference 11.

These adjustments and multipliers are shown in Figures 9 through 15. Thermal limit monitoring must be performed with the more limiting MCPR and MAPLHGR limits resulting from the power- and flow-biased calculation.

ROD BLOCK MONITOR SETPOINTS

The ARTS RBM provides for power-dependent RBM trips. The trip setpoints/allowable values and applicable RBM signal filter time constant data are shown in Table 2. These values are for use with Technical Specification 3.3.6. The use of the setpoints specified in Table 2 is documented in References 2, 9, 10, and 14.

LINEAR HEAT GENERATION RATES

The maximum LHGR value for each fuel type for use in Technical Specification 3.2.4 is given in Table 4. The LHGR is an exposure dependent value. Due to the proprietary nature of these values only the maximum LHGR for each fuel type is listed in Table 4. The LHGR data is listed in References 3 & 4 (GNF proprietary).

STEAM BYPASS SYSTEM OPERABILITY

The operability requirements for the steam bypass system for use in Technical Specifications 3.7.8 and 4.7.8.C are found in Table 5, Reference 12. If these requirements cannot be met, the MCPR, MCPR(P) and MAPFAC(P) limits for inoperable Steam Bypass System, known as Turbine Bypass Valve Out Of Service (TBVOOS), must be used.

RECIRCULATION PUMP TRIP OPERABILITY

If the recirculation pump trip is inoperable, then the MCPR, MCPR(P) and MAPFAC(P) limits for Recirculation Pump Trip Out Of Service (RPTOOS), must be used.

RECIRCULATION PUMP MOTOR-GENERATOR (MG) SET SCOOP TUBE STOPS

DELETED (see Reference 20)

CONTROL ROD BLOCK INSTRUMENTATION REACTOR COOLANT SYSTEM RECIRCULATION FLOW UPSCALE TRIP

Technical Specification Limiting Condition for Operation number 3.3.6 requires control rod block instrumentation channels shall be OPERABLE with their trip setpoints consistent with the values shown in the Trip Setpoint column of Technical Specification Table 3.3.6-2. The Reactor Coolant System Recirculation Flow Upscale Trip is a cycle-specific value and as such is found in Table 7 of this COLR. Table 7 lists the Nominal Trip Setpoint and Analytical Value. These setpoints are set high enough to allow full utilization of the enhanced ICF domain up to 110% of rated core flow. Reference 8 provides the current basis for the trip setpoint values used.

HIGH EXPOSURE PROGRAM BUNDLES

Limerick Unit 2 Cycle 6 is the fourth cycle of irradiation for four Limerick Unit 1 Reload 4 GE11 fuel bundles. These bundles previously resided in Limerick Unit 1 Cycles 5, 6 and 7. They have spent one year in the Limerick fuel pool and have been inspected prior to being inserted into this cycle. These bundles are part of a joint GE-PECON Lead Test Assembly (LTA) program. This LTA program was implemented in order to obtain fuel bundle data at high exposures (beyond the current GE11 licensed limit of 70 GWD/MT Peak Pellet Exposure, Reference 17). A PECON 10CFR50.59 Review has been performed for the use of these bundles in a fourth cycle. No Unreviewed Safety Questions were identified. New MAPLHGR and DESLIM limits, respectively used for calculating MAPRAT and MFLPD, have been determined by the fuel vendor and are shown in Figure 6 and Table 4. See References 2, 3, 15 and 16 for more information on these bundles.

SAFETY LIMIT MINIMUM CRITICAL POWER RATIO (SLMCPR)

The Safety Limit Minimum Critical Power Ratio (SLMCPR) for Limerick 2 Cycle 6 is 1.12 for Dual Loop Operation and 1.14 for Single Loop Operation. These values are documented in Reference 2.

REFERENCES

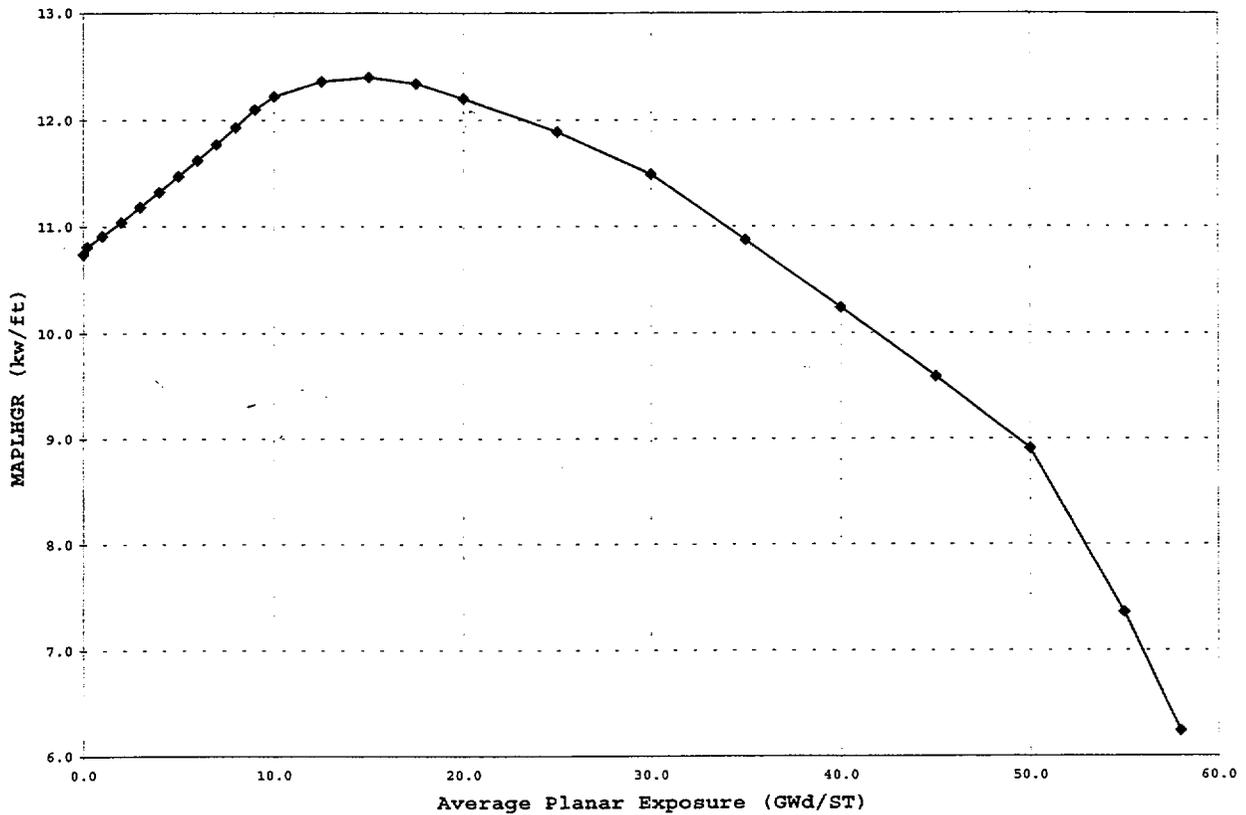
1. "Technical Specifications and Bases for Limerick Generating Station Unit 2", Docket No. 50-353, License No. NPF-85.
2. "Supplemental Reload Licensing Report for Limerick Generating Station Unit 2 Reload 5 Cycle 6", General Electric Company Document No. J11-03480SRLR, Revision 1, September 2000.
3. "Lattice Dependent MAPLHGR Report for Limerick Generating Station Unit 2 Reload 5 Cycle 6", General Electric Company Document No. J11-03480MAPL, Revision 1, September 2000.
4. "Lattice Dependent MAPLHGR Report for Limerick Generating Station Unit 2 Reload 4 Cycle 5", General Electric Company Document No. 24A5383AA, Rev. 0, January 1997.
5. "Lattice Dependent MAPLHGR Report for Limerick Generating Station Unit 2 Reload 3 Cycle 4", General Electric Company Document No. 24A5168AA, Rev. 0, January 1995.
6. "Lattice-Dependent MAPLHGR Report for Limerick Generating Station Unit 2 Reload 2 Cycle 3", General Electric Company Document No. 23A7200AA, Rev. 3, July 1994.
7. Letter, G. V. Kumar to K. M. McGinnis, "Limerick ARTS Application with Equipment Out-of-Service (EOOS)", Dec. 10, 1993.

