

U. S. NUCLEAR REGULATORY COMMISSION

Region I

Report No. 50-352/82-04
50-353/82-03

Docket No. 50-352
50-353
CPPR-106

License No. CPPR-107 Priority - Category A

Licensee: Philadelphia Electric Company

2301 Market Street

Philadelphia, Pennsylvania 19101

Facility Name: Limerick Generating Station, Unit Nos. 1 & 2

Inspection at: Limerick, Pennsylvania

Inspection conducted: February 1 - 28, 1982

Inspectors: *J. P. Durr* 3/3/82
J. P. Durr, Senior Resident Inspector Date Signed

_____ Date Signed

_____ Date Signed

Approved by: *E. C. McCabe* 3/4/82
E. C. McCabe, Chief, Reactor Date Signed
Projects Section 2B

Inspection Summary: Report 50-352/82-04 and 50-353/82-03 performed February 1 - 28, 1982.

Areas Inspected: A routine, unannounced inspection by the Senior Resident Inspector of the HVAC subcontractor's quality assurance program, plant tours, licensee action on previous inspection findings, and 10 CFR 21 reports. The inspection involved 77.5 hours at Unit 1 and 3 hours at Unit 2.

Results: One violation was identified in the 4 areas inspected, (Failure to adequately control design changes, para. 3 and 4).

Region I Form 12
(Rev. April 77)

8204020234 820315
PDR ADOCK 05000352
Q PDR

DETAILS

1. Persons Contacted

Philadelphia Electric Company

J. M. Corcoran, Field QA Branch Head
M.J. McGill, QAE
G. J. Moffitt, Engineer - Construction
P. L. Naugle, Engineer
P. K. Pavlides, Manager - QA

Bechtel Power Corporation

G. D. Abbey, Subcontracts Engineer (SCE)
T. Altum, Assistant Project Field Engineer (APFE)
A. Arch, APFE
M. J. Baron, Lead Field Welding Engineer
G. Cerrix, Instrument Superintendent
B. Dragon, QAE
H. D. Foster, PFQCE
H. F. Greenawalt, QAE
J. Honer, Sr. Lead S/C Engineer
G. C. Kelly, QAE
E. R. Klossin, PQAE
J. L. Martin, QAE
K. L. Quinter, Assistant PFQCE
D. Smolinsky, Lead Pipe Engineer
D. C. Thompson, Assistant PFQCE
R. E. Weaver, LSME
A. G. Weedman, PFE

Schneider, Inc.

T. M. Carroll, Project Manager
G. A. Heinrichs, QC Manager

The above listed personnel attended exit interviews on February 11 or 25, 1982. Other craftsmen, engineers, quality control technicians, and supervisors were contacted and interviewed as the inspection interfaced with their work.

2. Licensee's Actions on Previous Inspection Findings

(Closed) Violation (353/78-07-01)

(Closed) Violation (352/78-11-01) The licensee was discharging water from construction activities with turbidity levels in excess of Construction Permit allowed levels. The licensee analyzed the rate of discharge and the turbidity level relative to the Schuylkill River flow and determined that there was no adverse environmental impact. In addition, he eliminated the direct discharge of water to the Schuylkill River and instructed the responsible superintendent in the proper disposal of dewatering operation.

The subcontractor responsible for this violation has completed his work at the site and no further dewatering operations will be performed by him. The inspector toured the site on February 17, 1982, and verified that settling basins are functional and dewatering appears to be controlled. He also verified that the licensee had performed a follow-up audit, N-142, and surveillance, C-172, and corrected all violations. This item is closed.

(Closed) Violation (352/79-11-08)

(Closed) Violation (352/81-06-02) Inspection finding (352/79-11-08) identified improper welding of heating, ventilating, and air conditioning (HVAC) dampers. An attempt to close this finding disclosed that inadequate corrective actions were taken. The limited access to the welds in question precluded meaningful inspections from being performed. The design remedy was to provide an alternate weld inside the damper. A verification inspection by the NRC revealed that where welds were inaccessible for inspection, the alternate weld had not been deposited. This resulted in the finding (352/81-06-02).

To preclude recurrence of incomplete corrective actions, the licensee has changed his system so that findings will no longer be closed out before committed actions are completed. This will be verified by the NRC as future violations are resolved.

In addition, the licensee took the following actions to correct the damper weld problem:

- (1) Reinspected all dampers for weld accessibility.
- (2) Welds which were determined to be inaccessible were modified in accordance with the alternate design.
- (3) Retrained the HVAC quality control inspectors regarding procedures for inaccessible equipment.

- (4) Revised the site inspection procedure, PPM-5.3, to include a requirement in the in-process inspection procedure to check for accessibility.

