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A001

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3.2 Core Operating Limits Report (COLR)

3.2.1 Core Operating Limits Report (COLR)

TRO 3.2.1 The Core Operating Limits specified in the attached COLR shall be met.

APPLICABILITY: Specified in the referenced Technical Specifications.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Core Operating Limits not met.	A.1 Perform action(s) described in referenced Technical Specification.	Specified in referenced Technical Specifications.

TECHNICAL REQUIREMENT SURVEILLANCE

SURVEILLANCE	FREQUENCY
-----NOTE----- No associated Surveillances. Surveillances are implemented in the applicable Technical Specifications.	N/A

Susquehanna SES
Unit 2 Cycle 12

CORE OPERATING LIMITS REPORT

Nuclear Fuels Engineering

October 2004

CORE OPERATING LIMITS REPORT
REVISION DESCRIPTION INDEX

Rev. No.	Affected Sections	Description/Purpose of Revision
0	ALL	Issuance of this COLR is in support of Unit 2 Cycle 12 operation.
1	5.0 6.0 8.0	This revision adds a text box to all appropriate plots. This text box indicates that for all bypass operable cases, four bypass valves are assumed operable. For the bypass inoperable cases, the text box indicates that two or more bypass valves are assumed inoperable. This revision was generated in response to Facility Operating License Amendment 185 which altered SR 3.7.6.1. This revision is administative in nature and no underlying calculations or plotted data were altered.
2	TOC 1.0 9.0 10.0	This revision adds the Power / Flow map to the COLR. Section 1.0 was revised to include the stability regions as part of the COLR. The Power / Flow map was added as Section 9.0. The Reference section was renumbered as Section 10.0 and a stability reference added. This revision is administrative in nature since the Power / Flow map is already included in NDAP-QA-0338.
3	5.0 8.0 10.0	The figures within Section 5.0 and Section 8.0 are revised to incorporate the 0.02 MCPR Safety Limit reduction approved by Amendment No. 191. Figure 5.2-2 is revised to correct the Operating Limit error documented by CR 606127.

SUSQUEHANNA STEAM ELECTRIC STATION
Unit 2 Cycle 12
CORE OPERATING LIMITS REPORT

Table of Contents

1.0 INTRODUCTION

This CORE OPERATING LIMITS REPORT for Susquehanna Unit 2 Cycle 12 is prepared in accordance with the requirements of Susquehanna Unit 2, Technical Specification 5.6.5. As required by Technical Specifications 5.6.5, core shutdown margin, the core operating limits, APRM setpoints, and stability regions presented herein were developed using NRC-approved methods and are established such that all applicable limits of the plant safety analysis are met.

2.0 DEFINITIONS

Terms used in this COLR but not defined in Section 1.0 of the Technical Specifications or Section 1.1 of the Technical Requirements Manual are provided below.

2.1 The AVERAGE BUNDLE EXPOSURE shall be equal to the total energy produced by the bundle divided by the total initial weight of uranium in the fuel bundle.

2.2 The AVERAGE PLANAR EXPOSURE at a specified height shall be equal to the total energy produced per unit length at the specified height divided by the total initial weight of uranium per unit length at that height.

2.3 The FRACTION OF LIMITING POWER DENSITY (FLPD) shall be the LHGR existing at a given height divided by the applicable LHGR for APRM Setpoint Limit for that bundle type.

2.4 The FRACTION OF RATED THERMAL POWER (FRTP) shall be the measured THERMAL POWER divided by the RATED THERMAL POWER.

2.5 FDLRX is the ratio of the maximum LHGR calculated by the core monitoring system for each fuel bundle divided by the LHGR limit for the applicable fuel bundle type.

2.6 MFLCPR is the ratio of the applicable MCPR operating limit for the applicable fuel bundle type divided by the MCPR calculated by the core monitoring system for each fuel bundle.

2.7 MAPRAT is the ratio of the maximum APLHGR calculated by the core monitoring system for each fuel bundle divided by the APLGHR limit for the applicable fuel bundle type.

2.8 FDLRC is the ratio of the maximum LHGR calculated by the core monitoring system for each fuel bundle divided by the LHGR for APRM Setpoint Limit for the applicable fuel bundle type.

3.0 SHUTDOWN MARGIN

3.1 Technical Specification Reference

Technical Specification 3.1.1

3.2 Description

The SHUTDOWN MARGIN shall be equal to or greater than:

a) 0.38% Δk/k with the highest worth rod analytically determined

OR

b) 0.28% Δk/k with the highest worth rod determined by test

Since core reactivity will vary during the cycle as a function of fuel depletion and poison burnup, Beginning of Cycle (BOC) SHUTDOWN MARGIN (SDM) tests must also account for changes in core reactivity during the cycle. Therefore, the SDM measured at BOC must be equal to or greater than the applicable requirement from either 3.2.a or 3.2.b plus an adder, "R". The adder, "R", is the difference between the calculated value of maximum core reactivity (that is, minimum SDM) during the operating cycle and the calculated BOC core reactivity. If the value of "R" is zero (that is, BOC is the most reactive point in the cycle) no correction to the BOC measured value is required.

The SHUTDOWN MARGIN limits provided in 3.2a and 3.2b are applicable in MODES 1, 2, 3, 4, and 5. This includes core shuffling.

4.0 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)

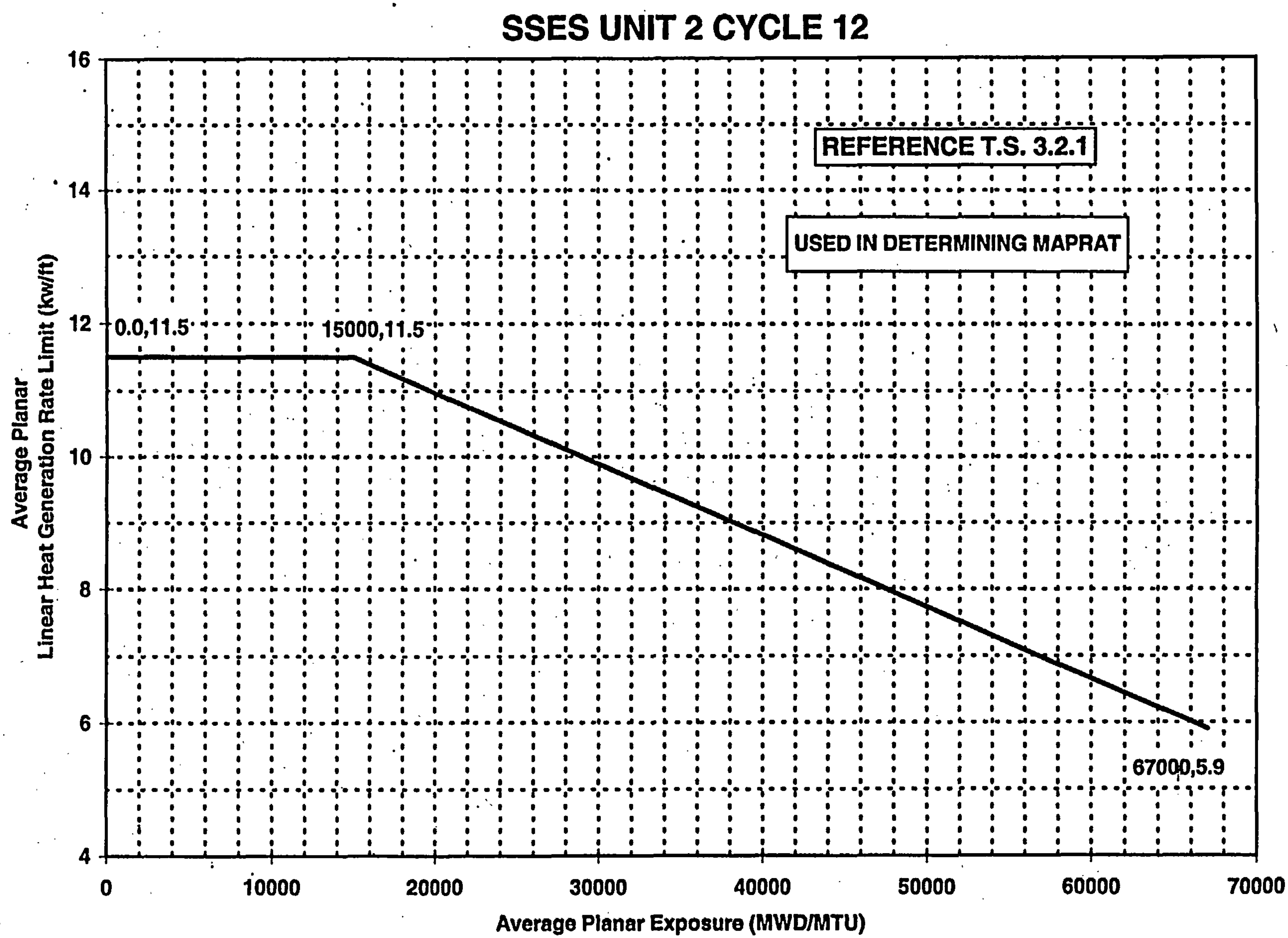
4.1 Technical Specification Reference

Technical Specification 3.2.1

4.2 Description

The APLHGRs for ATRIUM™-10 fuel shall not exceed the limit shown in Figure 4.2-1.

The APLHGR limits in Figure 4.2-1 are valid for Main Turbine Bypass Operable and Inoperable and EOC-RPT Operable and Inoperable in Two Loop operation. The APLHGR limits for Single Loop operation are provided in Section 8.0.



AVERAGE PLANAR LINEAR HEAT GENERATION RATE LIMIT VERSUS
AVERAGE PLANAR EXPOSURE TWO LOOP OPERATION
ATRIUM™-10 FUEL
FIGURE 4.2-1

5.0 MINIMUM CRITICAL POWER RATIO (MCPR)

5.1 Technical Specification Reference

Technical Specification 3.2.2, 3.7.6, and 3.3.4.1

5.2 Description

The MCPR limit is specified as a function of core power, core flow, average scram insertion time per Section 5.3 and plant equipment operability status. The MCPR limits for all fuel types (ATRIUM™-10) shall be the greater of the Flow-Dependent or the Power-Dependent MCPR, depending on the applicable equipment operability status.

a) EOC-RPT and Main Turbine Bypass Operable

Figure 5.2-1: Flow-Dependent MCPR value determined from BOC to EOC

Figure 5.2-2: Power-Dependent MCPR value determined from BOC to EOC

b) Main Turbine Bypass Inoperable / EOC-RPT Operable

Figure 5.2-3: Flow-Dependent MCPR value determined from BOC to EOC

Figure 5.2-4: Power-Dependent MCPR value determined from BOC to EOC

c) EOC-RPT Inoperable / Main Turbine Bypass Operable

Figure 5.2-5: Flow-Dependent MCPR value determined from BOC to EOC

Figure 5.2-6: Power-Dependent MCPR value determined from BOC to EOC

The MCPR limits in Figures 5.2-1 through 5.2-6 are valid for Two Loop operation.

