

May 18, 1995

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

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M92078)

Dear Mr. Opeka:

The Commission has issued the enclosed Amendment No. 189 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2, in response to your application dated April 21, 1995.

The amendment revises Technical Specification (TS) 3.1.2.4, "Charging Pumps-Operating," by adding a note that indicates that the provisions of TS 3.0.4 and 4.0.4 are not applicable for entry into MODE 4 from MODE 5.

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,

Original signed by:

Guy S. Vissing, Senior Project Manager Project
Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 189 to DPR-65
2. Safety Evaluation

cc w/enclosures: See next page

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

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Sincerely,

A handwritten signature in cursive script, reading "Guy S. Vissing".

Guy S. Vissing, Senior Project Manager
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 189 to DPR-65
2. Safety Evaluation

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Mr. John F. Opeka
Northeast Nuclear Energy Company

Millstone Nuclear Power Station
Unit 2

cc:

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

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. 189
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 April 21, 1995, 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. 189, 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, to be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Phillip F. McKee, Director
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 18, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 189

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

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

Remove

3/4 1-13
B 3/4 1-3
B 3/4 1-3a

Insert

3/4 1-13
B 3/4 1-3
B 3/4 1-3a

REACTIVITY CONTROL SYSTEMS

CHARGING PUMPS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two** charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4*.

ACTION:

With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 48 hours or be in HOT STANDBY within the next 4 hours; restore at least two charging pumps to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the next 36 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.4.1 Two charging pumps shall be demonstrated OPERABLE at least once per 31 days on a STAGGERED TEST BASIS by:

- a. Starting (unless already operating) each pump from the control room, and
- b. Verifying that each pump operates for at least 15 minutes.

4.1.2.4.2 One charging pump shall be demonstrated inoperable at least once per 12 hours whenever the temperature of one or more of the RCS cold legs is < 300°F by verifying that the motor circuit breaker is in the open position.

*The provisions of Specification 3.0.4 and 4.0.4 are not applicable for entry into MODE 4 for the charging pump that is inoperable pursuant to Specification 3.1.2.3 provided the charging pump is restored to OPERABLE status within at least 4 hours or prior to entering MODE 3, whichever comes first.

**A maximum of two charging pumps shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than 300°F.

BASES

3/4.1.2 BORATION SYSTEMS (Continued)

The analysis to determine the boration requirements assumed that the Reactor Coolant System is borated concurrently with cooldown. In the limiting situation when letdown is not available, the cooldown is assumed to be initiated within 26 hours and cooldown to 220°F, is completed in the next 28 hours.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity change in the event the single injection system becomes inoperable.

The boron capability required below 200°F is based upon providing a SHUTDOWN MARGIN within the limit specified in the CORE OPERATING LIMITS REPORT at 140°F after xenon decay. This condition requires either 3750 gallons of 2.5% boric acid solution from the boric acid tanks or 57,300 gallons of 1720 ppm borated water from the refueling water storage tank.

The maximum boron concentration requirement (3.5%) and the minimum temperature requirement (55°F) for the Boric Acid Storage Tank ensures that boron does not precipitate in the Boric Acid System. The daily surveillance requirement provides sufficient assurance that the temperature of the tank will be maintained higher than 55°F at all times.

A minimum boron concentration of 1720 ppm is required in the RWST at all times in order to satisfy safety analysis assumptions for boron dilution incidents and other transients using the RWST as a borated water source as well as the analysis assumption to determine the boration requirement to ensure adequate shutdown margin.

A maximum of two charging pumps OPERABLE, when RCS temperature is less than 300°F, ensures that the maximum inadvertent dilution flow rate as assumed in the boron dilution analysis is 88 gallons per minute.

