UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

TOLEDO EDISON COMPANY

AND

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

DOCKET NO. 50-346

DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 80
License No. NPF-3

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the Toledo Edison Company and The Cleveland Electric Illuminating Company (the licensees) dated July 20, 1984, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-3 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 80 , are hereby incorporated in the license. The Toledo Edison Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 13, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 80

FACILITY OPERATING LICENSE NO. NPF-3

DOCKET NO. 50-346

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain a vertical line indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Insert Page	Remove Page
2-3	2-3
2-5	2-5
2-7	2-7
B 2-2	B 2-2
B 2-5	B 2-5
3/4 1-26	3/4 1-26
3/4 1-28	3/4 1-28
3/4 1-28a	3/4 1-28a
3/4 1-28b	3/4 1-28b
3/4 1-28c	3/4 1-28c
3/4 1-28d	3/4 1-28d
3/4 1-29	3/4 1-29
3/4 1-29a	3/4 1-29a
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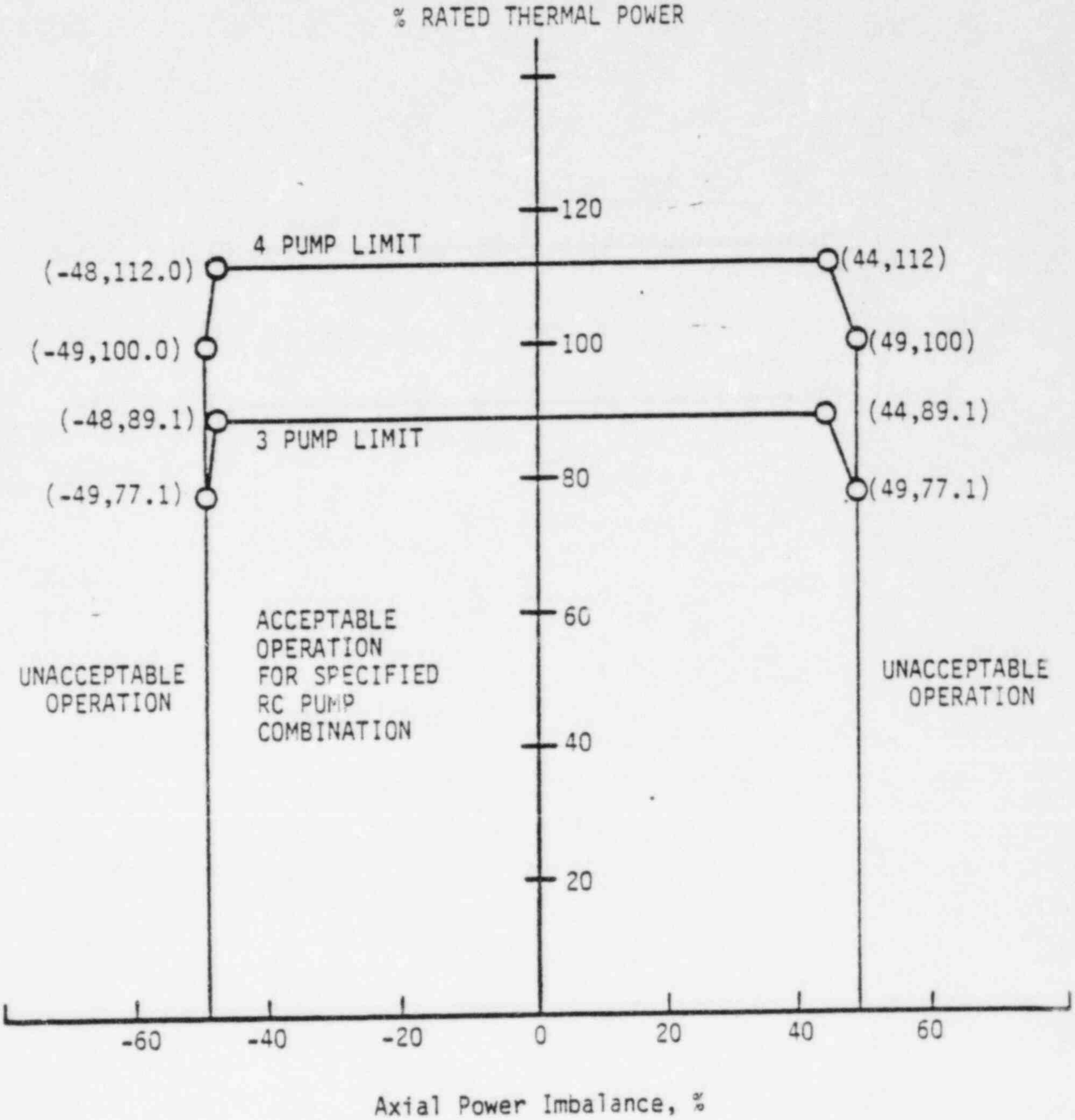
3/4 2-2a	3/4 2-2a
3/4 2-2b	3/4 2-2b
3/4 2-2c	3/4 2-2c
3/4 2-2d	3/4 2-2d
3/4 2-3	3/4 2-3
3/4 2-3a	3/4 2-3a
3/4 2-3b	3/4 2-3b
3/4 2-3c	3/4 2-3c
3/4 2-3d	3/4 2-3d
3/4 2-12	3/4 2-12
3/4 4-1	3/4 4-1

Figure 2.1-2 Reactor Core Safety Limit



PUMPS OPERATING	REACTOR COOLANT FLOW, GPM
4	387,200
3	290,100

2.2 LIMITING SAFETY SYSTEM SETTINGS

REACTOR PROTECTION SYSTEM SETPOINTS

2.2.1 The Reactor Protection System instrumentation setpoints shall be set consistent with the Trip Setpoint values shown in Table 2.2-1.

APPLICABILITY: As shown for each channel in Table 3.3-1.

ACTION:

With a Reactor Protection System instrumentation setpoint less conservative than the value shown in the Allowable Values column of Table 2.2-1, declare the channel inoperable and apply the applicable ACTION statement requirement of Specification 3.3.1.1 until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

Table 2.2-1 Reactor Protection System Instrumentation Trip Setpoints

Functional unit	Trip setpoint	Allowable values
1. Manual reactor trip	Not applicable.	Not applicable.
2. High flux	$\leq$104.94% of RATED THERMAL POWER with four pumps operating	$\leq$104.94% of RATED THERMAL POWER with four pumps operating#
	$\leq$79.7% of RATED THERMAL POWER with three pumps operating	$\leq$79.7% of RATED THERMAL POWER with three pumps operating#
3. RC high temperature	$\leq$618°F	$\leq$618°F#
4. Flux -- Δflux/flow(1)	Trip setpoint not to exceed the limit line of Figure 2.2-1	Allowable values not to exceed the limit line of Figure 2.2-1#
5. RC low pressure(1)	$\geq$1983.4 psig	$\geq$1983.4 psig* $\geq$1983.4 psig**
6. RC high pressure	$\leq$2300 psig	$\leq$2300.0 psig* $\leq$2300.0 psig**
7. RC pressure-temperature(1)	$\geq$(12.60 T_{out} °F - 5662.2) psig	$\geq$(12.60 T_{out} °F - 5662.2) psig#
8. High flux/number of RC pumps on(1)	$\leq$55.1% of RATED THERMAL POWER with one pump operating in each loop	$\leq$55.1% of RATED THERMAL POWER with one pump operating in each loop#
	$\leq$0.0% of RATED THERMAL POWER with two pumps operating in one loop and no pumps operating in the other loop	$\leq$0.0% of RATED THERMAL POWER with two pumps operating in one loop and no pumps operating in the other loop#
	$\leq$0.0 of RATED THERMAL POWER with no pumps operating or only one pump operating	$\leq$0.0% of RATED THERMAL POWER with no pumps operating or only one pump operating#
9. Containment pressure high	$\leq$4 psig	$\leq$4 psig#

Table 2.2-1. (Cont'd)

(1) Trip may be manually bypassed when RCS pressure ≤1820 psig by actuating shutdown bypass provided that:

a. The high flux trip setpoint is ≤5% of RATED THERMAL POWER.

b. The shutdown bypass high pressure trip setpoint of ≤1820 psig is imposed.

c. The shutdown bypass is removed when RCS pressure >1820 psig.

*Allowable value for CHANNEL FUNCTIONAL TEST.

**Allowable value for CHANNEL CALIBRATION.

#Allowable value for CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION.

Figure 2.2-1 Trip Setpoint for Flux -- ΔFlux/Flow

Curve shows trip setpoint for a 25% flow reduction for three pump operation (290,100 gpm). The actual setpoint will be directly proportional to the actual flow with three pumps.

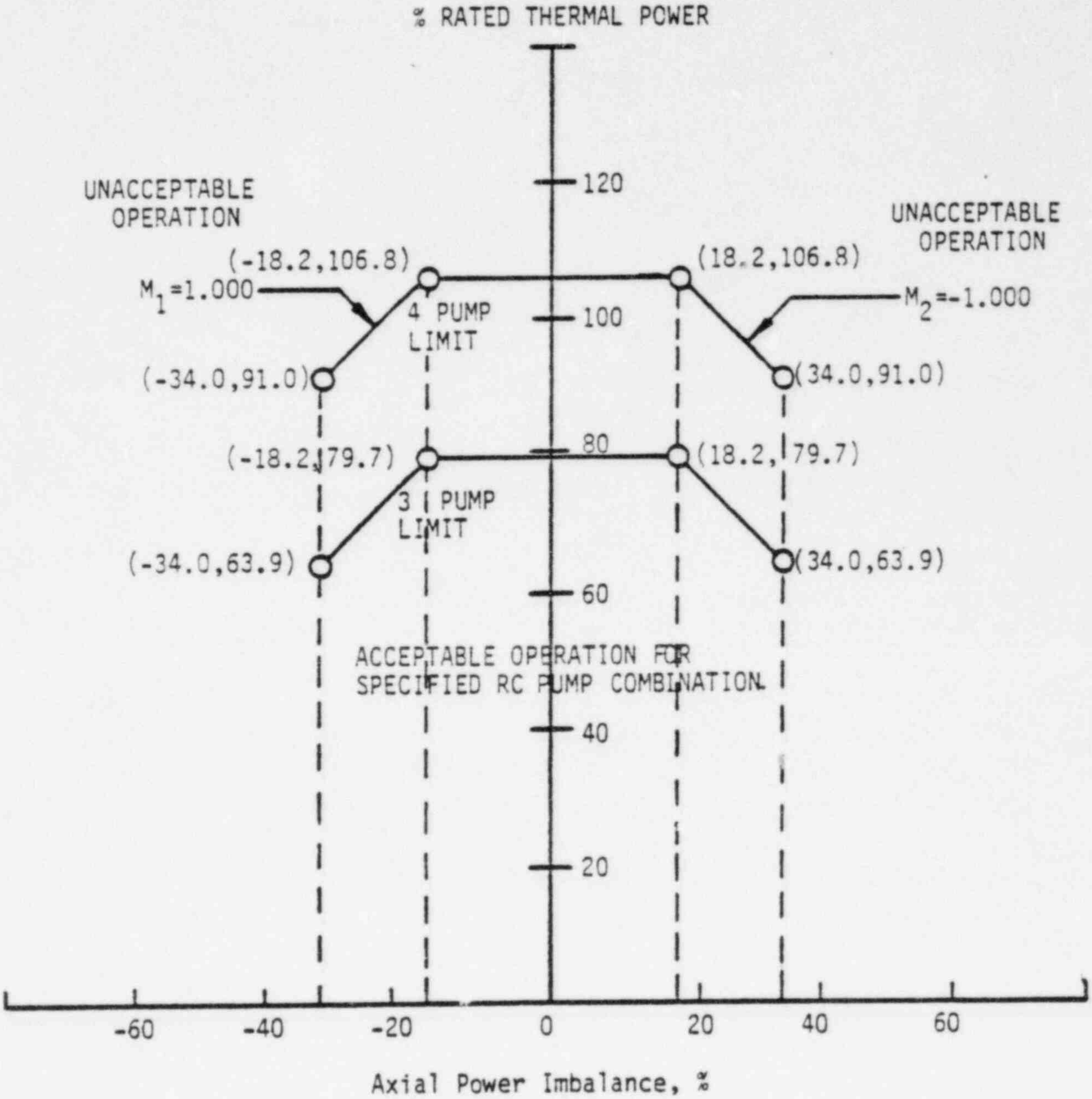


Figure 2.2-2 Allowable Value for Flux-Δ Flux/Flow

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2.1 SAFETY LIMITS

BASES

2.1.1 and 2.1.2 REACTOR CORE

The restrictions of this safety limit prevent overheating of the fuel cladding and possible cladding perforation which would result in the release of fission products to the reactor coolant. Overheating of the fuel cladding is prevented by restricting fuel operation to within the nucleate boiling regime where the heat transfer coefficient is large and the cladding surface temperature is slightly above the coolant saturation temperature.

Operation above the upper boundary of the nucleate boiling regime would result in excessive cladding temperatures because of the onset of departure from nucleate boiling (DNB) and the resultant sharp reduction in heat transfer coefficient. DNB is not a directly measurable parameter during operation and therefore THERMAL POWER and Reactor Coolant Temperature and Pressure have been related to DNB through the B&W-2 DNB correlation. The DNB correlation has been developed to predict the DNB flux and the location of DNB for axially uniform and non-uniform heat flux distributions. The local DNB heat flux ratio, DNBR, defined as the ratio of the heat flux that would cause DNB at a particular core location to the local heat flux, is indicative of the margin to DNB.

The minimum value of the DNBR during steady state operation, normal operational transients, and anticipated transients is limited to 1.30. This value corresponds to a 95 percent probability at a 95 percent confidence level that DNB will not occur and is chosen as an appropriate margin to DNB for all operating conditions.

