

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-352/81-06
50-353/81-05

Docket No. 50-352
50-353

License No. CPPR-106
CPPR-107

Priority -

Category A

Licensee: Philadelphia Electric Company

2301 Market Street

Philadelphia, Pennsylvania 19101

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

Inspection at: Limerick, Pennsylvania

Inspection conducted: April 1-30, 1981

Inspectors: J. P. Durr
J. P. Durr, Senior Resident Inspector

5/11/81
date signed

_____ date signed

_____ date signed

Approved by: E. C. McCabe, Jr.
E. C. McCabe, Chief, Reactor
Projects Section 28

5/27/81
date signed

Inspection Summary: (Unit No. 1) Inspection on April 1-30, 1981 (Report No. 50-352/81-06)

Areas Inspected: A routine inspection, including off-shift activities, by the resident inspector of piping installation, welding, IE Bulletin activities, structural steel, safety related components, and licensee's activities on previous inspection findings. The inspection involved 61 inspector-hours on site.

Results: Two items of noncompliance were identified in the 6 areas inspected (failure to correct identified nonconforming conditions, para. 3; welding undercut in structural steel, para. 6).

(Unit No. 2) Inspection on April 1-30, 1981 (Report No. 50-353/81-05) A routine inspection, including off-shift activities by the resident inspector of piping installation, welding, IE Bulletin activities, and licensee's activities on previous inspection findings. The inspection involved 15 inspector-hours on site.

Results: One item of noncompliance was identified in the 4 areas inspected (welding undercut in structural steel, para. 6).

DETAILS

1. Persons Contacted

Philadelphia Electric Company

D.T. Clohecy, Quality Assurance Engineer (QAE)
J.M. Corcoran, Field QA Branch Head
F.J. Coyle, QAE
M.J. McGill, QAE
A. McLean, Engineer
G.J. Moffitt, Jr., Engineer
R. Scott, Senior Engineer

Bechtel Power Corporation

A. Arch, Assistant Project Field Engineer
B.A. Dragon, QAE
H.D. Foster, Project Field Quality Control Engineer
J.P. Gray, Sr., Piping and Instrument QCE
L.E. Griffiths, Subcontracts Engineer
A.M. Hill, Office Engineer
E.R. Klossin, Project QAE
J.L. Martin, Lead Site QAE
K.L. Quinter, Assistant Project Field QCE
J.R. Reiney, Jr., Project Construction Manager
D.C. Thompson, Assistant Project Field QCE
A.G. Weedman, Project Field Engineer

The above listed persons attended exit interviews held on April 15, 1981, or on April 30, 1981. Other engineers, craftsmen, quality control technicians, or supervisors were contacted as the inspection interfaced with their work.

2. 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.

On April 16, 1981, Messrs. V. Gilinsky, Commissioner; J. Austin, Technical Assistant; Boyce Grier, Region I Director; and George Smith, Division of Emergency Preparedness and Operational Support Director, toured the Limerick Generating Station. The tour was preceded by a briefing at the simulator facility conducted by members of the Philadelphia Electric Company staff.

3. Licensee's Actions on Previous Inspection Findings

(Closed) Unresolved Item (352/79-01-02) Post tensioning of the fuel pool girders. The NRC reviewed the reports submitted by Philadelphia Electric Company and found that they adequately and satisfactorily address this unresolved item (Reference: IE Memorandum Carlson to Reinmuth, June 7, 1979, titled, "Limerick Generating Station Unit 1 - Post Tensioning of Fuel Pool Girders", and IE Memorandum Jordan to Martin, March 24, 1981, titled, "Post Tensioning of Fuel Pool Girders").

This item is closed.

(Closed) Infraction (352/79-07-04) Field Design Changes were not incorporated into completed work. The licensee's corrective actions were inspected in IE Report 50-352/80-02, except for the implementation of actions to preclude recurrence. The licensee developed a new Job Rule, JR-G-42, "Review of Revisions to Drawings". The Job Rule designates responsible discipline engineers to review all design changes. The review considers if the changes impact on work in progress or completed work. The review is documented in a log book and retained until completion of the job.