The MCPR limits for Single Loop operation are provided in Section 8.0.

5.3 Average Scram Time Fraction

Table 5.3-1 provides the relationship between average scram time to control rod position and scram time fraction. The evaluation of scram insertion time data, as it relates to the attached table should be performed per Reactor Engineering procedures.

EOC-RPT and Main Turbine Bypass Operable

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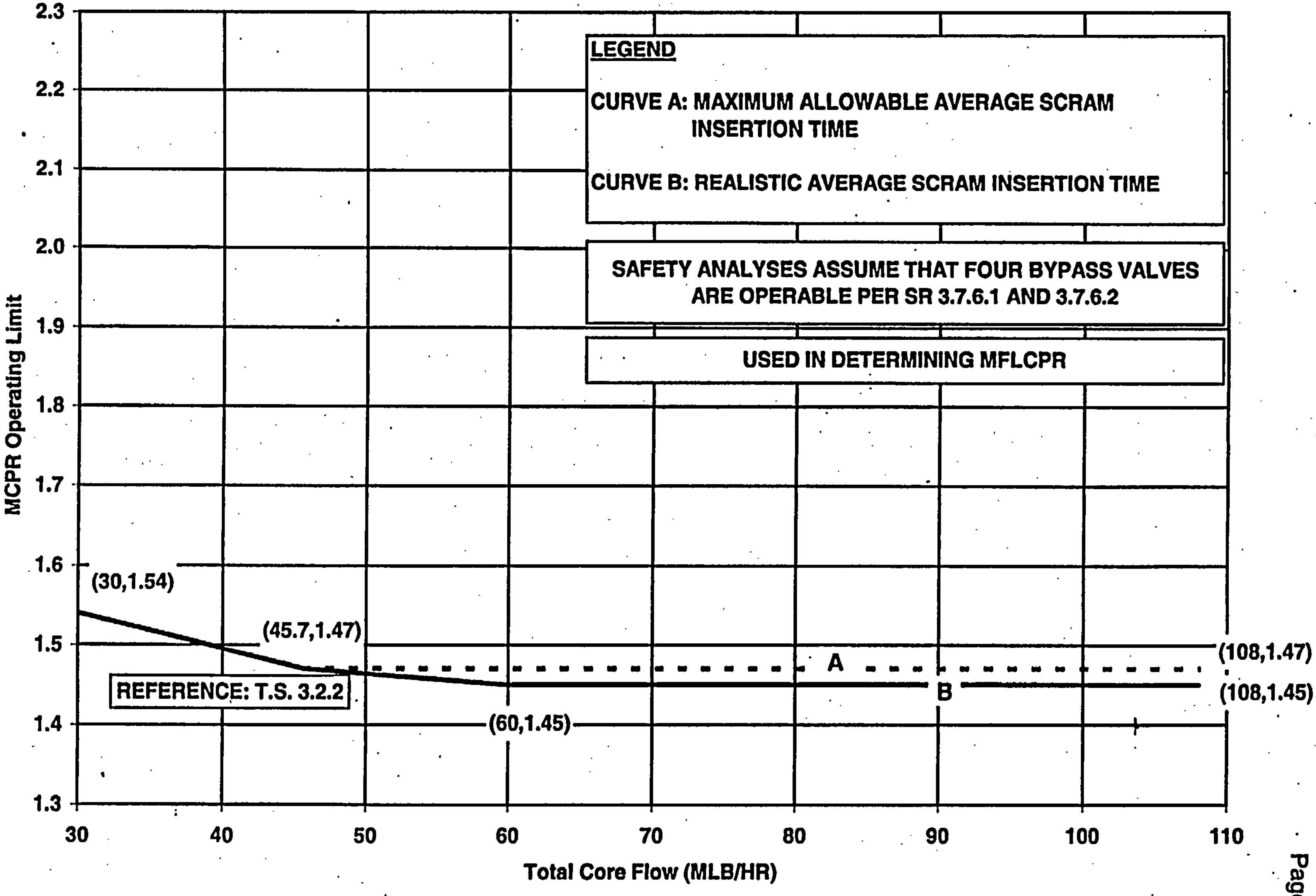
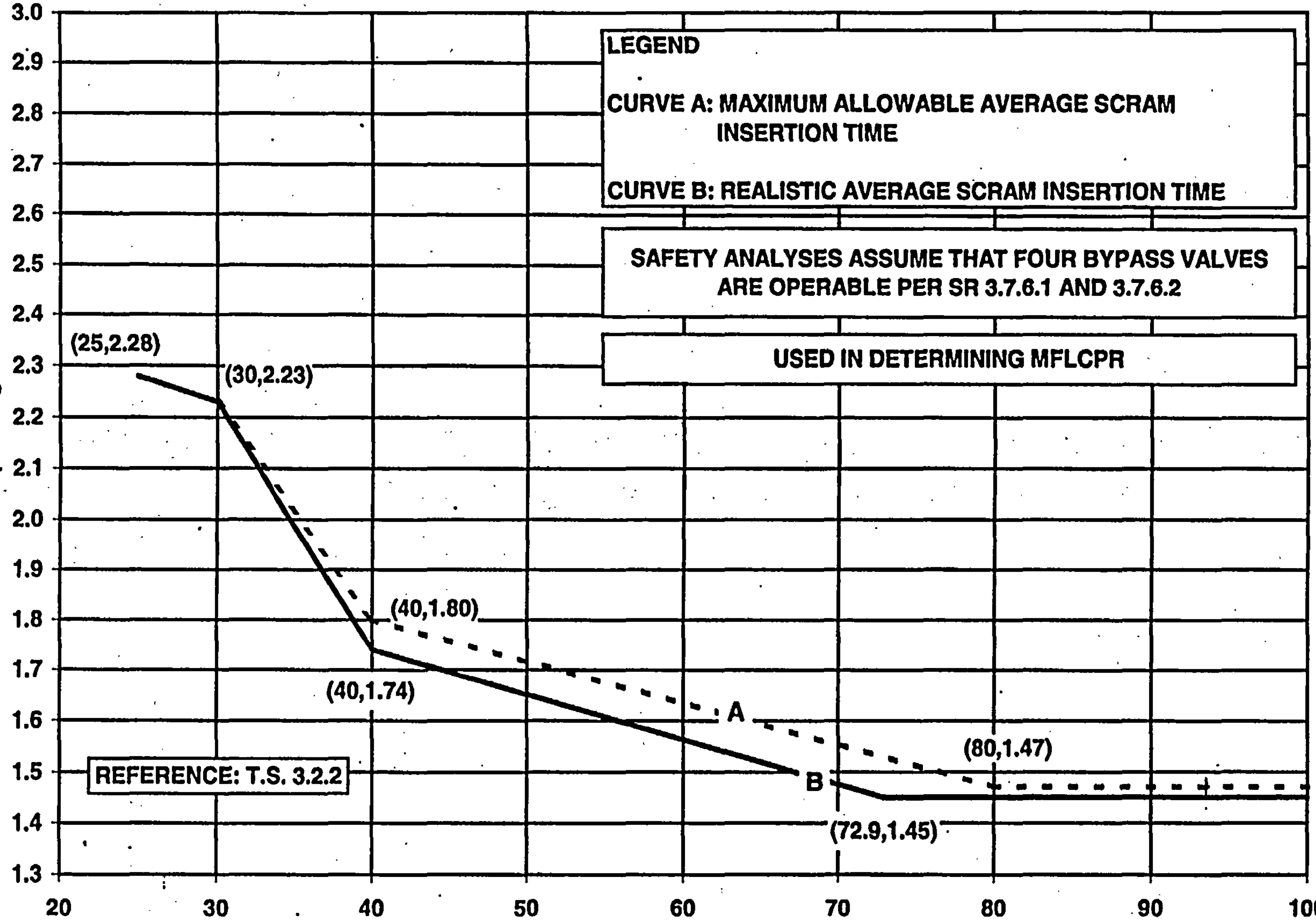


MCPR OPERATING LIMIT VERSUS TOTAL CORE FLOW
EOC-RPT AND MAIN TURBINE BYPASS OPERABLE
TWO LOOP OPERATION (BOC TO EOC)
FIGURE 5.2-1

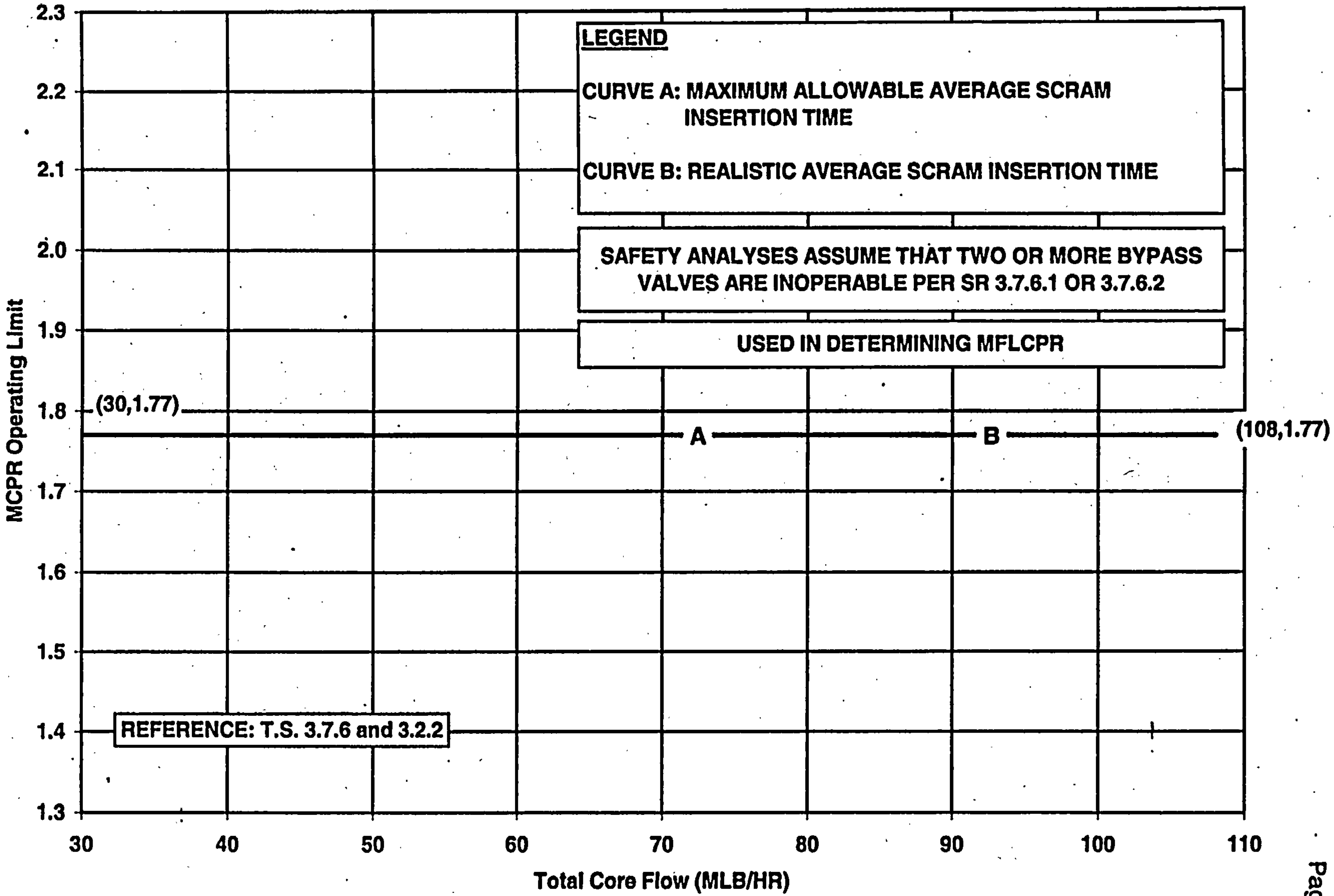
SSES UNIT 2 CYCLE 12



MCPR OPERATING LIMIT VERSUS CORE POWER
EOC-RPT AND MAIN TURBINE BYPASS OPERABLE
TWO LOOP OPERATION (BOC TO EOC)
FIGURE 5.2-2

