NORTHEAST UTILITIES

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

General Offices • Selden Street, Berlin, Connecticut

P.O. BOX 270
HARTFORD, CONNECTICUT 06141-0270
(203) 665-5000

March 25, 1988

Docket No. 50-423
B12863
Re: 10CFR21

Mr. William T. Russell
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Dear Mr. Russell:

Northeast Nuclear Energy Company
Millstone Nuclear Power Station, Unit No. 3
Report of Substantial Safety Hazard

In conformance with 10CFR21, Northeast Nuclear Energy Company (NNECO) hereby provides notification of a Substantial Safety Hazard (SSH) for Millstone Nuclear Power Station, Unit No. 3.

Mr. Ebe McCabe of the NRC Region I Office was verbally notified March 24, 1988, that five Rosemount capacitive-type flow transmitters failed during the first cycle of operation. These transmitters provide primary loop flow indication to the solid state reactor protection system. There are three such transmitters in each of the four primary loops. If any two out of three transmitters actuates in a loop, a trip signal is initiated. At least two out of three transmitters are required to be operable in each loop. If any one transmitter is found inoperable, a trip signal is initiated per Technical Specifications until the failed transmitter is made operable.

The transmitters that failed are all of the same model number and have similar serial numbers. The manufacturer has been notified of the five failures. Despite the fact that the same problem occurred on transmitters whose serial numbers are close, the manufacturer had indicated to us the failures are random and there is no generic problem. In each case the affected transmitter was replaced. The surveillance frequency for Cycle 2 operation is being increased to a monthly surveillance interval to preclude undetected future failures of these transmitters. Since November 1987 we have not observed any additional problems with these transmitters.

We have investigated the use of similar Rosemount transmitters on Haddam Neck, Millstone Unit No. 1, and Millstone Unit No. 2. We have determined that a similar model, 1153HD5PA, is used only at Millstone Unit No. 2. There are two such instruments: one is used for pressurizer level, and one for pressurizer

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pressure. Our preliminary review indicates these instruments have not experienced this problem.

In discussions with the vendor, they have indicated to us that they have investigated the failures and conclude that if any such failure were to occur, they would only be expected to occur in the time frame of 12 to 18 months of instrument operation.

The following information applicable to this SSH is provided as outlined by 10CFR21.21(b)(3), i through viii:

(i) Name and Address of Individual Informing the Commission

E. J. Mroczka, Senior Vice President, Northeast Nuclear Energy Company, P.O. Box 270, Hartford, CT 06141-270.

(ii) Identification of Basic Component

Rosemount Capacitive-Type Differential Pressure Transmitter, Model No. 1153HD5PC.

(iii) Identification of Firm Supplying the Basic Component

Rosemount Inc., 12001 Technology Drive, Eden Prairie, MN 55344.

(iv) Nature of Failure

A loss of oil in the sensor module caused the transmitters to fail to function properly. These transmitters at Millstone Unit No. 3 are used to measure reactor coolant flow to the steam generators. The transmitters failed nonconservatively and this was discovered through routine plant operations. The flow transmitters provide a trip function via the reactor protection system. If any two out of three transmitters sense low flow, a trip signal is initiated. At Millstone Unit No. 3, five failures occurred. The failures were observed individually in the latter part of the first cycle of plant operation. These failures occurred sporadically such that two transmitters never failed simultaneously. Therefore, at Millstone Unit No. 3 there was never an occasion when two transmitters were failed simultaneously in one loop. Consequently, Millstone Unit No. 3 was always able to provide a low flow trip for all four reactor coolant system loops.

(v) Date on Which Information of Failures Was Obtained

Although individual component failures were observed at different times, it was determined that a trend was occurring after the fifth transmitter had failed and a Substantial Safety Hazard Evaluation was initiated on November 24, 1987.

(vi) Number and Location of All Such Transmitters

Rosemount Model No. 1153HD5PC transmitters are used at Millstone Unit No. 3 to measure reactor coolant system flow (12 transmitters) and pressurizer level (2 transmitters).

(vii) Corrective Action, Responsible Organization

As corrective action, all failed transmitters were replaced. An in-service test procedure has been prepared and is scheduled to be implemented by April 1, 1988, that will provide time response testing of these transmitters on a monthly basis during Cycle 2 operation. This increased surveillance will preclude operation with any undetected failures. NNECO is responsible for this corrective action. To date no further failures have occurred.

(viii) Advice Related to Failure Given to Licensees

(Not applicable--refers to supplier.)

I trust this fulfills reporting obligations in accordance with 10CFR21 and is fully responsive to your needs for such information.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

E. J. Mroczka
Senior Vice President

cc: W. J. Raymond, NRC Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3
R. L. Ferguson, NRC Project Manager, Millstone Unit No. 3
T. E. Murley, Director, Office of Nuclear Reactor Regulation (3 Copies)
U.S. Nuclear Regulatory Commission, Document Control Desk

bcc: E. C. McCabe, Chief, Reactor Projects Section 1B