



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

THE 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. 69  
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 February 17, 1984, as revised March 29, 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 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, Facility Operating License No. NPF-3 is hereby amended as indicated below and by changes to the Technical Specifications as indicated in the attachment to this license amendment:

Revise paragraph 2.C.(2) to read as follows:

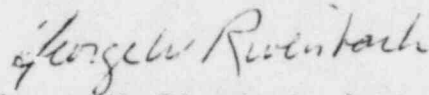
8406230314 840612  
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Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 69, 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



George W. Rivenbark, Acting Chief  
Operating Reactors Branch No. 4  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: June 12, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 69

FACILITY OPERATING LICENSE NO. NPF-3

DOCKET NO. 50-346

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

Pages

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3/4 1-28b

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REACTIVITY CONTROL SYSTEMS

SAFETY ROD INSERTION LIMIT

LIMITING CONDITION FOR OPERATION

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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

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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  $K_{eff} \geq 1.0$ .

## REACTIVITY CONTROL SYSTEMS

### 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, and -2c and 3.1-3a, -3b, and -3c for the first  $200 \pm 10$  EFPD of operation. If the axial power shaping rods are completely withdrawn at  $200 \pm 10$  EFPD for extension of cycle length, then the regulating rod groups shall be limited in physical insertion as shown on Figures 3.1-2e and 3.1-3e for the remainder of the cycle. However, if the axial power shaping rods are not completely withdrawn at  $200 \pm 10$  EFPD, then the regulating rod groups shall be limited in physical insertion as shown on Figures 3.1-2d and 3.1-3d for the remainder of the cycle. A rod group overlap of  $25 \pm 5\%$  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 Exceptions 3.10.1 and 3.10.2.

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

Figure 3.1-2b. Regulating Group Position Limits,  $24 \pm 10$ ,  $-0$  to  $150 \pm 10$  EFPD, Four RC Pumps - Davis-Besse 1, Cycle 4

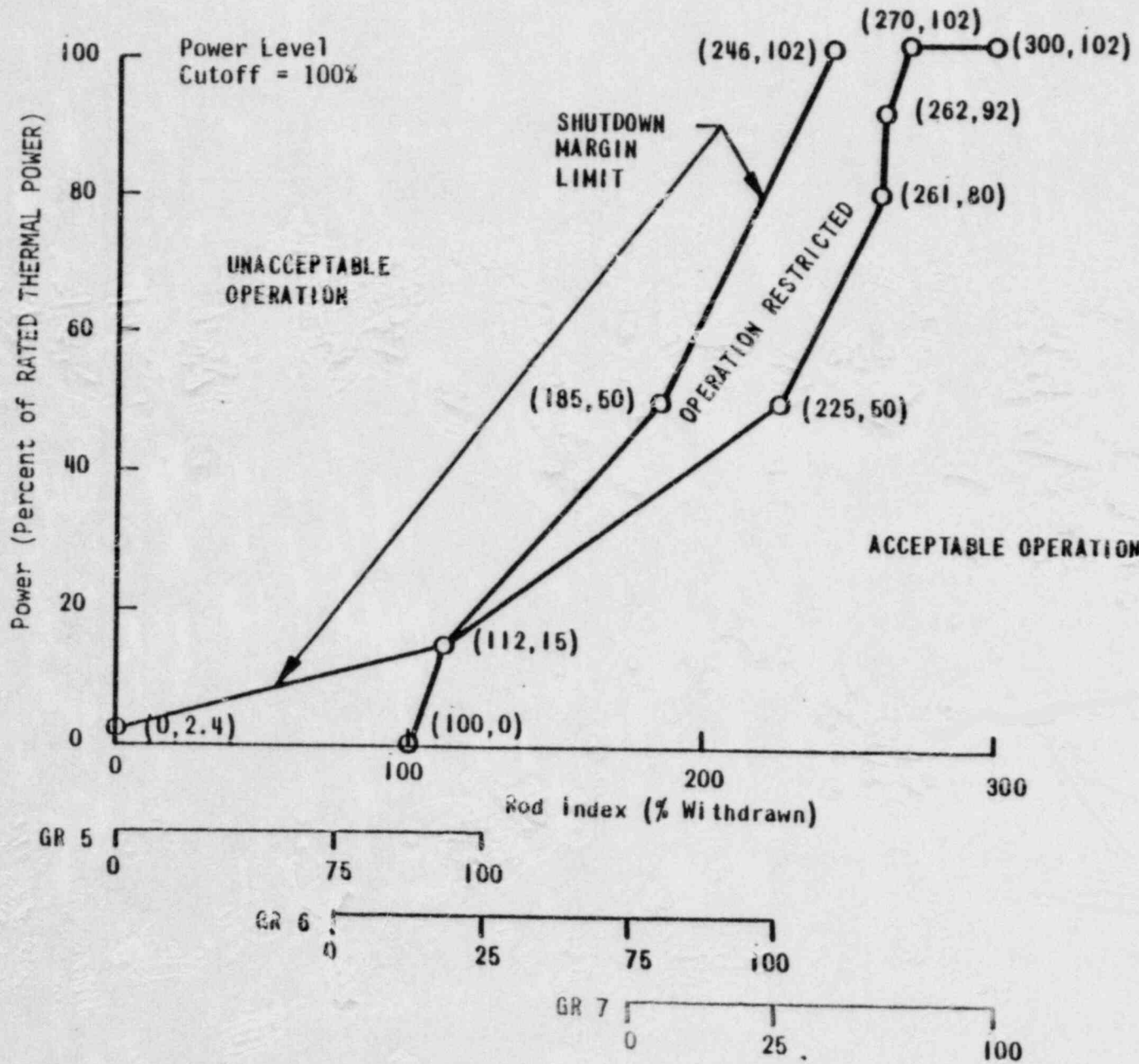


Figure 3.1-2c. Regulating Group Position Limits,  $150 \pm 10$  to  $200 \pm 10$  EFPD, Four RC pumps - Davis-Besse 1, Cycle 4

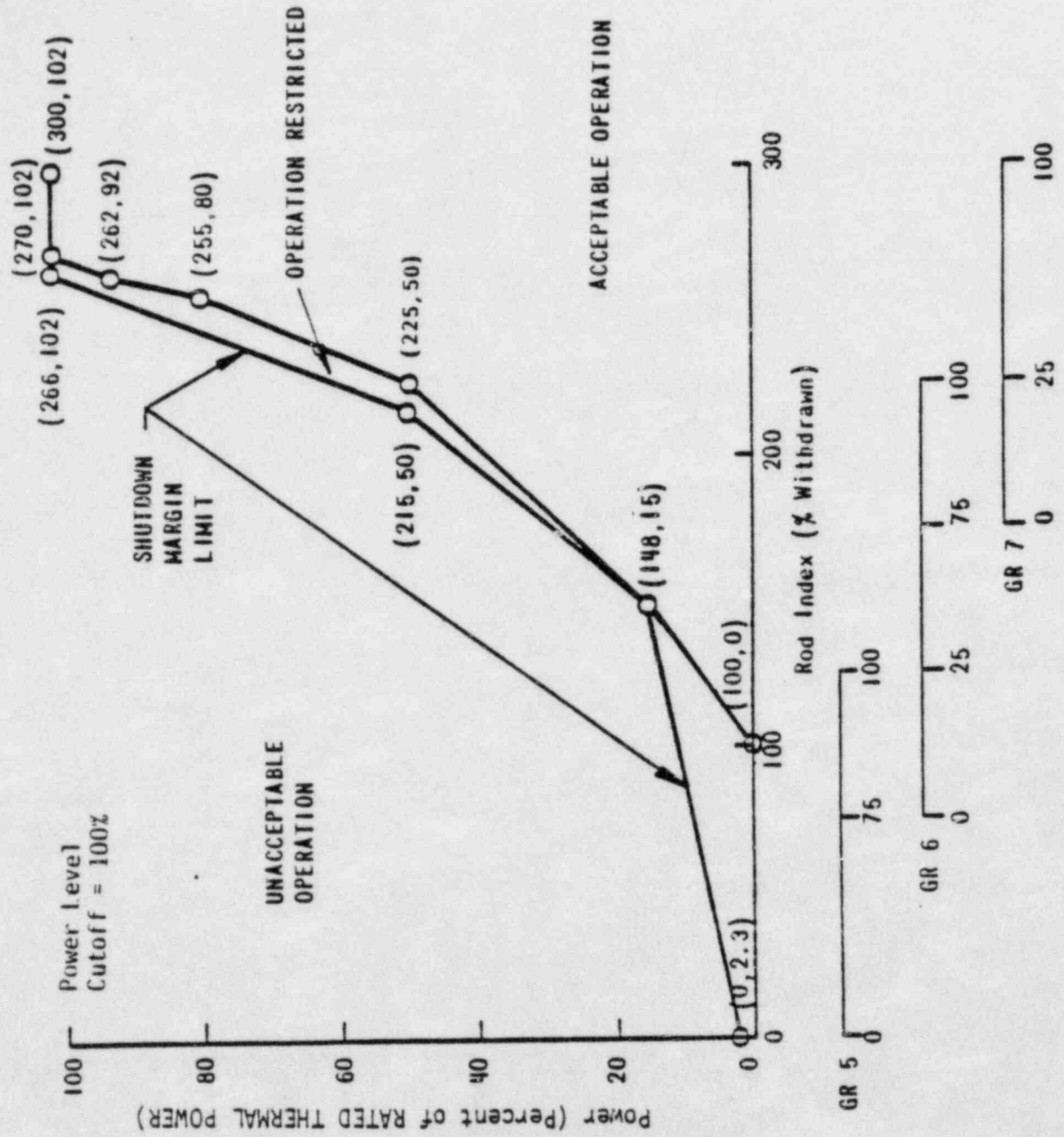


Figure 3.1-2d. Regulating Group Position Limits, 200 ± 10  
 Lo 240 + 10 EFPD, Four RC Pumps -- Davis-  
 Besse 1, Cycle 4

