NORTHEAST UTILITIES
THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
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April 16, 1992

Docket No. 50-336
B14132
Re: 10CFR50.90
10CFR50.91

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

Gentlemen:

Millstone Nuclear Power Station, Unit No. 2
Proposed Revision to Technical Specifications
Spent Fuel Pool Reactivity

Pursuant to 10CFR50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend its Operating License DPR-65, by incorporating the changes identified in Attachment 1 into the technical specifications of Millstone Unit No. 2.

Description of the Proposed Changes

The proposed change to the Millstone Unit No. 2 Technical Specifications would modify the existing two region spent fuel pool design, modified by amendment 109, dated January 15, 1986[1] and amendment 128, dated March 31, 1988,[2] to a three region configuration.

Presently, Region I is designed to store up to 384 fuel assemblies with an initial enrichment of up to 4.5 weight percent U-235. Region I is comprised of 5 rack modules and fuel assemblies can be stored in every location. The Region I racks contain a neutron poison material (Boraflex), and have a nominal center-to-center distance between storage locations of 9.8 inches. Region I' is designed to store up to 728 fuel assemblies which have sustained their de ign burnup. Fuel assemblies are stored in a three out of four array, with blocking devices installed to prevent inadvertent placement or storage of a fuel assembly in tne fourth location. The Region II storage racks have a nominal center-to-center distance between storage locations of 9 inches.

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(1) D. B. Osborne letter to J. F. Opeka, [Issuance of Amendment 109], dated January 15, 1986.

(2) D. H. Jaffe letter to E. J. Mroczka, "Issuance of Amendment (TAC No. 65274)," dated March 31, 1988.

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The proposed changes will result in a three region configuration, which will be described by alphabetic letters rather than the previous numeric convention. Region A will utilize three of the existing Region I poison rack modules. Region A is designed to store up to 224 fuel assemblies, which will be qualified for storage in this region by verification of adequate assembly average burnup versus fuel assembly initial enrichment (reactivity credit for burnup). Fuel assemblies can be stored in every location in Region A. These racks will be used for immediate storage of fuel discharged from the reactor. Region B will utilize the remaining two existing Region I poison rack modules. Region B is designed to store up to 120 new fuel assemblies with an initial enrichment of up to 4.5 weight percent U-235 and other assemblies which do not satisfy the burnup versus initial enrichment requirements of either Region A or Region C. Fuel assemblies will be stored in a three out of four array in Region B, with blocking devices installed to prevent inadvertent placement or storage of a fuel assembly in the fourth location. Region C is the new designation for the existing Region II storage racks. This alphabetic storage rack designation is a human factors consideration, designed to minimize the probability of a fuel assembly movement error and to provide a historical distinction between the various fuel pool configuration records.

The following details the proposed changes to the Technical Specifications:

1) Definition 1.39, STORAGE PATTERN is currently defined for Region II. This is being changed to define the 3-out-of-4 array to be used in Regions B and C.

2) Specification 3.9.17 is currently concerned with fuel movement over Region II racks (due to the dropped assembly accident and misplaced fuel assembly event). This is being changed from any fuel movement over the Region II racks to any fuel movement in the spent fuel pool.

3) Specification 3.9.18 is being modified to change the wording in the surveillance requirements from Region II to Region C, and adds a surveillance requirement to ensure that fuel assemblies to be placed in Region A are within the enrichment and burnup limits of a new Figure (3.9-4).

4) Figure 3.9-1 is being modified to change the references from Region II to Region C.

5) Figure 3.9-2 is being modified to delete the references from Regions I and II and add Regions A, B, and C.

6) Figure 3.9-3 is being modified to change the references from Region II to Region C.

7) A new Figure (3.9-4) is being added to specify the allowable enrichment and burnup limits for fuel assemblies to be stored in Region A.

8) Specification 3.9.19 is being split into two parts:

   (a) Specification 3.9.19.1 is the old specification 3.9.19, changing the references from Region II to Region C.

   (b) Specification 3.9.19.2 is a new requirement for the STORAGE PATTERN requirements of Region B.

9) The Design Features section for Fuel Storage Criticality and Capacity are being changed to describe the design features for the newly defined regions (A, B, and C), as well as to change the storage capacity numbers to reflect the blocked locations in Regions B and C.

10) The Bases sections for Specifications 3.9.17, 3.9.18, and 3.9.19 are being changed to reflect the changes introduced by the changes in the spent fuel storage rack criticality design basis.