8. "Safety Review for Limerick Generating Station Units 1 and 2, 110% Increased Core Flow Operation and Final Feedwater Temperature Reduction", GE Nuclear Energy Document No. NEDC-32224P, Revision 1, October 1994.
9. "Maximum Extended Load Line Limit and ARTS Improvement Program Analyses for Limerick Generating Station Units 1 and 2", GE Nuclear Energy Document No. NEDC-32193P, Rev. 2, October 1993.
10. "GE NSSS Setpoints Required to Support Power Rerate", PECON Calculation No. LE-0082, Revision 5, June 19, 1998.
11. Letter, J. A. Baumgartner to J. M. Carmody, "Limerick 2 Cycle 6 ARTS Curves", May 5, 1999.
12. Letter, R. M. Butrovich to J. M. Carmody, "Limerick 2 Cycle 6 Resolved OPL-3", December 11, 1998.
13. "Limerick Generating Station Unit 2 ECCS-LOCA Evaluation for Cycle 6", GE Nuclear Energy Document No. J11-03480-08-01P, February 1999.
14. "Power Rerate Condition Setpoint Calculations for the Philadelphia Electric Company Limerick Generating Station Units 1 & 2", GE Document No. GE-NE-208-20-0993-2, August 1994.
15. Letter, J. A. Baumgartner to K. W. Hunt, "Licensing Evaluation for Core Reconfiguration of Limerick 2 Cycle 6", April 14, 1999.
16. General Electric Report, "10CFR50.59 Safety Evaluation, Continued Irradiation of Limerick 1 GE11 Assemblies in Limerick 2 Cycle 6", March 22, 1999.
17. General Electric Report No. NEDE-31917P, "GE11 Compliance With Amendment 22 of NEDE-24011-P-A (GESTAR II)", April 1991.
18. "ARTS Flow-Dependent Limits with TBVOOS for Peach Bottom Atomic Power Station and Limerick Generating Station", GENE Document NEDC-32847P, June 1998.
19. "General Electric Standard Application for Reactor Fuel", NEDE-24011-P-A-14, June 2000.
20. Amendment to Facility Operating License for Limerick Generating Station, Unit 2, Amendment No. 104, Docket No. 50-353, License No. NPF-85.

Figure 1

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
 VERSUS AVERAGE PLANAR EXPOSURE
 BUNDLE TYPE 2 (P9CTB412-13GZ1, GE13)

This Figure is Referred to by Technical Specification 3.2.1

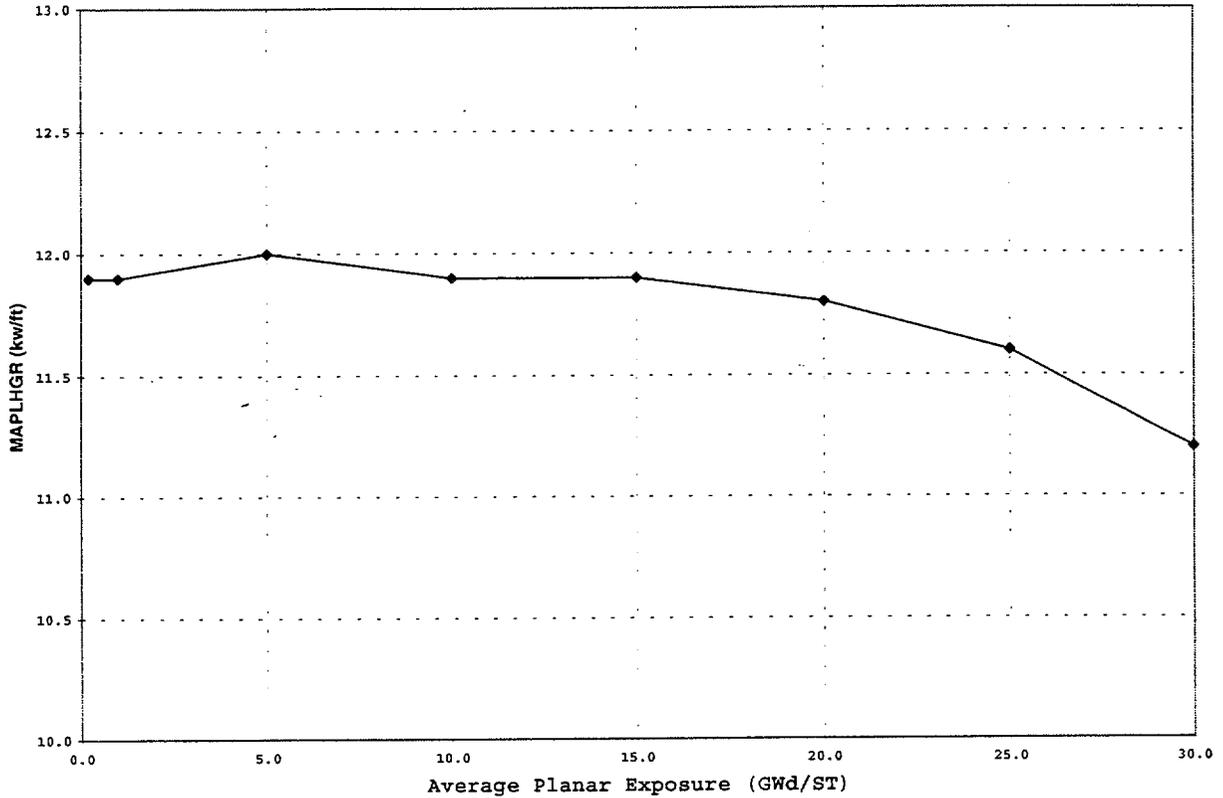


<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>
0.0	10.74	7.0	11.77	25.0	11.89
0.2	10.81	8.0	11.93	30.0	11.49
1.0	10.91	9.0	12.10	35.0	10.87
2.0	11.04	10.0	12.22	40.0	10.24
3.0	11.18	12.5	12.36	45.0	9.59
4.0	11.32	15.0	12.40	50.0	8.91
5.0	11.47	17.5	12.34	55.0	7.36
6.0	11.62	20.0	12.20	57.99	6.24

Figure 2

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
 VERSUS AVERAGE PLANAR EXPOSURE
 BUNDLE TYPES 3, 6 & 19 (P8CIB219-4GZ, GE6)

This Figure is Referred to by Technical Specification 3.2.1

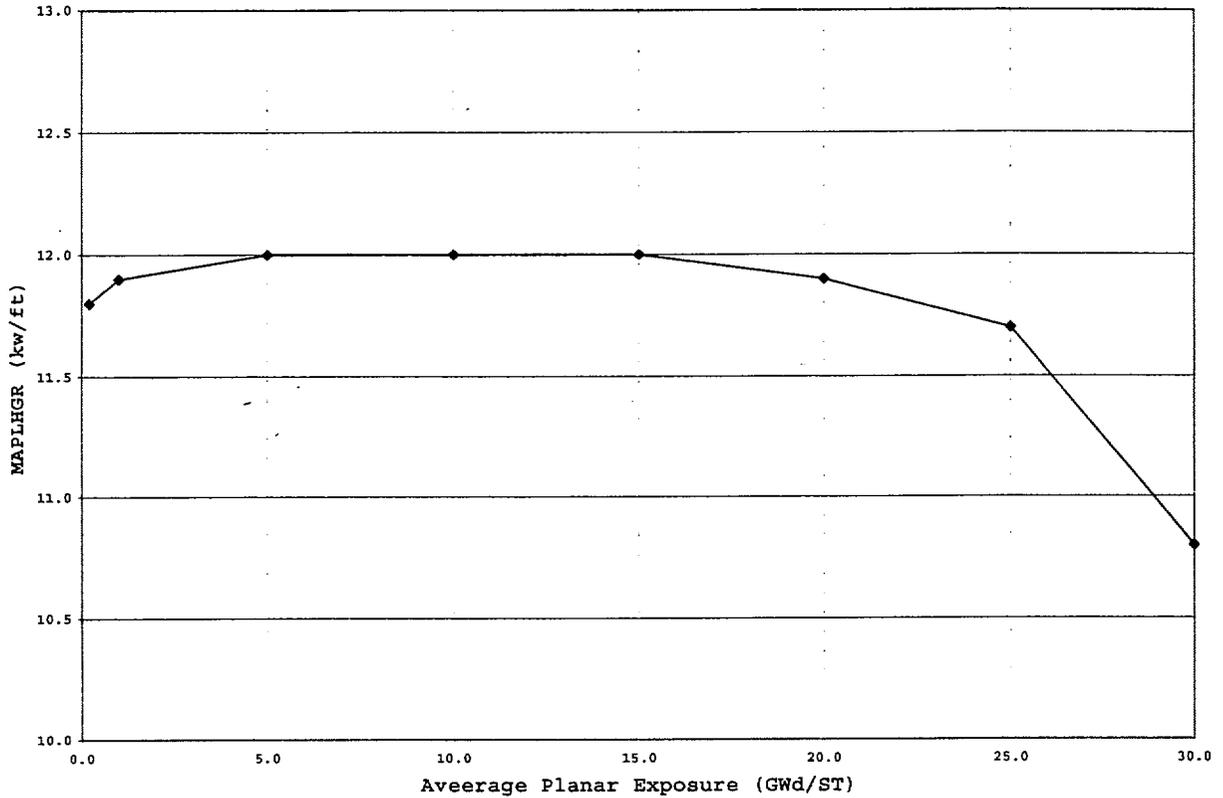


<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>
0.2	11.90	10.0	11.90	25.0	11.60
1.0	11.90	15.0	11.90	30.0	11.20
5.0	12.00	20.0	11.80		