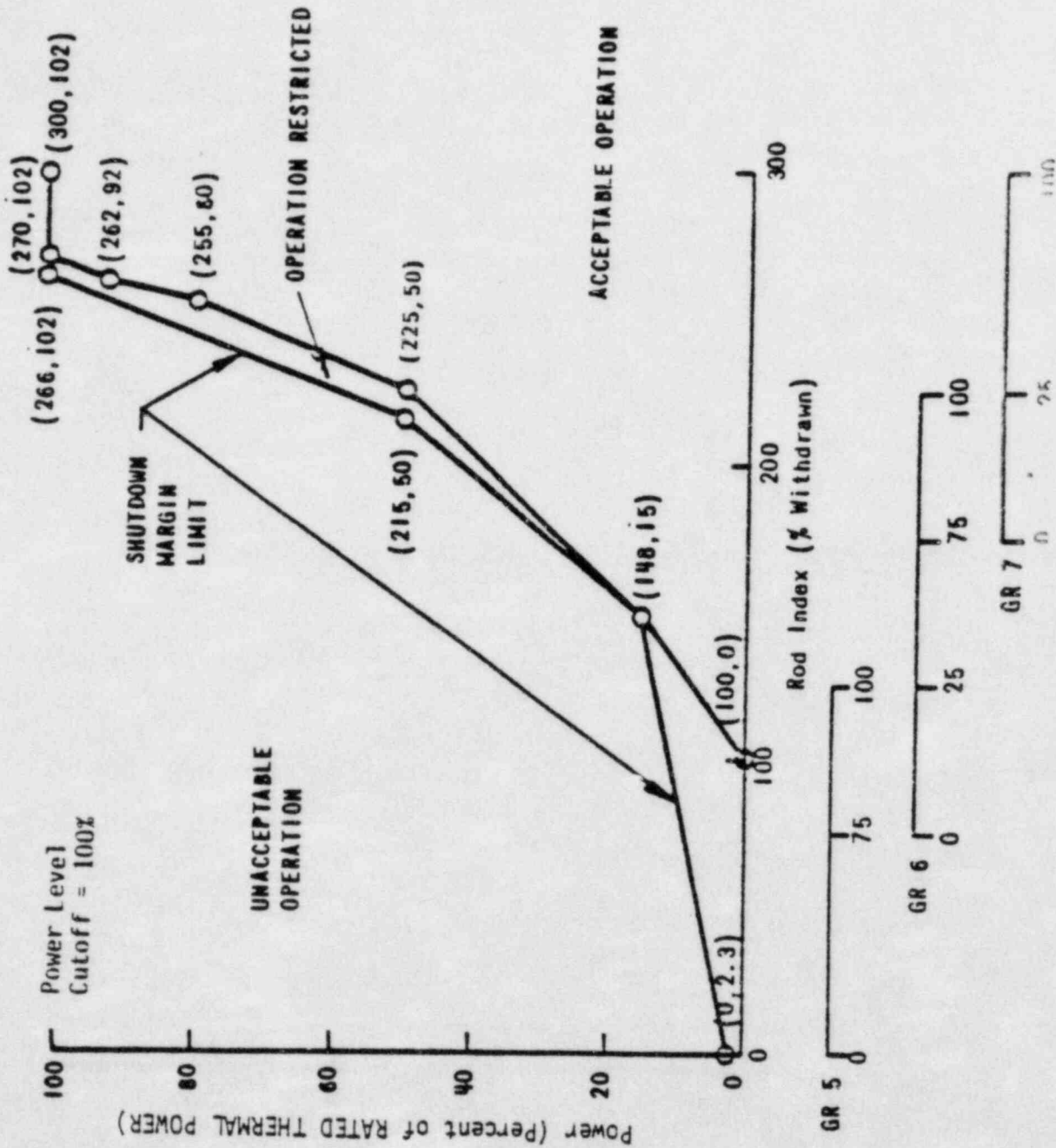




Figure 3.1-2e. Regulating Group Position Limits, 200 ± 10 to 280 ± 10 EFPD, Four RC Pumps, APSRS Withdrawn - Davis-Besse 1, Cycle 4

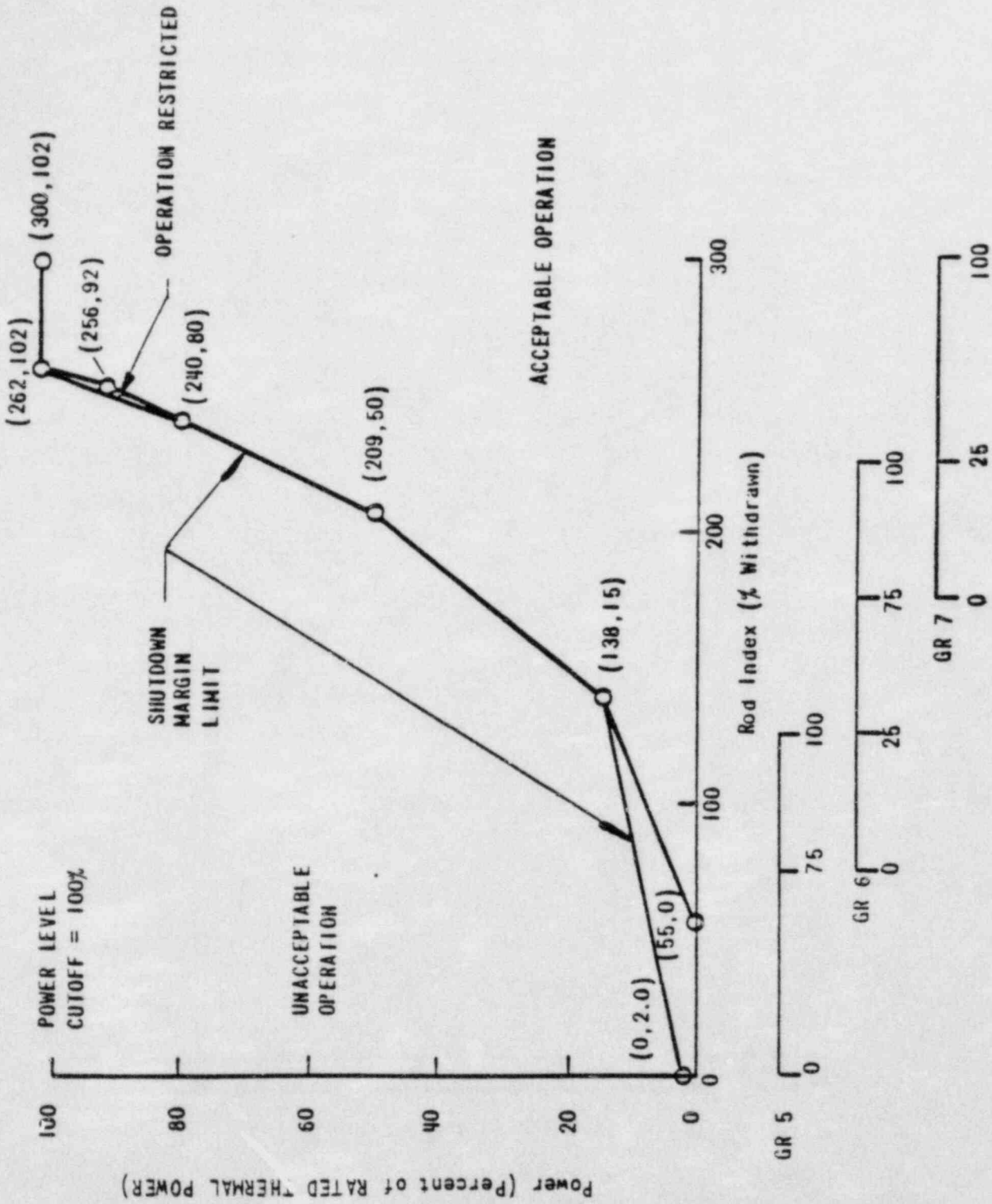


Figure 3.1-3c. Regulating Group Position Limits,  $150 \pm 10$  to  $200 \pm 10$  EFPD, Three RC Pumps - Davis-Besse 1, Cycle 4

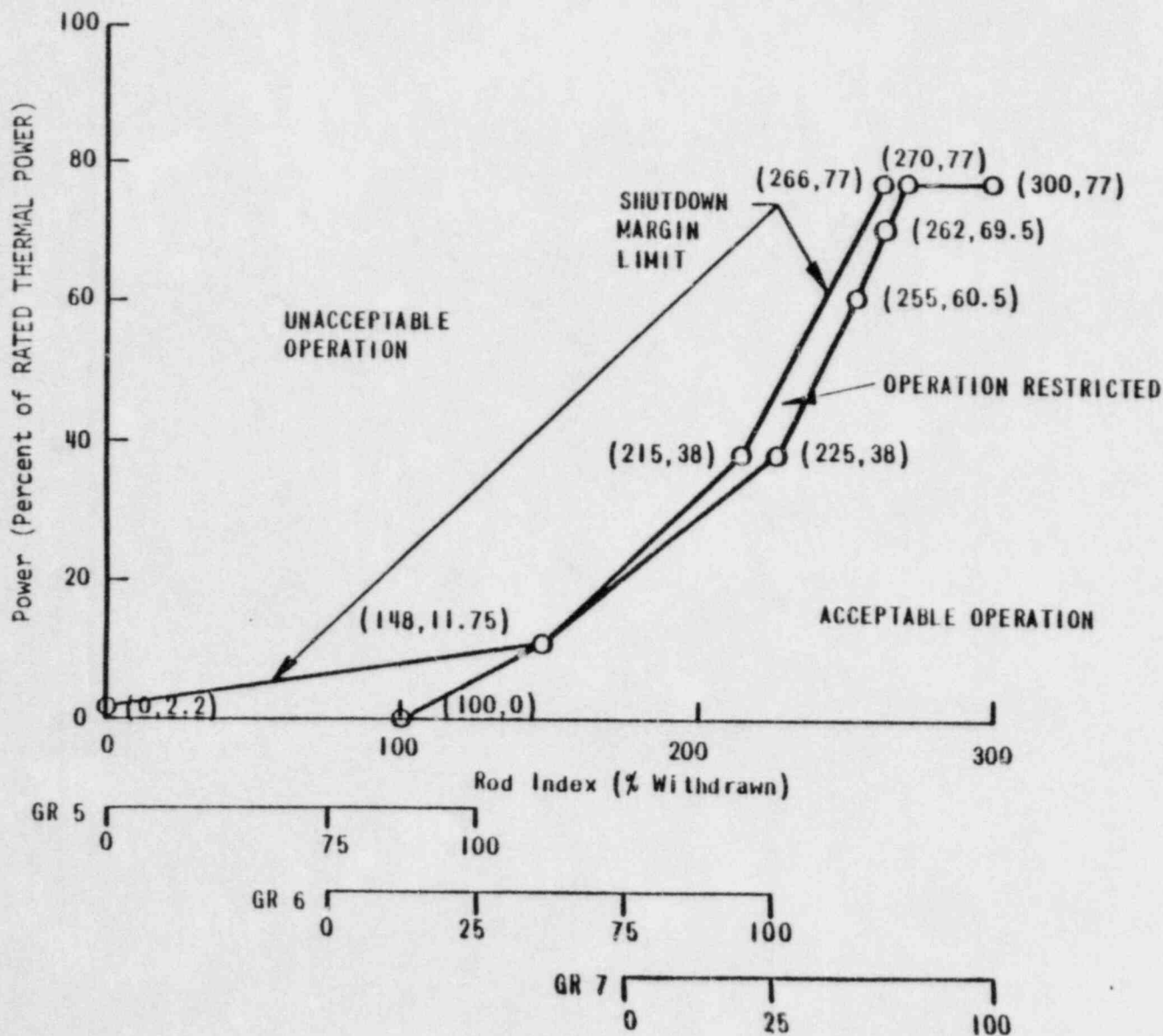


Figure 3.1-3d. Regulating Group Position Limits, 200 ± 10 to 240 ± 10 EFPD, Three RC Pumps - Davis-Besse 1 Cycle 4

