

October 19, 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. 3 - ISSUANCE OF
AMENDMENT RE: MAIN STEAM ISOLATION VALVE TESTING
(TAC NO. MA8746)

Dear Mr. Scace:

The Commission has issued the enclosed Amendment No. 185 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated April 19, 2000.

The amendment removes the requirement to perform partial stroke testing of the main steam isolation valves during power operation, modifies the technical specification wording for clarity, combines two surveillance requirements into one, and modifies the associated Bases for consistency.

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/

Victor Nerses, Sr. Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 185 to NPF-49
2. Safety Evaluation

cc w/encls: See next page

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NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

DOCKET NO. 50-423

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 185
License No. NPF-49

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 19, 2000, 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. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 185, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

/RA/

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: October 19, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 185

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

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

3/4 7-9

B 3/4 7-5

B 3/4 7-6

B 3/4 7-6a

Insert

3/4 7-9

B 3/4 7-5

B 3/4 7-6

B 3/4 7-6a

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 185

TO FACILITY OPERATING LICENSE NO. NPF-49

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

DOCKET NO. 50-423

1.0 INTRODUCTION

By letter dated April 19, 2000, the Northeast Nuclear Energy Company, et al. (the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 3 (Millstone Unit 3) Technical Specifications (TSs). The requested changes would remove the requirement to perform partial stroke testing of the main steam isolation valves (MSIVs) during power operation, modify the TS wording for clarity, combine two surveillance requirements into one, and modify the associated Bases for consistency.

2.0 BACKGROUND

TS Surveillance Requirement (SR) 4.7.1.5.1 requires partial stroke testing of the MSIVs when the plant is operating in Modes 1 and 2. Partial stroke testing of the MSIVs increases the risk of valve closure when the plant is operating, which can result in a reactor trip. This occurred at Millstone Unit 3 on December 11, 1998, as documented in Licensee Event Report 98-045-00.

Each MSIV (total of four) is provided with four sets of redundant solenoid valves, which allow both venting and pressurizing of the main valve's upper and lower chambers to allow opening and closing of the main valve. The solenoids control positioning of internal pilot/piston assemblies to allow the admittance of steam or the venting of steam to the main valve's upper and lower chambers. Solenoid positioning allows movement of the main valve to its proper position. Single failure of an MSIV solenoid will not prevent the valve from meeting the required closure time.

The licensee has provided the following background information:

The MSIV partial stroke testing verifies that the MSIV actuation solenoid valves operate in the proper amount of time and that the main valve is free to move. Due to past performance difficulties with the MSIV solenoid valves (that did not affect the ability of the main valve to close), solenoid stroke time trending has been performed during the partial stroke tests since 1995. Solenoid stroke times have been consistent, ensuring main valve closure within the required time of receipt of a closure signal. Additionally, there has been no evidence of main valve binding in the open direction since the valves were originally installed. During full stroke testing of the MSIVs, each valve has historically closed well within the required 10 second stroke time.

As a result of the valve closure event that occurred on December 11, 1998, design enhancements have been incorporated that have increased the reliability of valve performance. The improvements include larger solenoid piston ports to minimize the chance of clogging which could affect solenoid stroke time and solenoid piston positioning, more powerful solenoid springs to increase solenoid pilot valve lift, upgraded solenoid coils to accommodate the stronger springs, and improved material of solenoid pilot and piston to minimize susceptibility to magnetite formation and subsequent solenoid valve mechanical sticking. Partial stroke testing following incorporation of these design improvements, including stroke time trends and analysis of solenoid valve traces, has demonstrated reliable main valve operation and provided assurance of the ability of the MSIVs to perform their safety function when called upon.

3.0 EVALUATION

The proposed TS changes and the staff's evaluation of those changes are discussed in the following pages.

