Northeast
Utilities System

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(203) 665-5000

September 30, 1994

Docket No. 50-423
B14987

Re: 10CFR50.90

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

Millstone Nuclear Power Station, Unit No. 3
Proposed Revision to Technical Specifications
Core Alteration Definition and Refueling Operations

Introduction

Pursuant to 10CFR50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend Operating License No. NPF-49, by incorporating the changes identified in Attachments 1 and 2 into the Technical Specifications of Millstone Unit No. 3.

Description of the Proposed Changes

The proposed changes to the Millstone Unit No. 3 Technical Specifications consist of a revision to the definition of CORE ALTERATIONS, a deletion of a surveillance requirement for the source range monitors, an addition of a surveillance requirement for the source range monitors, and a revision to the Action Statements of Limiting Conditions for Operations (LCOs) 3.9.2, 3.9.8.1 and 3.9.8.2. To support these changes, NNECO proposes to replace the existing Bases Section 3/4.9.8 with expanded Bases Sections 3/4.9.8.1 and 3/4.9.8.2. The proposed changes are described below.

1. Section 1.0, Definitions, 1.9, CORE ALTERATIONS

   The existing definition for CORE ALTERATIONS is being revised to clearly define which evolutions are core alterations. This definition is consistent with the improved standard technical specifications (STS) for Westinghouse Plants (NUREG-1431). The new definition will read as follows:

   "CORE ALTERATIONS shall be the movement of any fuel, sources, reactivity control components, or other components

affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position."

2. Section 3/4.9.2, Refueling Operations, Instrumentation

The words, "As a minimum" have been deleted from the LCO because the LCO states minimum acceptable requirements. This is a premise which does not have to be repeated. In addition, the word "each" has been deleted, because it is superfluous. An audible indication check to the source range monitors has been added to Surveillance Requirement 4.9.2.a. Surveillance Requirement 4.9.2.b, which requires an analog channel operational test be performed within eight hours prior to the initial start of core alterations, is being deleted because the applicability of this LCO is MODE 6, the analog channel operational test will have to be performed prior to entering MODE 6. An additional performance of this surveillance prior to initial start of core alterations does not add to the verification that the monitor is operable. Because Surveillance Requirement 4.9.2.b is deleted, Surveillance Requirement 4.9.2.c is renumbered to 4.9.2.b.

3. Sections 3/4.9.8.1 and 3/4.9.8.2, Residual Heat Removal and Coolant Circulation, High Water Level and Low Water Level

The wording of the Action Statement for LCO 3.9.8.1 has been revised by deleting the phrase "an increase in the reactor decay heat load" and by adding the phrase "and suspend loading irradiated fuel assemblies in the core." This change is consistent with NUREG-1431. Suspending any operations that would increase decay heat load, such as loading a fuel assembly is a prudent action under this condition. The footnotes on pages 3/4 9-8 and 3/4 9-9 are being revised to delete the reference to "CORE ALTERATIONS in the vicinity of the reactor vessel hot legs." This change is required due to the change in the definition of a core alteration. The intent is to maintain the same operational flexibility as before to secure the residual heat removal (RHR) system when working near the hot legs. The proposed change to the footnotes is consistent with NUREG-1431. To support these changes, NNECO proposes to replace the existing Bases Section 3/4 9.8 with an expanded Bases Section 3/4.9.8.1 and 3/4.9.8.2 that would be more informative. The guidance of NUREG-1431 was utilized to develop the proposed rewrite of Bases Section 3/4.9.8. The

pages of Bases Section 3/4 9.8 have been renumbered to reflect the above changes.

Index page XV has been revised to reflect the above changes.

Attachments 1 and 2 contain the marked up and retyped pages of the Millstone Unit No. 3 Technical Specifications. It is noted that these pages reflect the currently issued version of the Technical Specification. They do not include changes previously proposed in the submittal dated May 18, 1994.[1] Therefore, NNECO suggests that the NRC Staff check with NNECO for continuity with the Millstone Unit No. 3 Technical Specifications prior to issuance.

Safety Assessment

The proposed changes to Sections 3/4.9.2, 3/4.9.8.1, and 3/4.9.8.2 and the definition for a core alteration do not pose a condition adverse to safety, and do not create any adverse safety consequences created by the proposed changes. The rationale for this conclusion is provided below:

Movement of a fuel assembly in the reactor vessel would still be considered a core alteration under the new definition of "CORE ALTERATIONS." Because this action will be performed under the supervision of a senior reactor operator (SRO), it would not be impacted by the proposed change in the definition of a core alteration. Therefore, there is no effect on the probability of a fuel handling accident.

The deletion of the requirement to perform the analog channel operational test of the source range monitors within eight hours prior to core alterations will not impact performance, since these monitors will have had to be checked prior to entry into MODE 6 and once per 7 days thereafter.

The proposed changes to the footnotes on pages 3/4 9-8 and 3/4 9-9 are required due to the change in the definition of a core alteration. The intent is to maintain the same operational flexibility as before to secure the RHR system when working near the hot legs. Since some of the work will no longer be considered a core alteration, the note allowing a RHR loop to be secured must delete the reference to a core alteration.