The curve presented in Figure 2.1-1 represents the conditions at which a minimum DNBR of 1.30 is predicted for the maximum possible thermal power 112% when the reactor coolant flow is 387, 200 GPM, which is 110% of design flow rate for four operating reactor coolant pumps. This curve is based on the following hot channel factors with potential fuel densification and fuel rod bowing effects:

$$F_Q = 2.56; \quad F^N_{\Delta H} = 1.71; \quad F^N_Z = 1.50$$

The design limit power peaking factors are the most restrictive calculated at full power for the range from all control rods fully withdrawn to minimum allowable control rod withdrawal, and form the core DNBR design basis.

The reactor trip envelope appears to approach the safety limits more closely than it actually does because the reactor trip pressures are measured at a location where the indicated pressure is about 30 psi less than core outlet pressure, providing a more conservative margin to the safety limit.

The curves of Figure 2.1-2 are based on the more restrictive of two thermal limits and account for the effects of potential fuel densification and potential fuel rod bow.

1. The 1.30 DNBR limit produced by a nuclear power peaking factor of F_Q = 2.56 or the combination of the radial peak, axial peak, and position of the axial peak that yields no less than a 1.30 DNBR.

2. The combination of radial and axial peak that causes central fuel melting at the hot spot. The limits are 20.4 kW/ft for batches 1E, 4B, and 5A and 20.5 kW/ft for batches 5B, 6, and 7.

Power peaking is not a directly observable quantity and therefore limits have been established on the basis of the reactor power imbalance produced by the power peaking.

The specified flow rates for curves 1 and 2 of Figure 2.1-2 correspond to the expected minimum flow rates with four pumps and three pumps, respectively.

The curve of Figure 2.1-1 is the most restrictive of all possible reactor coolant pump-maximum thermal power combinations shown in BASES Figure 2.1. The curves of BASES Figure 2.1 represent the conditions at which a minimum DNBR of 1.30 is predicted at the maximum possible thermal power for the number of reactor coolant pumps in operation or the local quality at the point of minimum DNBR is equal to +22%, whichever condition is more restrictive. These curves include the potential effects of fuel rod bow and fuel densification.

The DNBR as calculated by the B&W-2 DNB correlation continually increases from point of minimum DNBR, so that the exit DNBR is always higher. Extrapolation of the correlation beyond its published quality range of +22% is justified on the basis of experimental data.

RC High Temperature

The RC high temperature trip $\leq$618°F prevents the reactor outlet temperature from exceeding the design limits and acts as a backup trip for all power excursion transients.

Flux -- ΔFlux/Flow

The power level trip setpoint produced by the reactor coolant system flow is based on a flux-to-flow ratio which has been established to accommodate flow decreasing transients from high power where protection is not provided by the high flux/number of reactor coolant pumps on trips.

The power level trip setpoint produced by the power-to-flow ratio provides both high power level and low flow protection in the event the reactor power level increases or the reactor coolant flow rate decreases. The power level setpoint produced by the power-to-flow ratio provides overpower DNB protection for all modes of pump operation. For every flow rate there is a maximum permissible power level, and for every power level there is a minimum permissible low flow rate. Examples of typical power level and low flow rate combinations for the pump situations of Table 2.2-1 that would result in a trip are as follows:

1. Trip would occur when four reactor coolant pumps are operating if power is 106.8% and reactor coolant flow rate is 100% of full flow rate, or flow rate is 93.63% of full flow rate and power level is 100%.

2. Trip would occur when three reactor coolant pumps are operating if power is 79.7% and reactor coolant flow rate is 74.7% of full flow rate, or flow rate is 70.22% of full flow rate and power is 75%.

For safety calculations the instrumentation errors for the power level were used. Full flow rate in the above two examples is defined as the flow calculated by the heat balance at 100% power.

The AXIAL POWER IMBALANCE boundaries are established in order to prevent reactor thermal limits from being exceeded. These thermal limits are either power peaking kW/ft limits or DNBR limits. The AXIAL POWER IMBALANCE reduces the power level trip produced by a flux-to-flow ratio such that the boundaries of Figure 2.2-1 are produced.

RC Pressure - Low, High, and Pressure Temperature

The high and low trips are provided to limit the pressure range in which reactor operation is permitted.

During a slow reactivity insertion startup accident from low power or a slow reactivity insertion from high power, the RC high pressure setpoint is reached before the high flux trip setpoint. The trip setpoint for RC high pressure, 2300 psig, has been established to maintain the system pressure below the safety limit, 2750 psig, for any design transient. The RC high pressure trip is backed up by the pressurizer code safety valves for RCS over pressure protection, and is therefore set lower than the set pressure for these valves, $\leq$ 2525 psig. The RC high pressure trip also backs up the high flux trip.

The RC low pressure , 1983.4 psig, and RC pressure-temperature ($12.60\ t_{out}$ - 5662.2) psig, trip setpoints have been established to maintain the DNB ratio greater than or equal to 1.30 for those design accidents that result in a pressure reduction. It also prevents reactor operation at pressures below the valid range of DNB correlation limits, protecting against DNB.

High Flux/Number of Reactor Coolant Pumps On

In conjunction with the flux - Δflux/flow trip the high flux/number of reactor coolant pumps on trip prevents the minimum core DNBR from decreasing below 1.30 by tripping the reactor due to the loss of reactor coolant pump(s). The pump monitors also restrict the power level for the number of pumps in operation.

SAFETY ROD INSERTION LIMIT

LIMITING CONDITION FOR OPERATION

3.1.3.5 All safety rods shall be fully withdrawn.

APPLICABILITY: 1* and 2*#.

ACTION:

With a maximum of one safety rod not fully withdrawn, except for surveillance testing pursuant to Specification 4.1.3.1.2, within one hour either:

a. Fully withdraw the rod or

b. Declare the rod to be inoperable and apply Specification 3.1.3.1.

SURVEILLANCE REQUIREMENTS

4.1.3.5 Each safety rod shall be determined to be fully withdrawn:

a. Within 15 minutes prior to withdrawal of any regulating rod during an approach to reactor criticality.

b. At least once per 12 hours thereafter.

*See Special Test Exception 3.10.1 and 3.10.2.
#With $K_{eff} \geq 1.0$.

REGULATING ROD INSERTION LIMITS

LIMITING CONDITION FOR OPERATION

3.1.3.6 The regulating rod groups shall be limited in physical insertion as shown on Figures 3.1-2a, -2b, -2c, and -2d and 3.1-3a, -3b, -3c and -3d. A rod group overlap of 25 ±5% shall be maintained between sequential withdrawn groups 5, 6 and 7.

APPLICABILITY: MODES 1* and 2*#.

ACTION

With the regulating rod groups inserted beyond the above insertion limits (in a region other than acceptable operation), or with any group sequence or overlap outside the specified limits, except for surveillance testing pursuant to Specification 4.1.3.1.2, either:

a. Restore the regulating groups to within the limits within 2 hours, or

b. Reduce THERMAL POWER to less than or equal to that fraction of RATED THERMAL POWER which is allowed by the rod group position using the above figures within 2 hours, or

c. Be in at least HOT STANDBY within 6 hours.

NOTE: If in unacceptable region, also see Section 3/4.1.1.1.

*See Special Test Exception 3.10.1 and 3.10.2.

#With $k_{eff} \geq 1.0$.

REGULATING ROD INSERTION LIMITS

SURVEILLANCE REQUIREMENTS

4.1.3.6 The position of each regulating group shall be determined to be within the insertion, sequence and overlap limits at least once every 12 hours except when:

a. The regulating rod insertion limit alarm is inoperable, then verify the groups to be within the insertion limits at least once per 4 hours;

b. The control rod drive sequence alarm is inoperable, then verify the groups to be within the sequence and overlap limits at least once per 4 hours.

Figure 3.1-2a Regulating Group Position Limits, 0 to 25+10/-0 EFPD, Four RC Pumps -- Davis-Besse 1, Cycle 5

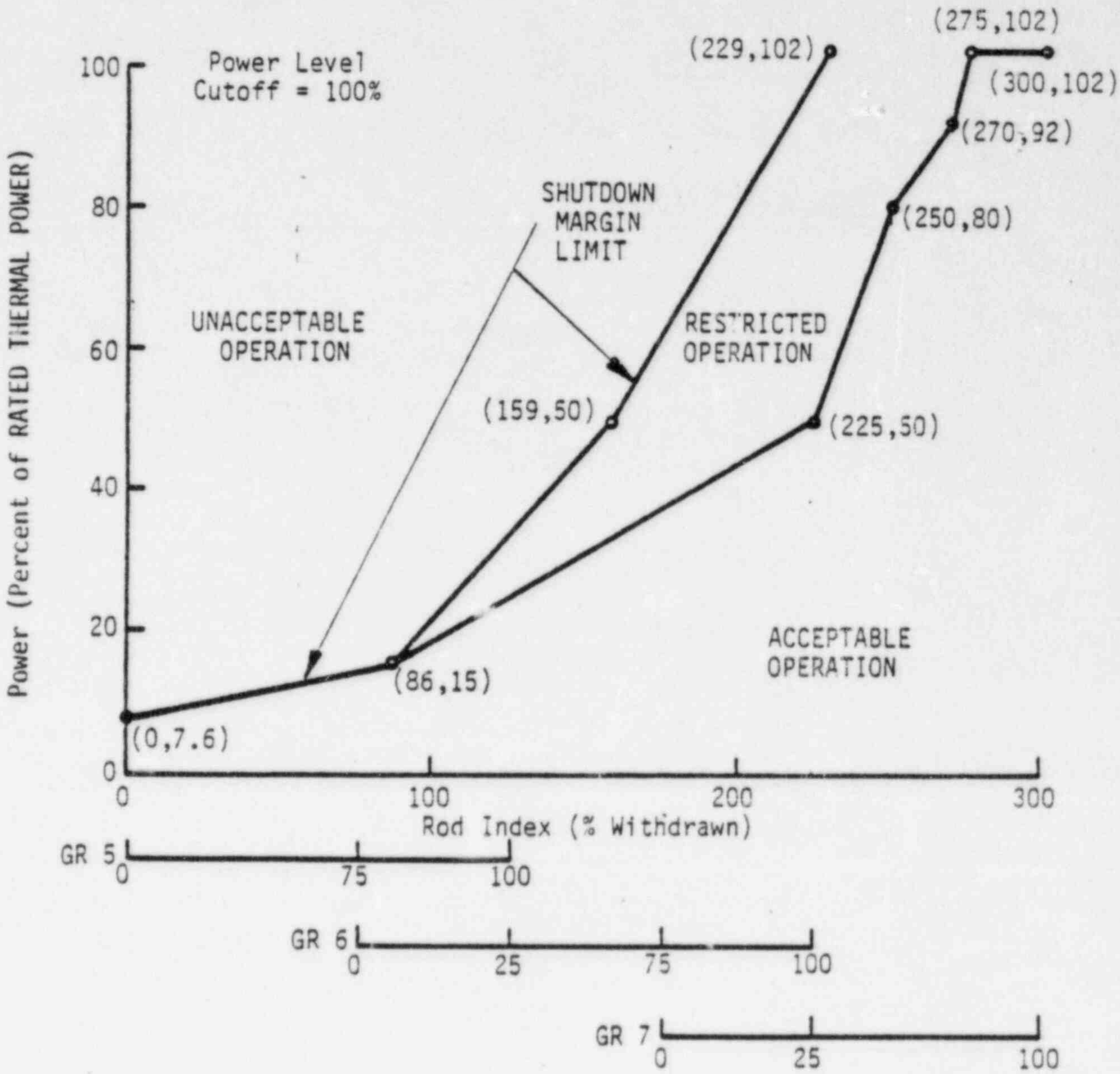

Figure 3.1-2b Regulating Group Position Limits, 25+10/-0 to 200±10 EFPD, Four RC Pumps -- Davis-Besse 1, Cycle 5

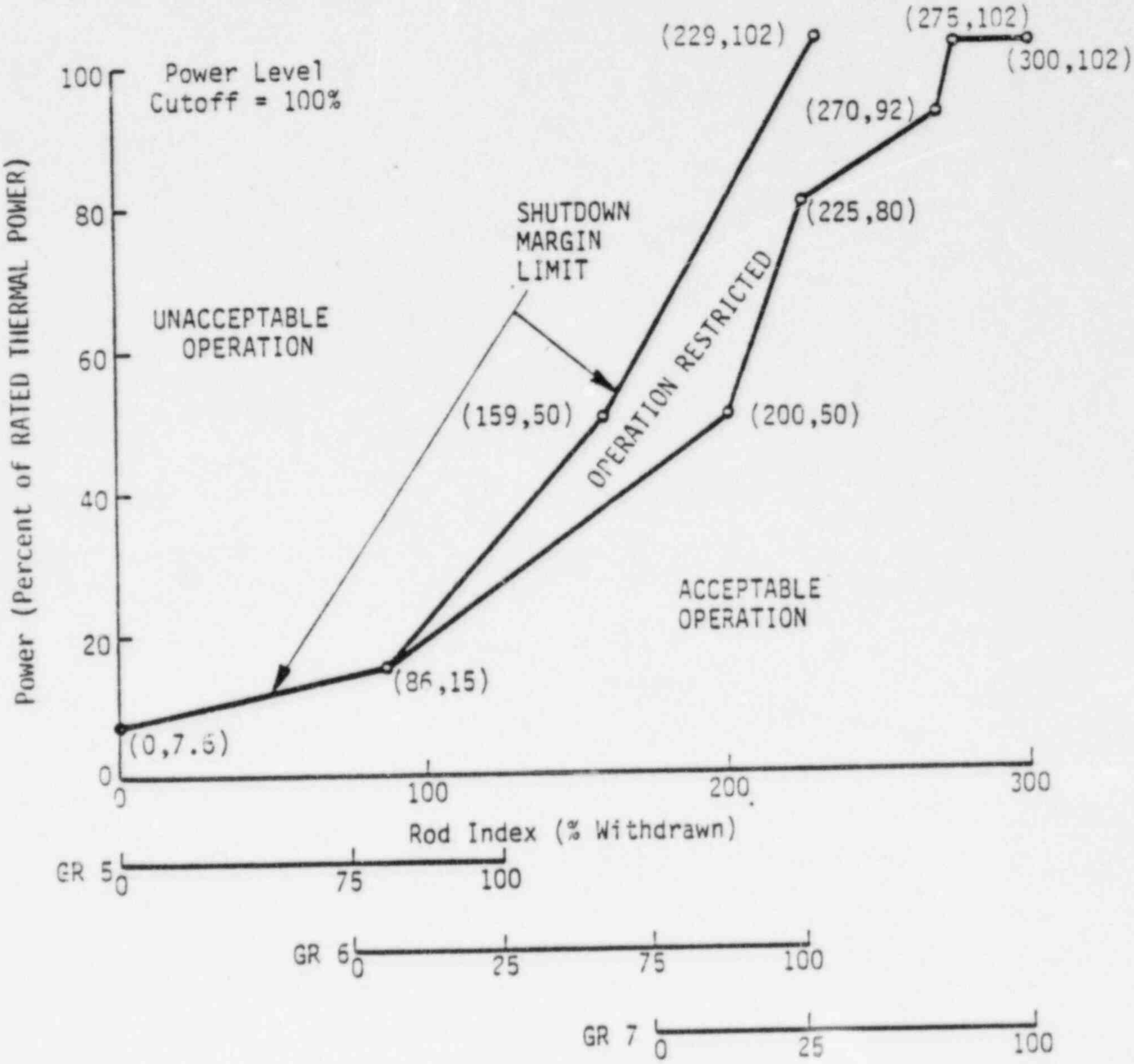

Figure 3.1-2c Regulating Group Position Limits, 200 ±10 to 330 ±10 EFPD, Four RC Pumps -- Davis-Besse 1, Cycle 5

