

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
NEW YORK WATER POWER COMPANY
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September 30, 1993

Docket No. 50-423
B14598

Re: 10CFR50.90

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
Proposed Revision to Technical Specifications
Emergency Diesel Generator Fuel Oil Storage Capacity

Introduction

Pursuant to 10CFR50.90, Northeast Nuclear Energy Corporation (NNECO) hereby proposes to amend Operating License NPF-49 by incorporating the changes identified in the attachments into the Millstone Unit No. 3 Technical Specifications. The proposed changes will increase the volume of fuel oil required to be stored in the emergency diesel generator (EDG) day tank, and clarify the bases for the EDG fuel oil storage tank and day tank minimum fuel oil volume requirements.

The marked-up technical specification pages are provided in Attachment 1, and the retyped technical specification pages are provided in Attachment 2. The proposed changes are described in detail below.

Background

On March 31, 1993,⁽¹⁾ the NRC Staff was informed of a NNECO evaluation which identified several discrepancies with the Millstone Unit No. 3's EDG fuel oil storage systems. NNECO evaluated the discrepancies and concluded that continued plant operation was safe. Following several discussions with the NRC Staff and the Senior Resident Inspector, and after reconsidering an interpretation of the reporting guidance, a 10CFR50.72 report was made to the NRC Staff on June 11, 1993. The corresponding Licensee Event Report (LER) was issued on July 9, 1993.⁽²⁾

- (1) J. F. Opeka letter to the U.S. Nuclear Regulatory Commission, "Emergency Diesel Generator Fuel Oil Storage Capacity," dated March 31, 1993.
- (2) S. E. Scace letter to the U.S. Nuclear Regulatory Commission, "Facility Operating License No. NPF-49, Docket No. 50-423, Licensee Event Report 93-007-00," dated July 9, 1993.

On June 7, 1993,⁽³⁾ the NRC Staff provided a response to the March 31, 1993, submittal. In their response, the NRC Staff requested that NNECO submit an application for license amendment pursuant to 10CFR50.90 to address the subject changes to the design bases of the EDG fuel oil storage and transfer system, provide the details of the implementation of an EDG load shedding contingency plan in accordance with NUREG 1031,⁽⁴⁾ and identify the compensatory action that would be taken pending NRC Staff approval. On June 30, 1993,⁽⁵⁾ NNECO submitted a schedule for providing the requested information, and identified the compensatory actions taken by Millstone Unit No. 3.

To comply with the NRC request of June 7, 1993, and commitments contained within the schedule provided on June 30, 1993, and the LER submitted on July 9, 1993, NNECO is providing this proposed license application for NRC Staff review and approval. This proposed license amendment was to have been submitted by August 31, 1993, but additional time was required to develop the proposed change. This delay has been verbally discussed with the NRC Staff.

Description of Proposed Changes

NNECO proposes to revise the Millstone Unit No. 3 Technical Specifications 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 EDG day tank from 205 gallons to 278 gallons; and to clarify Bases Section 3/4.8 by stating that the minimum volume of fuel oil required to be stored in the EDG fuel oil storage tanks and day tanks by Technical Specifications 3.8.1.1.b.1 and 3.8.1.2.b.1 ensure that minimum usable volumes of fuel are available to permit operation of each of the EDGs for a period of time without replenishment from other sources.

NNECO proposes to revise Millstone Unit No. 3 Technical Specifications 3.8.1.1.b.1 and 3.8.1.2.b.1 by increasing the minimum volume of fuel required to be stored in an EDG day tank from 205 gallons to 278 gallons. Increasing the minimum fuel oil volume required to be stored in an EDG day tank will result in extending the length of time that an EDG may operate without replenishing the EDG day tank. The proposed minimum fuel oil volume requirement for the EDG day tank is based on the EDG day tank capacity at the start level of the second transfer

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- (3) U.S. Nuclear Regulatory Commission letter to J. F. Opeka, "Design Bases for the Millstone Nuclear Power Station, Unit 3, Emergency Diesel Generator (EDG) Fuel Oil Capacity," dated June 7, 1993.
 - (4) NUREG 1031, Supplement 4, "Safety Evaluation Report Related to the Operation of Millstone Nuclear Power Station, Unit No. 3," issued November 1985.
 - (5) J. F. Opeka letter to the U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 3, Emergency Diesel Generator Fuel Oil Storage Capacity," dated June 30, 1993.

pump, and considers level instrumentation errors, the potential for loss of fuel oil volume due to vortex formation, and the EDG day tank unusable volume.

