



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

METROPOLITAN EDISON COMPANY

JERSEY CENTRAL POWER AND LIGHT COMPANY

PENNSYLVANIA ELECTRIC COMPANY

DOCKET NO. 50-289

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 38
License No. DPR-50

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Metropolitan Edison Company, Jersey Central Power and Light Company and Pennsylvania Electric Company (the licensees), dated February 17, 1978, as supplemented March 1, 1978, 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. DPR- 50 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 38, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 7, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 38

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Revise Appendix A as follows:

<u>Remove Pages</u>	<u>Insert Pages</u>
vii	vii
3-34a	3-34a
3-35	3-35
3-35a	3-35a
Fig. 3.5-2I	Fig. 3.5-2I
Fig. 3.5-2M	Fig. 3.5-2M
-	Fig. 3.5-2N

The changed areas on the revised pages are shown by marginal lines.

<u>Figure</u>	<u>Title</u>
3.5-2H	Operational Power Imbalance Envelope Applicable to Operation from 100+ 10 to 246+ 10 EFPD; Cycle 3
3.5-2I	Operational Power Imbalance Envelope Applicable to Operation from 246+ 10 EFPD to 315 EFPD; Cycle 3
3.5-2J	LOCA Limited Maximum Allowable Linear Heat Rate
3.5-2K	APSR Position Limits for Operation from 0 to 100+ 10 EFPD; Cycle 3
3.5-2L	APSR Position Limits for Operation from 100+ 10 to 246+ 10 EFPD; Cycle 3
3.5-2M	APSR Position Limits for Operation from 246+ 10 EFPD to 270+ 10 EFPD; Cycle 3
3.5-2N	APSR Position Limits for Operation from 270+ 10 EFPD to 315 EFPD; Cycle 3
3.5-3	Incore Instrumentation Specification
4.2-1	Equipment and Piping Requiring Inservice Inspection in Accordance with Section XI of the ASME Code
4.4-1	Ring Girder Surveillance
4.4-2	Ring Girder Surveillance Crack Pattern Chart
4.4-3	Ring Girder Surveillance Crack Pattern Chart
4.4-4	Ring Girder Surveillance Crack Pattern Chart
4.4-5	Ring Girder Surveillance Crack Pattern Chart
6-1	Organization Chart

2. The control rod group withdrawal limits (Figures 3.5-2A, 3.5-2B, 3.5-2C, 3.5-2D, 3.5-2E, 3.5-2F, 3.5-2K, 3.5-2L, 3.5-2M, and 3.5-2N) shall be reduced 2 percent in power for each 1 percent tilt in excess of the tilt limit.
 3. The operational imbalance limits (Figure 3.5-2G, 3.5-2H and 3.5-2I) shall be reduced 2 percent in power for each 1 percent tilt in excess of the tilt limit.
- f. Except for physics or diagnostic testing, if quadrant tilt is in excess of +25.28% determined using the full incore detector system (FIT), or +24.09% determined using the minimum incore detector system (MIT) if the FIT is not available, or +21.39% determined using the out of core detector system (OCT) when neither the FIT nor MIT are available, the reactor will be placed in the hot shutdown condition. Diagnostic testing during power operation with a quadrant tilt is permitted provided that the thermal power allowable is restricted as stated in 3.5.2.4.d above.
- g. Quadrant tilt shall be monitored on a minimum frequency of once every two hours during power operation above 15 percent of rated power.