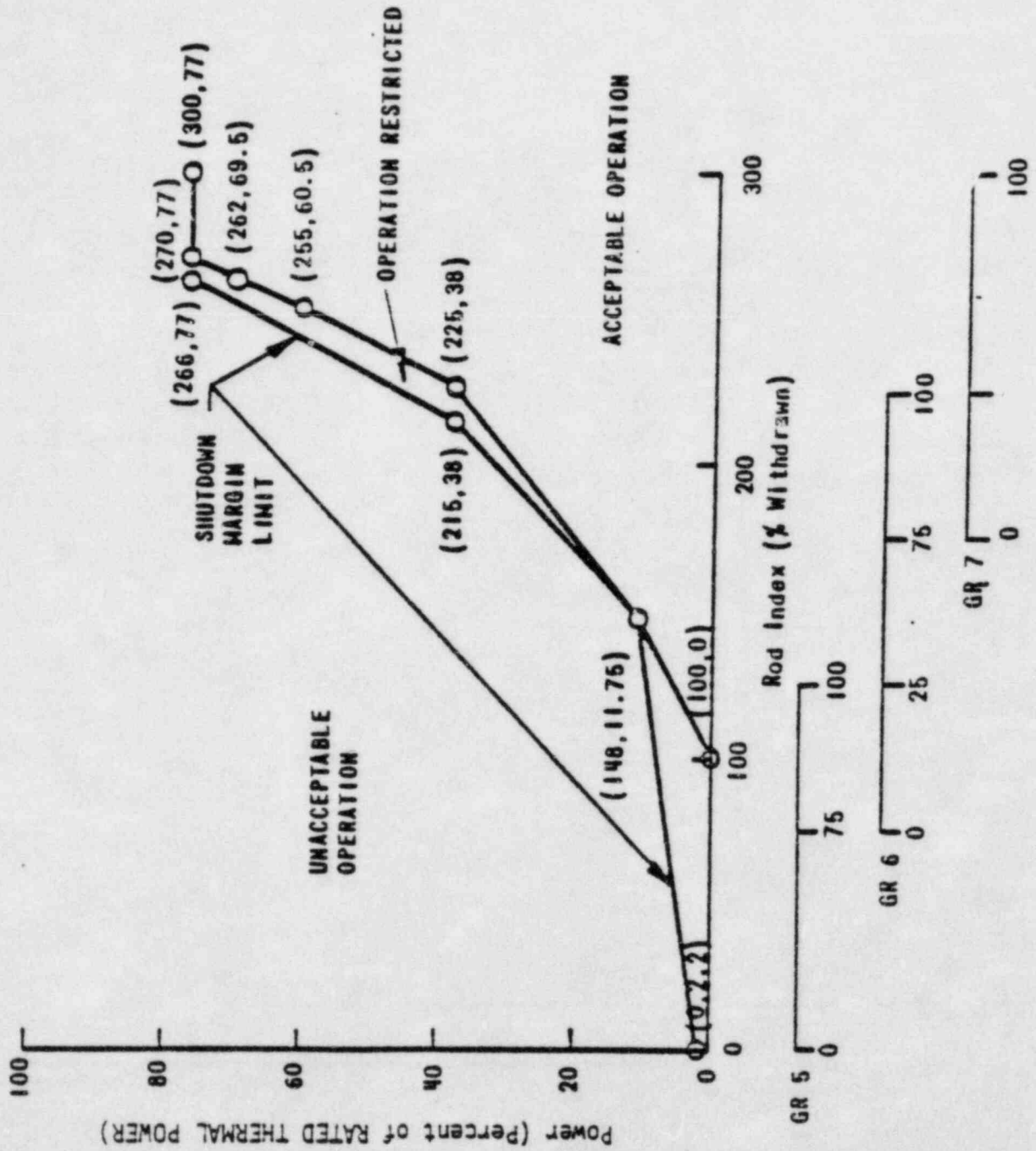
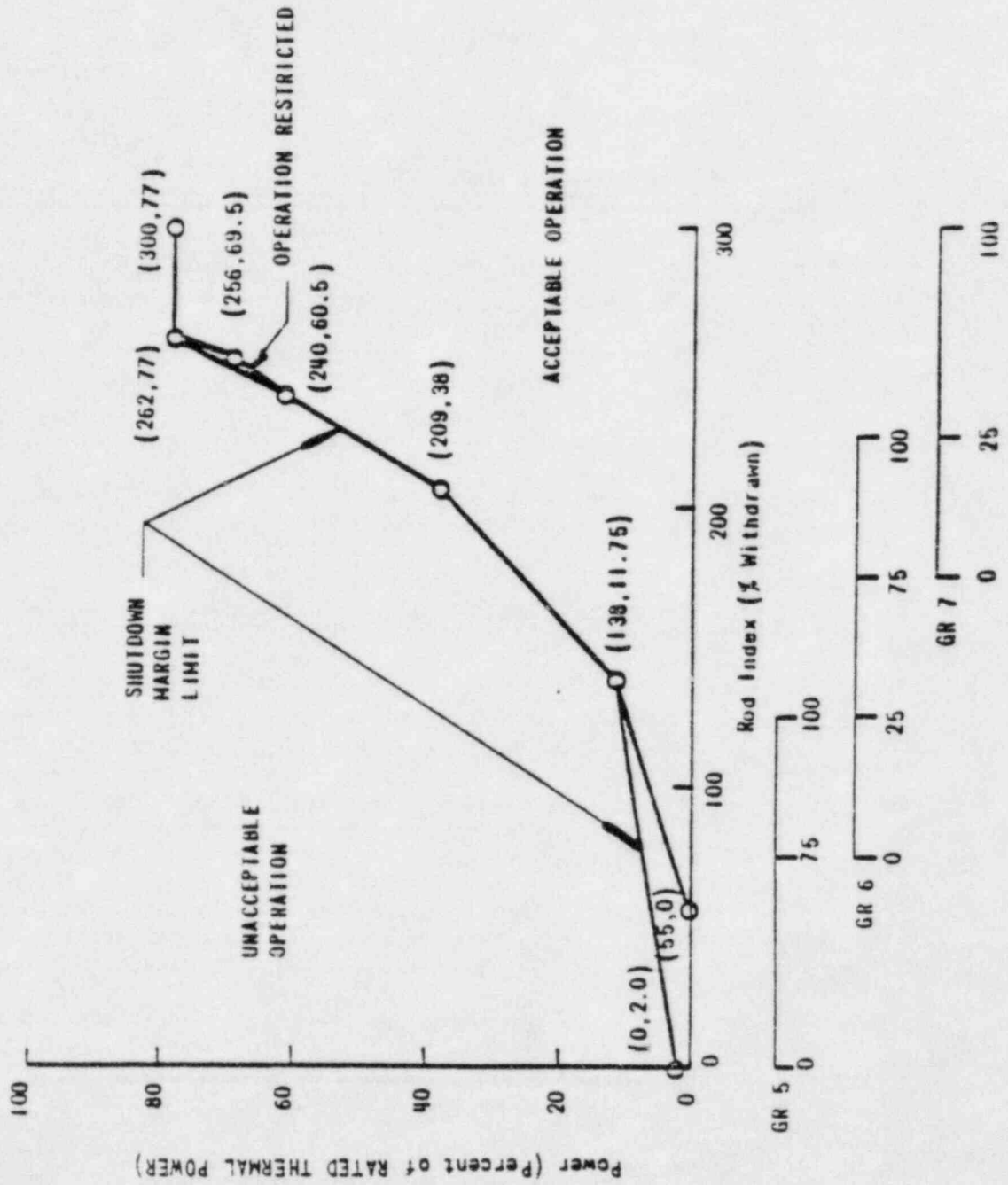


Figure 3.1-3e. Regulating Group Position Limits, 200 ± 10 to 280 ± 10 EFPD, Three RC Pumps, APSRs Withdrawn - Davis-Besse 1, Cycle 4



## REACTIVITY CONTROL SYSTEMS

### ROD PROGRAM

#### LIMITING CONDITION FOR OPERATION

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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

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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.

## REACTIVITY CONTROL SYSTEMS

### XENON REACTIVITY

#### LIMITING CONDITION FOR OPERATION

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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

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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.

## REACTIVITY CONTROL SYSTEMS

### 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, -5f, -5g and -5h for the first  $200 \pm 10$  EFPD of operation. If this rod group is completely withdrawn at  $200 \pm 10$  EFPD for extension of cycle length, it shall not be reinserted in the core for remainder of the cycle and the limits of Figure 3.1-5e shall be applicable. However, if the rod group is not completely withdrawn at  $200 \pm 10$  EFPD, the group shall be limited in physical insertion as shown on Figures 3.1-5d and -5i for the remainder of the cycle.

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 3.1-5c. APSR Position Limits,  $150 \pm 10$  to  $200 \pm 10$  EFPD, Four RC Pumps - Davis-Besse 1, Cycle 4

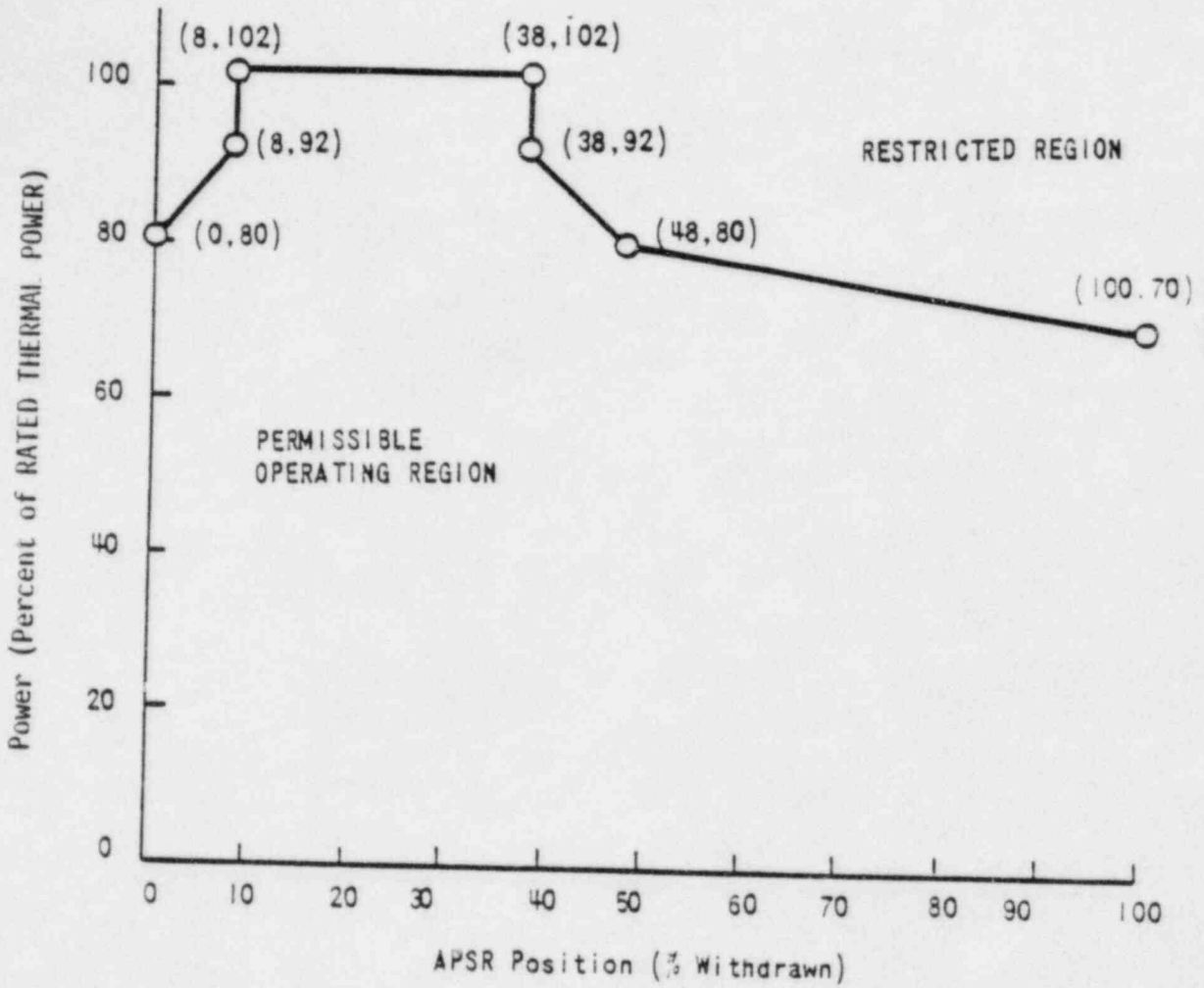




Figure 3.1-5d. APSR Position Limits,  $200 \pm 10$  to  $240 \pm 10$  EFPD, Four RC Pumps - Davis-Besse 1, Cycle 4

