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 17, 1992

Docket No. 50-423
A10242
Re: 10CFR2.201

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

References:

1. C. W. Hehl letter to J. F. Opeka, Millstone Unit 3 Inspection 91-26, dated January 10, 1992.

2. T. T. Martin letter to J. F. Opeka, Notice of Violation (NRC Inspection Report No. 50-423/91-26), dated February 21, 1992.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
Reply to a Notice of Violation (EA 92-008)

In a letter dated January 10, 1992 (Reference 1), the NRC transmitted the results of a special safety inspection conducted at Millstone Unit No. 3 between November 27 and December 20, 1991. This special inspection focused upon the circumstances associated with an event at Millstone Unit No. 3 involving the disabling of the supplementary leak collection and release system (SLCRS), following a June 9, 1991, reactor trip, in violation of a technical specification limiting condition for operation. On January 22, 1992, an enforcement conference was held to discuss the apparent violation, its cause, and Northeast Nuclear Energy Company's (NNECO) corrective actions.

By letter dated February 21, 1992 (Reference 2), the NRC transmitted a Notice of Violation (NOV) relating to the above inspection. The NOV cites NNECO for a violation which involves the failure to promptly identify and take corrective action and for exceeding the technical specification action statement by not placing the plant in a cold shutdown condition. Pursuant to the provision of 10CFR2.201, NNECO hereby provides its response (Attachment 1) to the subject NOV.

The NOV specifically alleges that NNECO failed to promptly identify the root cause of a failed fire damper during surveillance of the 'B' train of the SLCRS, and that a similar common mode failure had also rendered the 'A' train inoperable. As NNECO explained at the enforcement conference, we acknowledge that our evaluation of the failed fire damper on Train 'B' was inadequate (i.e., the failure of the damper was not properly addressed in the plant incident report). However, on July 8, 1991, NNECO completed a detailed follow-on

IE01
1/1

investigation which concluded that on June 9, 1991, a common mode failure had occurred which rendered both trains of the SLCRS inoperable. This discovery of the common mode failure and the immediate corrective actions taken were reported in LER 91-18.

While the SLCRS was inoperable, other safety systems remained available to mitigate the consequences of a design basis accident. The safety-related auxiliary building ventilation system remained operable during this time (i.e., June 9 - 27, 1991) to provide filtered exhaust of air being released from the auxiliary building. Through common ductwork and building interconnections, the auxiliary building ventilation system would have provided a filtered discharge path for buildings within the SLCRS boundary. On January 5, 1992, a special ventilation system test was performed. The special test demonstrated that the auxiliary building ventilation system fans could draw a slight negative pressure with the SCLRS fans turned off and all dampers in the position they would have been following a safety injection signal. To gain more insight and gather more test data for this configuration, NNECO has decided to repeat the above test during the next cold shutdown of the plant.

In addition to the alleged violation, NRC Inspection Report 50-423/91-26 (Reference 1) and the cover letter for the subject NOV raised certain issues concerning NNECO's posttrip review process and design modification review process. These issues were addressed at length by NNECO during the enforcement conference and are not included as a violation in the subject NOV. However, NNECO provides below further information regarding these issues and its corrective actions taken (and planned) to enhance the two processes.

Immediately following the identification of the common cause/common mode failure of the SLCRS on July 8, 1991, NNECO took prompt and comprehensive corrective actions as recognized by the NRC in issuing the NOV. Although the initial posttrip review failed to identify in a timely manner all of the problems associated with the June 9 trip, NNECO nevertheless pursued a thorough course of evaluation as demonstrated by the various review groups involved. These evaluations resulted in broad conclusions about the overall posttrip review process which have led to extensive corrective actions (as described in Attachment 1). We have also thoroughly evaluated the posttrip review process station-wide and as a result, a new Millstone station procedure on posttrip review has been developed. This procedure shifts from relying on a single individual performing the review and instead implements a multi-discipline team review of a trip. Although the design change process was determined to be adequate overall, NNECO's detailed evaluation identified the need to ensure that a mechanical discipline review is performed in all design modifications. NNECO's evaluation determined for all design modifications except those originated by electrical and Instrumentation and Controls (I&C) that a mechanical discipline review was typically included.

