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

April 15, 1[illegible]

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M97506)

Dear Mr. Carns:

The Commission has issued the enclosed Amendment No. 137 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated March 4, 1996.

The amendment modifies Surveillance Requirements 4.8.1.1.2.a.6, 4.8.1.1.2.b, and 4.8.1.1.2.g.7 by specifying load bands in loading the diesel generator (DG) in lieu of the present requirement to load the DG greater than or equal to a given value. A footnote is being added to the three surveillance requirements to indicate that a momentary transient outside the load range shall not invalidate the test. The associated Bases sections have been revised to reflect the above changes.

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. 137 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

April 15, 1997

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

Docket No. 50-423

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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. 137
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 4, 1996, 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. 137 , 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: April 15, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 137

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	Insert
3/4 8-4	3/4 8-4
3/4 8-6	3/4 8-6
B 3/4 8-1b	B 3/4 8-1b

SURVEILLANCE REQUIREMENTS (Continued)

b) Simulated loss-of-offsite power by itself, or

c) Simulated loss-of-offsite power in conjunction with an ESF Actuation test signal, or

d) An ESF Actuation test signal by itself.

6) Verifying the generator is synchronized and gradually loaded in accordance with the manufacturer's recommendations between 4800-5000 kW* and operates with a load between 4800-5000 kW* for at least 60 minutes, and

7) Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

b. At least once per 184 days, verify that the diesel generator starts and attains generator voltage and frequency of 4160 ± 420 volts and 60 ± 0.8 Hz within 11 seconds after the start signal. The generator shall be synchronized to the associated emergency bus, loaded between 4800-5000 kW* in accordance with the manufacturer's recommendations, and operate with a load between 4800-5000 kW* for at least 60 minutes. The diesel generator shall be started for this test using one of the signals in Surveillance Requirement 4.8.1.1.2.a.5. This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.5, may also serve to concurrently meet those requirements as well.

c. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day tank;

d. At least once per 31 days by checking for and removing accumulated water from the fuel oil storage tanks;

e. By sampling new fuel oil in accordance with ASTM-D4057 prior to addition to storage tanks and:

1) By verifying in accordance with the tests specified in ASTM-D975-81 prior to addition to the storage tanks that the sample has:

a) An API Gravity of within 0.3 degrees at 60°F, or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate, or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89, or an API gravity of greater than or equal to 27 degrees but less than or equal to 39 degrees;

*The operating band is meant as guidance to avoid routine overloading of the diesel. Momentary transients outside the load range shall not invalidate the test.

SURVEILLANCE REQUIREMENTS (Continued)

5) Verifying that on an ESF Actuation test signal, without loss-of-offsite power, the diesel generator starts from standby conditions on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 0.8 Hz within 11 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test;

6) Simulating a loss-of-offsite power in conjunction with an ESF Actuation test signal, and:

   a) Verifying deenergization of the emergency busses and load shedding from the emergency busses;

   b) Verifying the diesel starts from standby conditions on the auto-start signal, energizes the emergency busses with permanently connected loads within 11 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency 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; and

   c) Verifying that all automatic diesel generator trips, except engine overspeed, lube oil pressure low (2 of 3 logic) and generator differential, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal.

7) Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded between 5400-5500 kW*** and during the remaining 22 hours of this test, the diesel generator shall be loaded between 4800-5000 kW***. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 0.8 Hz within 11 seconds after the start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test.* Within 5 minutes after completing this 24-hour test, perform Specification 4.8.1.1.2.a.5);**

*Diesel generator loadings may include gradual loading as recommended by the manufacturer.

**If Surveillance Requirement 4.8.1.1.2.a.5) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated between 4800-5000 kW for 2 hours or until operating temperature has stabilized.

***The operating band is meant as guidance to avoid routine overloading of the diesel. Momentary transients outside the load range shall not invalidate the test.

3/4.8.1, 3/4.8.2, and 3/4.8.3 A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION

Technical Specification 3.8.1.1.b.1 requires a minimum volume of 278 gallons be contained in each of the diesel generator day tanks. Technical Specification 3.8.1.2.b.1 requires a minimum volume of 278 gallons be contained in the required diesel generator day tank. This capacity ensures that a minimum usable volume of 189 gallons is available to permit operation of each of the diesel generators for approximately 27 minutes with the diesel generators loaded to the 2,000 hour rating of 5335 kW. The shutoff level for the (two) fuel oil transfer pumps is 493 gallons (413 gallons usable volume) which corresponds to approximately 60 minutes of engine operation at the 2,000 hour rating. The first pump has a make-up setpoint of 372 gallons (284 gallons usable volume) which corresponds to approximately 42 minutes of operation at the 2,000 hour rating. The 278 gallon day tank low level value corresponds to the auto make-up setpoint of the second pump and is therefore the lowest value of fuel oil with auto make-up capability. Loss of the two redundant pumps would cause day tank level to drop below the minimum value.

Technical Specification 3.8.1.1.b.2 requires a minimum volume of 32,760 gallons be contained in each of the diesel generator's fuel storage systems. Technical Specification 3.8.1.2.b.2 requires a minimum volume of 32,760 gallons be contained in the required diesel generator's fuel storage system. This capacity ensures that a minimum usable volume (29,180 gallons) is available to permit operation of each of the diesel generators for approximately three days with the diesel generators loaded to the 2,000 hour rating of 5335 kW. The ability to cross-tie the diesel generator fuel oil supply tanks ensures that one diesel generator may operate up to approximately six days. Additional fuel oil can be supplied to the site within twenty-four hours after contacting a fuel oil supplier.