The inspector reviewed the Job Rule, JR-G-42, and examined the log books maintained by the Area 1 Lead Electrical Engineer, the Lead Civil Engineer, and the Lead Instrument Engineer. The review of the Area 1 Lead Electrical Engineer's log disclosed that Field Drawing Change Notices (FDCN's) were not being logged along with the other design change documents. However, the engineer was reviewing FDCN's as they were incorporated into the drawing revisions. The failure to review and log FDCN's was the result of a misinterpretation of the Job Rule. The engineer was reviewing and logging other design change documents. This item is unresolved pending review and logging of FDCN's by the Area 1 Lead Electrical Engineer. (352/81-06-01)

(Open) Infraction (352/79-11-08) Improper welding of heating, ventilation, and air conditioning (HVAC) dampers. The inspector reviewed Bechtel drawing C-616, Revision 15, and verified that changes have been made to accommodate limited access welding of HVAC fire dampers. An inspection of fire dampers revealed that a limited number of dampers have been modified to correct for the restricted access. The following dampers were inspected:

<u>Damper No.</u>	<u>Elevation</u>	<u>Remarks</u>
FPD-202-3	201'	approx. 1 5/8" clearance
FPD-202-13	201'	accessible
FPD-201-13	201'	accessible, approx. 7" clearance
FPD-201-40	283'	option installed
FPD-201-31	253'	These are mounted side by side.
FPD-202-44	253'	Approximate dimensions are 38"L x 40"W x 42" H with 4"-5" wall clearance.

The inspector questioned the licensee's ability to make meaningful inspections of the dampers such as FPD-202-3 which is only 1 5/8" from the wall. The dampers on elevation 253' are a side by side installation which requires the inspector to examine welds from a distance of 38" with 4" of clearance from the wall. The access to these dampers for the original installation, inspection and reinspection does not allow reasonable clearance for work to be performed.

The licensee reopened his audit report finding N-173 and directed further work be performed to satisfy the original noncompliance. The failure to assure that conditions adverse to quality are corrected is contrary to 10 CFR 50, Appendix B, Criterion XVI and an item of noncompliance. (352/81-06-02)

(Closed) Infraction (352/79-12-01) A subcontractor for masonry walls failed to maintain current revisions of drawings in the work area. The subcontractor is no longer performing work on the site. The obsolete drawings were for the control room area, elevation 239'. Only 3 drawings were of seismic Category I walls. The inspector selected drawing C-761 and reviewed the Quality Control Inspection Report (QCIR) No. C-761-Rx-JL-1-8-1 and verified that drawings used for inspection are kept current. The QCIR for this drawing is still open and inspection incomplete at this time.

Quality assurance program requirements were not imposed on masonry walls subcontractors and was cited as an item of noncompliance (Reference 352/79-12-02). The lack of a document control program resulted from not imposing quality assurance requirements on this subcontractor. This was inspected under item 352/79-12-02.

This item is closed.

(Closed) Infraction (352/79-12-02) Infraction 352/79-02-02 was incorrectly reported as closed in IE Report 50-352/81-04 when, in fact, it should have been 352/79-12-02.

This item is closed.

(Closed) Infraction (352/79-12-03) Control of pipe hanger drawings. Obsolete drawings were discovered in the possession of a piping foreman. The practice had been to issue 1 or 2 hanger drawings and reproduce uncontrolled copies in the field. The licensee purged the field of all uncontrolled drawings and established a controlled issue system.

The inspector reviewed the Job Rule, JR-G-5, "Design Document Control", and verified that pipe hanger drawings are controlled in accordance with paragraph 4.2.5. He examined the drawing controls for field stick Nos. 8 and 18. He reviewed the Quality Control Record No. M52-GBB-112-2-5-1 for hangers GBB-112-H8, H9, and H10. These were the pipe hanger drawings determined to be obsolete.

This item is closed.

(Closed) Infraction (352/80-19-01) Failure to document a change to the jet barrier steel. The licensee's corrective actions were:

- To issue a Field Change Request No. C-7578-F requesting authorization to correct the minimum edge violation. This was accomplished by plug welding the hole.
- Specification 8031-C-63, "Specification for the Erection of Structural Steel", is the controlling guidance for erection of structural steel. Field deviation and changes to components controlled by Specification C-63 are allowed by Specifications C-63, G-17, and PCM-252. PCM-252, paragraph 10, and Specification C-63 were modified to more clearly define undocumented changes.

The inspector reviewed the foregoing documents and verified that corrective actions were complete. He also verified that quality control is notified of any changes to designed installations.

This item is closed.

(Closed) Unresolved Item (352/80-21-01) Different installation criteria for anchor bolt thread engagement and apparent mislocation of an electrical junction box. The licensee amended Specification 8031-C-64, "Specification for Installation of Expansion-Type Anchor Studs and Shells", to be consistent with drawing E-1406 for sleeve anchor bolt thread engagements. Further, drawing E-1406, paragraph 1(e), provides for the location of conduits to be approximate and other locations are acceptable within specified guidelines.

