

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

November 14, 1997

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M98678)

Dear Mr. Carns:

The Commission has issued the enclosed Amendment No. 153 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated May 5, 1997.

Technical Specification Surveillance 4.8.4.1 requires periodic testing of lower voltage circuit breakers for all containment penetration conductor overcurrent protective devices. The amendment modifies the requirements for determining the operability of lower voltage circuit breakers by using the manufacturer's curve of current versus time to test delay trip elements, clarifies the use of two pole in series testing, and expands the Bases description of the testing.

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. 153 to NPF-49
 2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 14, 1997

Mr. Neil S. Carns
Senior Vice President
and Chief Nuclear Officer
Northeast Nuclear Energy Company
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Director - Regulatory Affairs
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Sincerely,

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

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

Docket No. 50-423

Enclosures: 1. Amendment No. 153 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

cc:

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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. 153
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 May 5, 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. 153 , 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: November 14, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 153

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 8-20

B 3/4 8-3

Insert

3/4 8-20

B 3/4 8-3

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c) For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
- 2) By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis.

Air circuit breaker long-time and short-time delay trip elements shall be tested to verify that the circuit breaker operates within the manufacturer's time delay band width for the specified test current. The instantaneous element shall be tested by injecting a current equal to $\pm 20\%$ of the pickup value of the element and verifying that the circuit breaker trips instantaneously with no intentional time delay.

Molded case circuit breakers and unitized starters (a frame size of 250 amps or less) shall be tested for long time delay as described above, and in addition tested for the instantaneous trip by injecting a current value which falls within +40% (of the upper limit) and -25% (of the lower limit) of the manufacturers instantaneous trip current range and verifying the breaker trips instantaneously with no intentional time delay. For those molded case circuit breakers/unitized starters used in 480V ungrounded circuits, if single pole instantaneous test results fall outside these tolerances, additional instantaneous testing shall be conducted to determine the breaker's operability using two poles in series, including A-B, B-C and C-A phase combinations. If test results of all two poles in series combinations fall within the specified tolerances, the breaker is considered OPERABLE.

Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.

- b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

ELECTRICAL POWER SYSTEMS

BASES

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

Containment electrical penetrations and penetration conductors are protected by either deenergizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance.

The Surveillance Requirements applicable to lower voltage circuit breakers provide assurance of breaker reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker. Each manufacturer's molded case and metal case circuit breakers are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers are tested. If a wide variety exists within any manufacturer's brand of circuit breakers, it is necessary to divide that manufacturer's breakers into groups and treat each group as a separate type of breaker for surveillance purposes.

Long-time trip elements are tested by injecting a test current (300% of the pickup) in accordance with the manufacturer's specifications and verifying that the circuit breaker operates within the time delay band width for that current as specified by the manufacturer. Short-time trip elements are tested by injecting a test current (150% of the pickup) in accordance with the manufacturer's specifications and verifying that the circuit breaker operates within the time delay band width for that current as specified by the manufacturer.

The molded case circuit breakers and unitized starters will be tested in accordance with Manufacturer's Instructions.

The OPERABILITY of the motor-operated valves thermal overload protection and integral bypass devices ensures that the thermal overload protection will not prevent safety-related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of the thermal overload protection are in accordance with Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977.

Operating Procedure 3273, "Technical Requirements - Supplementary Technical Specifications," list containment penetration conductor overcurrent protective devices and thermal overload protection bypassed only under accident conditions and thermal overload protection not bypassed under accident conditions. The addition or deletion of any device shall be made in accordance with Section 50.59 of 10CFR50 and approved by the Plant Operation Review Committee.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 153

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 May 5, 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). TS Surveillance 4.8.4.1 requires periodic testing of lower voltage circuit breakers for all containment penetration conductor overcurrent protective devices. The proposed amendment would modify the requirements for determining the operability of lower voltage circuit breakers by using the manufacturer's curve of current versus time to test delay trip elements, clarify the use of two pole in series testing, and expand the Bases description of the testing.

2.0 EVALUATION

2.1 Long-Time and Short-Time Delay Trip Element Testing

In its letter dated May 5, 1997, the licensee proposed a modification to the wording of TS Surveillance 4.8.4.1.a.2. The purpose of the proposed modification is to clarify: (a) that the requirement of the surveillance is to ensure that lower voltage circuit breakers operate within the manufacturer's time delay band width for the specified test currents; and (2) that the test currents specified in the surveillance (i.e., 300% pickup and 150% pickup) are not exact values from which the licensee may not make minor deviations.

