

May 1, 1995

Mr. John F. Opeka
Executive Vice President, Nuclear
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Northeast Nuclear Energy Company
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SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M91285)

Dear Mr. Opeka:

The Commission has issued the enclosed Amendment No. 110 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated December 23, 1994.

The amendment changes the acceptance criteria for the peak transient generator voltage from 4784 volts to 5000 volts during full load rejection tests of the diesel generator (DG), and also deletes the 10-year surveillance requirement to perform a 110% pressure test of the DG fuel oil system.

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

Vernon L. Rooney, Senior Project Manager
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 110 to NPF-49
2. Safety Evaluation

cc w/encls: See next page

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DATE	04/4/95	04/6/95	04/17/95	04/10/95	04/19/95

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in black ink, appearing to read "V. Rooney", written over a horizontal line.

Vernon L. Rooney, Senior Project Manager
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-423

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2. Safety Evaluation

cc w/encls: See next page

Mr. John F. Opeka
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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. 110
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 December 23, 1994, 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.

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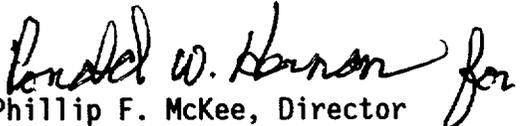
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 110, 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 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Phillip F. McKee, Director
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 1, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 110

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 8-5

3/4 8-8

Insert

3/4 8-5

3/4 8-8

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6, but not less than or equal to 40.1), if gravity was not determined by comparison with the supplier's certification;
 - c) A flash point equal to or greater than 125°F; and
 - d) A clear and bright appearance with proper color when tested in accordance with ASTM-D4176-82.
- 2) By verifying within 30 days of obtaining the sample that the other properties specified in Table 1 of ASTM-D975-81 are met when tested in accordance with ASTM-D975-81 except that the analysis for sulfur may be performed in accordance with ASTM-D1552-79, ASTM-D2622-82 or ASTM-D4294-83.
- f. At least once every 31 days by obtaining a sample of fuel oil in accordance with ASTM-D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM-D2276-78, Method A;
- g. At least once per 18 months, during shutdown, by:
- 1) Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service;
 - 2) Verifying the generator capability to reject a load of greater than or equal to 595 kW while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 3 Hz;
 - 3) Verifying the generator capability to reject a load of 4986 kW without tripping. The generator voltage shall not exceed 5000 volts during and 4784 volts following the load rejection;
 - 4) Simulating a loss-of-offsite power by itself, and:
 - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses, and
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 11 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 0.8 Hz during this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.3 Reports - All diesel generator failures, valid or nonvalid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests (on a per Diesel Generator basis) is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 110

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 December 23, 1994, the Northeast Nuclear Energy Company (the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 3 Technical Specifications (TSs). The requested changes would change the acceptance criteria for the peak transient generator voltage from 4784 volts to 5000 volts during full load rejection tests of the diesel generator (DG), and also delete the 10-year surveillance requirement to perform a 110% pressure test of the DG fuel oil system.

2.0 EVALUATION

Diesel Generator Full Load Rejection Test -

The proposed change to TS surveillance requirement (SR) involves using a power factor (PF) that will envelope the calculated PF during worst case loading conditions. To accommodate this test, the voltage limit for TS SR 4.8.1.1.2.g.3 is being revised. The proposed change to TS surveillance requirement 4.8.1.1.2.g.3 would permit the emergency diesel generator (EDG) full load rejection test to be performed at more realistic plant conditions.

A full load rejection test demonstrates that the EDG has the capability to reject the total connected load without overspeed tripping or exceeding predetermined voltage limits. An EDG full load rejection may occur because of a system fault or inadvertent breaker tripping. TS Surveillance Requirement 4.8.1.1.2.g.3 at Millstone 3 requires verification that the EDG has the capability to reject a load of 4784 kW at unity PF without tripping or exceeding specified voltage limits. The proposed change in SR 4.8.1.1.2.g.3 of Millstone Unit 3 TS would change the acceptable peak transient voltage and PF. This change would permit the EDG full load rejection test to be performed at more realistic plant conditions using a PF that would envelope the calculated PF during worst case loading conditions. Presently, the EDG full load rejection test at the Millstone 3 requires that the test be performed at unity PF and a peak voltage limit of 4784 volts during and following a full load rejection test. The present load rejection test being performed is

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consistent with the current TS at Millstone 3 but is not considered to be a true representation of the EDG's ability to properly respond to an actual full load rejection.

