U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-387/82-14

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, Unit 1

Inspection At: Salem Township, Pennsylvania

Inspection Conducted: April 12-14, 1982

Inspectors: C D Patras for
S. V. Pullani, Reactor Inspector — 4/29/82 date

Approved by: L H Bettenhausen
L. H. Bettenhausen, Chief, — 4/28/82 date
Test Program Section,
Engineering Inspection Branch

Inspection Summary: Inspection on April 12-14, 1982 (Report No. 50-387/82-14)
Areas Inspected: Routine, unannounced inspection of startup test procedure review and tours of the facility. The inspection involved 12 inspector hours in office and 31 inspector hours on site by one region based NRC inspector.
Results: No violations or deviations were identified

DETAILS

1. Personnel Contacted

1.1 Pennsylvania Power and Light Company (PP&L)

* J. Green, Operations Supervisor of QA
* F. Eisenhuth, Senior Compliance Engineer
R. Lombard, Reactor Engineer
* L. O'Neil, Technical Supervisor
* R. Sheranko, Startup and Test Group Supervisor
R. Wehry, Startup and Test Field Engineer

1.2 US Nuclear Regulatory Commission (USNRC)

G. Rhoads, Resident Inspector

The inspector also interviewed other licensee employees during the course of the inspection.

* denotes those present at the exit interview.

2. Startup Test Procedure Review

The following preliminary startup test procedures were reviewed for compliance with NRC requirements and licensee commitments:

-- ST-3 Revision 0, Fuel Loading
-- ST-5, Revision 0, Control Rod Drive System
-- ST-19, Revision 0, Core Performance

As a result of this review, the inspector discussed several questions with licensee personnel. Some of these questions were satisfactorily resolved by the licensee personnel and were further verified by the inspector by review of pertinent records. Other questions need further licensee actions for their resolution. A brief discussion of these questions follows:

2.1 ST-3, Revision 0, Fuel Loading

2.1 1 This procedure contains incomplete information at several places denoted by the word "later" (e.g., Appendix 3.1-C; Fuel and Core Component Transfer Authorization Sheet (FACCTAS) for Installing Neutron Sources; Appendix 3.2-A, FACCTAS for Calibration and Initial Placement of Fuel Loading Chambers; Appendix 3.2-F, FACCTAS for Initial Fuel Loading; Intitial Status items 3.3.2.17 and 3.3.2.24; and Test Instruction item 3.3.3.6). The above information should be completed

and reviewed by the licensee prior to final approval of the procedure. This is an Unresolved Item (50-387/82-14-01).

2.1.2 The inspector questioned whether the FACCTAS to be included in the procedure as Appendixes 3.1-C, 3.2-A, and 3.3-F (see Item 2.1.1 above) will contain step-by-step instructions for manipulating fuel and other core components and recording these operations. Licensee personnel stated that the FACCTAS will contain such provisions. The inspector verified this by review of a sample FACCTAS presented by licensee personnel.

2.1.3 The inspector stated that Appendix 3.0-A, Spent Fuel Storage Rack and New Fuel Locations, does not show the location of each fuel assembly within the rack as stated in Procedure Step 3.3.2.14. Licensee personnel stated that the fuel is now in the rack. The actual fuel assembly locations will be shown in Appendix 3.0-A.

2.1.4 Procedure Step 3.3.2.23 requires the Main Body, ST-30, to be reviewed as an Initial Status for Subtest ST-3.3 of this startup test. The licensee personnel stated that ST-30 is not the correct test number and it will be changed to ST-3.0. Further, the inspector stated that the minimum acceptable count rate for any Fuel Loading Chamber (FLC) for continuing the fuel loading operations should be 3 counts per second as stated in Appendix 3.1-D of the procedure. Procedure Step 3.3.3, Note 5, which presently reads 0.5 counts per second, should be corrected. Licensee personnel were aware of this discrepancy and stated that it will be corrected.

2.1.5 From the sequence of Procedure Steps 3.3.3.6, 3.3.3.7, and 3.3.4, it appears that the analysis of partial core shutdown margin is performed after the core is completely loaded. The inspector stated that the analysis should be performed just after the partial core shutdown margin test in Step 3.3.3.6 and prior to continuing with any further fuel loading. The licensee personnel agreed and stated that the incomplete Procedure Step 3.3.3.6 (see Paragraph 2.1.1 above) when completed will include this provision.