Figure 3

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
 VERSUS AVERAGE PLANAR EXPOSURE
 BUNDLE TYPES 4 & 7 (P8CIB176-4GZ, GE6)

This Figure is Referred to by Technical Specification 3.2.1

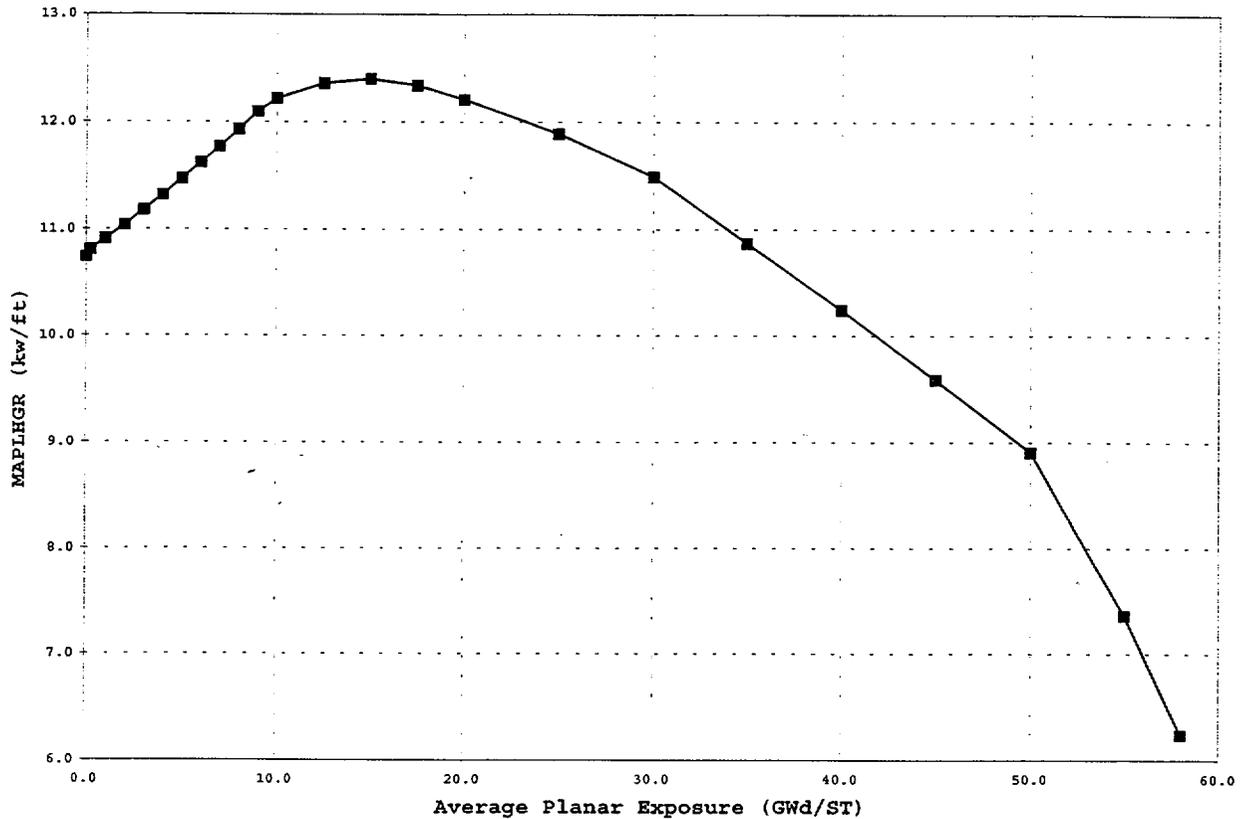


<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>
0.2	11.80	10.0	12.00	25.0	11.70
1.0	11.90	15.0	12.00	30.0	10.80
5.0	12.00	20.0	11.90		

Figure 4

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
 VERSUS AVERAGE PLANAR EXPOSURE
 BUNDLE TYPE 5 (P9CTB412-13GZ2, GE13)

This Figure is Referred to by Technical Specification 3.2.1

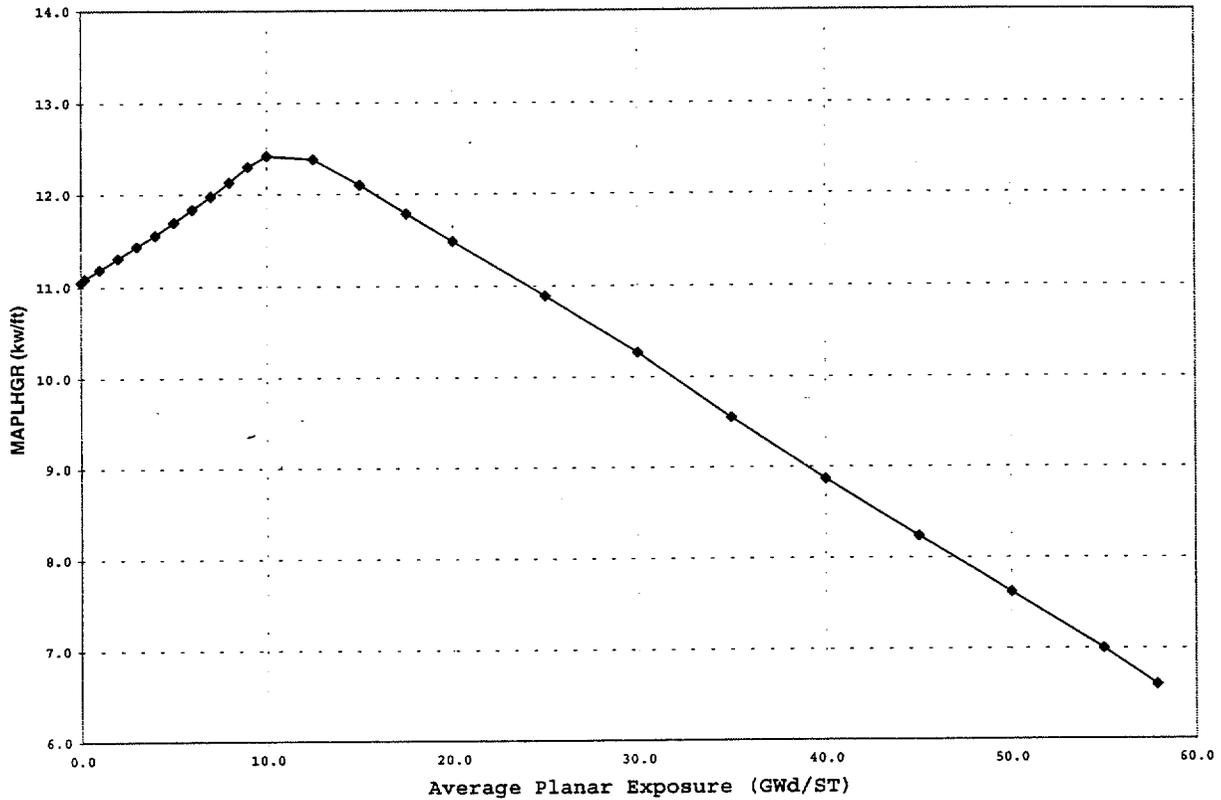


Avg. Plan Exposure (GWd/ST)	MAPLHGR (kW/ft)	Avg. Plan Exposure (GWd/ST)	MAPLHGR (kW/ft)	Avg. Plan Exposure (GWd/ST)	MAPLHGR (kW/ft)
0.0	10.74	7.0	11.77	25.0	11.89
0.2	10.81	8.0	11.93	30.0	11.49
1.0	10.91	9.0	12.10	35.0	10.87
2.0	11.04	10.0	12.22	40.0	10.24
3.0	11.18	12.5	12.36	45.0	9.59
4.0	11.32	15.0	12.40	50.0	8.91
5.0	11.47	17.5	12.34	55.0	7.36
6.0	11.62	20.0	12.21	57.99	6.24

Figure 5

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
 VERSUS AVERAGE PLANAR EXPOSURE
 BUNDLE TYPE 11 (P9CUB354-12GZ2, GE11)