---

(1) J. F. Opeka letter to the U.S. Nuclear Regulatory Commission, "Proposed Revision to Technical Specifications, Fuel Building Exhaust Filter System," dated May 18, 1994.

Utilizing a camera to map the core is an example of a process that previously would have been considered a core alteration. The proposed footnote would permit the RHR hot leg to be secured, so that this process could be performed. In addition, this new revised footnotes are consistent with NUREG-1431.

The revised Action Statements of LCOs 3.9.8.1 and 3.9.8.2 have no impact on any accidents previously analyzed. The proposed action statements are consistent with NUREG-1431.

The addition of an audible indication check to the source range monitors has no impact on the plant procedure which performs the channel check. This change will clarify that an audible check is to be done. In summary, the proposed changes are safe and acceptable.

Significant Hazards Consideration

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

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

   Boron Dilution in Mode 6 — A boron dilution in Mode 6 is precluded by technical specification requirements to close and lock all dilution source valves. There is a provision for dilution valves to be opened under administrative controls; in this case, cautionary measures will be taken to control and monitor the reactivity addition. Deletion of the source range analog operational test prior to core alterations will not impact an accident previously evaluated since the source range monitors are verified operable prior to entry into Mode 6 and every 7 days thereafter. The change in definition for a core alteration means that components which do not effect reactivity may be moved within the reactor vessel without any additional condition such as direct supervision of an SRO.

   Since a boron dilution would not be initiated by movement of nonfuel components within the reactor vessel, it is not impacted by the change in definition of a core alteration.

Inadvertent Loading of a Fuel Assembly — Movement of a fuel assembly would be performed as a core alteration under the supervision of an SRO, therefore, it would not be impacted by the change to the definition of a core alteration. The change to the source range monitors also will not affect the probability of occurrence of a misloaded fuel assembly since this accident is precluded by administrative controls, as well as the source range monitors. Also, there will be no degradation in the reliability or accuracy of the source range monitors due to this change. The deletion of the requirement to perform the analog channel operational test within eight hours prior to core alterations will not impact performance of the monitors, since they have to be checked prior to entry into Mode 6 and every 7 days thereafter.

Fuel Handling Accident — Movement of fuel will not affect this accident, because it will still be considered a core alteration. Therefore, there is no effect on the probability of a fuel handling accident. The source range monitors are not involved in the occurrence of a fuel handling accident. The fuel handling accident is the only accident considered here with radiological consequences. It will not be impacted by the proposed changes.

Loss of RHR in Mode 6 — The probability of this accident will not be changed since the new requirement is the same as before. As before, RHR may be secured for up to one hour per eight-hour period and boron dilution operations may not be performed with RHR secured (although this requirement is being added to the notes, the requirement is also given elsewhere in the technical specifications). Additionally, the existing reactor coolant system (RCS) temperature limits must still be met.

Based on the above, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

All required systems will continue to operate as before. Therefore, there is no possibility of a new or different kind of accident. The deletion of the source range analog channel operational test within eight hours prior to core alterations will not affect the performance of the monitors since they will have had this test completed prior to entry into Mode 6 and every 7 days thereafter. The change in

definition of a core alteration cannot create the possibility of a new type of accident because those initiating events for accidents will remain classified as core alterations.

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

   The margin of safety for the above listed accidents will remain as before.

   a. Boron Dilution in Mode 6 — This accident calculates the time from receipt of a shutdown margin monitor dilution alarm until the core reaches criticality. Since this time is not changed, there is no reduction in the margin of safety. In this case, the dilution is precluded by administrative controls which will not be impacted by the proposed changes.

   b. Inadvertent Loading of a Fuel Assembly — Technical Specification 3.9.1.1 protects against this accident by requiring sufficient boron in the RCS to prevent criticality for any core configuration including two stuck RCCAs in the fully withdrawn position. Since this requirement will not change, the margin of safety will not change.

   c. Fuel Handling Accident — The margin of safety for the radiological limits is not changed.

   d. Loss of RHR — Changes are editorial due to the revised definition of a core alteration. There is no change to the 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 an SHC. The changes proposed herein are not enveloped by any of the specific examples. However, as discussed above, the proposed changes do not involve an SHC.

Environmental Considerations

NNECO has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not increase the type and amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation

exposure. 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.

Nuclear Review Board

The Millstone Unit No. 3 Nuclear Review Board has reviewed and concurred with the above determination.

Notification of the State of Connecticut

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

Schedule for NRC Approval and Issuance

Currently, the next refueling outage is scheduled to begin in April 1995. NNECO requests that this proposed license amendment be reviewed and approved prior to the start of this refueling outage for Millstone Unit No. 3.

Should you have any questions regarding this submittal, please contact Mr. R. G. Joshi at (203) 440-2080.

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
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

Mr. Kevin T.A. McCarthy, Director
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
P.O. Box 5066
Hartford, CT 06102-5066

Subscribed and sworn to before me

this 30 day of September, 1994

Eleanor C. Lambert

Date Commission Expires: January 31, 1998