The NRC inspector verified that the above corrective actions were completed. These items are closed.

(Closed) Unresolved Item (352/80-02-03) The practice of welding galvanized shapes to the containment liner was questioned. A review of the February 14, 1980 letter disclosed that the licensee performed welding tests of electro-galvanized and hot-dipped galvanized shapes. No adverse reactions were noted because of the coating. The AWS Welding Handbook, 72.13-72.21, and the AWS Structural Welding Code, 3.2, discuss welding through galvanized coatings without detrimental effects on the weld deposit. This item is closed.

(Closed) Unresolved Item (352/80-02-04) The inspector was concerned that licensee Audit Finding Reports, Form QAF-8, were not routinely reviewed for reportability under 10 CFR 50.55(e). A review of the licensee's Quality Assurance Plan, Appendix Z and Exhibit XXXIII, verified that procedures have been implemented which assure the review of audit findings for reportability. The Finding Report is required to be reviewed for reportability and this review documented in block 21 of the report. This item is closed.

(Closed) Violation (353/80-08-01)

(Closed) Violation (352/80-09-01) The licensee failed to prevent the discharge of raw sewage to the Schuylkill River. The licensee determined that the spillage was caused by an open vent associated with the main tank inlet pipe. An abnormally large flow of sewage escaped from this vent. The licensee capped this vent to preclude recurrence. The inspector verified that the vent was capped and discussed the sewage system operation with the pollution control engineer and plant operators. This item is closed.

(Closed) Violation (352/80-17-01)

(Closed) Violation (352/81-04-01) Violation (352/80-17-01) identified uncontrolled cutting of reinforcing bars (rebar) in a concrete block wall. Violation (352/81-04-01) identified uncontrolled issue of rebar cutting drills and improper documentation of cut rebar. The licensee recalled all rebar cutting drills, and implemented new procedures to control the cutting of rebar, and performed an analysis of "worst case" walls to assure structural soundness.

The inspector reviewed the revised Job Rule, JR-G-28, for the committed program changes and controls. He verified that the procedure for control was implemented by examining selected attributes from the Job Rule. He

interviewed the personnel responsible for Job Rule implementation and confirmed that they were knowledgeable of their duties and that appropriate records were being kept. During previous plant tour inspections, the inspector examined several Excavation Check Sheets and verified that rebar drilling was properly authorized. These items are closed.

3. Plant Tours (Unit Nos. 1 & 2)

Periodically during the inspection, tours were made of the Unit Nos. 1 and 2 primary reactor containments, the reactor buildings, the control structure, and surrounding yards and shops. The inspector examined completed work, work in-progress, quality control activities, and equipment storage, handling, and maintenance. He discussed the technical aspects of the work with craftsmen, supervisors, and engineers to assure work was being performed in accordance with requirements.

During the tours and over a period of several days, welders complained to the inspector that they were having difficulty with weld porosity during the first half inch of weld deposit. Further inquiries by the inspector revealed that other welders were also experiencing difficulty with porosity in the initial weld deposits. This was brought to the attention of the licensee who acknowledged that similar complaints had been made to him and that some informal tests had been performed in order to substantiate the complaint. The tests apparently were satisfactory and the issue closed.

Based on the welders' statements, the inspector requested further steps be taken to resolve the issue. The licensee believes that the problem may be limited to welder technique and will provide additional instruction to those encountering difficulty. This item is unresolved pending resolution of the problem (352/82-04-03).

Safety related welds (ASME III, Class II and III) were selected for document review and observation of welding activities. The document reviews verified the welder's qualifications, proper welding procedures were employed, required nondestructive tests specified, appropriate quality control inspection points specified and signed off, and proper preheat and postweld heat treatments were required. The observation of welding consists of, where applicable, examination of the cleanliness, fitup, and alignment of the parts; proper welding equipment; purge and cover gas flow rates; electrodes and filler materials; appearance of the weld deposit; evidence of quality control activities; and proper documentation. The following welds were examined:

<u>Weld No.</u>	<u>Class</u>	<u>System</u>	<u>Status</u>
GBB-111-1/6 FW55	II	RHR	Root Pass Pipe Weld
HBC-182-H901	III	RHR Serv. water	Intermediate Weld Passes

In an attempt to close an open item concerning pipe hangers, the inspector reviewed the Job Rule M-17, "Field Control of Pipe Supports". The Job Rule, paragraph 5.6.1, permits the field engineer to deviate from the hanger detail drawing or the installation specifications during fabrication, installation, and rework. In the case of fabrication and installation, the engineer has 3 days within which to document the change on a Field Change Request (FCR). For partially installed hangers and hanger rework, he is not required to document changes until the completed hanger is submitted for acceptance to quality control. This practice allows undocumented design changes to be made and installation to proceed without approved drawings or procedures. This is contrary to 10 CFR 50, Appendix B, Criteria III and VI in that:

Criterion III requires the design basis be translated into drawings and that field changes to these drawings be controlled.

