October 17, 1994

Mr. John F. Opeka
Executive Vice President, Nuclear
Connecticut Yankee Atomic Power Company
Northeast Nuclear Energy Company
Post Office Box 270
Hartford, CT 06141-0270

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M87864)

Dear Mr. Opeka:

Distribution:
Docket File
PUBLIC
PD I-4 Plant
SVarga
CMiller (A)
JStolz
SNorris
OGC
GHill (2)
CGrimes
DShum
ACRS (10)
OPA
OC/LFDCB
LNicholson, RI

The Commission has issued the enclosed Amendment No. 97 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated September 30, 1993, with clarifying information provided by letter dated July 8, 1994.

The amendment revises the Technical Specifications by increasing the minimum volume of fuel oil required to be stored in the emergency diesel generator (EDG) day tank from 205 gallons to 278 gallons, and clarifies the bases for the EDG fuel oil storage tank and day tank minimum fuel oil volume requirements.

A copy of the related Safety Evaluation is also enclosed. The 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-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 97 to NPF-49
2. Safety Evaluation

cc w/encls: See next page

DOCUMENT NAME: G:\ROONEY\M87864.AMD

OFFICE	LA:PDI-4	PM:PDI-4	D:PDI-4	OGC		
NAME	SNorris	VRooney:cn	JStolz			
DATE	09/9/94	09/21/94	09/21/94	09/30/94		

OFFICIAL RECORD COPY

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

October 17, 1994

Mr. John F. Opeka
Executive Vice President, Nuclear
Connecticut Yankee Atomic Power Company
Northeast Nuclear Energy Company
Post Office Box 270
Hartford, CT 06141-0270

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M87864)

Dear Mr. Opeka:

The Commission has issued the enclosed Amendment No. 97 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated September 30, 1993, with clarifying information provided by letter dated July 8, 1994.

The amendment revises the Technical Specifications by increasing the minimum volume of fuel oil required to be stored in the emergency diesel generator (EDG) day tank from 205 gallons to 278 gallons, and clarifies the bases for the EDG fuel oil storage tank and day tank minimum fuel oil volume requirements.

A copy of the related Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Vernon L. Rooney, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 97 to NPF-49
2. Safety Evaluation

cc w/encls: See next page

cc:

Ms. L. M. Cuoco, Senior Nuclear Counsel
Northeast Utilities Service Company
Post Office Box 270
Hartford, Connecticut 06141-0270

J. J. LaPlatney
Haddam Neck Unit Director
Connecticut Yankee Atomic Power Company
362 Injun Hollow Road
East Hampton, Connecticut 06424-3099

Kevin T. A. McCarthy, Director
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, Connecticut 06106-5127

Allan Johanson, Assistant Director
Office of Policy and Management
Policy Development and Planning Division
80 Washington Street
Hartford, Connecticut 06106

S. E. Scace, Vice President
Nuclear Operations Services
Northeast Utilities Service Company
Post Office Box 128
Waterford, Connecticut 06385

Nicholas S. Reynolds
Winston & Strawn
1400 L Street, NW
Washington, DC 20005-3502

R. M. Kacich, Director
Nuclear Planning, Licensing & Budgeting
Northeast Utilities Service Company
Post Office Box 128
Waterford, Connecticut 06385

J. M. Solymossy, Director
Nuclear Quality and Assessment Services
Northeast Utilities Service Company
Post Office Box 128
Waterford, Connecticut 06385

Regional Administrator
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

First Selectmen
Town of Waterford
Hall of Records
200 Boston Post Road
Waterford, Connecticut 06385

P. D. Swetland, Resident Inspector
Millstone Nuclear Power Station
c/o U.S. Nuclear Regulatory Commission
Post Office Box 513
Niantic, Connecticut 06357

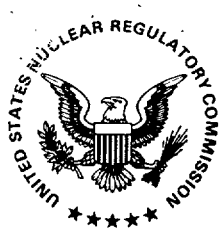
Donald B. Miller, Jr.
Senior Vice President
Millstone Station
Northeast Nuclear Energy Company
Post Office Box 128
Waterford, Connecticut 06385

F. R. Dacimo, Nuclear Unit Director
Millstone Unit No. 3
Northeast Nuclear Energy Company
Post Office Box 128
Waterford, Connecticut 06385

Burlington Electric Department
c/o Robert E. Fletcher, Esq.
271 South Union Street
Burlington, Vermont 05402

M. R. Scully, Executive Director
Connecticut Municipal Electric
Energy Cooperative
30 Stott Avenue
Norwich, Connecticut 06360

David W. Graham
Fuel Supply Planning Manager
Massachusetts Municipal Wholesale
Electric Company
Post Office Box 426
Ludlow, Massachusetts 01056



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. 97
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 September 30, 1993, with clarifying information provided by letter dated July 8, 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.