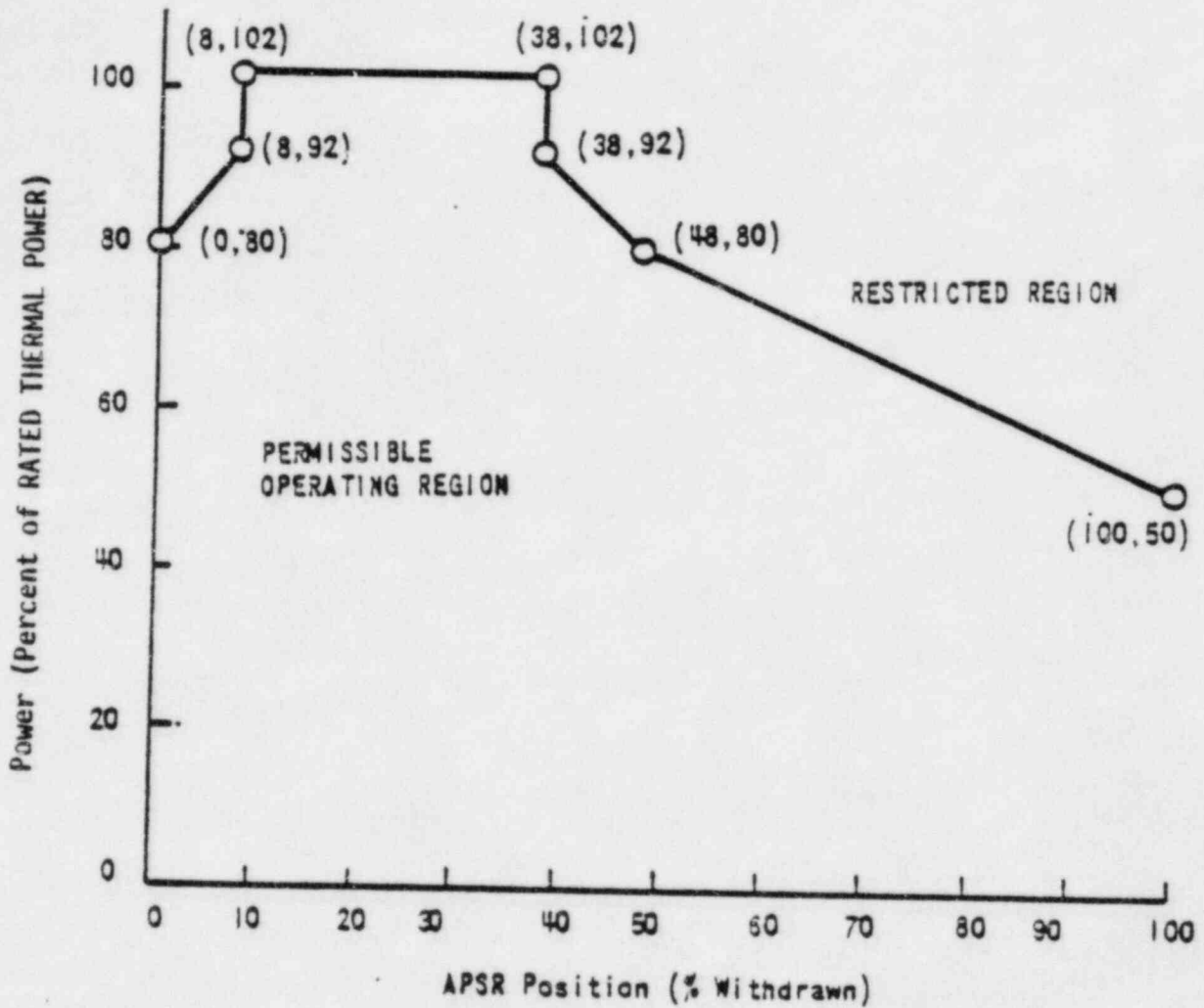


Figure 3.1-5e. APSR Position Limits,  $200 \pm 10$  to  $280 \pm 10$  EFPD, Three or Four RC Pumps, APSRs Withdrawn - Davis-Besse 1, Cycle 4

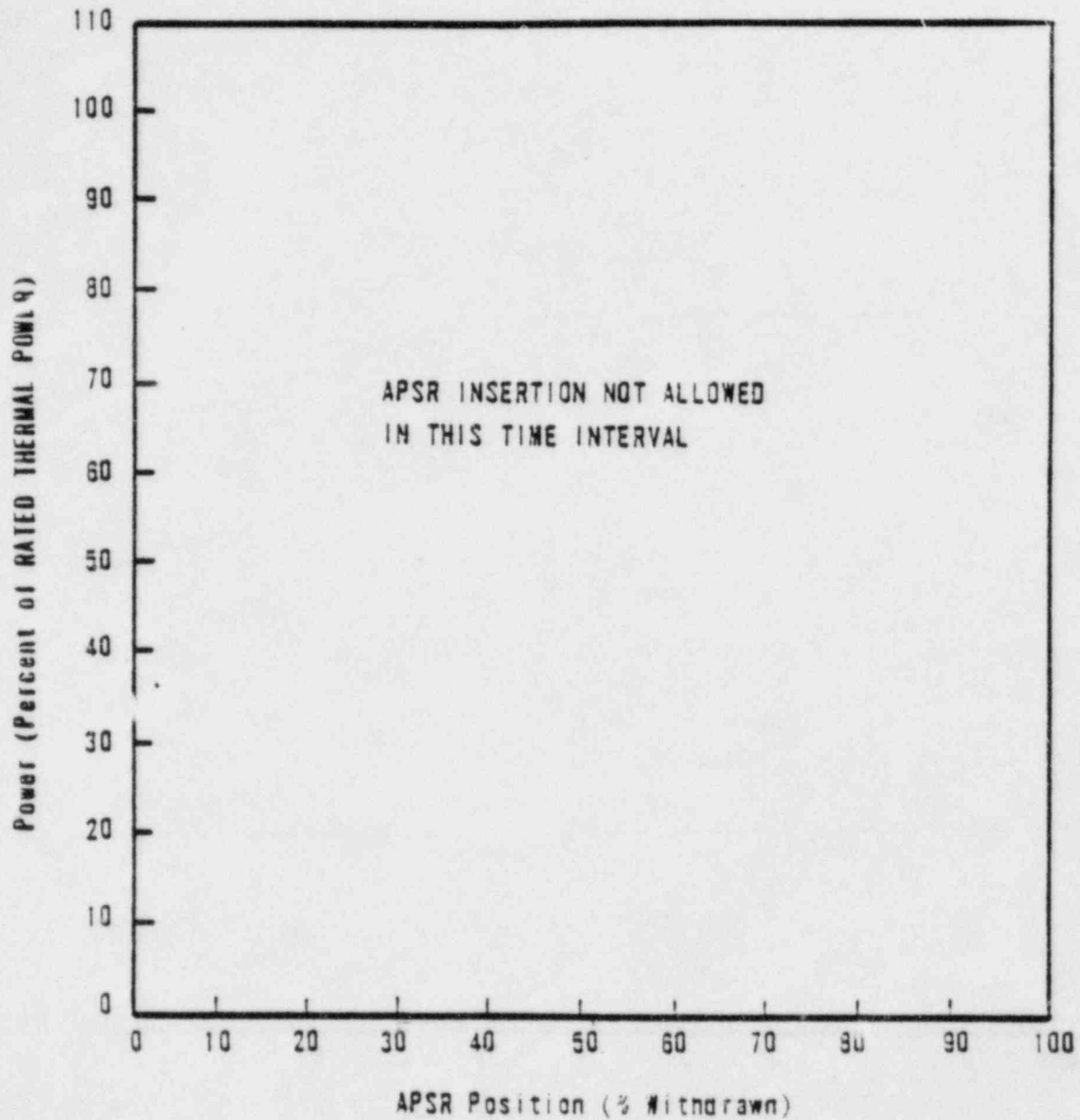


Figure 3.1-5f. APSR Position Limits, 0 to 24+10/-0 EFPD,  
 Three RC Pumps - Davis-Besse 1, Cycle 4

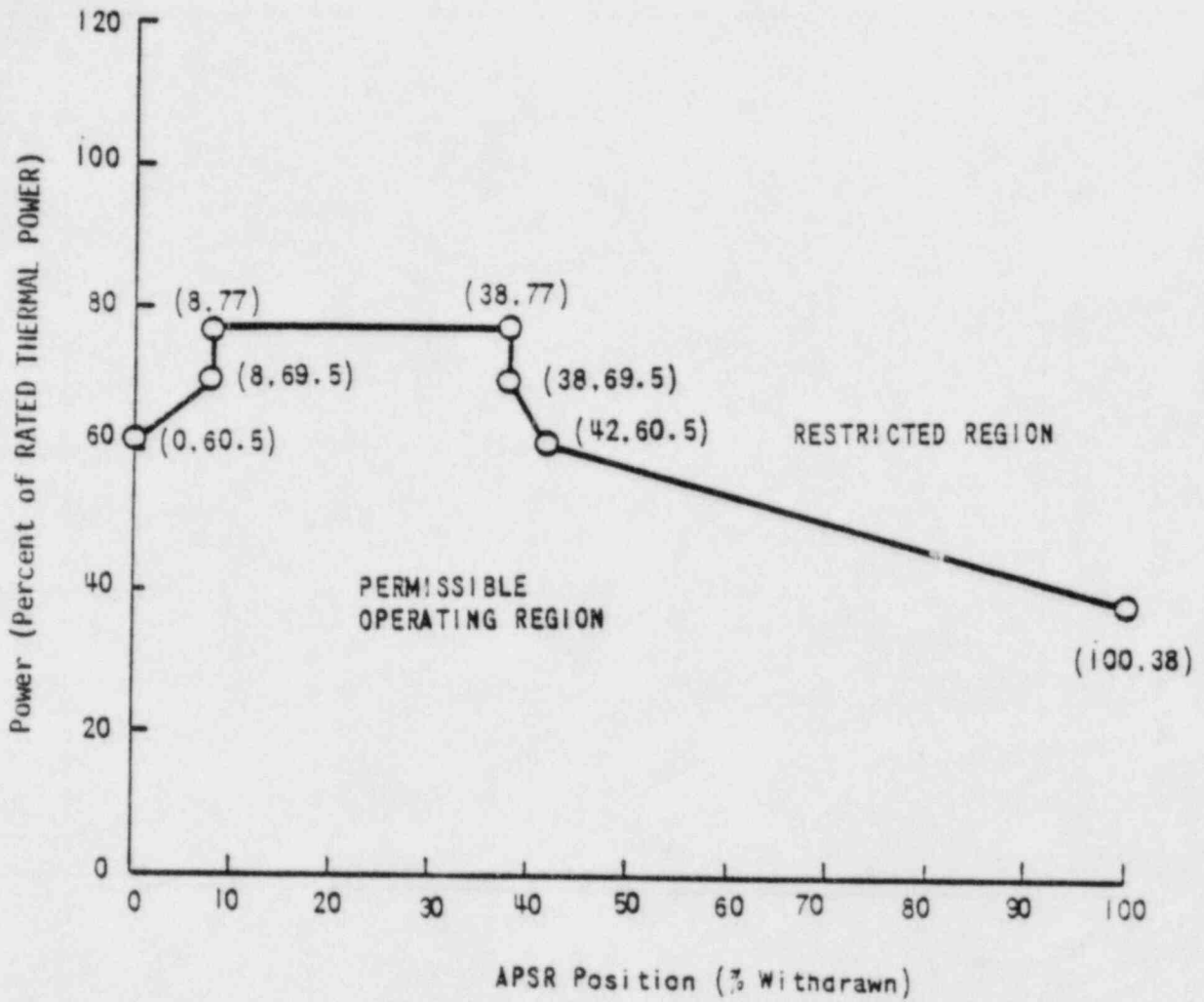


Figure 3.1-5g. APSR Position Limits,  $24 \pm 10 / -0$  to  $150 \pm 10$  EFPD, Three RC Pumps - Davis-Besse 1, Cycle 4

