



**Northeast
Nuclear Energy**

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The Northeast Utilities System

APR 26 2000

Docket No. 50-336
B18107

Re: 10 CFR 50.90

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

**Millstone Nuclear Power Station, Unit No. 2
Modification to a Technical Specification Amendment Request
Fuel Handling and Cask Drop Accidents (TAC NO. MA7712)**

In a letter dated December 14, 1999,⁽¹⁾ Northeast Nuclear Energy Company (NNECO) requested a change to the Millstone Unit No. 2 Technical Specifications and Final Safety Analysis Report. The majority of the proposed changes were the result of revised analyses of the fuel handling accident inside containment, the fuel handling accident in the spent fuel pool area, and the spent fuel cask drop accident in the spent fuel pool area. In a conference call with the Nuclear Regulatory Commission (NRC) conducted on April 25, 2000, the revised analysis of a fuel handling accident inside containment was discussed. During this conference call, NNECO agreed to modify the revised analysis to use a more conservative value of containment mixing. The modified analysis results are contained in Attachment 1. Attachment 2 contains additional information requested by the NRC to support review of the License Amendment Request.

Modifying the revised analysis of a fuel handling accident inside containment to assume 20% containment mixing does not affect the conclusions of the Safety Summary or Significant Hazards Consideration, or any of the other changes requested by the letter dated December 14, 1999. Although the use of 20% containment mixing will result in higher calculated radiological consequences, the calculated doses associated with the fuel handling accident inside containment are well within the 10 CFR 100 offsite accident dose limits and within the 10 CFR 50, Appendix A, General Design Criteria (GDC) 19 limit for Control Room Operators.

⁽¹⁾ R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Proposed Revision to Technical Specifications, Fuel Handling and Cask Drop Accidents," dated December 14, 1999.

ADD1

NNECO has also determined that the proposed changes to Technical Specification 3.9.11, "Refueling Operations - Water Level - Reactor Vessel," are not associated with the revised analysis of the fuel handling accident inside containment. Therefore, we withdraw the proposed changes to Technical Specification 3.9.11. None of the other previously submitted changes are affected by this withdrawal.

There are no regulatory commitments contained within this letter.

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



Raymond P. Necci
Vice President - Nuclear Technical Services

Sworn to and subscribed before me

this 26th day of APRIL, 2000



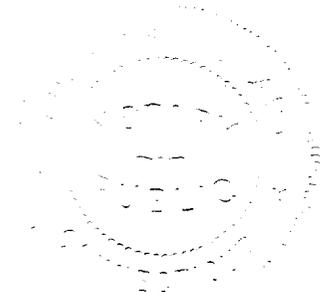
Notary Public

My Commission expires FEBRUARY 28, 2001

Attachments (2)

cc: H. J. Miller, Region I Administrator
J. I. Zimmerman, NRC Project Manager, Millstone Unit No. 2
D. P. Beaulieu, Senior Resident Inspector, Millstone Unit No. 2

Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127



Attachment 1

Millstone Nuclear Power Station, Unit No. 2

**Modification to a Technical Specification Amendment Request
Fuel Handling and Cask Drop Accidents
Discussion of Modification**

**Modification to a Technical Specification Amendment Request
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Discussion of Modification**

In a letter dated December 14, 1999,⁽¹⁾ Northeast Nuclear Energy Company (NNECO) requested a change to the Millstone Unit No. 2 Technical Specifications and Final Safety Analysis Report. The majority of the proposed changes were the result of revised analyses of the fuel handling accident inside containment, the fuel handling accident in the spent fuel pool area, and the spent fuel cask drop accident in the spent fuel pool area.

In a conference call with the Nuclear Regulatory Commission (NRC) conducted on April 25, 2000, the revised analysis of a fuel handling accident inside containment was discussed, specifically the amount of mixing assumed in the containment atmosphere used in the calculations performed to support the revised analysis. The current Millstone Unit No. 2 analysis of a fuel handling accident inside containment assumes uniform mixing in the containment atmosphere. The current analysis was submitted to the NRC in a letter dated March 21, 1977.⁽²⁾ An NRC evaluation of the current analysis was provided in a letter dated May 12, 1979.⁽³⁾

The revised analysis of a fuel handling accident inside containment submitted in December 1999, assumed a containment mixing of 50%. This is a more conservative approach in that the calculated consequences will be higher than if uniform mixing is used. NNECO felt that it was not appropriate to assume uniform mixing since the containment ventilation system flowpaths and containment atmosphere are not specifically modeled, and therefore uniform mixing could not be verified. However, based on a qualitative engineering evaluation that was submitted in a letter dated March 30, 2000,⁽⁴⁾ a 50% containment mixing value was used in the development of the revised analysis. Subsequent discussions with the NRC have determined a value of 20% containment mixing would be more appropriate. A higher value of containment mixing may be acceptable, if additional justification is developed.

