

November 10, 1992

Docket No. 50-336

Mr. John F. Opeka
Executive Vice President, Nuclear
Connecticut Yankee Atomic Power Company
Northeast Nuclear Energy Company
Post Office Box 270
Hartford, Connecticut 06141-0270

Dear Mr. Opeka:

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SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M84247)

The Commission has issued the enclosed Amendment No. 164 to Facility Operating License No. DPR-65 for Millstone Nuclear Power Station, Unit No. 2, in response to your application dated August 12, 1992.

The amendment modifies the Technical Specifications (TS) by revising the limiting condition for operation (LCO), action statement, and surveillance requirements (TS 3.2.3 and 4.2.3.2) associated with the total unrodded radial peaking factor (F_r^T), the LCO (TS 3.3.3.2) associated with the incore neutron flux detectors, and Figure 2.2-2, "Local Power Density - High Trip Setpoint Part 2." The changes allow either full-core or octant-symmetric based incore detector monitoring system power distribution analyses for Cycle 12.

A copy of the related Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed
by

Guy S. Vissing, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 164 to DPR-65
2. Safety Evaluation

cc w/enclosures:

See next page

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Mr. John F. Opeka
Northeast Nuclear Energy Company

Millstone Nuclear Power Station
Unit 2

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

NORTHEAST NUCLEAR ENERGY COMPANY
THE CONNECTICUT LIGHT AND POWER COMPANY
THE WESTERN MASSACHUSETTS ELECTRIC COMPANY
DOCKET NO. 50-336
MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 164
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northeast Nuclear Energy Company, et al. (the licensee), dated August 12, 1992, 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-65 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 164, 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 issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Albert W. McGazir for

John F. Stolz, Director
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 10, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 164

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

3/4 2-9
3/4 3-30
3/4 3-31
2-7

Insert

3/4 2-9
3/4 3-30
3/4 3-31
2-7

POWER DISTRIBUTION LIMITS

TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR - F_r^T

LIMITING CONDITION FOR OPERATION

3.2.3 The calculated value of F_r^T shall be within the 100% power limit specified in the CORE OPERATING LIMITS REPORT. The F_r^T value shall include the effect of AZIMUTHAL POWER TILT.

APPLICABILITY: MODE 1*.

ACTION:

With F_r^T exceeding the 100% power limit within 6 hours either:

- a. Reduce THERMAL POWER to bring the combination of THERMAL POWER and F_r^T to within the power dependent limit specified in the CORE OPERATING LIMITS REPORT and withdraw the full length CEAs to or beyond the Long Term Steady State Insertion Limits of Specification 3.1.3.6; or
- b. Be in at least HOT STANDBY.

SURVEILLANCE REQUIREMENT

4.2.3.1 The provisions of Specification 4.0.4 are not applicable.

4.2.3.2 F_r^T shall be determined to be within the 100% power limit at the following intervals:

- a. Prior to operation above 70 percent of RATED THERMAL POWER after each fuel loading,
- b. At least once per 31 days of accumulated operation in Mode 1, and
- c. Within four hours if the AZIMUTHAL POWER TILT (T_q) is > 0.020 .

4.2.3.3 F_r^T shall be determined by using the incore detectors to obtain a power distribution map with all full length CEAs at or above the Long Term Steady State Insertion Limit for the existing Reactor Coolant Pump Combination.

*See Special Test Exception 3.10.2

INSTRUMENTATION

INCORE DETECTORS

LIMITING CONDITION FOR OPERATION

3.3.3.2 The incore detection system shall be OPERABLE with:

- a. At least 75% of all incore detector locations, and
- b. A minimum of two quadrant symmetric incore detector locations per core quadrant, and
- c. A minimum of 9 OPERABLE incore detector segments at each detector segment level.

An OPERABLE incore detector segment shall consist of an OPERABLE rhodium detector constituting one of the segments in a fixed detector string.

An OPERABLE incore detection location shall consist of a string in which at least three of the four incore detector segments are OPERABLE.

APPLICABILITY: When the incore detection system is used for:

- a. Monitoring the AZIMUTHAL POWER TILT,
- b. Recalibration of the excore neutron flux detection system, or
- c. Monitoring the TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR or the linear heat rate.

