

Mr. Neil S. Carns  
 Senior Vice President  
 and Chief Nuclear Officer  
 Northeast Nuclear Energy Company  
 c/o Mr. Richard T. Laudenat  
 Director - Regulatory Affairs  
 P.O. Box 128  
 Waterford, CT 06385

May 29, 1997

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M98288)

Dear Mr. Carns:

The Commission has issued the enclosed Amendment No. 139 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated March 31, 1997.

The amendment modifies Technical Specification Surveillance 4.7.1.2.1.b, which requires the testing of the auxiliary feedwater motor-driven and turbine-driven pumps on recirculation flow at least once per 92 days. The amendment also makes changes to the appropriate Bases section.

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. 139 to NPF-49  
 2. Safety Evaluation

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 29, 1997

Mr. Neil S. Carns  
Senior Vice President  
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Northeast Nuclear Energy Company  
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Sincerely,

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

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

Docket No. 50-423

Enclosures: 1. Amendment No. 139 to NPF-49  
2. Safety Evaluation

cc w/encls: See next page

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Unit 3

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Northeast Nuclear Energy Company

Millstone Nuclear Power Station  
Unit 3

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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. 139  
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 March 31, 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.

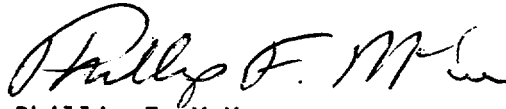
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 139 , 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: ~~May~~ 29, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 139

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

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 7-5

B 3/4 7-2

B 3/4 7-2a

Insert

3/4 7-5

B 3/4 7-2

B 3/4 7-2a

## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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- b. At least once per 92 days on a STAGGERED TEST BASIS, tested pursuant to Specification 4.0.5, by:
  - 1) Verifying that on recirculation flow each motor-driven pump develops a total head of greater than or equal to 3385 feet;
  - 2) Verifying that on recirculation flow the steam turbine-driven pump develops a total head of greater than or equal to 3780 feet when the secondary steam supply pressure is greater than 800 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.
  
- c. At least once each REFUELING INTERVAL by verifying that each auxiliary feedwater pump starts as designed automatically upon receipt of an Auxiliary Feedwater Actuation test signal. For the steam turbine-driven auxiliary feedwater pump, the provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

4.7.1.2.2 An auxiliary feedwater flow path to each steam generator shall be demonstrated OPERABLE following each COLD SHUTDOWN of greater than 30 days prior to entering MODE 2 by verifying flow to each steam generator.



## PLANT SYSTEMS

### BASES

#### SAFETY VALVES (Continued)

- w<sub>o</sub> = Minimum total steam flow rate capability of the operable MSSVs on any one steam generator at the highest MSSV opening pressure including tolerance and accumulation, as appropriate, in lb/sec. For example, if the maximum number of inoperable MSSVs on any one steam generator is one, then w<sub>o</sub> should be a summation of the capacity of the operable MSSVs at the highest operable MSSV operating pressure, excluding the highest capacity MSSV. If the maximum number of inoperable MSSVs per steam generator is three, then w<sub>o</sub> should be a summation of the capacity of the operable MSSVs at the highest operable MSSV operating pressure, excluding the three highest capacity MSSVs. The following plant specific safety valve flow rates were used:

SG Safety Valve Number (Bank No.)	Main Steam System	
	Set Pressure (psia)	Flow (lbm/hr per loop)
1	1200	893,160
2	1210	900,607
3	1220	908,055
4	1230	915,502
5	1240	922,950

#### 3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the Auxiliary Feedwater System ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating or accident conditions coincident with a total loss-of-offsite power.

The auxiliary feedwater system is capable of delivering a total feedwater flow of 480 gpm at a pressure of 1236 psia to the entrance of at least three steam generators while allowing for (1) any spillage through the design worst-case break of the Normal feedwater line, (2) the design worst-case single failure; and (3) recirculation flow. This capacity is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F at which point the Residual Heat Removal System may be placed into operation.

