

CORE OPERATING LIMITS REPORT
FOR
PEACH BOTTOM ATOMIC POWER STATION UNIT 2
RELOAD 7, CYCLE 8

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LIST OF EFFECTIVE PAGES

Page(s)

Revision

1-20

1

INTRODUCTION AND SUMMARY

This report provides the cycle-specific parameter limits for: Average Planar Linear Heat Generation Rate (APLHGR); Minimum Critical Power Ratio (MCPR); Flow Adjustment Factor (K_f); Linear Heat Generation Rate (LHGR); and Rod Block Monitor flow biased upscale setpoints for Peach Bottom Atomic Power Station Unit 2, Cycle 8, Reload 7. These values have been determined using NRC-approved methodology 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.e of Reference (1). Preparation of this report was performed in accordance with PECO Nuclear Group Procedure NP-11F122 (tentative).

APLHGR LIMITS

The limiting APLHGR 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 7. Figures 1 through 7 are used when hand calculations are required as specified in Technical Specification 3.5.I. The reduction factors for use during single recirculation loop operation are shown in Table 1.

MCPR LIMITS

The MCPR values for use in Technical Specification 3.5.K for each fuel type are given in Figures 8 through 10 and in Tables 2 and 3. Table 2 is used when the requirement of 4.5.K.2.a is met, when this requirement cannot be met the Operating Limit MCPR values as a function of τ are given in Figures 8 through 10. At times when the surveillance requirement of specification 4.5.K.2 is not performed Table 3 is used. The K_f core flow adjustment factor for use in Technical Specification 3.5.K is given in Figure 11.

ROD BLOCK MONITOR SETPOINTS

The N value for the RBM flow biased upscale setpoints for use in Technical Specification 3.2.C is given in Table 4.

LINEAR HEAT GENERATION RATES

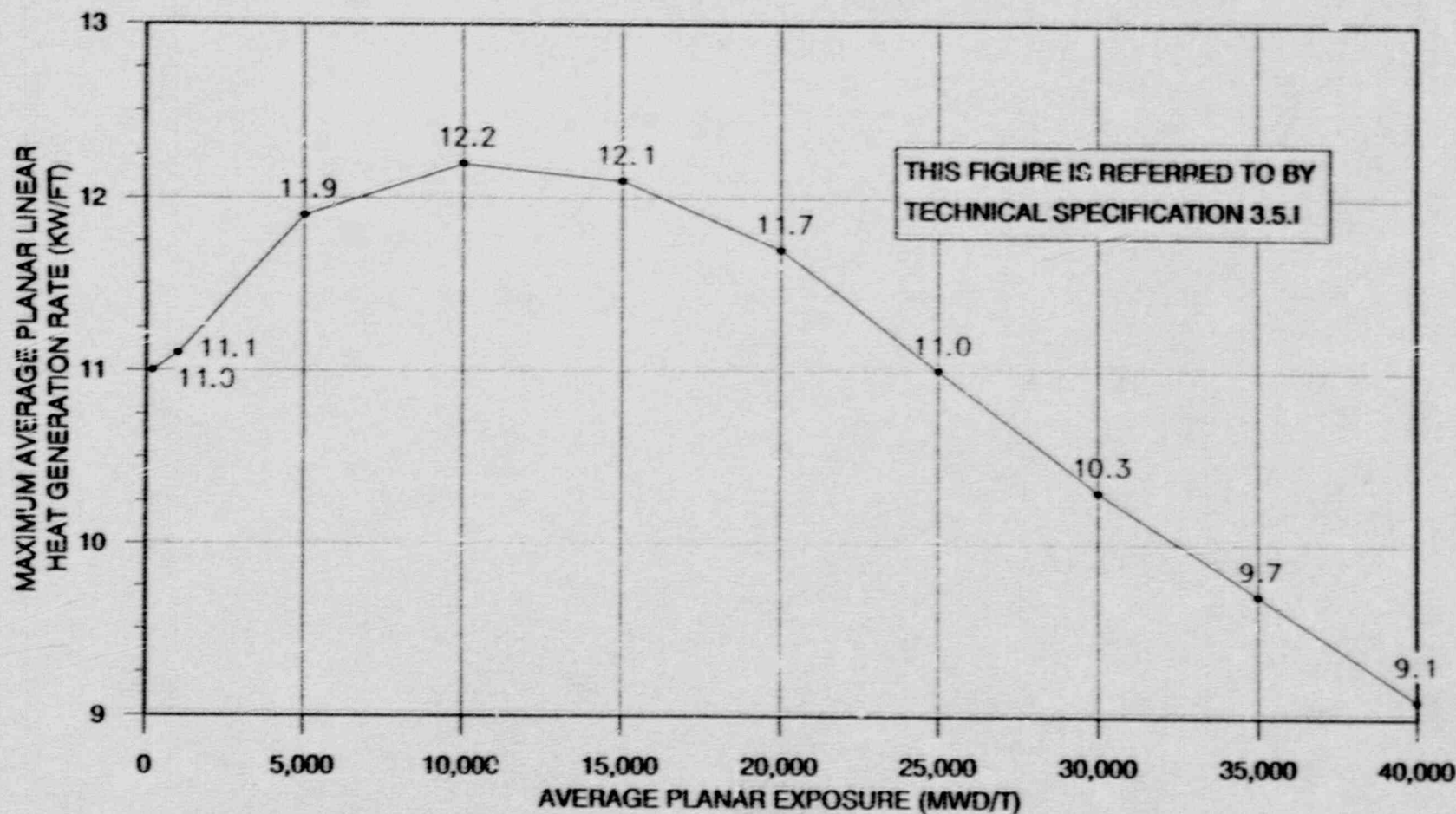
The LHGR value for use in Technical Specification 3.5.J for each fuel type is given in Table 5.

REFERENCES

- 1) "Technical Specifications and Bases for Peach Bottom Atomic Power Station Unit 2", Docket No. 50-277 Appendix A to License No. DPR-44.

