CORE OPERATING LIMITS REPORT

FOR

LIMERICK GENERATING STATION UNIT 1

RELOAD 3, CYCLE 4

Prepared By: E.P. Dennin Date: 9/13/90

E.P. Dennin
Engineer

Reviewed By: J.M. Carmody Date: 9/14/90

J.M. Carmody
Branch Head
Nuclear Design

Approved By: L.F. Rubino Date: 9/14/90

L.F. Rubino
Manager
Fuel Management Section

LIST OF EFFECTIVE PAGES

Page(s)	Revision
1-20	0

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 and high flow clamped setpoints for Limerick Generating Station Unit 1, Cycle 4, Reload 3. 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 of Reference (1). Preparation of this report was performed in accordance with PECO Nuclear Group Procedure NP-11F122.

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 3.2.1. The reduction factor for use during single recirculation loop operation is given in Table 1.

MCPR LIMITS

The MCPR value for use in Technical Specification 3.2.3 for each fuel type is given in Figures 8 through 12. The K_f core flow adjustment factor for use in Technical Specification 3.2.3 is given in Figure 13.

ROD BLOCK MONITOR SETPOINTS

The N value for the RBM flow biased upscale and high flow clamped setpoints for use in Technical Specification 3.3.6 is given in Table 2.

LINEAR HEAT GENERATION RATES

The LHGR value for use in Technical Specification 3.2.4 for each fuel type is given in Table 3.

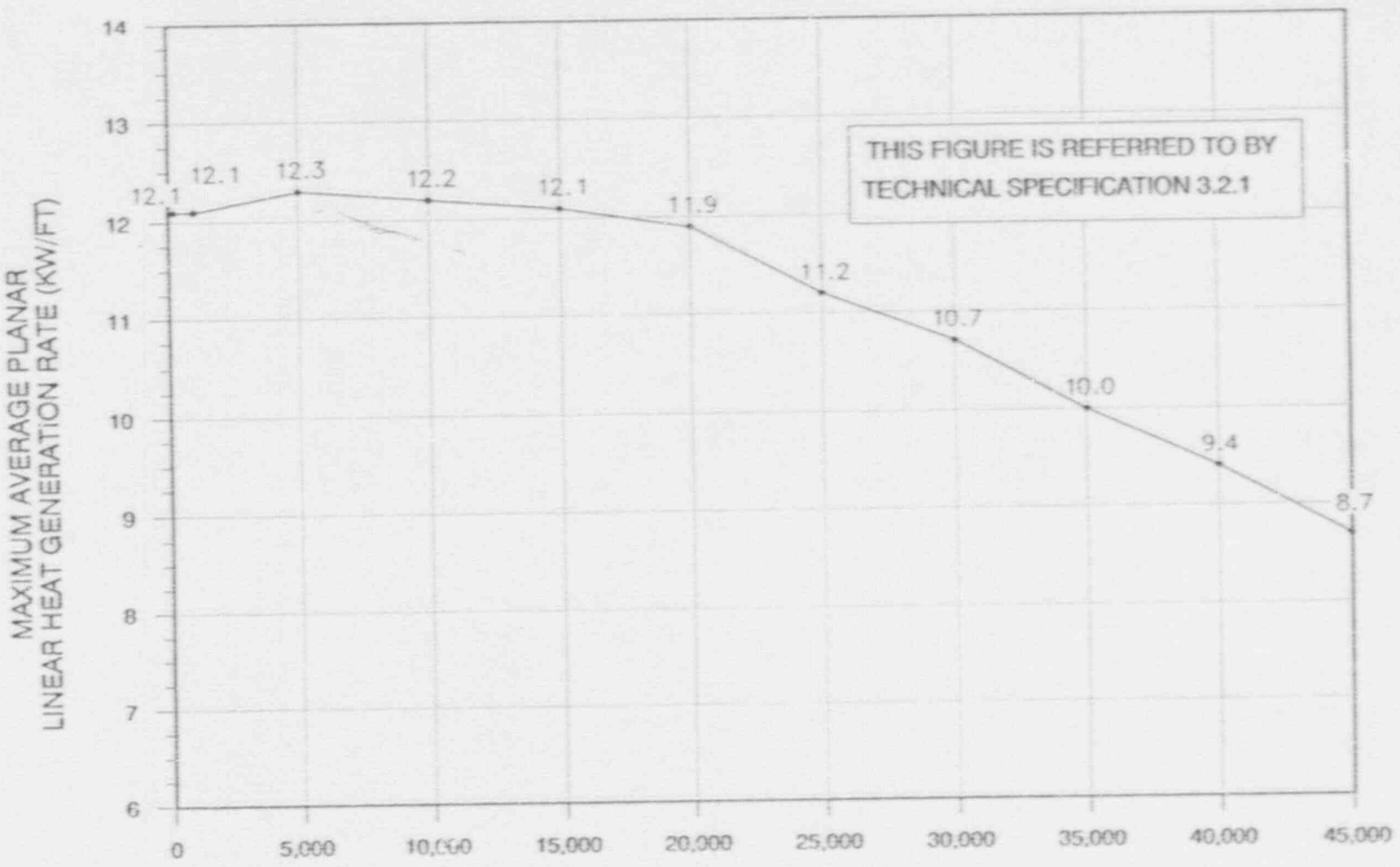
REFERENCES

1) "Technical Specifications and Bases for Limerick Generating Station Unit 1", Docket No. 50-352 Appendix A to License No. NPF-39.

2) "Supplemental Reload Licensing Submittal for Limerick Generating Station Unit 1, Reload 3", General Electric Company Document No. 23A6519, Rev. 0.

