



**Northeast
Nuclear Energy**

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The Northeast Utilities System

NOV 23 1999

Docket No. 50-336
B17893

Re: 10 CFR 50.90

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Nuclear Power Station, Unit No. 2
Changes to Technical Specifications
Updating List of Documents Describing the Analytical Methods Specified in
Technical Specification 6.9.1.8b

Pursuant to 10 CFR 50.90, Northeast Energy Company (NNECO) hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed changes into the Millstone Unit No. 2 Technical Specifications. The proposed changes will update the list of documents, describing the analytical methods used to determine the core operating limits, specified in Technical Specification 6.9.1.8b. The reason for these changes is to incorporate the most recent, Nuclear Regulatory Commission (NRC) approved, methodology documents in Millstone Unit No. 2 Technical Specifications. These changes will update the documents describing the analytical methods used in the current Large Break Loss of Coolant Accident analysis (LBLOCA) and the neutronics core design of cycle 14 and beyond.

Attachment 1 provides a discussion of the proposed changes and the Safety Summary. Attachment 2 provides the Significant Hazards Consideration. Attachment 3 provides the marked-up version of the appropriate pages of the current Technical Specifications. Attachment 4 provides the retyped pages of the Technical Specifications.

Environmental Considerations

NNECO has reviewed the proposed License Amendment Request against the criteria of 10 CFR 51.22 for environmental considerations. The proposed changes will update the list of documents, describing the analytical methods used to determine the core operating limits, specified in Technical Specification 6.9.1.8b. These changes will not significantly increase the type and amounts of effluents that may be released offsite. In addition, this amendment request will not significantly increase individual or cumulative occupational radiation exposures. Therefore, NNECO has determined the proposed changes will not have a significant effect on the quality of the human environment.

A001

Conclusions

The proposed changes do not involve a significant impact on public health and safety (see the Safety Summary provided in Attachment 1) and do not involve a Significant Hazards Consideration pursuant to the provisions of 10 CFR 50.92 (see the Significant Hazards Consideration provided in Attachment 2).

Plant Operations Review Committee and Nuclear Safety Assessment Board

The Plant Operations Review Committee and Nuclear Safety Assessment Board have reviewed and concurred with the determinations.

Schedule

We request issuance of this amendment prior to restart from refueling outage 13, which is currently scheduled in early June of 1999, with the amendment to be implemented within 30 days of issuance.

State Notification

In accordance with 10 CFR 50.91(b), a copy of this License Amendment Request is being provided to the State of Connecticut.

There are no regulatory commitments contained in this letter.

If you should have any questions regarding this submittal, please contact Mr. Ravi Joshi at (860) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



Raymond P. Necci
Vice President - Nuclear Oversight and
Regulatory Affairs

Subscribed and sworn to before me

this 23 day of November, 1999



Notary Public

Date Commission Expires: 1/31/2001

cc: See next page

Attachments (4)

cc: H. J. Miller, Region I Administrator
R. B. Eaton, NRC Senior Project Manager, Millstone Unit No. 2
D. P. Beaulieu, Senior Resident Inspector, Millstone Unit No. 2

Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Attachment 1

Millstone Nuclear Power Station, Unit No. 2
Change to Technical Specifications
Updating List of Documents Describing the Analytical Methods Specified in
Technical Specification 6.9.1.8b
Discussion of Changes

November 1999

**Change to Technical Specifications
Updating List of Documents Describing the Analytical Methods Specified in
Technical Specification 6.9.1.8b
Discussion of Changes**

Introduction

Northeast Energy Company (NNECO) hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed changes into the Millstone Unit No. 2 Technical Specifications. The proposed changes will update the list of documents, describing the analytical methods used to determine the core operating limits, specified in Technical Specification 6.9.1.8b.

Description of Proposed Change

The proposed changes will update the documents describing the Siemens methodology given in Technical Specification 6.9.1.8b. The following documents will be replaced:

1. The document contained in section 6.9.1.8b.1 will be replaced with the document listed in Insert A. This change is required to 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.
2. The documents contained in section 6.9.1.8b.8 will be replaced with one document listed in Insert B. This change is required to include the most recent Emergency Core Cooling System (ECCS) model used in Large Break Loss of Coolant Accident (LBLOCA) applications. This model contains resolution of the deficiencies reported under 10 CFR 50.46(a) in a letter dated May 20, 1999.⁽¹⁾
3. The document contained in section 6.9.1.8b.4 will be revised by replacing "93" with "093" and adding "(A)" to indicate that it was approved by the Nuclear Regulatory Commission (NRC).