P8X8R FUEL TYPE P8DRB285

(Applicable to 100 mil Channels)

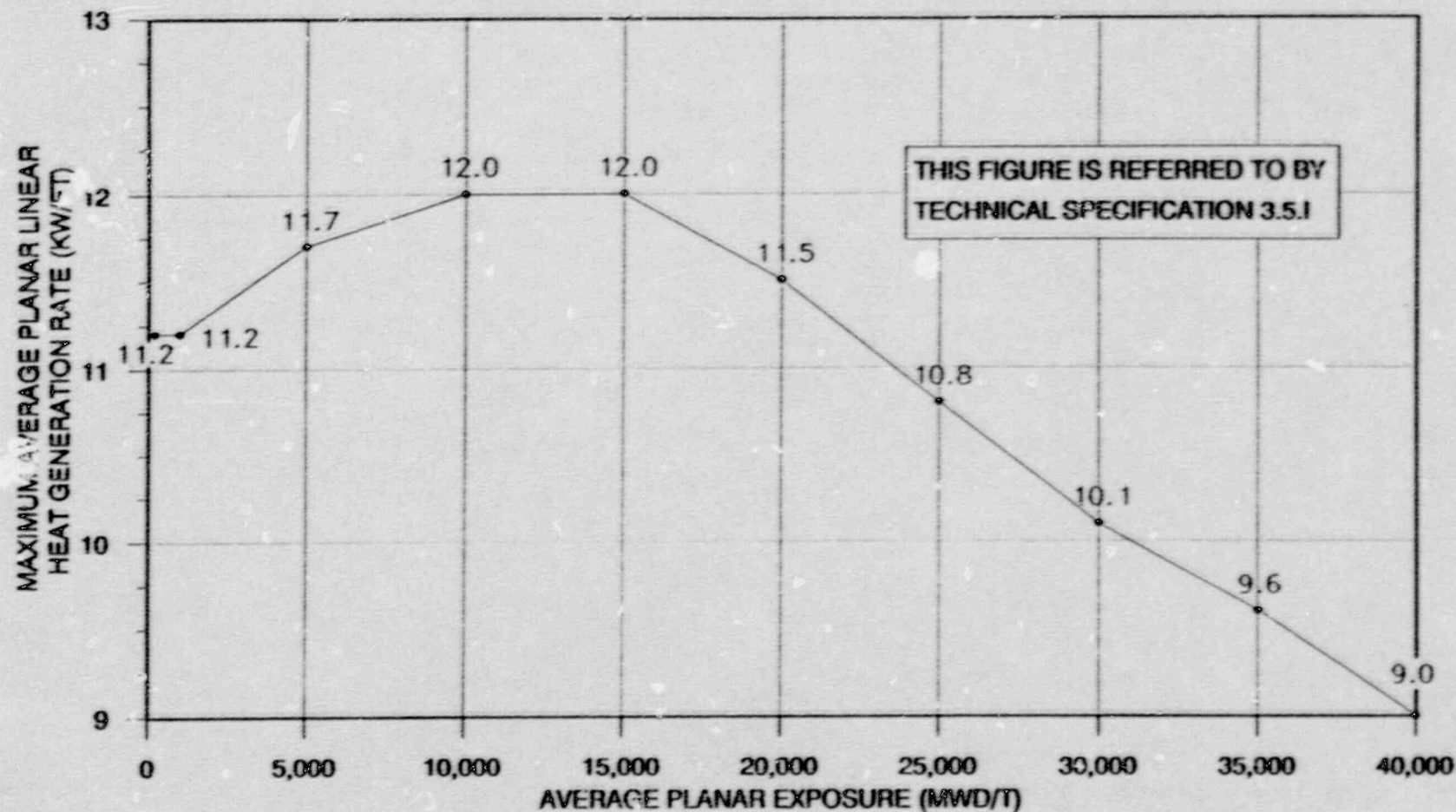


MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE VERSUS AVERAGE PLANAR EXPOSURE

FIGURE 1

P8X8R FUEL TYPE P8DRB284H

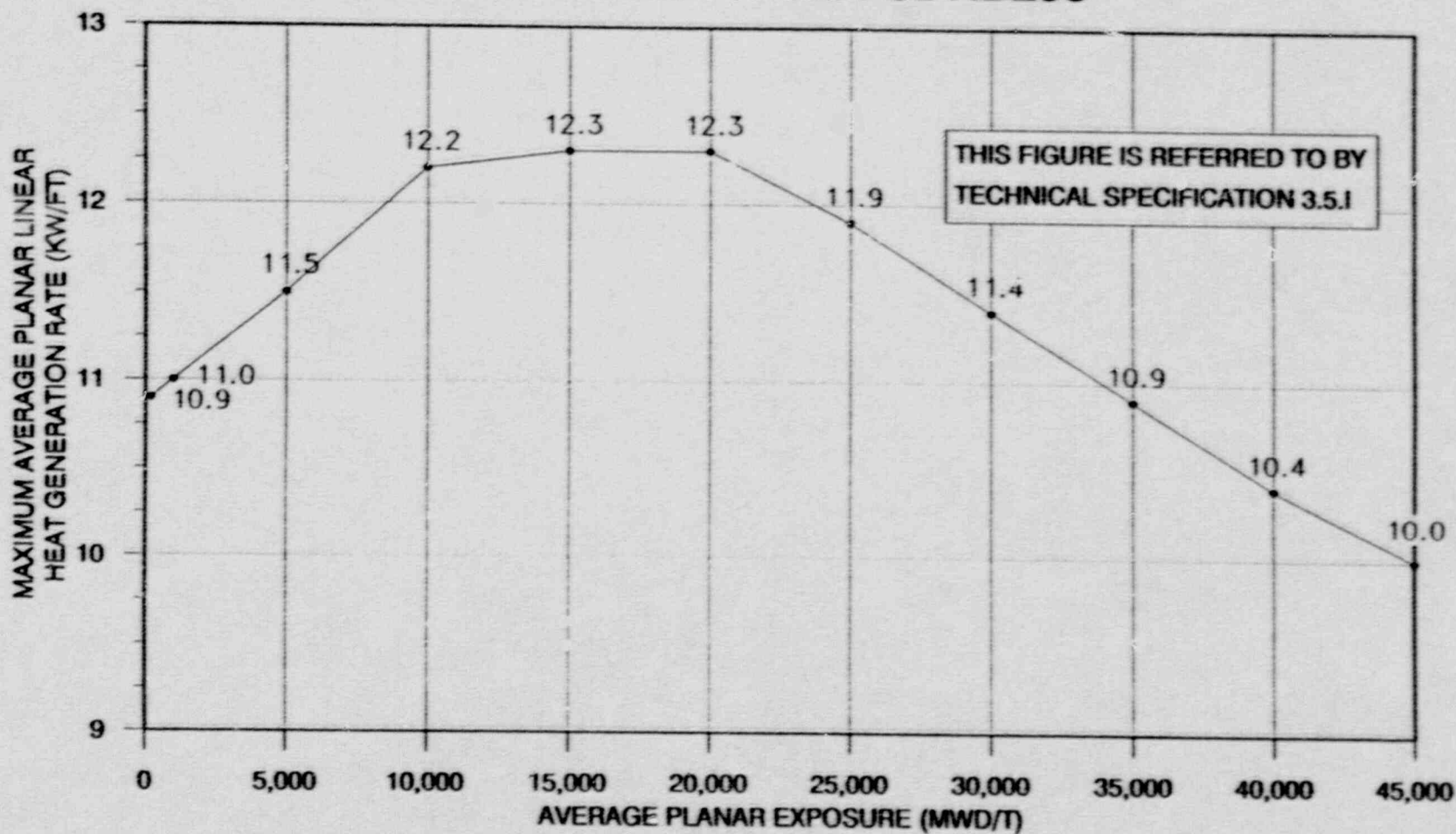
(Applicable to 80 mil, 100 mil, and 120 mil Channels)



MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE VERSUS AVERAGE PLANAR EXPOSURE

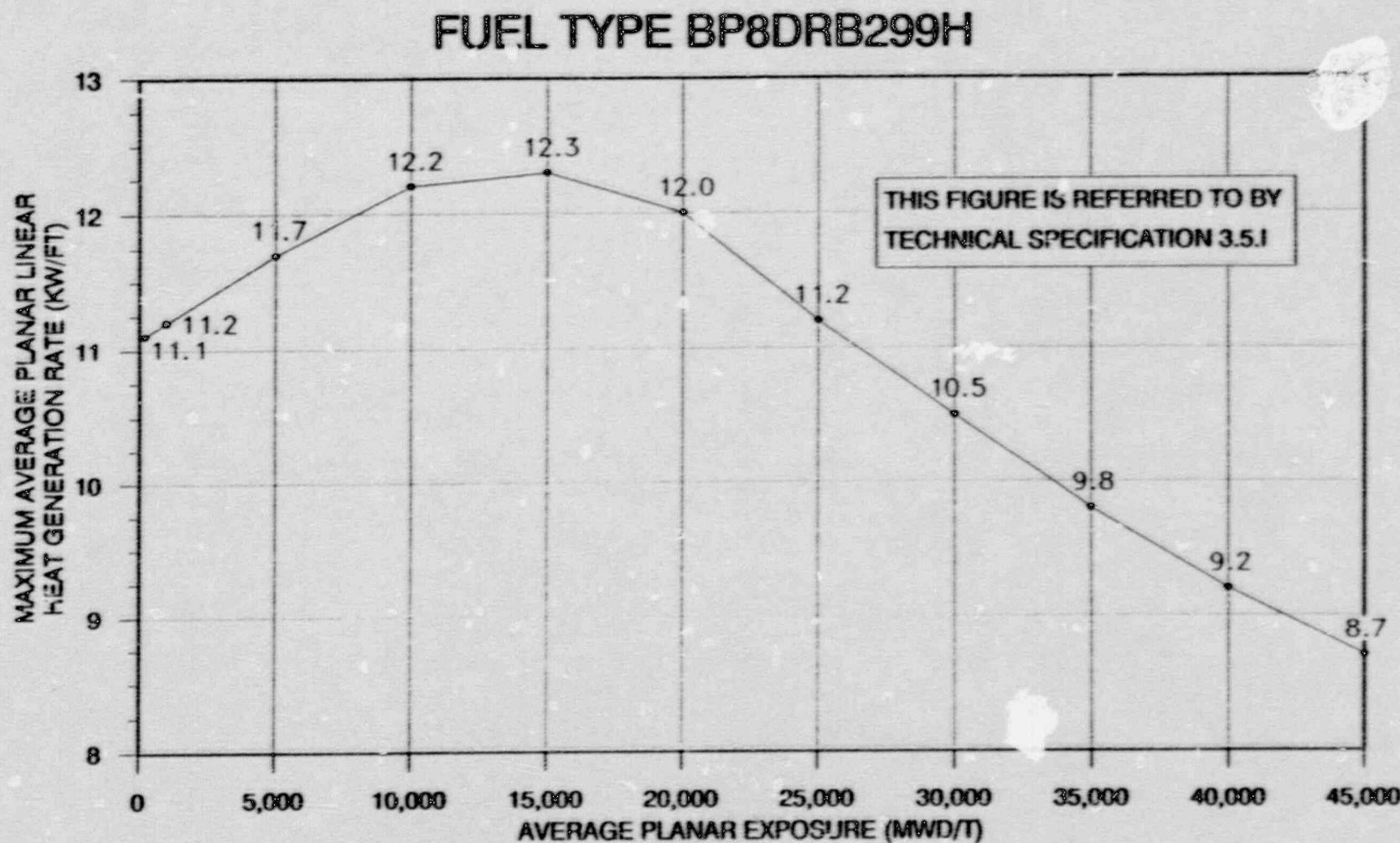
FIGURE 2

BP8X8R FUEL TYPE BP8DRB299



MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE VERSUS AVERAGE PLANAR EXPOSURE