NNECO proposes to revise Bases Section 3/4.8 of the Millstone Unit No. 3 Technical Specifications by clarifying that the minimum volume of fuel oil required to be stored in the EDG fuel oil storage tanks and day tanks ensure that minimum usable volumes are available to permit operation of each of the EDGs for a specific time period with the EDGs loaded to the 2,000 hour rating of 5335 kW. The minimum fuel oil volume requirement for the EDG day tank will support EDG operation for approximately 27 minutes. The minimum fuel oil volume requirement for the EDG storage tanks will support EDG operation for approximately 3 days.

Safety Assessment

The proposed changes to revise Technical Specifications 3.8.1.1.b.1 and 3.8.1.2.b.1 will increase the minimum volume of fuel oil required to be stored in the EDG day tank from 205 gallons to 278 gallons. EDG run-time will be extended from 23 minutes to approximately 27 minutes. ANSI N 195 recommends 60 minutes of EDG operation at the transfer pump start level; therefore, this proposed Technical Specification level differs with the recommendation of ANSI N 195. However, ANSI N 195 assumes that the diesel fuel oil system possess one fuel transfer pump. A system with this configuration would not be single failure proof; therefore, it would be appropriate to use a large margin in the run-time to permit corrective actions to be taken in the event of a transfer pump failure. Millstone Unit No. 3's EDG fuel oil transfer system is equipped with two independent safety related transfer pumps with automatic make-up capability. This design exceeds the recommendations of ANSI N 195. Therefore, the ability to operate an EDG for approximately 27 minutes utilizing the fuel oil stored in the respective EDG day tank is acceptable based on the fact that Millstone Unit No. 3's fuel oil transfer system is not susceptible to the single failure permitted by ANSI N 195.

Level alarms will allow monitoring of the operation of the fuel oil transfer pumps, and they will enable personnel to respond in a timely manner to a reduction in the fuel oil inventory stored in an EDG day tank.

The proposed changes to Bases Section 3/4.8 will clarify that the intent of Technical Specifications 3.8.1.1.b.1, 3.8.1.1.b.2, 3.8.1.2.b.1, and 3.8.1.2.b.2 is to ensure the availability of a minimum usable volume of fuel oil to permit operation of each of the EDGs for a specific time period. If the proposed changes to Technical Specifications 3.8.1.1.b.1 and 3.8.1.2.b.1 (discussed above) are approved, the minimum fuel oil volume required to be stored in each of the EDG day tanks ensures that the corresponding EDG may run for approximately 27 minutes without replenishing the corresponding EDG day tank. The minimum fuel oil volume required to be stored in each of the EDG storage tanks by Technical Specifications 3.8.1.1.b.2 and 3.8.1.2.b.2 ensures that the EDGs could operate for approximately 3 days without replenishing the EDG storage tanks.

Previous statements contained in the Millstone Unit No. 3 Final Safety Analysis Report (FSAR) regarding maximum EDG run-times were based on calculations which

utilized gross tank capacities. These calculations did not consider usable volumes, instrument inaccuracies, or vortexing. Since EDG storage tank usable volumes are less than the gross storage capacity, EDG maximum operating times will be shorter when based on usable volumes. The usable volume of fuel oil available in each of the EDG storage tanks will support operation of a single EDG for approximately 3 days, without replenishment from other sources. Basing EDG operating time upon usable volume still provides a significant margin of time for delivery of fuel oil. The ability of the plant to replenish fuel oil is described in detail in Section 9.5.4.3 of the Millstone Unit No. 3 FSAR. This ability is as follows:

1. Emergency fuel oil suppliers can deliver fuel on site within 24 hours after being contacted. Suppliers are notified within 4 hours after a loss of power or a design basis accident.
2. There are four regular and four emergency fuel oil suppliers located at various locations to assure redundancy in delivery routes. One of the suppliers can supply fuel oil by railway tank car.
3. The tanks are cross-connected to supply a single operating EDG with the fuel oil from both tanks, if necessary.
4. High grid reliability combined with a high probability of restoring offsite power within 24 hours based on historic data, reduces the need for reliance on EDGs for extended periods of time.