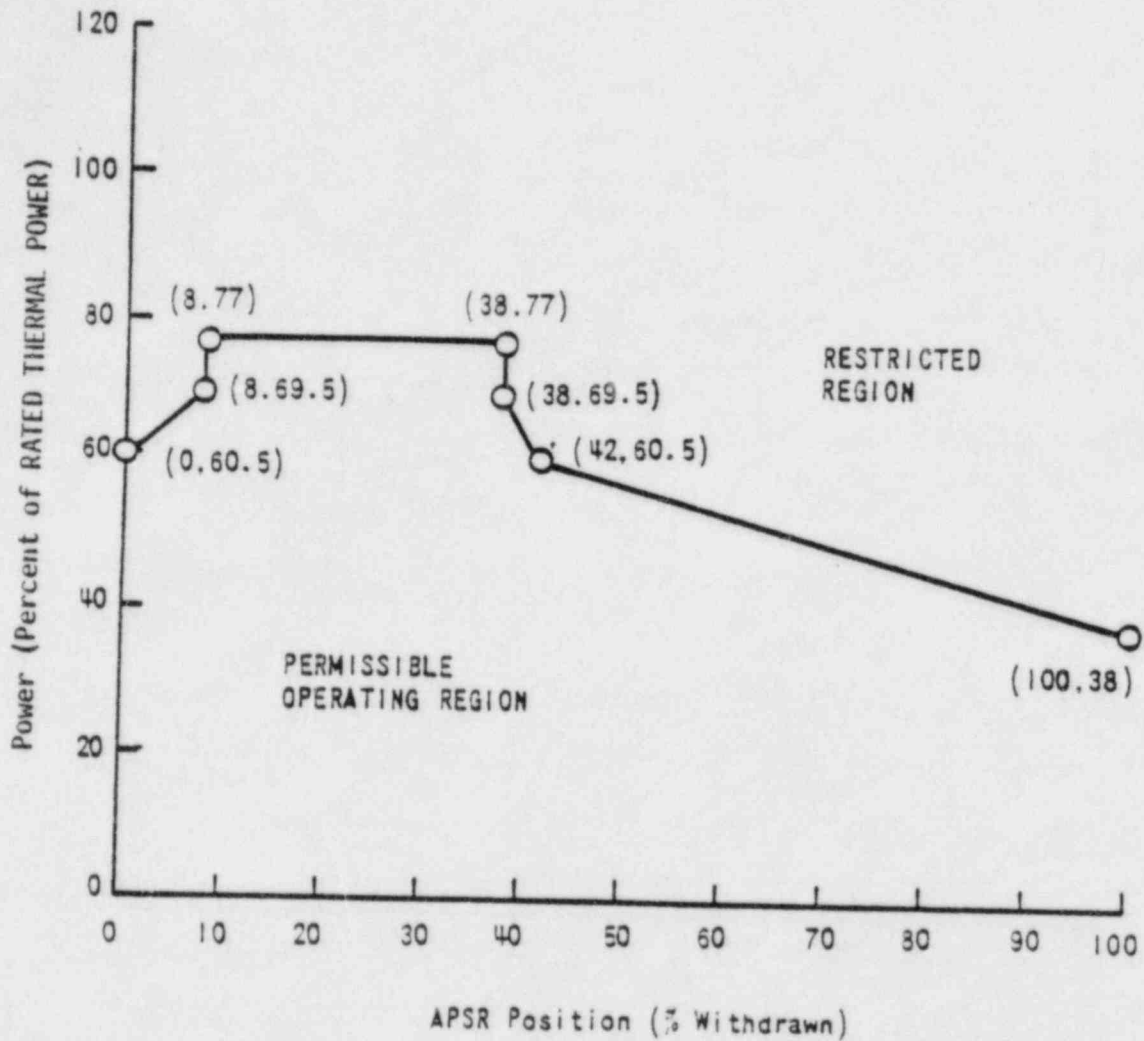


Figure 3.1-5h. APSR Position Limits,  $150 \pm 10$  to  $200 \pm 10$  EFPD, Three RC Pumps - Davis-Besse 1, Cycle 4

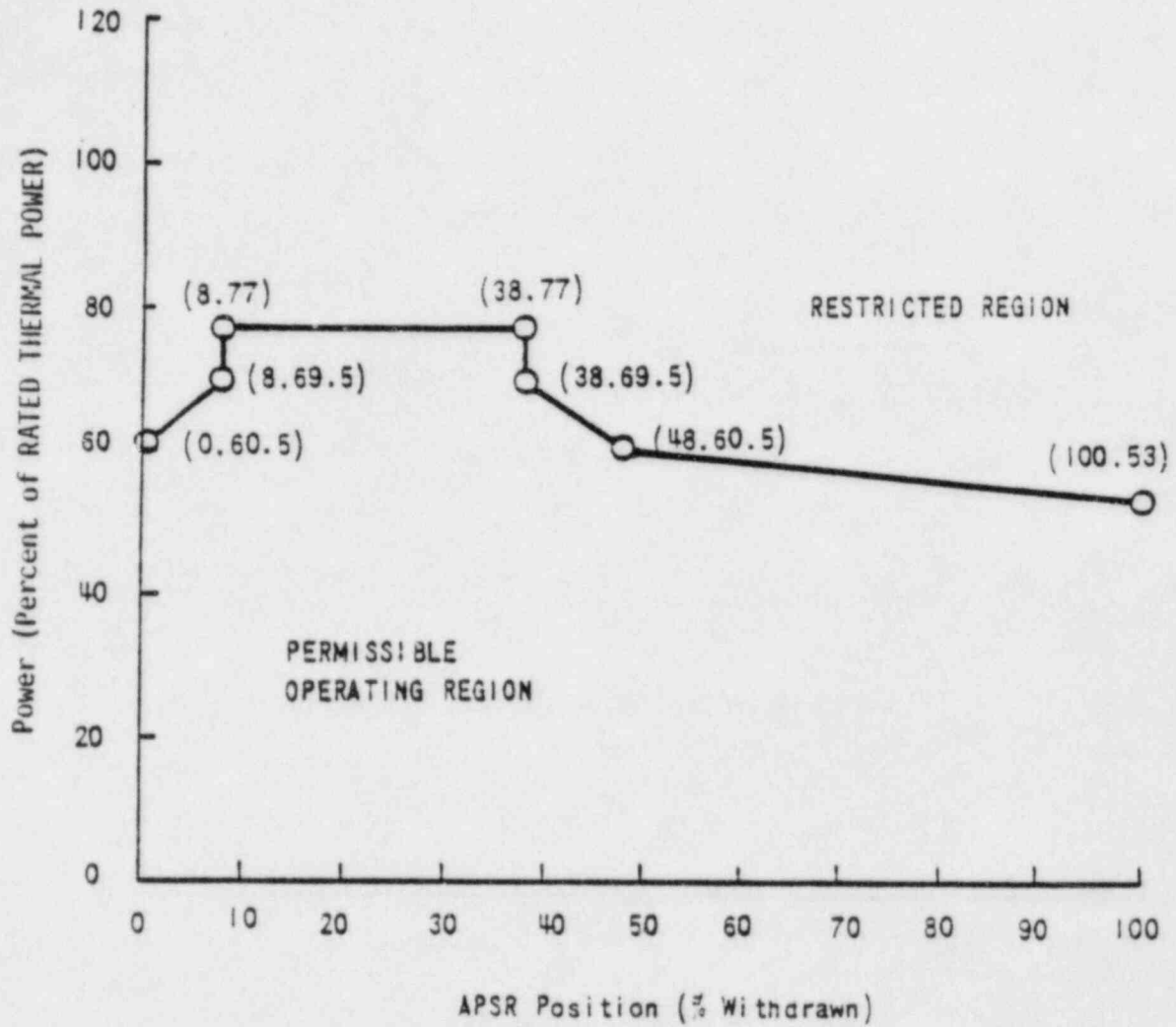
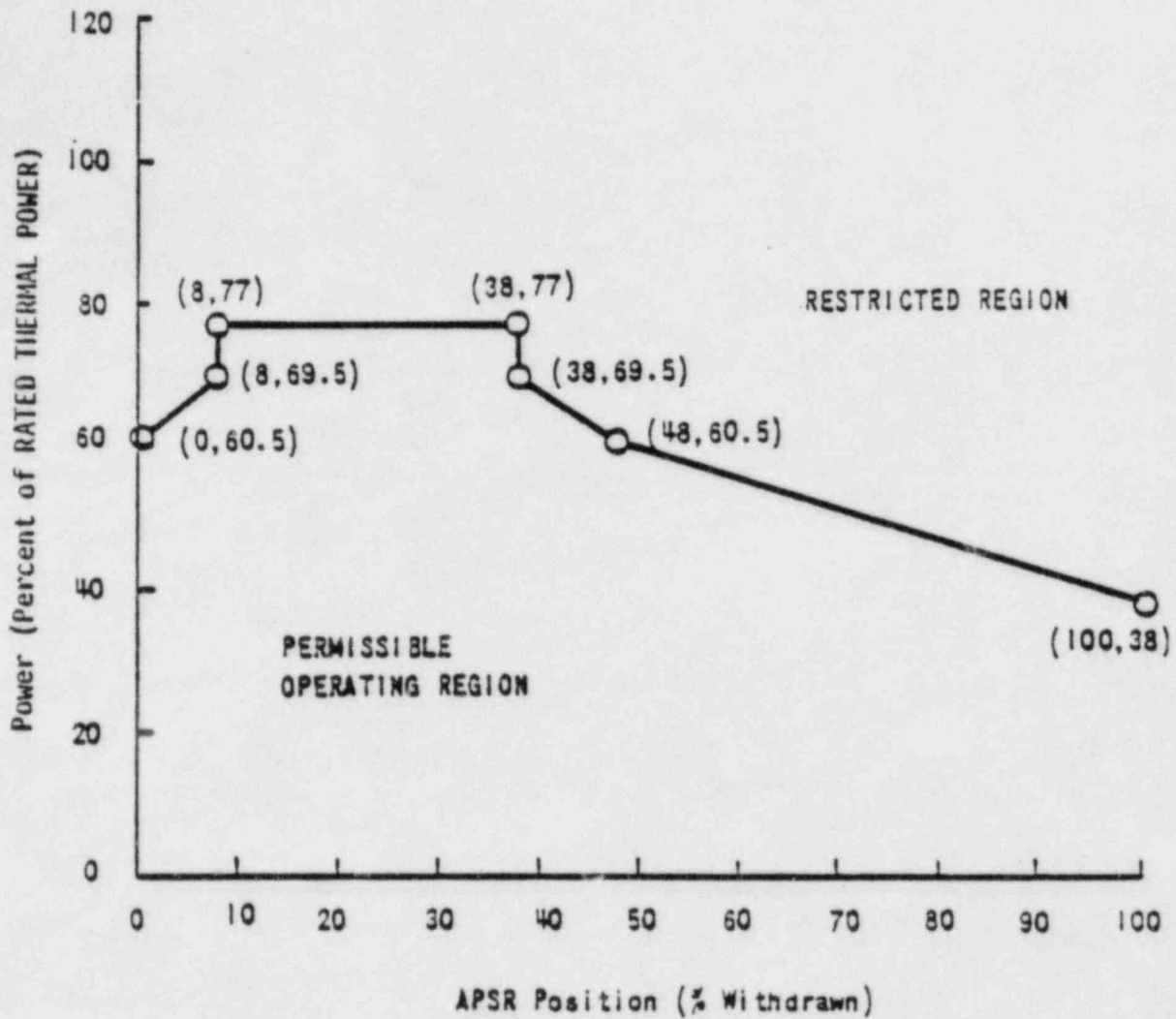


Figure 3.1-5i. APSR Position Limits,  $200 \pm 10$  to  $240 \pm 10$  EFPD, Three RC Pumps - Davis-Besse 1, Cycle 4



### 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 and -1c and 3.2-2a, -2b and -2c for the first 200  $\pm$ 10 EFPD of operation. If the axial power shaping rods are completely withdrawn at 200  $\pm$ 10 EFPD for extension of cycle length, then the AXIAL POWER IMBALANCE shall be maintained within the limits shown on Figures 3.2-1e and 3.2-2e for the remainder of the cycle. However, if the axial power shaping rods are not completely withdrawn at 200  $\pm$ 10 EFPD, then the AXIAL POWER IMBALANCE shall be maintained within the limits shown on Figures 3.2-1d and 3.2-2d for the remainder of the cycle.