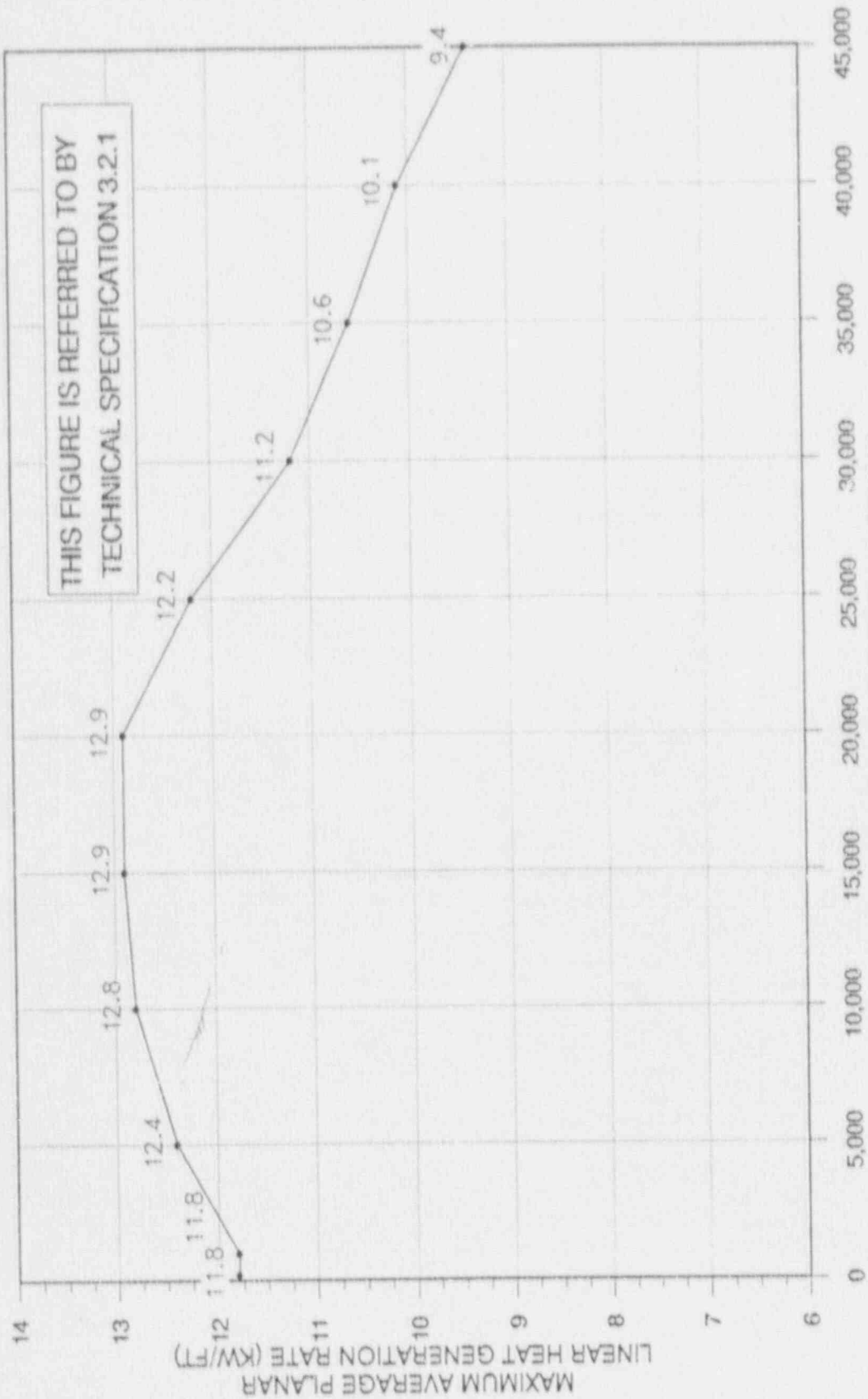
3) "Basis for MAPLHGR Technical Specifications for Limerick 1", NEDE-31401-P, August 1990.

4) G.R. Hull to L.F. Rubino , "Recommended Revisions to the Limerick 1 Cycle 4 Loading Pattern and Associated Safety Evaluation", 22 August 1990.



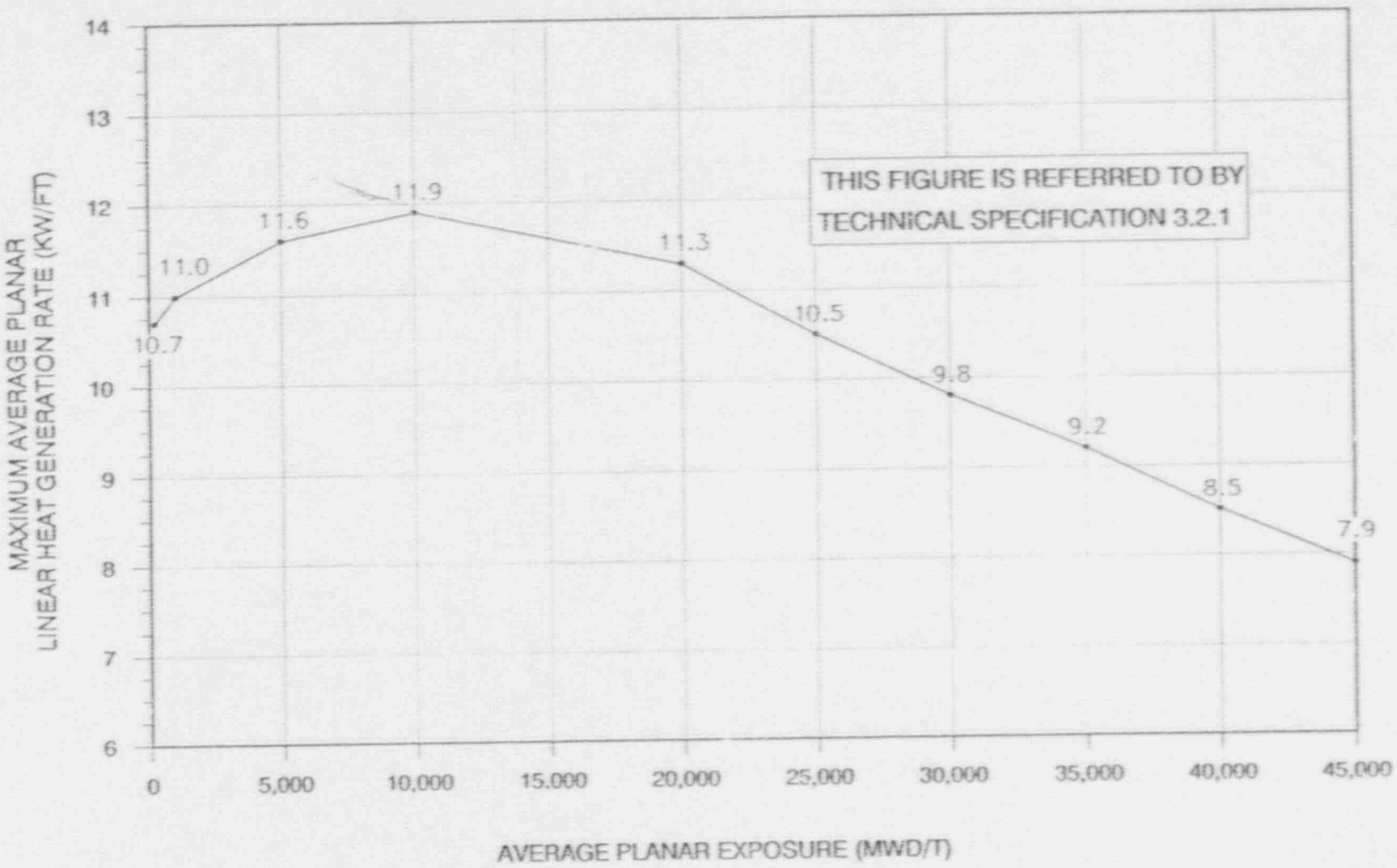
MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE (MAPLHGR) VERSUS
AVERAGE PLANAR EXPOSURE
FUEL TYPE BP8CIB248 (BP8x8R)