Surveillance Requirements 4.8.1.1.2.a.6 (monthly) and 4.8.1.1.2.b (once per 184 days) and 4.8.1.1.2.g.7 (18 months test)

The Surveillances 4.8.1.1.2.a.6 and 4.8.1.1.2.b verify that the diesel generators are capable of synchronizing with the offsite electrical system and loaded to greater than or equal to continuous rating of the machine. A minimum time of 60 minutes is required to stabilize engine temperatures, while minimizing the time that the diesel generator is connected to the offsite source. Surveillance Requirement 4.8.1.1.2.g.7 requires demonstration once per 18 months that the diesel generator can start and run continuously at full load capability for an interval of not less than 24 hours, $\geq$ 2 hours of which are at a load equivalent to 110% of the continuous duty rating and the remainder of the time at a load equivalent to the continuous duty rating of the diesel generator. The load band is provided to avoid routine overloading of the diesel generator. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain diesel generator operability. The load band specified accounts for instrumentation inaccuracies using plant computer and for the operational control capabilities and human factor characteristics. The note (*, ***) acknowledges that momentary transient outside the load range shall not invalidate the test.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 137

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 4, 1996, 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 would modify Surveillance Requirements (SR) 4.8.1.1.2.a.6, 4.8.1.1.2.b, and 4.8.1.1.2.g.7 by specifying load bands in loading the diesel generator (DG) in lieu of the present requirement to load the DG greater than or equal to a given value. A footnote is being added to the three surveillance requirements to indicate that a momentary transient outside the load range shall not invalidate the test. The associated Bases sections have been revised to reflect the above changes.

2.0 EVALUATION

2.1 Surveillance Requirement 4.8.1.1.2.a.6

This SR currently requires that every month the DG be synchronized and gradually loaded in accordance with the manufacturer's recommendation to greater than or equal to 4986 kW, operating with a load greater than or equal to 4986 kW for at least 60 minutes. The licensee has proposed to replace the current load of "greater than or equal to 4986 kW" with a load range "between 4800-5000 kW." The staff finds that DG testing in the load range of 4800-5000 kW provides adequate assurance of the DG's capability to carry continuous rating load while ensuring that the DGs will not be overloaded. The load range also accounts for the instrument error, operational control capabilities, and human factor characteristics. This is consistent with Regulatory Guide (RG) 1.9, Revision 3, "Selection, Design, and Qualification of Diesel-Generator Units used as Standby (Onsite) Electrical Power Systems at Nuclear Power Plants;" therefore, the staff finds this change acceptable.

2.2 Surveillance Requirement 4.8.1.1.2.b

This SR currently requires that at least once every 184 days, it should be verified that the DG starts and attains generator voltage and frequency of 4160 ± 420 volts and 60 ± 0.8 Hz within 11 seconds after the start signal.

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The generator shall be synchronized to the associated emergency bus, loaded to greater than or equal to 4986 kW, in accordance with the manufacturer's recommendations, and operated with a load greater than or equal to 4986 kW for at least 60 minutes. The licensee has proposed to replace the current load of "greater than or equal to 4986 kW" with a load range "between 4800-5000 kW." As stated above, the staff finds the DG testing in the load range of 4800-5000 kW consistent with the recommendations of RG 1.9, Revision 3, and acceptable.

2.3 Surveillance Requirements 4.8.1.1.2.g.7

This SR currently requires that the DG operate for at least 24 hours. During the first 2 hours of this test, the DG should be loaded to greater than or equal to 5485 kW, and during the remaining 22 hours of this test, the DG should be loaded to greater than or equal to 4986 kW. The licensee has proposed to replace the current load of "greater than or equal to 5485 kW" with a load range "between 5400-5500 kW" for the first 2 hours of this test and replace the current load of "greater than or equal to 4986 kW" with a load range "between 4800-5000 kW" for the remaining 22 hours of this test. The staff finds the above load ranges consistent with the recommendations of RG 1.9, Revision 3, and acceptable.

2.4 Other

The licensee has proposed adding a footnote, which will be applicable to all the SRs. This footnote will allow momentary excursions outside the load ranges specified in the SRs without invalidating the test. The staff finds that the footnote clarifies the specific SR requirements, as will as provides more operational flexibility. In addition, this footnote is consistent with the Improved Standard Technical Specifications and, therefore, is acceptable.

Bases Sections 3/4.8.1, 3/4.8.2, and 3/4.8.3 have also been revised to reflect the above changes to SRs 4.8.1.1.2.a.6, 4.8.1.1.2.b, and 4.8.1.1.2.g.7. This change is administrative in nature and has no impact on plant safety.

2.5 Overall

The staff concluded that use of open-ended language such as "greater than or equal to" has the potential for overloading the DGs because of the instrument inaccuracies and human factor characteristics. Specifying a load range could eliminate this potential and possibly improve DG reliability. The specified load range of 4800-5000 kW for a continuous rating of approximately 5000 kW and 5400-5500 kW for 110 percent of a continuous load rating of approximately 5500 kW provides adequate assurance of the DG's capability to carry continuous and overload rating while ensuring that the DGs will not be overloaded. These load ranges also take into account the instrument error, operational control capabilities, and human factor characteristics. Additionally, the above changes are consistent with RG 1.9, Revision 3, which recommends loading of the DGs between 90-100 percent of the continuous and short-term rating to avoid overloading of the DGs due to instrument inaccuracies. On this basis, the staff finds the proposed changes 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 11496 dated March 12, 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: Om Chopra

Date: April 15, 1997