This Figure is Referred to by Technical Specification 3.2.1

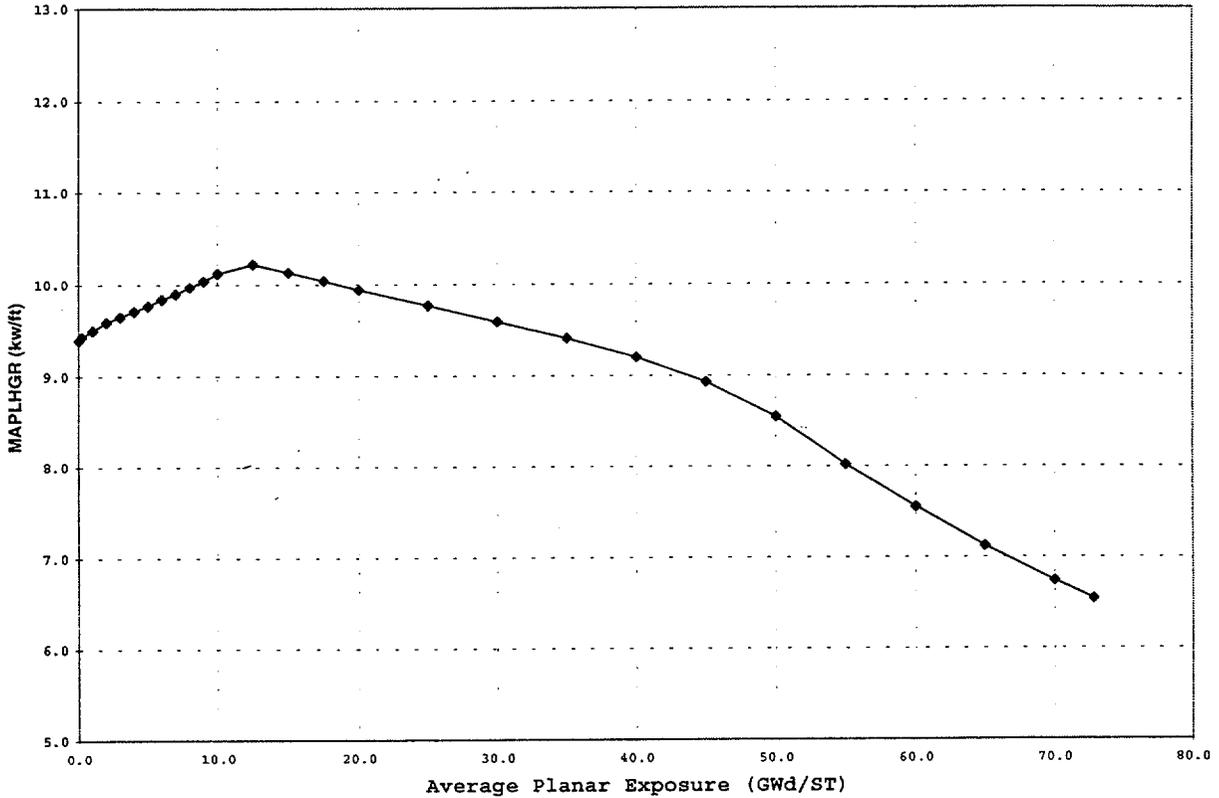


<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>
0.0	11.05	7.0	11.98	25.0	10.89
0.2	11.09	8.0	12.13	30.0	10.27
1.0	11.19	9.0	12.30	35.0	9.55
2.0	11.31	10.0	12.42	40.0	8.87
3.0	11.44	12.5	12.38	45.0	8.24
4.0	11.56	15.0	12.10	50.0	7.62
5.0	11.70	17.5	11.79	55.0	7.00
6.0	11.84	20.0	11.49	57.9	6.60

Figure 6

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
 VERSUS AVERAGE PLANAR EXPOSURE
 BUNDLE TYPE 13 (P9CUB331-9G5.0, GE11-High Exposure Program)

This Figure is Referred to by Technical Specification 3.2.1

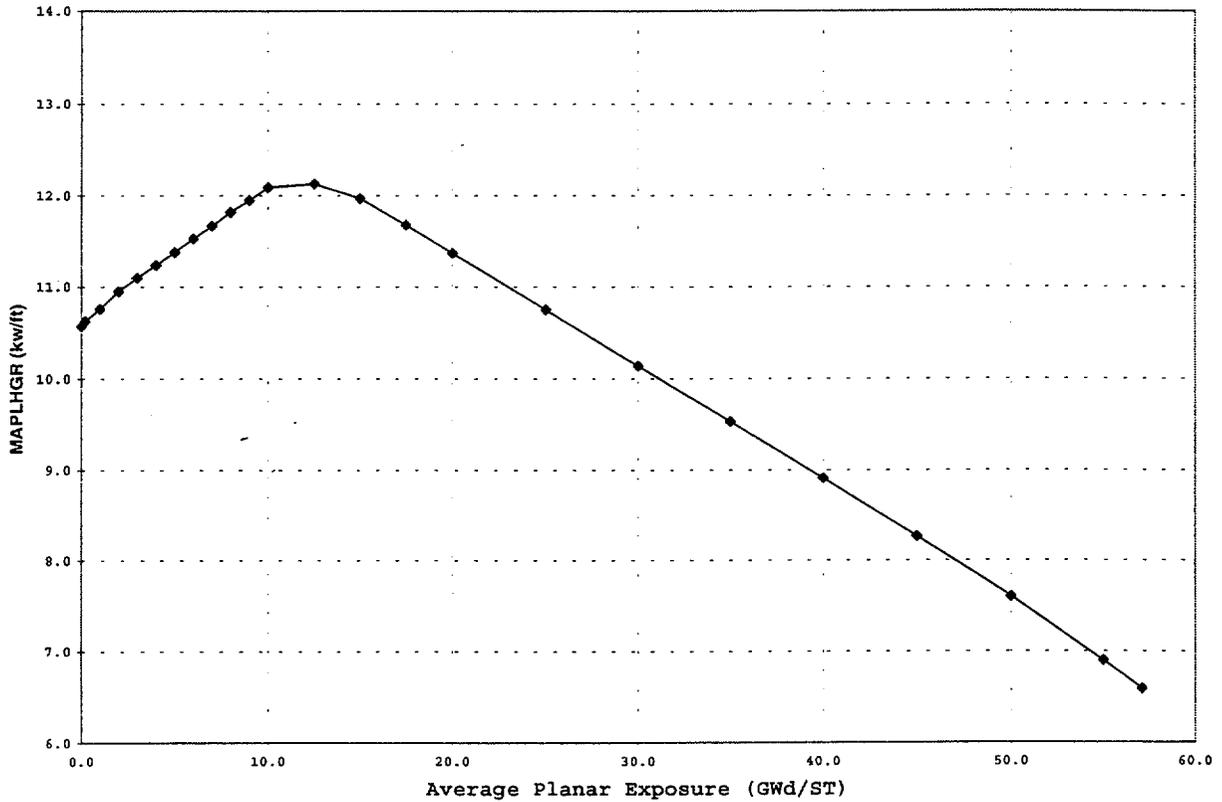


<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>
0.0	9.39	8.0	9.97	35.0	9.41
0.2	9.43	9.0	10.04	40.0	9.20
1.0	9.50	10.0	10.12	45.0	8.93
2.0	9.59	12.5	10.22	50.0	8.55
3.0	9.65	15.0	10.13	55.0	8.02
4.0	9.71	17.5	10.04	60.0	7.55
5.0	9.77	20.0	9.94	65.0	7.12
6.0	9.84	25.0	9.77	70.0	6.74
7.0	9.90	30.0	9.59	72.82	6.54

Figure 7

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
 VERSUS AVERAGE PLANAR EXPOSURE
 BUNDLE TYPE 15 (P9CUB399-14GZ, GE11)