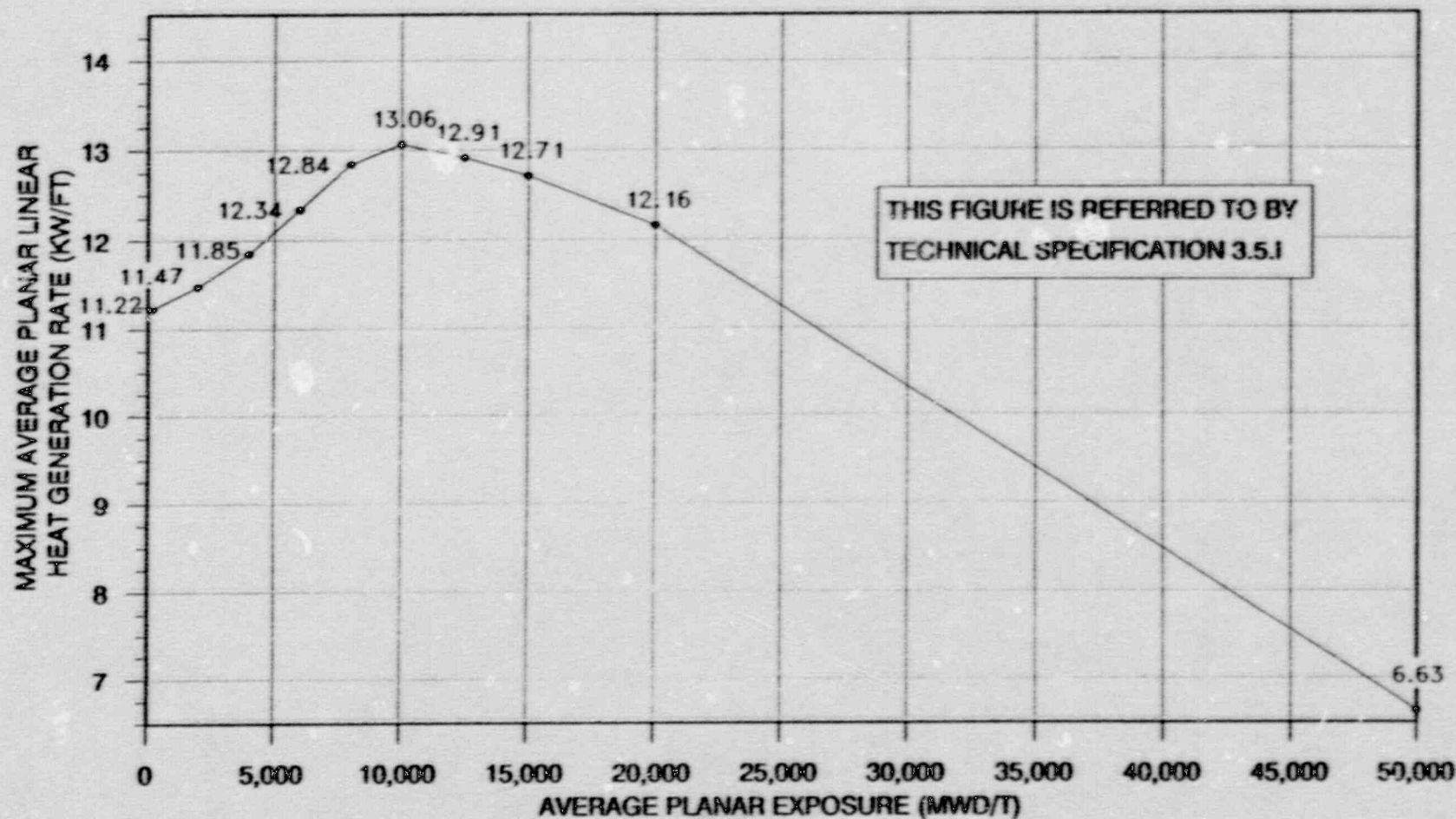
FIGURE 3



**MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE VERSUS AVERAGE PLANAR EXPOSURE**

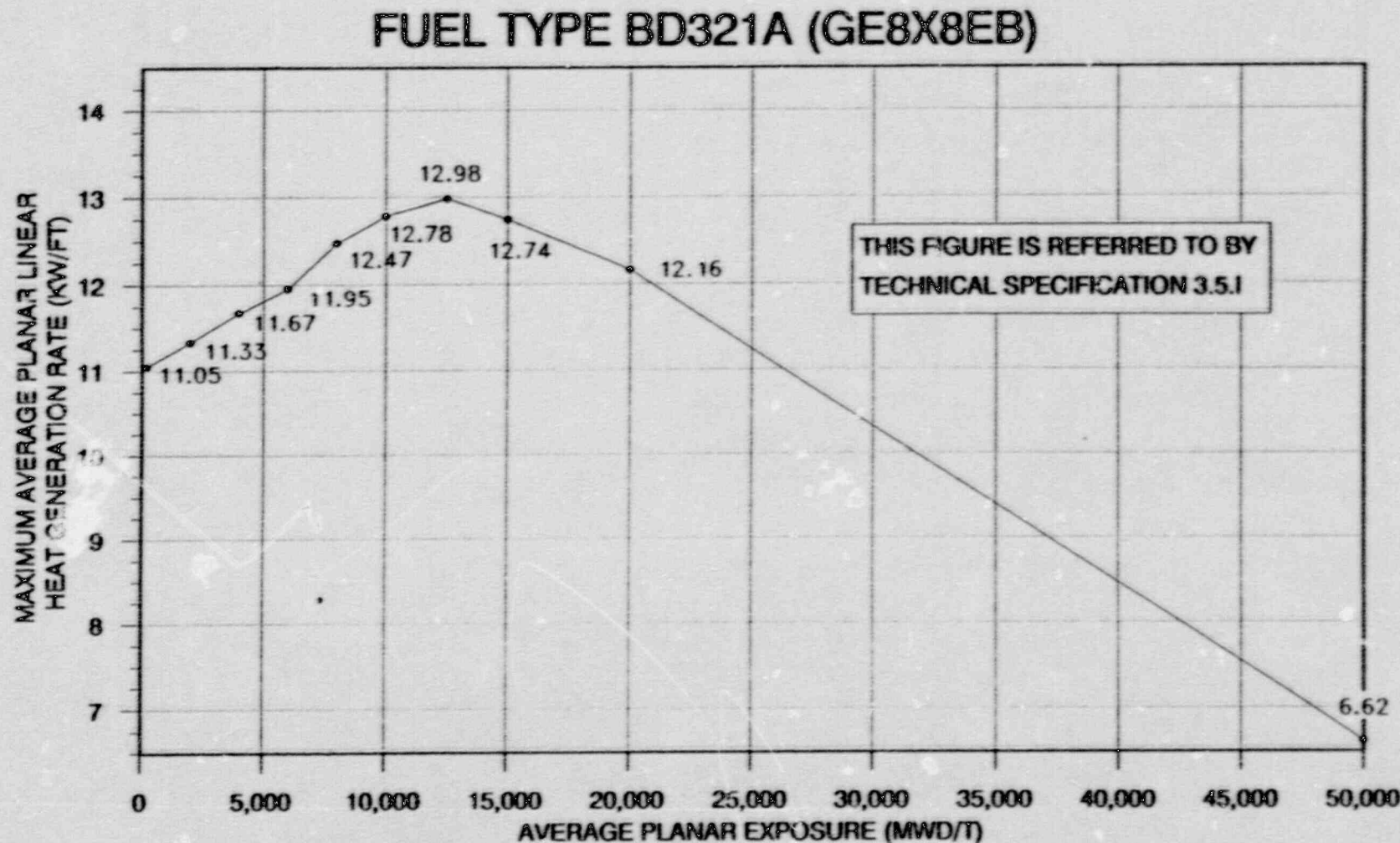
FIGURE 4

FUEL TYPE BD319A (GE8X8EB)



MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE VERSUS AVERAGE PLANAR EXPOSURE

