U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-388/83-09

Docket No. 50-388

License No. CPPR-102 Priority -- Category B

Licensee: Pennsylvania Power and Light Company

2 North Ninth Street

Allentown, Pennsylvania 18101

Facility Name: Susquehanna Steam Electric Station, Unit 2

Inspection At: Berwick, Pennsylvania

Inspection Conducted: July 5-8, 1983

Inspectors: A. Finkel
A. Finkel, Lead Reactor Engineer — date: July 25, 1983

Approved by: C. Anderson
C. Anderson, Chief, Plant Systems Section, DETP — date: 8/2/83

Inspection Summary: Inspection on July 5-8, 1983 (Inspection Report No. 50-388/83-09)
Areas Inspected: Routine, unannounced inspection by one region-based inspector of activities pertaining to the installation of safety-related instrumentation equipment. The inspection involved 30 hours on-site by one region-based inspector.
Results: No violations were identified.

DETAILS

1. Persons Contacted

Pennsylvania Power and Light Company

R. Beckley, Resident Quality Assurance Engineer
* D. ChiDuong, Nuclear Quality Assurance
* S. Denson, Maintenance
* R. Featenby, Assistant Project Director
* M. Parker, Nuclear Quality Assurance
* R. Smith, Nuclear Quality Assurance

Bechtel Power Corporation

* G. Bell, Quality Assurance Engineer
* N. Griffin, Field Engineering
* T. McHenry, Field Quality Control Engineering
* T. Minor, Project Field Engineer
* W. Price, Special Assistance

*denotes those present at exit meeting.

2. Facility Tour

The inspector observed work activities in progress, completed work and plant status in several areas of the plant during a general inspection of Unit 2. The inspector examined work items for obvious defects or violations with NRC requirements or licensee commitments. Particular note was taken regarding the presence of quality control inspectors and indication of quality control activities through visual evidence such as inspection records, material identifications, and nonconformance and acceptance tags. In addition, the inspector interviewed craft and supervisory personnel encountered in the work areas.

No violations were identified.

3. Licensee Event Report (LER) (General Electric Switch CR2940)

The inspector informed the licensee on July 7, 1983 that an LER was received in Region 1 describing a switch failure of the General Electric CR2940.

The inspector reviewed the quality records which identified the switch location, the nonconformance reports, and the quality control inspection records which identified the rework/repair performed by the licensee.

The inspector selected the Engineering Safeguards Auxiliary Buses 2A201; 2A202, 2A203 and 2A204 for verifying that the switch problem was corrected. Of the 36 switches associated with the above listed buses, the

inspector verified that all had been corrected, inspected and tested for functional use.

No violations were identified.

4. Instrumentation (Component/System) Work Observations

The inspector observed work performance; partially completed work; and completed work, as appropriate, relative to the installation of instrumentation components associated with the following systems:

-- Reactor Protection System,
-- Source Range, Intermediate Range, Average Power Range Monitoring and Traversing Incore Probe,
-- Area and Process Radiation Monitoring System, and
-- Safety Parameter Display System.

Discussions with licensee personnel and a review of the Piping and Instrumentation Drawings (P and ID's) for the above system indicated that the instruments were installed per the drawings with inspection deviations noted in the turnover documentation packages.

Nonconformance reports (NCR's) have been written by the licensee with corrective action identified on the NCR. On a sampling basis, the inspector verified that correction action has occurred on four selected NCRs.

During the inspection of the above system instrumentation, the inspector noted the following problems on system equipment turned over to the Intergrated Start-Up Group (ISG).

a. Neutron Monitoring System (NMS)

An inspection of NMS cables from the drywell penetrations to the Power Generation Control Consoles (PGCC) 2TC625 A, B, D and E indicated the cables entering the terminating connectors on the field side of the connector panels were loose in virtually all connectors resulting in improperly supported cables. The licensee issued PP&L Nonconformance Report 83-701 on the ISG organization for disposition.

This item is unresolved pending NRC review of the action the licensee has taken (388/83-09-01).

b. Neutron Monitoring System SRM/IRM System 1

An inspection of the SRM/IRM Pre-Amplifier Panel 2C030 indicated that warm, moist air from underneath the 2C030 panel has resulted in significant corrosion internal to the panel. Also panel 2C030 has a cracked internal weld on the right hand unistrut instrument mount.

Both the panels, 2C030 and 2C031, contain instruments with uncovered pin jacks resulting in potential for corrosion and dust damage to the connector. The licensee issued PP&L NCR 83-702.

This item is unresolved pending NRC review of the action the licensee has taken (388/83-09-02)

c. 4160 Volt Switchgear

During the inspection of the General Electric CR2940 switch in the 4160 volt Safeguards Auxiliary Buses 2A201, 2A202, 2A203 and 2A204 equipment, the inspector identified excessive accumlation of dirt and dust on the floor of the equipment and metal chips and insulation material on the instruments. The licensee issued PP&L NCR83-693.