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- (1) R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Proposed Revision to Technical Specifications, Fuel Handling and Cask Drop Accidents," dated December 14, 1999.
- (2) D. C. Switzer letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Evaluation of Postulated Fuel Handling Accident Inside Containment," dated March 21, 1977.
- (3) R. W. Reid letter from U.S. Nuclear Regulatory Commission, Millstone Nuclear Power Station, Unit No. 2, Amendment No. 52 to Facility Operating License No. DPR-65, dated May 12, 1979.
- (4) R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Additional Response to a Request for Additional Information, Technical Specification Amendment Request, Fuel Handling and Cask Drop Accidents (TAC NO. MA7712)," dated March 30, 2000.

The revised analysis of a fuel handling accident inside containment submitted in December 1999, assumed 176 fuel rods (one fuel assembly) would be damaged. Included in that submittal was a brief discussion of a recent analysis performed by the Siemens Power Corporation that concluded only 99 fuel rods would be damaged. The Siemens Power Corporation analysis only applies to a fuel handling accident in the spent fuel pool area. It is not applicable to a fuel handling accident inside containment.

The revised analysis of a fuel handling accident inside containment previously submitted has been modified to reflect 20% containment mixing. The results of the modified analysis are summarized in Table 1. The previously submitted revised radiological consequences of a fuel handling accident inside containment are included in Table 1 in parentheses for comparison.

Table 1
Summary of Modified Doses for Fuel Handling Accident Inside Containment

Location	Thyroid (rem)	Whole Body (rem)	Beta Skin (rem)
EAB	3.53E+01 (1.77E+01)	1.23E-01 (6.14E-02)	N/A
LPZ	4.63E+00 (2.31E+00)	1.61E-02 (8.05E-03)	N/A
Control Room	2.58E+01 (1.23E+01)	3.94E-02 (1.91E-02)	1.32E+00 (6.44E-01)

The radiological consequences of a Fuel Handling Accident Inside Containment at Millstone Unit No. 2 are well within the Exclusion Area Boundary (EAB) and Low Population Zone (LPZ) dose limits of 10 CFR 100 (300 rem thyroid and 25 rem whole body). Well within is defined by Standard Review Plan (SRP) 15.7.4⁽⁵⁾ as 25% or less of the 10 CFR 100 limits. The dose to the Control Room Operators is within the 10 CFR 50, Appendix A, General Design Criteria (GDC) 19 limit of 5 rem whole body or its equivalent (30 rem thyroid and 30 rem to the skin as defined by SRP 6.4.⁽⁶⁾

⁽⁵⁾ Standard Review Plan 15.7.4, "Radiological Consequences of Fuel Handling Accidents," Revision 1, July 1981.

⁽⁶⁾ Standard Review Plan 6.4, "Control Room Habitability System," Revision 2, July 1981.

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Attachment 2

Millstone Nuclear Power Station, Unit No. 2

**Modification to a Technical Specification Amendment Request
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Additional Information**

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Additional Information**

The following additional information supports the proposed changes to the Millstone Unit No. 2 Technical Specifications and Final Safety Analysis Report associated with the revised analyses of the fuel handling accident inside containment, the fuel handling accident in the spent fuel pool area, and the spent fuel cask drop accident in the spent fuel pool area. A copy of each item is included for your use.

1. 07077.13-WM(B)-02 Normalized X/Qs at the Unit 2 & 3 Control Room and TSC for Releases from Unit 2 (selected pages only)
2. M2FHAIC-02981R2 Rev. 0 MP-2 Fuel Handling Accident in Containment With 20% Mixing
3. Drawing 25203-14028 Millstone Nuclear Power Station - Unit No. 2 Containment and Auxiliary Building Floor Plan at El 38' - 6"