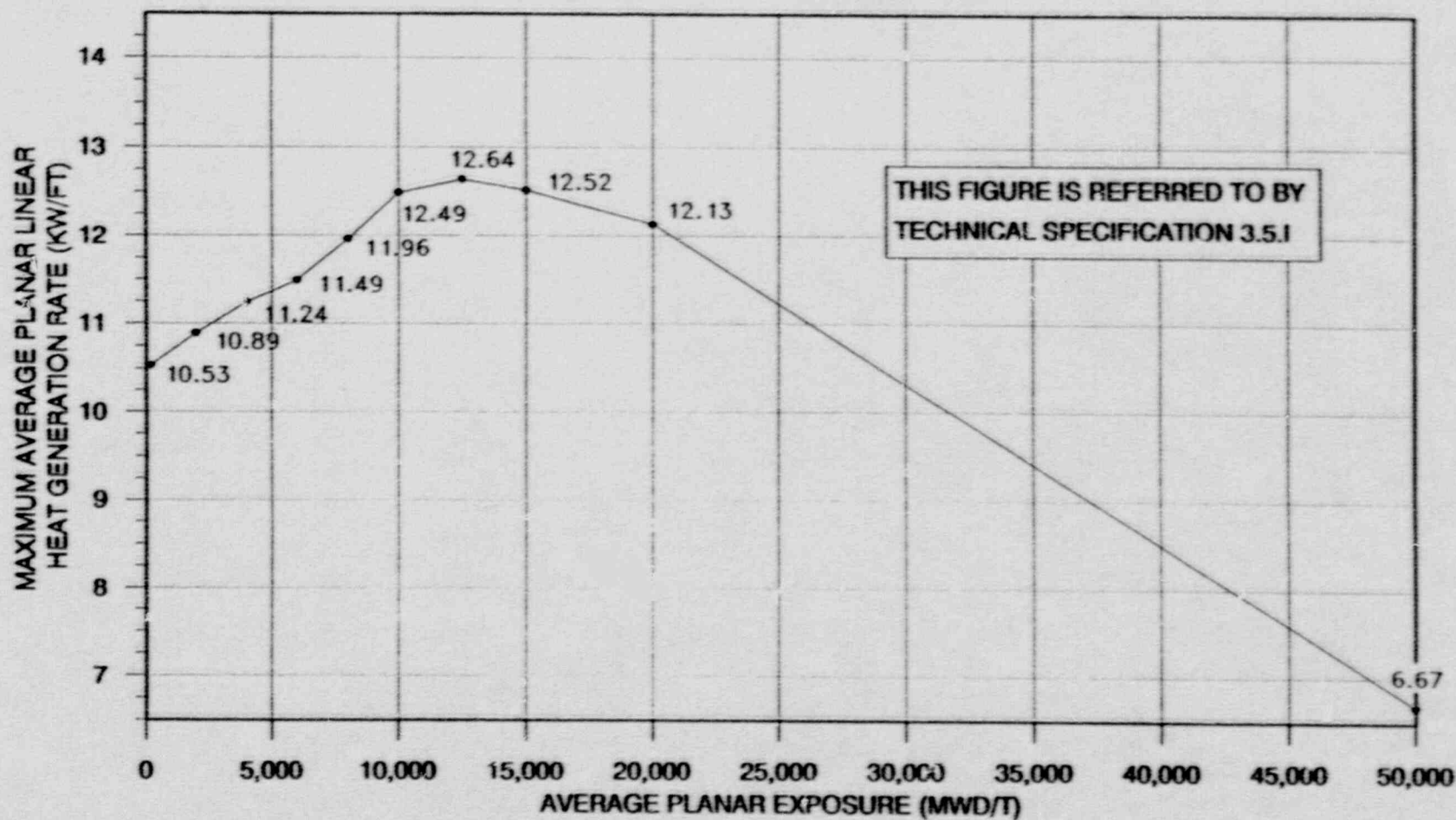
FIGURE 5



**MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE VERSUS AVERAGE PLANAR EXPOSURE**

FIGURE 6

FUEL TYPE LTA310



MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE VERSUS AVERAGE PLANAR EXPOSURE