The requirements for maximum pumping capability to reduce shutdown risk and low temperature overpressure protection are met by balancing the number of OPERABLE pumps with PORVs and RCS vents. An LTOP accident scenario assumes all OPERABLE pumps start, one relief path fails, and RCS pressure then must remain less than the 10CFR50, Appendix G limits. For shutdown risk reduction, it is desirable to have the maximum pump capacity and maintain the RCS full (not vented). The scenarios considered by these technical specifications are as follows: (1) A pumping capability of 1 charging and 1 HPSI pump with relief from 2 PORVs (to account for single failure); (2) pumping capacity of 2 charging pumps and 1 HPSI pump or 2 charging pumps and 2 HPSI pumps with relief from an RCS passive vent of greater than or equal to 2.8 square inches. To further reduce shutdown risk by maximizing pumping capacity, a HPSI pump may be made inoperable but available at short notice by shutting its discharge valve with the key lock on the control panel.

BASES

3/4.1.2 BORATION SYSTEMS (Continued)

The provision in Specification 3.1.2.4 that Specifications 3.0.4 and 4.0.4 are not applicable for entry into MODE 4 is provided to allow for closing the motor circuit breaker and subsequent testing of the inoperable charging pump. Specification 3.1.2.3, which is applicable to MODES 5 and 6, requires that one charging pump be OPERABLE. Specification 3.1.2.4 requires that at least two charging pumps be OPERABLE in MODES 1, 2, 3, and 4. The exception from Specification 3.0.4 and 4.0.4 will allow Millstone Unit No. 2 to enter into MODE 4 and test the inoperable charging pump and declare it OPERABLE.

3/4.1.3 MOVEABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) the potential effects of a CEA ejection accident are limited to acceptable levels.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original criteria are met.

The ACTION statements applicable to an immovable or untrippable CEA and to a large misalignment (≥ 20 steps) of two or more CEAs, require a prompt shutdown of the reactor since either



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 189

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 April 21, 1995, the Northeast Nuclear Energy Company (the licensee) submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 2 Technical Specifications (TSs). The requested changes would revise TS 3.1.2.4, "Charging Pumps-Operating," by adding a note that indicates that the provisions of TS 3.0.4 and 4.0.4 are not applicable for entry into MODE 4 from MODE 5.

2.0 BACKGROUND AND DISCUSSION

Amendment 185 issued by NRC letter of February 15, 1995, modified TS 3.1.2.3, "Charging Pump-Shutdown," to indicate that with relief capability provided by the power-operated relief valves (PORVs), only one charging pump and one high-pressure safety injection (HPSI) pump would be operable in MODES 5 and 6. This change was made to address Low Temperature Overpressure Protection (LTOP) issues. The TS was further modified to allow an additional charging pump and an additional HPSI pump to operate provided the reactor coolant system (RCS) was vented through a passive vent of greater than or equal to 2.8 in². This modification was made to address shutdown risk management and LTOP issues.

When entering MODE 4 from MODE 5, Millstone Unit 2 is unable to maintain a passive vent of greater than or equal to 2.8 in². Therefore, TS 3.1.2.3 limits Millstone Unit 2 to only one charging pump and one HPSI pump for MODES 5 and 6. TS 3.1.2.4, "Charging Pumps-Operating," requires two charging pumps be operable in MODES 1, 2, 3, and 4. The ACTION statement requires that if only one charging pump is operable that an additional charging pump must be restored to an operable status or the unit must be shut down. TS 3.0.4 prohibits entrance into an operational MODE when the limiting condition for operation (LCO) is not met and the ACTION statement requires a shutdown. Similarly, TS 4.0.4 prohibits entry into an operational MODE if the Surveillance Requirement cannot be met.

Therefore the TS as currently written prohibits entrance into MODE 4 due to plant limitations on the restoration of two charging pumps prior to entry into MODE 4.

Thus the licensee has proposed to add a footnote to TS 3.1.2.4 which indicates that an exception to TSs 3.0.4 and 4.0.4 is provided for entry into MODE 4 from MODE 5 for no greater than 4 hours or prior to entry into MODE 3, whichever occurs first.

The proposed change would also modify the accompanying bases by clarifying that in MODES 5 and 6 only one charging pump and only one HPSI pump may be operable with relief provided by the power operated relief valves. In addition, a discussion has been added which describes why Technical Specification 3.1.2.4 has taken an exception to Technical Specifications 3.0.4 and 4.0.4.