Presently, the wording of TS Surveillance 4.8.4.1.a.2 requires: (1) that the licensee test long-time delay trip elements using an injection current equal to 300% of pickup and short-time delay trip elements using an injection current equal to 150% of pickup; and (2) that the licensee verify that the circuit breakers tested operate within the time delay band width for these test currents as specified by the manufacturer. In order to clarify the surveillance requirements, the licensee has proposed: (a) removing from TS Surveillance 4.8.4.1.a.2 the requirement to test long-time delay trip elements using an injection current equal to 300% of pickup and short-time delay trip elements using an injection current equal to 150% of pickup; and (b) adding a statement to the bases to clarify that a nominal injection current value of 300% pickup is used to test long-time delay trip elements and a nominal

injection current value of 150% pickup is used to test short-time delay trip elements. The requirements to test long-time delay and short-time delay trip elements and to verify that the circuit breakers tested operate within the time delay band width specified by the manufacturer are retained in the modified TS Surveillance 4.8.4.1.a.2.

The NRC staff has reviewed the licensee's proposed modification to clarify TS Surveillance 4.8.4.1.a.2 and determined that the proposed modification retains the original intent of the surveillance, which is to ensure that lower voltage circuit breakers operate within the manufacturer's time delay band width. The purpose for specifying the values of injection current as 300% pickup and 150% pickup in TS Surveillance 4.8.4.1.a.2 is that these values are relatively easy to attain and the heat they produce will not significantly affect adjacent poles of the circuit breaker being tested or the test results. Minor deviations from the test currents specified in TS Surveillance 4.8.4.1.a.2 (i.e., 300% pickup and 150% pickup) will not invalidate the purpose of the surveillance test, and these values of injection current are not viewed by the staff as exact values from which the licensee may not make minor deviations. Because the injection current values specified in the surveillance are not exact values, it is appropriate to move these specified test currents to the bases. The staff finds the licensee's proposed modification for TS Surveillance 4.8.4.1.a.2 acceptable because it clarifies the surveillance without changing its intent.

The staff notes that in a conversation with the licensee on October 23, 1997, the licensee agreed that the word "approximately" be removed from the proposed wording in Bases Section 3/4.8.4. The word "approximately" is not needed based on the above discussion of the surveillance testing requirements.

2.2 Two Pole in Series Testing

By letter dated January 20, 1988, the NRC staff approved the use of two pole in series testing to determine molded case circuit breaker (MCCB) operability following a failure of an MCCB to pass a single pole test. Specifically, the staff found the series combination pole tests acceptable because (1) the proposed specification was clarified to indicate that the series combination pole testing is only applicable to the instantaneous elements of MCCB/unitized starters used in 480V circuits; (2) the 480V distribution system is ungrounded; (3) a single line-to-ground connection on the ungrounded system will not produce any fault current; (4) a line-to-line fault occurring on the ungrounded system will produce fault current flowing through at least two poles of the circuit breaker, which is the case for which the circuit breaker has been satisfactorily tested by the series combination pole tests; and (5) procedures exist to ensure that the 480V distribution system will be maintained as an ungrounded system.

TS 4.8.4.1.a.2 currently states that for those MCCB/unitized starters used in 480V circuits, if single pole instantaneous test results fall outside these tolerances, additional instantaneous testing shall be conducted using two poles in series, including A-B, B-C, and C-A phase combinations. All combination test results shall fall within the specified tolerances. In its letter dated May 5, 1997, the licensee proposed to clarify the surveillance

specification by specifically stating that the two pole in series test determines MCCB operability. The licensee stated that failure of a single pole test does not result in the MCCB being declared inoperable, but does require that all combinations of two pole in series tests be performed on that MCCB. Only if the MCCB is determined to be inoperable is the subsequent testing of a representative sample of that type breaker required.

The NRC staff has reviewed the licensee's request and has determined that the proposed change clarifies the existing surveillance requirement in that it defines the necessary steps the licensee must take to determine whether the MCCB is operable or inoperable and whether subsequent testing of an additional representative sample must be conducted. Therefore, the staff finds the change acceptable.

2.3 Bases Change

The NRC staff has reviewed the proposed change to Bases Section 3/4.8.4 and, with the removal of the word "approximately" as previously discussed, has no objection to the wording.

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 30637 dated June 4, 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: November 14, 1997