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.

\*See Special Test Exception 3.10.1.

Figure 3.2-1a. Axial Power Imbalance Limits, 0 to 24+10, -0 EFPD, Four RC Pumps - Davis-Besse 1, Cycle 4

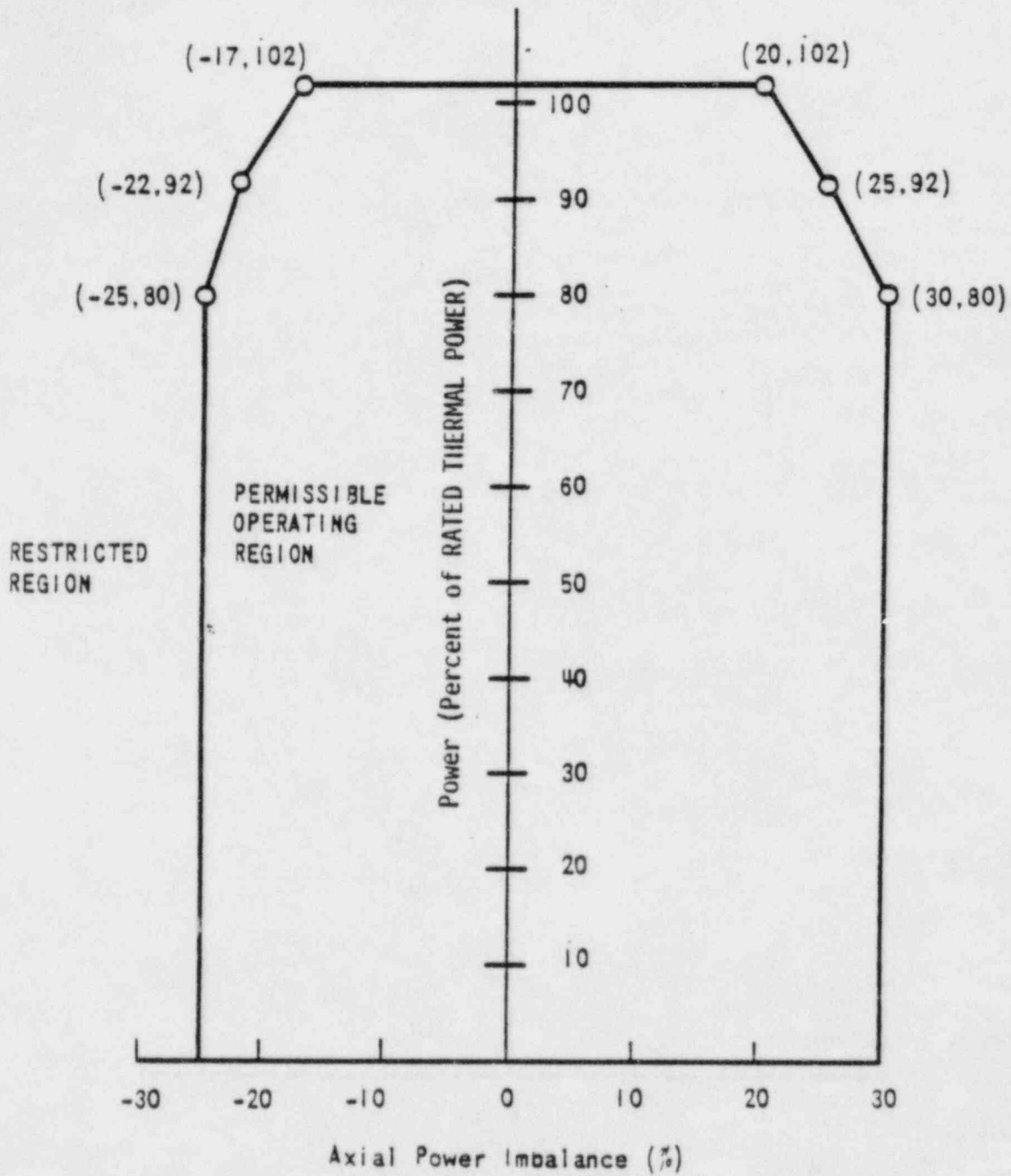




Figure 3.2-1b. Axial Power Imbalance Limits,  $24 \pm 10$ ,  $-0$  to  $150 \pm 10$  EFPD, Four RC Pumps - Davis-Besse 1, Cycle 4

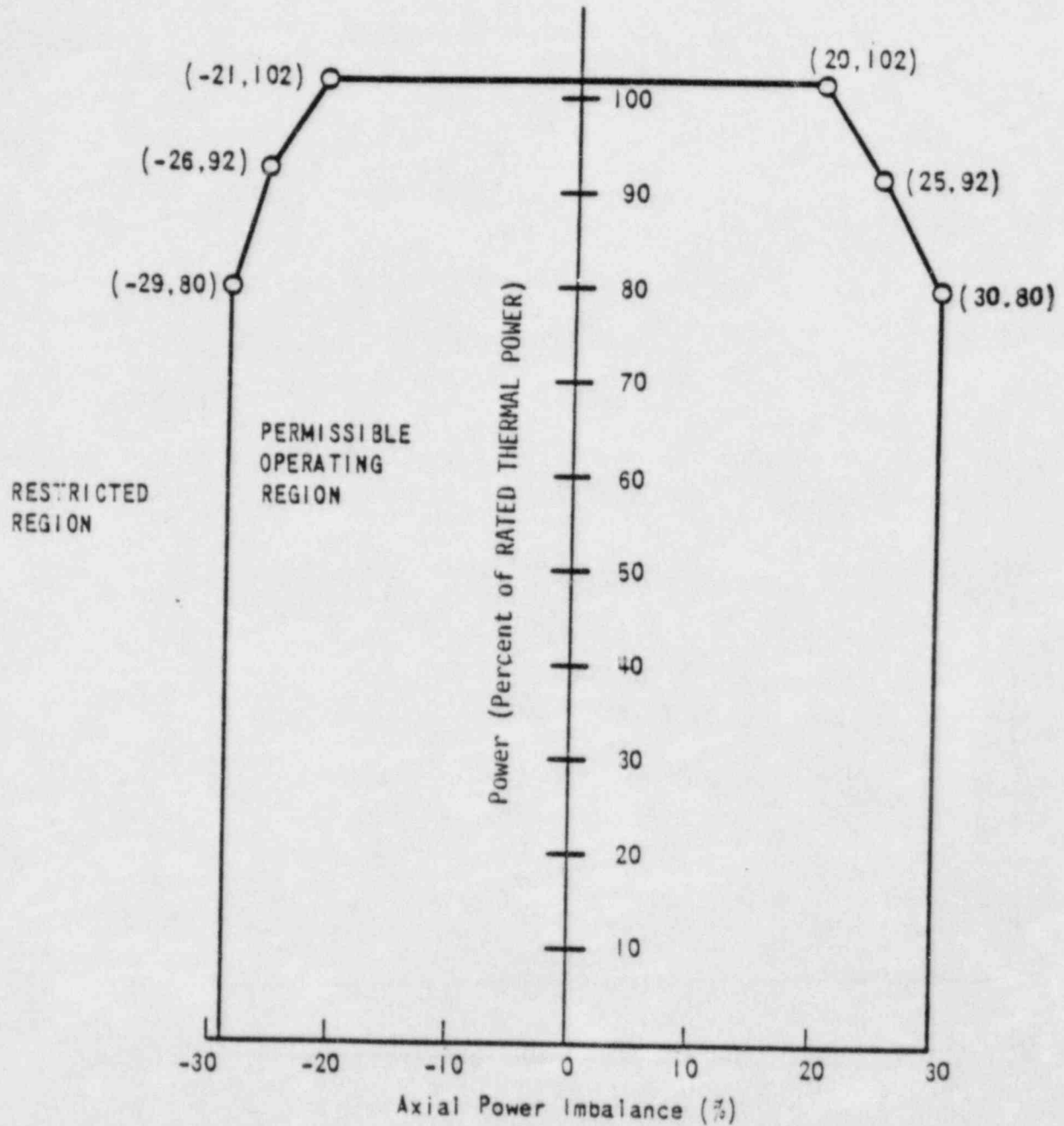


Figure 3.2-1c. Axial Power Imbalance,  $150 \pm 10$  to  $200 \pm 10$  EFPD, Four RC Pumps - Davis-Besse 1, Cycle 4