FIGURE 1



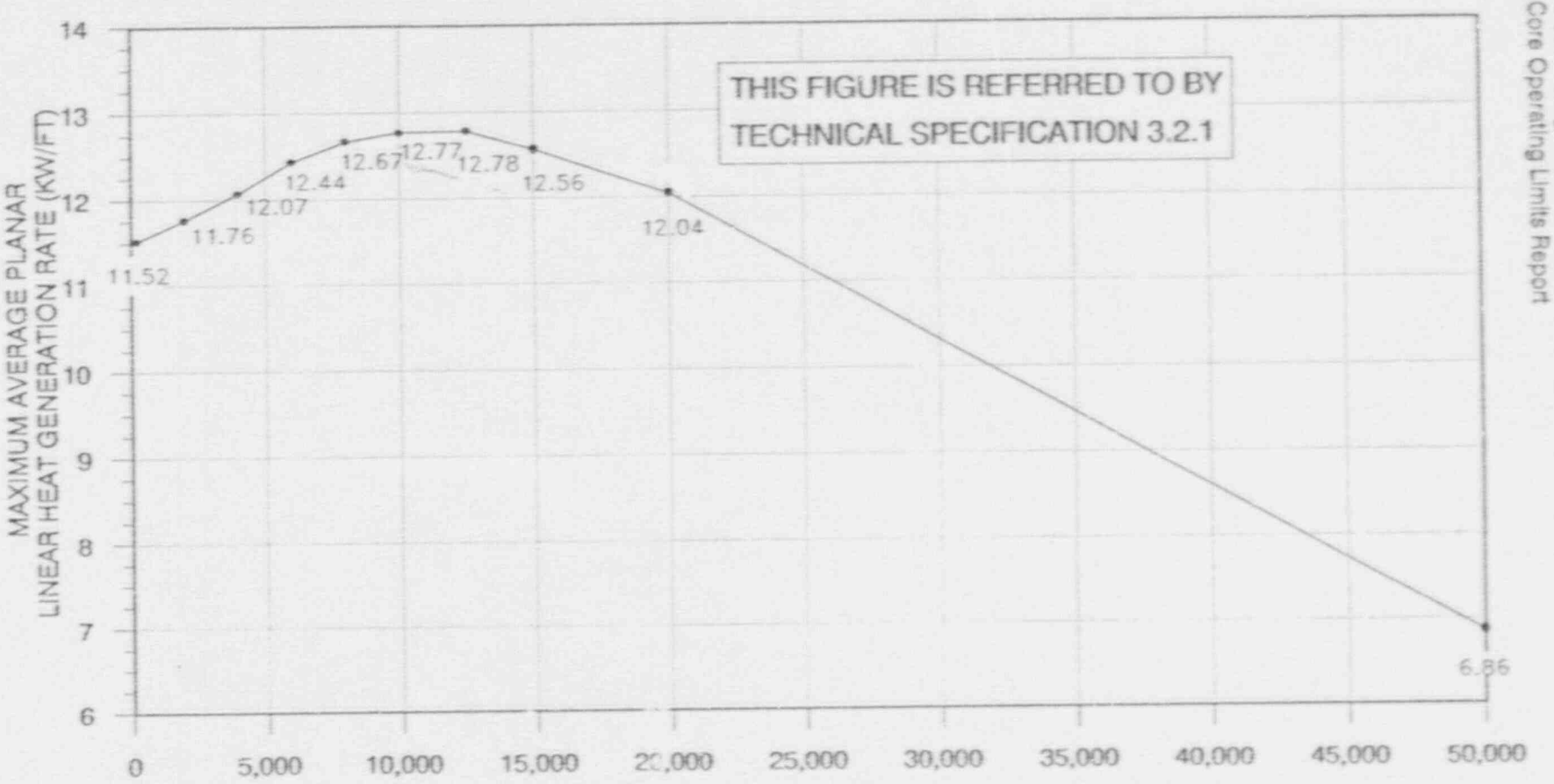
MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR) VERSUS AVERAGE PLANAR EXPOSURE
FUEL TYPE BP8CIB163 (BP8x8R)

FIGURE 2



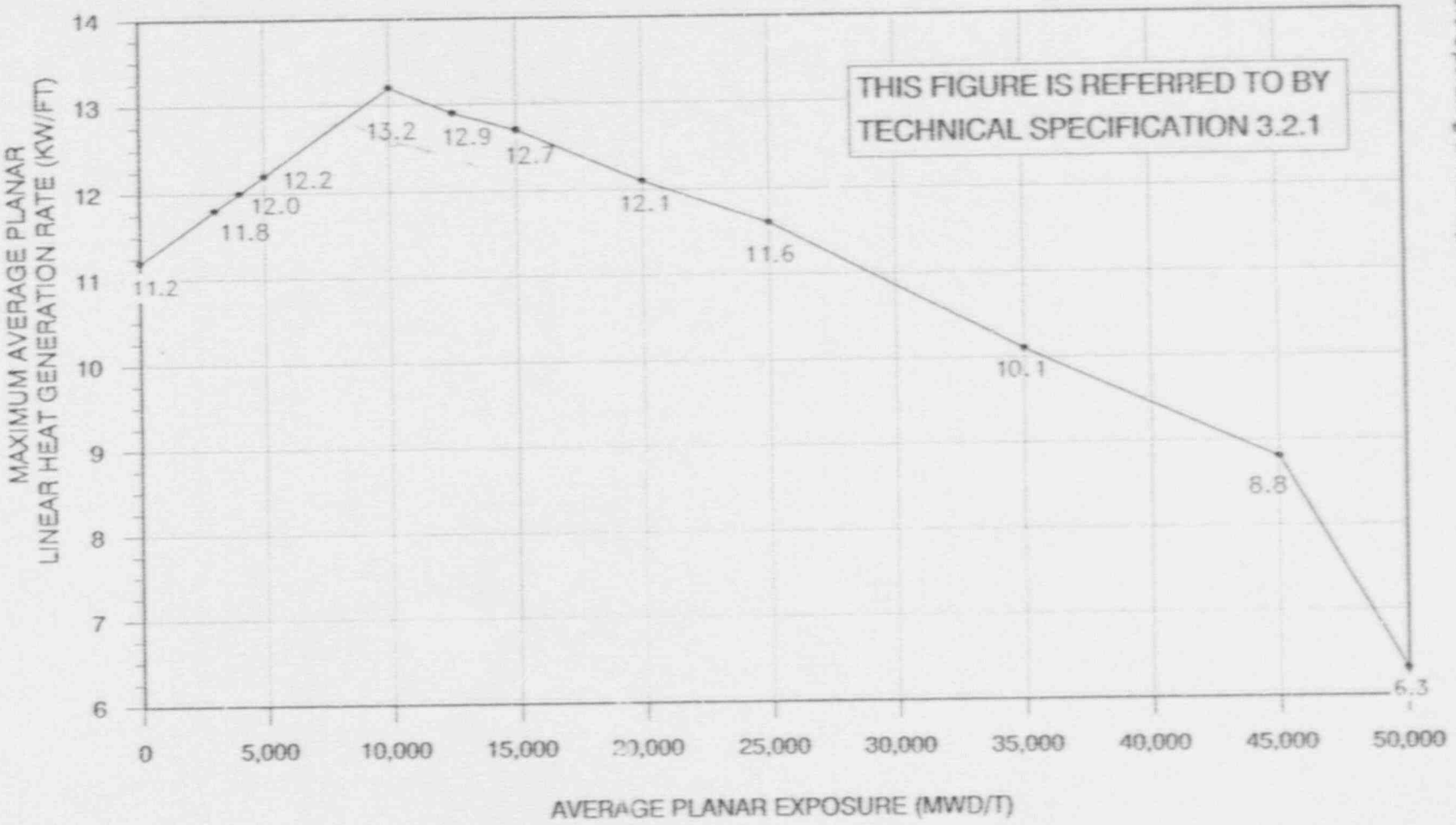
MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE (MAPLHGR) VERSUS
AVERAGE PLANAR EXPOSURE
FUEL TYPE BP8CIB094 (BP8x8R)

