

Mr. Martin L. Bowling  
Recovery Officer - Millstone Unit No. 2  
Northeast Nuclear Energy Company  
c/o Ms. Patricia A. Loftus  
Director - Regulatory Affairs  
P.O. Box 128  
Waterford, CT 06385

January 23, 1998

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. MA0104)

Dear Mr. Bowling:

The Commission has issued the enclosed Amendment No. 156 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated November 14, 1997.

The amendment makes changes to Technical Specification 4.5.2.d.1 to clarify the wording and increase the setpoint for the open pressure interlock.

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:

James W. Andersen, Project Manager  
Special Projects Office - Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 156 to NPF-49  
2. Safety Evaluation

cc w/encls: See next page

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

January 23, 1998

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Sincerely,

A handwritten signature in black ink, appearing to be "JW Andersen", is written over the typed name.

James W. Andersen, Project Manager  
Special Projects Office - Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-423

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2. Safety Evaluation

cc w/encls: See next page

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

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

DOCKET NO. 50-423

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 156  
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 November 14, 1997, 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. 156 , 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 its issuance, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Phillip F. McKee  
Deputy Director for Licensing  
Special Projects Office  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: January 23, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 156

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

Replace the following page of the Appendix A, Technical Specifications, with the attached page. The revised page is identified by amendment number and contains a vertical line indicating the area of change.

Remove

3/4 5-4

Insert

3/4 5-4

## EMERGENCY CORE COOLING SYSTEMS

### SURVEILLANCE REQUIREMENTS

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4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

- a. At least once per 12 hours by verifying that the following valves are in the indicated positions with power to the valve operators removed:

<u>Valve Number</u>	<u>Valve Function</u>	<u>Valve Position</u>
3SIH*MV8806	RWST Supply to SI Pumps	OPEN
3SIH*MV8802A	SI Pump A to Hot Leg Injection	CLOSED
3SIH*MV8802B	SI Pump B to Hot Leg Injection	CLOSED
3SIH*MV8835	SI Cold Leg Master Isolation	OPEN
3SIH*MV8813	SI Pump Master Miniflow Isolation	OPEN
3SIL*MV8840	RHR to Hot Leg Injection	CLOSED
3SIL*MV8809A	RHR Pump A to Cold Leg Injection	OPEN
3SIL*MV8809B	RHR Pump B to Cold Leg Injection	OPEN

- b. At least once per 31 days by:

- 1) Verifying that the ECCS piping, except for the operating centrifugal charging pump(s) and associated piping, the RSS pump, the RSS heat exchanger and associated piping, is full of water, and
- 2) Verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:

- 1) For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and
- 2) At least once daily of the areas affected (during each day) within containment by containment entry and during the final entry when CONTAINMENT INTEGRITY is established.

- d. At least once each REFUELING INTERVAL by:

- 1) Verifying automatic interlock action of the RHR System from the Reactor Coolant System by ensuring that with a simulated signal greater than or equal to 412.5 psia the interlocks prevent the valves from being opened.





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 156

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 November 14, 1997, the Northeast Nuclear Energy Company, et al. (the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 3 Technical Specifications (TS). The requested changes to TS 4.5.2.d.1 would clarify the wording and increase the setpoint for the open pressure interlock (OPI).

2.0 BACKGROUND

One function of the residual heat removal (RHR) system is to provide cooling of the reactor coolant system (RCS) and remove decay heat from the core. The RHR system is a low pressure system with most of the piping and components rated at 600 psia. Since the RCS operates at 2235 psig, the RHR system requires isolation valves to prevent overpressurization. The OPI is present on two of the three isolation valves (the third valve is normally closed with its power breaker locked out). The OPI prevents inadvertent opening of the suction/isolation valves when the RCS pressure is above the design pressure of the RHR system considering RHR pump discharge pressure.

Licensee Event Report 97-031 described an event which concluded that the RHR system OPI did not comply with TS surveillance requirements. As a result of inappropriate calibration techniques, the OPI bistable was calibrated to a nominal 390 psia decreasing pressure and did not consider the effects of instrument uncertainties and reset tolerances. As a result, the bistables could prematurely trip on a decreasing pressure signal (above 390 psia) and then reset on an increasing pressure signal at an even higher pressure. TS Surveillance Requirement 4.5.2.d.1 currently requires verifying automatic action of the RHR system from the RCS by ensuring that with a simulated or actual RCS pressure signal greater than or equal to 390 psia the interlocks prevent the valves from being opened. Therefore, the requirements of the TS were not being met.

In its letter dated November 14, 1997, the licensee proposed (1) changing the pressure from 390 psia to 412.5 psia to take the bistable reset into account and, (2) to delete the words "or actual reactor coolant system pressure."

### 3.0 EVALUATION

#### 3.1 Setpoint Change

In the November 14 letter, the licensee stated that a number of factors are taken into account in the setting of the OPI:

- a. Additional system pressure protection is provided by the RHR suction relief valves; these valves have a setpoint of  $440 \pm 3\%$  psig (426.8-453.2 psig). Therefore, the OPI setpoint must not exceed the minimum setpoint of the RHR suction relief valve of 426.8 psig (441.8 psia, assuming a 15 psi conversion from psig to psia).
- b. The RCS system pressure plus the RHR pump discharge pressure developed when the pumps are operating must not exceed the 600 psig piping and component limit. During recent RHR system testing, the licensee determined that the maximum developed pump discharge pressure is 195 psid (dead head pressure). Therefore, based on this differential pressure, the OPI setpoint should be no higher than 405 psig (600 psig - 195 psi = 405 psig or 420 psia).
- c. The current operating procedures for the RHR system discuss initiating RHR/RCS cooldown at less than 390 psia/350°F (Mode 4 is defined as  $K_{eff}$  less than 0.99, percent rated thermal power equals zero, and temperature less than 350°F and greater than 200°F). Therefore, the OPI setpoint should be greater than 390 psia.

In order to account for instrument inaccuracies, deadbands, resets, etc., the licensee stated that 412.5 psia was determined to be the upper limit at which the OPI bistables will reset after actuation and allow the RHR suction valves to be opened. The licensee stated that at any pressure above 412.5 psia the OPI bistables will prevent the valves from opening. By accounting for bistable inaccuracies and reset deadbands, the bistables can continue to be calibrated so the valves can be opened at or below a nominal 390 psia.

The NRC staff has reviewed the proposed change to the OPI setpoint and finds the change acceptable in that (1) there is sufficient margin between the setpoint and the minimum setpoint of the RHR suction relief valve of 426.8 psig (441.8 psia), (2) there is sufficient margin between the setpoint and the RHR system pressure minus the pump discharge pressure (600 psig - 195 psi = 405 psig or 420 psia), (3) the setpoint takes into account bistable inaccuracies and reset deadbands, and (4) the isolation valves can continue to be opened at less than 390 psia for RHR system operation.

#### 3.2 Wording Change

In the November 14 letter, the licensee stated that the bistable receives an electric current to actuate. Therefore, the bistable is not reading the "actual reactor coolant system pressure." The licensee stated that deleting the words "actual reactor coolant system pressure" clarifies that the OPI generates instrument signals derived from pressure transmitters measuring RCS pressure. The NRC staff has reviewed the change in wording and finds the

change acceptable in that it clarifies the wording to more accurately describe the verification test used for the OPI.

#### 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 the 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 (62 FR 66138 dated December 17, 1997). 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. Andersen

Date: January 23, 1998