

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-387/89-11 and 50-388/89-11

Docket Nos. 50-387 and 50-388

License Nos. NPF-14 and NPF-22

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: May 8-12, 1989 and May 22-26, 1989

Inspector: P.M. Trapp, Reactor Engineer, STPS, OB, DRS

7/3/89
date

Approved by: Dr. P.K. Eapen, Chief, Special Test Programs
Section, Division of Reactor Safety

7/3/89
date

Inspection Summary: Routine Unannounced Inspection on May 8-12, 1989 and
May 22-26, 1989. (Inspection Report Nos. 50-387/89-11
(Unit 1); 50-388/89-11 (Unit 2))

Areas Inspected: The focus of this inspection is design, design changes, modifications, and temporary bypasses. Also included in the scope was the installation and testing of hardware associated with modifications.

Results: The inspector found the design change process was being thoroughly controlled by existing Administrative Procedures. The design packages, Installation procedures and testing, for the design packages reviewed, were found to be fully adequate. No unresolved items or violations were identified during this inspection.

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DETAILS

1. Persons Contacted

A. Licensee

- * J. Blakeslee Jr., Assistant Superintendent (Supt.) of Plant
- G. Butler, Manager Engineering Design
- * B. Byram, Superintendent of Plant
- D. Cardinale, Supervisor (Supv.), Instrumentation and Control
- M. Detamore, Supv. Reliability
- J. Doxsey, Supv. Reactor Engineering
- * E. Figard, Supv. Maintenance
- M. Golden, Plant Engineering Supv.
- * J. Graham, Assistant (Asst.) Manager (Mgr.), Quality Assurance (QA)
- J. Hobbis, Sr. Proj. Eng.
- * D. Klinger, App. "R" Mgr.
- * G. Kuczynski, Tech, Supv.
- J. Kulick, Supv. Nuclear Fuels
- G. Miller, Supv. Mech.
- T. Nork, Plant Eng. Supv.
- * L. O'Neil, Supv. NPE President Group
- * J. O'Sullivan, IEG Supv.
- * N. Pitcher, Constr. Supt.
- * H. Riley, HP/Chem Supv.
- * D. Roth, Sr. Compliance Eng.
- * G. Stanley, Asst. Supt - Outage
- * R. Stotler, Supv. Security
- J. Stefanko, Mgr. Nuclear Fuels & Syst. Eng.

B. NRC

- S. Barber, Senior Resident Inspector
- J. Stair, Resident Inspector

The inspector also held discussions and interviews with other members of Nuclear Plant Engineering (NPE) and plant staff.

*Denotes those present at the exit interviews conducted onsite, May 12, 1989 and May 24, 1989.

2. Design Changes and Modifications (37700 and 37828)

The objective of this inspection is to ascertain that design changes and modifications are in conformance with the requirements of the Technical Specifications (TS), 10 CFR, the Safety Analysis Report, and the licensee's Quality Assurance program.

This objective was accomplished by performing a detailed review of selected modifications listed in Attachment B. In addition to the modifications listed in Attachment B, a temporary Bypass was also selected for review. The Plant Modification Packages (PMPs) and installation of plant design changes were reviewed and the following was verified:

- PMP's were reviewed and approved by onsite and offsite review organizations.
- Design changes and modifications were controlled by Approved Procedures.
- Post Modification Test Procedures and Results were adequately reviewed.
- Station Procedure modifications were made prior to modification being declared operable.
- Operator training was conducted prior to declaring the modification operable.
- Marked up copies of as-built drawings were distributed prior to declaring the modification operable. Also administrative controls were established to maintain as-built drawings.
- Modifications selected were listed in the 10 CFR 50.59(b) annual report to the NRC when appropriate.
- Preventive maintenance and inservice inspection and test (IST) programs were properly updated.
- Changes to the FSAR were properly controlled and updated.
- Installation of modifications conformed with Design Change Package.

During the second week of this inspection, the inspection objectives were to witness installation and testing of modifications which were in progress.