ACTION:

With the incore detection system inoperable, do not use the system for the above applicable monitoring or calibration functions. The provisions of specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENT

4.3.3.2 The incore detection system shall be demonstrated OPERABLE:

- a. By performance of a CHANNEL CHECK within 24 hours prior to its use and at least once per 7 days thereafter when required for:
 1. Monitoring the AZIMUTHAL POWER TILT.
 2. Recalibration of the excore neutron flux detection system.
 3. Monitoring the TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR or the linear heat rate.
- b. At least once per 18 months by performance of a CHANNEL CALIBRATION operation which exempts the neutron detectors but includes all electronic components. The neutron detectors shall be calibrated prior to installation in the reactor core.

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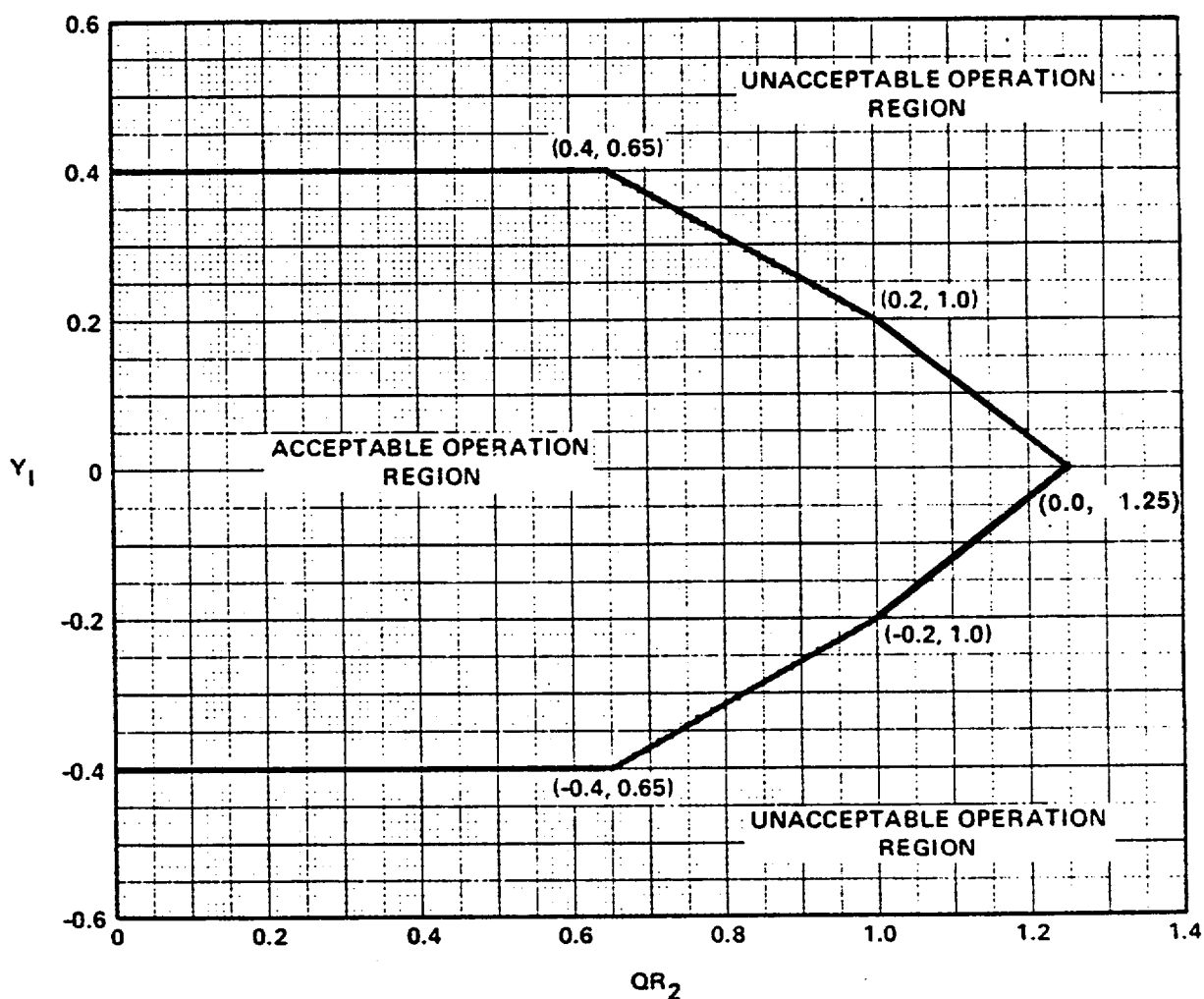