3.5.2.5 Control Rod Positions:

- a. Operating rod group overlap shall not exceed 25 percent \pm 5 percent, between two sequential groups except for physics tests.
- b. Position limits are specified for regulating and axial power shaping control rods. Except for physics tests or exercising control rods, the regulating control rod insertion/withdrawal limits are specified on Figures 3.5-2A, 3.5-2B, and 3.5-2C for four pump operation and Figures 3.5-2D, 3.5-2E, and 3.5-2F for three or two pump operation. Also excepting physics tests or exercising control rods, the axial power shaping control rod insertion/withdrawal limits are specified on Figures 3.5-2K, 3.5-2L, 3.5-2M and 3.5-2N. If any of these control rod position limits are exceeded, corrective measures shall be taken immediately to achieve an acceptable control rod position. Acceptable control rod positions shall be attained within four hours.
- c. Except for physics tests, power shall not be increased above the power level cutoff (See Figures 3.5-2A, 3.5-2B and 3.5-2C) unless the xenon reactivity is within 10 percent of the equilibrium value for operation at rated power and asymptotically approaching stability.
- d. Core imbalance shall be monitored on a minimum frequency of once every two hours during power operation above 40 percent of rated power. Except for physics tests, corrective measures (reduction of imbalance by APSR movements and/or reduction in reactor power) shall be taken to maintain operation within the envelope defined by Figures 3.5-2G, 3.5-2H and 3.5-2I. If the imbalance is not within the envelope defined by Figures 3.5-2G, 3.5-2H and 3.5-2I corrective measures shall be taken to achieve an acceptable imbalance. If an acceptable imbalance is not achieved within four hours, reactor power shall be reduced until imbalance limits are met.
- e. Safety rod limits are given in 3.1.3.5.

3.5.2.6 The control rod drive patch panels shall be locked at all times with limited access to be authorized by the superintendent.

3.5.2.7 A power map shall be taken at intervals not to exceed 30 effective full power days using the incore instrumentation detection system to verify the power distribution is within the limits shown in Figure 3.5-2J.

Bases

The power-imbalance envelope defined in Figures 3.5-2G, 3.5-2H, and 3.5-2I is based on LOCA analyses which have defined the maximum linear heat rate (see Figure 3.5-2J) such that the maximum clad temperature will not exceed the Final Acceptance Criteria (2200F). Operation outside of the power imbalance envelope alone does not constitute a situation that would cause the Final Acceptance Criteria to be exceeded should a LOCA occur. The power imbalance envelope represents the boundary of operation limited by the Final Acceptance Criteria only if the control rods are at the withdrawal/insertion limits as defined by

