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

REGION I

Report No. 79-30

Docket No. 50-387

License No. CPPR-101 Priority -- Category C

Licensee: Pennsylvania Power & Light Company
2 North Ninth Street
Allentown, Pennsylvania 18101

Facility Name: Susquehanna Steam Electric Station, Unit 1

Inspection At: Berwick, Pennsylvania

Inspection Conducted: August 21-24, 1979

Inspectors: E. P. Jernigan
E. P. Jernigan, Reactor Inspector — October 9, 1979 date

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Approved by: Lowell E. Tripp
Lowell E. Tripp, Section Chief, Engineering Support Section No. 1, RC&ES Branch — 10/10/79 date

Inspection Summary:
Inspection on August 21-24, 1979 (Report No. 50-387/79-30)
Areas Inspected: Routine, unannounced inspection by a regional based inspector of pipe welding and pre-service examination activities associated with the recirculation system modification. The inspection involved 26 inspector-hours on site by 1 NRC regional based inspector.
Results: In the 2 areas inspected, an item of apparent noncompliance was identified in one area. Failure to apply design control measures relative to field modifications to demonstrate that Section XI inservice inspection requirements can be met. (Paragraph 3)

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(August 1979)

## DETAILS

1. Persons Contacted

Pennsylvania Power & Light Company PP&L

*J. Green, Resident Nuclear QA Engineer
*R. Beckley, Site QA Engineer
E. Carroll, Site QA Engineer
T. Oldenhage, Resident Engineer
*M. Gorsk, Resident Engineer
*J. Eichlin, Engineer
*D. Ritter, Engineer
*E. Brignole, Senior Project Engineer
G. Burvis, QA Engineer

General Electric (I&SE)

D. Weis, Welding Superintendent

Bechtel Corporation

*J. O'Sullivan, Assistant Project Field Engineer
*G. Shrader, Project Field QC Engineer
*M. Daubenheyer, Project Superintendent

*Denotes those present at the exit meeting.

2. Plant Tour

The inspector observed work activities in progress, completed work, and plant status in several areas throughout the plant during the tour. The inspector examined work items for any obvious defects or noncompliance with regulatory requirements.

3. Recirculation System Modification

The licensee NSSS contractor, General Electric, is replacing the safe-ends on the reactor pressure vessel recirculation nozzles to allow installation of a newly designed thermal sleeve. This modification is in keeping with previous modifications aimed at increasing reliability and protection against intergranular stress corrosion cracking (IGSCC).

The following items were examined for compliance with the 1974 Edition of Section XI and III of the ASME Code including the Summer 1975 and 1976 Addenda for the respective codes.

-- Witnessed welding of nozzle safe-end and thermal sleeve stub mock-up.

-- Nondestructive examination (NDE) and inspection of mock-up.

-- Material certifications and related quality records.

-- Welding procedure qualification records.

-- Weldor qualification records.

The above activities were in compliance with the applicable code requirements. However, the inspector found that the safe-end replacement required cutting the risers to gain access to the safe-end thermal sleeve. Also, a second cut was necessary to remove the external jet pump riser pipes. This cut was located about 3/4-inch above the main recirculation header to riser attachment welds. To protect against sensitization during field welding, corrosion resistant cladding (CRC) was applied to the lower end of the riser pipes on the inside and outside surface. Additionally, the material lost during cutting, as well as anticipated weld shrinkage, is made up in the vertical section by adding a 308L weld build-up to the lower end of each riser pipe. This weld build-up will vary up to approximately 1 1/2-inch in length. The final weld configuration is a double circumferential weld (about 3/4-inch center-to-center).

The documentation reviewed by the inspector for inservice inspection did not indicate that weld inspectability had been assured. Discussions with cognizant personnel and a review of preliminary data indicated that the final weld configuration precluded a satisfactory ultrasonic examination. This was based on reports of efforts to ultransonically examine a mock-up containing a double weld and a configuration similar to the welds in question. Reported results of this effort are considered to be inconclusive.

The construction permit for Unit 1 was issued in November, 1973. Relating this date to the requirements of 10 CFR 50.55a (g), Inservice Inspection Requirements stipulate that components classified as ASME Code Class 1 and 2 shall be designed and provided with access to enable the performance of inservice examinations. Additionally, Article IWA-1400 of the ASME states that the Owner's responsibility for the performance of inservice examinations includes "The design and arrangement of pipe system components to include allowance for adequate clearances for the conduct of the examinations."

Further, the Bechtel specification M-196, Revision 0, Design Guidelines for Access for Inservice Inspection, states requirements for weld spacing (to be a minimum of 6-inches) clearance and access for manual ISI examinations.

Failure to follow the above mentioned requirements relative to design and arrangement of piping/welds to permit ISI is contrary to the requirements of 10 CFR 50.55a paragraph (g)(2), Codes and Standards.

This item is an infraction. (79-30-01)

4. Management Meeting

At the conclusion of the inspection on August 24, 1979, a meeting was held at the site with representatives of the licensee and contractor organizations. Attendees at this meeting included personnel whose names are asterisked in Paragraph 1. The inspector summarized the purpose and results of the inspection as described in this report.