In addition, under extreme conditions, there is a possibility to extend EDG operation beyond the calculated 3 day time period through load shedding. Such a plan was analyzed utilizing the 1985 electrical loads. The original analysis (included in the FSAR) concluded that operation of an EDG could be extended significantly (from 3.5 days to 5.5-6 days).

Guidance has been incorporated into Emergency Plan Implement Procedure (EPIP) 4400, "Notifications and Communications," to initiate a load shedding evaluation in a timely manner, if a determination is made that fuel oil cannot be delivered to the site as required. The specific loads to be shed will be determined by the Emergency Response Organization. This approach is taken because of the dynamics involved in accident scenarios. Formal load shedding guidance for every postulated scenario is not considered practical. It is estimated that with the higher loads, load shedding could extend operation of a single EDG significantly beyond 3 days. The exact length of time that EDG operation may be extended is not presently available. In the submittal made on June 30, 1993, and the Licensee Event Report submitted on July 9, 1993, NNECO committed to re-evaluate the load shed calculation to demonstrate the ability to extend EDG run-time. The re-evaluation is being performed for demonstration purposes only, and is targeted for completion by December 31, 1993. Originally, NNECO committed to have this re-evaluation completed by October 31, 1993. However, additional time will be required to complete the re-evaluation, due to the support required to resolve unanticipated issues discovered during the current refueling outage.

Based on the discussion above, these proposed changes do not affect public health and safety.

Significant Hazards Consideration

In accordance with 10CFR50.92, NNECO has reviewed the attached proposed changes and has concluded that they do not involve a significant hazards consideration. The basis for this conclusion is that the three criteria of 10CFR50.92(c) are not compromised. The proposed changes do not involve a significant hazards consideration because the changes would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes to revise Technical Specifications 3.8.1.1.b.1 and 3.8.1.2.b.1 by increasing the minimum fuel oil volume stored in the EDG day tank will extend the length of time that the corresponding EDG may run, without replenishing the fuel oil. The EDG run-time will be extended from 23 minutes to approximately 27 minutes. The EDG run-time calculation considered usable volume, vortexing, and instrument accuracy. The proposed changes have no effect on EDG operation and reliability; therefore, there is no effect on the probability or consequences of an accident previously evaluated.

The proposed changes to revise Bases Section 3/4.8 will clarify that the intent of Technical Specifications 3.8.1.1.b.1, 3.8.1.1.b.2, 3.8.1.2.b.1, and 3.8.1.2.b.2 is to ensure the availability of a minimum usable volume of fuel oil to permit operation of each of the EDGs for a specific time period. These changes denote that EDG operating times are reduced when usable volume, instrument inaccuracies, and vortexing are considered. The shorter EDG operating time has no effect on the probability or consequences of an accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The EDGs are required to operate in response to a loss of offsite power. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety.

The proposed changes to revise Technical Specifications 3.8.1.1.b.1 and 3.8.1.2.b.1 will increase the minimum volume of fuel oil required to be stored in the EDG day tank from 205 gallons to 278 gallons. When usable volume is considered, the EDG run-time will be extended from 23 minutes to approximately 27 minutes. Thus, these proposed changes do not involve a significant reduction in a margin of safety.

