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MURRAY R. EDELMAN SR. VICE PRESIDENT NUCLEAR

> May 20, 1987 PY-CEI/NRR-0650 L

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

> Perry Nuclear Power Plant Docket No. 50-440 Response to Notices of Violation 50-440/87004-01 87004-02 and 87004-03

Gentlemen:

This letter acknowledges receipt of the Notices of Violation contained within Inspection Report 50-440/87004 dated April 20, 1987. The report identified areas examined by Messrs. K. A. Connaughton and G. F. O'Dwyer during their inspection conducted from March 4 through April 13, 1987 of activities at the Perry Nuclear Power Plant, Unit 1.

Cur response to these Notices of Violation is attached. Please feel free to contact me should you have any additional questions.

Very truly yours,

Murray R. Edelman Senior Vice President Nuclear Group

MRE:njc

Attachment

cc: T. Colburn K. Connaughton USNRC, Region III

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Restatement of the Violation

- 10 CFR 50, Appendix B, Criterion 16, as implemented by Cleveland Electric Illuminating Company Perry "Quality Assurance Plan" states, in part, in Section 16 of that plan as follows:
 - 16.1.1 Conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances shall be promptly identified, and corrected...
 - 16.1.2 For significant conditions adverse to quality, corrective action taken shall include measures to preclude repetition.

Contrary to the above:

On December 4, 1986, a Division 2 control air valve F115B was identified as leaking and a work request written.

On February 10, 1987, a Division 1 control air valve F110A was identified as leaking and a work request written.

On February 27, 1987, both Division 1 and 2 Diesel Generator failed to start due to failure to correct the air leaks previously identified. This is a Severity Level IV Violation (Supplement 1).

Corrective Action Taken and Results Achieved

On February 27, 1987, a failure of two control air solenoid valves rendered Division I and II Diesel Generators (DG) inoperable. Troubleshooting of the failure was initiated immediately and the problem was identified as excessive air leakage past the 3 way continuously energized air solenoid valves. The valves were replaced, surveillance testing was completed, and both Divisions were declared operable on February 28. As noted in the violation, both leaking solenoid valves had previously been identified for replacement due to leakage, with work requests initiated but not yet implemented. However, several Surveillance Tests had been run successfully subsequent to identifying the leaking valves. At discovery, the conditions were evaluated not to require immediate action, thus immediate replacement did not occur.

The cause of failure of the solenoid valves is believed to be accelerated degradation of the material within the valves. The valve manufacturer was contacted and responded that failures seldom occurred and that the most common failure developed when the poppets, made from BUNA-N, were subjected to an incompatible lubricant or excessive heat. These valves are subjected to temperatures near the upper end of the qualified operating range and are continuously energized. These factors are believed to eventually cause degradation of the material within the valve resulting in air leakage and eventual failure.

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Corrective Steps to Prevent Recurrence

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The following corrective actions have been or will be completed to prevent recurrence of the DG control air solenoid valve failures:

- 1. Those DG control air solenoid valves which have been in service and continuously energized for over 6 months have been replaced.
- 2. An engineering evaluation will be performed to establish a better defined service life for the control air solenoid valves.
- 3. An engineering evaluation is underway to minimize the application of continuously energized solenoid valves as well as the number of active components in the pneumatic/electrical control system of the DG control air panel and to replace solenoid valves containing BUNA-N material with Viton material.
- 4. A design change has been initiated for the DG building ventilation system which will decrease the average ambient temperature in the vicinity of the DG control panel. Preliminary steps have been taken to decrease the ambient temperature in the DG room during standby conditions.
- 5. The failed control air solenoid valves have been returned to the vendor for performance of failure analysis.

The following actions will be completed to enhance the ability to complete in a timely manner corrective maintenance which may directly affect system performance:

- Plant Administrative Procedure (PAP)-1705, "Diesel Generator Reports and Records", will be revised to require a periodic review of diesel generator work order priorities with the Work Review Committee (WRC) to ensure the appropriate work priority is assigned.
- 2. At the time a Work Order (WO) is initiated, the proper priority assignment is assured via a combined review by the Unit Supervisor and the Project Work Center, as required. Through interface with the WRC, the system engineer is responsible for evaluating and monitoring outstanding corrective maintenance for the respective systems to ensure that work activities are given proper priority. These prioritization and interface responsibilities will be reemphasized with the appropriate personnel.
- 3. PAP-0115 is currently under development to proceduralize the functions and responsibilities of the WRC. These responsibilities include a review of work documentation to facilitate proper prioritization and sequencing of work performance.

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Date of Full Compliance

The corrective actions discussed above will be implemented at various times up to 12/30/87. This date is based on completion of data collection and then subsequent evaluation for solenoid valve service life. Full compliance will be achieved at this time.

