

NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
 THE HARTFORD ELECTRIC LIGHT COMPANY
 WESTERN MASSACHUSETTS ELECTRIC COMPANY
 HOLYOKE WATER POWER COMPANY
 NORTHEAST UTILITIES SERVICE COMPANY
 NORTHEAST NUCLEAR ENERGY COMPANY

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June 12, 1981

Docket No. 50-245
A01759



Director of Nuclear Reactor Regulation
 Attn: Mr. Dennis M. Crutchfield, Chief
 Operating Reactors Branch #5
 U. S. Nuclear Regulatory Commission
 Washington, D.C. 20555

- References:
- (1) W. G. Council letter to D. L. Ziemann, dated January 21, 1980.
 - (2) W. G. Council letter to B. H. Grier, dated March 31, 1980.
 - (3) W. G. Council letter to B. H. Grier, dated May 8, 1980.
 - (4) W. G. Council letter to B. H. Grier, dated July 31, 1980.
 - (5) W. G. Council letter to B. H. Grier, dated October 31, 1980.
 - (6) W. G. Council letter to B. H. Grier, dated February 26, 1981.
 - (7) W. G. Council letter to B. H. Grier, dated April 7, 1980.
 - (8) D. M. Crutchfield letter to W. G. Council, dated June 3, 1981.
 - (9) NUREG/CR-1889, "Large LOCA - Earthquake Combination Probability Assessment - Load Combination Program Project 1 Summary Report," dated January, 1981.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 1
 Isolation Condenser Supply Line
 Containment Penetration Anchor

In Reference (1), Northeast Nuclear Energy Company (NNECO) provided information to the NRC Staff regarding the load combinations and design loads that were used to modify the isolation condenser supply line containment penetration anchor, X-10A, subsequent to the water hammer event which occurred on December 19, 1979. The following load conditions were indicated in Reference (1):

- (1) Normal Operation + DBE
- (2) Normal Operation + HEPB

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In addition, NNECO responded to NRC Staff findings resulting from their extensive audit of the modifications made to the containment penetration anchor X-10A in References (2) through (6). As indicated in References (2) through (6), only the above two load conditions were to be considered by NNECO in the reanalysis of the containment penetration anchor, X-10A.

In parallel with the water hammer concerns, NNECO was also addressing the requirements of IE Bulletin No. 79-02. In Reference (7), NNECO stated that although HEPB loads were not specifically included in the scope of IE Bulletin No. 79-02, the above load condition (2) would be included in the reanalysis of containment penetration anchor X-10A. As such, NNECO informed the NRC Staff that the anchor bolts would meet a factor of safety of two (2) for this load condition.

The NRC Staff has recently provided NNECO with a Safety Evaluation, entitled "Isolation Condenser Steam Line Water Hammer and Pipe Anchor Safety Factor," in Reference (8). In this Safety Evaluation, the NRC Staff concluded that "Two design areas do not comply with NRC IE Bulletin No. 79-02 which requires a factor of safety of at least four for expansion anchor bolts under all design conditions. A factor of two instead of four was reported for load condition (2) above. In addition, to comply with the design condition requirements of IE Bulletin No. 79-02, load condition (2) above should be: Normal Operating Loads + HEPB + DBE."

Anchor bolt factors of safety have been documented in Reference (6) to be a minimum of four (4) for load condition (1) above, and a minimum of two (2) but less than four (4) for load condition (2) above. This is consistent with the information provided to the NRC Staff in Reference (7). It is noteworthy that this letter was omitted as a reference in Reference (8), although directly pertinent to the subject matter.

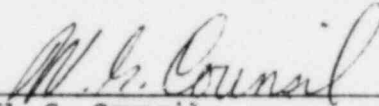
Nevertheless, in order to be responsive to the NRC Staff concerns identified in Reference (8), the effort necessary to document a factor of safety of at least four (4) for load condition (2) above, is presently being assessed. As you are aware, the original pipe break loads utilized in the design of containment penetration anchor X-10A were conservatively calculated and applied in a manner consistent with technology available at that time. As such, the loadings are not based upon a rigorous mechanistic evaluation of discrete pipe break locations such as would be done today. It is our contention that performing the more rigorous analysis will result in a demonstrated anchor bolt factor of safety of four (4) for load condition (2) above. The results of the analytical evaluation of containment penetration anchor X-10A will be submitted to the NRC Staff upon completion.

The NRC Staff's Safety Evaluation states that IE Bulletin No. 79-02 requires a factor of safety of four (4) for the load condition: Normal Operating Loads + HEPB + DBE. It has always been NNECO's determination that the IE Bulletin No. 79-02 only applied to load condition (1) above. However, as stated above and in Reference (7), NNECO concluded that it would be prudent to also address load condition (2) above. As such, NNECO committed to meet a minimum factor of safety of two (2) for load condition (2). Also, as stated above, References (1) through (6) specified what load conditions would be addressed for containment penetration anchor X-10A. However, Reference (8) is the first time the NRC Staff has documented that their interpretation of IE Bulletin No. 79-02 requires consideration of the load condition: Normal Operating Loads + HEPB + DBE. The original design basis of containment penetration anchor X-10A did not consider the load condition: Normal Operating Loads + HEPB + DBE. It is NNECO's determination that IE Bulletin No. 79-02 requirements only apply to original design bases. In addition, recent studies funded by the NRC (Reference (9)), reveal that the probability of a large pipe break occurring simultaneously with a seismic event is extremely remote and well below the threshold of consideration for design basis events. Therefore, NNECO concludes that justification to address this load condition does not exist and, as such, no further action in this regard is planned by NNECO.

Should you have any questions, please feel free to contact us.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



W. G. Council
Senior Vice President