

**North
Atlantic**

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The Northeast Utilities System

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NYN- 94121

October 24, 1994

United States Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

References: (a) Facility Operating License No. NPF-86, Docket No. 50-443
(b) USNRC Letter dated September 16, 1994, "Inspection Report No. 50-443/94-17,"
J. P. Durr to T. C. Feigenbaum

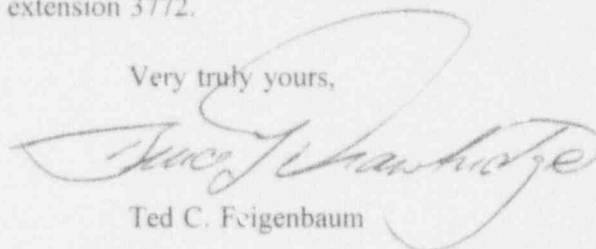
Subject: Response to Recent Operations Department Errors

Gentlemen:

In a letter dated September 16, 1994 [Reference (b)], you described recent errors that occurred in the Operations Department and requested North Atlantic Energy Service Corporation (North Atlantic) to provide a written response regarding these errors. Specifically, you requested North Atlantic's perspective of these errors, an evaluation of the reasons for the errors, and an overall assessment of the Operations Department performance with regard to the identified problems. Accordingly, the Enclosure provides the requested response.

Should you have any questions concerning this response, please contact Mr. James M. Peschel, Regulatory Compliance Manager, at (603) 474-9521, extension 3772.

Very truly yours,



Ted C. Feigenbaum

TCF:JES/jes

Enclosure

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North Atlantic
October 24, 1994

ENCLOSURE TO NYN-94121

Response to Operations Department Errors

In a letter dated September 16, 1994 [Reference (b)], the NRC described recent errors that occurred in the Operations Department and requested North Atlantic Energy Service Corporation (North Atlantic) to provide a written response regarding these errors. Specifically requested were North Atlantic's perspective of these errors, an evaluation of the reasons for the errors, and an overall assessment of the Operations Department performance with regard to the identified problems. The following describes North Atlantic's response to this request.

I. North Atlantic's Perspective on the Errors, Causes, and Corrective Actions

North Atlantic is concerned with the recent errors in the Operations Department particularly since they are contrary to the excellent performance normally exhibited by this department. The following describes each event and provides a summary of the causes and corrective actions.

A. Second Verification of Control Rod Drive Shaft Latching and Locking

On July 12, 1994, after the performance of latching rod control cluster assembly (RCCA) extension shafts, Operations Department personnel identified that a procedural step was not performed regarding the second verification of shaft latching and locking. Operations procedure OS1015.17, "Unlatching and Latching RCCA Extension Shafts," directs refueling personnel to visually verify that the J-slots are locked at the completion of latching operations. This is in addition to the first method of verification, which has the operator "feel" the latching spring click into place when in the breech lock position. The first verification was performed for each drive shaft. The second verification can only be performed after the reactor cavity level has been reduced to the top of the drive shafts. This requires operators to stop implementing OS1015.17, transition to OS1015.10, "Refueling Canal and Cavity Drain," reduce the cavity level, then return to OS1015.17 once the cavity level has been reduced. Neither OS1015.10 or OS1000.09, "Refueling Operations," contained procedural direction to return to OS1015.17 and verify shaft latching and locking.

North Atlantic completed a Station Information Report to determine the cause of this event and to develop corrective actions. North Atlantic has concluded that inadequate procedures was the cause of this event. Specifically, the steps directing the visual verification of proper latching and locking should have been included in OS1015.10 instead of OS1015.17. This would have allowed the procedure to sequence each activity, rather than having to rely on turnover notes or operator memory to ensure that they were in fact completed.

The Station Information Report also described the following statement in the Operations Department management night notes: "during drain down, we only check that the rod drive shafts are all at the same height." This statement was intended to remind operators of the Technical Specification requirements regarding control rod movements. It was not intended to be a discussion of all activities required during drain down. Based on this, North Atlantic does not believe that this was a contributing factor.

For corrective action, North Atlantic removed the reactor vessel head and performed the second verification. This confirmed that all control rod drive shafts were properly latched and locked. Additionally, procedure OS1015.10 was revised to include verification of proper latching and locking of control rod drive shafts.

B. Feedwater Transient

On August 5, 1994, a tagging order was being restored in preparation for starting Condensate Pump 30A. In accordance with the tagging order restoration sequence, the pump suction valve was opened before the pump casing vent valve. This action caused a fixed volume of air to enter the operating condensate pumps via the combined suction header. The slug of air caused the operating condensate pumps to cavitate. Feedwater pump suction pressure decreased to 187 psig then quickly recovered to normal (approximately 300 psig). Normal Condensate and Heater Drain System response caused a second, less severe feedwater pump suction pressure reduction transient. Immediately following this event, the suction valve for Condensate Pump 30B was found in the mid-position.

North Atlantic initiated a Station Information Report and a Human Performance Enhancement System evaluation for this event to determine the causes and to develop corrective actions. North Atlantic has determined that this event was caused by an incorrect restoration sequence in the tagging order. Specifically, the step to vent the pump casing should have preceded the step to open the pump's suction valve. The Work Control Coordinator, who prepared the tagout restoration, was unaware of the need to maintain this sequence of restoration. Interviews with Operations Department members revealed many who were not aware of the need to open the vent valve before the suction valve when restoring a condensate pump tagout.

