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

Region I

Report No. 50-387/79-40
50-388/79-21

Docket No. 50-387
50-388

License No. CPPR-101
CPPR-102 Priority -- Category B

Licensee: Pennsylvania Power & Light Company

2 North Ninth Street

Allentown, Pennsylvania 18101

Facility Name: Susquehanna Steam Electric Station

Inspection at: Salem Township, Pennsylvania

Inspection conducted: November 5-30, 1979

Inspectors: Robert M. Gallo 12/20/79
R. M. Gallo, Resident Reactor Inspector date signed

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date signed

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date signed

Approved by: R. W. McGaughy 1/9/80
R. W. McGaughy, Chief, Projects Section, RC&ES Branch date signed

Inspection Summary:
Unit 1 Inspection on November 5-30, 1979 (Report No. 50-387/79-40)
Areas Inspected: Routine inspection by the Resident Inspector of: installation and welding of reactor coolant pressure boundary and other piping; installation of safety-related components; ACR/PGCC rework; containment load testing; 50.55(e) reports; procedures and work in progress for the Reactor Pressure Vessel Recirculation System nozzle modification. The inspector also performed plant tours and reviewed licensee actions on previously identified items. The inspection involved 32 inspector-hours, including 3 hours during off shift by the NRC Resident Inspector.
Results: No items of noncompliance were identified.

Unit 2 Inspection on November 5-30, 1979 (Report No. 50-388/79-21)
Areas Inspected: Routine inspection by the Resident Inspector of: installation and welding of reactor coolant pressure boundary and other piping; installation of safety-related components. The inspector also performed plant tours and reviewed licensee actions on previously identified items. The inspection involved 9 inspector-hours by the NRC Resident Inspector.
Results: No items of noncompliance were identified.

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DETAILS

1. Persons Contacted

Pennsylvania Power & Light Company	Note
R. Beckley, Site QAE	3
P. Brady, Project Engineer-Construction	1
G. Burvis, Site QAE	
E. Carroll, Site QAE	
S. L. Denson, Assistant Project Construction Manager	1
R. H. Featenby, Project Construction Manager	1, 3
M. Gorski, Resident Engineer	
J. Green, Resident NQA	1, 2, 4
E. Lazarowitz, Resident Engineer	
T. F. Oldenhage, Resident Engineer	
R. Petrokonis, Project Engineer-Construction	
D. B. Ritter, Project Engineer-Construction	2
A. R. Sabol, Manager, Nuclear Quality Assurance	
R. A. Schwarz, Senior Project Engineer-Construction	1

Bechtel Corporation	
G. C. Bell, Bechtel QAE	
J. G. Berra, Project Superintendent Services	1
M. A. Drucker, Electrical QAE	1, 3
J. Colker, Lead Pipe/Mechanical Engineer	
G. Gelinas, QC Lead Engineer Piping/Mechanical	
J. Khandar, Mechanical QAE	
A. Konjura, Mechanical QAE	4
H. Lilligh, Project QAE	2, 3
T. Minor, Project Field Engineer	1
J. O'Sullivan, Assistant Project Field Engineer	3, 4
B. Ott, Lead Welding QCE	
W. Ross, Lead Welding Engineer	
K. Stout, Project Field QCE	1, 4
C. Turnbow, Field Construction Manager	1, 3

General Electric Company-Nuclear Energy Business Group (NEBG)	
E. A. Gustafson, Site Manager	
J. C. Walker, QA/QC Representative	1

General Electric Company-Installation & Service Engineering (I&SE)

G. Bragan, Site Manager 1
J. Kong, Project Manager Recirculation System Nozzle Modification

Peabody Testing Company

M. Whalen, NDE Supervisor

Notes

1 - Denotes those present at the exit interview, November 9, 1979.
2 - Denotes those present at the exit interview, November 16, 1979.
3 - Denotes those present at the exit interview, November 21, 1979.
4 - Denotes those present at the exit interview, November 30, 1979.

The inspector also interviewed other PP&L employees, as well as employees of Bechtel, Peabody Testing Company, and General Electric Company.

2. Plant Tours - Units 1 and 2

The inspector observed work activities in progress, completed work and plant status in several areas of the plant during general inspection of the plant. The inspector examined work for any obvious defects or noncompliance with regulatory requirements or license conditions. Particular note was taken of presence of quality control inspectors and quality control evidence such as inspection records, material identification, nonconforming material identification, housekeeping and equipment preservation. The inspector interviewed craft personnel, supervision and quality inspection personnel as such personnel were available in the work areas.

No items of noncompliance were identified.

3. Licensee Action on Previous Inspection Findings

a. (Open) Noncompliance (387/78-15-01): Failure to qualify welders for the welding process in use.

