

March 17, 2000

Mr. S. E. Scace - Director
Nuclear Oversight and Regulatory Affairs
c/o Mr. David A. Smith
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385-0128

SUBJECT: MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2 - ISSUANCE OF
AMENDMENT RE: UPDATING CORE OPERATING LIMITS REPORT
DOCUMENTS LIST (TAC NO. MA7308)

Dear Mr. Scace:

The Commission has issued the enclosed Amendment No. 242 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2, in response to your application dated November 23, 1999, as supplemented December 7, 1999.

The amendment updates the list of documents which describe the analytical methods used to determine the core operating limits specified in Technical Specification 6.9.1.8b.

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

Sincerely,

/RA/

Jacob I. Zimmerman, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 242 to DPR-65
2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Unit 2

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Millstone Nuclear Power Station
Unit 2

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

DOCKET NO. 50-336

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 242
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 November 23, 1999, as supplemented December 7, 1999, 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. 242, 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, and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: March 17, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 242

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

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

Remove

6-18
6-18a

Insert

6-18
6-18a

ADMINISTRATIVE CONTROLS

- d. Documentation of all failures (inability to lift or reclose within the tolerances allowed by the design basis) and challenges to the pressurizer PORVs or safety valves.

ANNUAL RADIOACTIVE EFFLUENT REPORT

- 6.9.1.6 A routine Annual Radioactive Effluent Report covering the operation of the unit during the previous calendar year of operation shall be submitted by May 1 of each year.

The report shall include that information delineated in the REMODCM.

Any changes to the REMODCM shall be submitted in the Annual Radioactive Effluent Report.

MONTHLY OPERATING REPORT

- 6.9.1.7 Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Document Control Desk, Washington, D.C. 20555, one copy to the Regional Administrator, Region I, and one copy to the NRC Resident Inspector, no later than the 15th of each month following the calendar month covered by the report.

CORE OPERATING LIMITS REPORT

- 6.9.1.8 a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle.

3/4.1.1.1	SHUTDOWN MARGIN - $T_{avg} > 200^{\circ}\text{F}$
3/4.1.1.2	SHUTDOWN MARGIN - $T_{avg} \leq 200^{\circ}\text{F}$
3/4.1.1.4	Moderator Temperature Coefficient
3/4.1.3.6	Regulating CEA Insertion Limits
3/4.2.1	Linear Heat Rate
3/4.2.3	Total Integrated Radial Peaking Factor - F_r^T
3/4.2.6	DNB Margin

- b. 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) EMF-96-029(P)(A) Volumes 1 and 2, "Reactor Analysis System for PWRs Volume 1 - Methodology Description, Volume 2 - Benchmarking Results," Siemens Power Corporation, February 1995.
- 2) ANF-84-73 Revision 5 Appendix B (P)(A), "Advanced Nuclear Fuels Methodology for Pressurized Water Reactors: Analysis of Chapter 15 Events," Advanced Nuclear Fuels, July 1990.

CORE OPERATING LIMITS REPORT (CONT.)

- 3) XN-NF-82-21(P)(A) Revision 1, "Application of Exxon Nuclear Company PWR Thermal Margin Methodology to Mixed Core Configurations," Exxon Nuclear Company, September 1983.
- 4) EMF-84-093(P)(A) Revision 1, "Steamline Break Methodology for PWRs," Siemens Power Corporation, February 1999.
- 5) XN-75-32(P)(A) Supplements 1 through 4, "Computational Procedure for Evaluating Fuel Rod Bowing," Exxon Nuclear Company, October 1983.
- 6) XN-NF-82-49(P)(A) Revision 1, "EXXON Nuclear Company Evaluation Model EXEM PWR Small Break Model," Advanced Nuclear Fuels Corporation, April 1989.
- 7) XN-NF-82-49(P)(A) Revision 1 Supplement 1, "Exxon Nuclear Company Evaluation Model Revised EXEM PWR Small Break Model," Siemens Power Corporation, December 1994.
- 8) EMF-2087(P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications," Siemens Power Corporation, June 1999.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 242

TO FACILITY OPERATING LICENSE NO. DPR-65

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By letter dated November 23, 1999, as supplemented December 7, 1999, the Northeast Nuclear Energy Company, et al. (the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 2 Technical Specifications (TS). The requested changes would update the list of documents which describe the analytical methods used to determine the core operating limits specified in TS 6.9.1.8b. The December 7, 1999, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination or expand the scope of the original application as published.

2.0 EVALUATION

The proposed changes will update the documents describing the analytical methods used in the current large break loss of coolant accident (LBLOCA) analysis and the neutronics core design of cycle 14 and beyond. These documents are listed in TS 6.9.1.8b. The document listed in TS 6.9.1.8b.1; XN-75-27(A) and Supplements 1 through 5, "Exxon Nuclear Neutronics Design Methods for Pressurized Water Reactors," will be replaced with EMF-96-029(P)(A) Volumes 1 and 2, "Reactor Analysis System for PWRs Volume 1- Methodology Description, Volume 2 - Benchmarking Results," Siemens Power Corporation, February 1995. This change will include the most recent methodology description and benchmarking results of the reactor analysis system used in the neutronics core analysis of cycle 14 and beyond.