This Figure is Referred to by Technical Specification 3.2.1

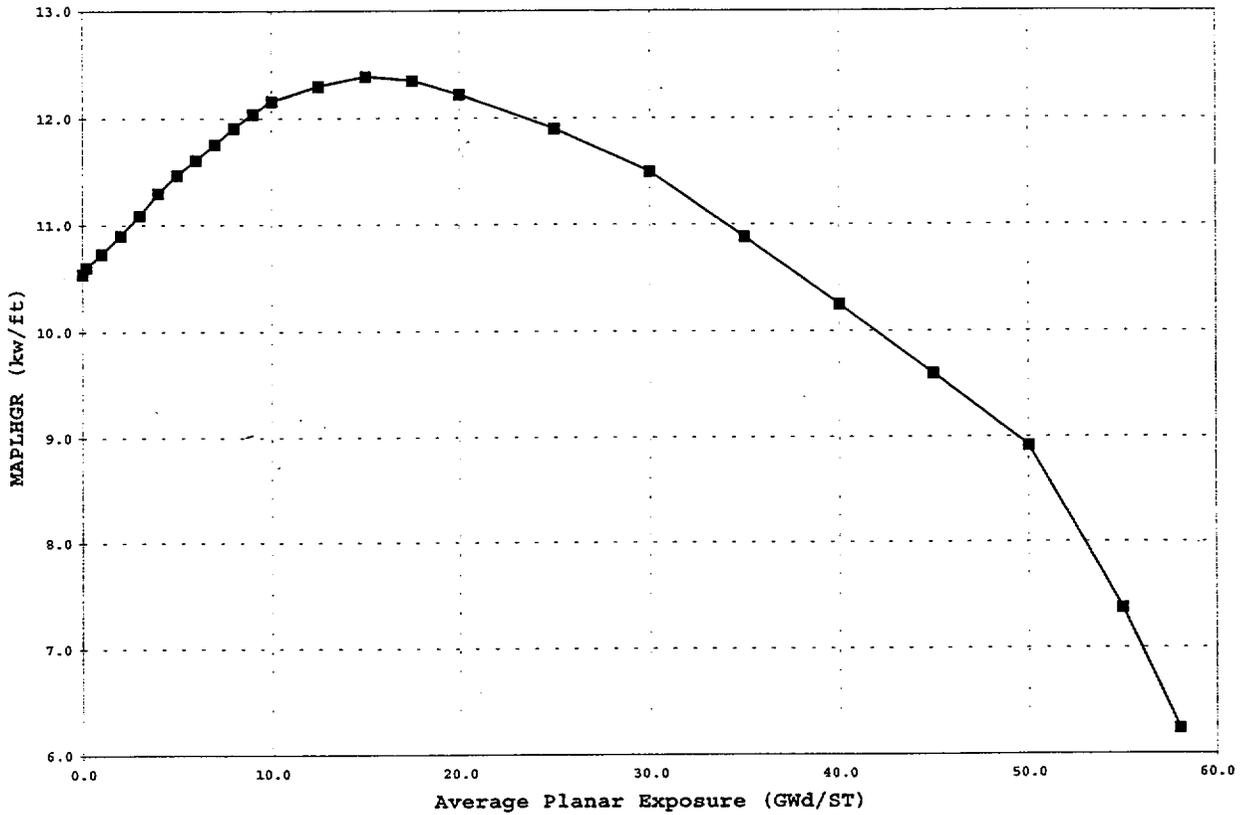


<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>
0.0	10.57	7.0	11.67	25.0	10.75
0.2	10.63	8.0	11.82	30.0	10.14
1.0	10.76	9.0	11.95	35.0	9.53
2.0	10.95	10.0	12.09	40.0	8.91
3.0	11.10	12.5	12.13	45.0	8.27
4.0	11.24	15.0	11.97	50.0	7.60
5.0	11.38	17.5	11.68	55.0	6.90
6.0	11.53	20.0	11.37	57.08	6.59

Figure 8

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
 VERSUS AVERAGE PLANAR EXPOSURE
 BUNDLE TYPE 18 (P9CTB416-15GZ, GE13)

This Figure is Referred to by Technical Specification 3.2.1



<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>	<u>Avg. Plan Exposure (GWd/ST)</u>	<u>MAPLHGR (kW/ft)</u>
0.0	10.54	7.0	11.76	25.0	11.90
0.2	10.60	8.0	11.91	30.0	11.50
1.0	10.73	9.0	12.04	35.0	10.88
2.0	10.90	10.0	12.16	40.0	10.25
3.0	11.09	12.5	12.30	45.0	9.60
4.0	11.30	15.0	12.39	50.0	8.92
5.0	11.47	17.5	12.35	55.0	7.38
6.0	11.61	20.0	12.22	58.05	6.24

FIGURE 9

POWER DEPENDENT MAPLHGR MULTIPLIER MAPFAC(P)

THIS FIGURE IS VALID FOR THE RCF, ICF, MELL, FWHOOS AND
 FWTR OPERATING DOMAINS

This Figure is Referred to by Technical Specification 3.2.1

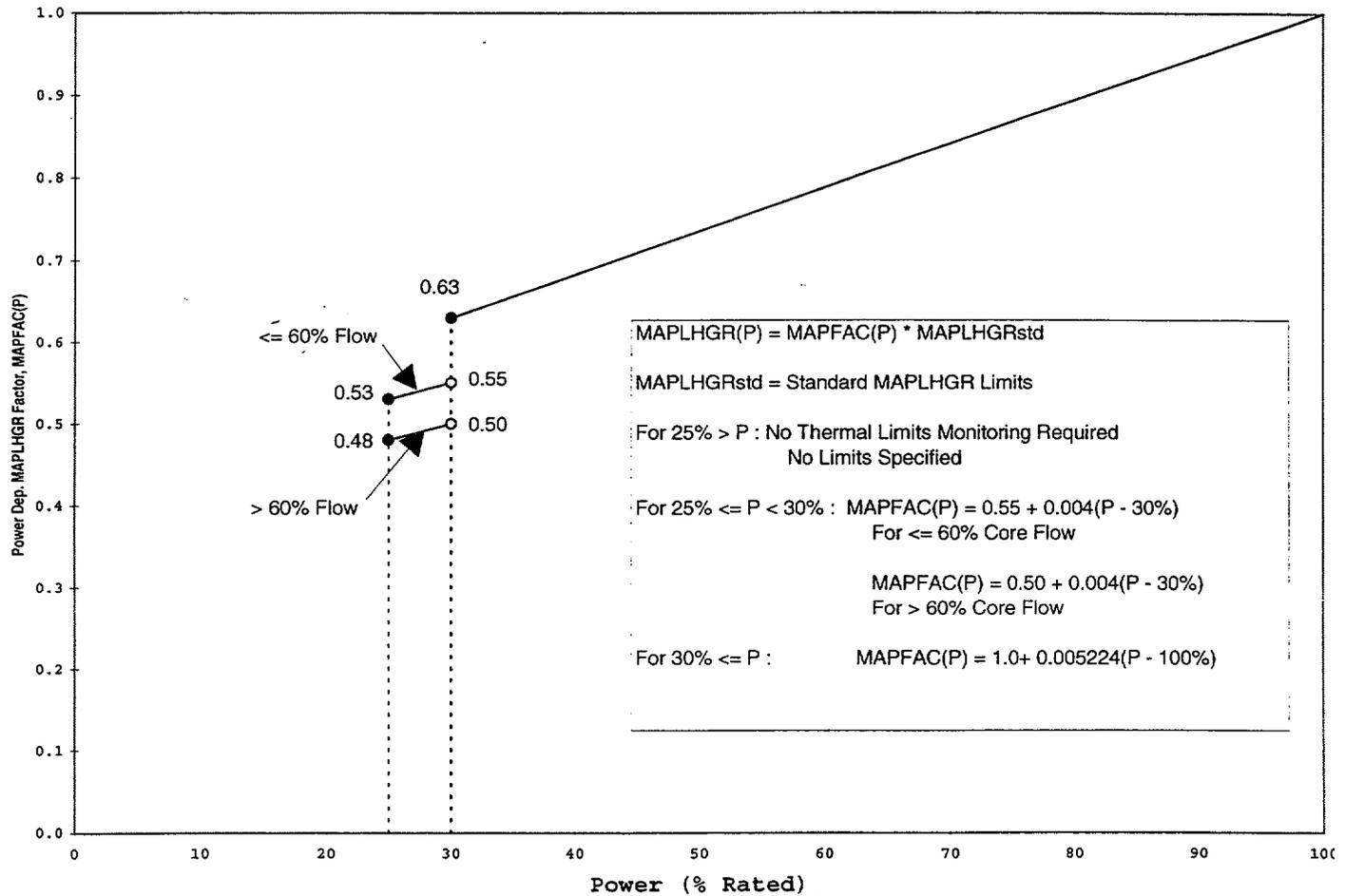


FIGURE 10

POWER DEPENDENT MAPLHGR MULTIPLIER MAPFAC(P)