It should be noted that the restoration sequence required for the Condensate Pumps is different than that normally utilized for other centrifugal pumps, which require the closure of vents prior to opening the pump suction valve. Specifically, the Condensate Pumps normally operate with their suctions under a vacuum. As a result, if a pump suction valve is opened before the pump casing is vented to the condenser, then any air trapped in the pump casing is drawn into the suction of the other operating Condensate Pumps via the common suction header.

North Atlantic was unable to identify the cause of the partial mispositioning of the suction valve for Condensate Pump 30B, but determined that it was not a significant contributing factor to this event.

For corrective action, North Atlantic has placed a sign on the gear operator of each Condensate Pump suction valve to alert personnel that if condenser vacuum exists, it is necessary to verify the condenser vent valve is first open before opening the suction valve. In addition, North Atlantic will revise the tagging computer data base to add a caution statement regarding the restoration process for the Condensate Pumps. Furthermore, a similar caution statement will be added to the procedure for Condensate System lineup.

C. Inadvertent Spent Fuel Pool Heatup

On August 11, 1994, an operator identified an inadvertent heatup of the spent fuel (SF) pool water due to the closure of the SF cooling pump outlet valve SF-V-73. This valve, which is normally throttled to 1100 gpm, was inadvertently closed on August 10. At that time a mechanic had completed a packing adjustment on the valve. The Control Room received the SF cooling pump low flow alarm and an operator acknowledged it. This operator attempted unsuccessfully to contact a Nuclear Systems Operator (NSO) in the plant in order to investigate the cause of the alarm. The Control Room operator was subsequently distracted by the need to respond to another higher priority alarm. Two shift turnovers occurred in the Control Room before it was recognized that the low flow alarm was not investigated when it was initially received.

North Atlantic is very concerned about this event and a Station Information Report and a Human Performance Enhancement System evaluation were completed to determine the causes and to develop corrective actions. As a result, a number of causes were identified for this event. First, inadequate verbal communications occurred between the Work Control Coordinator and the mechanic who performed a packing adjustment on SF-V-73 in that the consequences of potential errors during the performance of this work were not discussed. In addition, communication between the Work Control Coordinator and the mechanic did not establish the required as-found and as-left valve positions. Furthermore, no formal pre-job briefing was conducted for this job. The Work Control Coordinator thought that a pre-job briefing was previously conducted for this work.

Inadequate communication was also a contributing factor with the Control Room operator who acknowledged the low flow alarm did not inform his supervisor or other Control Room staff of the alarm. In addition, this operator did not subsequently attempt to contact a NSO to have him investigate the cause of the alarm, after his first attempt was unsuccessful.

Inadequate work practice was also identified to be a contributing cause. Specifically, the mechanic who worked on SF-V-73 failed to adequately verify the initial and final position of this valve. The mechanic apparently incorrectly established the as-found position as closed, however, the valve was originally 25 to 40 percent open, in order to provide the 1100gpm requirement.

Inadequate written procedures were also identified as a contributing cause. Procedure MS0519.20, "Quarterly Blanket Valve Packing Adjustment," which was used for the packing adjustment, did not contain enough guidance or documentation requirements regarding valve positions to ensure adequate configuration control. The procedure required the documentation of only the as-left position of valves and did not provide any specific guidance for throttled valves.

Another contributing factor was determined to be the presence of nuisance alarms in the Control Room as a result of concurrent SSPS testing. The nuisance alarms masked the low flow alarm such that two operating crews who relieved the Control Room watch failed to identify and investigate it.

North Atlantic will/has implemented the following corrective actions to address this event:

- Procedure MS0519.20, "Quarterly Blanket Valve Packing Adjustment," has been revised to improve configuration control and documentation requirements. This procedure revision also promotes discussion between the Work Control Coordinator and mechanics performing packing adjustments.
- An Operations Good Practice (OGP) will be developed for effective techniques on how to address alarms in the Control Room. This OGP will include communication techniques when alarms are received.
- A policy statement will be developed and proceduralized with the objective of maintaining as few as possible normal alarms on the Video Annunciator System (VAS) screens.
- This event was reviewed with Operations crews and job performance counseling was performed as required. The same will be implemented for the Maintenance crews.
- A sign-off will be added to the Control Room Relief Checklist to ensure that the reason/cause of existing VAS alarms are understood.

The Nuclear System Operator logs have been revised to require periodic monitoring of the Spent Fuel Pool cooling flow.

3. Overall Assessment of the Operations Department Performance with Regard to the Identified Problems

North Atlantic has reviewed the three aforementioned events and has concluded that they represent isolated instances of inadequate performance that detract from otherwise excellent performance on the part of the Operations Department. The previous consistent good performance by the Operations Department is most easily evidenced in past NRC resident inspection reports, which document numerous examples of conservative decision making and an excellent safety perspective. Since these three events, North Atlantic management has not seen any evidence of a declining performance trend in this department. This is further substantiated by the independent performance trending that is performed by the Quality Programs organization, which indicates an overall reduction in personnel errors in the Operations Department since the beginning of 1994.

North Atlantic did not identify a common cause between these three events. Additionally, personnel error was considered to be a primary factor in only one of the three events. This pertained to the third event concerning the inadvertent heat up of the spent fuel pool. Personnel error was not a factor in the two remaining events. Notwithstanding the lack of a common cause, North Atlantic management is concerned about any degradation in performance, even that associated with isolated occurrences, and therefore will continue to carefully monitor the performance of the Operations Department.