NORTHEAST UTILITIES

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

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March 1, 1984

Docket No. 50-423
F0450A

Dr. Thomas E. Murley
Regional Administrator
Region I
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Reference: (1) W. G. Counsil letter to T. E. Murley, F0433A, dated December 9, 1983.

Dear Dr. Murley:

Millstone Nuclear Power Station, Unit No. 3
Reporting of Potential Significant Deficiencies
in Design and Construction:
Main Control Board Lugs (SD-48)

In a November 10, 1983 telephone conversation between your Mr. T. Elsasser and our Mr. J. Festa, Northeast Nuclear Energy Company (NNECO) reported a potential significant deficiency in the construction of Millstone Unit No. 3 as required by 10CFR50.55(e). The potential significant deficiency involves inadequate terminations of #14 AWG Tefzel and ITT Exane wire to AMP PIDG 53983-1 16-14 HD lugs in the main control board, supplied by Reliance Electric Company.

On January 16, 1984, Reliance Electric Company, with the assistance of Stone & Webster Engineering Corporation and Northeast Utilities, initiated an inspection and repair program for all terminations of #14 AWG Tefzel and ITT Exane wire to AMP PIDG 53983-1 16-14 HD Lugs in all boards supplied by Reliance Electric Company.

The inspection criteria which Reliance Electric utilized on the AMP crimps is as follows:

- Lugs with conductors crimped only partially where the tool has compressed only a portion of the conductor at the tongue end of the barrel will be rejected.
- Lugs with conductor strands not visible inside the barrel but the crimp is within the barrel length will be rejected.
- Lugs with conductor strands visible inside the barrel but the crimp is not within the barrel length (crimp rolloff) will be rejected.

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This rejection criteria was based on testing by Reliance Electric of samples taken from the Main Control Board in which the above configurations failed the UL-486 tensile pull test. Based on this criteria, it was concluded that the integrity of the terminations exhibiting the partial or mislocated crimp on the wire barrel portion are questionable.

Using the above criteria, Reliance Electric documented 6,813 lugs that were rejected of an approximate 150,000 total lugs inspected. As of today, a total number of 5,682 lugs have been repaired. An agreement was made between Reliance Electric, Stone & Webster Engineering Corporation, and Northeast Utilities that all repair work will be performed by Northeast Utilities and Stone & Webster personnel utilizing proper QA procedures. We are still in the process of replacing the remaining lugs as identified by Reliance Electric.

Throughout the inspection, Reliance Electric QA identified two other areas of concern. The first area is in regard to lugs (16-14 AWG) that were used to terminate 20 AWG resistor leads on Cutler-Hammer Type E-30 switches and on Stanwick terminal blocks. One-hundred resistor lugs were rejected utilizing the reject criteria. It was agreed between all parties that leads to the replacement resistors will be double-backed before crimping to the lug. This double back configuration is acceptable both from an electrical and mechanical standpoint.

The second area of concern is in regards to lugs (16-14 AWG) that were terminated to the conductors using an ETC crimper. This type of crimp which is not exactly the same as an AMP crimp is still acceptable both from an electrical and mechanical standpoint.

We are in the process of revising the mild environment qualification plan (Report Number SQP-99X2087-A) to include the above two configurations. These two configurations will be tested for the seismic portion of IEEE-323 exactly as configured in the panels.

We expect to be able to provide a final report on this subject by November 1984.

Very truly yours,

W. G. Counsil

W. G. Counsil
Senior Vice President

By: C. F. Sears
Vice President
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cc: Mr. R. C. DeYoung, Director
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