Other Related Activities

Several management tools have been intitiated that will improve the ability to complete in a timely manner Work Orders (WO) which may directly affect system performance. A WO Backlog Study was performed to determine the amount involving corrective maintenance which may warrant closer attention. This number was determined to be less than half of the total number of backlogged WOs. These results are being utilized as a part of the ongoing evaluation and enhancement of the Work Order process. It should be noted that the amount of backlogged WOs has been reduced by 20% since January, 1987 under the existing program. Additionally, a rolling schedule is presently being developed which will be used for the coordinated performance of routine surveillances, corrective maintenance, and preventative maintenance. Thus, work activities required on systems and components will be coordinated consistent with scheduled surveillances on the same systems and components. Additionally, a monthly Plant System Status Report has been developed to be used as a trending tool for the WRC. The report provides a concise summary of corrective and preventive maintenance, temporary alterations and future design changes for select systems.

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50-440/87004-02

Restatement of the Violation

Perry Unit 1 Technical Specification 3.6.1.3 requires, in part, that in Operational Condition 1 with one primary containment personnel airlock door inoperable, maintain at least the operable airlock door closed. Exception is provided during entry to repair an inoperable inner door.

Contrary to the above, on March 14, 1987, while in Operational Condition 1, the outer door of the upper personnel airlock was opened and reclosed twice for a containment entry and exit while the inner airlock door was inoperable. The containment entry did not involve repair to the inner airlock door.

This is a Severity Level IV violation (Supplement I).

Corrective Action Taken and Results Achieved

The upper airlock inner door was declared inoperable due to a suspected leakage path. The leakage path was created when the equalizing valve on the door (a ball valve) was placed in an overtravel position. When the leakage was discovered the Control Room instructed the security officer posted at the upper airlock to not allow access through the airlock. This security officer failed to pass on the information to a relieving security officer. Access through the airlock was then permitted. At the time of the event, preparations to tag the outer door closed were in progress. Once the tags were prepared, the airlock outer door was locked and danger tagged to preclude use of the airlock until the equalizing valve could be adjusted.

Corrective Steps to Prevent Recurrence

The equalizing valve was adjusted by installing additional washers on the operating linkage to prevent overtravel. The other airlock doors were inspected and verified to operate properly.

To address the communication aspects of this event, all security officers have been give verbal instructions to ensure that any directions received are written down and properly addressed to the relieving officers. A memorandum from the security supervisor to all security shift supervisors was issued directing that any future instructions received by security officers shall be communicated to the security shift supervisor who shall verify them with the originator.

Date of Full Compliance

Full compliance has been achieved.

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Restatement of the Violation

10 CFR 50, Appendix B, Criterion V, as implemented by the Perry Nuclear Power Plant Quality Assurance Plan, Section 5.1.1 requires, in part, that activities that affect quality shall be prescribed by clear and complete documented procedures, instructions and/or drawings of a type appropriate to the circumstances.

Contrary to the above, procedures for operations involving the "B" Residual Heat Removal subsystem on March 25, 1987, and the Reactor Water Cleanup system on March 30, 1987 were not appropriate for existing circumstances. Performance of the procedures, as written, resulted in inadvertent partial losses of reactor water inventory.

This is a Severity Level IV violation (Supplement I).

Corrective Action Taken and Results Achieved

On March 25, at 0522, a reactor vessel water level decrease was observed during initiation of the shutdown cooling mode of the B Residual Heat Removal (RHR) system. Operators stablilized reactor vessel level at 180 inches, which is above the low level 3 scram setpoint. Investigation determined that upon initiation of shutdown cooling, a flow path was established from the outlet of the RHR pumps into the drained feedwater system piping. This was due to the Reactor Feedwater Isolation valve (1B21-F065B) being left in the open (off-normal) position per a Nonconformance Report disposition.

On March 30, at 0952, reactor vessel water level was again observed decreasing. At the time of this event a tagout was being cleared on the Reactor Water Cleanup (RWCU) to RHR B to Feedwater B Manual Isolation valve (1G33-F051B). Upon opening this valve a flow path was established from the outlet of the RWCU pumps into the drained feedwater system piping due to the Reactor Feedwater Isolation valve (1B21-F065B) being left in the open position. The operations personnel performing the tagout clearance were directed to reclose valve 1G33-F051B and operators secured the RWCU system. In anticipation of entry into Plant Emergency Instructions, Control Room operators manually initiated a scram signal when reactor vessel level had decreased to approximately +180 inches above top of active fuel (TAF). As a result of these actions, reactor vessel level returned to a normal level of approximately +200 inches above TAF within 12 minutes.

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Corrective Steps to Prevent Recurrence

The cause of these events was personnel error. The off-normal system lineups were not adequately controlled as required by Plant Administrative Procedures (PAP)-0201, "Conduct of Operations", and PAP-0205, "Operability of Plant Systems". When a valve is left in an off-normal position the valve and its associated boundary valves should be tagged with White Out-of-Service tags in accordance with PAP-1401, "Safety Tagging". This would prevent the operation of any of the valves directly in-line with the off-normal valves without a review of the current system lineup.

As a result, appropriate operations personnel have received training on these events and the requirement to appropriately control system configuration in accordance with PAP-0201, "Conduct of Operations", and PAP-0205, "Operability of Plant Systems". Valve 1B21-F065B has been repaired and returned to normal operating status. These corrective actions are sufficient to prevent recurrence in the future.

Date of Full Compliance

Full compliance has been achieved.