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

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Region I

Report No. <u>50-387/81-28</u>				
Docket No. <u>50-387</u>				
License No. <u>CPPR-101</u> Priority CategoryB				
Licensee: Pennsylvania Power and Light Company				
2 North Ninth Street				
Allentown, Pennsylvania 18101				
Facility Name: Susquehanna Steam Electric Station, Unit 1				
Inspection at: <u>Salem Township, Pennsylvania</u>				
Inspection conducted: December 9-11, 1981				
Inspectors: $\mathcal{H}.\mathcal{H}.\mathcal{M}.\mathcal{M}.\mathcal{h}.\mathcal{h}.\mathcal{h}.\mathcal{h}.\mathcal{h}.\mathcal{h}.\mathcal{h}.h$				
Approved by: A Sthuman L. H. Bettenhausen, Chief, Test Program Section date signed				

Inspection Summary:

Inspection on December 9-11, 1981 (Report No. 50-387/81-28)

<u>Areas Inspected</u>: Routine, unannounced inspection of the preoperational test program implementation including review of program status, preoperational test procedure review and test result evaluation; review of startup program status and review of startup procedures and tours of the facility. The inspection involved 40 inspector hours on site and 8 inspector hours in office by two region-based inspectors.

<u>Results</u>: No items of noncompliance or deviations were identified.



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# DETAILS

#### 1. Persons Contacted

# Pennsylvania Power and Light Company

- \* F. Butler, I & C Supervisor
- \* F. Eisenhuth, Senior Compliance Engineer
  E. Gorsky, QC Supervisor
  \* J. Green, QA Supervisor of Operations
- C. Jaffee, ISG Coordinator
- \* H. Keiser, Superintendent of Plant R. Sheranko, Startup Test Group Supervisor
- \* D. Thompson, Assistant Superintendent of Plant R. Wehry, Startup and Test Field Engineer

# **Bechtel Power Corporation**

- N. Covington, Assistant ISG Supervisor
- E. Figard, ISG Supervisor

# U.S. Nuclear Regulatory Commission

- \* A. Finkel, Reactor Inspector \* J. McCann, Resident Reactor Inspector
- \* G. Rhoads, Resident Reactor Inspector

The inspectors also interviewed other licensee personnel during the course of inspection.

\* Denotes those present at the exit interview on December 11, 1981.

2. Preoperational Test Program

References:

- -- Final Safety Analysis Report;
- -- Regulatory Guide 1.68, Initial Test Program for Water Cooled Nuclear Power Plants;
- -- Startup Administrative Manual;
- -- Startup Technical Manual;
- -- Regulatory Guide 1.68.1, Preoperational and Startup Testing of Feedwater and Condensate Systems for Boiling Water Reactor Plants;

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- -- ANSI N18.1, Selection and Training of Nuclear Power Plant Personnel; and.
- -- ANSI N45.2.6, Qualifications of Inspection, Examination and Testing Personnel for the Construction Phase of Nuclear Power Plants.

## a. Preoperational Test Program Implementation

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The inspector met with the Superintendent of Plant and his assistant, Integrated Startup Group (ISG) Supervisor and his assistant, Quality Assurance (QA) Supervisor Operations, Quality Control (QC) Supervisor and other licensee representatives, and discussed the following areas:

-- Test program implementation and status;

- -- System turnovers from construction to ISG and from ISG to plant staff;
- -- Test procedures remaining to be issued;
- -- Remaining tests to be conducted;
- -- Tests completed to date; and,
- -- Completed test results evaluation reviewed by the licensee.

As a result of these discussions with the licensees' representatives and review of the referenced documents relative to the preoperational test program, no discrepancies were noted. The inspector had no further questions at this time.