FIGURE 3



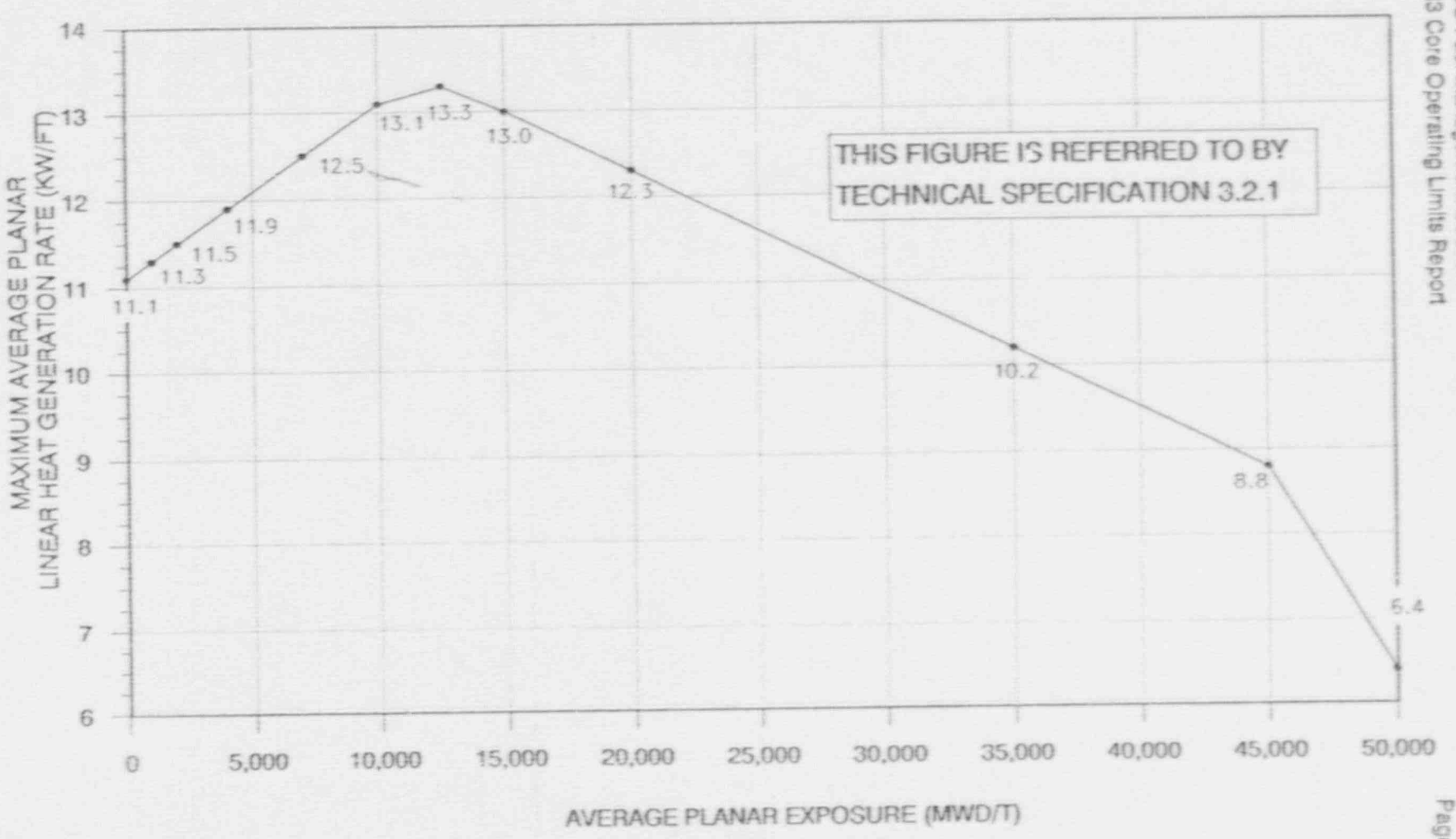
MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR) VERSUS AVERAGE PLANAR EXPOSURE
FUEL TYPE BC320A (GE82WR)