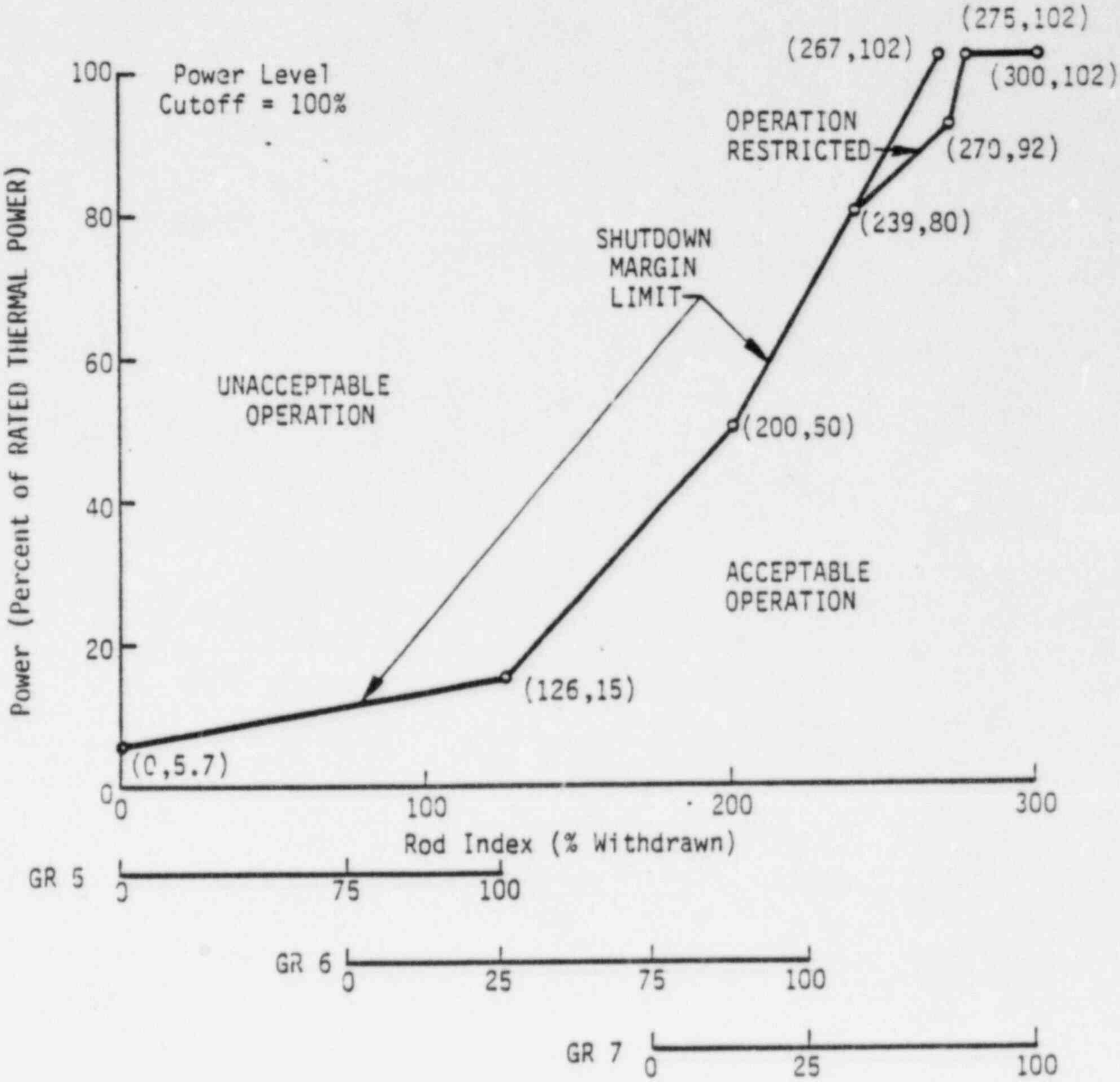

Figure 3.1-2d Regulating Group Position Limits, 330 ±10 to 390 ±10 EFPD, Four RC Pumps, APSRs Withdrawn -- Davis-Besse 1, Cycle 5

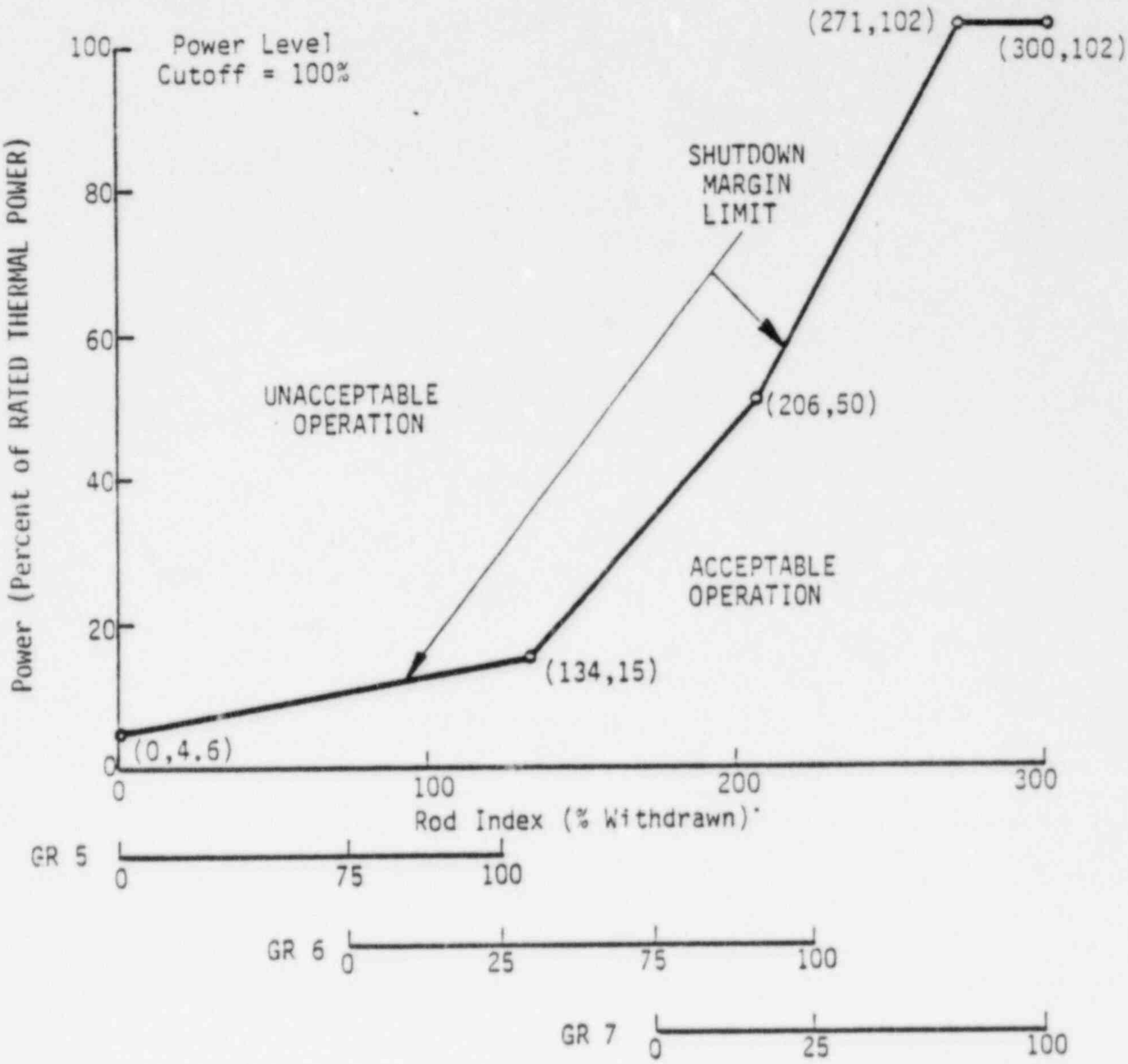

Figure 3.1-2e

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Figure 3.1-3a Regulating Group Position Limits, 0 to 25+10/-0 EFPD, Three RC Pumps -- Davis-Besse 1, Cycle 5

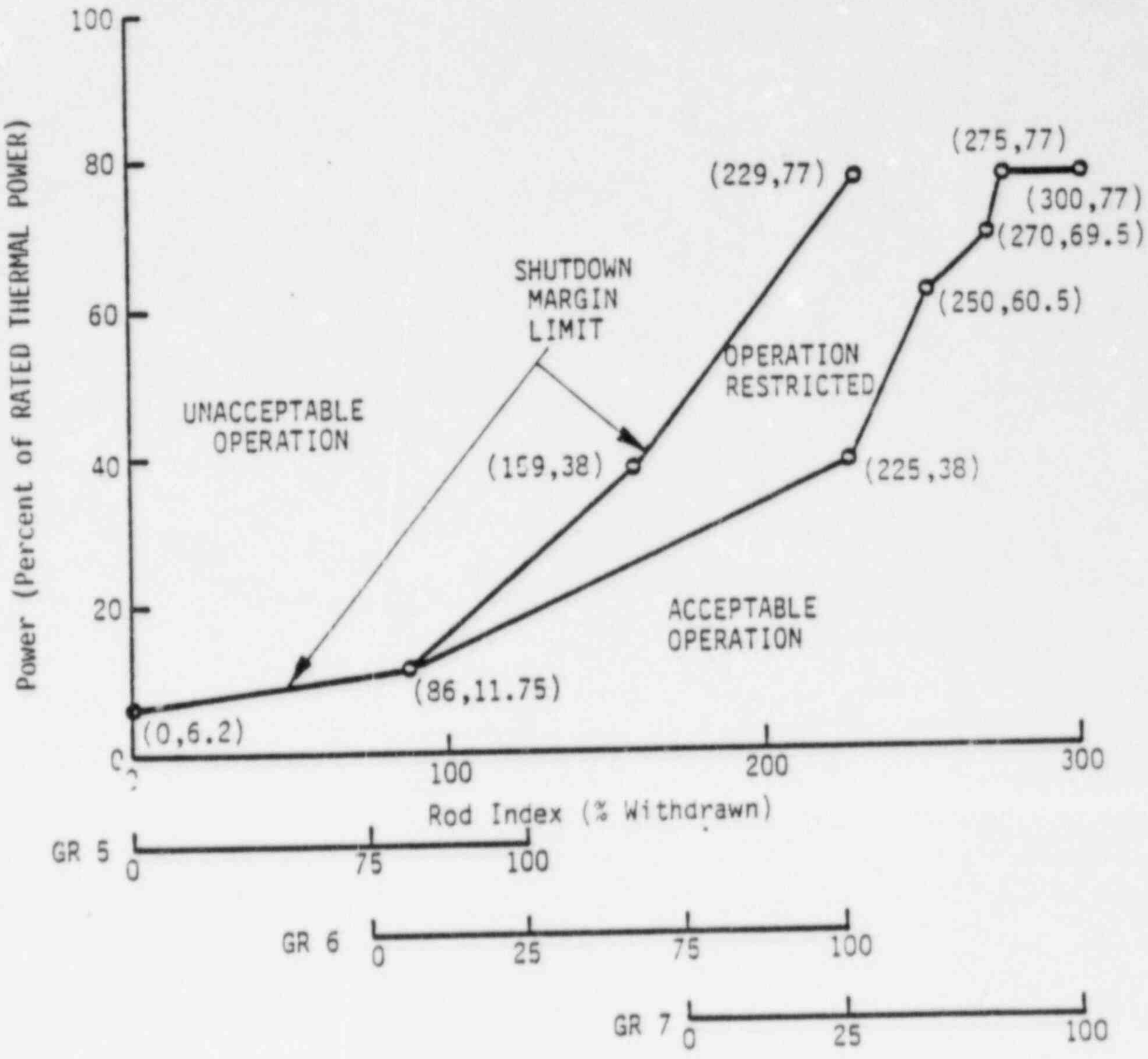

Figure 3.1-3b Regulating Group Position Limits, 25+10/-0 to 200 ±10 EFPD, Three RC Pumps -- Davis-Besse 1, Cycle 5