## b. Test Results Evaluation

The following preoperational test procedures were reviewed to ascertain whether uniform criteria are being applied for evaluating completed preoperational tests to assure their technical and administrative adequacy:

- -- P 2.1, Revision 2, Approved March 25, 1980 Test Results Evaluation Approved August 20, 1981 125 Volt DC System
- -- P 5.1 A, Revision 1, Approved March 25, 1980 Test Results Evaluation Approved July 16, 1980 ESS 480 Volt Transformers, Load Centers and Switchgear
- -- P 5.1 C, Revision 1, Approved June 5, 1980 Test Results Evaluation Approved September 4, 1980 ESS 480 Volt Motor Control Center and Auxiliaries

- -- P 57.1, Revision 1, Approved March 25, 1980 Test Results Evaluation Approved July 19, 1980 Uninterruptible AC Power System
- -- P 75.1, Revision 1, Approved August 22, 1980 Test Results Evaluation Approved July 15, 1981 24 Volt DC System
- -- P 76.1, Revision 1, Approved November 17, 1980 Test Results Evaluation Approved June 17, 1981 Plant Leak Detection
- -- P 88.1, Revision 1, Approved March 25, 1980 Test Results Evaluation Approved July 17, 1981 250 Volt DC System
- P 5.1 B, Revision 1, Approved March 25, 1980
   Test Results Reviewed and Evaluated November 12, 1980
   Non ESS 480 Volt Transformers, Load Centers and Switchgear
- P 5.1 D, Revision 1, Approved February 28, 1980
   Test Results Reviewed and Evaluated November 5, 1980
   Non ESS 480 Volt Motor Control Center and Auxiliaries
- -- P 14.1, Revision 2, Approved June 13, 1980 Test Results Reviewed and Evaluated June 9, 1981 Reactor Building Closed Cooling Water System
- -- P 16.1, Revision 1, Approved July 22, 1980 Test Results Reviewed and Evaluated July 14, 1981 RHR Service Water System
- -- P 17.1, Revision 1, Approved March 27, 1980 Test Results Reviewed and Evaluated November 17, 1980 Instrument AC Power System
- -- P 23.1, Revision 1, Approved June 19, 1980 Test Results Reviewed and Evaluated October 7, 1981 Diesel Fuel Oil System
- -- P 25.1, Revision 1, Approved June 13, 1980 Test Results Reviewed and Evaluated April 14, 1981 Primary Containment Instrument Gas System
- -- P 28.3, Revision 1, Approved July 3, 1980 Test Results Reviewed and Evaluated December 3, 1980 Standby Diesel Generator Building Heating & Ventilating System

- -- P 34.2, Revision 1, Approved September 19, 1980 Test Results Reviewed and Evaluated June 23, 1981 Reactor Building Chilled Water System
- -- P 54.1, Revision 1, Approved September 23, 1980 Test Results Reviewed and Evaluated July 7, 1981 Emergency Service Water System
- -- P 60.1, Revision 2, Approved July 31, 1980 Test Results Reviewed and Evaluated February 17, 1981 Containment Atmospheric Circulation System
- -- P 78.1, Revision 1, Approved June 3, 1981 Test Results Reviewed and Evaluated October 23, 1981 Source Range Neutron Monitors

The inspector reviewed the test results and verification of licensee evaluation of test results by the following methods:

- -- Review of test changes;
- -- Review of test exceptions;
- -- Review of test deficiencies;
- -- Review of "As-Run" copy of test procedure;
- -- Review of QC inspection records; and,
- -- Verifying that the test results have been approved.

