Northeast
Nuclear Energy

Rope Ferry Rd. (Route 156), Waterford, CT 06385

Millstone Nuclear Power Station
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385-0128
(203) 447-1791
Fax (203) 444-4277

The Northeast Utilities System

March 27, 1997
Docket No. 50-336
B16342

Re: 10CFR50.90

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

Millstone Nuclear Power Station, Unit No. 2
Proposed Revision to Technical Specifications
Ultimate Heat Sink

Introduction

Pursuant to 10CFR50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed changes into the Technical Specifications of Millstone Unit No. 2. The proposed changes modify the LCO, surveillance requirements and bases of Technical Specification 3.7.11, "Ultimate Heat Sink" by removing the reference to a specific monitoring location and the use of an average value for water temperature. The ultimate heat sink temperature limit of 75 °F is not being changed.

Background

Millstone Unit No. 2 is required to have a system capable of transferring heat from structures, systems, and components important to safety to an ultimate heat sink under normal and accident conditions. The Service Water System (SWS) satisfies this requirement by using the water of Long Island Sound as the heat sink.

The SWS is designed to provide sufficient cooling water for all modes of operation at a maximum ultimate heat sink temperature of 75 °F. Operation within this temperature limit is required by Technical Specification 3.7.11, "Ultimate Heat Sink."

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In Licensee Event Report (LER) 50-336/96-037-00,[1] Millstone Unit No. 2 (MP2) reported that "surveillance procedure (SP) 2619A, "Control Room Shift Checks," did not adequately reflect the requirements of Technical Specification Surveillance Requirement 4.7.11 for determining ultimate heat sink temperature in Modes 1, 2, 3, or 4." In the LER, NNECO made the following commitment. "As a result of this event, a Technical Specification revision will be initiated to remove the requirement to take the average temperature of the ultimate heat sink at the Unit 2 intake structure. Included in this is a revision of the Technical Specification Bases to identify instrumentation to be used to perform the Technical Specification surveillance. This revision will be submitted to the NRC by March 31, 1997."

This submittal provides the license amendment request which, if granted by the NRC, will resolve the condition reported in LER 50-336/96-037-00.

Attachment 1 provides a discussion of the proposed changes. Attachment 2 provides the Significant Hazards Consideration. Attachment 3 provides the marked-up version of the appropriate pages of the current Technical Specifications. Attachment 4 provides the retyped pages of the Technical Specifications.

Environmental Considerations

NNECO has reviewed the proposed license amendment request against the criteria of 10CFR51.22 for environmental considerations. The proposed changes remove the reference to a monitoring location where the ultimate heat sink temperature is measured during normal plant operation and eliminate the use of an average ultimate heat sink temperature. These changes do not increase the type and amounts of effluents that may be released off site. In addition, this amendment request will not significantly increase individual or cumulative occupational radiation exposures. Therefore, NNECO has determined the proposed changes will not have a significant effect on the quality of the human environment.

Conclusions

The proposed changes were evaluated utilizing the criteria of 10CFR50.59 and were determined **not** to involve an unreviewed safety question. Additionally, we have concluded that the proposed changes **are safe**.

The proposed changes **do not** involve a significant impact on public health and safety (see the Safety Assessment provided in Attachment 1) and **do not** involve a Significant Hazards Consideration pursuant to the provisions of 10CFR50.92 (see the Significant Hazards Consideration provided in Attachment 2).

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[1] J. A. Price letter to U.S. Nuclear Regulatory Commission, Licensee Event Report 50-336/96-037-00, dated December 31, 1996.

Plant Operations Review Committee and Nuclear Safety Assessment Board

The Plant Operations Review Committee and Nuclear Safety Assessment Board have reviewed and concurred with the determinations.

Schedule

We request issuance at your earliest convenience, with the amendment to be implemented within 30 days of issuance.

State Notification

In accordance with 10CFR50.91(b), a copy of this license amendment request is being provided to the State of Connecticut.