Criterion VI requires that measures shall assure that changes to these drawings are reviewed for adequacy, approved for release, and are distributed to and used at the location where the activity is performed.

The stated and implied requirements are that field design changes must be documented and controlled before the work proceeds so that the workmen have clear drawings and instructions to perform the work with.

This is a violation (352/82-04-04).

The inspector became aware of an excessive rejection rate for pipe hangers while pursuing the foregoing violation. The licensee is currently experiencing a 50% rejection rate for hangers inspected by quality control. Discussions with the licensee's staff verified that they were aware of the problem and taking steps to improve the acceptance rate. The inspector informed the licensee that he strongly suspected that the failure to provide positive controls on the field originated design changes, identified above, have contributed to the problem. The licensee's efforts to improve the hanger rejection rate will be reviewed in conjunction with the violation.

4. Heating, Ventilating, and Air Conditioning (HVAC)
Subcontractor Audit

The NRC SALP Report for the period of October, 1979 to September, 1980, identified the subcontractor quality assurance program functional area as below average. The HVAC subcontractor's performance was the basis for this finding. Further, the licensee reported a Construction Deficiency relating to the fabrication and installation of HVAC duct work which did not meet design drawings. Based on these findings, an audit of the HVAC subcontractor's program was performed to assess the adequacy of corrective actions taken by the licensee. The audit consisted of selected attributes from the HVAC subcontractor's "Field Nuclear Quality Assurance Manual" and "Project Procedures Manual". The audit verified the implementation of design reviews, organization, welding procedures, document control, inspection, nonconformance reporting and duct work installation.

The review of the drawing control process revealed that when design changes are received from the architect-engineer (AE) they are redrawn in the HVAC subcontractor's format. This requires that the redrawn documents receive another design review by the AE. To expedite the work, "pick off" sheets are drawn from the design change drawings. The "pick off" sheets are details of the fabrication which permits work to progress while the base document is approved. There are no provisions in the program to provide review and control of these "pick off" sheets. This means that equipment is being fabricated, for a period of time, to unreviewed and uncontrolled documents. This is contrary to 10 CFR 50, Appendix B, Criterion VI and a violation (352/82-04-01).

The review of the Nonconformance and Corrective Action control systems disclosed that 4 Nonconformance and Disposition Reports from 1978 were not closed. Further, the Corrective Action Report (CAR) log shows 11 CAR's open from November, 1979 to September, 1981. The quality assurance manual does not impose any time restraints for initiating follow-up action by the responsible parties. The licensee stated that the quality assurance manual was currently being revised and that a time restraint would be imposed on CAR follow-up.

The quality assurance manual also states that a "Shop Standard Book" is prepared by the Lead Draftsman. This has not been done, however, the information covered by the Shop Standard is covered by the AE, C-1350 drawings. These are in use by the field personnel. The "Shop Quality Assurance Manual" has recently deleted the Shop Standard requirement. The licensee stated that the Field Quality Assurance Manual will be revised to accurately reflect current practice. These items are unresolved pending revision of the manual (352/82-04-02).

5. IE Circular Review

80-22 Investigation report 352/82-01 identified concerns with the licensee's personnel qualification verification program. The need to perform personnel qualification verification was the result of IE Circular 80-22. The inspector verified that the licensee initiated actions to satisfy the Circular concerns within PECO and its contractors. The licensee, independent of the NRC investigation, identified problems with a quality control inspector's credentials and has taken steps to correct the matter. This item is closed.

6. Closeout of 10 CFR 21 Reports

The inspector verified that the licensee is aware of the following listed 10 CFR 21 items and has initiated corrective action:

<u>Part 21 No.</u>	<u>Subject</u>	<u>AITs No.</u>
80-190 80-195	American Warming and Ventilating Actuator Defects	H06000527
80-333	Colt Industries Emergency Diesel Generator	H06000539
80-215	American Warming and Ventilation Wiring Defects	H06000614
80-259	MDA Scientific Pressure Switches	H06000671
79-159	GE Connector Crimping	H06000500
80-331	PGCC Flexible Conduit Grounding	H070003086 H070003087
	Bergen Paterson Snubbers	H06000516

The above items are closed.

7. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain if it is acceptable, a deviation, or a violation. Unresolved items are discussed in paragraphs 3 and 4.

8. Exit Interviews

Exit Interviews were held on February 11 and 25, 1982, with members of the licensee's staff. The inspector discussed the scope and findings of the inspection.