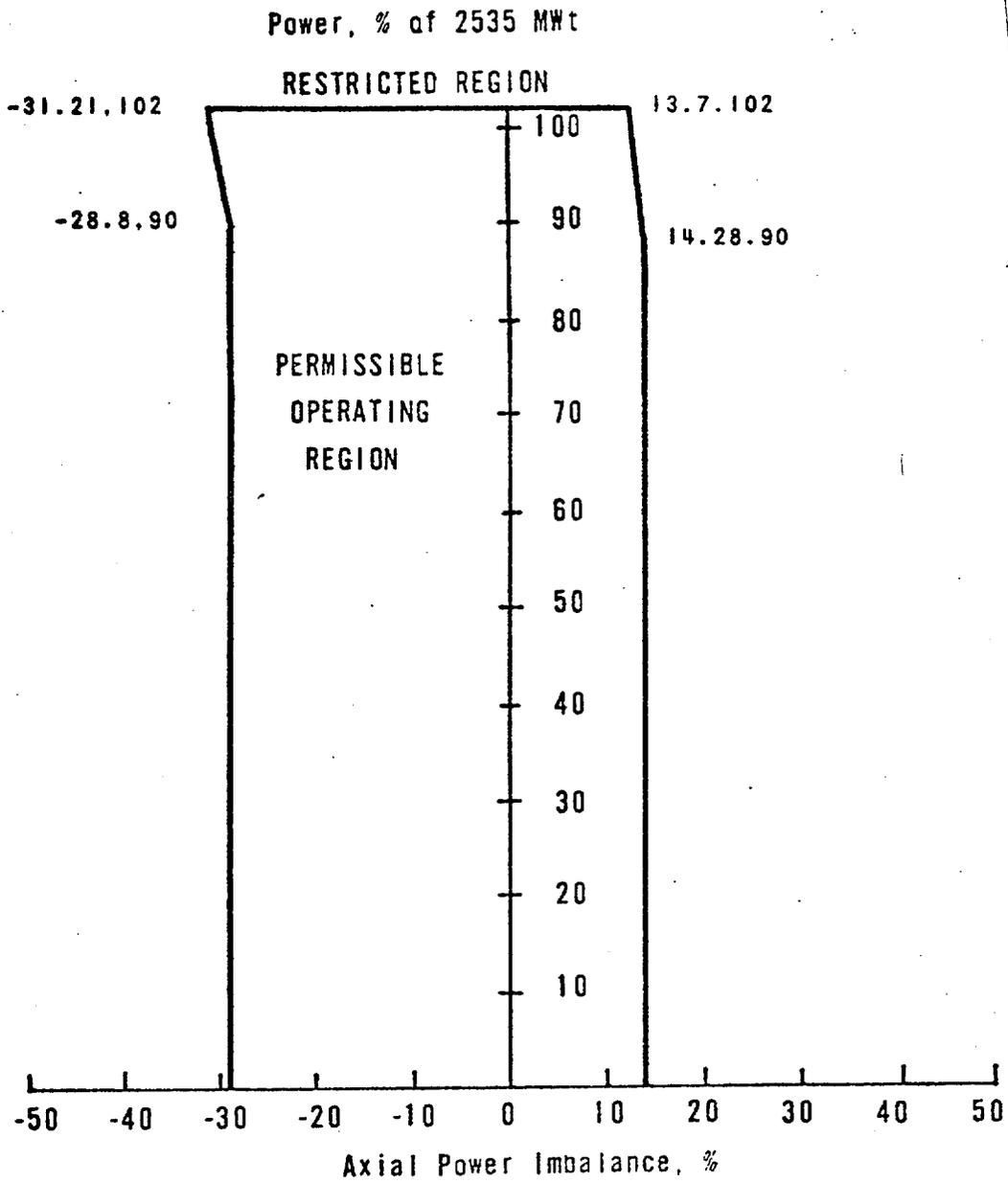
Figures 3.5-2A, 3.5-2B, 3.5-2C, 3.5-2D, 3.5-2E, 3.5-2F, 3.5-2K, 2.5-2L, 3.5-2M and 3.5-2N and if quadrant tilt is at the limit. Additional conservatism is introduced by application of:

- a. Nuclear uncertainty factors
- b. Thermal calibration uncertainty
- c. Fuel densification effects
- d. Hot rod manufacturing tolerance factors.
- e. Postulated fuel rod bow effects

The Rod Index versus Allowable Power curves of Figures 3.5-2A, 3.5-2B, 3.5-2C, 3.5-2D, 3.5-2E, 3.5-2F, 3.5-2K, 3.5-2L, 3.5-2M and 3.5-2N describe three regions. These three regions are:

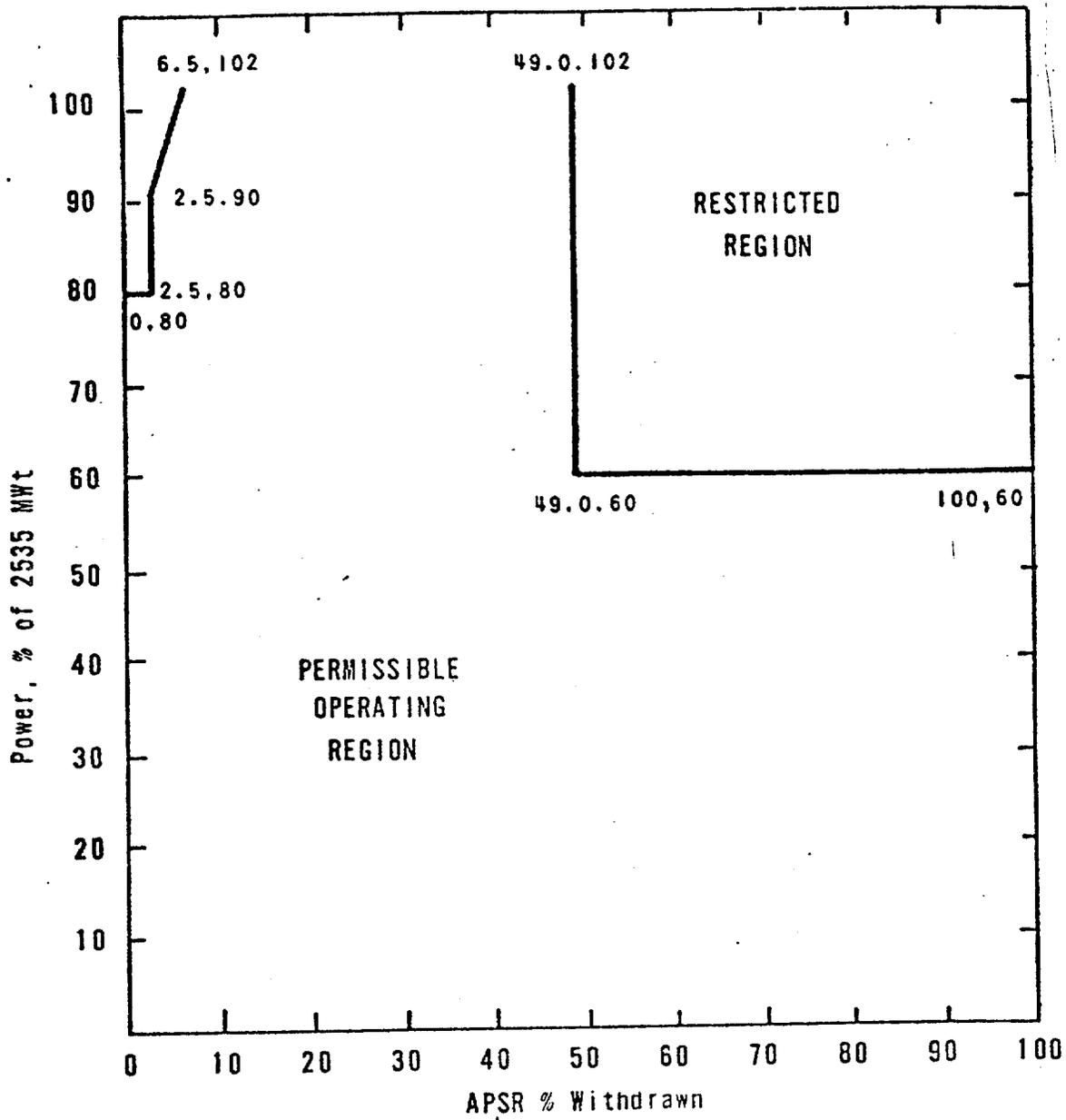
1. Permissible operating Region
2. Restricted Regions
3. Prohibited Region (Operation in this region is not allowed)

NOTE: Inadvertent operation within the Restricted Region for a period of four hours is not considered a violation of a limiting condition for operation. The limiting criteria within the Restricted Region are potential ejected rod worth and ECCS power peaking and since the probability of these accidents is very low especially in a 4 hour time frame, inadvertent operation within the Restricted Region for a period of 4 hours is allowed.



