

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

Region I

Report No. 81-05

Docket No. 50-352

License No. CPPR-106 Priority \_\_\_\_\_ Category A

Licensor: Philadelphia Electric Company

2301 Market Street

Philadelphia, Pennsylvania 19101

Facility Name: Limerick Generating Station, Unit 1

Inspection at: Limerick, Pennsylvania

Inspection conducted: March 9-13, 1981

Inspectors: A. D. Sassani, Jr.  
A. D. Sassani, Jr., Reactor Inspector

4-2-81  
date signed

Approved by: S. D. Ebnetter  
S. D. Ebnetter, Chief, Plant Systems Section,  
Engineering Inspection Branch

4/6/81  
date signed

Inspection Summary:

Inspection on March 9-13, 1981 (Inspection Report No. 50-352/81-05)

Areas Inspected: Routine, unannounced inspection by a regional based inspector of quality related documentation, records, and work activities pertaining to receipt, storage, identification, installation, inspection and audits relative to: instrumentation components and systems associated with the Reactor Protection System, Engineered Safety Features Actuation System, and Reactor Recirculation System. The inspection involved 40 inspector-hours onsite by one regional based inspector.

Results: No item of noncompliance was identified.

## DETAILS

### 1. Persons Contacted

#### Philadelphia Electric Company

- \*F. J. Coyle, Quality Assurance Engineer
- J. Corcoran, Quality Assurance Field Branch Head
- \*D. A. DiPaolu, Quality Assurance Engineer
- \*G. Lauderback, Jr., Quality Assurance Engineer
- \*D. A. Marascio, Quality Assurance Engineer
- \*P. L. Naugle, Engineer
- \*M. G. Tokolics, Quality Assurance Engineer

#### Bechtel Power Corporation

- \*T. Altum, Lead Welding Engineer
- \*L. E. Brown, Quality Control Engineer
- \*H. D. Foster, Project Field Quality Control Engineer
- H. Gilbert, Senior Quality Control Engineer
- \*J. Gwin, Project Superintendent
- \*G. Harper, Lead S/C Engineer
- M. Krumenacker, General Foreman Instrumentation
- \*E. R. Klossin, Quality Assurance Engineer
- \*R. A. Lauemann, Electrical Superintendent
- J. McVeigh, Quality Control Engineer
- J. Martin, Project Quality Assurance Engineer
- \*R. Newman, Construction Engineer
- \*D. Shaw, Assistant Project Field Engineer
- \*A. Weedman, Project Field Engineer

#### General Electric Company

- \*R. F. Arditi, Quality Assurance
- \*T. P. Byrum, Technical Director
- \*W. J. Neal, Resident Site Manager
- M. Sierra, C&I Engineer

#### U.S. Nuclear Regulatory Commission

- \*J. P. Durr, Senior Resident Inspector
- \*S. Reynolds, Reactor Inspector

\*Denotes personnel present at exit interview.

## 2. Documentation Review

The inspector reviewed quality related documentation pertaining to receipt, storage, identification, installation, inspection, and audits for instrumentation components and systems to ascertain whether applicable requirements have been met.

Documentation reviewed for this determination include:

- Limerick Generating Station, Units 1 and 2, QA Plan for Design and Construction.
- Bechtel Nuclear QA Manual.
- Material Receiving and Storage Control Procedure, SF/PSG G-5.1, Revision 3.
- Equipment Storage Requirement Specification, 22A2724, Revision 3.
- QC Inspection Plan, SF/PSP G-6.1, Revision 3.
- Instrument Installation Details, M-830, Revision 6.
- In Storage Maintenance and In Place Maintenance of Installed Equipment, 803-JR-G-7, Revision 18.
- Operating and Maintenance Instruction, GEK-75670, Volume III, Part 1.
- Control of Measuring and Test Equipment, SF/PSP G-4.1, Revision 2.
- QC Instruction I-1.10, Installation of Instruments.
- Installation of Expansion Type Shell, Wedge and Sleeve Anchor Specification, C-64.
- Procedure for Performing Quality Assurance Audits, QAI-18-6.
- Control and Installation of Instrument Items, 8031-JR-G, Revision 5.
- Storage Control Withdrawal Instructions for Equipment and Materials, 8031-JR-R-10.
- Nuclear Instrument Valves and 3 Valve Bypass Manifold Specification, M-248.
- Control of Non-Conforming Items Procedure, SF/PSP G-3.1, Revision 3.