Additionally, the documents listed in TS 6.9.1.8b.8; (1) XN-NF-82-20(P)(A) Revision 1, Supplement 2, "Exxon Nuclear Company Evaluation Model EXEM/PWR ECCS Model Updates," Exxon Nuclear Company, February 1985; (2) XN-NF-82-20(P)(A) Revision 1 and Supplements 1, 3, and 4, "Exxon Nuclear Company Evaluation Model EXEM/PWR ECCS Model Updates," Advanced Nuclear Fuels Corporation, January 1990; (3) XN-NF-82-07(P)(A) Revision 1, "Exxon Nuclear Company ECCS Cladding Swelling and Rupture Model," Exxon Nuclear Company, November 1982; (4) XN-NF-85-16(P)(A) Revision 2 and Supplements 1, 3, and 4, "RODEX2 Fuel Rod Thermal Mechanical Response Evaluation Model," Exxon Nuclear Company, March 1984; (5) ANF-81-58-(P)(A) Revision 2; Supplements 3 and 4, "RODEX2 Fuel Rod Thermal Mechanical Response Evaluation Model," Advanced Nuclear Fuels Corporation, June 1990;

(6) XN-NF-85-16(P)(A) Volume 1 and Supplements 1, 2, and 3, Volume 2, Revision 1 and Supplement 1, "PWR 17 x 17 Fuel Cooling Test Program," Advanced Nuclear Fuels Corporation, February 1990; and (7) XN-NF-85-105(P)(A) and Supplement 1, "Scaling of FCTF Based Reflood Heat Transfer Correlation for Other Bundle Designs," Advanced Nuclear Fuels Corporation, January 1990 will be replaced with EMF-2087(P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications," Siemens Power Corporation, June 1999. This change is to include the most recent Nuclear Regulatory Commission (NRC) approved, emergency core cooling system (ECCS) model used in LBLOCA applications.

Additionally, the licensee is revising the document listed in TS 6.9.1.8b.4, EMF-84-93(P), Revision 1, "Steamline Break Methodology for PWRs," Siemens Power Corporation, June 1998, by replacing "93" with "093" and adding "(A)" to indicate that it has been approved by the NRC.

The NRC staff approved the above replacement documents EMF-96-029(P) and EMF-2087(P) by letters dated October 29, 1996, and June 15, 1999, respectively. As stated in those letters, the staff does not intend to repeat its review of the matters described in those reports and found acceptable when those reports appear as a reference in license applications, except to assure that the material presented is applicable to the specific plant involved. The NRC staff Safety Evaluation approving EMF-96-029(P) contained specific restrictions. Specifically:

- (1) SAV95 application will be supported by additional code validation to [e]nsure that the methodology and uncertainties are applicable:
 - a) For designs differing from the Westinghouse reactors with 157 fuel assemblies with either 15 x 15 or 17 x 17 fuel rod arrays, and CE (Combustion Engineering) reactors with 217 fuel assemblies with 14 x 14 fuel rod arrays,
 - b) When using incore monitoring systems differing from the INPAX-W and INPAX-2 systems contained in this safety evaluation when SPC provides input from SAV95.
- (2) Modifications to the code and methodology will be validated using the criteria approved in EMF-96-029(P).
- (3) The validation will be maintained by SPC and will be available for NRC audit.

The above restrictions remain in effect. Additionally, the NRC staff's Safety Evaluation approving EMF-2087(P) approved the cladding creep model in RODEX2 for use in LBLOCA analyses with rod-average burnups of up to 62 GWd/MTU (gigawatt days per metric ton of uranium). This limitation also remains in effect.

The licensee states that the proposed changes to use EMF-96-029(P)(A) will provide the most recent, NRC-approved, methodology description and benchmarking results of the reactor analysis system used in the neutronics analysis of cycle 14 and beyond. The licensee further states that the use of EMF-2087(P)(A) will include the most recent, NRC-approved, ECCS model used in LBLOCA applications. The licensee has stated that its letter of May 20, 1999, reported deficiencies in the ECCS models and applications for Millstone 2 in accordance with 10 CFR 50.46(a) and that the use of EMF-2087(P)(A), in lieu of the previously referenced documents, resolves those reported deficiencies. The licensee has also confirmed that these

documents are applicable to Millstone 2. Based on the safety evaluations performed by the staff approving EMF-96-029(P) and EMF-2087(P), as contained in EMF-96-029(P)(A) and EMF-2087(P)(A), the confirmation by the licensee of their applicability to Millstone 2, and staff evaluation of the licensee's application, the staff has determined that the use of these documents for Millstone 2 is acceptable, with the restrictions contained therein.

The staff considers the change from EMF-84-93(P), Revision 1, "Steamline Break Methodology for PWRs," Siemens Power Corporation, June 1998, to EMF-84-093(P)(A), Revision 1, "Steamline Break Methodology for PWRs," Siemens Power Corporation, February 1999, to be administrative in nature. This change is 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

This amendment changes recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). Pursuant to 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this 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.

Principal Contributor: T. Colburn

Date: March 17, 2000