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

Region I

Report No. 50-387/81-29

Docket No. 50-387

License No. CPPR-101 Priority -- Category B

Licensee: Pennsylvania Power and Light Company

2 North Ninth Street

Allentown, Pennsylvania 18101

Facility Name: Susquehanna Steam Electric Station

Inspection at: Salem Township, Pennsylvania

Inspection conducted: December 22, 1981 - January 26, 1982

Inspectors: G. G. Rhoads, Resident Inspector — 1/26/82 date signed

J. F. McCann, Resident Inspector — 1/26/82 date signed

_____ — _____ date signed

Approved by: Ebe C. McCabe, Chief, Reactor Projects Section No. 2B, DRPI — 1/27/82 date signed

Inspection Summary:

Inspection On: December 22, 1981 - January 26, 1982 (Report No. 50-387/81-29)

Routine resident (174 hr.) inspection of: Preoperational testing, onsite review; committee activities; fuel receipt; bulletins and circulars; open items; and plant status. Nine open items, 1 circular, and 1 bulletin were closed. Two new items were opened; Followup on Undervoltage Device Replacement on Diesel Generator Breakers, and FSAR Revision to Residual Heat Removal Drawings.

Region I Form 12
(Rev. April 77)

DETAILS

1. Persons Contacted

Pennsylvania Power and Light Company

L. Adams, Plant Supervisor of Operations
T. Clymer, Site QAE
F. Eisenhuth, Senior Compliance Engineer
E. Gorski, Plant Quality Supervisor
J. Green, Operations Quality Assurance Supervisor
H. Keiser, Superintendent of Plant
D. Thompson, Assistant Superintendent of Plant

Bechtel Corporation

E. Figard, ISG Supervisor
M. Johnson, ISG QC Engineer

The inspectors also interviewed other PP&L employees, as well as employees of Bechtel.

2. Licensee Action on NRC Findings:

a. (Closed) Unresolved Item (387/81-02-05) Reactor Building Crane Testing.

On January 5, 1982 Preoperational Test P99.1, Revision 1 and Technical Procedure (TP) 2.23, Revision 0 were reviewed to verify that all comments previously given by the inspector had been properly resolved.

This item is closed.

b. (Closed) Noncompliance (387/81-04-01) Reactor Building Crane Construction Testing.

On January 5, 1981 the following documents were reviewed:

-- PP&L response to item of noncompliance, PLA-776, dated May 14, 1981.

-- Preoperational Test P99.1, Revision 1, Reactor Building Crane Preoperational Test.

-- Technical Procedure (TP) 2.23, Revision 0, "Reactor Building Overhead Crane Load Testing."

The inspector verified that construction testing requirements specified in Bechtel Specification 8856-M-22 that had not been accomplished prior to turnover to the licensee were incorporated into either the Preoperational Test, or the technical procedure.

On January 7, 1981 Bechtel Field Procedure FP-G-19, Revision 6, "Procedure For Performance Of Construction Completion And Turnover Activities" was reviewed. It was verified that an interim memorandum dated May 11, 1981 had been added to Field Procedure FP-G-19, Revision 6 to add a requirement for Bechtel Engineering to check for performance test completion prior to turning over the system to PP&L.

This item is closed.

c. (Open) Noncompliance (387/81-08-01; 388/81-04-01) Use of Supplemental Procedures (SP) To Replace An Existing QA Procedure in QA Manual.

PP&L letter to the NRC, PLA-879, dated July 15, 1981 stated that the following action would be taken to correct noncompliance:

(1) A Nuclear Department Instruction, NDI-QA-8.13 titled, "Documents Review" would be issued by August 3, 1981.

(2) The NDI-QA-8.13 would replace QA Manual Supplemental Procedure (SP)-8.

(3) QA Manual Procedure 7.1, Control and Issuance of documents would be revised to state overall document review requirements.

The NDI Procedure was made effective on November 20, 1981. A licensee representative stated that an oral extension of the issuance date for the procedure had been made with the NRC Region I. The inspector verified this with the NRC representative. The licensee is in the process of deleting the QA Manual Supplemental Procedure (SP-8) and revising the QA Manual Procedure (7.1) to meet the requirements of the licensee's corrective action. On January 15, 1982, the inspector discussed this item with the Superintendent of Plant and told him it would remain open pending completion of the licensee's corrective action.

d. (Closed) Noncompliance (387/81-08-04) Function Unit Procedure For Processing Nonconformance Reports.