In addition, a task force was chartered with an expanded scope which included identifying design changes that would prevent or mitigate an event similar to the June 9 event. The task force is scheduled to complete its work and provide its recommendation to NNECO management by April 15, 1992.

In summary, NNECO acknowledges that its evaluation of the failed fire damper of Train 'B' was inadequate, ultimately resulting in the inoperability of both trains of the SLCRS between June 9-17, 1991. However, NNECO has taken prompt and comprehensive actions to address the issue at Millstone Unit No. 3. NNECO has also instituted actions on a station basis that specifically addresses the posttrip review process. In addition, the plant design change record process (NEO 3.03) used at Millstone Unit Nos. 1, 2, and 3 and at the Haddam Neck Plant will be revised to ensure that a mechanical, system design review is performed similar to other disciplines reviews (e.g., electrical, I&C).

If you have any questions regarding the information contained in this letter, please contact us.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

J. F. Opeka
Executive Vice President

cc: T. T. Martin, Region I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
W. J. Raymond, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3
C. W. Hehl, Director, Division of Reactor Projects

Docket No. 50-423
A10242

Attachment 1

Millstone Nuclear Power Station, Unit No. 3

Reply to a Notice of Violation (EA 92-008)

March 1992

Millstone Nuclear Power Station, Unit No. 3
Reply to a Notice of Violation

I. Restatement of Violation

A. 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions, requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, deficiencies and deviations, are promptly identified and corrected.

Contrary to the above, between June 9, 1991 and July 2, 1991, a condition adverse to quality existed at the Millstone Unit 3 facility, and the condition was not promptly identified and corrected. Specifically, a common mode failure occurred, which rendered both trains of the Supplement Leak Collection and Release System (SLCRS) inoperable, when the fusible links for the Train "A" and Train "B" melted closing the fire dampers. During that time period, the licensee identified, on June 17, 1991, that the SLCRS Train "B" was inoperable because of a failed surveillance test. The licensee did not properly diagnose the root cause of the test failure as a part of their corrective actions in that the licensee attributed the failure of the fusible link to a mechanical failure, rather than the melting of the link. In addition, the licensee failed to check whether a similar problem existed on the "A" Train, and therefore, that condition adverse to quality, namely, the inoperability of the "A" train of SLCRS, existed for an additional 15 days (June 17, 1991 to July 2, 1991).

B. Technical Specification Limiting Condition for Operation (LCO) 3.6.6.1 requires that whenever the plant is in Modes 1, 2, 3, or 4, two independent Supplemental Leak Collection and Release Systems (SLCRS) shall be operable. The Technical Specification (LCO) Action Statement requires that with one Supplemental Leak Collection and Release System inoperable, restore the inoperable system to operable status within 7 days or be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours.

Technical Specification LCO 3.0.3 requires, in part, that when a LCO is not met, except as provided in the associated action requirements, within 1 hour action shall be initiated to place the unit in cold shutdown within the subsequent 24 hours.

Contrary to the above, between June 9, 1991 and June 17, 1991, while the plant was in either Modes 1, 2, or 3, both the "A" and "B" trains of SLCRS were inoperable in that the fire dampers in each of the trains were closed, thereby stopping the flow of air in the system, and action was not taken to place the plant in the cold shutdown condition. In addition, the "A" train of SLCRS remained inoperable from June 17, 1991 to July 2, 1991, exceeding the 7-day

action statement by 8 days, and action was not taken to place the plant in the cold shutdown condition.

II. Reason for the Violation

A. Background

On June 17, 1991, while conducting routine monthly surveillance testing of the 'B' train of the SLCRS, airflow through the system could not be measured. Investigation of the low flow condition revealed that a fusible link on the fire damper 3HVR*DMPF29 located in the 'B' train of the SLCRS ductwork had mechanically failed, allowing the damper to go shut and stop the flow of air. The visible portion of the failed link was evaluated as mechanical failure. Since no other links had failed in six years of operation, this was considered an isolated case. The fusible link was replaced, the train tested and declared operable.