A temporary modification was also selected for review. This temporary modification was reviewed for the following additional factors:

- A formal record was maintained of temporary modifications.
- Independent verification of temporary modification installation and removal was established.
- Functional tests were performed following installation or removal, if required.
- Periodic reviews of outstanding temporary modifications were performed.

2.1 References

- 10 CFR Part 50, (50.59, Appendix B and other Sections)
- Reg Guide 1.33
- ANSI N 45.2 - 1977
- ANSI N 45.2.11 - 1974
- Licensee Administrative Procedures Attachment A
- Plant Modification Packages Attachment B

2.2 Inspection Findings

Review and approval of safety evaluations and Design Change Packages (DCP) are conducted by the Plant Onsite Review Committee (PORC) and the Susquehanna Review Committee. These reviews and approvals are controlled by Administrative Procedure NDI-QA-9.1.1 Rev. 3. The Plant Modification Packages (PMP) reviewed, were completed in accordance with NDI-QA-9.1.1 and Section 6 of the Plant Technical Specifications.

Implementing Procedures for modifications are prepared by the Installation Engineering Group (IEG). The Implementing Procedures are written as a Work Authorization (WA) or a Construction Work Order (CWO). The CWO reviewed were found to conform with the guidance provided in the Design Change Package (DCP). The CWO were found to be thorough with adequate detail provided to perform the installation of the modification. All CWO's reviewed were found to have the proper approvals.

Post Modification Testing requirements are designated during the Installation Kickoff Meeting (IKM). The group responsible for the performance of the testing is also designated at this meeting. For the modifications reviewed, the testing was performed by the IEG, and was documented using a CWO. The tests reviewed, were found to be properly documented and approved. The results of the post modification tests were reviewed and approved by the cognizant Technical Supervisor as part of Attachment I of AD-QA-410 "Operational Readiness Form." For the modification selected, the tests were performed in accordance with approved procedures and the Operational Readiness Forms" were completed by the Technical Supervisor.

Plant Procedure change requirements due to modifications are identified in Attachment C of AD-QA-410 Rev. 10 "Procedure Change Sheet." The operating groups are responsible to identify and revise their procedures prior to the modification being declared operable. For selected procedure changes

the inspector verified that the procedures had been revised. The inspector did not identify any unacceptable conditions in this area.

The operator training material was reviewed by the inspector for selected modifications. Each modification had an associated "Operations Modification Information Summary Sheet" (OMISS) filled out by the Plant System Engineer. These sheets are collected and used as training material for the licensed operators. A four hour training session was conducted prior to the refueling outage to discuss the modifications planned during the outage. Simulator training is provided prior to the installation of modifications when the operations/training groups deem such training necessary. For example, the HPCI steam to the RHR heat exchanger was incorporated in the simulator prior to plant installation. Otherwise, the simulator is upgraded after the installation of the modification. For the selected modifications the OMISS was included in the operator training handout. In addition to the licensed training, each group supervisor assures that the required training has been performed and documents the completion of such training by signing the Operational Readiness form prior to declaring the modification operational.

The inspector reviewed the Process and Instrumentation Drawings (P&IDs) in the control room and verified that the drawings for the selected modifications had been updated. The updated as-built drawings were attached to the P&IDs. The drawing updates are also indicated on the "Operational Readiness Form."

The inspector reviewed the licensee 10 CFR 50.59 Summary Report for the period of January 1, 1987 to December 31, 1987. The modifications selected, when appropriate, were included described in this submittal.

The inspector reviewed the Operational readiness forms and assured that the Preventive Maintenance program had been changed to include the selected modifications.

The inspector randomly verified DCP 88-3054 was incorporated in Revision 39 to the FSAR.

During a routine walkdown of a non-safety related modification to the Core Spray Keepfill system, the inspector identified a valve (152031) which was indicated locked open in DCP 87-9042, the safety evaluation to DCP 87-9042 and the P&ID. However, this valve was found in the closed position. The valve check list also had this valve as a normally closed valve. The system engineer wrote an Engineering Work Request to correct the Design Change Package to reflect the actual valve position. The inspector verified that the valve position had no safety significance and had no

further questions concerning this issue. No such discrepancy was noted for safety related components reviewed.