These changes will update the documents describing the analytical methods used in the current LBLOCA analysis and the neutronics core design of cycle 14 and beyond. The documents listed in Inserts A and B have already been approved by the NRC.

Safety Summary

The proposed changes will update the documents describing the Siemens methodology given in Technical Specification 6.9.1.8b. The following documents will be replaced:

⁽¹⁾ R. P. Necci letter to the Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Reporting of Changes to, and Errors in, Emergency Core Cooling System Models or Applications," dated May 20, 1999.

1. The document contained in section 6.9.1.8b.1 will be replaced with the document listed in Insert A. This change is required to 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.
2. The documents contained in section 6.9.1.8b.8 will be replaced with one document listed in Insert B. This change is required to include the most recent ECCS model used in LBLOCA applications. This model contains resolution of the deficiencies reported under 10 CFR 50.46(a) in a letter dated May 20, 1999.⁽¹⁾
3. The document contained in section 6.9.1.8b.4 will be revised by replacing "93" with "093" and adding "(A)" to indicate that it was approved by the NRC.

These changes will update the documents describing the analytical methods used in the current LBLOCA analysis and the neutronics core design of cycle 14 and beyond. The documents listed in Inserts A and B have already been approved by the NRC.

The use of the revised methodology still provides a conservative simulation of the LBLOCA and conservative core neutronics analysis. The use of the revised methodology also constitutes an improvement over the previous methodology. Therefore, the proposed changes will have no adverse effect on plant safety.

Attachment 2

Millstone Nuclear Power Station, Unit No. 2
Change to Technical Specifications
Updating List of Documents Describing the Analytical Methods Specified in
Technical Specification 6.9.1.8b
Significant Hazards Consideration

November 1999

**Proposed Revision to Technical Specifications
Updating List of Documents Describing the Analytical Methods Specified in
Technical Specification 6.9.1.8b
Significant Hazards Consideration**

Significant Hazards Consideration

In accordance with 10 CFR 50.92, NNECO has reviewed the proposed changes and has concluded that they do not involve a Significant Hazards Consideration (SHC). The basis for this conclusion is that the three criteria of 10 CFR 50.92(c) are not compromised. The proposed changes do not involve an SHC because the changes would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change in document 1 of Technical Specification 6.9.1.8b is made to provide the most recent, Nuclear Regulatory Commission (NRC) approved, methodology description and benchmarking results of the reactor analysis system used in the core neutronics analysis of cycle 14 and beyond. This change has no impact on plant equipment operation. Since the change only affects the neutronics analysis of the core, it cannot affect the likelihood or consequences of accidents. Therefore, this change will not significantly increase the probability or consequences of an accident previously evaluated.

The proposed change in document 8 of Technical Specification 6.9.1.8b is made to include the most recent, NRC approved, Emergency Core Cooling System (ECCS) model used in Large Break Loss of Coolant Accident (LBLOCA) applications. This model contains resolution of the deficiencies reported under 10 CFR 50.46(a) in a letter dated May 20, 1999.⁽¹⁾ The use of the revised methodology also constitutes an improvement over the previous methodology. Therefore, this change will not significantly increase the probability or consequences of an accident previously evaluated.

The proposed changes in document 4 of Technical Specification 6.9.1.8b are administrative in nature. Therefore, these changes will not significantly increase the probability or consequences of an accident previously evaluated.

⁽¹⁾ R. P. Necci letter to the Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Reporting of Changes to, and Errors in, Emergency Core Cooling System Models or Applications," dated May 20, 1999.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change in document 1 of Technical Specification 6.9.1.8b is made to 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 proposed change in document 1 of Technical Specification 6.9.1.8b will not alter the plant configuration (no new or different type of equipment will be installed) or require any new or unusual operator actions. It does not alter the way any structure, system, or component functions and does not alter the manner in which the plant is operated.

