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The Northeast Utilities System

JAN 30 1998

Docket No. 50-336
B16981

Re: RCS Leak Before Break

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

Millstone Nuclear Power Station, Unit No. 2
Leak Before Break Evaluation of the Primary Coolant Piping
Justification for Continued Effective Applicability of Report CEN-367-A

The purpose of this letter is to inform the NRC Staff that the steam generator replacement, implemented at Millstone Unit No. 2 in 1992, did not invalidate the applicability of Topical Report CEN-367-A[1] as basis for the leak before break (LBB) evaluation of the primary coolant loop piping. This letter is provided in accordance with the requirement in section 2.3.4 of the NRC Safety Evaluation[2] of CEN-367 to address the applicability of CEN-367 to plant specific LBB evaluation. It is Northeast Nuclear Energy Company's (NNECO) intention to continue referencing Topical Report CEN-367-A as the technical basis for eliminating the dynamic effects of postulated primary loop pipe ruptures from the plant design basis. The use of CEN-367-A will be within the limitations provided in the NRC safety evaluation report (SER) included as part of this report.

The LBB analysis used for eliminating the dynamic effects of postulated primary loop pipe ruptures from the plant design basis is contained in the Combustion Engineering Owners Group (CEOG) Topical Report CEN-367. This report, which envelops all CE plants, including Millstone Unit No. 2, was submitted to the NRC for review in November of 1987 and was accepted in October of 1990. CEOG Topical Report CEN-367-A is the approved version of the original CEN-367 report which includes the required NRC acceptance letter and SER.

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1 CEN-367-A, "Leak Before Break Evaluation of Primary Coolant Loop Piping in CE Designed NSSS," dated February 1991.

2 J. E. Richardson, Nuclear Regulatory Commission, Letter to E. C. Sterling of CEOG, "Acceptance For Referencing of Topical Report CEN-367, Leak Before Break Evaluation of Primary Coolant Loop Piping in Combustion Engineering Designed Nuclear Steam Supply Systems," dated October 30, 1990.

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NNECO informed the NRC in a letter dated August 6, 1992[3] that Millstone Unit No. 2 complies with the leakage detection requirements of Regulatory Guide 1.45 and that NNECO, accordingly, meets all the SER requirements to utilize the LBB analysis results of CEN-367-A as the technical basis for eliminating the dynamic effects of postulated primary loop pipe ruptures from the plant design basis. The letter also indicated that this technical basis was used in 1992 for excluding reactor cavity pressurization from being considered in the design of the reactor cavity neutron shielding. This letter was acknowledged by the NRC Staff[4] in September 1992 indicating that they had "no objections."

In 1992, Millstone Unit No. 2 implemented a design change involving replacement of the entire primary reactor coolant system (RCS) side of the steam generators. The secondary portion (main steam and feedwater side) of the steam generators was reused. The two replacement generators were slightly heavier. Additionally, the weight distribution was such that the center of gravity was slightly higher than that of the original steam generators. The impact of these changes on the existing primary coolant loop piping, tributary piping, NSSS components and component supports was evaluated as part of the steam generator replacement project. All evaluations demonstrated compliance with the applicable design basis requirements.

As part of the steam generator replacement project, the main coolant loop piping was also reviewed to demonstrate continued effective applicability of Topical Report CEN-367-A to the LBB evaluation for Millstone Unit No. 2. This evaluation showed that the revised combined loads were enveloped by the loads used in CEN-367-A for the Hot Leg piping. However, with the revised seismic loads included, the combined loads did not envelope the loads used in CEN-367-A for the Cold Legs. Therefore, a plant-specific LBB evaluation of the Cold Legs at Millstone Unit 2 was performed by ABB/CE. Using the same material properties, analysis methods, J-R fracture toughness properties, and J integral evaluation techniques as employed in the original CEN-367-A report, the evaluations for the Cold Leg demonstrated continued compliance with the original NRC acceptance criteria.

The current Millstone Unit No. 2 Technical Specification Sections 3.4.6.1 and 3.4.6.2 specify various RCS leakage detection systems and associated limits respectively that are consistent with Regulatory Guide (RG) 1.45 recommendations.

Based on the results of plant specific LBB evaluation, it is concluded that the replacement of the steam generators in 1992 did not impact the continued effective applicability of Topical Report CEN-367-A for Millstone Unit No. 2. Millstone Unit No. 2

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[3] J. F. Opeka Letter to Nuclear Regulatory Commission, "Millstone Unit 2 - Intention to Utilize RCS Leak Before Break Analysis - Information Letter," dated August 6, 1992.

[4] Guy Vissing, Nuclear Regulatory Commission, Letter to J. F. Opeka, "Application of RCS Leak Before Break Analysis," dated September 1, 1992.

continues to satisfy all of the requirements necessary to apply the LBB analysis results. Leakage from the RCS will be detected by systems consistent with RG 1.45, which were previously found acceptable in the NRC Staff SER dated May 10, 1974 issued prior to start-up. Therefore, Millstone Unit No. 2 will continue to invoke LBB of the primary coolant loop piping as the technical basis for eliminating the dynamic effects of postulated primary loop pipe ruptures in future design and license applications within the limitations provided in the original NRC SER contained in CEN-367-A.

There are no commitments associated with this letter. Should you have any questions regarding this submittal, please contact Mr. Ravi G. Joshi at (860) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Martin L. Bowling, Jr.
Millstone Unit No. 2 - Recovery Officer

cc: W. D. Travers, Ph.D, Director, Special Projects Office
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