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. 97 , 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

Ronald W. Hernan for

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: October 17, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 97

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove	Insert
3/4 8-1	3/4 8-1
3/4 8-10	3/4 8-10
----	B 3/4 8-1a

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E Distribution System, and

b. Two separate and independent diesel generators, each with:

1) A separate day tank containing a minimum volume of 278 gallons of fuel,
2) A separate Fuel Storage System containing a minimum volume of 32,760 gallons of fuel,
3) A separate fuel transfer pump,
4) Lubricating oil storage containing a minimum total volume of 280 gallons of lubricating oil, and
5) Capability to transfer lubricating oil from storage to the diesel generator unit.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With one offsite circuit inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If either diesel generator has not been successfully tested within the past 24 hours, demonstrate its OPERABILITY by performing Surveillance Requirement 4.8.1.1.2.a.5 separately for each such diesel generator within 24 hours. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

b. With one diesel generator inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.5 within 24 hours*; restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY.

A. C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A. C. electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the Onsite Class 1E Distribution System, and

b. One diesel generator with:

1) A day tank containing a minimum volume of 278 gallons of fuel,

2) A fuel storage system containing a minimum volume of 32,760 gallons of fuel,

3) A fuel transfer pump,

4) Lubricating oil storage containing a minimum total volume of 280 gallons of lubricating oil, and

5) Capability to transfer lubricating oil from storage to the diesel generator unit.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A. C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 5.4 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENT

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the requirements of Specifications 4.8.1.1.1, 4.8.1.1.2 (except for Specification 4.8.1.1.2a.6), and 4.8.1.1.3.

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

Technical Specifications 3.8.1.1.b.1 and 3.8.1.2.b.1 require a minimum volume of 278 gallons be contained in each of the diesel generator day tanks. 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 Specifications 3.8.1.1.b.2 and 3.8.1.2.b.2 require a minimum volume of 32,760 gallons be contained in each of the diesel generator's fuel storage systems. 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.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 97

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 September 30, 1993, as supplemented July 8, 1994, the Northeast Nuclear Energy Company (the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 3 Technical Specifications (TS). The requested changes would revise the TS by increasing the minimum volume of fuel oil required to be stored in the emergency diesel generator (EDG) day tank from 205 gallons to 278 gallons, and would clarify the bases for the EDG fuel oil storage tank and day tank minimum volume requirements. The July 8, 1994, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

There are two EDGs and their associated fuel oil storage and transfer systems for Millstone 3. The fuel oil storage and transfer systems for each EDG consist of: a 550-gallon day tank which was designed to provide sufficient fuel oil to power the EDG at continuous rated load for approximately 1-1/2 hours; a 35,000 gallon fuel oil storage tank which was designed to store sufficient fuel oil to power the EDG on the basis of the continuous rated load for 3-1/2 days; two ac motor-driven transfer pumps (one pump powered from the associated EDG and the other capable of being powered from either EDG); and associated piping, valves, instrumentation, and controls. The fuel oil storage and transfer systems for the EDGs at Millstone 3, were designed in such a way so that fuel oil can be transferred from either storage tank to either EDG or both EDGs to permit the operation of one EDG at the continuous rated load for a minimum of 7 days without replenishment of fuel. This is accomplished by a cross-tie with two normally locked-closed valves between the two EDG fuel oil supply headers and by having one fuel oil transfer pump on each storage tank capable of being powered from either the division A or division B electrical.

During a review of EDG loading calculations as part of a self-assessment in the form of an in-house electrical distribution system functional inspection at Millstone 3, the licensee identified discrepancies in the EDG fuel oil storage capacity. Subsequently, a re-evaluation (using more conservative input parameters e.g. increased post-accident electrical loads, worst case instrument errors, effect of variations in the fuel oil specific gravity, considerations of vortex formation in the day tank, etc.) was performed to verify the capacity of the EDG fuel oil storage and day tanks. Results of the re-evaluation indicated that the fuel oil storage tank capacity would provide a calculated run time of slightly greater than 3 days. The two tank storage capacity to support 7 day operation of a single EDG was reduced to slightly greater than 6 days. The day tank storage capacity was reduced from 1-1/2 hours to 3/4 of an hour.

Accordingly, by letter dated September 30, 1993, the licensee requested an amendment to Operating License NPF-49. The amendment, which proposed changes to TS Sections 3.8.1.1.b.1 and 3.8.1.2.b.1, and TS Bases Section 3/4.8, will increase the volume of fuel oil required to be stored in the EDG day tank, and clarify the bases for the EDG fuel oil storage tank and day tank minimum fuel oil inventory requirements.