THIS FIGURE IS VALID FOR THE RPTOOS OR TBVOOS
 OPERATING DOMAINS

This Figure is Referred to by Technical Specification 3.2.1

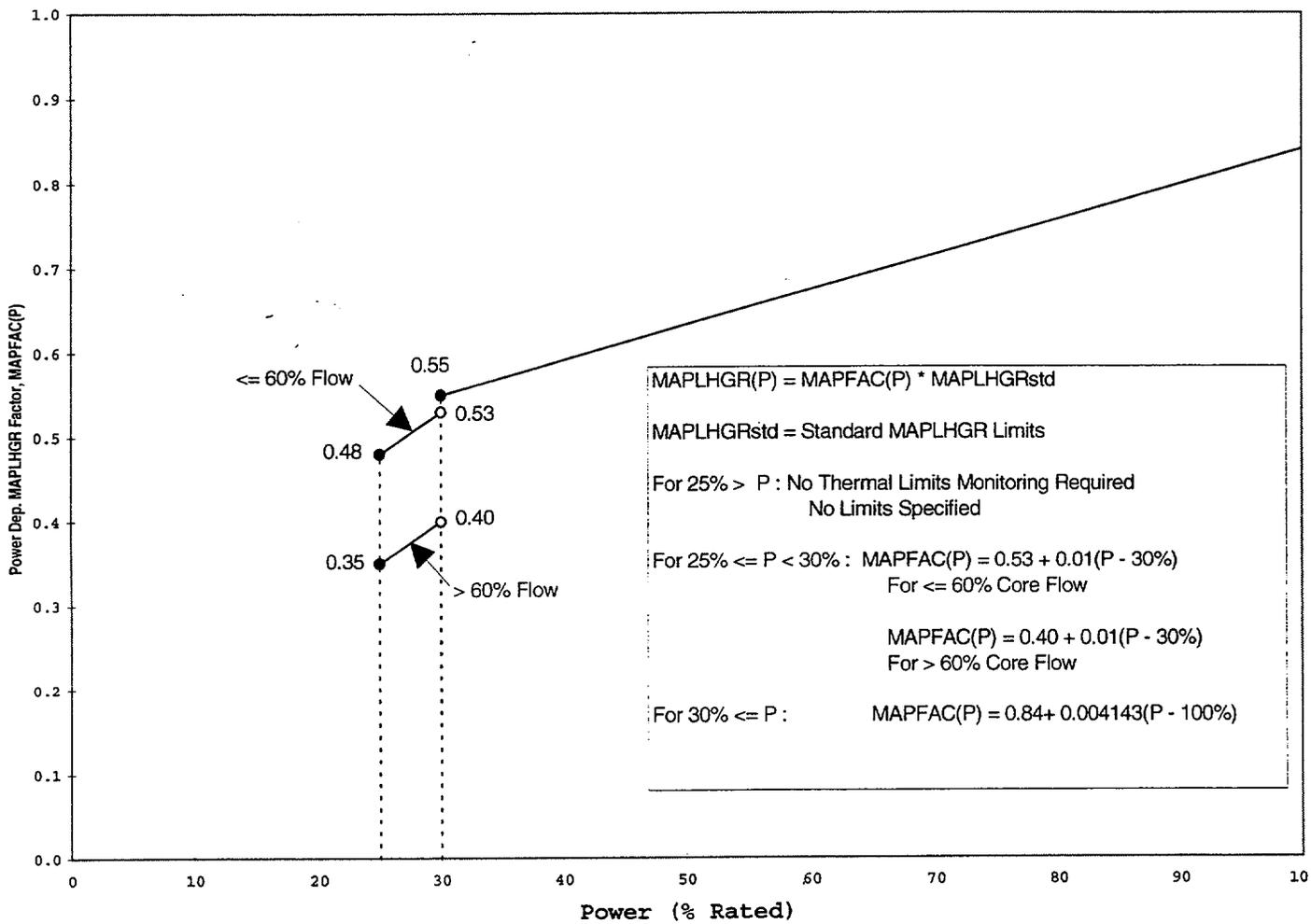


FIGURE 11

FLOW DEPENDENT MAPLHGR MULTIPLIER MAPFAC(F)

THIS FIGURE IS VALID FOR ALL OPERATING DOMAINS
EXCLUDING SINGLE LOOP OPERATION

This Figure is Referred to by Technical Specification 3.2.1

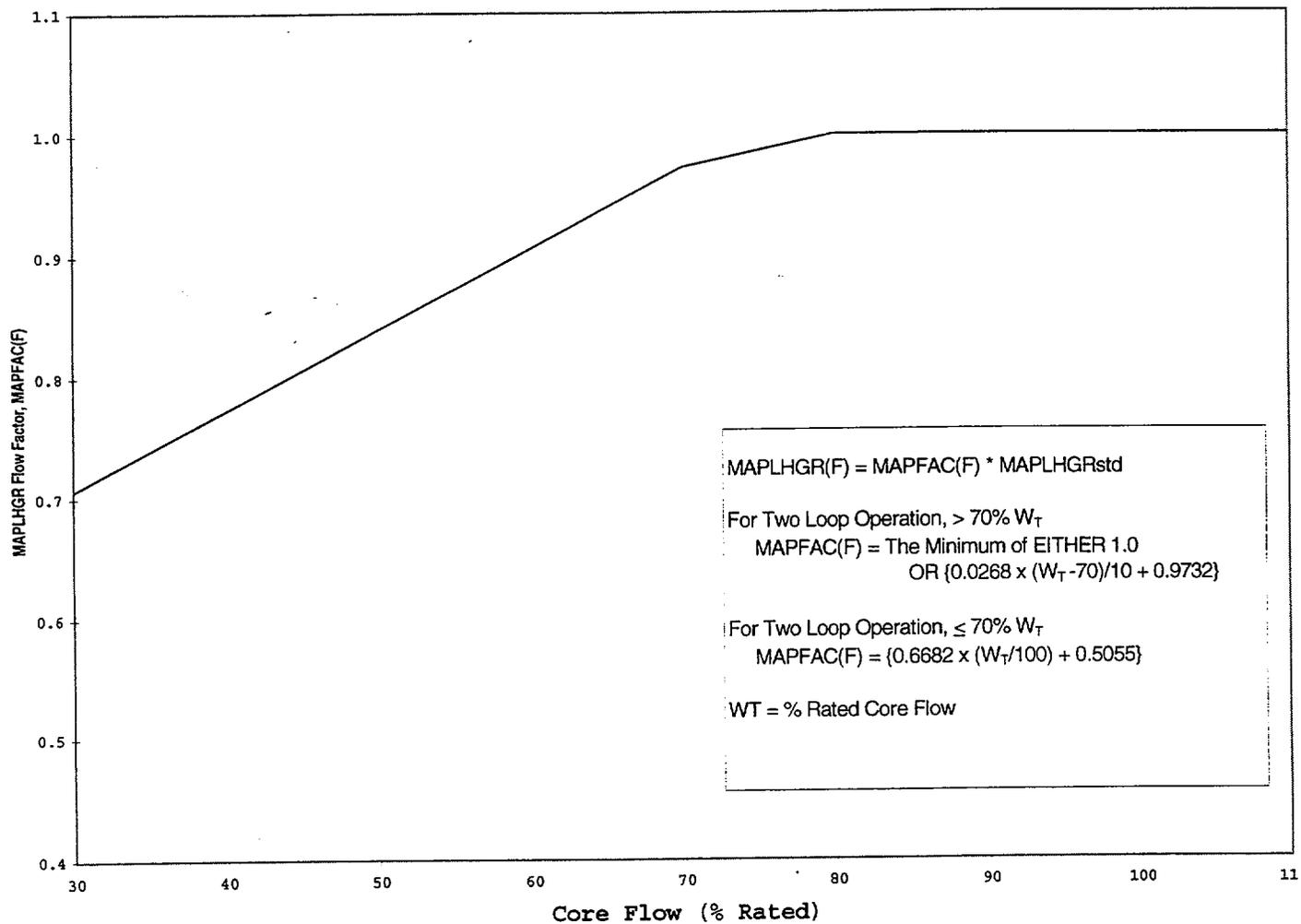


FIGURE 12

FLOW DEPENDENT MAPLHGR MULTIPLIER MAPFAC(F)