FIGURE 7

MCPR OPERATING LIMIT VERSUS τ

FUEL TYPE BP/P8X8R

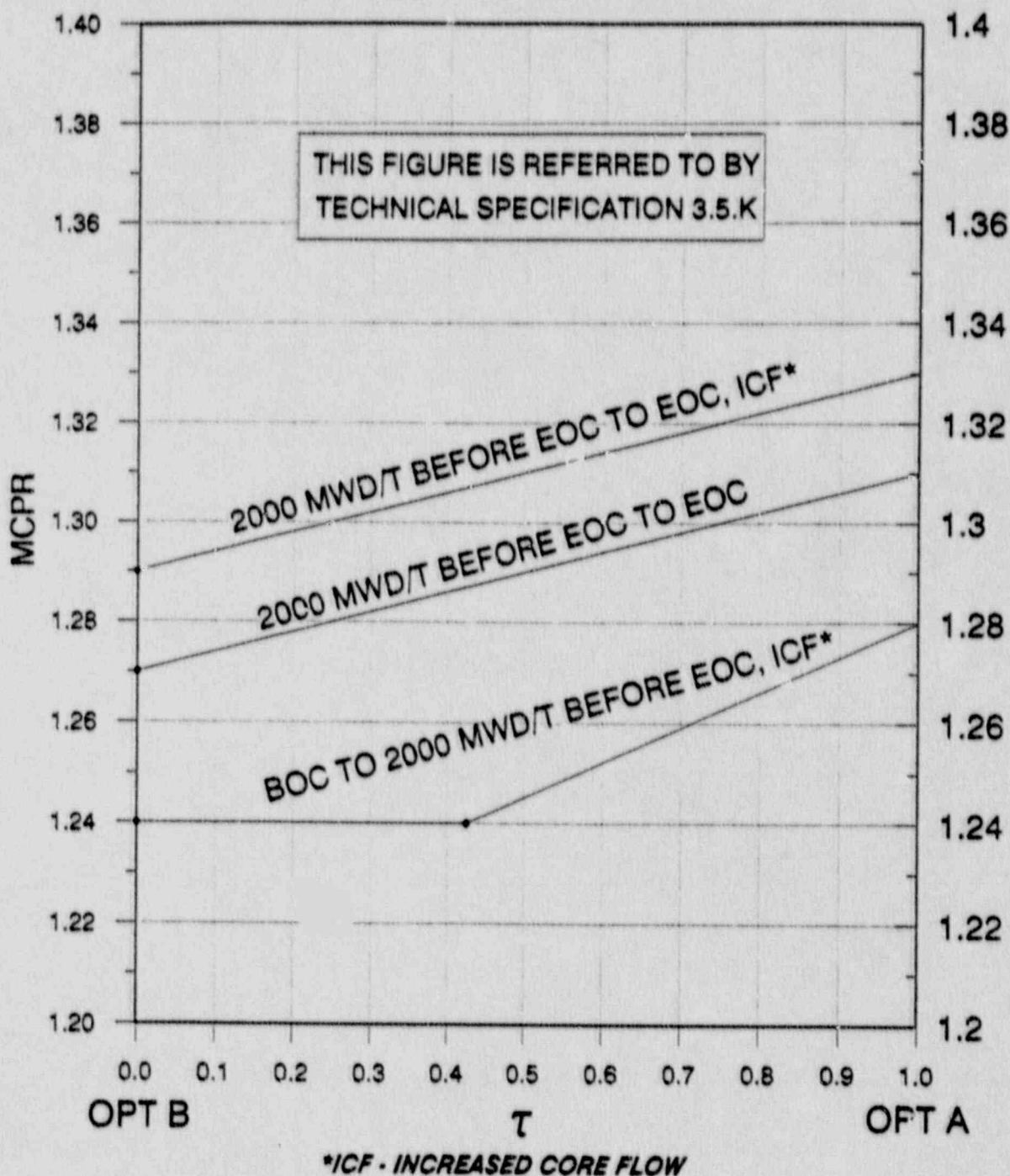


FIGURE 8

MCPR OPERATING LIMIT VERSUS τ FUEL TYPE GE8X8EB

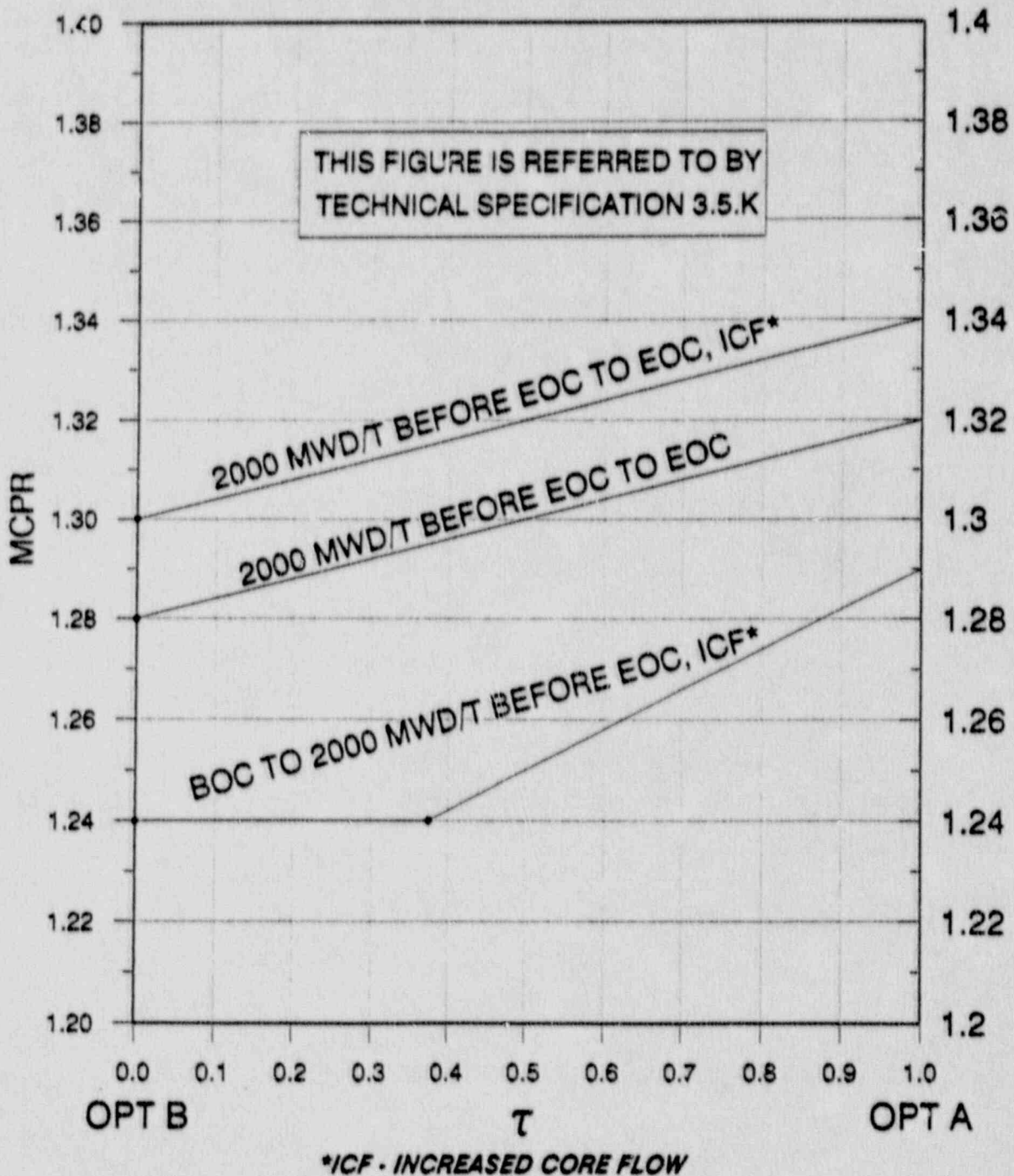


FIGURE 9

MCPR OPERATING LIMIT VERSUS τ FUEL TYPE LTA310

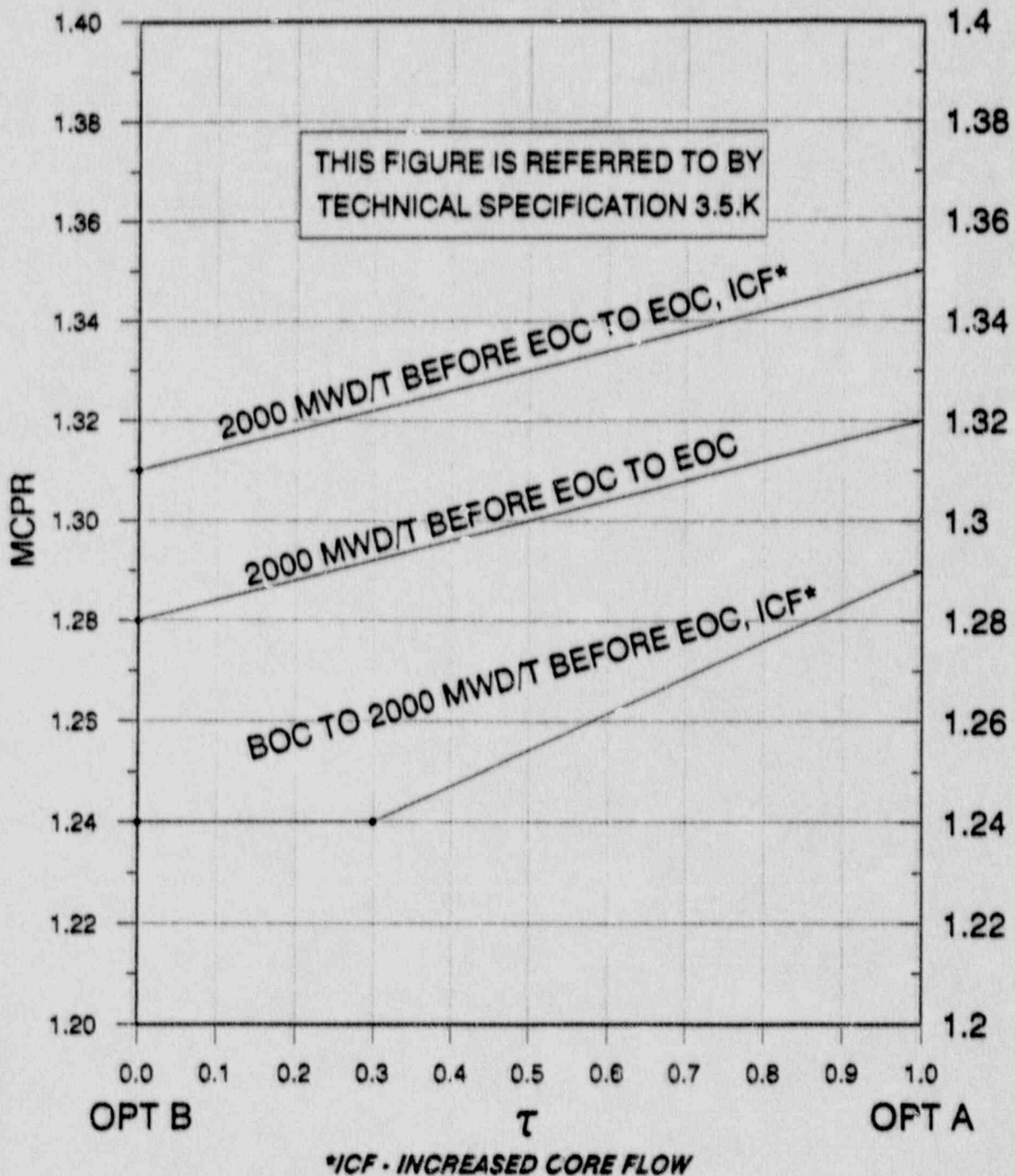


FIGURE 10

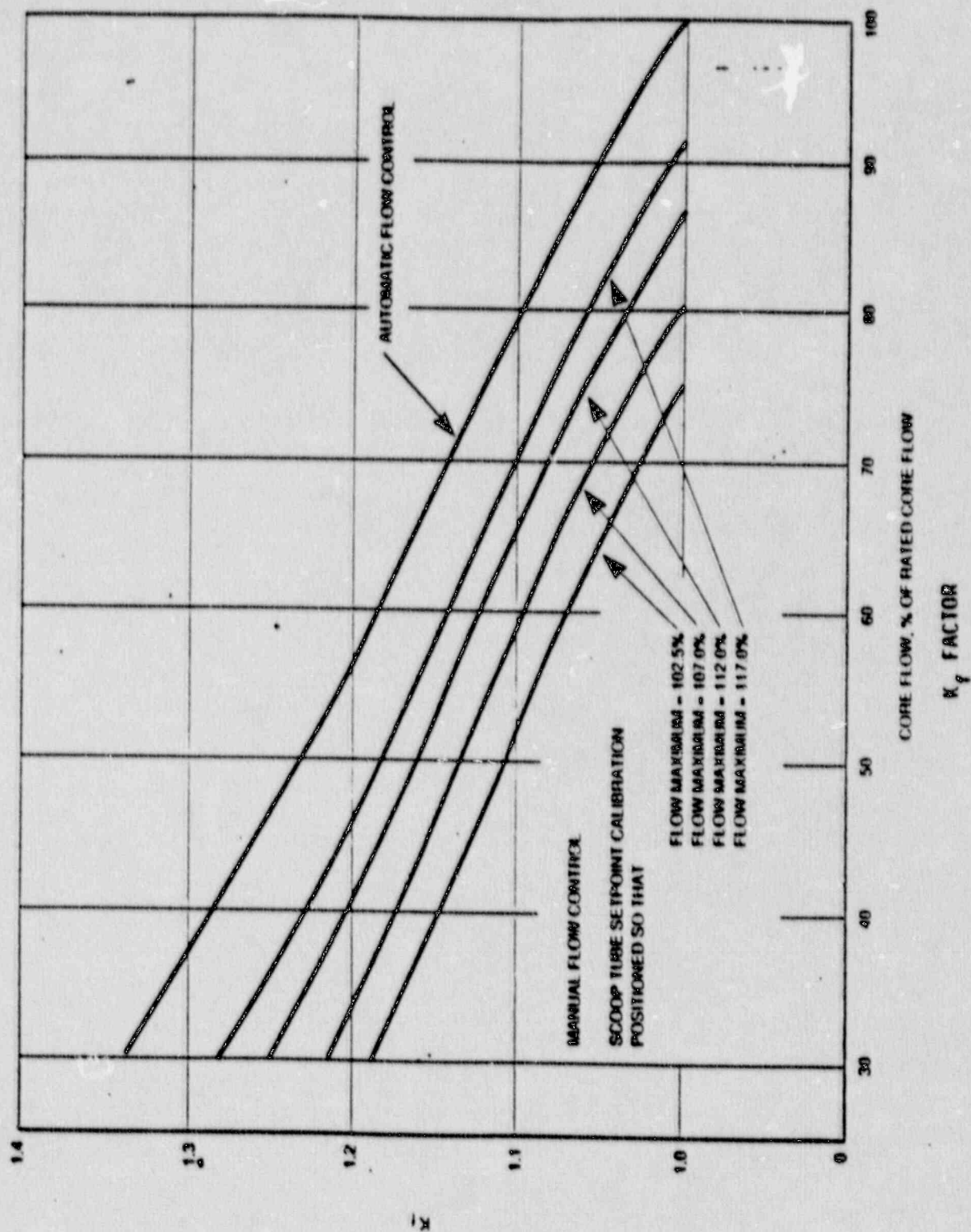


FIGURE 11

TABLE 1

SINGLE LOOP REDUCTION FACTORS

<u>FUEL TYPE</u>	<u>REDUCTION FACTOR</u>
BP/P8X8R	0.79
GE8X8EB	0.73
LTA310	0.73

THIS FIGURE IS REFERRED TO BY
TECHNICAL SPECIFICATION 3.5.1

TABLE 2

OPERATING LIMIT MCPR VALUES
FOR VARIOUS CORE EXPOSURES*

FUEL TYPE	MCPR OPERATING LIMIT** FOR INCREMENTAL CYCLE CORE AVERAGE EXPOSURE	