3.0 EVALUATION

3.1 Proposed TS Changes

The licensee proposed to revise TS Sections 3.8.1.1.b.1 and 3.8.1.2.b.1 by increasing the minimum volume of fuel oil required to be stored in the 550-gallon day tank of each EDG from 205 gallons to 278 gallons. Increasing the minimum fuel oil volume required to be stored in an EDG tank will result in extending the EDG run-time from 23 minutes to 27 minutes at the 2,000 hour rating of 5335 kW without makeup to the day tank.

This proposed TS does not conform with the guidance described in ANSI N195-1976, "Fuel Oil System for Standby Diesel Generators," which is endorsed by the Regulatory Guide 1.137 and the Standard Review Plan. ANSI N195-1976, in part, states that: "Each diesel shall be equipped with day or integral tank or tanks whose capacity is sufficient to maintain at least 60 minutes of operation at the level where oil is automatically added to the day or integral tank or tanks. This capacity shall be based on the fuel consumption at a load of 100% of the continuous rating of the diesel plus a minimum margin of 10%."

During a meeting held on June 22, 1994, with the NRC staff, the licensee indicated that the day tank is normally filled to the capacity which would be sufficient to maintain approximately 60 minutes of EDG operation at the 2,000 hour rating (which is approximately 10% higher than the continuous rating). However, during or after an EDG test run per the surveillance requirement, the fuel oil inventory in the day tank may decrease to a level which is below the 1-hour EDG run time capacity and above the proposed TS limit. In order to

ensure that the day tank is normally filled to the capacity which would be sufficient to maintain approximately 60 minutes of EDG operation at the 2,000-hour rating, the licensee agreed to revise operating/surveillance procedures to require that the EDG day tank will be refilled after completing each EDG run.

In the response, dated July 8, 1994, to the staff's request for additional information (RAI), dated April 7, 1994, the licensee re-stated its commitment regarding the refilling of the day tank after each EDG operation.

Based on its review and the above cited licensee's commitment, the staff concludes that the fuel oil inventory in each of the EDG day tanks at Millstone 3, meets the intent of the guidance described in ANSI N195-1976. Therefore, the staff finds the above proposed TS changes acceptable.

3.2 Proposed Changes to TS Bases

The licensee proposed to add the following two paragraphs to TS Bases Section 3/4.8:

a. Technical Specifications 3.8.1.1.b.1 and 3.8.1.2.b.1 require a minimum volume of 278 gallons be contained in each of the diesel generator day tanks. This capacity ensures that 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 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 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.

The above proposed paragraph to be added to TS Bases Section 3/4.8 will clarify the intent of TS Sections 3.8.1.1.b.1 and 3.8.1.2.b.1 to ensure the availability of minimum usable volume of fuel oil to be stored in each of the EDG day tanks for the operation of each of the EDGs for a specific time period.

Based on its review and evaluation of the proposed TS changes described in Section 3.1, the staff finds the above proposed paragraph to be added to TS Bases Section 3/4.8 acceptable.

b. Technical Specifications 3.8.1.1.b.2 and 3.8.1.2.b.2 require a minimum volume of 32,760 gallons be contained in each of the diesel generator's fuel storage systems. 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.

The licensee performed a load shedding analysis which indicates that, with reduction of loads, the above minimum usable volume of 29,180 gallons of fuel oil in each of the fuel oil storage systems will permit a continuous operation of the corresponding EDG for approximately 5 days. With cross-connecting storage tanks, one EDG may be operated continuously for a period of well over 7 days.

During the June 22, 1994 meeting, the licensee agreed to modify the plant Emergency Plan Implementing Procedure (EPIP) to require that the manager of the Technical Support Center, within the first 24 hours following a loss-of-coolant accident (LOCA) or loss-of-offsite power (LOP) event, provide a recommendation to the station with respect to load shedding to conserve EDG fuel oil.

In the response to the staff's RAI, the licensee re-stated its commitment with regard to EDG load shedding. In addition, the licensee indicated that the plant EPIP provides: (a) adequate guidance related to ordering fuel oil within 4 hours of a LOCA or LOP to ensure the replenishment of fuel oil supply in a timely manner (within 24 hours after the order for additional fuel oil has been placed), and (b) procedural guidance for cross-connecting storage tanks and for aligning the standby pump to the opposite train of electrical supply, if necessary.

Considering the above cited licensee's commitments, the staff concludes that the licensee will have adequate and reliable fuel oil inventory in the day tank for 1-hour EDG operation and in the storage tanks for 7 days of continuous EDG operation following a LOCA at Millstone 3. Based on its review, the staff concludes that the EDG fuel oil stored at Millstone 3 meets the intent of the guidance described in ANSI N195-1976. Therefore, the staff finds the above proposed paragraph to be added to TS Bases Section 3/4.8 related to minimum fuel oil stored for Millstone 3, acceptable.

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 a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 (58 FR 59753). 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: D. Shum

Date: October 17, 1994