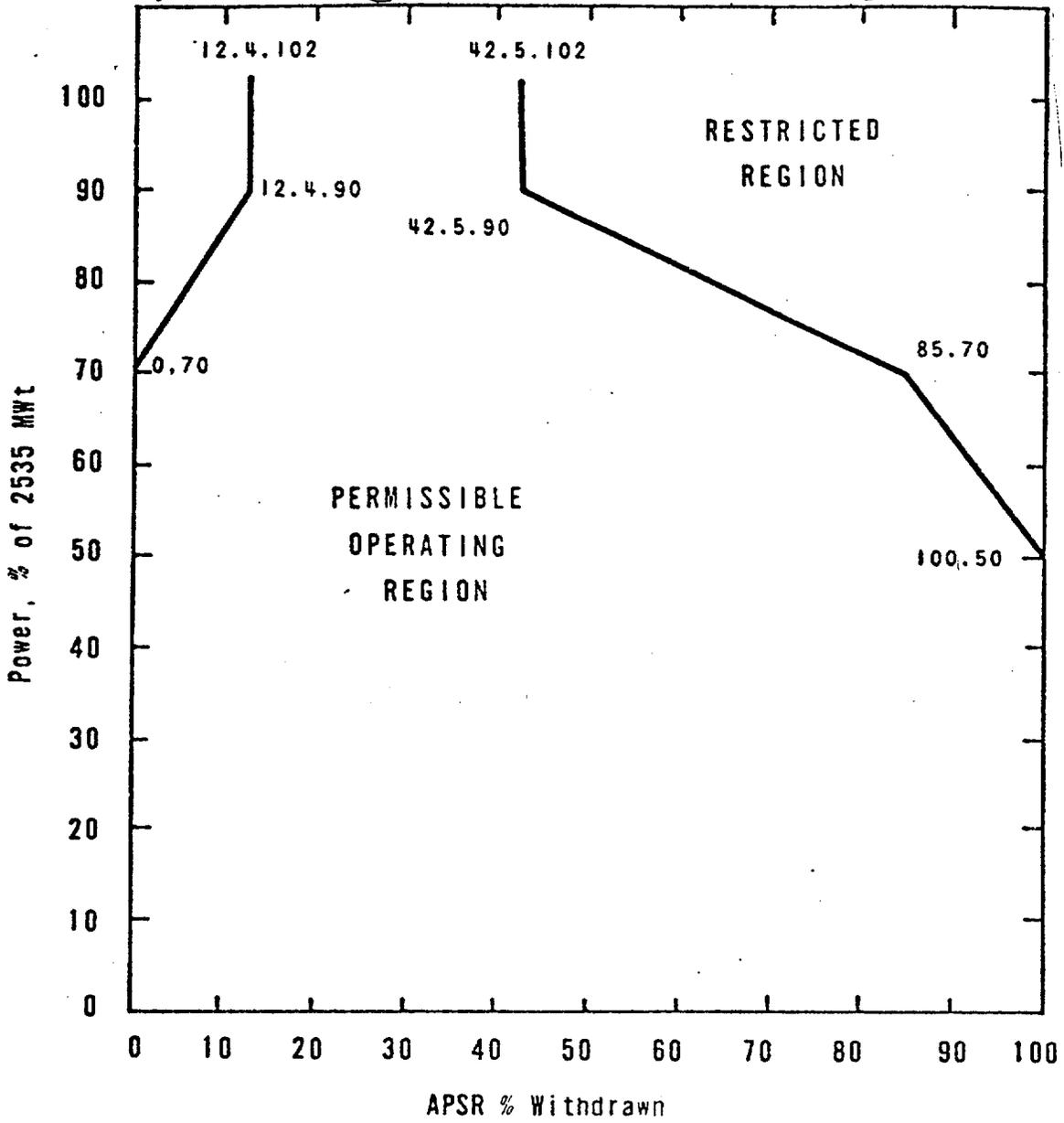
OPERATIONAL POWER, IMBALANCE ENVELOPE
FOR OPERATION FROM 246 ± 10 EFPD TO 315 EFPD
TMI-1 CYCLE 3

Figure 3.5-2I



APSR POSITION LIMITS FOR OPERATION
 FROM 246 ± 10 EFPD TO 270 ± 10 EFPD
 TMI-1 CYCLE 3

Figure 3.5-2M



APSR POSITION LIMITS FOR OPERATION
 FROM 270 ± 10 EFPD TO 315 EFPD
 TMI-1 CYCLE 3

Figure 3.5-2N