The inspector reviewed the licensee's actions relative to this matter. GE Installation and Service Engineering's (GEI&SE) Weld and NDE Spread Sheet 160-77E-0155, Revision 8, had been revised and submitted to Bechtel for approval. Discrepancies identified by Bechtel caused Revision 8 to be rejected. Revision 9 to the Spread Sheet was prepared and resubmitted by GEI&SE. The inspector expressed his concerns regarding the delay in completing the corrective steps taken in response to this item of noncompliance, as discussed in the licensee's letter to the NRC, PLA-302, dated November 20, 1978. The matter remains open pending verification of completion of the licensee's committed actions.

b. (Closed) Unresolved Item (387/79-31-03; 388/79-16-01): Cooper Energy Services Diesel Overspeed Shutdown Butterfly Valve Spring.

The inspector had inquired if the new valve springs could be differentiated from the replaced defective springs. By letter, dated November 9, 1979, to Bechtel, the Cooper Energy Services Senior Quality Control Engineer provided the defective spring and the replacement spring serial numbers. The inspector had no further questions on this matter at this time.

c. (Closed) Unresolved Item (387/79-31-06): Installation of CR-2940 control switches without locking rings.

The inspector had previously observed that Unit 1 control room panels had locking rings installed in accordance with GE FDI WJEG. The inspector also observed that the NSSSS Manual Isolation Switches for Unit 1 had locking rings installed but those for Unit 2 did not have locking rings. Upon investigation, the inspector determined that the NSSSS Manual Isolation Switches were in fact Cutler-Hammer 10250T switches. By memo, serial number SS-79-26, dated October 29, 1979, the GE Principal Engineer stated that this switch did not require a locking ring but that there was no adverse effect if a locking ring was installed. The inspector had no further questions on this matter at this time.

d. (Open) Unresolved Item (387/79-31-07): High Pressure Coolant Injection (HPCI) System Pump Installation.

The licensee's Resident NQA Engineer issued PP&L Deficiency Report (DR) No. 99 on October 19, 1979. The DR required "Stop Work" action regarding the HPCI pump alignment and discharge piping installation.

The "Stop Work" release was granted on November 27, 1979, based on the QA review and acceptance of Bechtel FCI-M-178, Revision 0. This matter remains unresolved pending completion of NCR 4346 and FCI-M-178.

4. Reactor Coolant Pressure Boundary Piping (Welding)

The following activities were examined to determine if they were being performed in accordance with the ASME Section III and IX Codes, PSAR Appendix D, the Bechtel Quality Assurance Manual Section III, Site Specifications M204, M207, Drawings M-198 and M-199, and GE Specifications 24A4628.

Welding - Unit 2

Welding of: VNB-B21-3-FW-C3

The inspector verified selected detailed drawings, welding procedures, base and filler materials as specified, welder qualification, quality control documentation, weld appearance, welding variables, and nondestructive testing activities as appropriate.

No items of noncompliance were identified.

5. Recirculation System Nozzle Modification - Unit 1

a. The inspector reviewed procedures and observed work in progress relative to the Recirculation System nozzle modification. The procedures and work were examined to verify conformance with ASME Section III thru Summer, 1976 Addenda and Section XI, 1974 edition for General Electric Installation and Service Engineering (GEI&SE) work; and ASME Section III thru Winter, 1972 Addenda for Bechtel work; and commitments in PP&L letters, to the NRC, PLA-291, dated September 25, 1978, and PLA-350, dated May 4, 1979.

Procedures reviewed included:

-- Bechtel ICI No. 18, Revision 4.

-- GEI&SE Procedures: SRSE 1-12, Revision 3; SRSE 1-18, Revision 5; and SRSE 1-19, Revision 0.

The inspector observed work in progress and verified conformance to applicable procedures.

Specific observations included:

-- Welding of safe-end to thermal sleeve (Weld No. 3) - N2F nozzle.

-- Welding of safe-end to nozzle (Weld No. 2) - N2A nozzle.

b. During observation of work in progress on nozzle N2A, the inspector reviewed the calibration record for machine welder serial number 119. The calibration test report reviewed was part of a Bechtel calibration procedure ICI No. 18, Revision 4. The inspector inquired if the Bechtel calibration procedure had been approved for use by GEI&SE. This item is considered unresolved pending the licensee's evaluation and review by the NRC (387/79-40-01).

The inspector also observed that step number 5.10.10 on the calibration test report included a reading of 10.74 VDC where the specified minimum voltage was specified as 10.89 VDC. The inspector stated that this reading should have been adjusted to be within specification or evaluated prior to field use of the equipment. This matter is considered unresolved pending the licensee's evaluation and review by the NRC (387/79-40-02).

6. ACR/PGCC Rework Control Panel Insert 72C

a. By letter dated November 28, 1979, the licensee reported that connector pin crimping defects on control room panel insert P853-72C were considered reportable in accordance with 10 CFR 50.55(e). This condition had been previously reported to the NRC in accordance with 10 CFR 21 by General Electric Company. Further examination of the repairs will be conducted during a future NRC inspection.

b. During this inspection the inspector noted that flexible conduit had been added to cables between the insert and the stationary bench board. The flexible conduit is presently supported at the stationary bench board end by tie wraps. The inspector inquired if this was to be final installation and if this system had been seismically qualified. The inspector was informed that the final installation was still under review and this matter would be addressed. This matter is considered unresolved pending inspection of the licensee's final installation (387/79-40-03; 388/79-21-01).