This item is closed.

4. IE Bulletin Review (Unit Nos. 1 & 2)

(IEB-79-02) Reference: IE Reports 50-352/81-01 and 81-04.

The inspector reviewed the licensee's test data reports for anchor bolt torque versus tension and failure loadings for concrete anchor bolts in masonry block walls. He verified the acceptability of anchor bolt preload practices at the Limerick Generating Station and the use of a safety factor of 3 for cyclic loads.

This item remains open pending review of the test program for anchor bolts installed prior to January 17, 1980.

5. Observation of Welding Activities (Unit Nos. 1 & 2)

Reactor coolant pressure boundary (ASME III, Class I) and other safety related pipe 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>
DCA-319-1/9 FW 1	I	Core Spray	Root and Intermediate Passes
BWR PD-1REC-1/WA16	I	Recirc.	Root and Intermediate Passes
GBC-201-1/0 FW56	III	Main Steam	Final pass and root I.D.
10JX106A	MC	Elect. Penetration	Fitup, root pass, & intermediate

The inspector noted that the feedwater piping closure spool fitups to the reactor pressure vessel nozzles do not meet ASME III Code alignment tolerances. This was previously identified and documented on NCR 4699 by the licensee. The misalignments of the 6 closure spools were as great as 5/8" in some instances. The inspector verified that activities to correct this misalignment were being carried out within the requirements of the ASME III Code.

Four heats of weld filler metal were selected for a review of quality documentation. The review verified that the materials meet ASME II C and III Code requirements. The review consisted of confirmation of chemical and physical test data.

No items of noncompliance were identified.

6. Observation of Structural Steel (Unit Nos. 1 and 2)

The reactor building North exhaust stack structural steel erection was selected for observation of work activities. Selected attributes on drawings C-845 and C-846 were selected for examination and verification that they conform to drawing, specification, and applicable code requirements. The examinations consisted of verification of weld size and appearance, bolted connections for proper size and type, conformance of the configuration to the drawings, proper size and weight of structural shapes, and properly shaped copes.

The inspector observed welding undercut on the welded connection for beams 22D2 and 24D4R. The welding undercut exceeded the 1/32" specified in the AWS Code D 1.1. This is contrary to specification 8031-C-41A, "Specification for Furnishing, Detailing, Fabrication, and Delivery of Structural Steel for the Reactor Building and Control Complex Superstructure and Radwaste Building", and 10 CFR 50, Appendix B, Criterion V.

This is an item of noncompliance (352/81-06-03, 353/81-05-01).

It was noted that the holes for the precast concrete panel attachment clips were being oxy-acetylene cut into the support beams. One of the holes was cut oversized and failed to "clean up" when reamed. This was brought to the attention of the foreman and workmen, who repaired the hole. Due to the inspector's concern for a general condition of oversized holes, two additional clips were removed. All holes examined appeared to be completely reamed, however, due to the restricted access, the reamed holes are serrated. The applicable codes are not definitive on the acceptability of this condition. The licensee is evaluating this condition.

This item is unresolved pending completion of the licensee's evaluation and review by the NRC. (352/81-06-04)

7. Safety Related Components (Unit No. 1)

The reactor recirculation discharge gate valve, B32-F031, SN:71-GE-49327-32, and the main steam isolation valve, B21-F022, P.O. 205-AB319, were selected for a quality documentation review. The review was to verify compliance with applicable codes, ASME Code for Pumps and Valves (draft) and ASME III Code. The review consisted of minimum wall calculations for the valve bodies and chemical/physical properties checks.

The chemical analysis review of the welding filler metals used for the valve B32-F031 disclosed that the nickel requirements for Stody supplied material is low for Product Certifications Nos. 1825-71, 1770-71, 1087-71, and 235-72. The applicable ASME IIC Code specifications require 11-14% nickel, while the Product Certifications record less than 11% nickel. Also, the material certification for Murex supplied filler material has recorded a manganese content of .66%, while the specification requires 1.0 - 2.5%.

This item is unresolved pending justification for these chemistry deviations and review by the NRC. (352/81-06-05)

8. Unresolved Items

Unresolved items are matters about which more information is required to determine if they are acceptable, noncompliances, or deviations. Unresolved items are discussed in paragraphs 3, 6 and 7.

9. Exit Interview

On April 15 and 30, 1981, exit interviews were held with members of the licensee's staff listed in paragraph 1. The inspector discussed the inspection scope and the findings.