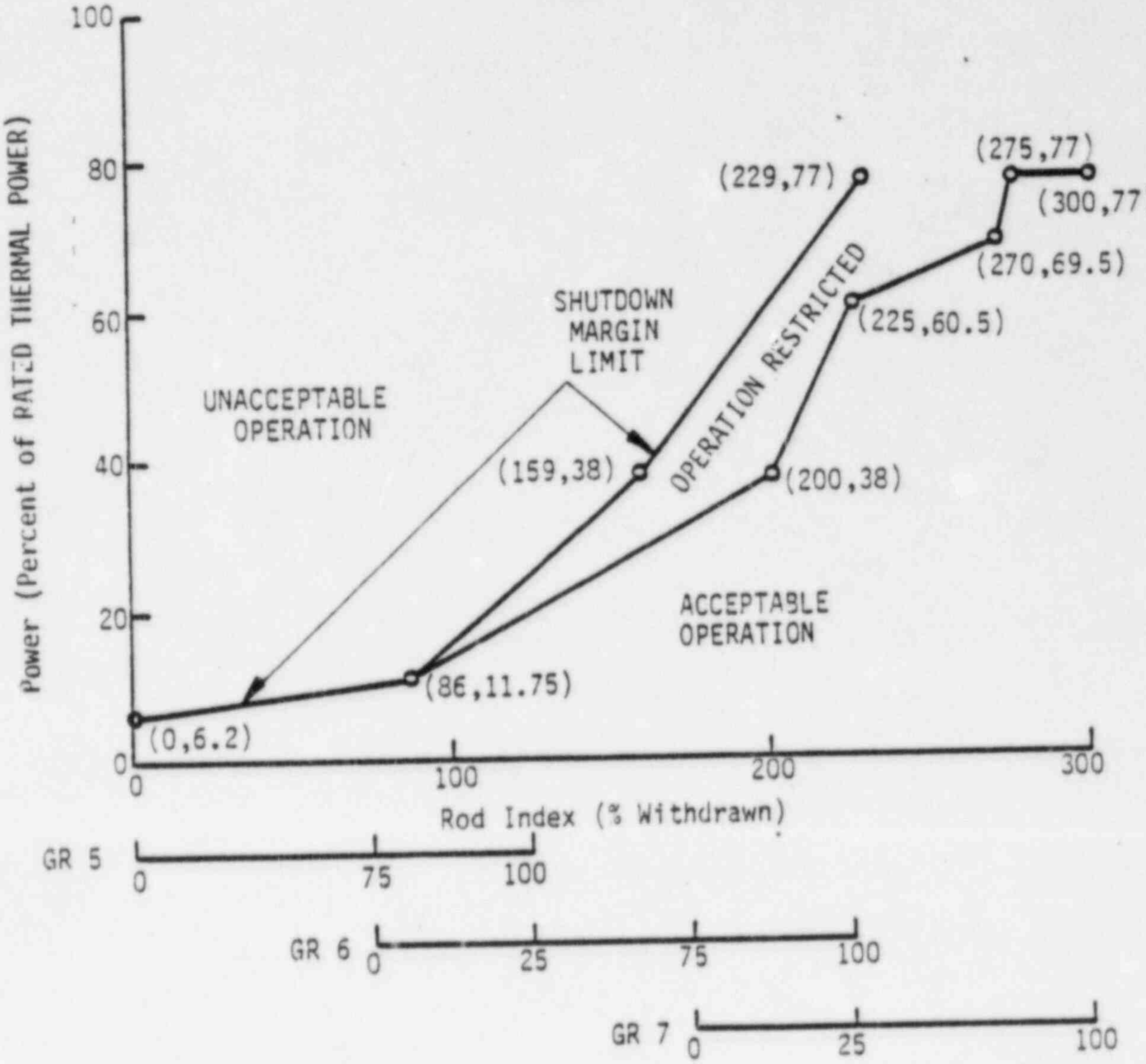

Figure 3.1-3c Regulating Group Position Limits, 200 ±10 to 330 ±10 EFPD, Three RC Pumps -- Davis-Besse 1, Cycle 5

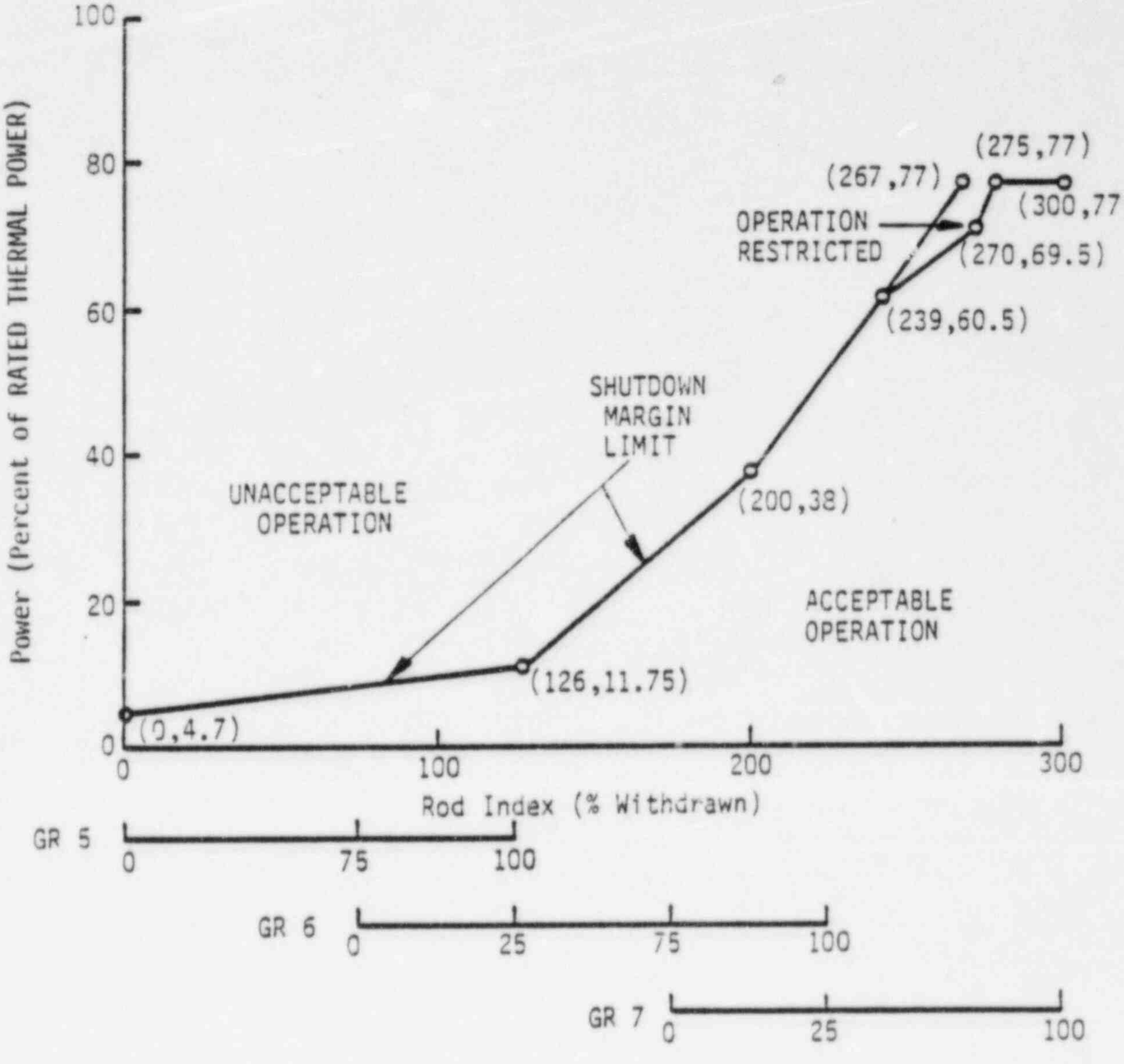

Figure 3.1-3d Regulating Group Position Limits, 330 ±10 to 390 ±10 EFPD, Three RC Pumps, APSRs Withdrawn -- Davis-Besse 1, Cycle 5

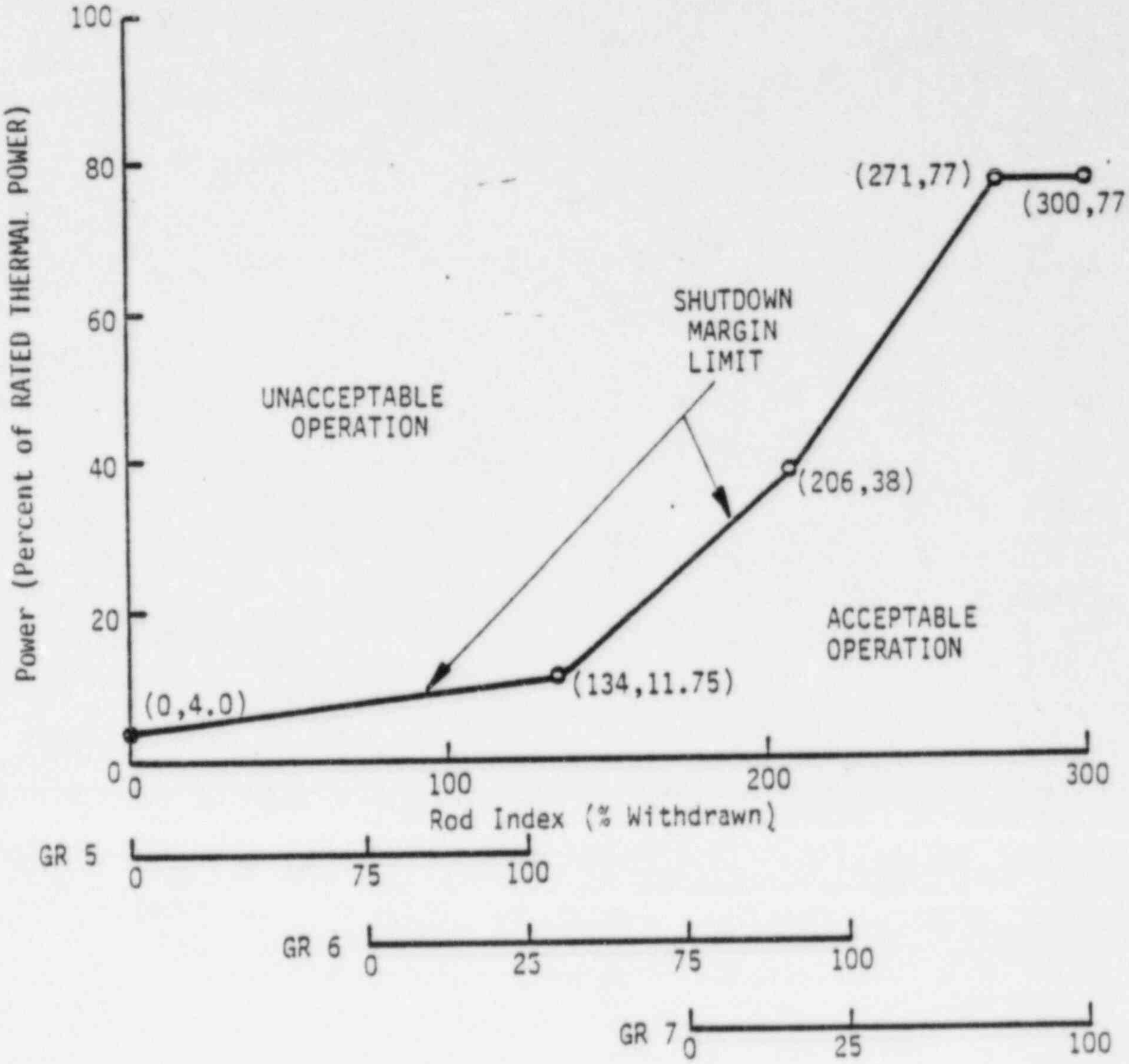

Figure 3.1-3e

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ROD PROGRAM

LIMITING CONDITION FOR OPERATION

3.1.3.7 Each control rod (safety, regulating and APSR) shall be programmed to operate in the core position and rod group specified in Figure 3.1-4.

APPLICABILITY: MODES 1* and 2*.

ACTION:

With any control rod not programmed to operate as specified above, be in HOT STANDBY within 1 hour.

SURVEILLANCE REQUIREMENTS

4.1.3.7

a. Each control rod shall be demonstrated to be programmed to operate in the specified core position and rod group by:

   1. Selection and actuation from the control room and verification of movement of the proper rod as indicated by both the absolute and relative position indicators:

      a) For all control rods, after the control rod drive patches are locked subsequent to test, reprogramming or maintenance within the panels.

      b) For specifically affected individual rods, following maintenance, test, reconnection or modification of power or instrumentation cables from the control rod drive control system to the control rod drive.

   2. Verifying that each cable that has been disconnected has been properly matched and reconnected to the specified control rod drive.

b. At least once each 7 days, verify that the control rod drive patch panels are locked.

*See Special Test Exceptions 3.10.1 and 3.10.2.

Figure 3.1-4 Control Rod Core Locations and Group Assignments -- Davis-Besse 1, Cycle 5

X

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A															
B						3		7		3					
C					2		6		6		2				
D				7		8		5		8		7			
E			2		5						5		2		
F		3		8		1		7		1		8		3	
G			6				4		4				6		
H (W — — Y)		7		5		7		1		7		5		7	
K			6				4		4				6		
L		3		8		1		7		1		8		3	
M			2		5						5		2		
N				7		8		5		8		7			
O					2		6		6		2				
P						3		7		3					
R															

Z

X Group Number

Group	No. of rods	Functions
1	5	Safety
2	8	Safety
3	8	Safety
4	4	Safety
5	8	Control
6	8	Control
7	12	Control
8	8	APSRs
Total #	61	

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XENON REACTIVITY

LIMITING CONDITION FOR OPERATION

3.1.3.8 THERMAL POWER shall not be increased above the power level cutoff specified in Figure 3.1-2 unless one of the following conditions is satisfied:

a. Xenon reactivity is within 10 percent of the equilibrium value for RATED THERMAL POWER and is approaching stability, or

b. THERMAL POWER has been within a range of 87 to 92 percent of RATED THERMAL POWER for a period exceeding 2 hours in the soluble poison control mode, excluding xenon free start-ups.

APPLICABILITY: MODE 1.

ACTION:

With the requirements of the above specification not satisfied, reduce THERMAL POWER to less than or equal to the power level cutoff within 15 minutes.