7. Cooper Energy Services Diesel Engine Modifications

a. Cooper Energy Services, supplier of the Susquehanna Emergency Diesel Generators, advised the NRC by letter, dated November 3, 1978, of a deficiency in the design of the crosshead assembly roller pin. During this inspection, the inspector observed work in progress to replace the crosshead assemblies.

By letter to Bechtel, dated November 15, 1979, Cooper Energy Services provided the part number for the redesigned crosshead assembly.

The inspector had no further questions at this time.

b. In addition, the inspector inquired what testing had been or would be accomplished to verify the engine modification. The inspector stated that it appeared that the commitment to Regulatory Guide 1.9 and IEEE 387-1972 in FSAR Section 8.1.6 called for testing. The inspector also noted that FSAR review question 040.65-X10, addressed diesel engine qualification testing. This matter is considered unresolved pending licensee evaluation and review by the NRC (387/79-40-05; 388/79-21-03).

8. Submerged Bubble Load Test

The inspector observed work in progress regarding the proposed submerged structures bubble load tests at Susquehanna. The objective of these tests

is to measure loads on, and response of, submerged structures in the Susquehanna pressure suppression pool when subjected to loads from a simulated safety-relief valve line air-clearing bubble.

The inspector examined installation of bubble chamber, associated pressure gages and sensor instrumentation. The inspector also reviewed the "Test Plan for Submerged Structures Tests at SSES," Stanford Research Institute Document No. 5881-43, Revision B. The tests are expected to be conducted in December, 1979. No items of noncompliance were identified.

9. Reactor Coolant Pressure Boundary and Safety-Related Piping - Unit 1

The inspector examined work activities relative to turnover to the startup group of the feedwater system. The system turnover boundaries are defined by Startup System Turnover No. 145A.2.2. The inspector examined documentation relative to the system turnover and observed the installed feedwater system piping. The inspector verified that the system turnover was being accomplished in accordance with applicable procedures, the PSAR Appendix D, and FSAR commitments.

The above activities were evaluated against criteria established in the following documents:

-- FSAR Sections 5.4.9 and 10.4.7

-- Bechtel QA Manual, Section III

-- Bechtel Drawings M-26-5, M-141, DBB-118-1, DBB-119-1, DLA-103-1, and DLA-101-1

-- PP&L Administrative Directive 6.1, Revision 4

-- Bechtel Field Procedure FP-G-19, Revision 3

-- Bechtel QC Project Special Provision Notice G-7.4, Revision 1

-- System Turnover Exception Form

The inspector noted that FSAR Section 5.4.9.3 did not describe the as-built construction of the feedwater system containment isolation valves. FSAR Figure 5.1-3a and Bechtel Drawing M-141 show the correct as-built condition of the feedwater system isolation valves. This matter is considered unresolved pending the licensee's revision to the FSAR (387/79-40-06).

10. Deficiency In the System For Isolating Non-Class 1E Loads Connected To the 250 VDC 1E System

By letter to the NRC, dated November 14, 1979, the licensee reported a deficiency in the electrical isolation system in accordance with 10 CFR

50.55(e). The inspector reviewed PP&L Deficiency Report (DR) 0134 regarding this deficiency. The DR states that the isolation systems for the 250 VDC Class 1E system connections to the Non-Class 1E loads do not meet the intent of the FSAR Sections 8.3.2.1.1.2, 8.1.6.1(m), and 3.12.3.4.1. Resolution of the 50.55(e) report and PP&L DR 0134 will be reviewed during a subsequent inspection. No items of noncompliance were identified.

11. Deficiency Regarding Violation of Separation Criteria for 4.16 KV Switchgear

By letter to the NRC, dated November 29, 1979, the licensee reported a deficiency, involving separation criteria for vendor supplied electrical panels and switchgear, in accordance with 10 CFR 50.55(e). The inspector reviewed Bechtel MCAR 1-38 regarding this deficiency. The MCAR states that separation requirements committed to in FSAR Section 3.13.1 (Regulatory Guide 1.75) were never incorporated into project specifications to govern vendor wiring. An analysis of the interal wiring of all electrical panels and switchgear on a case by case basis is in progress. Resolution of the 50.55(e) report and MCAR 1-38 will be reviewed during a subsequent NRC inspection. No items of noncompliance were identified.

12. Unresolved Items

Unresolved items are matters about which more information is required to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during this inspection are discussed in Paragraphs 5.b, 6.b, 7.a, 7.b, and 9.

13. Exit Interviews

At periodic intervals during the course of this inspection, meetings were held with facility management (dates and attendees are denoted in Detail 1) to discuss inspection scope and findings.