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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July 25, 1988

Docket No. 50-336
B12980
Re: 10CFR50.62

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 2
ATWS Modifications (TAC #59114)

In a June 8, 1988 letter,(1) the Staff requested that Northeast Nuclear Energy Company (NNECO) provide responses to a number of questions regarding proposed ATWS modifications at Millstone Unit No. 2. These responses were to be submitted to the Staff within 15 days from receipt of the June 8, 1988 letter. However, discussions with the Project Manager for Millstone Unit No. 2 on June 10, 1988 resulted in a mutually agreeable due date of 15 days after the June 10 telephone discussion for approximately one-half of the required responses, with the remainder being due by July 12, 1988. Since the agreed upon due date fell on a weekend, approximately one-half of the requested material was submitted on the first business day following; June 27, 1988.(2) The remaining responses were submitted on July 11, 1988.(3)

In reviewing the responses submitted on June 27 and July 11, 1988, the Staff required further clarification of several points. The purpose of this letter is to provide that clarification.

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(1) D. H. Jaffe letter to E. J. Mroczka, "Millstone Nuclear Power Station, Unit No. 2, Request for Additional Information," dated June 8, 1988.

(2) E. J. Mroczka letter to U.S. Nuclear Regulatory Commission "ATWS Modifications (TAC#59114)", dated June 27, 1988.

(3) E. J. Mroczka letter to U.S. Nuclear Regulato y Commission, "ATWS Modifications (TAC #59114)," dated July 11, 1988.

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Questions 2a.2

Explain why a common mode failure affecting the RPS power distribution system, including degraded voltage and/or frequency conditions cannot go undetected to compromise both the RPS and the ATWS prevention/mitigation functions.

Response:

Vital AC power to the four channel RPS and the four channel DSS is supplied from four vital inverters. These inverters are equipped with the following local and control room alarms and indications:

A. Input Breaker Trip
B. AC Voltage Output Low (Setpoint of 108 VAC)
C. AC Ground Fault
D. High Temperature (Setpoint of 175 DEG. F.)

Any of the above gives an "inverter trouble" alarm in the control room. If an overvoltage condition were to develop, the result would be a corresponding overcurrent condition that would trigger the high temperature alarm. Any alarm requires prompt operator action to check the local indications that would identify any degraded voltage, current or frequency conditions and allow for corrective action to be taken.

The inverters are powered by a station 125 VDC system, which consists of two batteries, three battery chargers and two battery busses. Each bus powers two inverters which in turn provide the four separate channels of vital 120 volt AC for the four channel RPS and DSS. The battery bus and battery charger systems are monitored and alarmed for various conditions including:

a. Charger Trouble:
   1. High Voltage at 150 VDC
   2. Low Voltage at 120 VDC
b. DC Bus Undervoltage at 126 VDC
c. Ground alarms
d. Indications are provided for Battery current and voltage, DC bus current and voltage.

Alarms again call for prompt operator response to determine locally what parameters are affected.

Because four separate inverters are used to supply separately each of the four RPS and DSS channels, the failure of any one inverter and associated channel will not prevent either the RPS or the DSS from providing a reactor shutdown capability. Current practice calls for testing of DC bus undervoltage alarms at every other outage. However, revised procedures to be implemented at the next planned refueling outage call for testing one set of AC voltage output low alarms, charger trouble alarms, and DC bus undervoltage alarms at

alternate refueling outages. This revised procedure ensures that one set of these alarms is tested each outage.

NNECO trusts the foregoing information satisfies Staff concerns.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

E. J. Mroczka
Senior Vice President

cc: W. T. Russell, Region I Administrator
D. H. Jaffe, NRC Project Manager, Millstone Unit No. 2
W. J. Raymond, Senior Resident Inspector, Millstone Unit Nos. 1, 2 and 3