The issue of performing the EDG full load rejection test has been raised in the past in NRC Information Notice (IN) 91-13, "Inadequate Testing of Emergency Diesel Generators (EDGs)." It was determined that Vermont Yankee Generating Station was inadequately testing the EDG by using a unity PF. Specifically, the plant surveillance test required that the EDGs maintain a load of 2500 to 2750 kW which is equivalent to 2500 to 2750 kVA at a PF at unity (equal to 1). The licensee considered this limit sufficient to meet the maximum load of 2471 kW specified in the final safety analysis report (FSAR). However, during subsequent analysis the licensee determined that the worst case EDG loading could actually reach 2751 kW. In addition, the EDG would realistically experience an electrical PF of 0.85, causing the actual generator output current to be significantly higher. Therefore, it was determined that the original surveillance test did not adequately demonstrate the capability of the EDG to carry its worst case accident kW and inductive loading. As a result, the licensee modified its EDG testing requirements to ensure that both engine and generator is appropriately tested. In addition, the Westinghouse Improved TS requires that the full load rejection test for the EDGs be performed at a voltage and power factor that is as close as possible to actual worst case loading.

Therefore, to ensure that the EDGs at Millstone 3 are tested under conditions that are as close as possible to worst case loading conditions, the licensee intends to perform the subject surveillance with a PF between .84 and .86. However, this PF will result in a higher transient voltage during the full load rejection test. Thus, the licensee is proposing to revise the acceptance criterion regarding transient voltage limits. Currently, the voltage limit is 4784 volts during and following a load rejection. The licensee's proposal changes the acceptance criterion to: "The generator voltage shall not exceed 5000 volts during and 4784 volts following the load rejection." The licensee has determined that the peak transient voltage of 5000 volts experienced during the revised testing will be of a very short duration and will not exceed the design limits of the EDGs.

The staff agrees that the proposed change to the load rejection test at Millstone 3 is more representative of worst case loading conditions during an actual full load rejection. Additionally, the changes adequately address the concerns expressed by the staff in NRC IN 91-13 and the revised voltage limits do not exceed the design limits of the EDGs during the load rejection test. Therefore, the staff concludes that the above changes will more accurately demonstrate the capability of the EDGs to perform their safety function and are acceptable.

Emergency Diesel Oil System Pressure Test -

The proposed amendment deletes the surveillance requirement of TS 4.8.1.1.2.i.2 which involves performing a pressure test of portions of the emergency diesel fuel oil system. Alternative testing for the tanks and

pipng would include leak testing at hydrostatic head pressure with the tanks filled to design capacity and would be governed by TS 4.0.5.

The existing Technical Specification 4.8.1.1.2.i.2 requires a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Boiler and Pressure Vessel Code. This pressure test is required to be performed at 110 percent of the system design pressure. This test is consistent with the acceptable method which is presented in NRC Regulatory Guide 1.137, "Fuel-Oil Systems for Standby Diesel Generators." Regulatory Guide 1.137 adopts Section 7.3 of ANSI N195-1976, "Fuel Oil Systems for Standby Diesel Generators" which specifies testing in accordance with Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the ASME Code. Section XI Article IWD-5000 in turn requires testing of components at 1.10 times the system pressure for systems with design temperatures less than 200°F or in the case of atmospheric storage tanks, the hydrostatic head, developed with the tank filled to its design capacity, is considered to be an acceptable test pressure.

The licensee has requested the proposed change due to the diesel fuel oil system's incompatibility with the requirements of the performance of a pressure test at 110 percent of system pressure. The diesel fuel oil tank is vented to atmosphere without an existing ability to isolate and pressurize the tank in order to perform the pressure test. The fulfillment of ASME Code requirements is achieved by the performance of the alternate testing consisting of leak testing with the associated atmospheric tanks filled to design capacity. The alternate test is considered to provide equivalent assurance of the tank and piping integrity in that filling the tank to design capacity and verifying that no loss of inventory occurs is comparable to pressurizing the system and monitoring for any decrease in pressure. The diesel fuel oil system is classified as ASME Code Class 3 in accordance with the guidance of Regulatory Guide 1.26, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants." Technical Specification 4.0.5 requires testing of ASME Code Class 1, 2, and 3 components in accordance with Section XI of the ASME Code. The existing TS 4.8.1.1.2.i.2 is, therefore, seen as redundant to the requirements of TS 4.0.5 in that ASME Section XI testing is required, but the specific testing methodology of TS 4.8.1.1.2.i.2 is not practical for the current design of the diesel fuel oil system.

Upon review of the licensee's submittal, the staff concludes that the alternative testing allowed by Section XI of the ASME Code is an adequate inservice testing methodology and that the performance of the inservice testing is required by TS 4.0.5. Therefore, the deletion of TS 4.8.1.1.2.i.2 is deemed 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 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 (60 FR 8751). 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 Contributors: MD Pratt
VL Rooney

Date: May 1, 1995