If you should have any questions on the above, please contact Mr. Ravi Joshi at (860) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

M. L. Bowling
Millstone Unit No. 2 Recovery Officer

Subscribed and sworn to before me

this 27TH day of MARCH, 1997

Date Commission Expires: BRIAN F. THUMM NOTARY PUBLIC Commission Expires November 30, 2001

Attachments (4)

cc: H. J. Miller , Region I Administrator
D. G. McDonald, Jr., NRC Project Manager, Millstone Unit No. 2
D. P. Beaulieu, Senior Resident Inspector, Millstone Unit No. 2
Dr. W. D. Travers, Director, Special Projects
W. D. Lanning, Director, Millstone Assessment Team
Mr. Kevin T. A. McCarthy, Director, Monitoring and Radiation Division,
Department of Environmental Protection

Docket No. 50-336
B16342

Attachment 1

Millstone Nuclear Power Station, Unit No. 2
Proposed Revision to Technical Specifications
Ultimate Heat Sink
Discussion of Proposed Changes

March 1997

Proposed Revision to Technical Specifications
Ultimate Heat Sink
Discussion of Proposed Changes

Introduction

Northeast Nuclear Energy Company (NNECO) is proposing to change Technical Specification 3.7.11, "Ultimate Heat Sink" to eliminate the compliance issues identified in Licensee Event Report (LER) 50-336/96-037-00. The proposed changes modify the LCO, surveillance requirements and bases of Technical Specification 3.7.11, "Ultimate Heat Sink by removing the reference to a specific monitoring location and the use of an average value for water temperature. In place of an average water temperature, the surveillance procedure will use the highest indicated temperature. A discussion of the various locations that will be used to monitor ultimate heat sink temperature has been added to the Bases of the Technical Specification. Thus, any future changes to the information related to ultimate heat sink temperature monitoring locations will be controlled under 10CFR50.59.

The proposed changes remove the reference to a monitoring location where the temperature of the ultimate heat sink is measured and eliminate the use of an average value for ultimate heat sink temperature. They do not change the ultimate heat sink temperature limit of 75 °F. The proposed changes have no impact on the probability or consequences of previously evaluated accidents, do not create the possibility of a new or different kind of accident from any accident previously evaluated, and do not affect the offsite doses associated with previously evaluated accidents. There is no reduction in the margin of safety for the design basis accident analysis. Thus, the license amendment request does not involve an unreviewed safety question.

Background

On December 2, 1996, it was identified that the surveillance performed to determine the ultimate heat sink temperature in Modes 1, 2, 3, and 4 did not adequately reflect the requirements of Technical Specification Surveillance Requirement 4.7.11. Specifically, an average temperature was not being used, and the temperature was not monitored at the Millstone Unit No. 2 intake structure as specified in Technical Specification 3.7.11. The one temperature instrument located at the Millstone Unit No. 2 intake structure does not provide an average water temperature. The other instruments currently being used to monitor UHS temperature, the Circulating Water System (CWS) waterbox inlet temperature instruments and the local Service Water System (SWS) header temperature instruments, are not located at the Millstone Unit No. 2 intake structure.

Although compliance to the Technical Specification Surveillance Requirement was not met in this event, the basis for the Technical Specification requirement was met by

ensuring that the service water inlet temperature did not exceed the design limit of 75°F.

Design Basis and Licensing Basis

Millstone Unit No. 2 is required to have a system capable of transferring heat from structures, systems, and components important to safety to an ultimate heat sink under normal and accident conditions. The ultimate heat sink consists of the Long Island Sound and provides the cooling water necessary to ensure that heat removal capacity exists for normal cooldown and for the mitigation of design basis accidents. The SWS takes its suction from the ultimate heat sink at the intake structure and provides cooling water for several safety related systems, including the Reactor Building Closed Cooling Water (RBCCW) System and the diesel generators. The maximum ultimate heat sink temperature limit in Technical Specification 3.7.11 is based upon the design analysis for the SWS during accident conditions which assumes a maximum of 75°F.

Technical Specification 3.7.11 was added by Amendment 145 (issued June 12, 1990) and requires that the ultimate heat sink be operable with an average temperature of less than or equal to 75 °F at the Millstone Unit No. 2 intake structure. This change reflected the assumption made for the ultimate heat sink in the design basis analysis for maximum SWS temperature.