Surveillance Requirement 4.7.1.2.1 verifies that each AFW pump's total head at a recirculation flow test point is greater than or equal to the required total head. This surveillance ensures that the AFW pump performance has not degraded during the operating cycle. Because it is undesirable to introduce cold AFW into

## PLANT SYSTEMS

### BASES

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#### AUXILIARY FEEDWATER SYSTEM (Continued)

the steam generators while they are operating, this testing is performed with recirculation flow. This test confirms one point on the pump curve and is indicative of overall performance. This test confirms component OPERABILITY is used to trend performance and to detect incipient failures by indicating abnormal performance. The total head specified in Surveillance Requirement 4.7.1.2.1 does not include a margin for test measurement uncertainty. This consideration shall be addressed at the implementing procedure level.

#### 3/4.7.1.3 DEMINERALIZED WATER STORAGE TANK

The OPERABILITY of the demineralized water storage tank with the minimum water volume ensures that sufficient water is available to maintain the RCS at HOT STANDBY conditions for 10 hours with steam discharge to the atmosphere concurrent with total loss-of-offsite power, and with an additional 6-hour cooldown period to reduce reactor coolant temperature to 350°F. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

#### 3/4.7.1.4 SPECIFIC ACTIVITY

The limitations on Secondary Coolant System specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 dose guideline values in the event of a steam line rupture. This dose also includes the effects of a coincident 1 gpm primary-to-secondary tube leak in the steam generator of the affected steam line. These values are consistent with the assumptions used in the safety analyses.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 139

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 March 31, 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 proposed amendment would modify Technical Specification Surveillance 4.7.1.2.1.b, which requires the testing of the auxiliary feedwater motor-driven and turbine-driven pumps on recirculation flow at least once per 92 days. The proposed amendment also makes changes to the appropriate Bases section.

2.0 EVALUATION

TS 4.7.1.2.1.b currently requires that each auxiliary feedwater pump shall be demonstrated operable at least once per 92 days on a staggered test basis. Specifically, TS 4.7.1.2.1.b.1 requires verification that on recirculation flow each motor-driven pump develops a differential pressure of greater than or equal to 1460 pounds per square inch differential (psid) when tested pursuant to Specification 4.0.5 (surveillance requirements for inservice inspection and testing of ASME Code Class 1, 2, and 3 components). TS 4.7.1.2.1.b.2 requires verification that on recirculation flow the steam turbine-driven pump develops a differential pressure of greater than or equal to 1640 psid when the secondary steam supply pressure is greater than 800 psig. In the March 31, 1997, letter, the licensee requested three changes to TS Section 4.7.1.2.1.b. Specifically, the licensee requested that (1) the required test parameter for the motor-driven pumps be increased from 1460 psid to 1468 psid, (2) the current parameters for the motor-driven and turbine-driven pumps be changed from differential pressure measured in psid to total head measured in feet, and (3) the reference to Specification 4.0.5 be moved in order to clarify that it applies to the testing of the motor-driven and turbine-driven pumps.

During a review of the previous calculation that established the acceptance criteria for the surveillance, the licensee discovered that the surveillance limits were developed with a nonconservative pump degradation allowance. When the licensee revised the calculation using proper data, the required differential pressure for the motor-driven pumps increased to 1468 psid. The NRC staff finds the change in required differential pressure from 1460 psid to

1468 psid acceptable in that it is relatively small when compared to the required value, the surveillance will continue to provide assurance that the motor-driven pumps will operate consistent with system evaluations, and it will provide assurance that the motor-driven pumps will perform their intended safety function.

The change in the referenced units from differential pressure measured in psid to total head measured in feet for the motor-driven and turbine-driven auxiliary feedwater pumps during surveillance testing allows the licensee to account for the effect of water density on pump performance during each test. The NRC staff finds the change acceptable in that the surveillance continues to provide the necessary assurance that the pumps will function as required in accident analyses and the change in parameter units does not change how the pumps are operated.

Also, moving the reference to Specification 4.0.5 clarifies that both the motor-driven and turbine-driven surveillances must be conducted in accordance with the inservice testing requirements. This change is administrative and clarifies the TS; therefore, the NRC staff finds it acceptable.

Based on the above, the NRC staff finds the proposed changes to TS 4.7.1.2.1.b 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

The amendment 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 (62 FR 19832 dated April 23, 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.

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: J. Andersen

Date: ~~May~~ 29, 1997