The proposed change in the documents in number 8 of Technical Specification 6.9.1.8b is made to include the most recent, NRC approved, ECCS model used in LBLOCA applications. The proposed change in document 8 of Technical Specification 6.9.1.8b will not alter the plant configuration (no new or different type of equipment will be installed) or require any new or unusual operator actions. It does not alter the way any structure, system, or component functions and does not alter the manner in which the plant is operated.

The proposed changes in document 4 of Technical Specification 6.9.1.8b are administrative in nature. These changes do not alter the way any structure, system, or component functions and do not alter the manner in which the plant is operated.

These changes do not introduce any new failure modes. Therefore, the proposed changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety.

The proposed change in document 1 of Technical Specification 6.9.1.8b is made to 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. It has no impact on plant equipment operation. The proposed change in document 8 of Technical Specification 6.9.1.8b is made to include the most recent, NRC approved, ECCS model used in LBLOCA applications. This model contains resolution of the deficiencies reported under 10 CFR 50.46(a) in a letter dated May 20, 1999.⁽¹⁾ The use of the revised methodology still provides a conservative simulation of the LBLOCA and conservative core neutronics analysis. The use of the revised methodology also constitutes an improvement over the previous methodology. The new documents will clearly identify the approved Siemens Topical Reports applicable to Millstone Unit No. 2 and will ensure that methodology changes will be

identified and submitted to the NRC for approval, as required. The proposed changes in document 4 of Technical Specification 6.9.1.8b are administrative in nature. Therefore, the proposed changes will not result in a significant reduction in a margin of safety.

As described above, this License Amendment Request does not involve a significant increase in the probability of an accident previously evaluated, does not involve a significant increase in the consequences of an accident previously evaluated, does not create the possibility of a new or different kind of accident from any accident previously evaluated, and does not result in a significant reduction in a margin of safety. Therefore, NNECO has concluded that the proposed changes do not involve an SHC.

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Attachment 3

Millstone Nuclear Power Station, Unit No. 2
Change to Technical Specifications
Updating List of Documents Describing the Analytical Methods Specified in
Technical Specification 6.9.1.8b
Marked Up Pages

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- 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 - $T_{avg} > 200^{\circ}F$
- 3/4.1.1.2 SHUTDOWN MARGIN - $T_{avg} \leq 200^{\circ}F$
- 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:

replace with insert A

1) ~~XN-75-27(A) and Supplements 1 through 5, "Exxon Nuclear Neutronics Design Methods for Pressurized Water Reactors," Exxon Nuclear Company, Report and Supplement 1 dated April 1977, Supplement 2 dated December 1980, Supplement 3 dated September 1981 (P), Supplement 4 dated December 1986 (P), and Supplement 5 dated February 1987 (P).~~

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-84-93(P)(A) Revision 1, "Steamline Break Methodology for PWRs," Siemens Power Corporation, ~~June 1998~~ 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) EXEM PWR Large Break LOCA Evaluation Model as defined by:

- 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.
- XN-NF-82-20(P)(A) Revision 1 and Supplement 1, 3, and 4, "Exxon Nuclear Company Evaluation Model EXEM/PWR ECCS Model Updates," Advanced Nuclear Fuels Corporation January 1990.
- XN-NF-82-07(P)(A) Revision 1, "Exxon Nuclear Company ECCS Cladding Swelling and Rupture Model," Exxon Nuclear Company, November 1982.
- XN-NF-81-58(P)(A) Revision 2 and Supplements 1 and 2, "RODEX2 Fuel Rod Thermal-Mechanical Response Evaluation Model," Exxon Nuclear Company, March 1984.
- 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.
- 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.
- 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.

replace with insert B

Insert A

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.

Insert B

EMF-2087(P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA
Applications," Siemens Power Corporation, June 1999.

Attachment 4

Millstone Nuclear Power Station, Unit No. 2
Change to Technical Specifications
Updating List of Documents Describing the Analytical Methods Specified in
Technical Specification 6.9.1.8b
Retyped Pages

November 1999

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.

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3/4.1.1.4	Moderator Temperature Coefficient
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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.

ADMINISTRATIVE CONTROLS

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.