

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-352/85-24

Docket No. 50-352

License No. NPF-27 Priority -- Category C

Licensee: Philadelphia Electric Company

2301 Market Street

Philadelphia, PA 19101

Facility Name: Limerick Generating Station, Unit 1

Inspection At: Limerick, Pennsylvania

Inspection Conducted: April 30 - May 2, 1985

Inspectors: D. Florek
D. Florek, Lead Reactor Engineer

5/15/85
Date

Approved by: H. H. Nicholas for
L. Bettenhausen, Chief
Operations Branch, DRS

5/30/85
Date

Inspection Summary: Inspection on April 30 - May 2, 1985 (Inspection Report No. 50-352/85-24)

Areas Inspected: Routine, onsite, unannounced inspection of licensee actions on previous inspection findings, the startup test program during test condition heatup, QA/QC Interfaces and tours of the facility. The inspection involved 23 hours onsite by one region based inspector.

Results: No violations were identified.

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DETAILS

1.0 Persons Contacted

- R. Costagliola, Maintenance Supervisor - PECO
- *T. Dey, QA Engineer - PECO
- V. Cwietniewicz, Instrument and Control Engineer - PECO
- *C. Endriss, Regulatory Engineer - PECO
- E. Firth, Limerick Training Coordinator - PECO
- *K. Folta, Site QC Supervisor - Gilbert
- *G. Gilbody, QA Engineer - PECO
- *R. Hennessey, QC Supervisor - PECO
- *L. Hopkins, Performance Engineer - PECO
- *A. Jenkins, Startup Program Supervisor - GE
- G. Leitch, Plant Superintendent - PECO
- *K. Mandl, QA Corporate Supervisor - PECO
- *J. McElwain, QA Auditor - PECO
- P. Pagano, NSSS Test Supervisor - GE
- G. Rainey, Instrument and Control Engineer - PECO
- *W. Rekito, Regulatory Coordinator - Bechtel
- C. Wilpizeski, Mechanical Engineer - PECO

U.S. Nuclear Regulatory Commission

J. Wiggins, Senior Resident Inspector

*Denotes those present at exit meeting conducted on May 2, 1985.

The inspector also contacted other licensee and contractor personnel in the course of the inspection including shift supervisors and members of the technical staff.

2. Licensee Action on Previous Inspection Findings

(Open) Violation (352/85-06-02) licensee actions in handling TER-22 and 29 were not in accordance with the administrative procedures. The inspector reviewed TER-22 and 29. They have been reviewed and accepted by management. The inspector reviewed STPS-41, A. Jenkins to all startup test directors "Compliance with Startup Test Program Administrative Controls" dated February 12, 1985, and STPS-46, A. Jenkins to J. Franz "NRC Finding Report N-489" dated February 19, 1985. Training was provided to test personnel regarding the events leading up to TER-22 and 29 and in the processing of test exceptions. The inspector interviewed several startup test directors and ascertained that they were knowledgeable of actions necessary to process level 1 test exceptions. The licensee has instituted use of a Technical Review Committee (TRC) to aid in the processing of level 1 test exceptions and review of completed Startup Test Results. As described in Inspection Report 50-352/85-14 this has improved the administration of the startup test program. In addition, the inspector reviewed

proposed changes to administrative procedure A-202 "Startup Test Implementation" which identified areas of improvement based on the experience to date in the implementation of the startup test program. The inspector reviewed QA Audit Report AL-84-86PR dated January 24, 1985, which identified related problems with implementation of the startup test program. The on site inspection identified no problems with licensee actions to correct the violation. However, violation 352/85-06-02 will remain open pending licensee submittal and NRC review of the formal response to the "Notice of Violation".

(Closed) Unresolved Item (352/85-11-01), (Open) Violation (352/85-06-05). The above items relate to the lack of controls for troubleshooting activities. The inspector reviewed A-41.1 "Troubleshooting Safety Related and Tech. Spec. Equipment", Revision 0, effective date May 1, 1985 and a PORC approved revision 1 to A-41.1 which had not yet been issued which permits minor repairs such as replacing fuses while troubleshooting. The inspector reviewed training logs and verified that A41.1 familiarization training was provided to plant personnel on March 26-29, 1985. The inspector also reviewed maintenance personnel training plans which include additional training in the administrative procedures including A41.1 in May 1985. The inspector reviewed several troubleshooting control forms (TCF) being used on a trial basis during March and April. The inspector also reviewed several TCF's being performed after the implementation date of the procedure. Based on interviews with several technical and operating shift personnel, they were familiar with the content and implementation of the procedure. No unacceptable conditions were noted. Unresolved Item 352/85-11-01 is considered closed. The onsite inspection identified no problems with the licensee corrective action. However, violation 352/85-06-05 will remain open pending licensee submittal and NRC review of the formal response to the "Notice of Violation".