The proposed changes to Bases Section 3/4.8 will clarify that the intent of Technical Specifications 3.8.1.1.b.1, 3.8.1.1.b.2, 3.8.1.2.b.1, and 3.8.1.2.b.2 is to ensure the availability of a minimum usable volume of fuel oil to permit operation of each of the EDGs for a specific time period. With the proposed changes to Technical Specifications 3.8.1.1.b.1 and 3.8.1.2.b.1 (discussed above), the minimum fuel oil volume required to be stored in each of the EDG day tanks ensures that the corresponding EDG may run for approximately 27 minutes without replenishing the corresponding EDG day tank. The minimum fuel oil volume required to be stored in each of the EDG storage tanks by Technical Specifications 3.8.1.1.b.2 and 3.8.1.2.b.2 ensures that the EDGs could operate for approximately 3 days without replenishing the EDG storage tanks.

Previous statements contained in the Millstone Unit No. 3 Final Safety Analysis Report (FSAR) regarding maximum EDG run-times were based on calculations which utilized gross tank capacities. The calculations did not consider usable volumes, instrument inaccuracies or vortexing. Since EDG storage tank usable volumes are less than the gross storage capacity, EDG maximum operating times will be shorter when based on usable volumes. The usable volume of fuel oil available in each of the EDG storage tanks will support operation of a single EDG for approximately 3 days, without replenishment from other sources. Basing EDG operating time upon usable volume still provides a significant margin of time for delivery of fuel oil. The ability of the plant to replenish fuel oil is described in detail in Section 9.5.4.3 of the Millstone Unit No. 3 FSAR.

Guidance has been incorporated into EPIP 4400 to initiate a load shedding evaluation in a timely manner, if a determination is made that fuel oil cannot be delivered to the site as required. The specific loads to be shed will be determined by the Emergency Response Organization. This approach is taken because of the dynamics involved in accident scenarios. Formal load shedding guidance for every postulated scenario is not considered practical. It is estimated that with the higher loads, load shedding could extend operation of a single EDG significantly beyond 3 days.

Based on the above discussion, the proposed changes to Bases Section 3/4.8 do not involve a significant reduction in a margin of safety.

Moreover, the Commission has provided guidance concerning the application of standards in 10CFR50.92 by providing certain examples (51FR7751, March 6, 1986) of amendments that are considered not likely to involve a significant hazards consideration. The changes proposed by this application for license amendment are not enveloped by any of the specific examples. The proposed changes to revise Technical Specifications 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 EDG day tank from 205 gallons to 278 gallons will be a more stringent requirement than that currently included in the Technical Specifications. The changes to Bases Section 3/4.8 clarify that the intent of Technical Specifications 3.8.1.1.b.1, 3.8.1.1.b.2, 3.8.1.2.b.1, and 3.8.1.2.b.2 is to ensure the availability of a minimum usable

U.S. Nuclear Regulatory Commission
B14598/Page 7
September 30, 1993

volume of fuel oil to permit operation of each of the EDGs for a specific time period. The changes to Bases Section 3/4.8 do not involve any physical modifications to the unit.

Environmental Consideration

NNECO has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, do not increase the types and amounts of effluents that may be released offsite, and do not significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, NNECO concludes that the proposed changes meet the criteria delineated in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an environmental impact statement.

The Millstone Unit No. 3 Nuclear Review Board has reviewed and approved this proposed license amendment and concurs with the above determination.

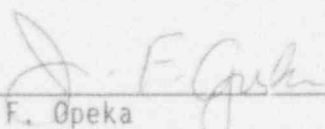
In accordance with 10CFR50.91(b), we are providing the State of Connecticut with a copy of this proposed amendment.

Regarding our proposed schedule for this amendment, we request issuance at your earliest convenience, with the amendment effective as of the date of issuance, to be implemented within 30 days of issuance.

Should the NRC Staff require any additional information to process this request, NNECO remains available to promptly provide such information.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



J. F. Opeka
Executive Vice President

cc: T. T. Martin, Region I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
D. H. Jaffe, NRC Project Manager, Millstone Station
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2,
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cc: Continued on Page 8

U.S. Nuclear Regulatory Commission
B14598/Page 8
September 30, 1993

cc: Mr. Kevin T.A. McCarthy, Director
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Subscribed and sworn to before me

this 30th day of September, 1993

Lorraine J. D'Amico
Notary Public

Date Commission Expires: 3/31/98