FIGURE 4



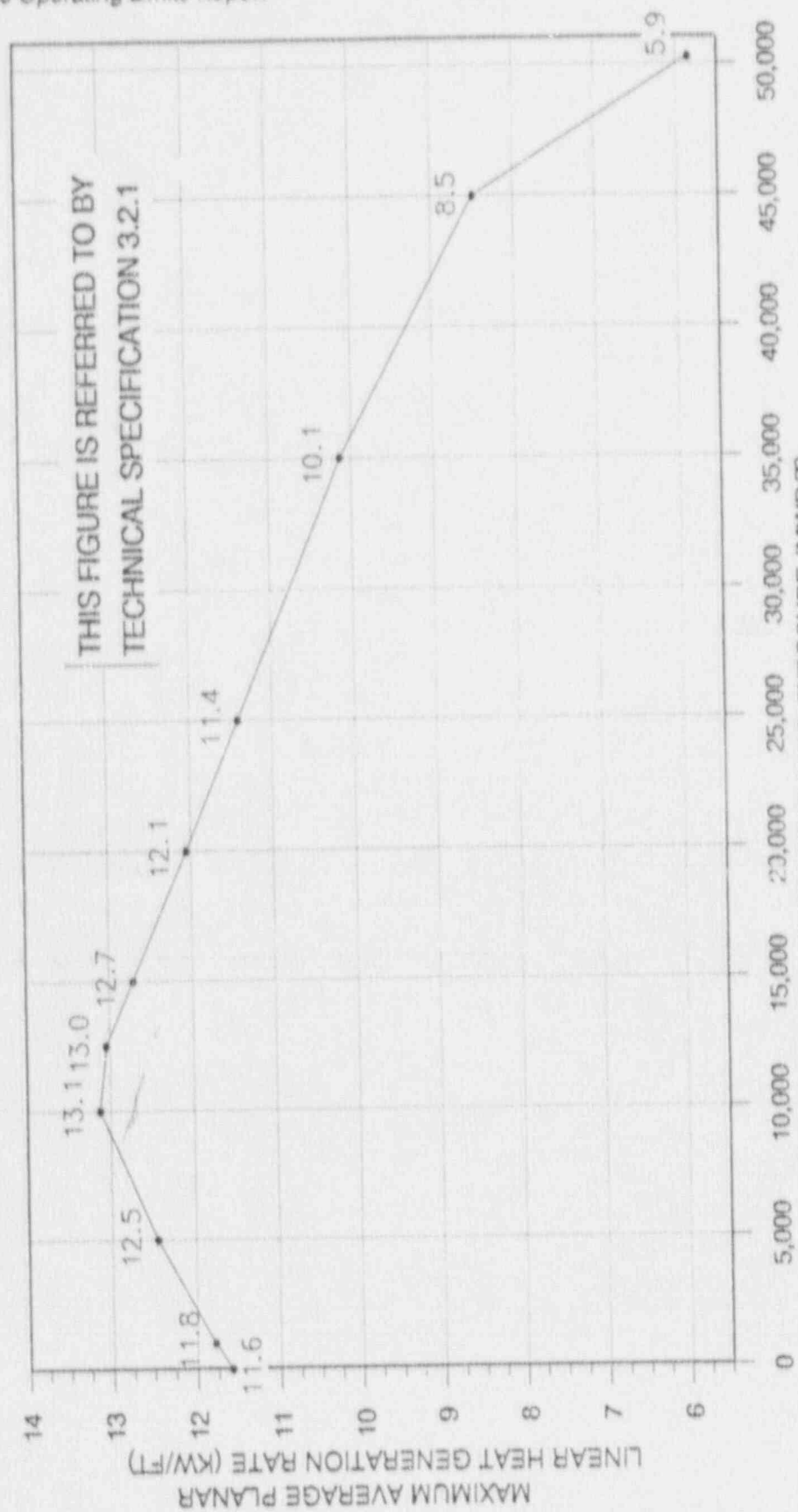
MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE (MAPLHGR) VERSUS
AVERAGE PLANAR EXPOSURE
FUEL TYPE BC318A (GE84WR)

FIGURE 5



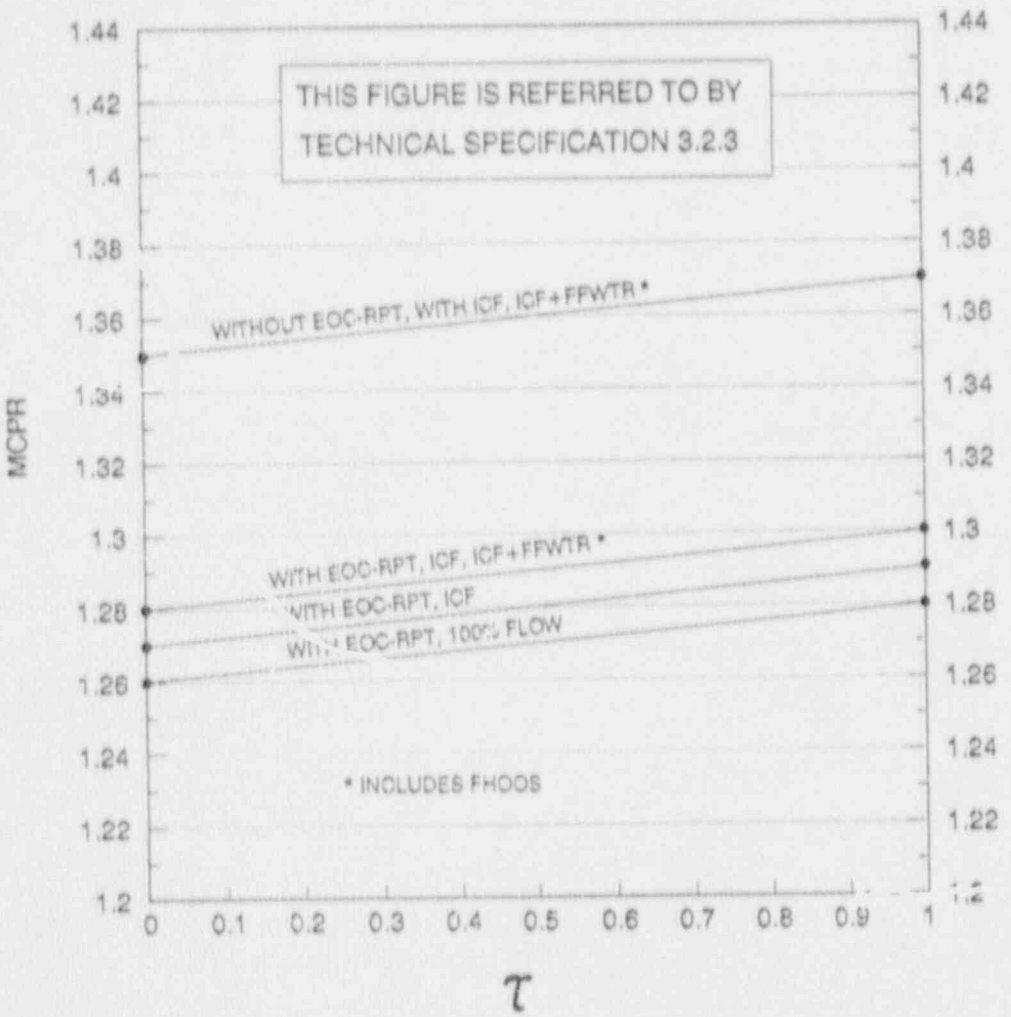
MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE (MAPLHGR) VERSUS
AVERAGE PLANAR EXPOSURE
FUEL TYPE BC322A (GE84WR)