THIS FIGURE IS VALID FOR SINGLE LOOP OPERATION

This Figure is Referred to by Technical Specification 3.2.1

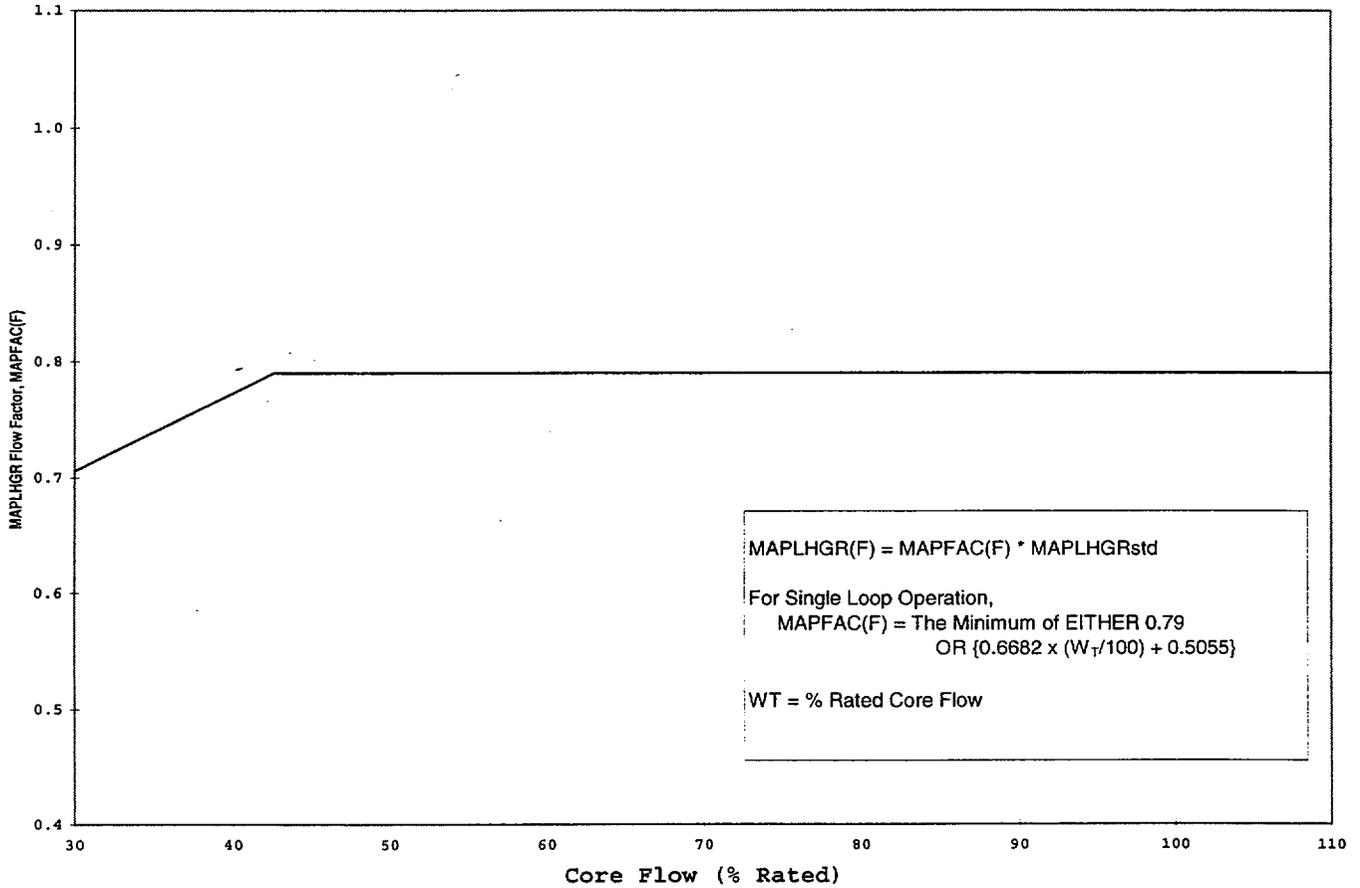


TABLE 1

OPERATING LIMIT MINIMUM CRITICAL POWER RATIO (OLMCPR)
 Use in conjunction with Figures 13, 14 and 15.

- This table is valid for two-loop operation.
- Add 0.02 to the OLMCPR when in Single Loop Operation.
- This table is valid for all Cycle 6 fuel types.
- This table is referred to by Technical Specification 3.2.3.

	TBV In Service and RPT In Service		TBV Out of Service		RPT Out of Service	
	Opt. B (Tau=0)	Opt. A (Tau=1)	Opt. B (Tau=0)	Opt. A (Tau=1)	Opt. B (Tau=0)	Opt. A (Tau=1)
BOC TO EOR - 2000 MWd/ST	1.31		1.32	1.35	1.35	1.40
EOR - 2000 MWd/ST to EOC	1.32	1.35	1.38	1.41	1.40	1.48

Notes:

1. When Tau does not equal 0 or 1, determine OLMCPR via linear interpolation.

FIGURE 13

POWER DEPENDENT MCPR LIMIT ADJUSTMENTS AND MULTIPLIERS

THIS FIGURE IS VALID FOR THE RCF, ICF, MELL, FWHOOS
 AND FWTR OPERATING DOMAINS

This Figure is Referred to by Technical Specification 3.2.3

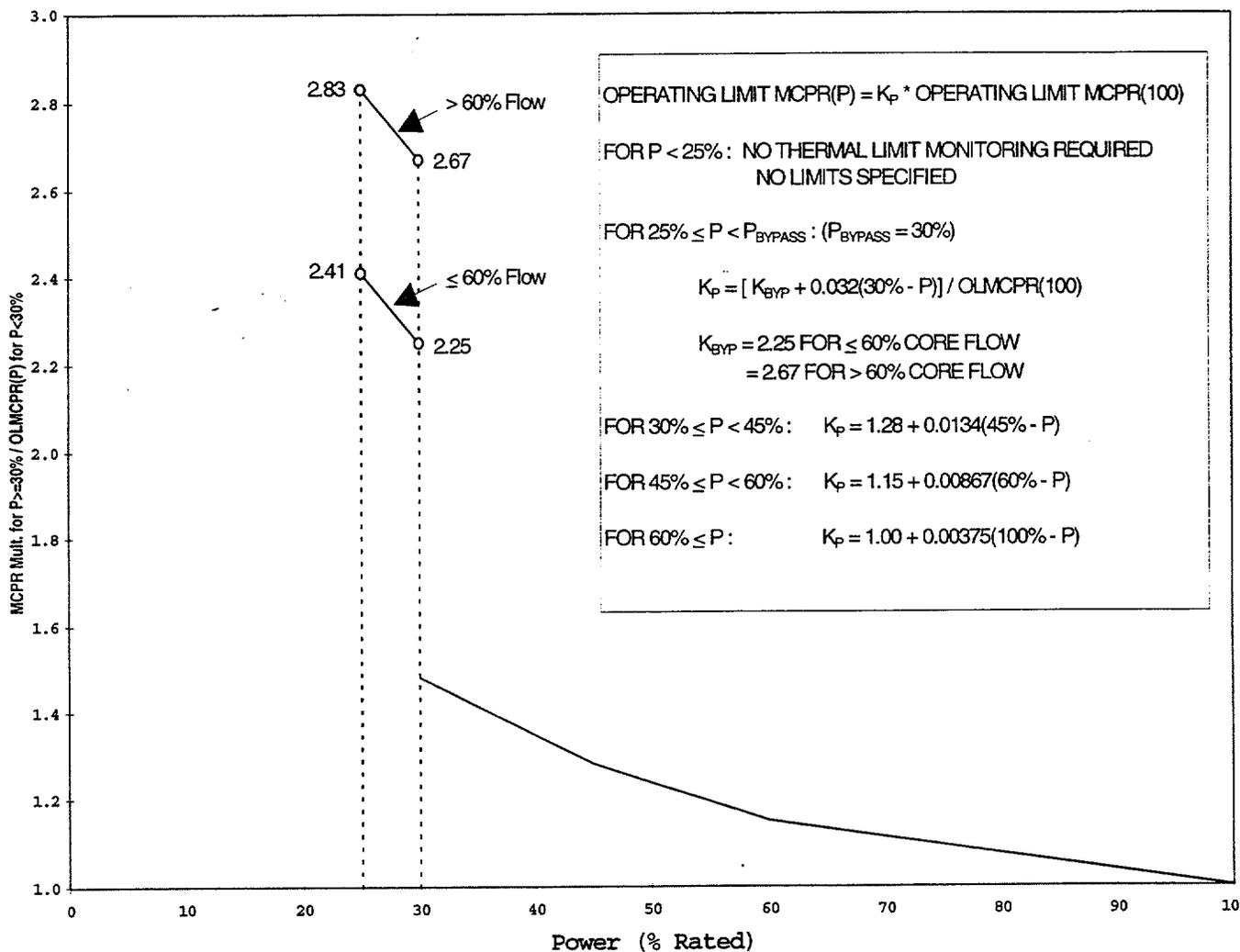


FIGURE 14

POWER DEPENDENT MCPR LIMIT ADJUSTMENTS AND MULTIPLIERS

THIS FIGURE IS VALID FOR THE RPTOOS OR TBVOOS
 OPERATING DOMAINS

This Figure is Referred to by Technical Specification 3.2.3

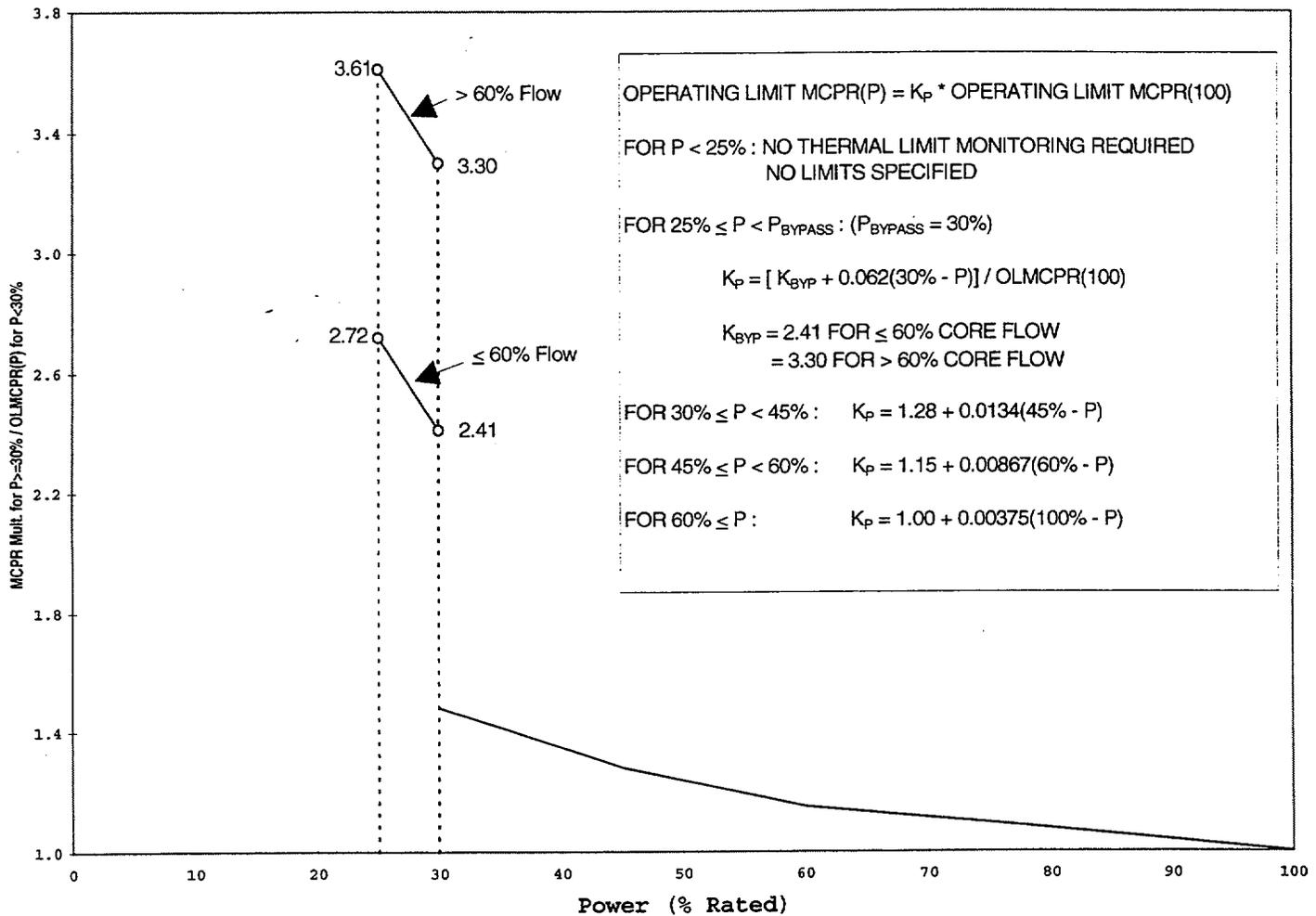


FIGURE 15

FLOW DEPENDENT MCPR LIMITS MCPR(F)

THIS FIGURE IS VALID FOR ALL OPERATING DOMAINS

This Figure is Referred to by Technical Specification 3.2.3

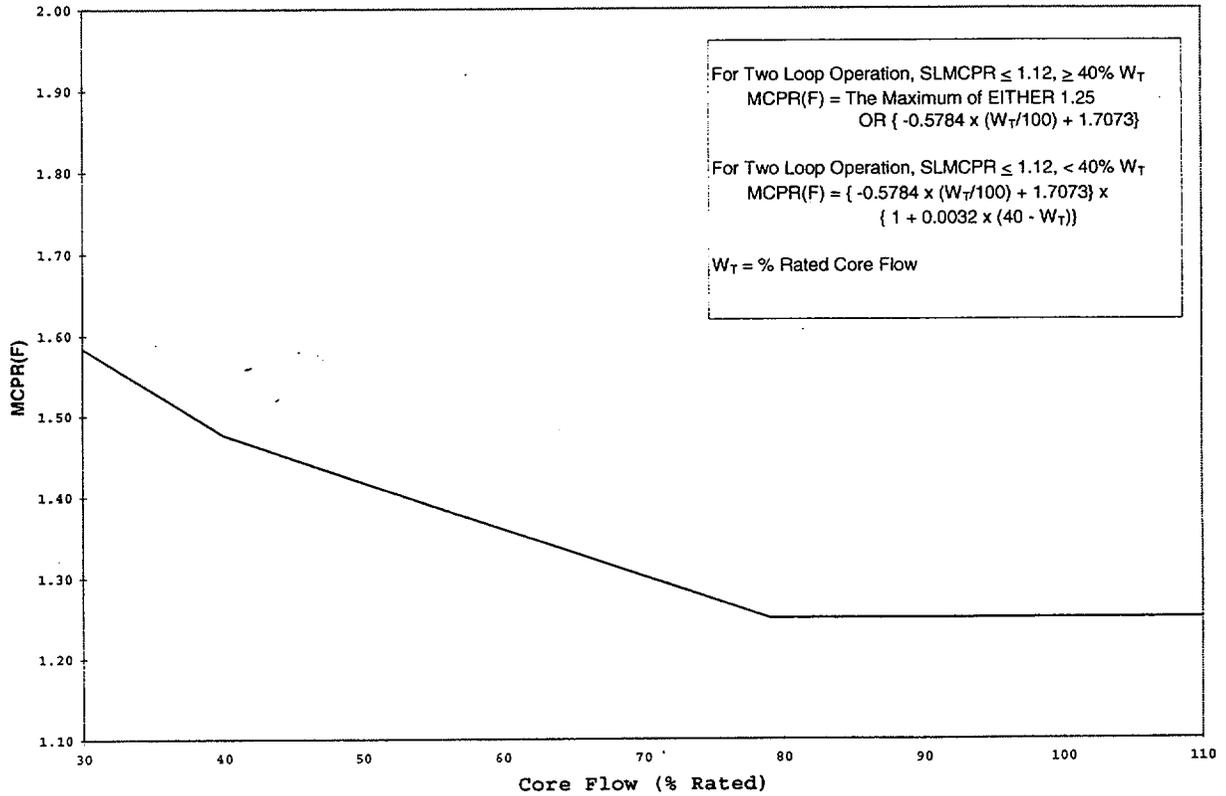


TABLE 2

ROD BLOCK MONITOR SETPOINTS

	Nominal Trip Setpoint	Allowable Value
LTSP	117.1%	118.3%
ITSP	112.3%	113.5%
HTSP	107.3%	108.5%
DTSP	92%	89%

These setpoints are based on a MCPDR limit of 1.31 (SLMCPDR=1.12) and are consistent with a RBM filter time constant between 0.1 seconds and 0.55 seconds.

- LTSP - Low trip setpoint
- ITSP - Intermediate trip setpoint
- HTSP - High trip setpoint
- DTSP - Downscale trip setpoint

TABLE 3

MAPLHGR SINGLE LOOP OPERATION (SLO) REDUCTION FACTOR

SLO reduction factor = 0.79 for all Cycle 6 fuel types.

TABLE 4

LINEAR HEAT GENERATION RATE LIMITS

<u>FUEL TYPE</u>	<u>MAXIMUM VALUE</u>
GE6	13.4 kW/ft
GE11	14.4 kW/ft
GE13	14.4 kW/ft
GE11 (High Exposure LUA)	11.5 kW/ft

NOTE: The LHGR is an exposure dependent value. Due to the proprietary nature of these values only the maximum LHGR for each fuel type is listed in Table 4. The LHGR data is listed in References 3 and 4 (GNF proprietary).

TABLE 5

TURBINE BYPASS VALVE PARAMETERS

TURBINE BYPASS SYSTEM RESPONSE TIME

Maximum delay time before start of bypass valve opening following generation of the turbine bypass valve flow signal	0.10 sec
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Maximum time after generation of a turbine bypass valve flow signal for bypass valve position to reach 80% of full flow (includes the above delay time)	0.30 sec
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MINIMUM REQUIRED BYPASS VALVES TO MAINTAIN SYSTEM OPERABILITY

Number of valves = 7

TABLE 6

Recirculation Pump Motor-Generator (MG) Set Scoop Tube Stops

DELETED (see Reference 20)

TABLE 7

Control Rod Block Instrumentation
Reactor Coolant System Recirculation Flow Upscale Trip

Nominal Trip Setpoint $\leq 113.4\%$

Allowable Value $\leq 115.6\%$