

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-352/85-08

Docket No. 50-352

License No. NPF-27 Priority - Category C

Licensee: Philadelphia Electric Company

2301 Market Street

Philadelphia, Pennsylvania 19101

Facility Name: Limerick Generating Station, Unit 1

Inspection at: Limerick, Pa.

Inspection Conducted: January 17-21, 1985

Inspectors: J. T. Wiggins 1/22/85
J. T. Wiggins, Senior Resident Inspector Date

Date

Date

Approved by: R.M. Gallo 1/28/85
R.M. Gallo, Chief, Reactor Projects Date
Section 2A

Inspection Summary: Inspection Report for Inspection Conducted January 17-21, 1985 (Report No. 50-352/85-08)

Areas Inspected: Special inspection by the senior resident inspector which covered an event in which both containment isolation valves for the reactor water cleanup system suction line were rendered inoperable for seven minutes due to an operator error. This inspection involved 10 hours by the Senior Resident Inspector.

Results: One violation was identified involving the failure to meet the requirements of the Technical Specification for containment isolation valve operability. Although the violation was not significant from a technical perspective, it is a concern due to the apparent inadequacy shown during this event regarding the controls over the activities of licensed reactor operators exercised by their onshift supervisors.

DETAILS

1. Persons Contacted

W. Barnshaw, Shift Superintendent
J. Corcoran, Field QA Branch Head
J. Doering, Operations Engineer
P. Duca, Technical Engineer
J.F. Franz, Assistant Station Superintendent
G.M. Leitch, Station Superintendent

In addition, the inspector discussed the causes and effects of the event described in this report with other operators and engineers on the station staff.

2. Purpose of this Report

This special report describes an event which occurred on 1/15/85 in which both containment isolation valves for the reactor water cleanup system were rendered inoperable during the performance of a surveillance test. This event resulted from a personnel error made by a control room operator and it was identified by the NRC Senior Resident Inspector on 1/16/85.

3. Description of the Event

During a control room log review on 1/16/85, the inspector noted an entry made at 9:20 a.m., 1/15, which indicated that the electrical power supply feeder breakers to both the inboard and outboard containment isolation valves for the reactor water cleanup system (RWCU) had been opened to support performance of a surveillance test. An entry at 9:27 a.m., 1/15, indicated that these feeder breakers had been subsequently reclosed. The inspector determined that the valves, designated HV44-1F001 (inboard) and HV44-1F004 (outboard), are the motor-operated valves which automatically isolate containment penetration number 014. As described in Technical Specification (TS) Table 3.6.3-1, the valves automatically close upon indication of low reactor vessel water level, upon indication of line breaks within the RWCU system and upon initiation of the standby liquid control system. The inspector further determined that, with these valves open and with the power supply feeder breakers to their motor operators open, the containment isolation operability requirements of TS 3.6.3 were not met.

The inspector discussed his findings with the shift superintendent at about 4:30 p.m., on 1/16/85, and with the Station Superintendent and other members of the station staff on 1/17 and 1/21/85. The inspector was informed that the shift supervisor on watch at about 9:00 a.m., 1/15/85 had directed a control room operator to open the feeder breakers

to HV44-1F001 and 1F004 in order to avoid an unwanted RWCU isolation during performance of surveillance test (ST)-6-107-590-1, the Daily Surveillance Log for OPCONS 1, 2, 3.

During performance of this ST in the past, spurious RWCU isolations had occurred as operators had attempted to record the temperatures indicated on modules which are located in the Auxiliary Equipment Room and which are used to sense indications of RWCU system line breaks by measuring room and ventilation temperatures. To record these temperatures, operators had to place the "read/set" switches on the modules involved in the "read" position. Placing the switches to "read" had been shown to cause transient voltage conditions within the modules which would result in high temperature RWCU trips being initiated by the modules. Opening the feeder breakers to the 1F001 and 1F004 valves would avoid spurious isolations of the RWCU system by rendering these valves incapable of automatically closing.