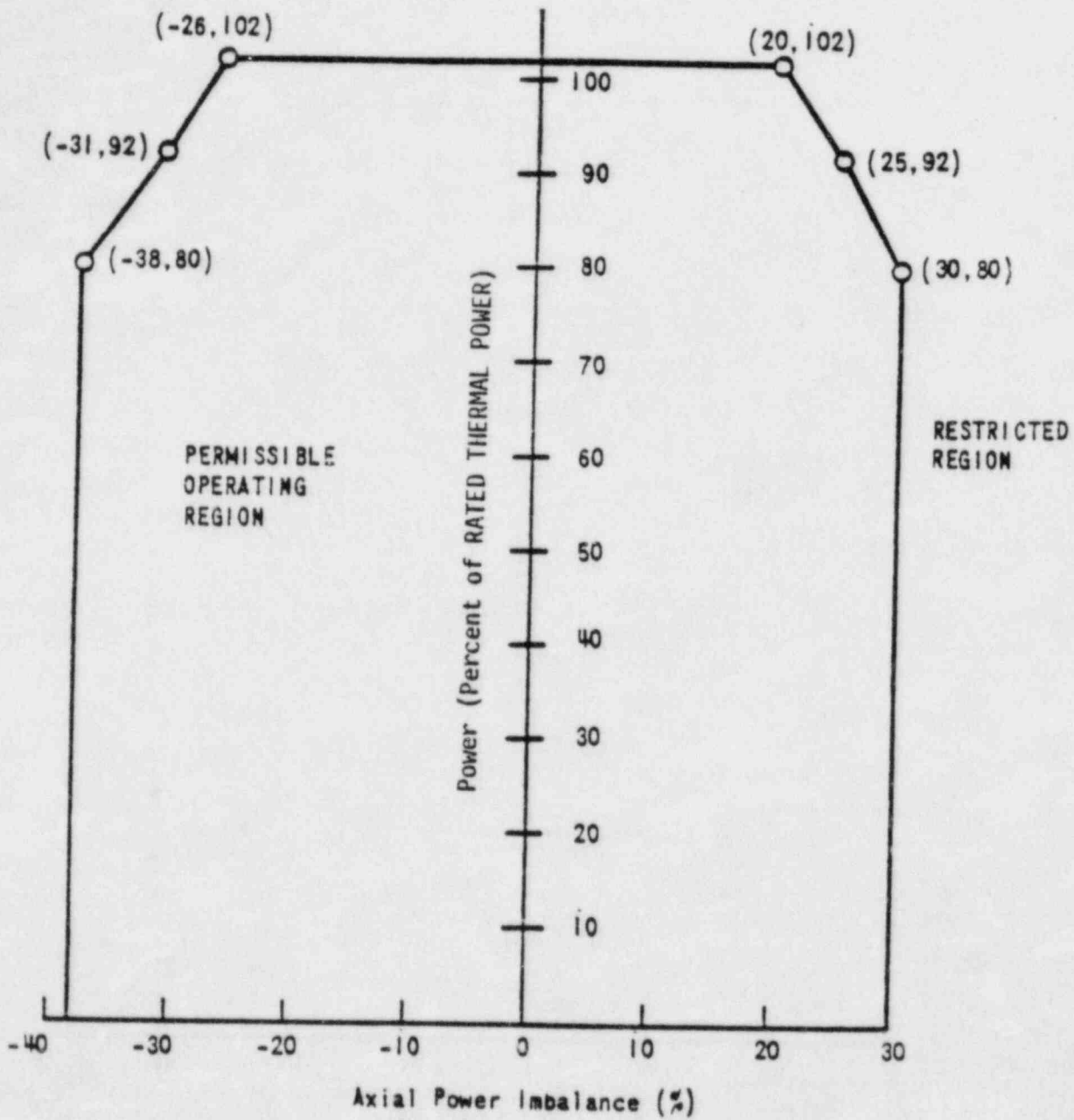


Figure 3.2-1d. Axial Power Imbalance Limits,  $200 \pm 10$  to  $240 \pm 10$  EFPD, Four RC Pumps - Davis-Besse 1, Cycle 4

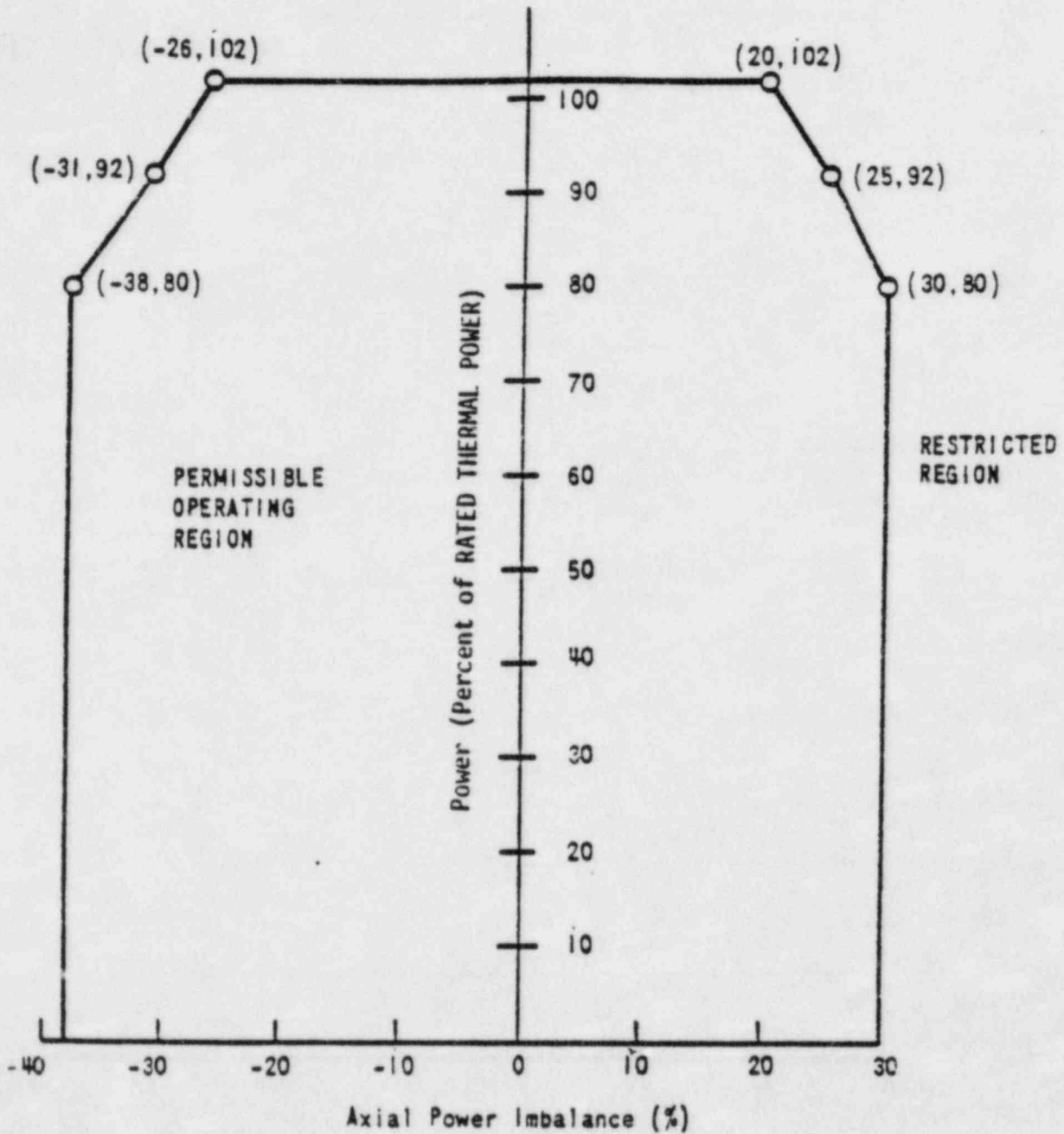


Figure 3.2-1e. Axial Power Imbalance Limits,  $200 \pm 10$  to  $280 \pm 10$  EFPD, Four RC Pumps, APSRs Withdrawn - Davis-Besse 1, Cycle 4

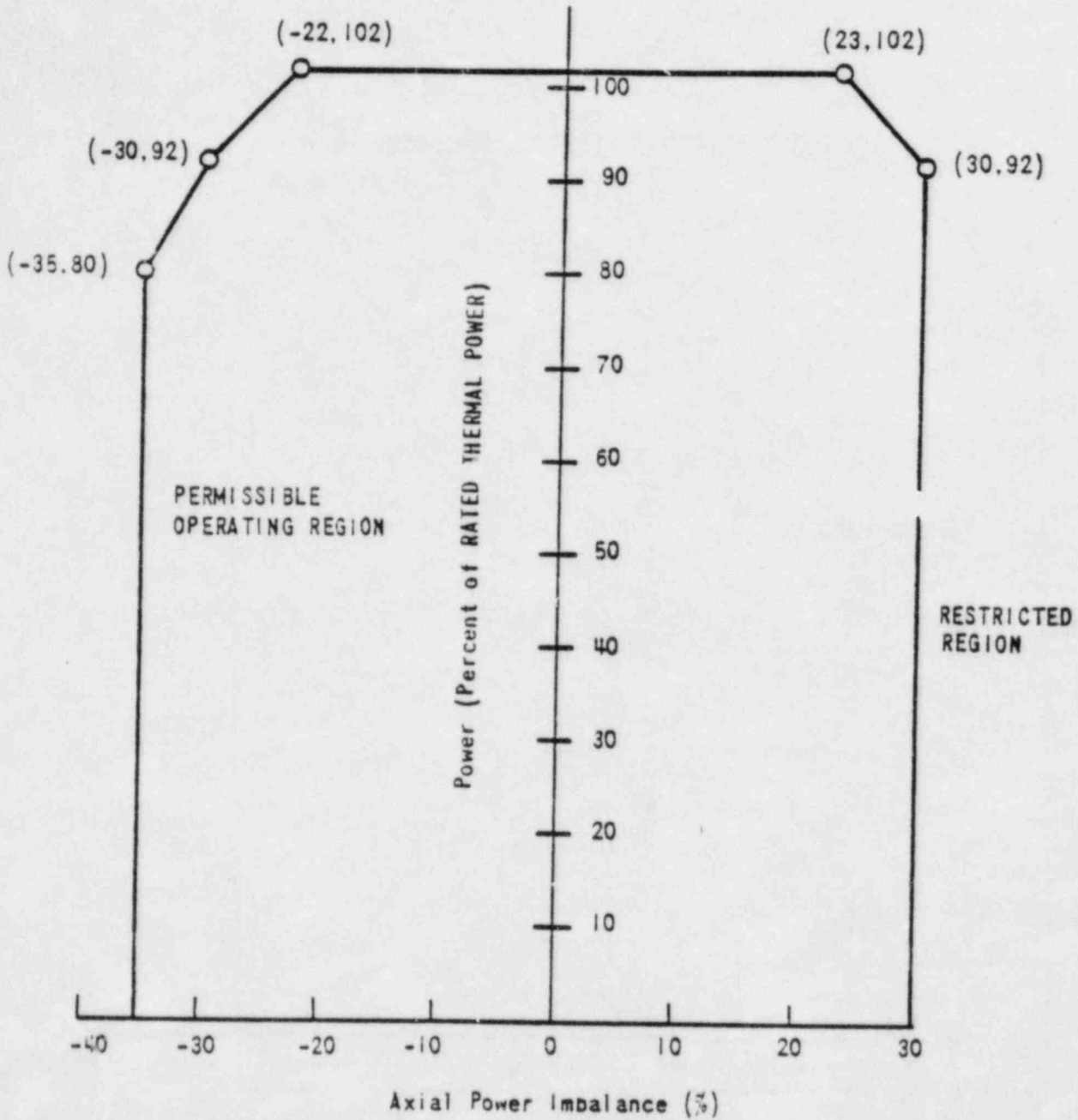


Figure 3.2-2c. Axial Power Imbalance Limits,  $150 \pm 10$  to  $200 \pm 10$  EFPD, Three RC Pumps - Davis-Besse 1, Cycle 4