The proposed revisions to Sections 1, 3/4 9, 5, and Bases associated with this amendment are included in Attachment 1.

Reason for the Change

These changes to the Millstone Unit No. 2 Technical Specifications are being proposed as a result of the errors recently discovered in the spent fuel rack criticality analysis. This information was shared with NRC Staff personnel, in a timely manner, via a prompt report on February 14, 1992 in accordance with 10CFR50.72 and several follow-up telephone conversations. Licensee Event Report 92-003-00, dated March 13, 1992,[3] reported this in accordance with 10CFR50.73(a)(2)(ii)(B). The calculational errors were discovered while performing criticality reanalyses associated with the Boraflex degradation. These proposed changes, as well as design modifications to the spent fuel pool storage racks (addition of cell blocking devices) are required to provide fuel storage for the upcoming refueling outage.

Safety Assessment

The safety assessments associated with these changes have considered the mechanical, material, thermal, seismic/structural, and reactivity (potential criticality) aspects of the spent fuel pool. All previously evaluated accidents associated with the spent fuel racks are also addressed. The assessment considers the functional design aspects of the fuel rack cell blocking devices as they relate to the spent fuel racks and accident conditions. Spent fuel pool criticality safety analyses are included as Attachment 2.

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(3) S. E. Scace letter to U.S. Nuclear Regulatory Commission, Facility Operating License No. DPR-65, Docket No. 50-336 "LER 92-003-00," dated March 13, 1992.

In accordance with 10CFR50.92, NNECO has reviewed the proposed Technical Specification change and has concluded that it does 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 change does not involve a significant hazards consideration because the change would not:

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

   Radiological consequences of the fuel handling accident are not impacted by the formation of Regions A and B because the fuel assembly design is unchanged. However, the probability of occurrence of a fuel misplacement error has increased slightly. The increase is not significant because the types of controls being put into place in Regions A and B are of the same type as already in place in Region C. Furthermore, a fuel assembly misplacement error is not considered an accident, as defined in the Final Safety Analysis Report.

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

   No changes are being made to the fuel assemblies or the storage racks, and controls used in the fuel pool will be of the same type as are now in place. As such, there is no possibility of a new or different kind of accident being created. The existing design basis covers all possible accident scenarios in the spent fuel pool.

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

   There is no reduction in the margin of safety since Keff $\leq$ 0.95 is met under all analyzed conditions using conservative assumptions which do not credit the soluble boron in the spent fuel pool except under some accident conditions, as allowed by NRC guidelines. The original mechanical analyses are unchanged for thermal and seismic/structural considerations.

Moreover, the Commission has provided guidance concerning the application of the standards in 10CFR50.92 by providing certain examples (March 6, 1986, 51FR7751) of amendments that are considered not likely to involve a significant hazards consideration. The proposed change is similar to example (ii) which is a change that constitutes an additional limitation, restriction, or control not presently included in the technical specification. The definition of an additional spent fuel pool storage area (with additional administrative controls) for fuel assemblies constitutes an additional limitation not presently included in technical specifications. The consequences remain unchanged and the margin of safety is not impacted.

Based on the information contained in this submittal and the environmental assessment for Millstone Unit No. 2, there are no significant radiological or nonradiological impacts associated with the proposed action, and the proposed

license amendment will not have a significant effect on the quality of the human environment.

The Millstone Unit No. 2 Plant Operations Review Committee has reviewed and recommended approval of the proposed license amendment. The Nuclear Review Board has reviewed this proposed license amendment and has concurred with the above determination.

Regarding our proposed schedule for this amendment, we request issuance at your earliest convenience, considering our current refuel outage start date of May 30, 1992, with amendment effective as of the date of issuance, to be implemented within 30 days of issuance.

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

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

J. F. Opeka
Executive Vice President

cc: T. T. Martin, Region I Administrator
G. S. Vissing, NRC Project Manager, Millstone Unit No. 2
W. J. Raymond, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

Mr. Kevin McCarthy
Director, Radiation Control Unit
Department of Environmental Protection
Hartford, Connecticut 06116

STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me, J. F. Opeka, who being duly sworn, did state that he is Executive Vice President of Northeast Nuclear Energy Company, a Licensee herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Licensee herein, and that the statements contained in said information are true and correct to the best of his knowledge and belief.

Notary Public

My Commission Expires March 31, 1993