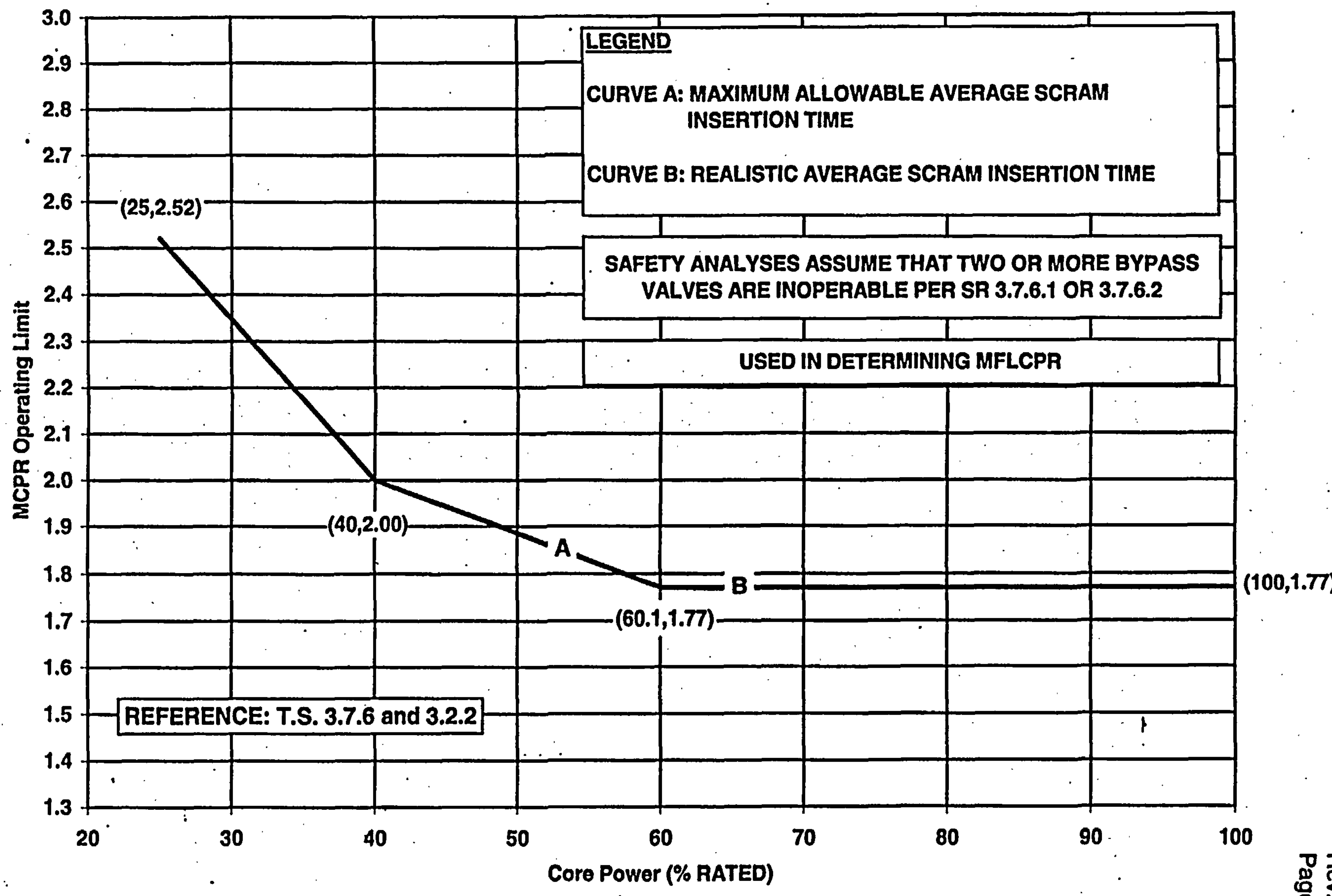
Main Turbine Bypass Inoperable / EOC-RPT Operable

SSES UNIT 2 CYCLE 12



MCPR OPERATING LIMIT VERSUS TOTAL CORE FLOW
MAIN TURBINE BYPASS INOPERABLE / EOC-RPT OPERABLE
TWO LOOP OPERATION (BOC TO EOC)
FIGURE 5.2-3

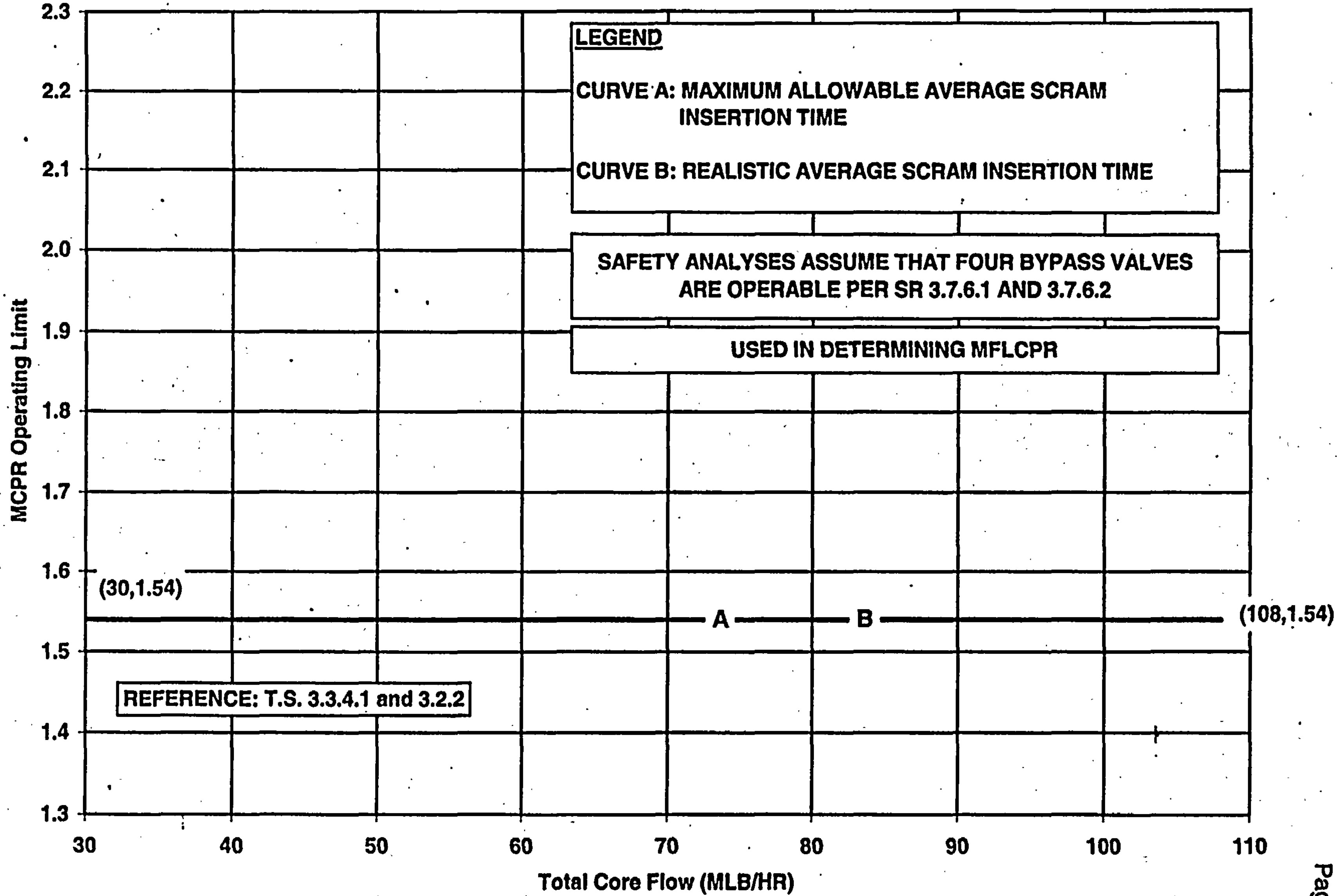
SSES UNIT 2 CYCLE 12



MCPR OPERATING LIMIT VERSUS CORE POWER
MAIN TURBINE BYPASS INOPERABLE / EOC-RPT OPERABLE
TWO LOOP OPERATION (BOC to EOC)
FIGURE 5.2-4