SURVEILLANCE REQUIREMENTS

4.1.3.8 Xenon reactivity shall be determined to be within 10% of the equilibrium value for RATED THERMAL POWER and to be approaching stability or it shall be determined that the THERMAL POWER has been in the range of 87 to 92% of RATED THERMAL POWER for $\geq$ 2 hours, prior to increasing THERMAL POWER above the power level cutoff.

AXIAL POWER SHAPING ROD INSERTION LIMITS

LIMITING CONDITION FOR OPERATION

3.1.3.9 The axial power shaping rod group shall be limited in physical insertion as shown on Figures 3.1-5a, -5b, -5c, -5d, -5e, -5f, and -5g.

APPLICABILITY: MODES 1 and 2*.

ACTION

With the axial power shaping rod group outside the above insertion limits, either:

a. Restore the axial power shaping rod group to within the limits within 2 hours, or

b. Reduce THERMAL POWER to less than or equal to that fraction of RATED THERMAL POWER which is allowed by the rod group position using the above figures within 2 hours, or

c. Be in at least HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.9 The position of the axial power shaping rod group shall be determined to be within the insertion limits at least once every 12 hours except when the axial power shaping rod insertion limit alarm is inoperable, then verify the group to be within the insertion limit at least once every 4 hours.

*With $K_{eff} \geq 1.0$.

Figure 3.1-5a APSR Position Limits, 0 to 25+10/-0 EFPD, Four RC Pumps -- Davis-Besse 1, Cycle 5

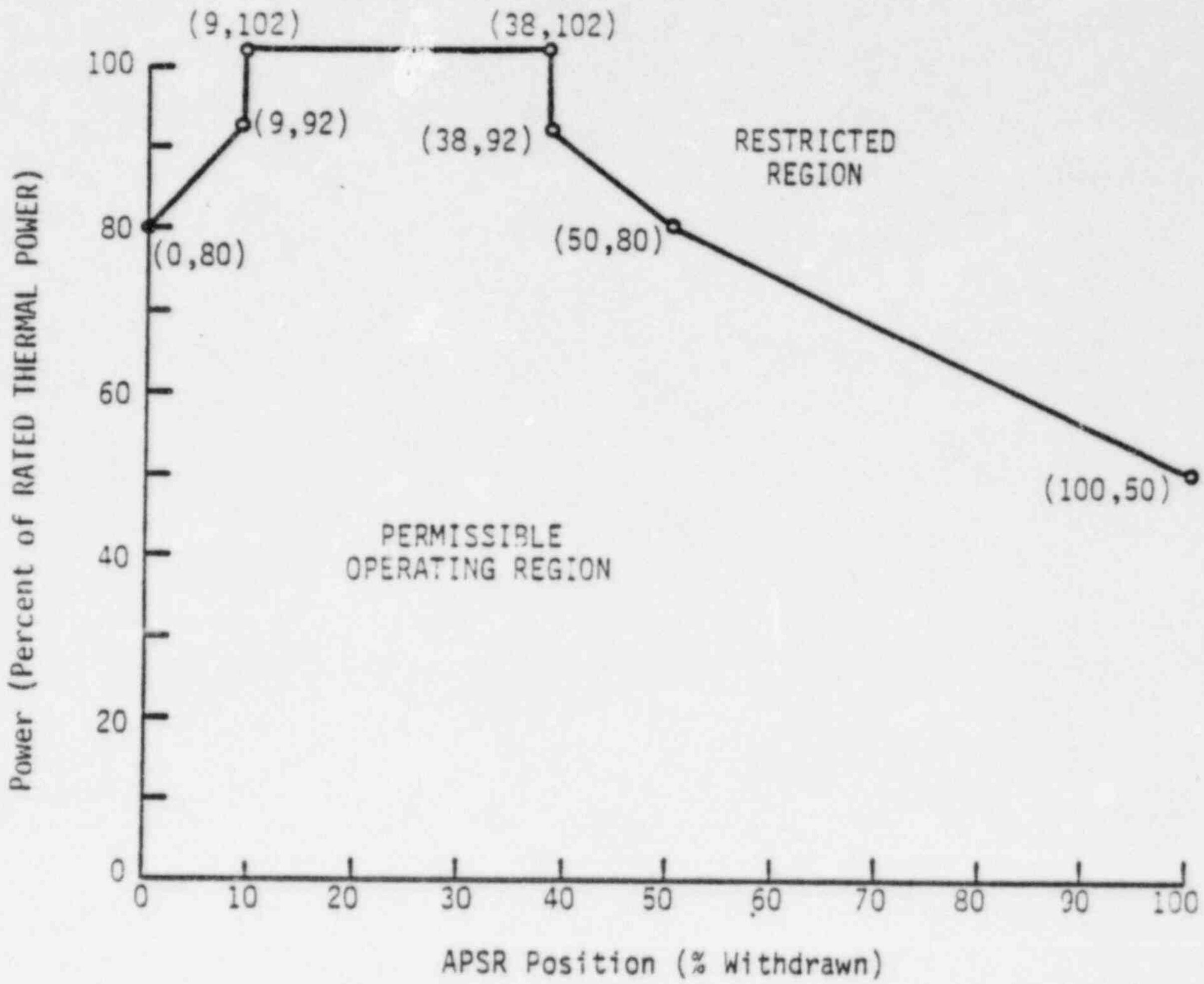

Figure 3.1-5b APSR Position Limits, 25+10/-0 to 200 ±10 EFPD, Four RC Pumps -- Davis-Besse 1, Cycle 5

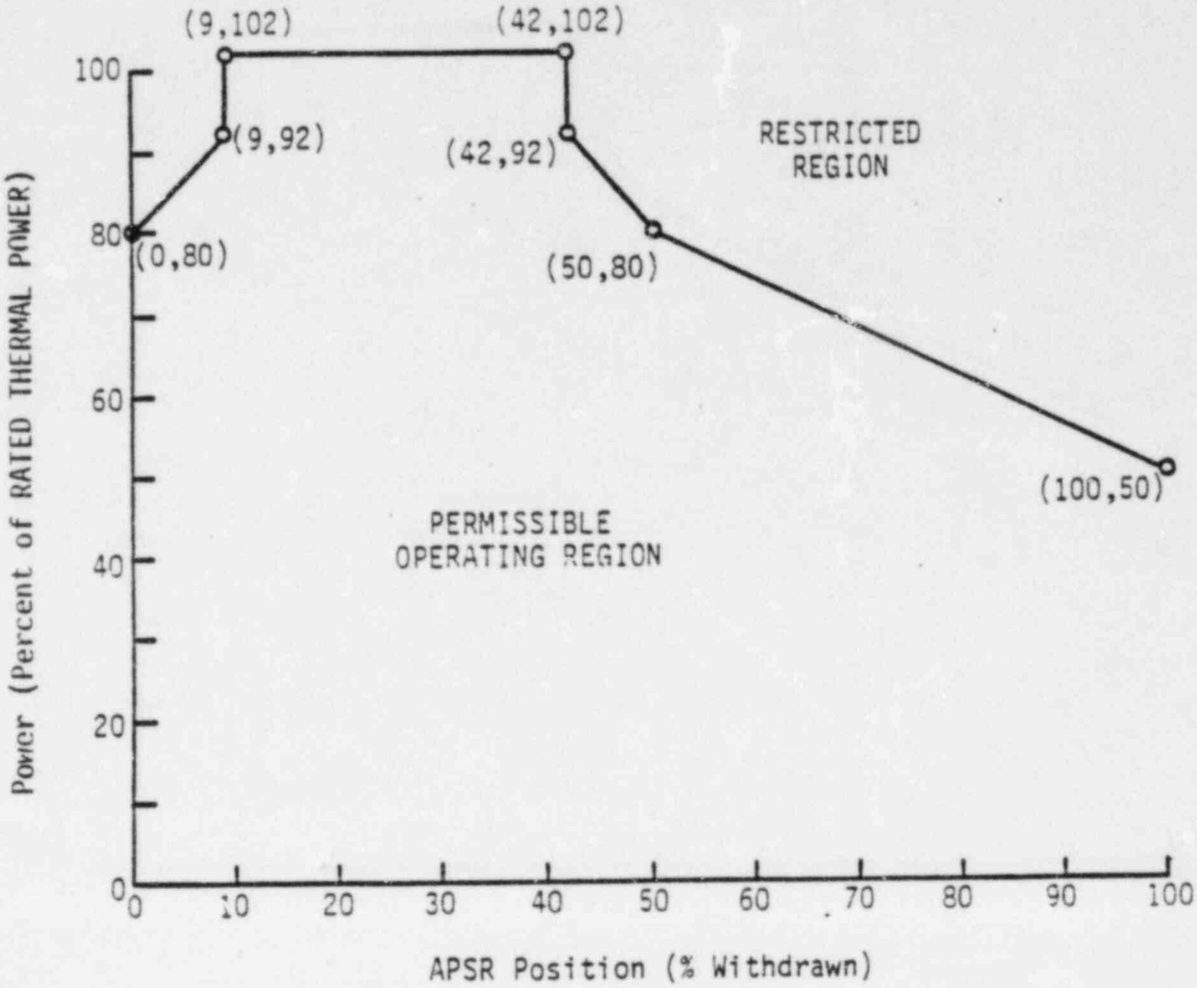

Figure 3.1-5c APSR Position Limits, 200 ±10 to 330 ±10 EFPD, Four RC Pumps -- Davis-Besse 1, Cycle 5

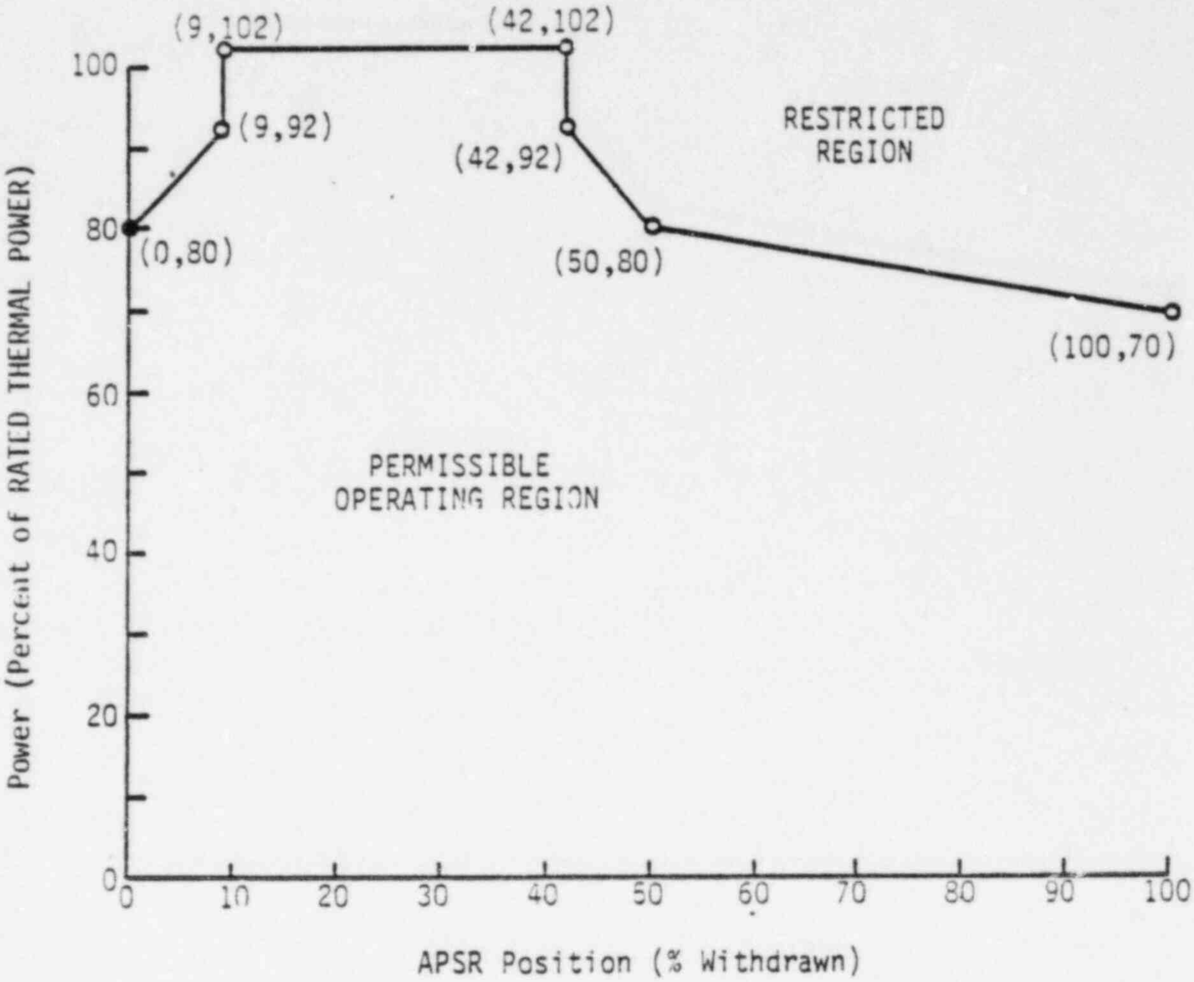

Figure 3.1-5d APSR Position Limits, 330 ±10 to 390 ±10 EFPD, Three or Four RC Pumps, APSRs Withdrawn -- Davis-Besse 1, Cycle 5