1. The Limiting Condition for Operation (LCO) for TS 3.7.1.5 would be modified by replacing the word "Each" with "Four." There are four MSIVs at Millstone Unit 3. In addition, this change would require the use of the plural context of valve. The staff has reviewed the proposed changes and finds them acceptable because they are not substantive and do not change the LCO requirements.
2. The applicability of TS 3.7.1.5 would be modified by replacing the phrase "a MSIV is" with "all MSIVs are." The staff has reviewed the proposed change and finds it acceptable because it is consistent with the intent that this specification should not be applicable in Modes 2, 3, and 4 if all of the MSIVs are closed and deactivated. In addition, the asterisk (*) associated with Mode 4 would be removed. The staff has reviewed the proposed change and finds it acceptable because this is consistent with the removal of the footnote which is discussed in subparagraph 3 below.
3. The current footnote (*) for TSs 3.7.1.5 and 4.7.1.5.3, which states, "In MODE 4, the MSIVs are required to be closed and deactivated with RCS temperature less than 320 degrees Fahrenheit" would be deleted. The licensee states that the basis for this footnote is an evaluation of MSIV operation that has determined that sufficient steam pressure may not exist below a Reactor Coolant System (RCS) temperature of 320 °F to close the MSIVs within the required Mode 4 isolation time of 120 seconds. Therefore, below 320 °F the MSIVs are not operable, and the valves are required to be closed.

This information concerning MSIV operability in Mode 4 would be contained in the associated Bases. The staff has reviewed the proposed change and finds it acceptable because this change will not result in any technical change to the requirements for MSIV operability. The action requirement in TS 3.7.1.5 will continue to require an inoperable MSIV to be closed, so, below 320 °F, the MSIVs (being inoperable at that time) will be required to be closed.

4. A period would be added at the end of the action requirement for Mode 1. The staff has reviewed the proposed change and finds it acceptable because this is not a substantive change to the Mode 1 action requirement.

5. The word "are" in the action requirement for Modes 2, 3, and 4 would be replaced with the phrase "is (are)" to be consistent with the use of "valve(s)." The staff has reviewed the proposed change and finds it acceptable because this is purely an editorial change, and does not change the Modes 2, 3, and 4 action requirement.
6. An asterisk would be added to the word "closed" in the action requirement for TS 3.7.1.5 for Modes 2, 3, and 4. This asterisk would refer to a new footnote that would be added. This action requirement requires inoperable MSIVs to be closed. The new footnote would allow MSIVs that are closed to comply with the action requirement to be opened to perform SR 4.7.1.5.2 when the RCS temperature is greater than or equal to 320 °F.

The staff has reviewed the proposed change and finds it acceptable because performance of this SR may be necessary to demonstrate MSIV operability. This approach, to allow the MSIVs to be opened to perform an SR to verify operability when the valves are closed to comply with an action requirement, may, under certain operating conditions, be the only way to determine if operability has been restored and so may be the only way to exit the action requirement. We consider this exception to be prudent and necessary. In addition, this change is consistent with NUREG-1431 (Technical Specification 3.0.5).

7. SR 4.7.1.5.1 would be deleted. The U.S. Nuclear Regulatory Commission has provided guidance to the industry regarding partial stroke testing of MSIVs when the plant is operating in Modes 1 and 2. NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants," dated April 1995, Section 4.2.4 recommends that MSIVs not be tested at power, since even a partial-stroke exercise increases the risk of valve closure when the unit is generating power. This guidance can also be found in NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 1, dated April 1995, and in the current draft of Revision 2 of the same document (still in development). The staff considers the removal of the requirement to test MSIVs at power to be an overall reduction in risk, since 1) valve testing while shutdown verifies the operability of the MSIVs; and 2) the likelihood of unintended plant transients while conducting partial-stroke testing is removed. Therefore, we find the proposed change to the MSIV testing TSs to be acceptable.
8. Current SRs 4.7.1.5.2 and 4.7.1.5.3 would be combined into the proposed SR 4.7.1.5.2. We have reviewed this proposal and find that the current requirements will not be changed, only the wording and format. Therefore, the proposed change is editorial in nature and is acceptable.

The Bases for TS 3/4.7.1.5 would be modified to be consistent with the proposed changes previously discussed. The staff does not object to the proposed TS Bases changes.

4.0 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.

5.0 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 (65 FR 51360). 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.

6.0 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: J. Pulsipher

Date: October 19, 2000

Millstone Nuclear Power Station
Unit 3

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