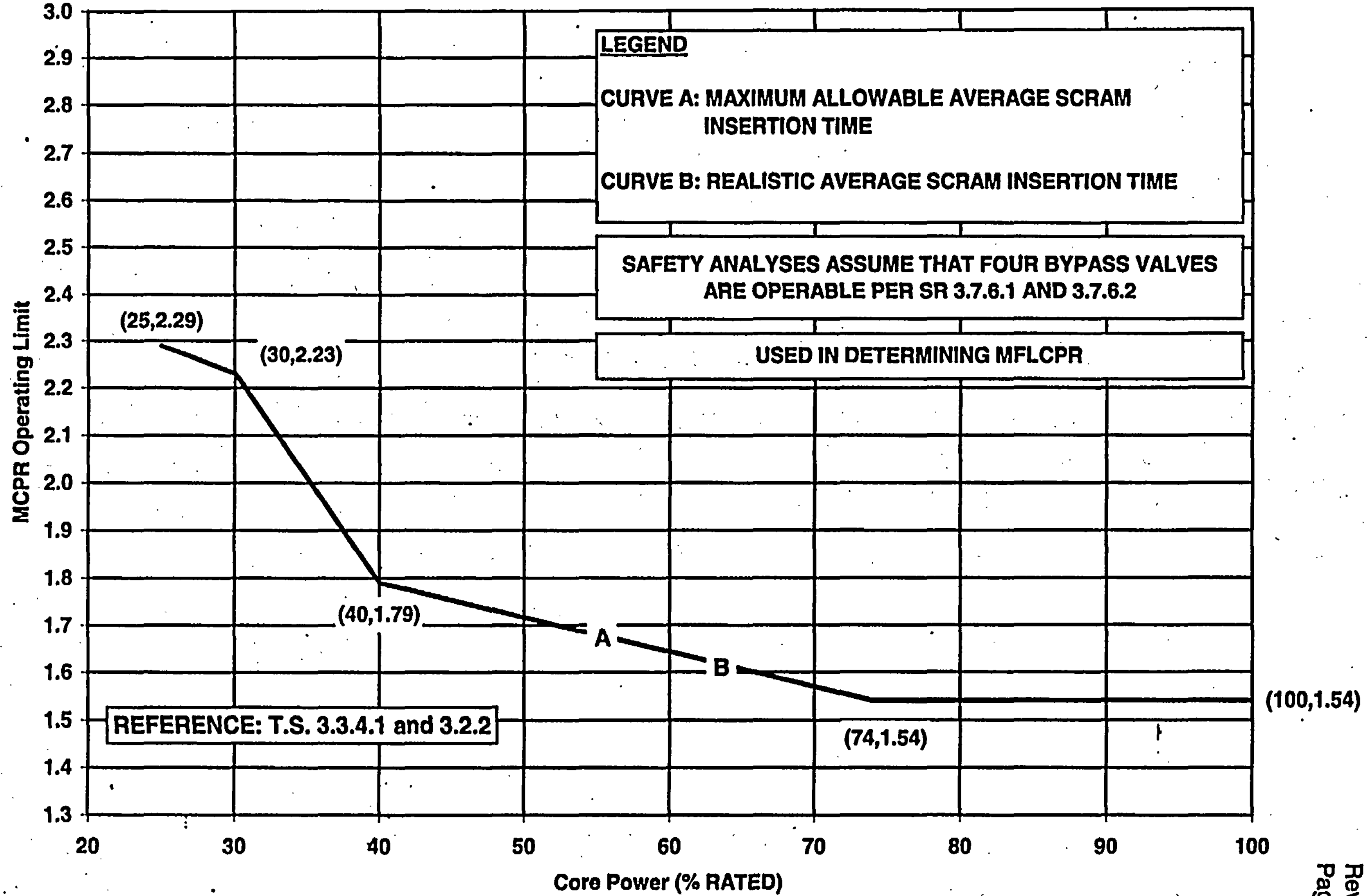
EOC-RPT Inoperable / Main Turbine Bypass Operable

SSES UNIT 2 CYCLE 12



MCPR OPERATING LIMIT VERSUS TOTAL CORE FLOW
EOC-RPT INOPERABLE / MAIN TURBINE BYPASS OPERABLE
TWO LOOP OPERATION (BOC TO EOC)
FIGURE 5.2-5

SSES UNIT 2 CYCLE 12



MCPR OPERATING LIMIT VERSUS CORE POWER
EOC-RPT INOPERABLE / MAIN TURBINE BYPASS OPERABLE
TWO LOOP OPERATION (BOC to EOC)
FIGURE 5.2-6

Table 5.3-1

Average Scram Time Fraction Table For Use With Scram Time Dependent MCPR Operating Limits

Control Rod Position	Average Scram Time to Position (seconds)					
45	0.470	0.480	0.490	0.500	0.510	0.520
39	0.630	0.676	0.722	0.768	0.814	0.860
25	1.500	1.582	1.664	1.746	1.828	1.910
5	2.700	2.848	2.996	3.144	3.292	3.440
Scram Time Fraction	0.000	0.200	0.400	0.600	0.800	1.000
Average Scram Insertion Time	Realistic					Maximum Allowable

6.0 LINEAR HEAT GENERATION RATE (LHGR)

6.1 Technical Specification Reference

Technical Specification 3.2.3 and 3.7.6

6.2 Description

The LHGR limits are specified below as a function of Main Turbine Bypass operability for each fuel type as follows:

Main Turbine Bypass Operable

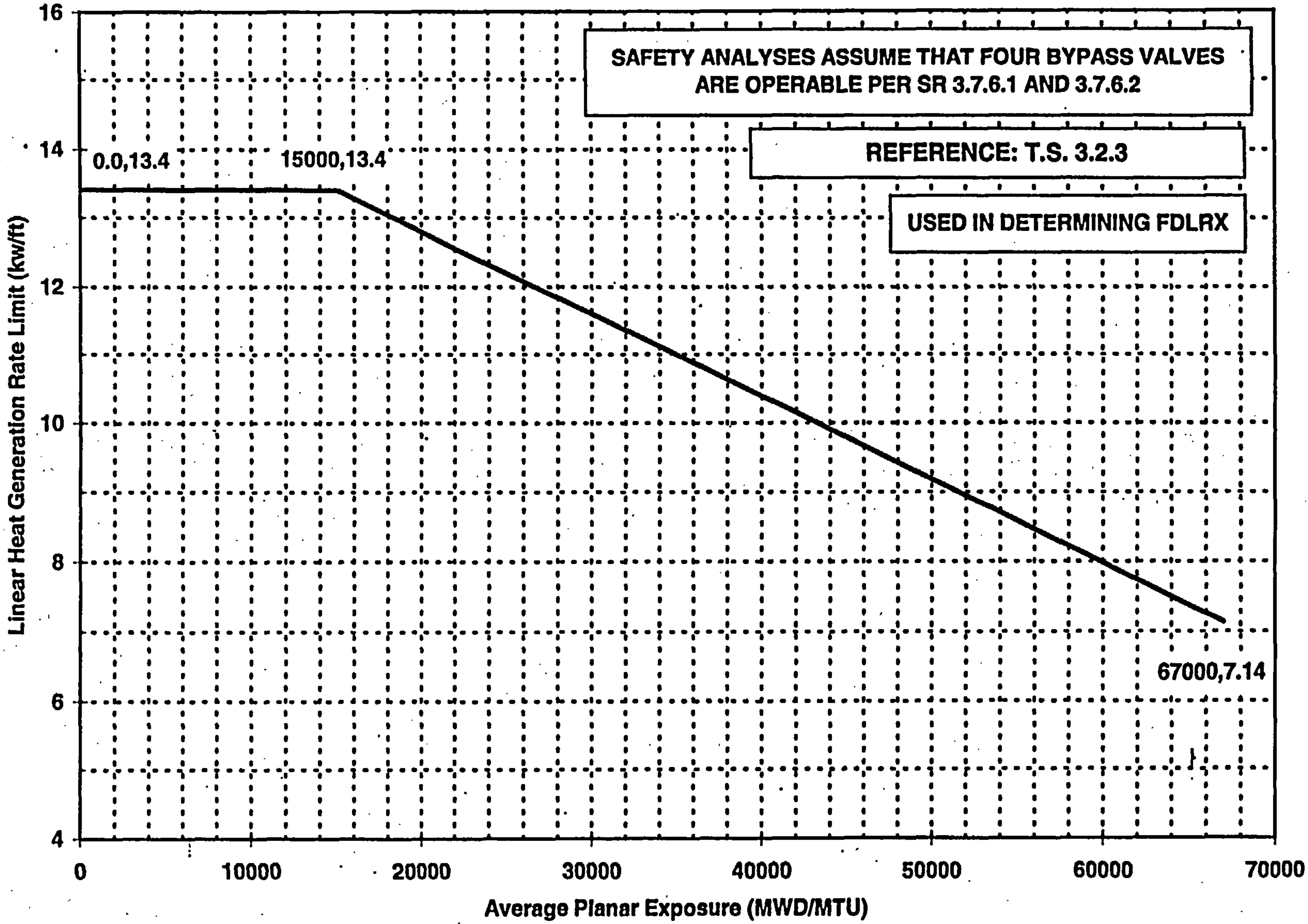
The LHGR for ATRIUM™-10 fuel shall not exceed the LHGR limit determined from Figure 6.2-1.

Main Turbine Bypass Inoperable

The LHGR for ATRIUM™-10 fuel shall not exceed the LHGR limit determined from Figure 6.2-2.

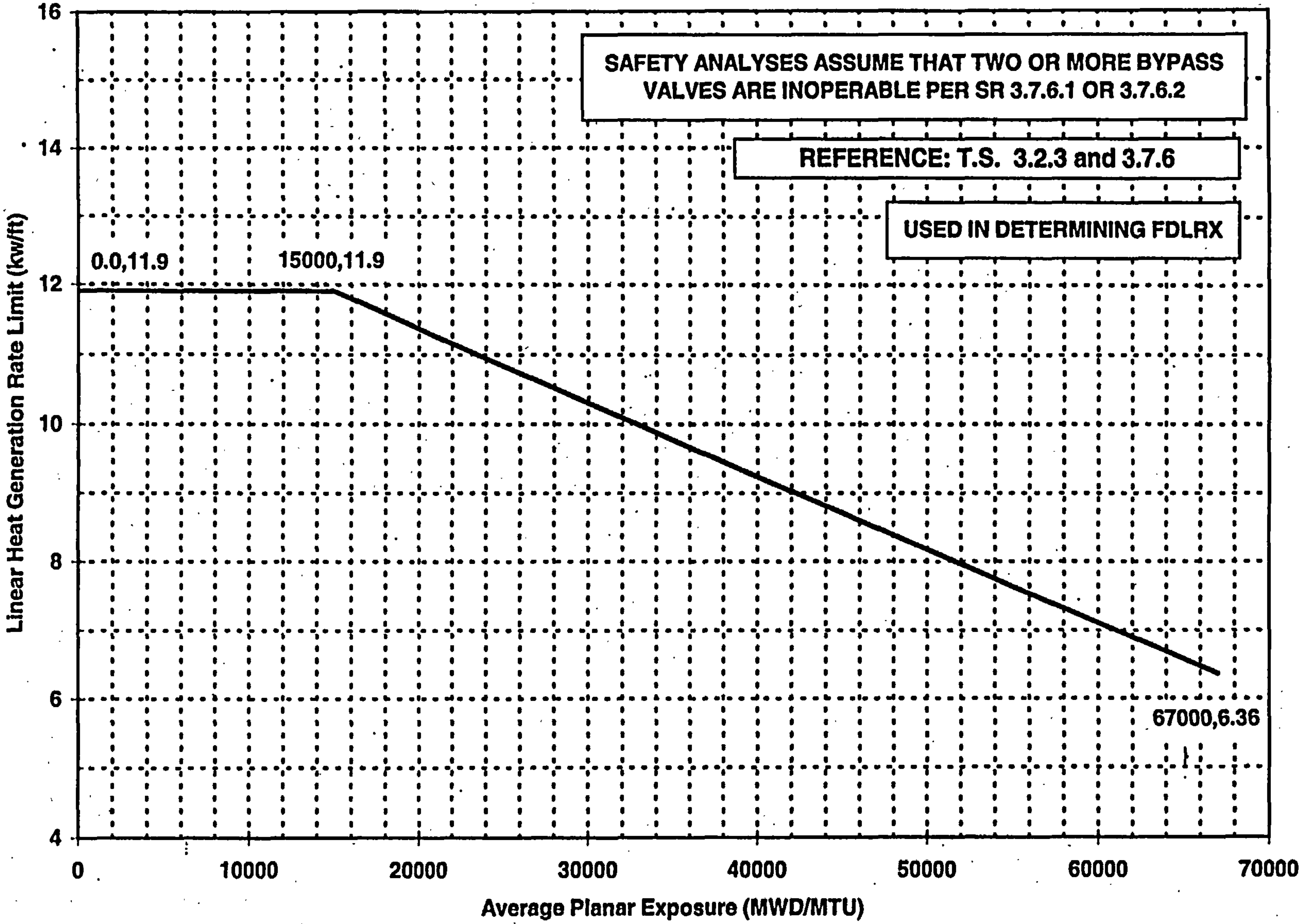
The LHGR limits in Figures 6.2-1 and 6.2-2 are valid for Two Loop and Single Loop operation.