While testing the 'A' train of the SLCRS on July 2, 1991, a low air flow condition was detected and an investigation revealed that the identical damper on the 'A' train had failed. Examination of the fusible link on the 'A' train damper revealed that the fusible link had failed due to melting, not due to simple mechanical failure. The link was replaced and the system was retested and declared operable.

On July 8, 1991, half of the failed link from the 'B' train failure was found. After reviewing the results of the failed surveillances, reexamining the fusible links from both trains and tracing ventilation ductwork, NNECO determined that both trains of the SLCRS had been rendered inoperable subsequent to the June 9, 1991, event. This discovery of common mode failure, and immediate corrective actions taken, were reported in LER 91-18.

B. Root Cause

NNECO was not aware that, between June 9, 1991, and June 17, 1991, both trains of the SLCRS were inoperable due to the failed fire dampers being in a closed position, thereby exceeding the technical specification action statements. Therefore, no action was taken to correct the condition.

The failure to properly identify the common mode SLCRS failure was due to two factors. First, the evaluation for the Train 'B' failed fusible link did not consider possible implications for Train 'A' operability. Contributing factors include:

(1) the individual who initiated the repair of the failed link was not the same individual who completed the repair;

(2) the personnel involved failed to ensure that all of the failed fuse pieces were collected; and

(3) the repair task was driven by Technical Specification 3.0.3.

Second, a specific PIR was not issued against the failed damper. The reason for the failure to issue a PIR on the failed fire damper was a misunderstanding that the PIR on the duct opening addressed both issues.

III. Corrective Actions that have been taken and Results Achieved

Corrective action consisted of replacing the original fusible link rated at 165°F with the links that are rated for 285°F, approximately 20° higher than the expected worst case steam temperature.

IV. Corrective Steps that will be taken to avoid Future Violations

A. Since this incident, the PIR procedure has been revised to also require that an initial investigation for adverse trends be performed within a few days. NNECO believes that this process could have identified the failure of the duct opening PIR to address the damper failure.

In addition, the PIR process was revised to include a requirement to initiate a PIR upon the failure of any Technical Specification Surveillance. Had a PIR been initiated upon failure of the surveillance in addition to the entry into Technical Specification 3.0.3, the probability that the common mode SLCRS failure would have been discovered is significantly higher.

The lessons learned from the June 9th event will be incorporated into training for operations personnel. In addition, the June 9th event will be used as a case-study to train Plant Operations Review Committee members.

B. In response to the inadequacies identified in the posttrip review process, NNECO has taken the following corrective actions:

1. A new Millstone Station procedure on posttrip reviews has been developed and is in effect as of March 9, 1992. This procedure shifts from relying on a single individual performing the review, and instead implements a multi-discipline team review of a trip. This team will include Operations, Engineering, HPES on an as-needed basis, and any other expertise deemed necessary. The goal of the event evaluation team is to identify the direct cause of the trip within 6 hours, with a comprehensive review complete and a written report generated within 24 hours. Furthermore, the procedure clearly spells out aspects of the event that have to be addressed including

plant response, and will also require a formal critique of all involved personnel. This procedure is based not only on INPO Good Practice OP-211, but industry practice as well.

2. NNECO has also upgraded unit procedure OP 3263. This upgraded procedure specifies additional data to be collected and saved in order to enhance the overall review process, expands on the controls and systems to be evaluated posttrip, and requires system interaction reviews.

V. Date When Full Compliance Achieved

NNECO is presently in full compliance with all requirements pertinent to this violation. Full compliance was achieved when the 'A' train of the SLCRS was made operational on July 2, 1991.

VI. Generic Implications

In addition to the corrective actions described above, Northeast Utilities (NU) will be taking additional actions to address some of the broader implications of the June 9th event as it relates to Millstone Unit Nos. 1, 2, and 3 and the Haddam Neck Plant.

A. In order to enhance the design modification review process, the PDCR process (NEO 3.03) will be revised to ensure that a Mechanical Systems design review is performed similar to other disciplines' reviews (e.g., electrical, EQ and seismic). In addition, NU also commits to evaluate the use of written analyses concerning the effects of a design change on operators as part of the PDCR process.

B. NU will review the need to issue a revised guidance on the testing of opposite trains of safety-related equipment when one train has experienced a significant step decrease in system/component performance.