The proposed change has been requested on an exigent basis to permit the licensee to permit Millstone Unit 2 to proceed in startup from MODE 5 to MODE 4 without unnecessary delay.

3.0 EVALUATION

TS 3.1.2.3 requires that one charging pump and one HPSI pump be operable in MODES 5 and 6. The specification allows an additional charging pump and HPSI pump to be operable provided the RCS has a passive vent of greater than or equal to 2.8 square inches.

TS 3.1.2.4 requires that at least two charging pumps are operable in MODES 1, 2, 3, and 4, except when the RCS is less than 300°F, then a maximum of two charging pumps can be operable.

Entry into MODE 4 from MODE 5 requires that two charging pumps be operable. In MODE 5, only one charging pump may be operable. The proposed TS modification will allow the entrance into MODE 4 and the subsequent testing of the second charging pump. The testing of the pump is required prior to declaring the pump operable.

TSs 3.0.4 and 4.0.4 prohibit entry into an operational mode when the LCOs are not met and the associated action statement requires a shutdown if they are not met within a specified time interval or if the surveillance has not been performed. Currently, the TSs would prohibit entrance into MODE 4 from MODE 5 due to the inability to provide two operable charging pumps at the start of MODE 4. Thus a situation exists with a requirement that will not support plant operation without relief.

We have reviewed the licensee's proposed change and have determined it to be acceptable. The proposed change will allow mode change from MODE 5 to MODE 4 and continued operation. The small delay in returning a second charging pump to operable status in MODE 4 will not detrimentally impact the risks associated with shutdown management practices.

4.0 EXIGENT CIRCUMSTANCES

Pursuant to 10 CFR 50.91(a)(6), the licensee requested the proposed amendment on an exigent basis. The proposed change would permit Millstone Unit 2 to proceed in startup from MODE 5 to MODE 4 without unnecessary delay. The condition that lead to discovery of need was a result of recent operator training involving Amendment No. 185 which was issued on February 15, 1995.

Notice of the staff's proposed determination that this proposed amendment involves no significant hazards consideration was published in the Federal Register on May 2, 1995 (60 FR 21558). The Commission has made a final determination that the proposed amendment does not involve a significant hazards consideration as discussed in Section 5.0.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has made a final determination that the amendment involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92(c), this means that the operation of the facility in accordance with the proposed amendment would not (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Involve a significant reduction in a margin of safety.

The Commission has evaluated the proposed changes against the above standards as required by 10 CFR 50.91(a) and has concluded that the changes do not:

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

The proposed TS change will require that a second charging pump be returned to service within 4 hours of entering MODE 4 or prior to entering MODE 3, whichever occurs first. The addition of the footnote indicating that TSs 3.0.4 and 4.0.4 are not applicable for entry into MODE 4 from MODE 5 will allow for the testing and subsequent return to service of a charging pump that was required to be inoperable in MODE 5. The testing is necessary to restore the pump to operable status when the reactor coolant system is less than 300°F. The less than 4 hours delay in verifying the operability of the second charging pump after entry into MODE 4 does not significantly affect the overall risk. The TS as proposed, will allow the plant to operate. Without the proposed change a situation would be created in which the plant could not be permitted to make the change from MODE 5 to MODE 4 and, therefore, the plant could not continue to operate.

The addition of the proposed footnote to TS 3.1.2.4 will not significantly increase the probability or consequences of an accident previously evaluated. The charging systems safety related functions are not being impacted by the proposed change.

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

The proposed change does not alter or affect the design, function, or operation of the plant. The proposed change will allow the licensee to perform the required operability tests to support the restoration of a charging pump to an operable status for MODES 1, 2, 3, and 4.

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

The proposed modification will allow for the restoration of a second charging pump to support plant operation in MODES 1, 2, 3, and 4. Testing of the charging pump is necessary to verify operability of the pump. Sufficient flow is provided by the remaining available pumps to address shutdown risk issues. The proposed change will not negatively impact the LTOP evaluation or boron dilution analysis.

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. 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 (60 FR 21558). The Commission has made a final determination that the amendment involves no significant hazards consideration. 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.

Principal Contributor: G. Vissing

Date: May 18, 1995