SSES UNIT 2 CYCLE 12



LINEAR HEAT GENERATION RATE LIMIT VERSUS AVERAGE PLANAR EXPOSURE
MAIN TURBINE BYPASS OPERABLE
ATRIUM™-10 FUEL
FIGURE 6.2-1

SSES UNIT 2 CYCLE 12



LINEAR HEAT GENERATION RATE LIMIT VERSUS AVERAGE PLANAR EXPOSURE
MAIN TURBINE BYPASS INOPERABLE
ATRIUM^{TM}-10 FUEL
FIGURE 6.2-2

7.0 AVERAGE POWER RANGE MONITOR (APRM) GAIN AND SETPOINTS

7.1 Technical Specification Reference

Technical Specification 3.2.4 and 3.3.1.1

7.2 Description

The APRM flow biased simulated thermal power-upscale scram trip setpoint (S) and flow biased neutron flux-upscale control rod block trip setpoint (S_{RB}) shall be established as specified in Table 7.2-1 and Table 7.2-2, including any adjustments per Technical Specification LCO 3.2.4.

Technical Specification LCO 3.2.4 provides an option to adjust the APRM setpoints when MFLPD is greater than FRACTION OF RATED THERMAL POWER (FRTP). The adjustment applies to both the APRM flow biased simulated thermal power-upscale scram trip setpoint and flow biased neutron flux-upscale control rod block trip setpoint for Two Loop and Single Loop operation. The APRM setpoints for Specification 3.2.4 are established in Tables 7.2-1 and 7.2-2.

Table 7.2-1
APRM Setpoint for
Two Loop Operation

Trip Setpoint	Allowable Value
$S \leq (0.58W + 59\%)\ T$	$S \leq (0.58W + 62\%)\ T$[1]
$S_{RB} \leq (0.58W + 50\%)\ T$	$S_{RB} \leq (0.58W + 53\%)\ T$

Table 7.2-2
APRM Setpoint for
Single Loop Operation

Trip Setpoint	Allowable Value
$S \leq (0.58W + 54\%)\ T$	$S \leq (0.58W + 57\%)\ T$[1]
$S_{RB} \leq (0.58W + 45\%)\ T$	$S_{RB} \leq (0.58W + 48\%)\ T$

where: S and S_{RB} are in percent of RATED THERMAL POWER

W = Loop recirculation flow as a percentage of the loop recirculation flow which produces a core flow of 100 million lbs/hr

T = Lowest value of the ratio of FRTP divided by the MFLPD.[2] The FLPD is the actual LHGR divided by the applicable LHGR limit for APRM Setpoints. The LHGR limit for APRM setpoints for ATRIUM™-10 fuel shall be taken from Figure 7.2-1.

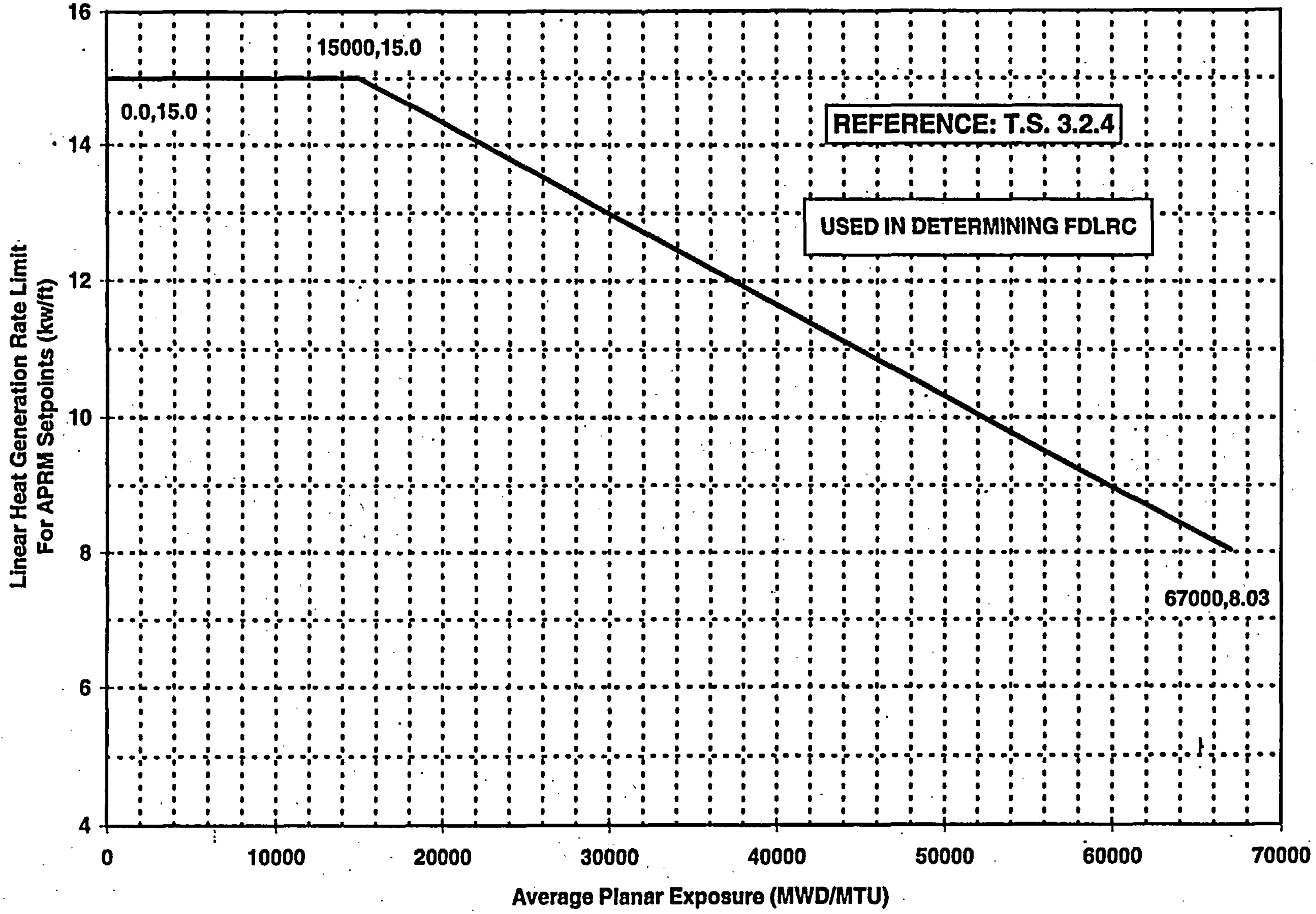
The LHGR for APRM setpoint limits in Figure 7.2-1 are valid for Main Turbine Bypass Operable and Inoperable and EOC-RPT Operable and Inoperable for both Two and Single Loop operation.

For calculated T-values greater than 1.0, a ratio of 1.0 is used in the above equations.

1 APRM flow biased simulated thermal power-upscale scram allowable value in this table is equal to the value established in Technical Specification 3.3.1.1.

2 For the calculation of T, the value of MFLPD shall be the maximum value of FDLRC.

SSES UNIT 2 CYCLE 12



LINEAR HEAT GENERATION RATE LIMIT FOR APRM SETPOINTS VERSUS AVERAGE PLANAR EXPOSURE
ATRIUM™ -10 FUEL
FIGURE 7.2-1

8.0 RECIRCULATION LOOPS - SINGLE LOOP OPERATION

8.1 Technical Specification Reference

Technical Specification 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.3.4.1, 3.4.1, and 3.7.6

8.2 Description

APLHGR

The APLHGR limit for ATRIUM™-10 fuel shall be equal to the APLHGR Limit from Figure 8.2-1.

The APLHGR limits in Figure 8.2-1 are valid for Main Turbine Bypass Operable and Inoperable and EOC-RPT Operable and Inoperable in Single Loop operation.

Minimum Critical Power Ratio Limit

The MCPR limit is specified as a function of core power, core flow, and plant equipment operability status. The MCPR limit for all fuel types (ATRIUM™-10) shall be the greater of:

a) Flow-Dependent MCPR value determined from Figure 8.2-2

OR

b) The Power-Dependent MCPR value determined from one of the following figures, as appropriate:

Figure 8.2-3 : EOC-RPT and Main Turbine Bypass Operable from BOC to EOC

Figure 8.2-4 : Main Turbine Bypass Inoperable / EOC-RPT Operable from BOC to EOC

Figure 8.2-5 : EOC-RPT Inoperable / Main Turbine Bypass Operable from BOC to EOC

The MCPR limits in Figures 8.2-2 through 8.2-5 are valid only for Single Loop operation.

Linear Heat Generation Rate Limit

The LHGR limits for Single Loop Operation are defined in Section 6.0.

Average Power Range Monitor (APRM) Gain And Setpoints

APRM setpoints and the LHGR limit for APRM setpoints for Single Loop operation are defined in Section 7.0.