FIGURE 6



MAXIMUM AVERAGE PLANAR LINEAR HEAT
GENERATION RATE (MAPLHGR) VERSUS
AVERAGE PLANAR EXPOSURE
FUEL TYPE P8CWB319 (GE8x8NB)

FIGURE 7



Note: These Limits Apply To Both Two Recirculation Loop and Single Recirculation Loop Operation

DEFINITIONS:

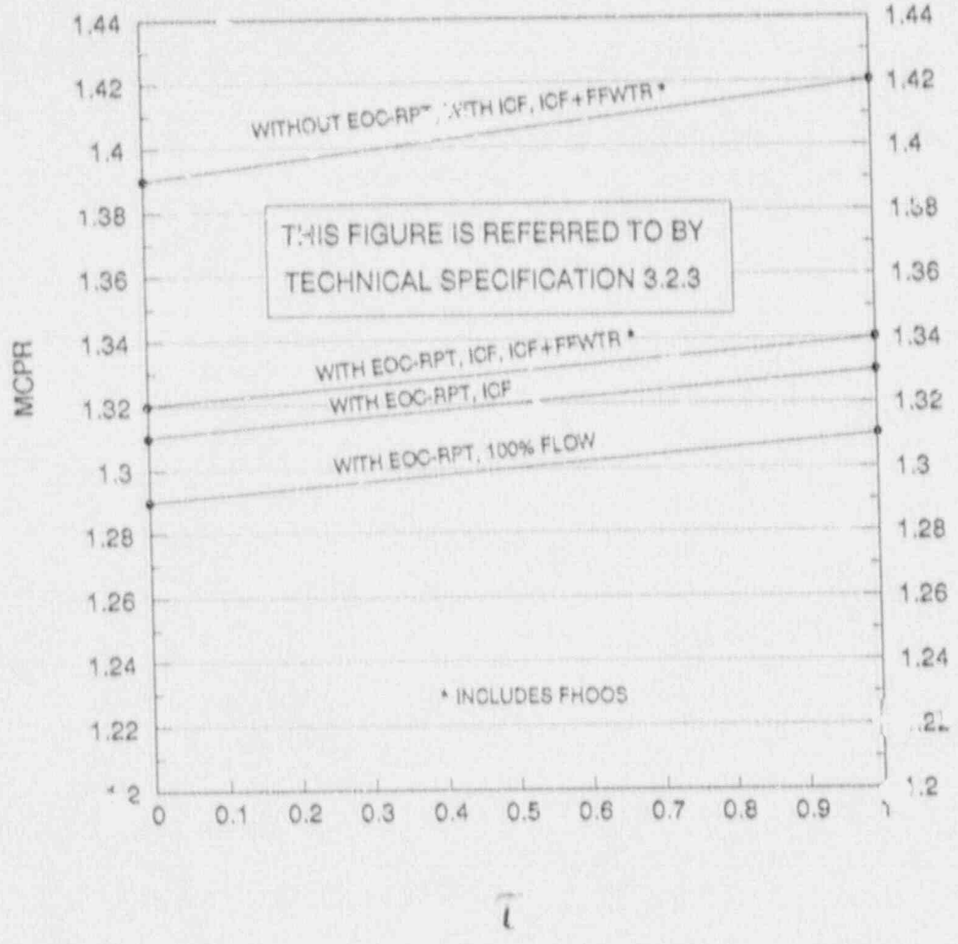
ICF - INCREASED CORE FLOW (UP TO 105% RATED)

FHOOS - FEEDWATER HEATING OUT OF SERVICE THROUGHOUT C UP TO 60° F TEMP. REDUCTION; ACHIEVED BY REMOVAL OF FEEDWATER HEATER(S))

FFWTR - FINAL FEEDWATER TEMPERATURE REDUCTION AT END-OF-CYCLE (UP TO 60° F TEMP. REDUCTION; ACHIEVED BY REMOVAL OF ALL 6th STAGE HEATERS)

MINIMUM CRITICAL POWER RATIO (MCPR) VERSUS τ
FUEL TYPES BP8x8R, GE84WR & GE82WR
(BOC TO EOC - 2000 MWD/ST)

FIGURE 8



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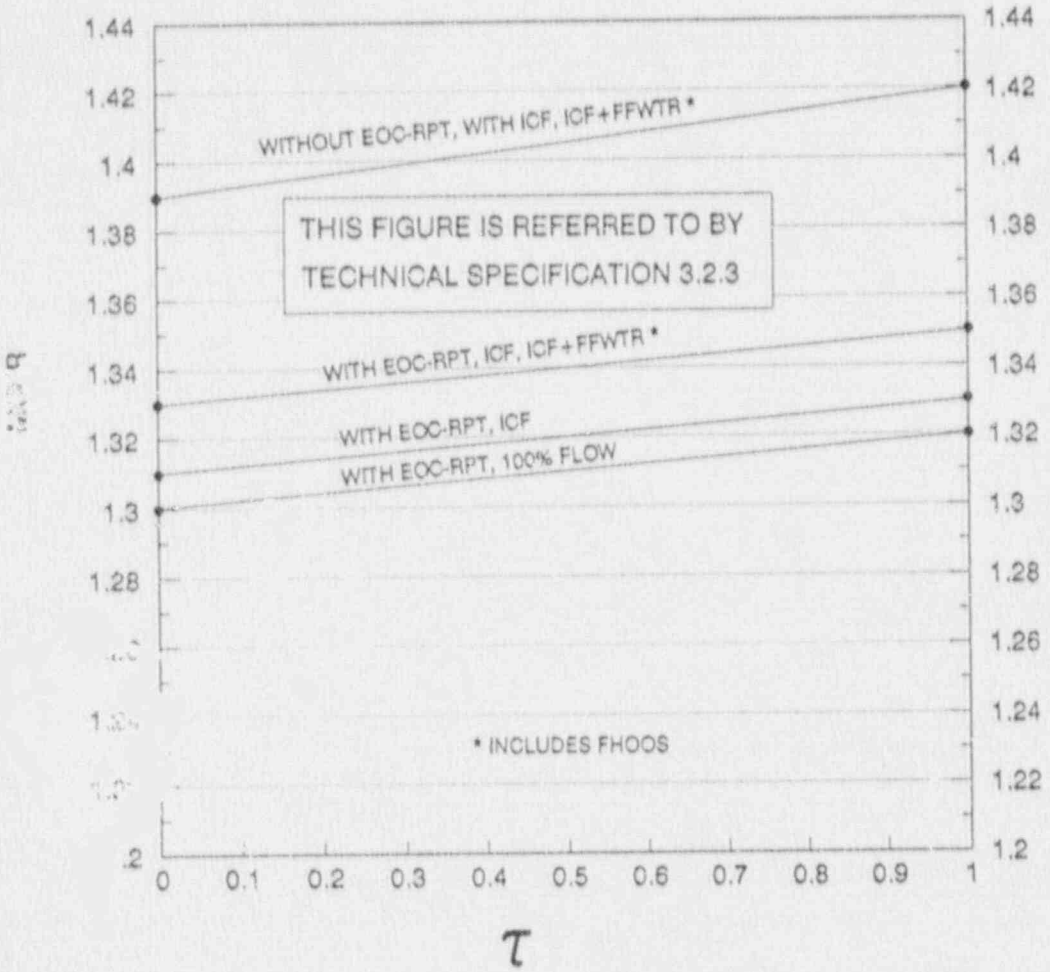
MINIMUM CRITICAL POWER RATIO (MCPR) VERSUS T
FUEL TYPES BP8x8R & GE82WR
(EOC - 2000 MWD/ST TO EOC)