The inspector learned that the shift supervisor recognized that TS3.6.3 required that the operability of 1F001 and 1F004 be maintained and that opening the power supply feeder breakers rendered these valves inoperable. Further, he understood that Action Statement 3.6.3a allowed four hours of operation in OPCON 2 provided at least one of the two RWCU valves was maintained operable. Therefore, he directed the control room operator to individually test the temperature modules associated with the 1F001 and 1F004 valves such that the power supply feeder breakers to both valves would not be open at the same time.

Apparently, the control room operator had not understood the restrictions the shift supervisor had placed on the power supplies to these valves and failed to identify that TS 3.6.3 required these valves to be operable. The control room operator stationed non-licensed operators at the temperature modules in the Auxiliary Equipment Room and at the valve feeder breakers at motor control centers in the Reactor Enclosure. He directed that the feeder breakers to both 1F001 and 1F004 be opened at the same time and that the temperature readings be recorded. Subsequently, after the temperature readings were recorded, the feeder breakers were reclosed. The total time duration in which the feeder breakers were open was about 7 minutes.

4. Licensee Corrective Action

At a meeting with the Station Superintendent and his staff on 1/21/85, the inspector was informed of the licensee's short and long term corrective actions. The inspector was informed that on 1/4/85, a plant staff field report had been approved which recommended that a modification be

made to the temperature modules to prevent their inadvertent tripping. However, as of 1/21/85, this modification had not been approved for implementation. As short term corrective action for this event, the Station Superintendent indicated that approval and implementation of this modification would be expedited. In the interim, the Station Superintendent stated that a temporary procedure change had been made to the Daily Surveillance Log to provide a detailed procedure for obtaining the temperature indications from the RWCU modules. Additionally, a memorandum had been issued to each operating shift requiring a review of TS 3.6.3.

Regarding long term corrective actions, the licensee described four items:

- 1) to enhance the familiarity of the operators with Technical Specification requirements, an additional 12-16 hours of TS training would be included in the requalification training cycle beginning in February for reactor operators, senior operators, shift technical advisors and shift advisors. Additionally, each of the above individuals would be issued their own copies of TSs by 2/1/85.
- 2) control room log review requirements would be modified such that the shift superintendent, the shift supervisor and the shift technical advisor would be required to review control room operators' logs once per shift.
- 3) the Daily Surveillance Logs for OPCONS 1, 2 and 3 and for OPCONS 4 and 5 would be reviewed to determine the adequacy of the procedural guidance incorporated within them.
- 4) an operating excellence program would be instituted to improve the overall performance of personnel at the facility.

The inspector had no further questions.

5. Conclusion

The inspector determined the TS 3.6.3 had required both containment isolation valves HV44-1F001 and HV44-1F004 to be operable. However, operation for up to 4 hours would have been allowed provided at least one of the two containment isolation valves was maintained operable. The inspector further determined that opening the feeder breakers to the motor operators for both valves simultaneously, while the valves were open, rendered both the valves incapable of automatically isolating containment penetration No. 014 and consequently made both of them

inoperable. The inoperable condition of these valves constituted a violation of TS 3.6.3. (50-352/85-08-01)

The inspector determined that, from a technical perspective, the safety significance of this violation was minimal. Because the reactor had been operated for less than one month at power levels less than 5%, the fission product amounts which would be available for release from the core during an accident were small. Further, during the 7 minutes that power supply feeder breakers were open, an operator was available at the breakers to reclose them if necessary, and the control room operator was cognizant of the status of the feeder breakers.

However, the event was **significant** from the perspective of the adequacy of the controls exercised over the activities of the reactor operators.

6. Exit Meeting

An exit meeting to discuss the findings of this inspection was conducted on 1/21/85 with Mr. Graham M. Leitch and members of his staff. At this meeting, these licensee representatives did not indicate that the matter covered by the report involved proprietary information.