	BOC TO 2000 MWD/T BEFORE EOC	2000 MWD/T BEFORE EOC TO EOC
<u>Standard Operating Conditions</u>		
BP/P8X8R	1.24	1.27
GE8X8EB	1.24	1.28
LTA310	1.24	1.28
<u>Increased Core Flow</u>		
BP/P8X8R	1.24	1.29
GE8X8EB	1.24	1.30
LTA310	1.24	1.31

* If Technical Specification requirement 4.5.K.2.a is met.

** These values shall be increased by 0.01 for single loop operation.

THIS FIGURE IS REFERRED TO BY
TECHNICAL SPECIFICATION 3.5.K

TABLE 3

OPERATING LIMIT MCPR VALUES
FOR VARIOUS CORE EXPOSURES*

FUEL TYPE	MCPR OPERATING LIMIT** FOR INCREMENTAL CYCLE CORE AVERAGE EXPOSURE	
	BOC TO 2000 MWD/T BEFORE EOC	2000 MWD/T BEFORE EOC TO EOC
<u>Standard Operating Conditions</u>		
BP/P8X8R	1.28	1.31
GE8X8EB	1.29	1.32
LTA310	1.29	1.32
<u>Increased Core Flow</u>		
BP/P8X8R	1.28	1.33
GE8X8EB	1.29	1.34
LTA310	1.29	1.35

* If Technical Specification Surveillance Requirement 4.5.K.2 is not performed.

** These values shall be increased by 0.01 for single loop operation.

THIS FIGURE IS REFERRED TO BY
TECHNICAL SPECIFICATION 3.5.K

TABLE 4

ROD BLOCK MONITOR SETPOINT

N=107

THIS FIGURE IS REFERRED TO BY
TECHNICAL SPECIFICATION 3.2.C

TABLE 5

DESIGN LINEAR HEAT GENERATION RATE LIMITS

<u>FUEL TYPE</u>	<u>LHGR LIMIT</u>
BP/P8X8R	13.4 KW/ft
GE8X8EB	14.4 KW/ft
LTA310	14.4 KW/ft

THIS FIGURE IS REFERRED TO BY
TECHNICAL SPECIFICATION 3.5.J