FIGURE 2.2-2 Local Power Density – High Trip Setpoint Part 2 (QR_2 Versus Y_1)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 164

TO FACILITY OPERATING LICENSE NO. DPR-65

NORTHEAST NUCLEAR ENERGY COMPANY

THE CONNECTICUT LIGHT AND POWER COMPANY

THE WESTERN MASSACHUSETTS ELECTRIC COMPANY

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By letter dated August 12, 1992 (Ref. 1), Northeast Nuclear Energy Company (NNECO/the licensee) submitted proposed Technical Specification (TS) changes to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit 2 (Millstone 2). The proposed changes would revise the limiting condition for operation (LCO), action statement, and surveillance requirements (TS 3.2.3 and 4.2.3.2) associated with the total unrodded radial peaking factor (F_r^T), the LCO (TS 3.3.3.2) associated with the incore neutron flux detectors, and Figure 2.2-2, "Local Power Density - High Trip Setpoint Part 2." The proposed changes would allow either full-core or octant-symmetric based incore detector monitoring system power distribution analyses for Cycle 12.

2.0 EVALUATION

The current INCA method (Ref. 2) used to analyze incore detector data and to infer the measured core power distribution, the radial peaking factors and the linear heat generation rate, assumes octant symmetric loading and operation of the reactor core. This assumption allows the reflection of all incore instruments into one core octant, with symmetric detector readings being averaged to a single value. This representative octant must then be corrected for the azimuthal power tilt by using a calculated factor to explicitly account for the peak pin power in the full core. NNECO plans to replace INCA with the INPAX incore detector monitoring system (Ref. 3) which will allow the measured power distribution to be directly determined on a full-core basis, thus including any measured azimuthal power tilt.

The proposed changes to the F_r^T LCO and Surveillance Requirement would replace the phrase "... within the limit ..." to "...within the 100% power limit ...". This is consistent with the specification in the Core Operating Limits Report (COLR) and is acceptable.

The revised TS on incore detectors would eliminate the requirement for azimuthal power tilt monitoring, as discussed above, and would bring the remaining portions of the TS more in line with the Standard Combustion Engineering TS. A sufficient number and distribution of detectors would still be required to allow full-core power monitoring. The proposed changes are, therefore, acceptable.

The local power density (LPD) trip setpoint peak in TS Figure 2.2-2 would be reduced from 135% to 125% at 0 axial shape index (ASI). This decrease in LPD operability margin will provide a relative increase in F_{CT} margin and allow an extension in cycle length. The licensee has confirmed that the safety analyses for Cycle 12 have shown that fuel centerline melting will not occur for any normal operating condition or anticipated operational occurrence with the higher F_{CT} for the Cycle 12 core. The proposed change is, therefore, acceptable.

Based on the above safety evaluation, the staff concludes that the proposed revisions to the F_{CT} , incore detectors, and LPD - high trip setpoint TS for Cycle 12 are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Connecticut State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (57 FR 40216). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

4.0 REFERENCES

1. Letter from J. F. Opeka (NNECO) to USNRC, "Proposed Revision to Technical Specifications - Cycle 12 Reload," dated August 12, 1992.
2. T. G. Ober, W. B. Terney, G. H. Marks, "INCA Method of Analyzing In-Core Detector Data in Power Reactors," CENPD-145-P, April 1975.
3. G. R. Correll, "INPAX-II: A Reactor Power Distribution Monitoring Code," XN-NF-83-09, 1983.

Principal Contributor: L. Kopp

Date: November 10, 1992