On January 18, 1982, a draft revision of Quality Control Procedure (QCP) 05, "Trend Review of Nonconformance Reports" was reviewed. It incorporated comments previously identified by the inspector in report 387/81-25.

This item is closed.

e. (Closed) Unresolved Item (387/81-10-03) Control of System Hangers.

The inspector reviewed changes made to Bechtel Field Procedure (FP-P-20), Revision 1, "Procedure For Field Control of Pipe Supports For Susquehanna Steam Electric Station" and Startup Administrative Manual AD6.1, Revision 9, "System/Component Turnover to PP&L." Both had been revised to include better control of system hangers. The revisions included all concerns the inspector had raised.

This item is closed.

f. (Closed) Construction Defiency Report (387/80-00-13) American Warming & Ventilating Wiring Deficiencies.

The inspector had reviewed this item in inspection report 387/81-19 and found the results acceptable.

This item is closed.

g. (Closed) Unresolved Item (387/77-13-02) Drawing Document Control (PP&L)

Failure to properly control project drawings at the corporate office. Stick files at the corporate office now contain only controlled drawings. This was verified by a random sample of stick file drawings at the corporate office on January 22, 1982.

h. (Closed) Noncompliance (387/81-02-11) Failure To Review Licensing Application For Adequacy.

The revision to PP&L application for SNM fuel storage and receipt license, PLA-647, dated February 27, 1981 was reviewed and determined to have the corrected boral slab thickness. On January 22, 1982, PP&L nternal letter, PLI-13149 dated April 13, 1981, and resolutions to comments generated during review of FSAR Revision 28 were reviewed. Responses were acceptable.

This item is closed.

i. (Open) Noncompliance (387/81-04-02) Preoperational Test Meeting Design Requirements.

On January 18, 1982 the FSAR Section 7.3 was reviewed. It was noted that comments made in the report concerning the FSAR description of the core spray system had not yet been corrected. On January 22, 1981 the inspector spoke with a PP&L licensing representative who stated that FSAR changes would be made over the next three months to bring the FSAR up-to-date.

This item will remain open pending revision to the FSAR.

j. (Closed) Noncompliance (387/81-08-02) Review of Revisions to QA Manual Not In Accordance With Procedures.

On January 22, 1982 the after-the fact reviews of Procedure 16.2, Revision 4 and Procedure SP-4, Revision 2 identified in PP&L's response to the item of noncompliance, PLA-879 dated July 15, 1981 were reviewed. The responsible personnel were interviewed and stated they were aware of the need to perform the review of PP&L QA Manual revisions. No unacceptable items were identified.

This item is closed.

k. (Closed) Unresolved (387/81-08-18) Qualification of PP&L QA Auditors.

On January 22, 1981, Nuclear Quality Assurance Procedure (NQA)) 10.1, Revision 0, "Certification of QA Auditors" was reviewed. It contained steps for PP&L to verify that consultants comply with PP&L's procedure for auditor qualification. The inspector then reviewed two consultant training records, and noted the licensee had completed a review of the personnels' records, and documented this review in accordance with the NQAP.

The inspector next compared the consultant's training record with the NQAP 10.1 Procedure and noted that the records indicated the consultant's qualification did meet the minimum requirements of PP&L Qualification Program for QA lead auditor.

This item is closed.

3. Plant Tours

The inspector conducted periodic tours of accessible areas of the plant during normal and backshift hours. The inspector observed work in progress, testing, housekeeping, cleanliness controls, and storage and protection of components and systems.

No items of noncompliance were identified.

4. IE Bulletin and Circular Followup

IE Bulletins and Circulars listed below were reviewed to verify the following:

(a) Bulletins and circulars received by PP&L corporate management were forwarded to appropriate individuals within the organization, including station management, for information, review and/or corrective actions as required.

(b) PP&L bulletin responses were submitted to the NRC within the specified time period.

(c) Licensee reviews and evaluations of bulletins and circulars are complete and accurate, as supported by other facility records and by inspector observations of installed plant equipment.

(d) Corrective actions specified in licensee bulletin responses or internal circular evaluation memoranda have been completed and/or responsibilities have been assigned for completion.

-- Bulletin 79-26 "Boron Loss From BWR Control Blades."