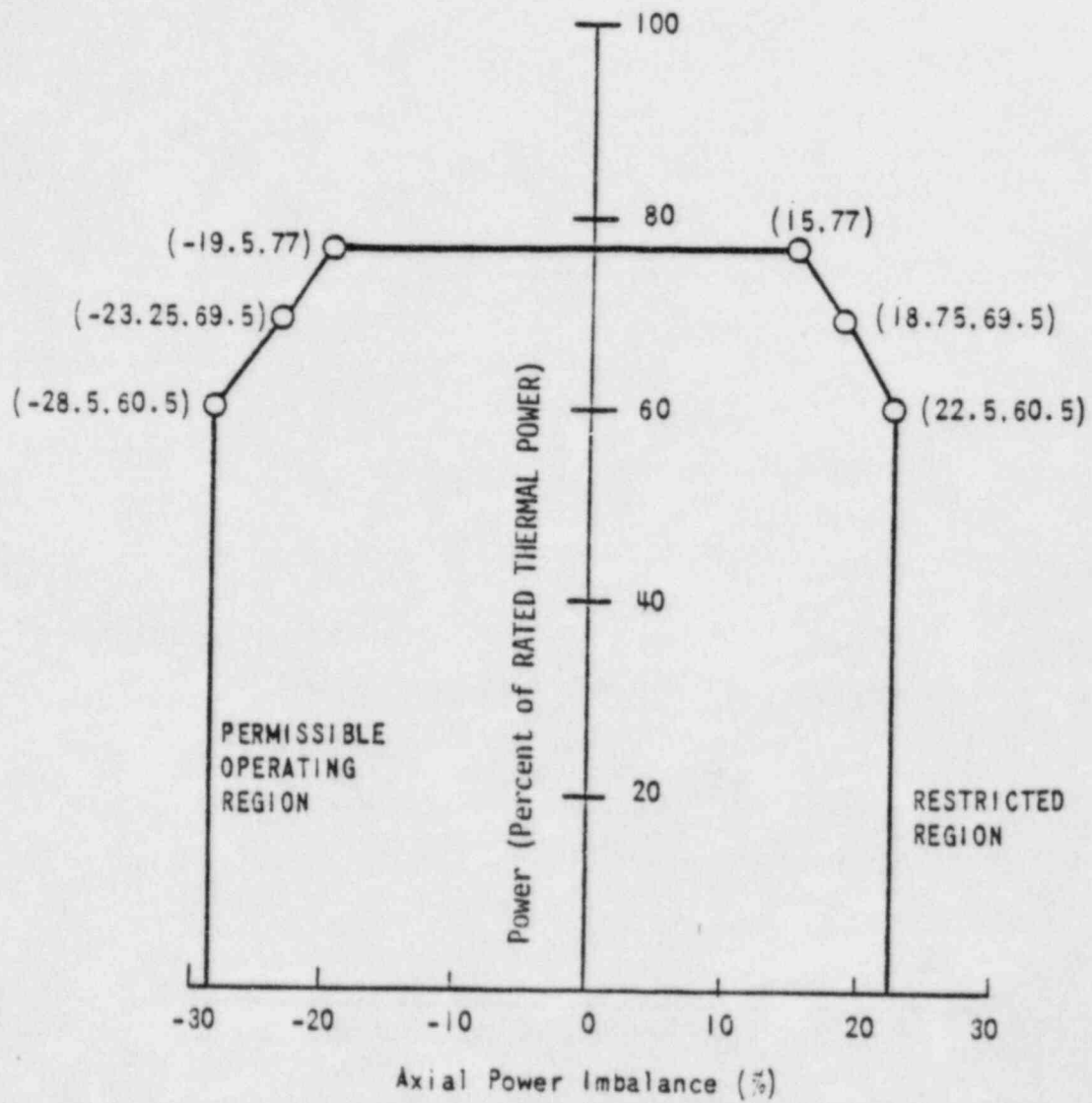


Figure 3.2-2d. Axial Power Imbalance Limits,  $200 \pm 10$  to  $240 \pm 10$  EFPD, Three RC Pumps - Davis-Besse 1, Cycle 4

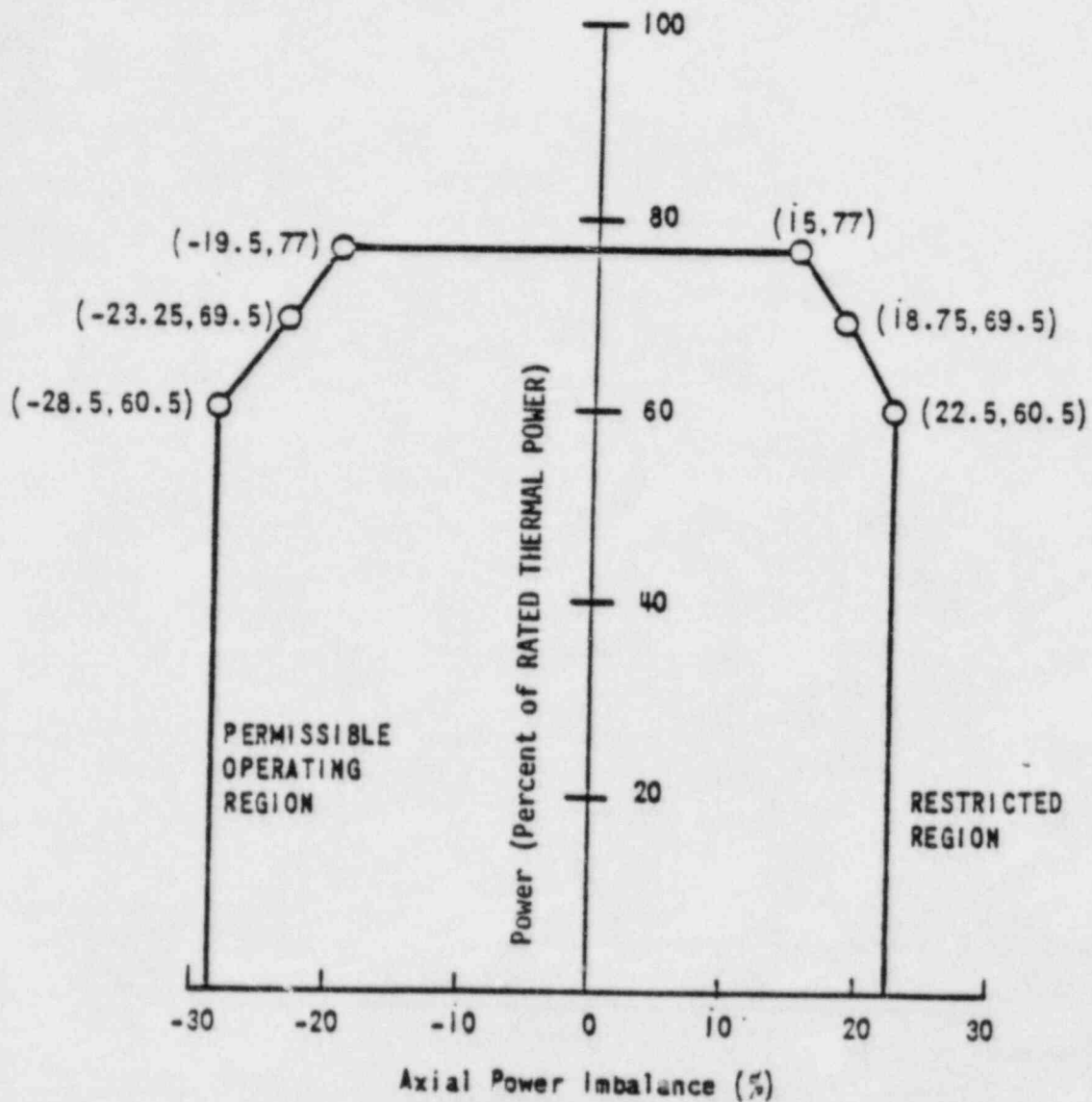
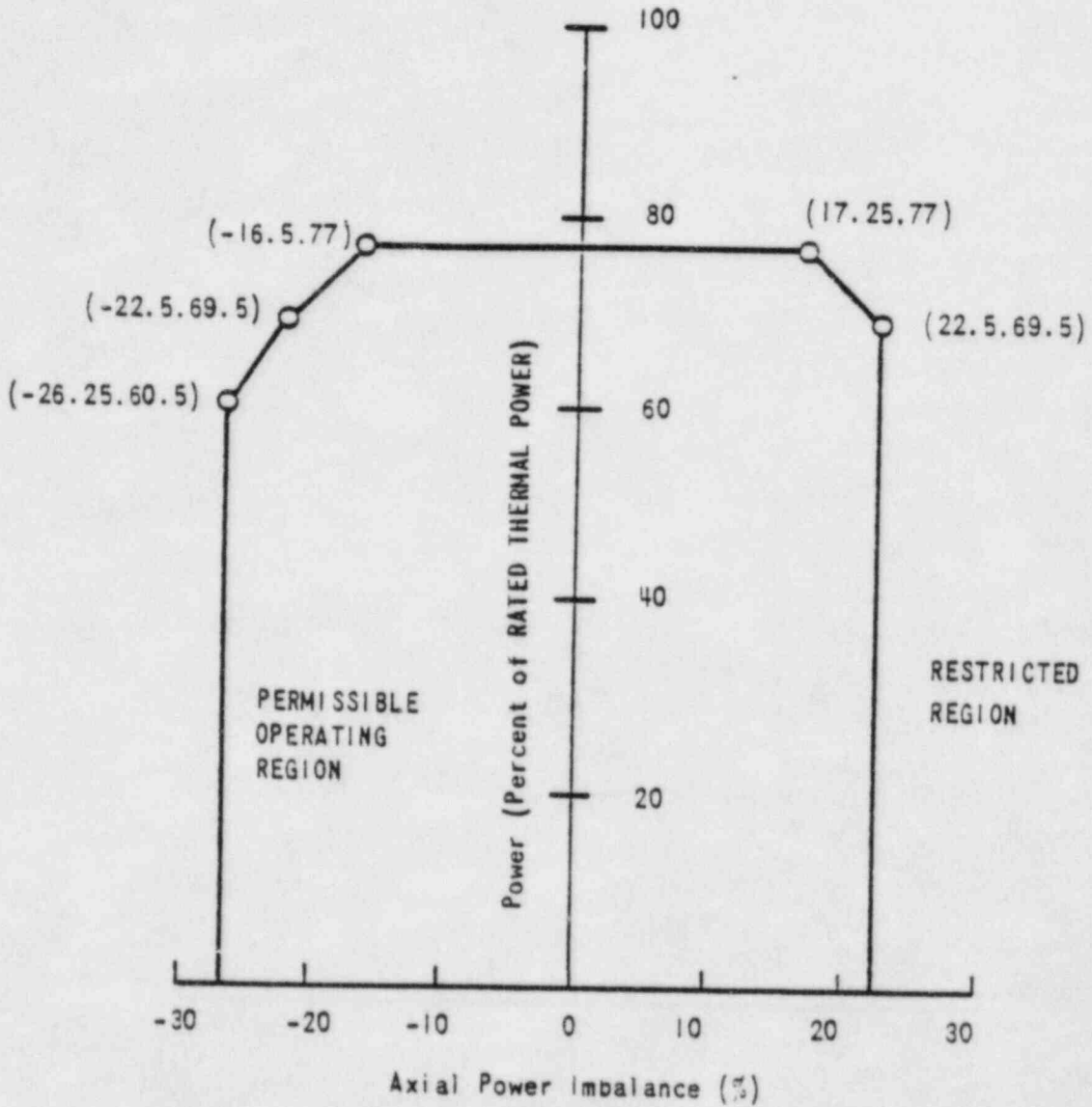


Figure 3.2-2e. Axial Power Imbalance Limits,  $200 \pm 10$  to  $280 \pm 10$  EFPD, Three RC Pumps, APSRs Withdrawn - Davis-Besse 1, Cycle 4



POWER DISTRIBUTION LIMITS

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  
(Tech. Spec. Table 3.2.2)

	<u>Steady state limit</u>	<u>Transient limit</u>	<u>Maximum limit</u>
Measurement independent QUADRANT POWER TILT	4.92	11.07	20.0
QUADRANT POWER TILT as measured by:			
Symmetrical incore detector system	3.43	8.93	20.0
Power range channels	1.96	6.96	20.0
Minimum incore detector system	1.90	4.40	20.0