No item of noncompliance was identified.

### 3. Reactor Protection System

The inspector reviewed quality related records and installations relative to instrumentation components to ascertain whether applicable requirements have been met in areas relating to receipt, storage, identification, installation, and inspection.

Areas inspected for this determination include:

- Instrument Nos. LT-42-1N080A, B, C, and D, LIS-42-1N680A, B, C, and D, PT-42-1N078A, B, C, and D and PIS-42-1N678A, B, C, and D. EL-253 feet, Reactor Building.
- Instrument Racks 10C004, 10C005, 10C026, and 10C027. EL-253 feet, Reactor Building.
- Control Panels 10C609 and 10C611, EL-289 feet, Auxiliary Equipment Room.
- Material Receiving Reports, Nos. MRR-PE-1834, 1481, 1758, 1826, and 1827.
- Vendor Product Quality Certifications, Nos. PQC-AA929, AA103, H12-U389, H12-U735, H12-U789, and H12-U790.
- QC Receiving Inspection Reports, Nos. M-1-PE-1834, 1481, 1758, 51343, and 51344.
- Nuclear Boiler Vessel Instrumentation, P&ID, M-42, Revision 7.
- QAD Drawing, QAD-M-42, Revision 4.
- In Storage and In Place Maintenance Logs and Maintenance Action Cards for above Racks and Panels.
- QC Installation Inspection Reports, Nos. M00-M708-18-1, M726-18-1 and M720-18-1, and Nos. M-1-10U790-1 and 10U789.
- Instrument Rack Assembly Drawings, 137D7290, 865E567, 164C5728, 164C5740 and 133D9793.
- Foreign File Drawings, Nos. C71-1020E, C71-1020E and C71-4010L.

During the inspection it was ascertained that the installation of instrument racks noted above was partially complete. Drawing Change Notice (DCN #8) for M-42 has the installation on Hold. The QA Installation Inspection Reports for racks and panels identified above have not been completed and signed off. These reports will be completed when partially completed work activities on the rack and panel installations are complete.

No item of noncompliance was identified.

#### 4. Engineered Safety Features Actuation System

The inspector reviewed quality related records and installation relative to instrumentation components to ascertain whether applicable requirements have been met in areas relating to receipt, storage, identification, installation, and inspection.

Areas inspected for this determination include:

- Instrument No. PT-52-1 N055E, EL.-177 feet, Reactor Building.
- Instrument No. PT-55-1N058F and Instrument Rack, 10C036, EL-217 feet, Reactor Building.
- Instrument No. PIS-55-1N658B and Control Panel, 10C618, EL-289 feet, Auxiliary Equipment Room.
- Core Spray System, QAD, QAD-M-52, Revision 9.
- HPCI System, QAD, QAD M-55, Revision 11.
- Panel Arrangement Drawings, Nos. M-1-H12-611-C-1.7 and M-1-H12-604-C-1.8.
- Mounting Assembly Drawing, FJ-G-002, Revision 1.
- Assembly Detail for Seismic Category I Floor Support, FJ-G-008, Revision 3.
- Core Spray Automatic Blow Down-Core Spray Pump 1CP-206 Isometric Tubing Drawing, FJ-52-1.
- Support, Surface Mounting For Seismic Category I Tubing Drawing, FJ-G-003, Revision 1.
- Bulk Material Request For Drawing FJ-52-1.
- Isometric Tubing Drawing, FJ-52-25.
- Material Receiving Reports, Nos. MRR-PE-138? and 1818.
- Vendor Product Quality Certifications, Nos. PQC-M-190 and PQC-H12-U792.
- QC Receiving Inspection Reports, Nos. M-1-PE-1382 and 51339.
- Instrument Location Drawing, M-719, Revision 7.
- Rack Arrangement Drawing, M-1-H23-P036, C-1.1.

- Panel Arrangement Drawing, M-1-H12-P618-C-2.3.
- QC Installation Inspection Reports, Nos. M-1-H12-10U792 and M00-M719-18.1.
- In Storage and In Place Maintenance Logs and Maintenance Action Cards.
- Material Withdrawal Cards, Nos. 51339 and 52830.