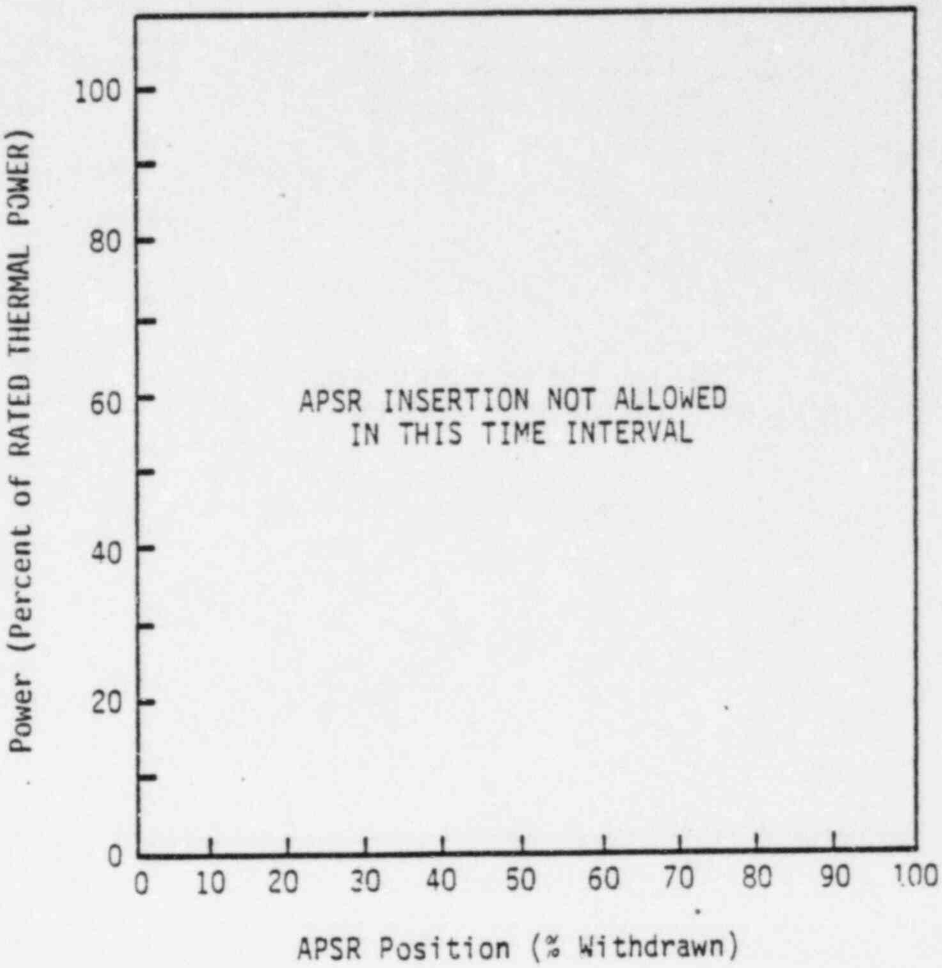

Figure 3.1-5a APSR Position Limits, 0 to 25+10/-0 EFPD, Three RC Pumps -- Davis-Besse 1, Cycle 5

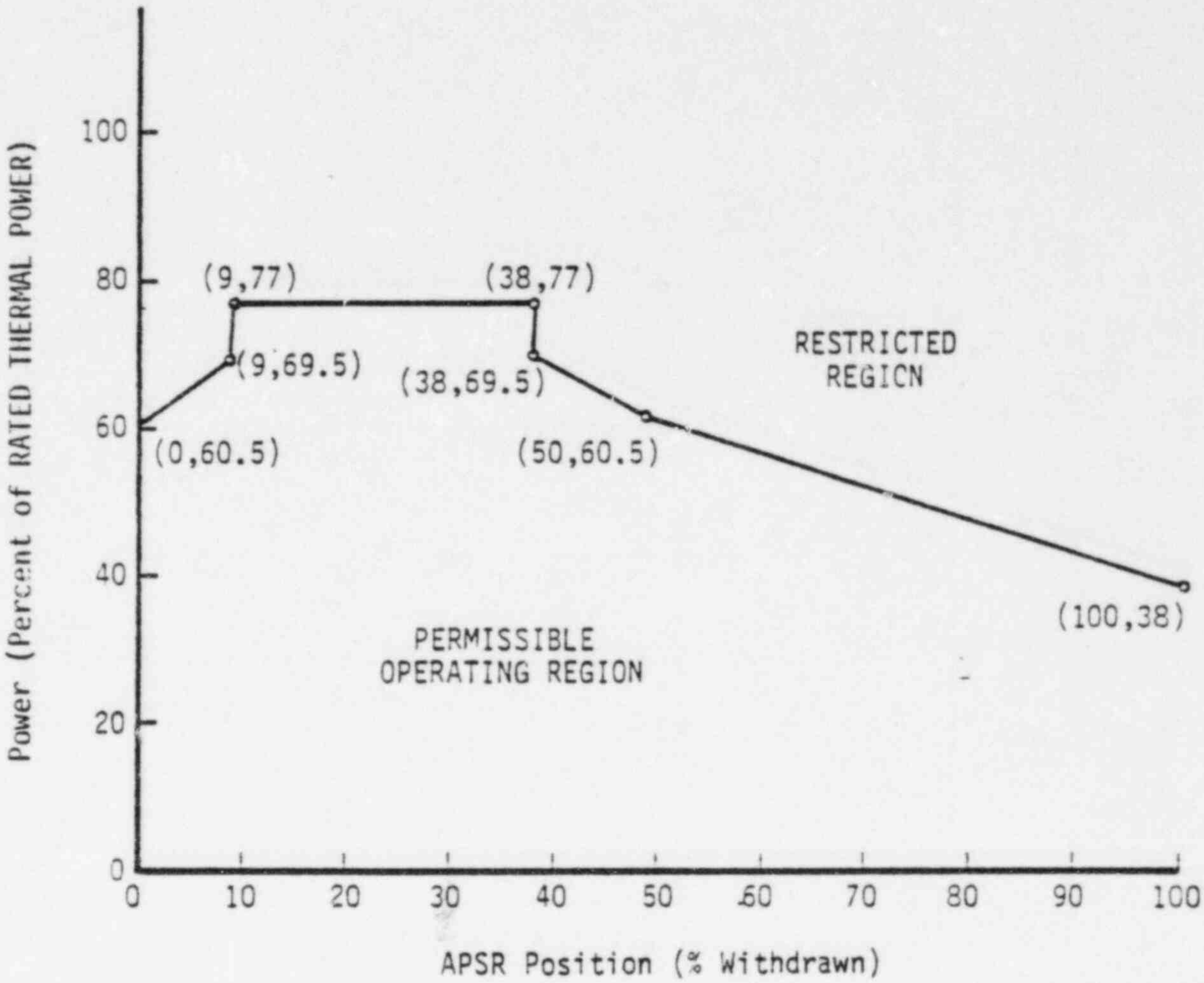

Figure 3.1-5f APSR Position Limits, 25+10/-0 to 200 ±10 EFPD, Three RC Pumps -- Davis-Besse 1, Cycle 5

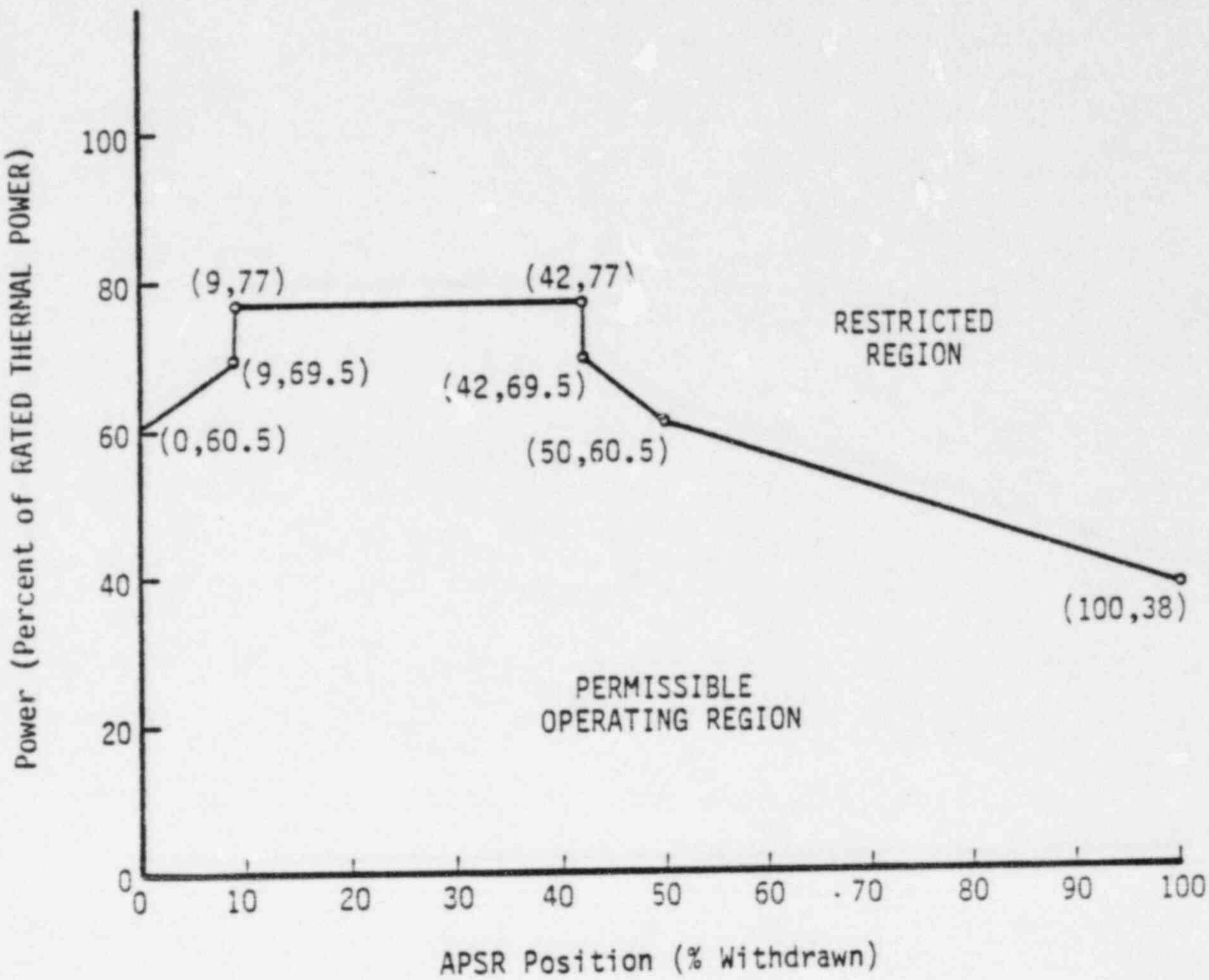

Figure 3.1-5g APSR Position Limits, 200 ±10 to 330 ±10 EFPD, Three RC Pumps -- Davis-Besse 1, Cycle 5

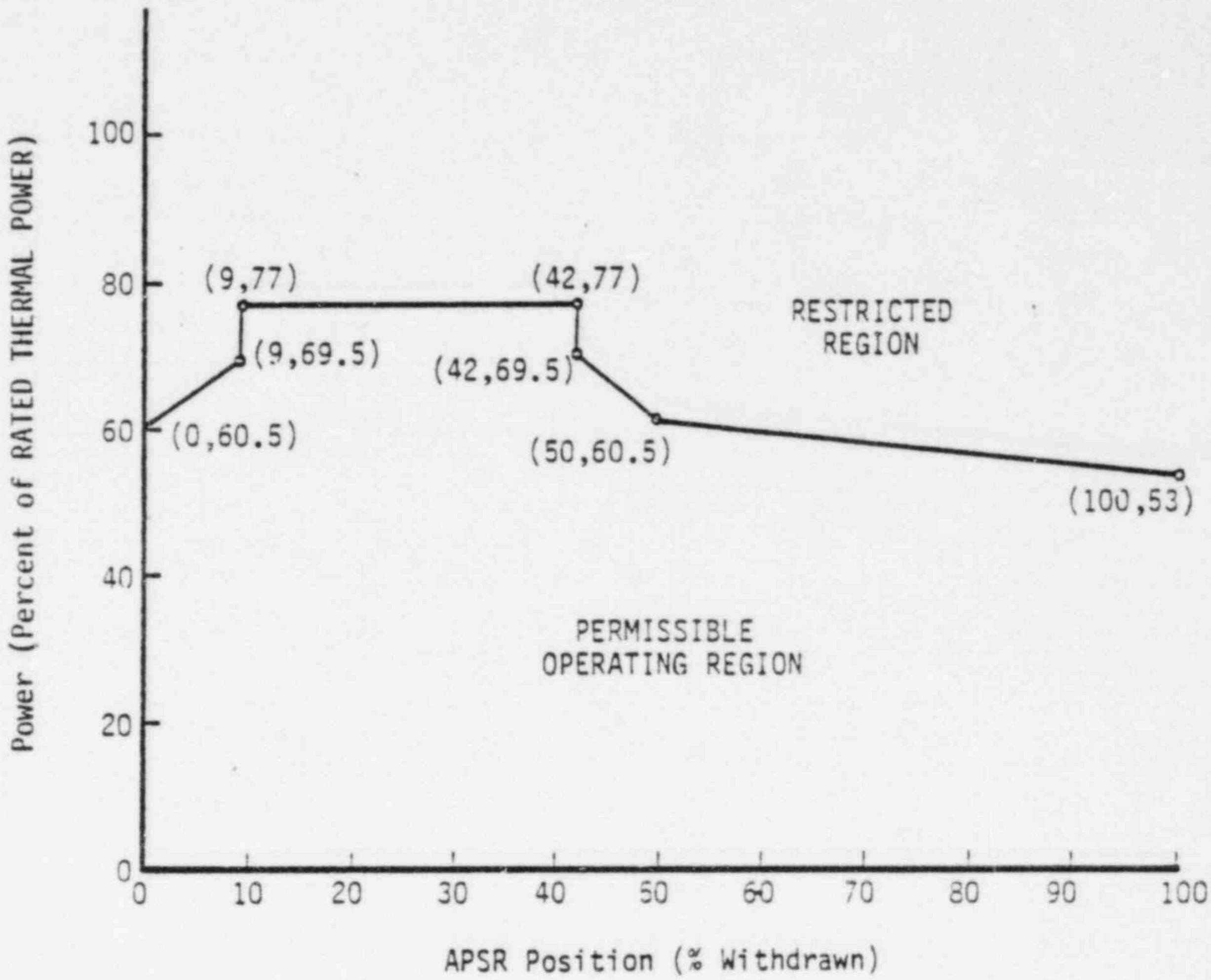

Figure 3.1-5h

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Figure 3.1-5i

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3/4.2. POWER DISTRIBUTION LIMITS

AXIAL POWER IMBALANCE

LIMITING CONDITION FOR OPERATION

3.2.1 AXIAL POWER IMBALANCE shall be maintained within the limits shown on Figures 3.2-1a, -1b, -1c, and -1d and 3.2-2a, -2b, -2c and -2d.