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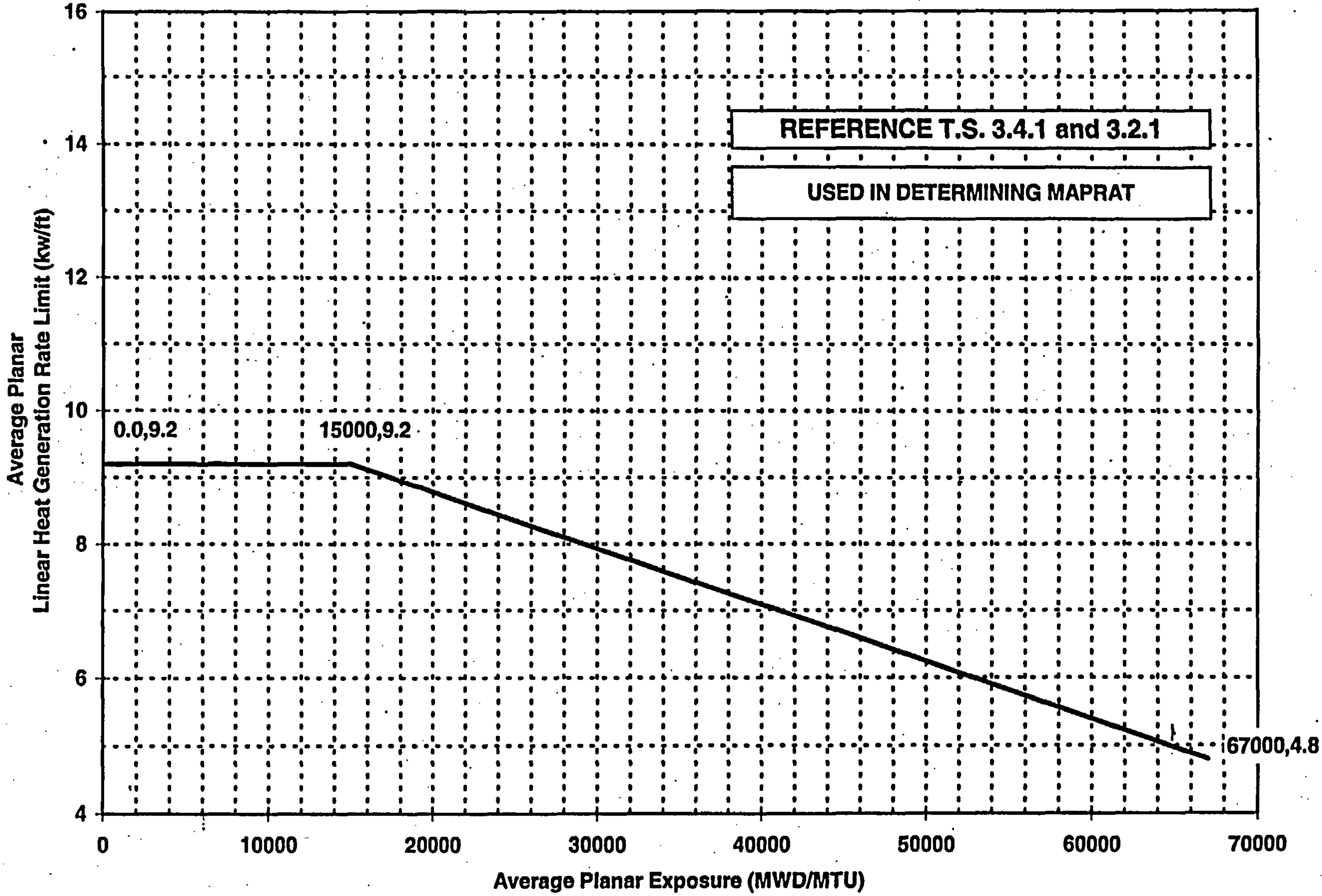
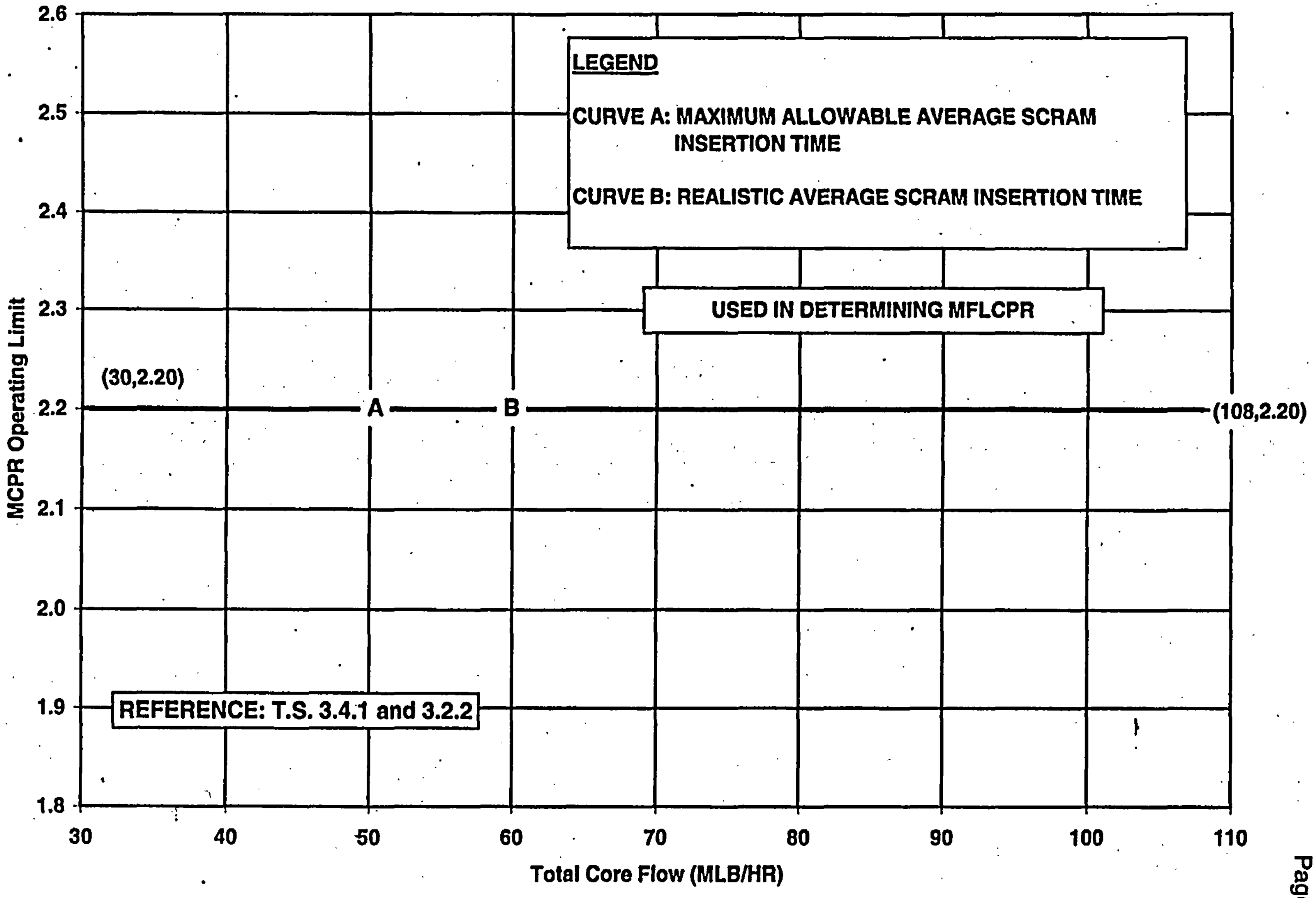


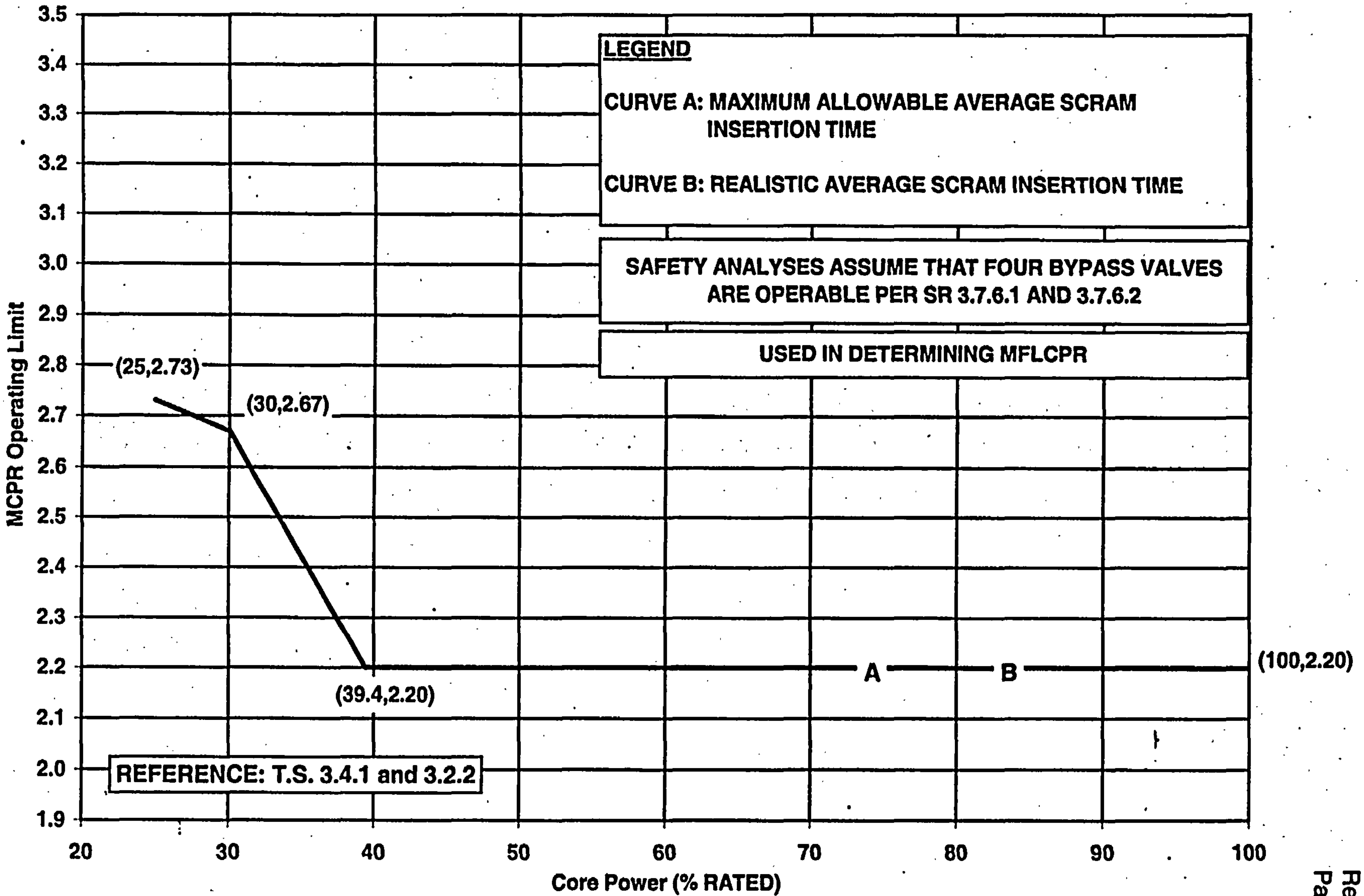
AVERAGE PLANAR LINEAR HEAT GENERATION RATE LIMIT VERSUS AVERAGE PLANAR EXPOSURE
SINGLE LOOP OPERATION
ATRIUM™-10 FUEL
FIGURE 8.2-1