The following exceptions were noted in the review of these procedures:

### Procedure

#### Title

### Unresolved Exceptions

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Ρ	23.1 R 1	Diesel Fuel Oil	001, 017.
Ρ	5.1 B R 1	Non - ESS 480 V TLCS	Exceptions Cleared, Needs Approval.
Ρ	28.3 R 1	SDG BLDG H&V	001, 002.
Ρ	5.1 D R 1	Non - ESS 480 V MCCA	Exceptions Cleared, Needs Approval.
Ρ	54.1 R 1	ESS System	001, 003, 012, 016, 018.
Ρ	34.2 R 1	RBCW System	002, 003, 004, 006, 007, 008, 009.
Ρ	16.1 R.1	RHR SW System	001, Ó02, 004, 008, 009, 010, 011, 012.
Ρ	78.1 R 1	SRMS	008.
Ρ	17.1 R 1	Inst. AC Power	001.
Ρ	60.1 R 2	Cont. Atmos. Circ. System	001, 002, 003, 004.
Ρ	25.1 R 1	PC Inst. Gas System	001, 002, 003, 004, 005, 006, 007, 008.
Ρ	14.1 R 2	RBCCW System	007, Ó08, Ó09.

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The above listed procedures will be examined on subsequent inspections for resolution of the listed exceptions and approval by the licensee. This is an inspector followup item (50-387/81-28-01).

# 3. <u>Startup Test Program</u>

## a. Startup Test Program Status

The inspector met with the Startup Test Group Supervisor and discussed the status of the Startup Test Program. Items discussed were the sequencing and scheduling of startup tests, the startup test performance matrix, and the interface between preoperational testing and startup testing. The inspector also reviewed the preliminary startup schedule and the preliminary startup performance matrix.

As a result of the above discussion and review, no noncompliance or deviations were identified. The inspector had no further questions at this time.

b. Startup Test Procedure Review

The following preliminary issues of Startup Test procedures were reviewed for compliance with NRC requirements and licensee commitments:

- -- ST-7, Revision O, Reactor Water Cleanup System.
- -- ST-9, Revision O, Water Level Measurements.
- -- ST-11, Revision 0, LPRM Calibration.
- -- ST-14, Revision O, Reactor Core Isolation Cooling System.
- -- ST-16, Revision 0, Selected Process Temperatures.
- -- ST-21, Revision 1, Core Power - Void Mode Response.
- -- ST-22, Revision O, Pressure Regulator.
- -- ST-24, Revision 1, Turbine Valve Surveillance

- -- ST-26, Revision 1, Relief Valves.
- -- ST-29, Revision 0, Recirculation Flow Control System.
- -- ST-30, Revision 0, Recirculation System.

Based on the above review, the inspector had several questions on these procedures and discussed them with licensee personnel. Some of these questions were satisfactorily resolved by the detailed explanation presented by the licensee personnel during the discussion. The remaining questions, described below, need further actions by the licensee for their resolution:

Sources of Acceptance Criteria are not identified or traceable for any of the eleven test procedures reviewed. Licensee personnel agreed that the appropriate references will be identified for each Acceptance Criterion for the tests. This will be followed up during future inspections. (50-387/81-28-02)

In reviewing ST-9, Revision 0, Water Level Measurements, the following was discussed. The Final Safety Analysis Report, Section 14.2.7, commits to Regulatory Guide 1.68, Revision 1, which requires verification of proper operation of reactor level instrumentation at certain power levels during the Power Ascension Test phase. The test as described in the procedure is performed only at steady state conditions. In view of the safety significance of proper operation of level instrumentation under transient conditions, especially those involving pressure/void changes, it appears prudent to perform this test under transient conditions as well. Licensee personnel stated that the transient portion of the test will be incorporated into the procedure, if found feasible. This is an inspector followup item (50-387/81-28-03).

## 4. <u>Plant Tours</u>

The inspector made several tours of the facility during the course of the inspection. The tours included the reactor building, turbine building, ESSW pump house, circulating and service water pump house and the Control Structure. The inspector observed work in progress, house-keeping and cleanliness controls.

No items of noncompliance or deviations were identified.

### 5. Exit Interview

At the conclusion of the site inspection on December 11, 1981, an exit meeting was conducted with the licensee's senior site representatives

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(denoted in Paragraph 1). The inspector summarized the scope and findings of the inspection. Previous inspections in this area were discussed.

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