On January 13, 1981 the (PMIS) for work activity N-0002, System 55 was reviewed. This Computerized Preventative Maintenance Program requires that procedure RE-81-015, "Determination of Control Blade Depletion Percentages" be done quarterly. This completed all open items on Bulletin 79-26, and the Bulletin is closed.

-- Circular 80-22 "Confirmation of Employee Qualifications."

Nuclear Department Instruction (NDI) 10.1.7, Revision 0, "Verification of Applicant's Qualifications and Experience" was reviewed to determine if problems noted in the circular were addressed. The NDI does cover how the licensee confirms educational and prior work experience by conducting background investigations. On January 22, 1982 the inspector reviewed nine PP&L employee background investigations, and noted that educational qualifications and prior work experience were checked.

The inspector also reviewed portions of NRC inspection report 99900527/81-02, 999004030/81-01, and 999004030/81-02 and verified that both Bechtel and General Electric's system for determining employee qualifications were reviewed and determined to be satisfactory. This circular is closed.

5. Fuel Receipt

On January 13, 1982, Procedure RE-TY-001, Revision 0, "New Fuel Bundle Rework" was reviewed. The procedure incorporated General Electric's (G.E.) Quality Plan Number 8.2, Revision 7, "Bundle Rework at Site" into a PP&L procedure. This was to allow qualified G.E. personnel to correct discrepancies with the new fuel discovered during the fuel receipt inspections.

On January 13, 1982, during a tour of the Unit 1 refueling floor, the inspector noted that one of the empty fuel containers had been damaged. The Reactor Engineer stated that the refueling platform had hit the container while it was sitting empty in the refueling upending stand. He stated that the operating procedures were being revised to prevent operation of the refueling platform with fuel in the upending stand, and that an incident report was being prepared to document the problem.

On January 21, 1982, the Assistant Superintendent of Plant stated a Temporary Change Notice (TCN) had been initiated to prevent operation of the refueling platform with fuel on the upending stand.

No unacceptable items were identified.

6. Comparison of As-Built Plant to FSAR Description

(a) The as-built condition of the Low Pressure Coolant Injection (LPCI) mode of the Residual Heat Removal (RHR) System was checked against the drawings and descriptions in the FSAR. This check consisted of:

-- Verification that latest copies of system field drawings are in agreement with FSAR Process and Instrumentation Diagrams (P&ID's).

-- Verification by field observation that the components are installed as described in the FSAR.

References used were:

-- Inspection and Enforcement Report No. 50-387/80-24-05).

-- Bechtel Drawing No. M-151, Sheet 1, Revision 19.

-- Bechtel Drawing No. M-151, Sheet 2, Revision 18.

-- FSAR Section 5.4.

-- FSAR Section 6.3.

-- FSAR Figures 5.4.13a and 5.4.13b, Revision 25 of July, 1981.

-- FSAR Section 7.3.

The major portion of instrumentation and logic verification was accomplished during Inspection 50-387/80-24-05 as part of the research for review of Preoperational Test P52.1, therefore, this inspection was limited to verification of proper sensor and output locations. All piping and mechanical portions of the system were 'walked down.'

(b) Findings:

The P&ID's in the FSAR are in substantial agreement with the latest field drawings and the 'as-built' condition of the system. There was one noted difference between the P&ID's in the FSAR and the as-built system.

Post-accident sampling lines have been added to both loops of the RHR System. These sampling lines are not incorporated into the FSAR drawings. The revision to the FSAR drawings will be reviewed during a subsequent inspection. (387/81-29-01)

Minor material deficiencies such as missing valve identification tags, and a missing test connection cap were also identified, and provided as a list to station management on January 20, 1982.

No violations were identified.

7. Witnessing of Preoperational Testing

Portions of the Standby Liquid Control System Preoperational Testing done on January 14, 1982, and Diesel Generator Testing done on January 7 and 8, 1982 were observed to verify that:

-- The properly approved test procedures were being followed.

-- Qualified personnel were performing the work.

-- Test prerequisities and precautions were followed.

-- Test and measuring equipment met procedure requirements and was properly calibrated.

-- Quality Control Hold and Witness requirements were met.

-- Test results were properly documented.

(a) Standby Liquid Control System Testing

No violations were observed, but an incorrect calculation method was found in the procedure. Step 7.3.1(4)(d) requires calculation of Standby Liquid Control Tank heater power from measured 3 phase voltages and currents.