SSES UNIT 2 CYCLE 12



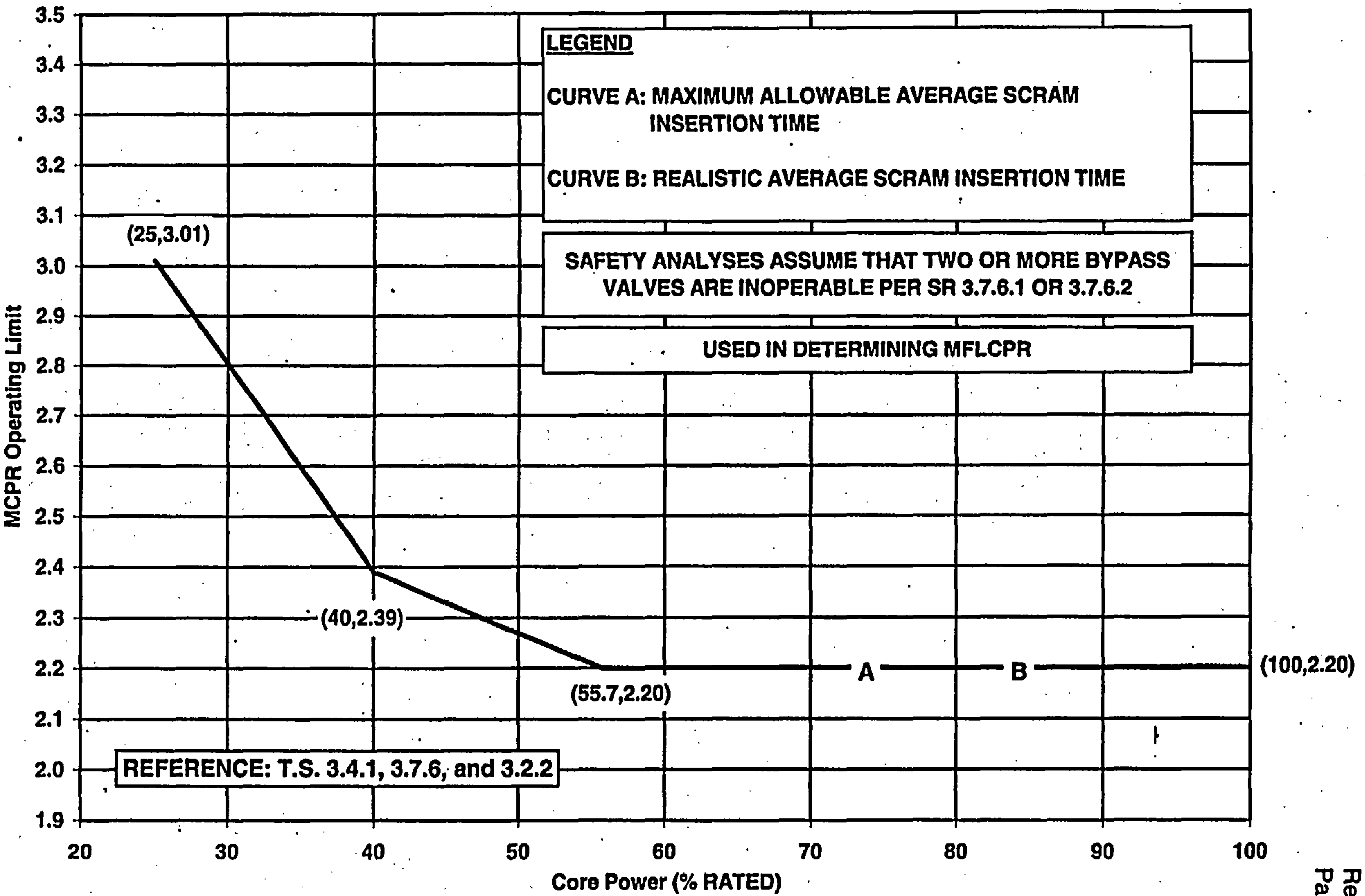
MCPR OPERATING LIMIT VERSUS TOTAL CORE FLOW
SINGLE LOOP OPERATION (BOC to EOC)
FIGURE 8.2-2

SSES UNIT 2 CYCLE 12

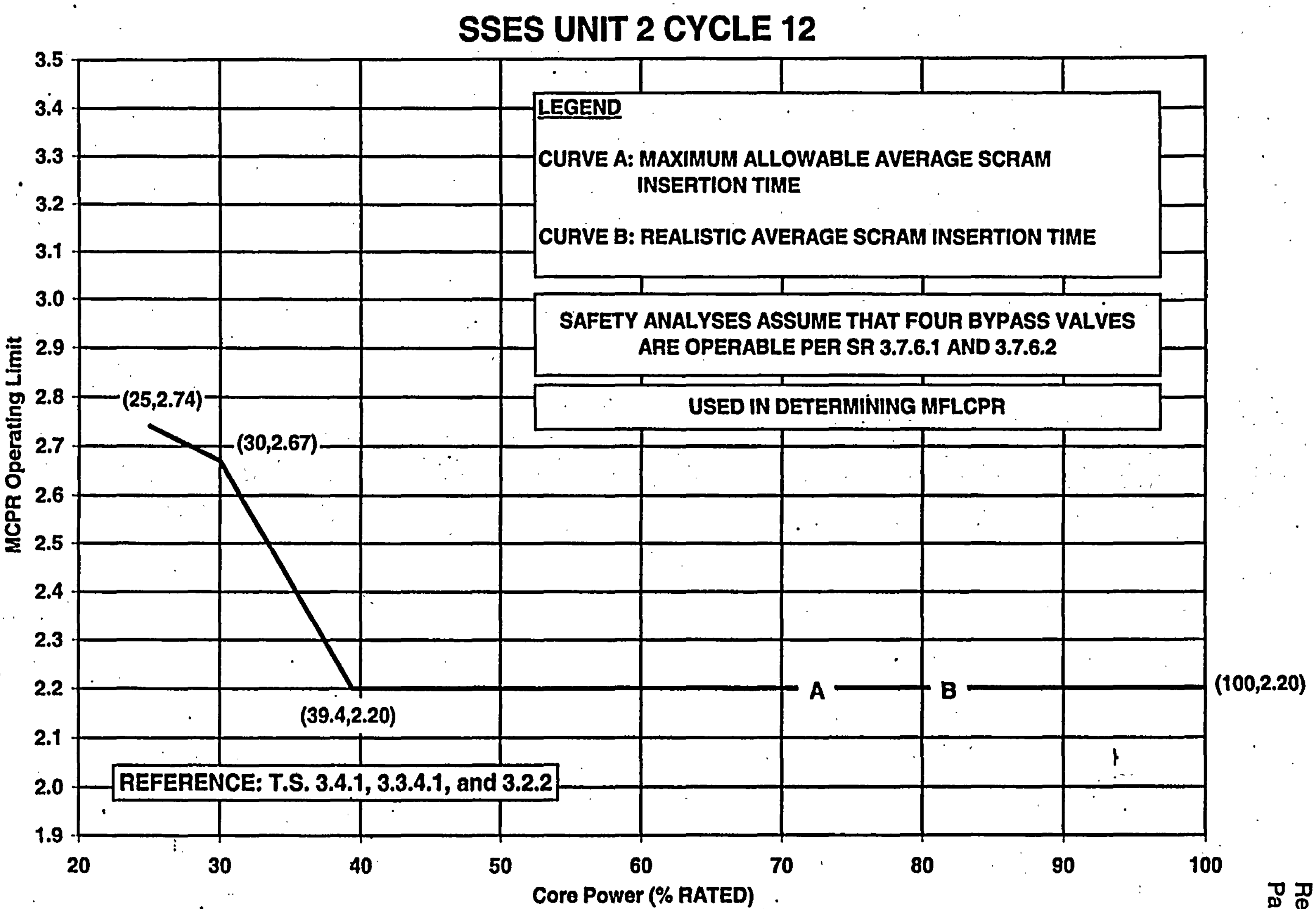


MCPR OPERATING LIMIT VERSUS CORE POWER
EOC-RPT AND MAIN TURBINE BYPASS OPERABLE
SINGLE LOOP OPERATION (BOC to EOC)
FIGURE 8.2-3

SSES UNIT 2 CYCLE 12



MCPR OPERATING LIMIT VERSUS CORE POWER
MAIN TURBINE BYPASS INOPERABLE / EOC-RPT OPERABLE
SINGLE LOOP OPERATION (BOC to EOC)
FIGURE 8.2-4



MCPR OPERATING LIMIT VERSUS CORE POWER
EOC-RPT INOPERABLE / MAIN TURBINE BYPASS OPERABLE
SINGLE LOOP OPERATION (BOC to EOC)
FIGURE 8.2-5

9.0 POWER / FLOW MAP

9.1 Technical Specification Reference

Technical Specification 3.4.1

9.2 Description

Monitor reactor conditions to maintain THERMAL POWER / core flow outside of Stability Regions I and II of the Power / Flow map, Figure 9.1.