APPLICABILITY: MODE 1 above 40% of RATED THERMAL POWER.*

ACTION

With AXIAL POWER IMBALANCE exceeding the limits specified above, either:

a. Restore the AXIAL POWER IMBALANCE to within its limits within 15 minutes, or

b. Within one hour reduce power until imbalance limits are met or to 40% of RATED THERMAL POWER or less.

SURVEILLANCE REQUIREMENTS

4.2.1. The AXIAL POWER IMBALANCE shall be determined to be within limits at least once every 12 hours when above 40% of RATED THERMAL POWER except when the AXIAL POWER IMBALANCE alarm is inoperable, then calculate the AXIAL POWER IMBALANCE at least once per hour.

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*See Special Test exception 3.10.1.

Figure 3.2-1a Axial Power Imbalance Limits, 0 to 25+10/-0 EFPD, Four RC Pumps -- Davis-Besse 1, Cycle 5

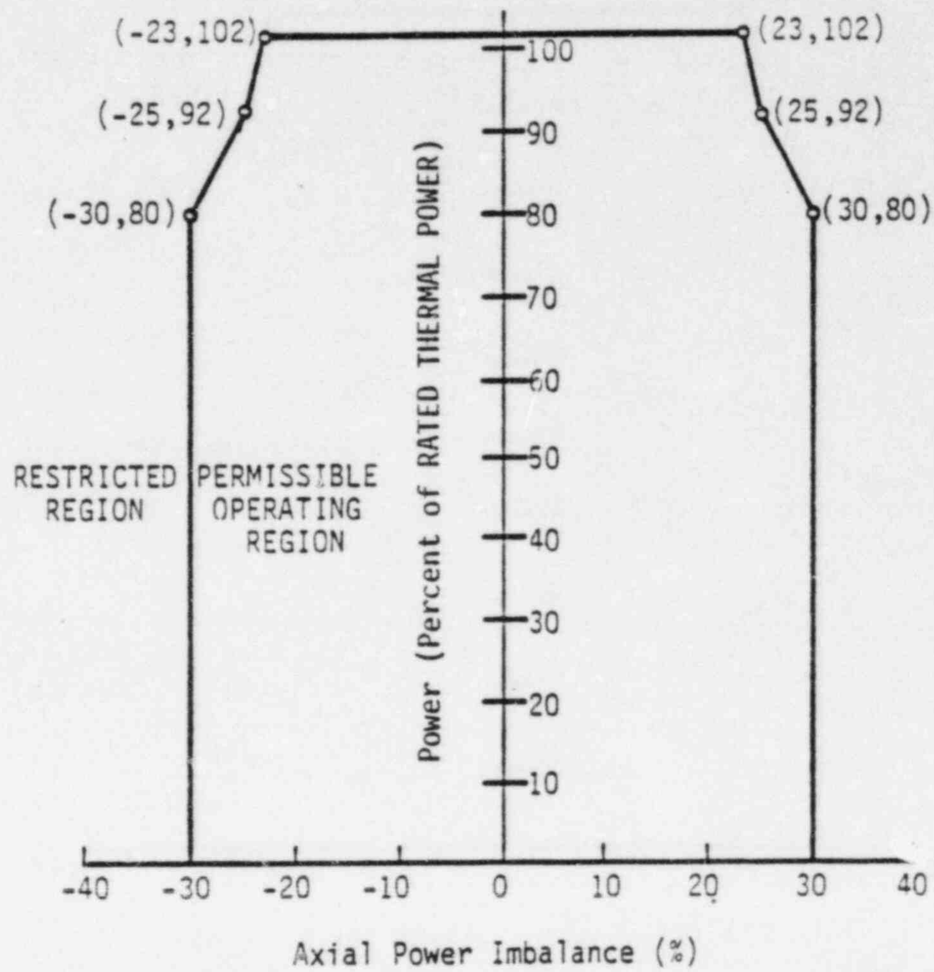

Figure 3.2-1b Axial Power Imbalance Limits, 25+10/-0 to 200 ±10 EFPD, Four RC Pumps -- Davis-Besse 1, Cycle 5

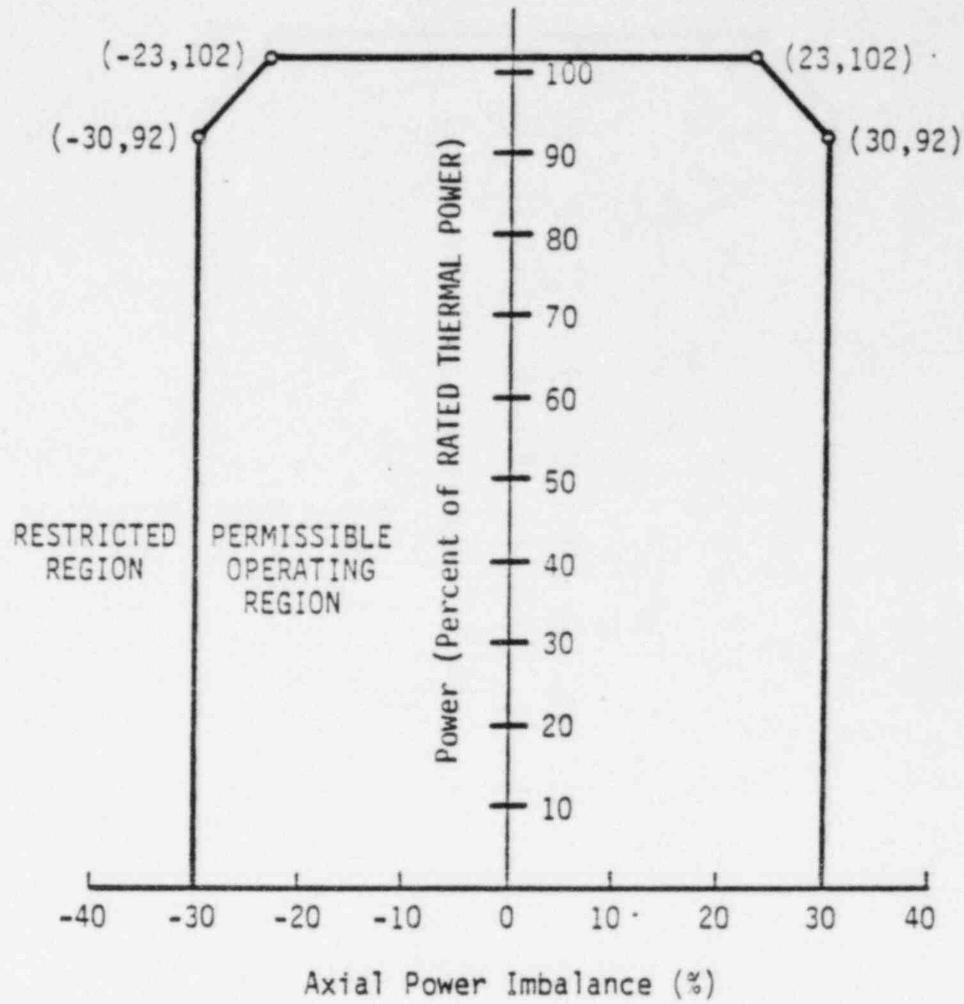

Figure 3.2-1c Axial Power Imbalance Limits, 200 ±10 to 330 ±10 EFPD, Four RC Pumps -- Davis-Besse 1, Cycle 5

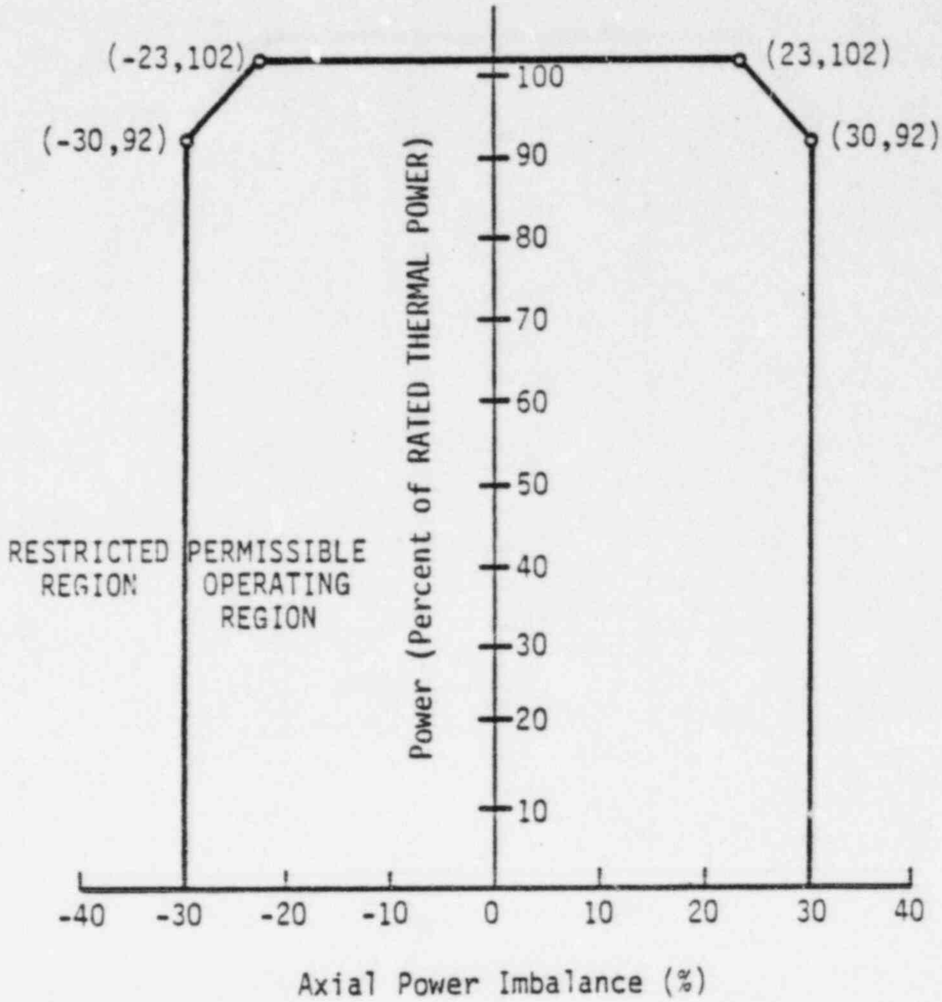

Figure 3.2-1d Axial Power Imbalance Limits, 330 ±10 to 390 ±10 EFPD, Four RC Pumps, APSRs Withdrawn -- Davis-Besse 1, Cycle 5

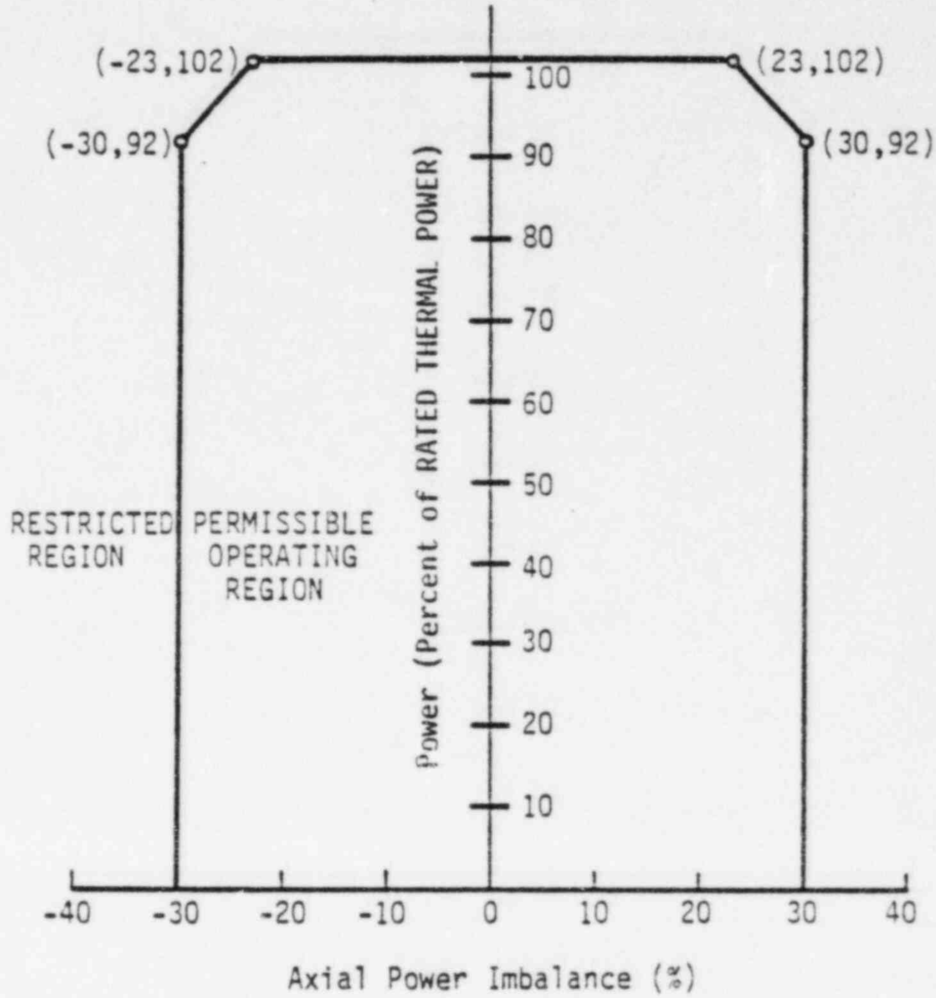

Figure 3.2-1e

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Figure 3.2-2a Axial Power Imbalance Limits, 0 to 25+10/-0 EFPD, Three RC Pumps -- Davis-Besse 1, Cycle 5

