

# 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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May 3, 1984

Docket No. 50-423  
B11151

Director of Nuclear Reactor Regulation  
Mr. B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Reference: (1) B. J. Youngblood letter to W. G. Council, Supplement to  
Millstone Nuclear Power Station, Unit No. 3 Draft SER,  
dated February 24, 1984.

Dear Mr. Youngblood:

Millstone Nuclear Power Station, Unit No. 3  
Response to Core Performance Branch (CPB) Open Item CPB-11

Attached is Northeast Nuclear Energy Company's (NNECO) response to Core  
Performance Branch DSER open item CPB-11 concerning compliance with  
Appendix A of SRP Section 4.2 which was transmitted to NNECO via Reference  
(1). As noted in the response, we consider the status of this item as being  
confirmatory based on our commitment to submit appropriate additional  
information in July, 1984.

If you have any questions, please contact our licensing representative directly.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY ET AL  
By Northeast Nuclear Energy Company  
Their Agent

W. G. Council  
W. G. Council  
Senior Vice President

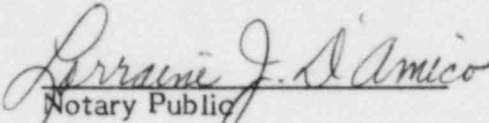
C. F. Sears  
By: C. F. Sears  
Vice President  
Nuclear and Environmental Engineering

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

Then personally appeared before me C. F. Sears, who being duly sworn, did state that he is Vice President of Northeast Nuclear Energy Company, an Applicant herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Applicants 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, 1988

## Open Items

### Core Performance Branch (CPB)

#### CPB 11 Compliance with Appendix A of SRP Section 4.2 (Draft SER Section 4.2.3.3(4))

Section 4.2.3.5 of the FSAR refers to WCAP-8236 (and WCAP-8288) for this analysis. We have reviewed and approved (Rubenstein, April 23, 1981) another report, WCAP-9401, which essentially augments the information presented in WCAP-8236 because both WCAP reports apply to similar assemblies. For the Millstone 3 application, however, the applicant must demonstrate compliance with Appendix A of SRP Section 4.2. The applicant may make reference to WCAP-8236 and WCAP-9401 to accomplish this.

#### Response

The seismic/LOCA qualification of Westinghouse 17x17 optimized fuel in a 4-loop neutron panel plant has been demonstrated in the NRC approved topical report, WCAP-9401-P-A (Reference (1)). The acceptability of the plant-specific fuel system to withstand the effects of the defined seismic/LOCA event is demonstrated when the plant specific applied forces fall within the spectral acceleration envelope as given in Reference (1).

The seismic (SSE) response spectrum at reactor vessel supports for Millstone Unit 3 is given in Figure (1). The enveloped response spectrum from Reference (1) was also plotted and given in Figure (1). A comparison of the two acceleration response spectra indicated a spectral acceleration violation for Millstone Unit 3 in the second mode of the fuel assembly.

The relative horizontal motion between the upper and lower core plates is small in comparison with their translational motion. The seismic loading and core geometry are approximately symmetric with respect to the core mid-elevation.

The even mode of fuel assembly response will not be excited under the seismic loading condition. Thus, the violation of the acceleration response spectrum will not alter the maximum seismic response such as grid impact force and fuel assembly deflection.

The seismic analyses performed for a number of 4-loop plants indicated that the maximum impact response is, in general, influenced by the acceleration level of the input forcing function at the fuel assembly fundamental mode. Thus, the interpolated maximum grid load would be less than 25 percent of the allowable grid strength at temperature. The estimated SRSS (square-root-of-sum-of-squares) combined seismic and LOCA load is expected to be less than 60 percent of the allowable grid strength.

In order to meet the acceptance criteria of SRP4.2, Appendix A; the seismic results derived from Reference (1) will be conservatively used for the Millstone Unit 3 plant. The plant-specific asymmetric LOCA loads are being further evaluated and the maximum combined seismic and LOCA loads based on the SRSS method will be submitted to the NRC in July 1984.

Therefore, based upon the above engineering evaluation and the commitment to supply the detailed results of the analyses using NRC approved Westinghouse methodology<sup>(1)</sup>, it is requested that the status of the subject DSER item be changed from "open" to "confirmatory."

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(1) WCAP-9401-P-A, "Verification Testing and Analysis of the 17x17 Optimized Fuel Assembly," M. D. Beaumont, et al. (Ed.) 1981.

SEISMIC (SSE) RESPONSE SPECTRUM AT  
REACTOR VESSEL SUPPORTS