FIGURE 9



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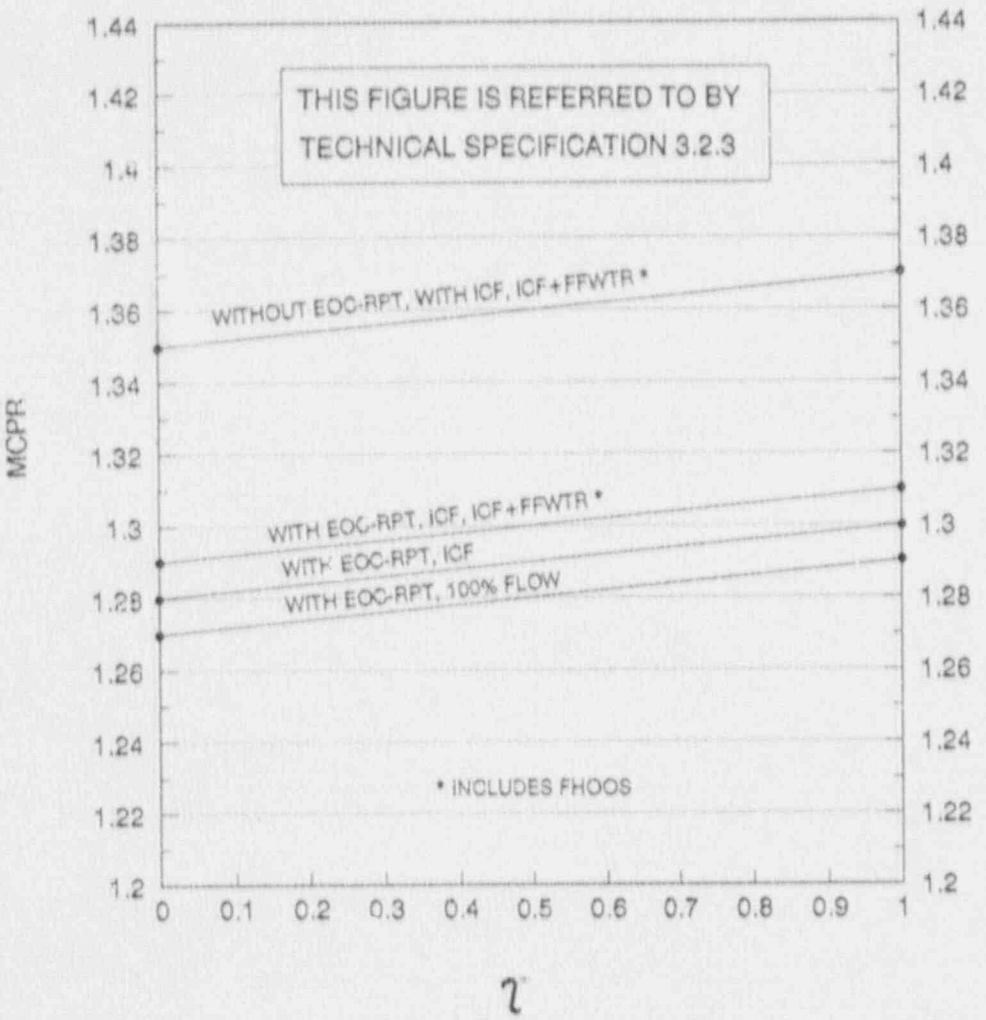
MINIMUM CRITICAL POWER RATIO (MCPR) VERSUS τ
FUEL TYPE GE84WR
(EOC - 2000 MWD/ST TO EOC)

FIGURE 10



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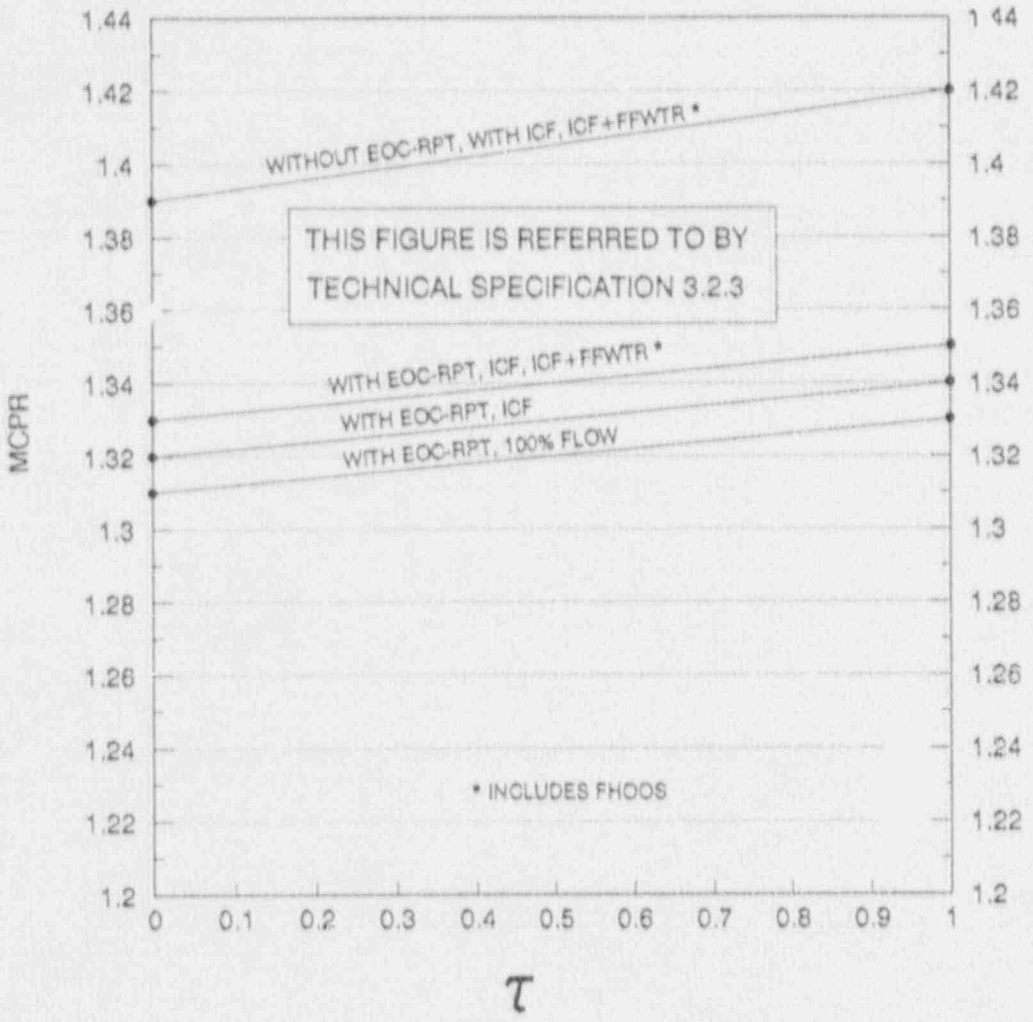
MINIMUM CRITICAL POWER RATIO (MCPR) VERSUS τ
FUEL TYPE GE8x8NB
(BOC TO EOC - 2000 MWD/ST)