2.1.6 The inspector stated that Appendix 3.3-B, Pre-fuel Loading Surveillance/Operability Requirements, is neither specifically referenced to be completed as a pre-requisite for fuel loading nor connected to the text of the procedure. Licensee personnel stated that Procedure Step 3.3.2.25 will be modified to reference Appendix 3.3-B specifically.

2.1.7 FSAR Section 14.2.7 commits to RG 1.68, Revision 1, Initial Test Programs for Water-Cooled Reactor Power Plants. RG

1.68, Appendix C, Paragraph 2.a(2), in part, requires the building evacuation alarm to be tested and operable and this to be included in the procedure as a prerequisite for fuel loading. The licensee stated that this will be included in the procedure.

2.1.8 RG 1.68, Appendix C, Paragraph 2.a(6) requires a response check for nuclear instruments (FLC/SRM) within 8 hours prior to loading (or resumption of loading, if delayed for 8 hours or more). The inspector stated that this 8-hour requirement is not specifically mentioned in the procedure. A channel functional test, which is different from response check, is specified to be done within 24 hours prior to start of Core Alteration in Procedure Step 3.3.2.17. Licensee personnel stated that Procedure Step 3.3.2.5 or 3.3.2.17 will be modified to specify the above 8-hour response check.

2.1.9 RG 1.68, Appendix C, Paragraph 2.b(6) requires the limits on subsequent fuel loading increments to be based on an extrapolation and conservative interpretation of the inverse multiplication plot. These details are to be included in the fuel loading procedure. Procedural Step 3.3.3 Note 3 and Appendix 3.3-C do contain instructions on how to make the plot but do not contain sufficient details on how to interpret it. Licensee personnel stated that these details will be included in the procedure.

2.1.10 RG 1.68, Appendix C, Paragraph 2.b(13) requires that the fuel loading crew should not work more than 12 hours out of each 24 hour period and this information be included in the procedure. Licensee personnel stated that the Technical Specification (TS 6.2.2.f.2) requirement of 16 hours out of a 24 hour period will override the above requirement and will be included in the procedure.

2.1.11 RG 1.68, Appendix C, Paragraphs 2.c(3), (4), and (6) require the criteria for emergency boron injection and for containment evacuation to be established. Further, actions to be followed or approvals to be obtained before routine loading may resume after limitations such as these have been reached or invoked should be included in the fuel loading procedure. Licensee personnel stated that these details will be provided or referenced to appropriate Emergency Operating Procedures.

The items discussed in Paragraphs 2.1.3 through 2.1.11 regarding ST-3 are grouped as an Inspector Followup Item (50-387/82-14-02).

2.2 ST-5, Revision 0, Control Rod Drive System

2.2.1 The inspector stated that the TS 3.3.1.2 requirement of maximum scram time of 7.0 seconds for any operable control

rod is not demonstrated during this test. Licensee personnel stated that a new Acceptance Criterion and necessary details will be included in the procedure for this purpose. This is an Inspector Followup Item (82-357/82-14-03).

2.2.2 RG 1.68, Appendix A, Paragraph 2 requires that those control rods whose scram times fall outside of the two-sigma limit should be retested a sufficient number of times (10 times) to reasonably predict proper performance during subsequent plant operations. The licensee's preliminary calculation indicates that repeated testing of 4 rods under various operating conditons will meet this requirements. The licensee will further verify the basis of the calculation and assure that this requirement is satisfied. This is an Unresolved Item (82-357/82-14-04).

2.3 ST-19, Revisio 0, Core Performance

This procedure contains incomplete information in that Appendix 19.0-B, K(f) Factor, is blank and denoted by the word "later". This information should be completed and reviewed by the licensee prior to final approval of the procedure. This is an Unresolved Item (50-387/82-14-05).

No violations or deviations were identified.

3. Unresolved Items

Unresolved items are matters about which more information is required to ascertain whether they are acceptable or whether they are violations or deviations. Unresolved items are discussed in the report above in Paragraphs 2.1.1, 2.2.2, and 2.3.

4. Plant Tours

The inspector made several tours of the facility during the course of the inspection. The tours included the reactor building and turbine building. During these tours, the inspector observed and evaluated work in progress at the refueling floor, general equipment protection and cleanliness controls. No violations or deviations were identified.

5. Exit Interview

The inspector met with licensee management representatives (see Section 1 for attendees) at the conclusion of the inspection on April 14, 1982. The inspector summarized the scope and findings of the inspection at that time.