The inspector reviewed temporary electrical and mechanical bypass control as described in AD-QA-484. Bypass 2-89-005, installation of a pressure transmitter across the HPCI stop valve test connections was field verified to comply with the requirements of AD-QA-484, as follows:

- A formal record of this modification was maintained in the control room.
- The bypass installation area was independently verified and the bypass tags were properly attached.
- Functional testing of this bypass was not required.
- Periodic reviews by the shift supervisor and technical staff were being performed.

The inspector found the electrical and mechanical bypass, procedure was being followed for the bypass reviewed and had no question concerning this issue.

The inspector witnessed installation of Modification 88-3018A using Construction Work Order C-90237. This work order was written to install fuses, an agastat relay and associated wiring in the Emergency Switchgear room ventilation system logic. The work package contained adequate detail for performing this work. The hardware installed conformed with the as-built drawings. The personnel installing the modification were knowledgeable and well versed in the intent of this modification. The inspector noted Quality Assurance personnel continuously monitored the installation and independently verified all cable terminations.

The inspector witnessed post modification testing for DCP No. 88-3018A, Div. I, using Construction Work Order C-90234. There was excellent communication among the installation engineering, construction and operations personnel. The test was performed in accordance with the procedures. The QA/QC groups verified each procedural step during the test.

2.3 Program Observations

The inspector found the modification program to be satisfactorily controlled by Administrative Procedures. The procedures were detailed and thorough. The plant staff was found to follow these procedures to result in a well implemented plant design change program.

Good communications were notable among the Nuclear Plant Engineering, Site Systems Engineers and Installation Engineering Groups. These groups were found to have open communications throughout the development of the Design Change Package and prior to plant installation during the formal Installation Kickoff Meeting (IKM). The System Engineering groups were found to have a strong role in assuring that all plant procedures, and programs affected by the plant design change were incorporated accordingly.

The inspector reviewed training records for the Site System Engineers and NPE engineers. The inspector found the training extensive and complete for most engineers.

The licensee is presently conducting a program to improve priorities placed on modifications. The NPE group has returned Project Funding Requests, which have not yet been started, to the site to be prioritized. The licensee is actively pursuing methods to assure that the NPE group is producing modifications which have the highest priority at the plant site.

One additional item reviewed by the inspector was the licensee use of Engineering Change Orders (ECO). An ECO is a change made to a Quality or Non Quality System, for which a Safety Evaluation is not required. These modifications are normally minor in nature and controlled in a manner similar to those modifications which require a 50.59 review. The inspector independently reviewed the licensee's ECOs on a sample basis and verified that the selected ECOs did not require safety evaluations.

3.0 Exit Meeting

At the conclusion of the site inspection, on May 24, 1989, an exit interview was conducted with the licensee's senior site representatives (denoted in Section 1) to discuss the results and conclusions of this inspection.

At no time during this inspection was written material provided to the licensee by the inspector. Based on the NRC Region I review of this report and discussions held with licensee representatives during this inspection, it was determined that this report does not contain information subject to 10 CFR 2.790 restrictions.

ATTACHMENT A

Administrative Procedure for Modification and Drawing Control

<u>Procedure Number</u>	<u>Title</u>
AD-QA-410 Rev. 11	Plant Modification Program -
AD-QA-484 Rev. 0	Electrical and Mechanical Bypass Control
NDI-QA-9.1.1 Rev. 3	Safety Evaluations
NDI-QA-15.2.3 Rev. 3	Configuration Control Program
NDI-QA-15.2.4 Rev. 3	As-Built Drawing Requirements
NDI-QA-15.2.7 Rev. 3	Drawing Change Control

ATTACHMENT B

Modification Packages Reviewed

<u>Design Change Package (DCP) No.</u>	<u>Title</u>
86-7033	Isolation of HPCI Steam Supply Line to RHR Heat Exchangers
86-9031	Modify 1F015B Internals
87-9014	RCIC E51A-K17 and K18 Relay. Changeout
87-9042	Keepfill Isolation to "B" Loop Core Spray
88-3054	HPCI Steam Supply Line to RHR Heat Exchanger Cut and Cap Determinations