(Closed) Unresolved Item (352/85-06-03), (Open) Violation (352/85-06-04) These items relate to corrective actions resulting from the event in which instrument and control (I&C) personnel connected test equipment to the recirculation flow control system and caused an increase in reactor power without the knowledge and consent of the operator at the controls. The inspector reviewed the following documents: I&C Sub-PORC meeting minutes dated January 30, 1985; letter J. Dolan to R. Weigle, "Recirc. Flow Increase of January 25, 1985," dated February 2, 1985; letter R. Weigle to R. DiSandro, "Multi Channel Test Equipment", dated February 8, 1985; QA Finding Report N-487 dated April 9, 1985; letter R. DiSandro to J. Grimes, "Multi Channel Test Equipment" dated April 30, 1985 and Request for Revision to RT-12-50008, dated April 30, 1985.

Based on review of the documents and discussions with I&C personnel: the Gould recorders involved in the event were removed from the site, training was provided for the technicians on February 1, 1985, other test equipment was reviewed for susceptibility to the same ground potential problem (none were found on site), other items which may be susceptible to the problem

will be identified by the Testing and Laboratories Section and caution tags will be attached per procedure RT-12-50008. In addition, as described in the inspector review of Unresolved Item 352/85-11-01, administrative procedure A-41.1 was issued which requires shift supervision authorization for troubleshooting activities. Unresolved item 352/85-06-03 is considered closed. The onsite inspection identified no problems with the licensee's corrective action. However, violation 352/85-06-04 will remain open pending licensee submittal and NRC review of the formal response to the "Notice of Violation".

(Open) Unresolved Item (352/84-71-02). This item related to the method to test the CST for vortex formation with HPCI operating at 5600 gpm and the CST water level at the transfer level. The inspector reviewed the following documents: Calculation MEL-4 dated 4/11/85; LDCN FS-840 dated 4/12/85; NUREG/CR-2772 "Hydraulic Performance of Pump Suction Inlets for Emergency Core Cooling Systems in Boiling Water Reactors"; Instrument Calibration Sheets for LIS-55-IN661F and LIS-55-IN661B; drawing M-372; FSAR section 6.3.2.2.1.1 and interviewed several licensee personnel. The inspector ascertained that NUREG/CR-2772 documents testing results that closely resemble the plant configuration for the as installed instrumentation. Calculation MEL-4 correctly applied the test results to the as-installed instrumentation. Calculation MEL-4 assumed initiation of suction transfer at CST water elevation of 226 feet and completion of transfer at 223.6 feet. This is comparable to suction transfer levels of the installed equipment when the HPCI pump is operating. FSAR section 6.3.2.2.1.1 indicates that CST transfer level is initiated at 220 feet which is the centerline of the HPCI suction nozzle at the CST. The inspector questioned the licensee representative regarding the differences between the FSAR identified values and the installed values. Technical specification values indicate that CST suction swap levels shall be greater than 219 feet 3.8 inches. The licensee indicated the difference is caused by HPCI pump operation which causes approximately 7 feet lower indication of CST level than actual due to the level instrumentation being referenced to static conditions not flowing conditions.

The inspector could not accept the licensee analysis based on the differences between the FSAR and actual plant installation. The conclusion established by the licensee calculations, that HPCI vortex testing is not required, would not be supported if CST levels during the suction transfer were as stated in the FSAR. Furthermore, FSAR Section 9.2.7 indicates a minimum of 135,000 gallons of water will be maintained in the CST for HPCI/RCIC operation. The inspector questioned whether the suction transfers at 226 feet versus 220 feet will impact on this commitment. This item will remain open pending licensee evaluation of the inspector concerns.

3.0 Startup Program Low Power Testing

The inspector reviewed: STP-99.2 "Low Power Testing" Revision 1 dated December 29, 1984; startup test results computer summary and the test exception report (TER) log to determine if the committed low power testing in FSAR chapter 14 was conducted. Based on the review the inspector ascertained that the plant low power testing as described in the FSAR was completed but not all of the test results had been reviewed and accepted by management. All test exceptions have been reviewed by at least the technical review committee, except TER-124 which was identified on April 25, 1985, and most have had their resolutions reviewed by the PORC and accepted by the Plant Superintendent. The plateau review must also be completed prior to exceeding 5% power. The licensee was aware of their license commitment to assure completion of the low power startup testing program for both testing and results analysis prior to exceeding 5% power. The licensee representatives indicated that the PORC review of the completed startup test results and test exceptions has been deferred due to PORC review being focused on other plant areas at this time. The licensee representative acknowledged that review and acceptance of completed test results and a plateau review would be conducted prior to exceeding 5% power. The adequacy of the licensee reviews will be assessed in a subsequent inspection.

4.0 QA/QC Interface

The inspector ascertained by review of STP-99.2 that QC review of completed startup test results was being conducted. The inspector also ascertained that QA was monitoring licensee actions relating to previous inspection findings.

5.0 Plant Tours

The inspector made several tours of the facility during the course of the inspection including the reactor building, turbine building, control structure and control room. No unacceptable conditions were noted.

6.0 Unresolved Items

Unresolved items are matters about which more information is needed to determine whether they are violations, deviations, or acceptable. Unresolved items are discussed in paragraph 2.

7.0 Exit Interview

An exit meeting was held on May 2, 1985 to discuss the inspection findings as detailed in this report (see paragraph one for attendees). At no time during the inspection did the inspector provide written inspection findings to the licensee. At the exit, the licensee did not identify any proprietary material that was contained within the scope of the inspection.