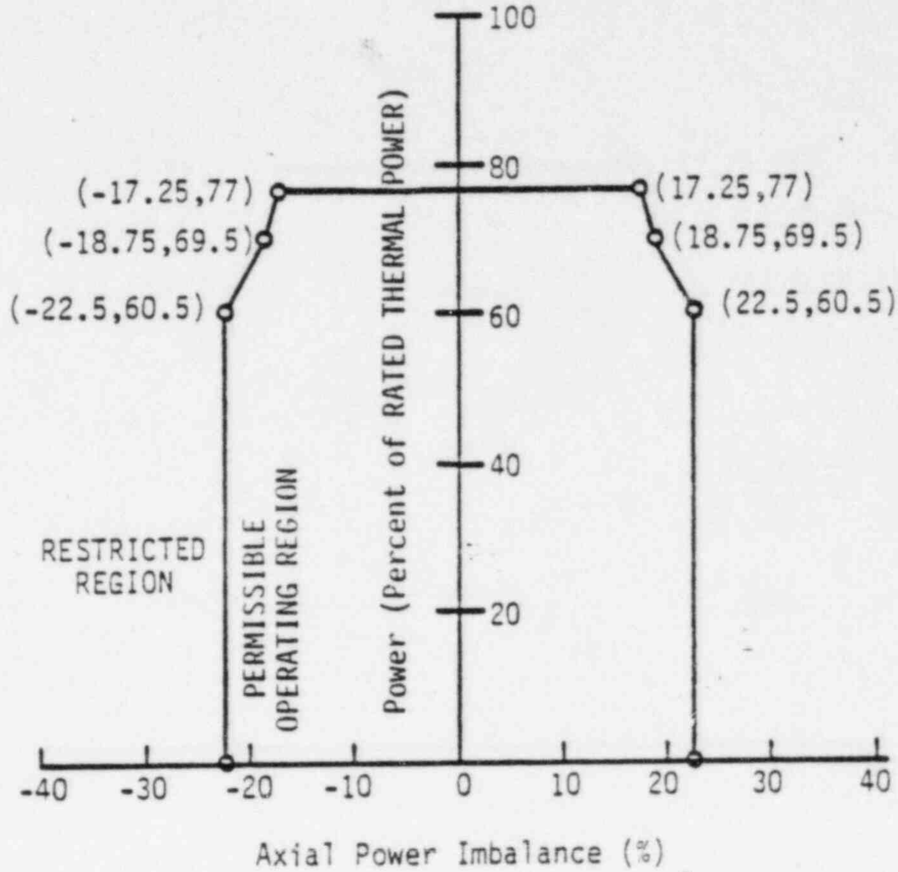

Figure 3.2-2b Axial Power Imbalance Limits, 25+10/-0 to 200 ±10 EFPD, Three RC Pumps -- Davis-Besse 1, Cycle 5

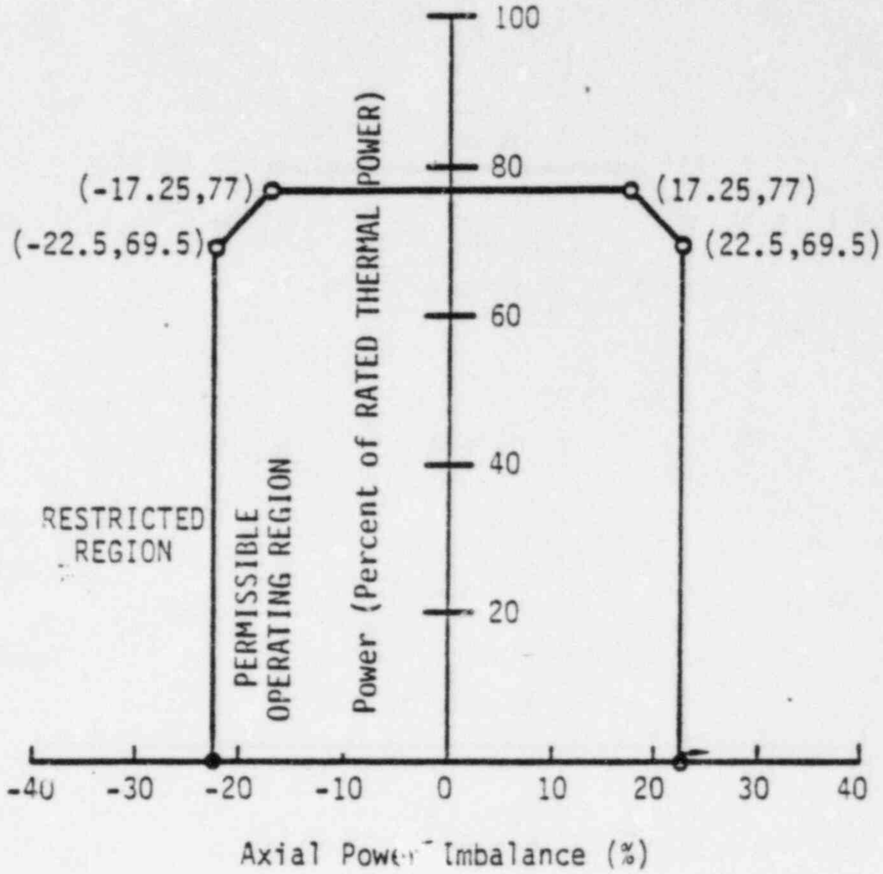

Figure 3.2-2c Axial Power Imbalance Limits, 200 ±10 to 330 ±10 EFPD, Three RC Pumps -- Davis-Besse 1, Cycle 5

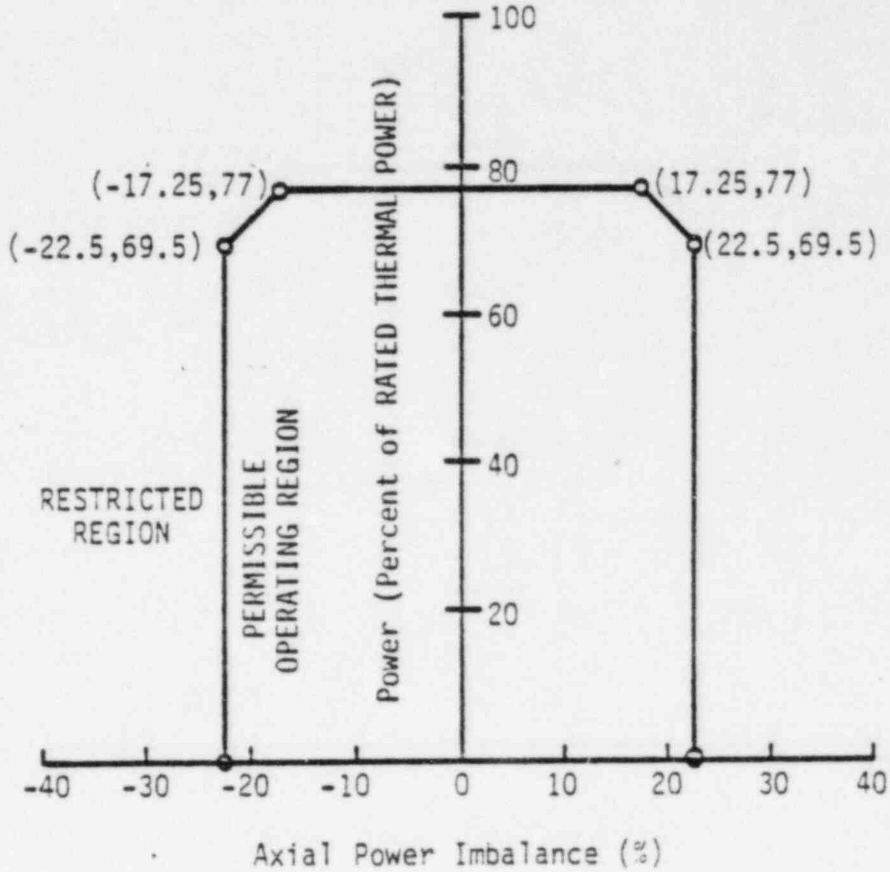

Figure 3.2-2d Axial Power Imbalance Limits, 330 ±10 to 390 ±10 EFPD, Three RC Pumps, APSRs Withdrawn -- Davis-Besse 1, Cycle 5

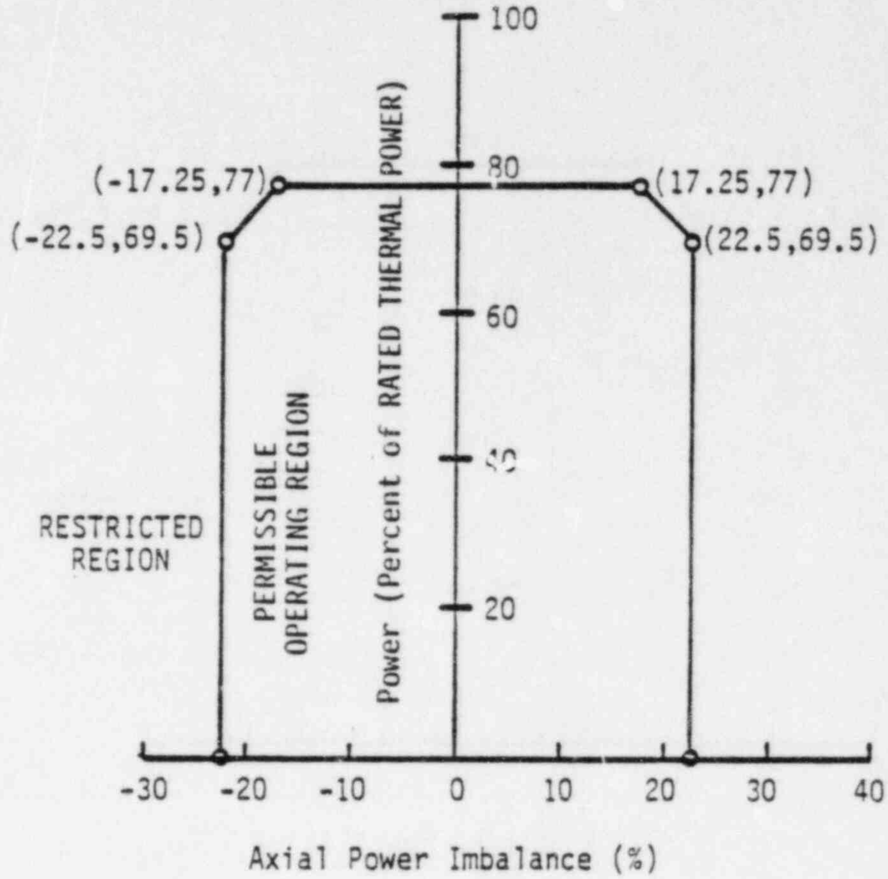

Figure 3.2-2e

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LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

d. With the QUADRANT POWER TILT determined to exceed the Maximum Limit of Table 3.2-2, reduce THERMAL POWER to $\leq$ 15% of RATED THERMAL POWER within 2 hours.

SURVEILLANCE REQUIREMENTS

4.2.4 The QUADRANT POWER TILT shall be determined to be within the limits at least once every 7 days during operation above 15% of RATED THERMAL POWER except when the QUADRANT POWER TILT alarm is inoperable, then the QUADRANT POWER TILT shall be calculated at least once per 12 hours.

Table 3.2-2 Quadrant Power Tilt Limits

	Steady state limit	Transient limit	Maximum limit
Measurement independent QUADRANT POWER TILT	4.92	11.07	20.0
QUADRANT POWER TILT as measured by:			
Symmetrical incore detector system, 0-50 ±10 EFPD	3.37	8.52	20.0
Symmetrical incore detector system, after 50 ±10 EFPD	3.02	8.52	20.0
Power range channels	1.96	6.96	20.0
Minimum incore detector system	1.90	4.40	20.0

3/4.4.1. COOLANT LOOPS AND COOLANT CIRCULATION

STARTUP AND POWER OPERATION

LIMITING CONDITION FOR OPERATION

3.4.1.1 Both reactor coolant loops and both reactor coolant pumps in each loop shall be in operation.

APPLICABILITY: MODES 1 and 2*.

ACTION:

a. With one reactor coolant pump not in operation, STARTUP and POWER OPERATION may be initiated and may proceed provided THERMAL POWER is restricted to less than 79.7% of RATED THERMAL POWER and within 4 hours the setpoints for the following trips have been reduced to the values specified in Specification 2.2.1 for operation with three reactor coolant pumps operating:

   1. High Flux
   2. Flux-ΔFlux-Flow

SURVEILLANCE REQUIREMENTS

4.4.1.1 The above required reactor coolant loops shall be verified to be in operation and circulating reactor coolant at least once per 12 hours.

4.4.1.2 The reactor protective instrumentation channels specified in the applicable ACTION statement above shall be verified to have had their trip setpoints changed to the values specified in Specification 2.2.1 for the applicable number of reactor coolant pumps operating either:

a. Within 4 hours after switching to a different pump combination if the switch is made while operating, or

b. Prior to reactor criticality if the switch is made while shutdown.

*See Special Test Exception 3.10.3.

SHUTDOWN AND HOT STANDBY

LIMITING CONDITION FOR OPERATION

3.4.1.2 a. At least two of the coolant loops listed below shall be OPERABLE:

1. Reactor Coolant Loop 1 and its associated steam generator,
2. Reactor Coolant Loop 2 and its associated steam generator,
3. Decay Heat Removal Loop 1,*
4. Decay Heat Removal Loop 2.*

b. At least one of the above coolant loops shall be in operation.**

c. Not more than one decay heat removal pump may be operated with the sole suction path through DH-11 and DH-12 unless the control power has been removed from the DH-11 and DH-12 valve operator, or manual valves DH-21 and DH-23 are opened.

d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

APPLICABILITY: MODES 3, 4 and 5

ACTION:

a. With less than the above required coolant loops OPERABLE, immediately initiate corrective action to return the required coolant loops to OPERABLE status as soon as possible, or be in COLD SHUTDOWN within 20 hours.

b. With none of the above required coolant loops in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required coolant loop to operation.

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*The normal or emergency power source may be inoperable in MODE 5.

**The decay heat removal pumps may be de-energized for up to 1 hour provided (1) no operations are permitted that would cause dilution of the reactor coolant system boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.