FIGURE 11



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MINIMUM CRITICAL POWER RATIO (MCPR) VERSUS τ
FUEL TYPE GE8x8NB
(EOC - 2000 MWD/ST TO EOC)

FIGURE 12

K_f Factor vs Core Flow

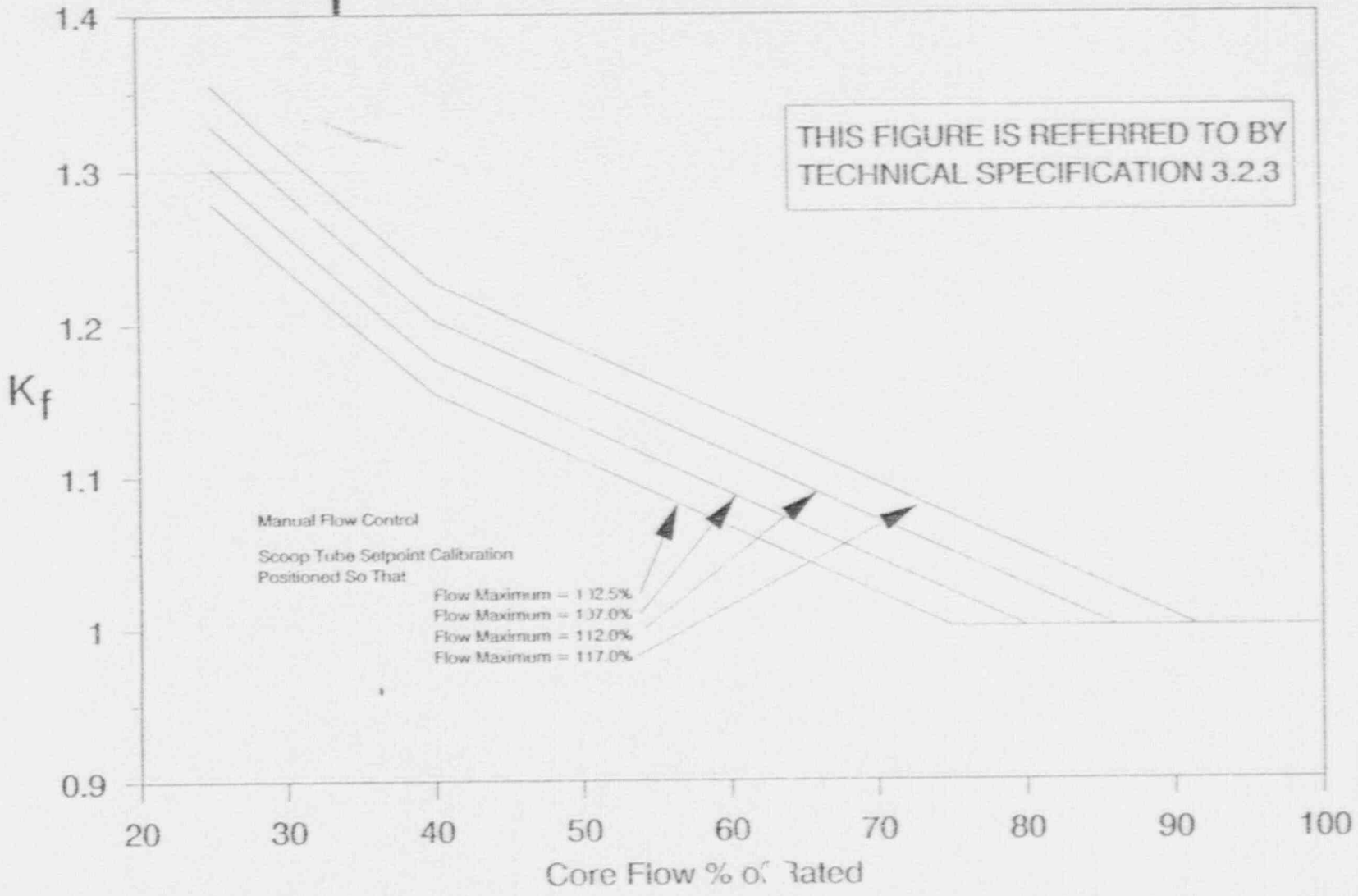

FIGURE 13

TABLE 1

SINGLE LOOP REDUCTION FACTOR

0.89

THIS TABLE IS REFERRED TO BY
TECHNICAL SPECIFICATION 3.2.1

TABLE 2

ROD BLOCK MONITOR SETPOINT

N=106

THIS TABLE IS REFERRED TO BY
TECHNICAL SPECIFICATION 3.3.6

TABLE 3

LINEAR HEAT GENERATION RATE LIMITS

FUEL TYPE	MAXIMUM VALUE
BP/P8X8R	13.4 KW/ft
GE8X8EB (GE82WR & GE84WR)	14.4 KW/ft
GE8x8NB	14.4 KW/ft

THIS TABLE IS REFERRED TO BY
TECHNICAL SPECIFICATION 3.2.4