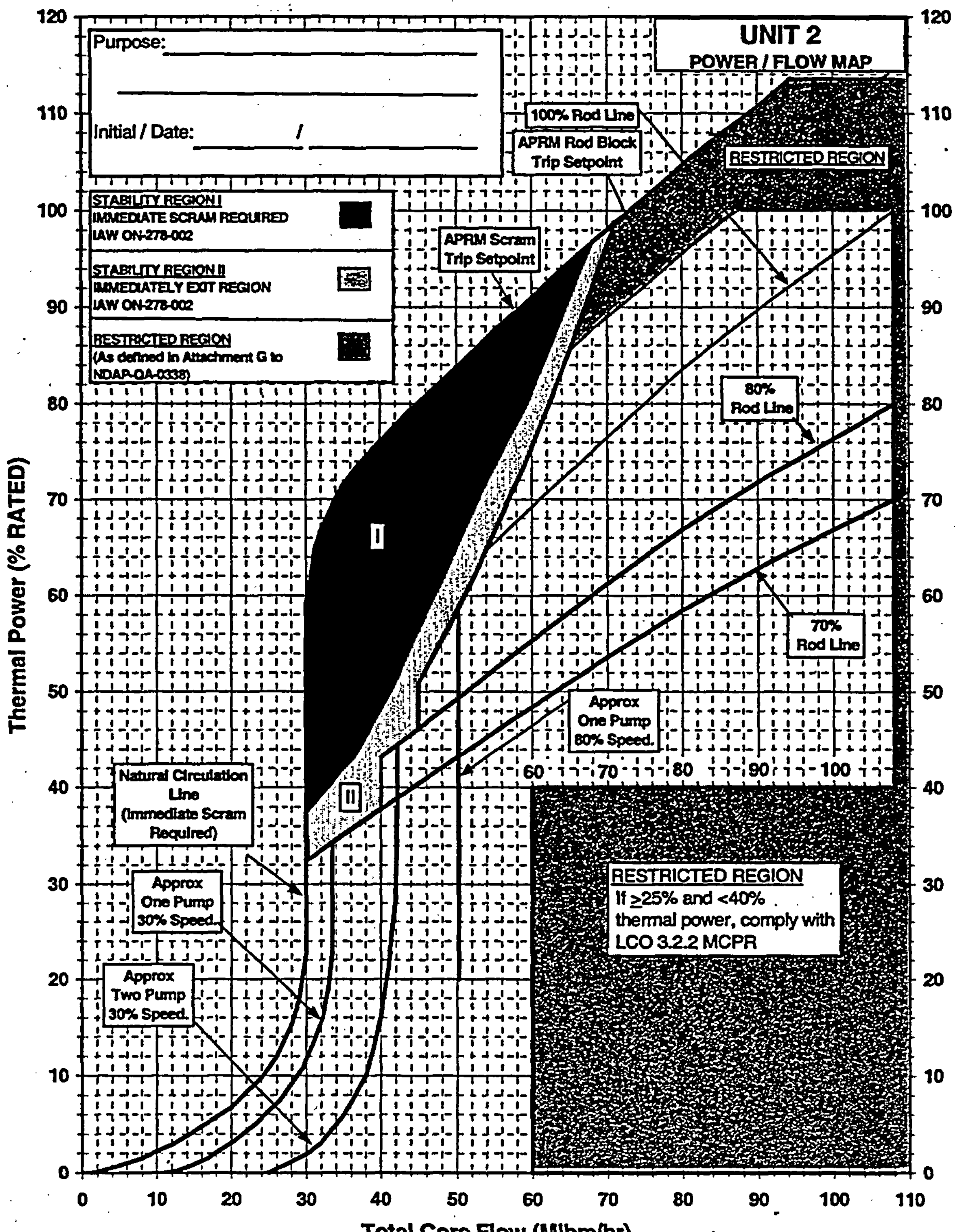


Figure 9.1
Power / Flow Map

10.0 REFERENCES

10.1 The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

1. PL-NF-90-001-A, "Application of Reactor Analysis Methods for BWR Design and Analysis," July 1992.

2. PL-NF-90-001, Supplement 1-A, "Application of Reactor Analysis Methods for BWR Design and Analysis: Loss of Feedwater Heating Changes and Use of RETRAN MOD 5.1," August 1995.

3. PL-NF-90-001, Supplement 2-A, "Application of Reactor Analysis Methods for BWR Design and Analysis: CASMO-3G Code and ANFB Critical Power Correlation," July 1996.

4. PL-NF-90-001, Supplement 3-A, "Application of Reactor Analysis Methods for BWR Design and Analysis: Application Enhancements," March 2001.

5. XN-NF-80-19(A), Volume 1, and Volume 1 Supplements 1 and 2 (March 1983), and Volume 1 Supplement 3 (November 1990), "Exxon Nuclear Methodology for Boiling Water Reactors: Neutronic Methods for Design and Analysis," Exxon Nuclear Company, Inc.

6. XN-NF-80-19(P)(A), Volumes 2, 2A, 2B, and 2C "Exxon Nuclear Methodology for Boiling Water Reactors: EXEM BWR ECCS Evaluation Model," September 1982.

7. XN-NF-80-19(P)(A), Volume 3 Revision 2 "Exxon Nuclear Methodology for Boiling Water Reactors Thermex: Thermal Limits Methodology Summary Description," January 1987.

8. XN-NF-80-19(P)(A), Volume 4, Revision 1, "Exxon Nuclear Methodology for Boiling Water Reactors: Application of the ENC Methodology to BWR Reloads," Exxon Nuclear Company, Inc. June 1986.

9. XN-NF-85-67(P)(A), Revision 1, "Generic Mechanical Design for Exxon Nuclear Jet Pump BWR Reload Fuel," Exxon Nuclear Company, Inc., September 1986.

10. ANF-524(P)(A), Revision 2 and Supplement 1, Revision 2, "Advanced Nuclear Fuels Corporation Critical Power Methodology for Boiling Water Reactors," November 1990.

11. NE-092-001A, Revision 1, "Licensing Topical Report for Power Uprate With Increased Core Flow," Pennsylvania Power & Light Company, December 1992 and NRC SER (November 30, 1993).

12. ANF-89-98(P)(A) Revision 1 and Revision 1 Supplement 1, "Generic Mechanical Design Criteria for BWR Fuel Designs," Advanced Nuclear Fuels Corporation, May 1995.

13. ANF-91-048(P)(A), "Advanced Nuclear Fuels Corporation Methodology for Boiling Water Reactors EXEM BWR Evaluation Model," January 1993.

14. XN-NF-79-71(P)(A) Revision 2, Supplements 1, 2, and 3, "Exxon Nuclear Plant Transient Methodology for Boiling Water Reactors," March 1986.

15. EMF-1997(P)(A) Revision 0, "ANFB-10 Critical Power Correlation," July 1998, and EMF-1997(P)(A) Supplement 1 Revision 0, "ANFB-10 Critical Power Correlation : High Local Peaking Results," July 1998.

16. Caldon, Inc., "TOPICAL REPORT: Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power Level Using the LEFM✓™ System," Engineering Report - 80P, March 1997.

17. Caldon, Inc., "Supplement to Topical Report ER-80P: Basis for a Power Uprate with the LEFM✓™ or LEFM CheckPlus™ System," Revision 0, Engineering Report ER-160P, May 2000.

18. EMF-85-74(P)(A), "RODEX2A (BWR) Fuel Rod Thermal-Mechanical Evaluation Model," Revision 0, Supplements 1 and 2, February 1998.

19. EMF-2158(P)(A), Revision 0, "Siemens Power Corporation Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/Microburn-B2," Siemens Power Corporation, October 1999.

20. EMF-CC-074(P)(A), Volume 4, Revision 0, "BWR Stability Analysis: Assessment of STAIF with Input from MICROBURN-B2," November 1999.

B 3.11.2.5 VENTILATION EXHAUST TREATMENT SYSTEM

BASES

TRO

This TRO ensures that the appropriate portions of the VENTILATION EXHAUST TREATMENT SYSTEM, as described in the Offsite Dose Calculation Manual (ODCM) are OPERABLE at all times. The TRO is modified by a Note which requires that the appropriate portions of the VENTILATION EXHAUST TREATMENT SYSTEM be used to reduce radioactive materials in gaseous waste prior to their discharge when projected doses due to gaseous effluent releases from either reactor unit to areas at and beyond the SITE BOUNDARY would exceed 0.3 mrem to any organ in a 31 day period. This requirement provides reasonable assurance that the releases of radioactive materials in gaseous effluents will be kept "as low as reasonably achievable." This TRO implements the requirements of 10 CFR Part 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50, and the design objectives given in Section II.D of Appendix I to 10 CFR Part 50. The limits governing the use of appropriate portions of the systems were specified as a suitable fraction of the dose design objectives set forth in Sections II.B and II.C of Appendix I, 10 CFR Part 50, for gaseous effluents (Ref. 1).

The VENTILATION EXHAUST TREATMENT SYSTEM is comprised of the following Unit 2 systems, as described in the ODCM:

The Unit 2 Reactor Building filtered exhaust system, including the following filters:

2F216A, 2F216B, 2F217A, 2F217B, 2F218A, 2F218B, 2F255A, 2F255B, 2F257A, 2F257B, 2F258A AND 2F258B.

The Unit 2 Turbine Building filtered exhaust system, including the following filters:

2F157A, 2F157B, 2F158A, and 2F158B.

(continued)

B 3.11.2.5 VENTILATION EXHAUST TREATMENT SYSTEM

BASES

TRO (continued)

This section of the TRM is part of the ODCM (Ref. 2) and implements the requirements of the Radiological Effluent Controls Program (Ref. 3).

ACTIONS

The ACTIONS are defined to ensure proper corrective measures are taken in response to the inoperable components. Dose evaluations are performed when evolutions occur which result in an effluent path to the environment with some level of degraded treatment. In effect, degraded treatment renders the monthly dose projection per TRS 3.11.2.5.1 questionable. The dose evaluation is an estimated projection under the degraded conditions.

Dose evaluations should be performed under the following conditions:

1. When bypassing a treatment system (a preliminary evaluation prior to bypassing the filter and a follow-up evaluation after the bypass);

(continued)

B 3.11.2.5 VENTILATION EXHAUST TREATMENT SYSTEM

BASES

ACTIONS (continued)

2. When placing an inoperable filter train in service (a preliminary evaluation prior to starting the system and a follow-up evaluation after the system is in service);

3. If a surveillance on a treatment system fails while the filter is in service; and

4. Any other event which results in degraded treatment.

The appropriate portion of the VENTILATION EXHAUST TREATMENT SYSTEM will be declared inoperable if any of the following conditions exist:

1. Failure of a surveillance test;

2. Broken or non-functional component which prevents the system from being run (e.g. both 100% fans or one 50% fan in the system); or

3. Bypass or degradation of system filtration in which effluent flow continues without full treatment.

A.1

With any portion of the VENTILATION EXHAUST TREATMENT SYSTEM inoperable, action must be taken to restore it to OPERABLE status. The 31 day Completion Time is a reasonable time frame to repair the inoperable components.

B.1

If the Required Action and Completion Time of Condition A are not met, or gaseous waste is being discharged without treatment and in excess of the TRO limits, a Special Report must be prepared and submitted to the Commission. The 30 day Completion Time is reasonable for preparation of the report. The Special Report should include the following information:

1. Identification of the inoperable equipment or subsystems and the reason for inoperability;

2. Action(s) taken to restore the inoperable equipment to OPERABLE status; and

3. Summary description of action(s) taken to prevent a recurrence.

(continued)

B 3.11.2.5 VENTILATION EXHAUST TREATMENT SYSTEM

BASES

TRS

The TRSs are performed at the specified Frequency to ensure that the VENTILATION EXHAUST TREATMENT SYSTEM is maintained OPERABLE.

TRS 3.11.2.5.1

This surveillance requires that a dose projection be performed in accordance with the methodology and parameters in the ODCM. The dose projection is performed based on the most recently available effluent data. If it is known prior to performing the dose projection that a treatment system will be out of service, and if data exists which indicates how the lack of treatment will impact effluents, these factors will be considered when performing the dose projection. The 31 day Frequency is consistent with Reference 3.

TRS 3.11.2.5.2

This surveillance verifies that the VENTILATION EXHAUST TREATMENT SYSTEM is OPERABLE by operating the system ≥ 10 minutes. Operation of the system for at least 10 minutes provides sufficient time to verify the appropriate parameters are within their normal operating range. The Frequency of 92 days is appropriate considering the performance of monthly dose projections.

This TRS is modified by a Note which states that the TRS is not required to be performed if the appropriate system has been utilized to process radioactive gaseous effluents during the previous 92 days. This allowance is appropriate because actual processing of radioactive gaseous effluents demonstrates system OPERABILITY.

REFERENCES

1. 10 CFR Part 50.
2. Technical Specification 5.5.1 - Offsite Dose Calculation Manual.
3. Technical Specification 5.5.4 - Radioactive Effluent Controls program.