Description of Proposed Changes

This submittal provides the license amendment request which, if granted by the NRC, will resolve the condition reported in LER 50-336/96-037-00. NNECO proposes to modify the Millstone Unit No. 2 Technical Specifications by:

1. Modifying LCO 3.7.11 by replacing the phrase "an average water temperature" with the phrase "a water temperature" and removing the phrase "at the Unit 2 intake structure." The currently installed plant instrumentation and monitoring locations are fully capable of providing the information necessary for operators to ensure that the UHS temperature is maintained within design basis limits. Thus, no modifications to the current plant design is necessary. The proposed corrective action appropriately revises the wording of the LCO to achieve the intended goal. A discussion of the appropriate indications to use, based on the value of the ultimate heat sink temperature, has been added to the Bases section.

2. Modifying SR 4.7.11.a by eliminating the word "average" and eliminating the phrase "at the Unit 2 intake structure." The modified SR reads: "The ultimate heat sink shall be determined OPERABLE: At least once per 24 hours by verifying the water temperature to be within limits."

3. Modifying SR 4.7.11.b by eliminating the word "average" and eliminating the phrase "at the Unit 2 intake structure." The modified SR reads: "The ultimate heat sink shall be determined OPERABLE: At least once per 6 hours by verifying the water temperature to be within limits when the water temperature exceeds 70°F."

4. Revising Technical Specification 3.7.11 Bases by adding a discussion of the appropriate indications to use, based on the value of the ultimate heat sink temperature.

   There are various locations where the ultimate heat sink temperature can be measured. Control room indications, from the plant process computer, include the Millstone Unit No. 2 intake structure and the CWS water box inlets. Local indications include the inlets to the vital AC switchgear room cooling coils and the inlets to the RBCCW heat exchangers. Only one of these indications is at the Millstone Unit No. 2 intake structure. The other indications, CWS water box inlets, inlets to the vital AC switchgear room cooling coils, and inlets to the RBCCW heat exchangers are located in buildings exterior to the intake structure. The temperature readings obtained at these remote locations will adequately reflect the temperature of the UHS. No significant cooling of the water from the intake structure is expected before it reaches these remote locations, especially since the potential to exceed the UHS temperature limit is only expected during the warm summer months when ambient air temperature will be high. Also, the fluid may be at a slightly higher temperature by the time these remote locations are reached, due to the work done on the fluid by the CWS and SWS pumps.

   Control room indications are normally used to ensure compliance with Technical Specification 3.7.11. Control room indications are acceptable because of the close correlation between control room indications and local SWS header indications (historically within approximately 2 °F). When the highest reading valid control room indication indicates the temperature of the UHS is > 70 °F, local SWS header indication must be used because the instruments are more accurate.

Safety Assessment

The proposed changes modify the LCO, Surveillance Requirements and Bases of Technical Specification 3.7.11, "Ultimate Heat Sink by removing the reference to a specific monitoring location. The use of an average value for water temperature has also been removed. The location for monitoring ultimate heat sink temperature has been relocated to the Bases of the Technical Specification. Thus, any future changes to the information related to ultimate heat sink temperature monitoring locations will be controlled under 10CFR50.59.

The ultimate heat sink consists of the Long Island Sound and provides the cooling water necessary to ensure that heat removal capacity exists for normal cooldown and for the mitigation of design basis accidents. The SWS takes its suction from the ultimate heat sink at the intake structure and provides cooling water for several safety related systems, including the RBCCW System and the diesel generators. The maximum ultimate heat sink temperature limit in Technical Specification 3.7.11 is based upon the design analysis for the SWS during accident conditions which assumes a maximum of 75°F. Since this limit has not changed, there is no effect on any design basis accident analysis.

The proposed locations for monitoring ultimate heat sink temperature, that have been added to the Bases section, will ensure the plant is operated within its design basis. The proposed instruments provide an accurate representation of the ultimate heat sink temperature. They will provide the operators with the information needed to ensure the plant is operated within its design bases.

This license amendment request does not change the ultimate heat sink temperature limit of 75 °F. Therefore, the proposed changes have no effect on any of the design basis accidents previously evaluated. Thus, there is no significant impact on public health and safety.