The equation used was not valid since the heater had only 2 elements connected with Phase A as the common connection, rather than a balanced 3 element wye or delta connection. The inspector told the Test Engineer that the equation was incorrect. The Test Engineer stated that the validity of the equation would be checked. The inspector determined that other steps of the procedure were not dependent on the power calculation results, and therefore, were not affected by the error.

Procedure Change TCN 37 to P53.1 was submitted on January 20, 1982 to properly calculate the power.

A portable digital thermometer used in the test was determined to be inaccurate by the Test Engineer because of a $10^{o}F$ difference between it and the recently calibrated Standby Liquid Control Tank temperature instrument. The portable instrument was replaced and subsequent measurements agreed within $1^{o}F$. On January 18, 1982, the inspector reviewed the calibration laboratory records to verify that the suspected instrument was removed from service for testing/calibration.

The instrument had been "confidence checked" and found to be operating satisfactorily. The inspector discussed possible causes for the 10°F difference between the installed temperature indicator and the portable digital thermometer with the calibration lab technician who stated that insufficient time was probably allowed for the probe to come into equilibrium with the water. The lab technician stated that he would contact the Test Engineer to discuss proper use of the digital thermometer.

(b) Diesel Generator Testing

The inspector witnessed portions of Preoperational Test P24.1, Revision 1. Portions witnessed included Section 10.3.13 titled, "Diesel Generator D Auto Start By Undervoltage On Bus 1F and Associated Interlocks Trapped By Diesel Generator Overspeed," and a manual start of the diesel generator.

The inspector verified that the test director followed the preoperational test procedure, and that when problems arose during testing, the diesel generator was secured so that trouble shooting would commence. Two areas of concern were identified during the test. First the Engineering Safeguards transformer main breaker 52-20409 would not shut either locally or from the control room. The problem was isolated to the Breaker Undervoltage device which did not have enough of a time delay to allow the breaker to shut and voltage to be restored to the Bus before tripping the breaker. A temporary modification was installed to bypass the undervoltage device. The test director stated that the undervoltage devices for the breaker would be replaced.

This item will be reviewed during a subsequent inspection. (387/81-29-02)

A procedural problem with the preoperational test was also identified. The procedure as written caused the diesel generator field breaker to open losing the field to the generator. The procedure as written stated an overspeed alarm would be received, but no breaker or diesel trip would occur. A test change notice to the test was written correcting the procedure to allow for proper testing of the diesel generator overspeed circuitry.

No unacceptable conditions were identified.

8. Emergency Planning

On January 13, 1982 the licensee conducted another emergency drill. The drill was limited in scope and was primarily intended to identify problems which should be corrected prior to the full scale emergency drill scheduled for March 1982.

Limited participation by outside agencies was included in this drill. Off-site radiation monitoring teams were dispatched and the licensee issued a brief press release on January 14 describing the drill.

The inspectors observed drill activities in the Control Room, Technical Support Center and Emergency Operations Center. The drill lasted approximately 12 hours and was followed by a critique on January 14 attended by plant management, key personnel and observers. The drill observers detected and discussed at the critique all of the problems noted by the inspectors.

No unacceptable items were identified.

9. Onsite Review Committee Activities

The inspector observed a portion of Plant Operations Review Committee Meeting (82-003) on January 15, 1982 to verify that it was conducted in accordance with Administrative Procedure AD-QA-102. A quorum was present, the agenda included all applicable required topics, and issues were freely and openly discussed prior to voting on resolutions. The meeting minutes were reviewed on January 26, 1982 and the entries included an accurate detailed account of the meeting business. No violations were observed.

10. Follow-Up On Problems Identified With Agastat General Purpose Relays

The high failure rate of Agastat GPDC740 control relays was described in Inspection Report 50-387/81-27. This issue was discussed again on January 22, 1982, with the licensee engineer who is tracking the problem. The licensee no longer intends to specifically identify and test all general purpose Agastat relays since they believe that any problems would be detected during pre-operational and startup testing.

Additional information obtained by NRC from Amerace Corporation now apparently limits expected high failure rates to the relays supplied to Cooper Bessemer, the diesel generator manufacturer, rather than to all general purpose relays.

The inspector will continue to follow this issue.

11. Exit Interviews

At periodic intervals during the course of this inspection, meetings were held with facility management to discuss the inspection and findings identified.