This item is unresolved pending NRC review of the action the licensee has taken. (388/83-09-03)

The licensee took prompt, corrective steps to correct the above condition during the short term; but to assure that the existing program prevents the above condition in the future, the licensee plans to review procedures and make changes as required to correct the above interface concerns.

5. Instrumentation (Component/Systems) - Quality Records Review

The inspector reviewed the quality records for the system equipment defined in paragraph 4 above. The records review included a verification of the following:

-- Verification of instrumentation type, range, and location,
-- Calibration and instrument setting (where applicable) were recorded,
-- Quality control inspection records were legible, complete and reviewed, and
-- Outstanding items were identified for each turn over package reviewed by the inspector.

No violations were identified.

6. Instrumentation (Cables and Terminations) Observation of Work and Work Activities

The inspector verified that the following cables were installed per the drawings, and that the installation complied with the routing, protection, separation and location of the electrical/instrumentation specification requirements.

a. Neutron Monitoring System Cables were inspected from the drywell penetration 2WIDDC and 2W100A to the PGCC Termination Cabinets 2TC625A and 2TC614E.

-- Cables XM 2Q1000 thru XM 2Q1042,
-- Cables VM 2Q1043 thru VM 2Q1085,
-- Cables YM 2Q1107 thru YM 2Q1128, and
-- Cables VM 2Q1195 D, E, F and G

b. Reactor Protection System cables were inspected from Control Valve Fast Closure (PSL-C72-2N005A), Turbine Main Stop Valve Closure (ZS20141A7 and ZS20141B8) and Fast Closure and Stop Valve Trip Bypass (PSH-C72-2N003A) panels to the Valve Control Cabinet 2TC614-E of the PGCC Termination Cabinet 2C609.

-- Cables FK0V1451 F, G, H AND K,
-- Cables UK2Q0404 Q, R, S, T, L, M, N, and P.

c. Safety Parameter Display System cables were inspected from various safety-related system throughout the plant to the alarm panel 2C601 in the unit 2 control room. The cables selected for verification were as listed below:

-- Cables 2001/E41A-005, 006 and 007 from the Reactor Core Cooling System to 2C601 Panel,
-- Cable FK2Q3009C from Reactor Core Clean-up system to 2C601 Panel, and
-- Cable 1801/E11A-006 RHR Relay to 2C601 Panel.

No violations were identified.

7. Instrumentation (Cables and Terminations) Review of Quality Records

The inspector reviewed the quality records for the cables defined in paragraph 6 above. The records review included a verification of the following:

-- Verification of the cable pull card data,
-- Location and routing of cables,
-- Seperation and cable size, and
-- Termination inspection.

Selected nonconformance report (NCR's) were reviewed and determined to be incompliance with quality control procedures. Turn-over packages were complete with outstanding items identified.

No violations were identified.

8. Housekeeping

Except as noted in paragraph 4 of this report various plant areas were being cleaned during this inspection period. The systems that were being turned over to the PP&L-ISG group had the electronic systems sealed with plugs on the equipment connectors or wrapped in plastic and the equipment was in a clean condition.

No violations were identified.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items or violations. Unresolved items identified during this inspection are discussed in Details, paragraph 4.

10. Exit Meeting

The inspector met with licensee and contractor representatives (denoted in paragraph 1) at the conclusion of the inspection on July 8, 1983. The inspector summarized the scope and findings of the inspection as described in this report.

Attached is a copy of a listing of significant issues provided to the licensee during the exit meeting. This listing was provided to the licensee for the purpose of assuring adequate communication of findings requiring corrective action. No other written material was provided to the licensee by the inspector during the course of the inspection.

Inspection Report
Unit 2
83-09
July 5-8, 1983

Inspector: A. Finkel
Exit Notes.

- Closed - GE Type CR2940 Switch Problem.
- Termination of Cables in the Safeguards System, Radiation System & Safety Analysis System.

Unresolved Items : Degradation of Equipment / ISG Area.

83-09-01

PP&L-NCR-83-693 Eng. Safeguards Auxiliary Buses 2A201
2A202
2A203
2A204
High Levels of Dirt, Dust, Metal Chips & Insulation Material.

83-09-02

PP&L NCR-83-702 PNL# 2C030 Cracked Weld, Corrosion in Cable on ground connector. RF
PNL 2C031 J3 HV Connector Not Twisted (Just inserted) Unplugged connector not capped.

83-09-03

PP&L NCR-83-701 Cables of the RF Connector or the field side of the connector panels are loose
Panels 2TC625 Bays A, B, D, & E.