Docket No. 50-336
B16342

Attachment 2

Millstone Nuclear Power Station, Unit No. 2
Proposed Revision to Technical Specifications
Ultimate Heat Sink
Significant Hazards Consideration

March 1997

Proposed Revision to Technical Specifications
Ultimate Heat Sink
Significant Hazards Consideration

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 consequence of an accident previously evaluated.

   The proposed changes remove the reference to a monitoring location where the temperature of the ultimate heat sink is measured and eliminate the use of an average ultimate heat sink temperature. The instruments used provide information to the operators which will permit them to ensure that the plant is operated within the design basis of the plant. The subject instruments will provide an accurate representation of the ultimate heat sink temperature. This role is passive; thus, these instruments cannot initiate or mitigate any accident.

   The locations used to monitor the ultimate heat sink temperature will be maintained in the Bases. This is a licensee controlled document which is maintained under the requirements of 10CFR50.59. The details being removed from the Technical Specifications are not assumed to be an initiator of any analyzed event. Since any changes to the relocated details will be evaluated per 10CFR50.59, any possible increase in the probability or consequences of an accident previously evaluated will be addressed.

   The proposed changes do not revise the ultimate heat sink temperature limit of 75 °F. The current analysis is based on the ultimate heat sink temperature limit of 75 °F. Therefore, there is no effect on the consequences of any accident previously evaluated.

   Thus, the license amendment request does not impact the probability of an accident previously evaluated nor does it involve a significant increase in the consequence of an accident previously evaluated.

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

   The proposed changes remove the reference to a monitoring location where the temperature of the ultimate heat sink is measured and eliminate the use of an

average ultimate heat sink temperature. The instruments used provide information to the operators which will permit them to ensure that the plant is operated within the design basis of the plant. The subject instruments will provide an accurate representation of the ultimate heat sink temperature. This role is passive; thus, these instruments cannot initiate or mitigate any accident.

The proposed changes will not alter the plant configuration (no new or different type of equipment will be installed) or require any new or unusual operator actions. They do not alter the way any structure, system, or component functions and do not alter the manner in which the plant is operated. The proposed changes do not introduce any new failure modes. They will not alter assumptions made in the safety analysis and licensing basis.

The locations used to monitor the ultimate heat sink temperature will be maintained in the Bases. This is a licensee controlled document which is maintained under the requirements of 10CFR50.59. Thus, adequate control of information will be ensured.

Therefore, the changes will 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 remove the reference to a monitoring location where the temperature of the ultimate heat sink is measured and eliminate the use of an average ultimate heat sink temperature. They do not change the ultimate heat sink temperature limit of 75 °F, which is assumed by the current analysis. Therefore, there is no effect on the consequences of any accident previously evaluated and no significant impact on offsite doses associated with previously evaluated accidents. Thus, there is no significant reduction in the margin of safety for the design basis accident analysis. The license amendment request does not result in a reduction of the margin of safety as defined in the Bases for Technical Specification 3.7.11. The instruments used provide information to the operators which will permit them to ensure that the plant is operated within the design basis of the plant. The subject instruments will provide an accurate representation of the ultimate heat sink temperature.

The proposed changes do not alter the way any structure, system, or component functions and do not alter the manner in which the plant is operated. They do not have any impact on the protective boundaries (e.g., fuel matrix and cladding, reactor coolant system pressure boundary, and primary and secondary containment), or on the safety limits for these boundaries.

The locations used to monitor the ultimate heat sink temperature will be maintained in the Bases. The Bases are a licensee controlled document which

is maintained under the requirements of 10CFR50.59. Since any future changes to this license controlled document will be evaluated per the requirements of 10CFR50.59, any possible reduction (significant or insignificant) in a margin of safety will be addressed.

Thus, the license amendment request does not involve a significant reduction in the margin of safety.

The proposed changes do not change the ultimate heat sink temperature limit of 75 °F. They have no impact on the probability or consequences of previously evaluated accidents, do not create the possibility of a new or different kind of accident from any accident previously evaluated, and do not affect the offsite doses associated with previously evaluated accidents. Therefore, there is no reduction in the margin of safety for the design basis accident analysis.

Docket No. 50-336
B16342

Attachment 3

Millstone Nuclear Power Station, Unit No. 2
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Marked Up Pages

March 1997