During the inspection it was ascertained that the installation of the instrument rack noted above was partially complete. The QC Installation Inspection Reports for the rack and panel identified above have not been completed and signed off. The reports will be completed when partially completed work activities on the rack and panel installations are complete.

No item of noncompliance was identified.

During the inspection, the inspector was observing work activities in progress on the installation of PT-52-1NU55E. While questioning the craftsman performing this activity, it appeared that the craftsman was not familiar with the manufacturer's instructions on installation of instrument tubing fittings. In discussions with representatives of the licensee's management, it was ascertained that steps should be taken to assure that craftsmen are familiar with manufacturer's instructions on the installation of fittings. This will be followed up by an inspector in a subsequent inspection. (81-05-03)

The inspector had no further questions at this time.

While inspecting panel 10C618, EL-289 feet, Auxiliary Equipment Room, the inspector observed that nine electronic trip units for the HPCI System were not secured in the panel rack. The licensee could not provide documentation or evidence of current work activities being performed on the trip units. It appears that there has not been adequate control over these safety related devices and activities associated with these devices.

The inspector identified this as an unresolved item, which will be the subject of a further review by an NRC inspector during a subsequent IE inspection. (81-05-01)

##### 5. Reactor Recirculation System

The inspector reviewed quality related records and installations relative to instrumentation components to ascertain whether applicable requirements have been met in areas relating to receipt, storage, identification, installation, and inspection.

Areas inspected for this determination include:

- Instrument Nos. LIS 42-1N025B and F, PS-42-1N045B and F and FT-43-1N024B.
- Instrument Racks 10C027, EL-253 feet and 10C041, EL-217 feet.
- Control Panel, 10C618, EL-289 feet, Auxiliary Equipment Room.
- Instrument Installation Details, M-830-G, Revision 30.
- Rack Arrangement Drawing, M-1-H23-P041-C-2.1.
- Instrument Location Drawing, M-716, Revision 6.
- Reactor Recirculation System, QAD, QAD-M-43, Revision 6.
- Material Receiving Report, MRR-PE-1829.
- Vendor Product Quality Certification, PQC-H12-U787.
- QA Receiving Inspection Report, M-1-PE-1430.

During the inspection it was ascertained that the installation of the control panel and instrument racks noted above were partially complete. The QC Installation Inspection Reports for the panel and racks identified above have not been completed and signed off. These reports will be completed when partially completed work activities are complete.

No item of noncompliance was identified.

During the inspection, the inspector observed inconsistencies between rack installed instruments and vendor supplied documentation.

- a. The manufacturer and range for installed instrumentation, PS-42-1N045B and F, does not agree with the vendor supplied Instrument Data Sheets (IDS), Specification 23A9301TN.
- b. The range for installed instrument FT-43-1Np24B does not agree with the vendor supplied Operating and Maintenance Instructions, GEK-75670, Volume III, Part I.

The inspector identified this as an unresolved item, which will be the subject of a further review by an NRC inspector during a subsequent IE inspection. (31-05-2).

#### 6. Measuring and Test Equipment (M&TE)

The inspector reviewed quality related records and storage relative to M&TE to ascertain whether applicable requirements have been met in areas relating to calibration, logs and usage.

Areas inspected for this determination include:

M&TE device nos. P-95, P-89, G-168, M-105, E-84, E-204 and E-226.

No item of noncompliance was identified.

7. Quality Assurance Audits

The inspector reviewed quality related audits relative to instrumentation activities to ascertain whether applicable requirements have been met.

Areas reviewed for this determination include:

- Audit Report, ARM-124, Transmitters
- Audit Report, ARP-167, Field Instrumentation Design
- Audit Report, ARP-168, Instrument Piping Installation
- Audit Report, ARP-194, Instrument Pipe Welding
- Audit Report, ARG-087, M&TE

No item of noncompliance was identified.

8. Nonconformance Report Review

The inspector reviewed quality related nonconformance report NCR 45-89 relative to instrumentation to ascertain whether applicable requirements have been met.

Areas reviewed include: reporting, logging, tagging and inspection of instrument racks 10C025, 10C041 and 10C077. The inspector observed that corrective action was not completed at this time.

No item of noncompliance was identified.

9. Unresolved Item

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. The unresolved items disclosed during the inspection are discussed in paragraphs 4 and 5.

10. Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on March 13, 1981. The inspector summarized the purpose and scope of the inspection and the findings. The licensee acknowledged the findings.