

April 11, 1994

Docket No. 50-245  
B14814

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

Millstone Nuclear Power Station, Unit No. 1  
Decrease in Reactor Pressure Vessel Level

On April 10, 1994, during the performance of a low pressure coolant injection (LPCI) system logic surveillance test, an inadvertent decrease in the Millstone Unit No. 1 reactor pressure vessel (RPV) water level occurred. The water level decrease was caused by an apparent procedural deficiency which established a flow path from the shutdown cooling (SDC) system to the "A" drywell spray header through the LPCI cross-connect piping. This flow path allowed water to flow into the drywell and collect in the drywell sumps. Appropriate notifications to NRC, State, and local authorities were made.

This event has been discussed with the NRC Staff during telephone conference calls conducted on April 10 and 11, 1994. During a telephone call between Mr. D. B. Miller, Jr. of Northeast Nuclear Energy Company (NNECO) and Mr. J. P. Durr of the NRC Staff, it was agreed that NNECO would provide the Staff with information regarding our planned short-term actions and an assessment of the potential implications of the April 10, 1994, event. Accordingly, the requested information is provided below.

The event was initiated at approximately 1610 hours when the "A" drywell spray valves were opened during performance of surveillance procedure SP 412K, "LPCI/Containment Cooling System Logic Test." At approximately 1613 hours, the drywell sump high level alarm was received in the control room. Approximately two minutes later the valves were manually shut by plant operators, terminating the flow into the drywell. RPV level, which was initially at 85" (which is just below the main steam lines), dropped to approximately 15" during the event. At all times during the event, RPV level remained above the reactor protection and emergency core cooling system actuation setpoints.

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At the time of the event, the SDC system was in service, in conjunction with the reactor recirculation pumps, to maintain adequate decay heat removal. The shutdown risk category was GREEN.

Immediate actions by the plant operators included stopping the test and stabilizing RPV level. The Senior Vice President - Millstone Station, who was notified of the event at his home, came to Millstone Station to ensure appropriate level of management involvement and to assist in any postevent assessment activities. He also interviewed personnel who were involved in the event to ensure their continual focus on safe plant operation and to gain their perspectives regarding the event. Because we believe at this point in time that the cause of the event is procedure related, all integrated testing activities have been suspended. The Plant Operations Review Committee met and established an Event Evaluation Team (EET) to perform a detailed root cause evaluation and to provide recommended corrective actions. Members on the EET are from several disciplines within the Northeast Utilities organization such as Operations, Engineering, Instrumentation and Controls, Training, Nuclear Licensing, and other support organizations. The results of the EET will be communicated to the NRC.

The event investigation is focusing on the following aspects of this event: the actual level decrease, the adequacy of testing, impact on equipment in the drywell, impact on the torus, a determination of the occurrence of similar industry incidents, and a review of the event's impact on future outage activities.

Before any integrated testing is authorized to proceed, integrated procedures will be given multi-discipline reviews especially with regard to the effect of plant modification and recent procedure changes on system interaction. These types of procedures will be reviewed for shutdown risk assessments and Infrequently Performed Test and Evolutions (IPTE) screening requirements. Finally, integrated procedures will be independently reviewed for 10CFR50.59 requirements. Only after the conditions specified above are properly evaluated by a multi-discipline team, will integrated test procedures be authorized to proceed.

Relevant plant data related to the RPV level decrease event is being collected, including the sequence of events log and computer traces. This information will be reviewed in detail to ensure a full understanding of the event is gained.

Evaluation of the adequacy of testing includes a complete and thorough review of LPCI surveillance procedure SP 412K. In addition, a list of test procedures which are required to be

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completed during the cycle 14 refueling outage is being defined to ensure that additional procedural deficiencies do not exist.

The impact on the drywell and torus is being assessed. A list of affected drywell components and equipment is being defined. The need for functional testing will be evaluated as drywell and equipment inspections, cleanup, and decontamination progress. A review of insulation that may be affected will also be performed. In addition, the drywell spray lines will be evaluated as a precaution to ensure that they were not negatively impacted from the initiation of the drywell sprays. A torus cleanliness inspection will be performed, as well as a chemistry evaluation of the torus water volume. In addition, the downcomers will be inspected as a precautionary measure. These activities will be completed prior to restart from the current refueling outage.

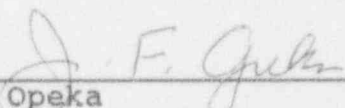
A determination of the occurrence of similar events will be performed. The review is expected to cover Northeast Utilities data, industry experiences, and potential applicability of vendor information provided by General Electric.

As a long-term measure, we will evaluate the procedure review process to determine its adequacy and to determine how the process may have contributed to the event. Additionally, a review of other integrated test procedures which were revised and completed this outage will be performed after startup to verify that they are technically accurate.

We trust the above information provides the NRC Staff with an understanding of the depth and breadth of the NNECO evaluation of the April 10, 1994, event, as well as the seriousness that NNECO management places on the event. If you have any questions, please contact P. J. Miner at (203) 665-3296.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

  
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