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

REGION I

Report No. 50-272/80-24

Docket No. 50-272

License No. DPR-70 Priority - Category C

Licensee: Public Service Electric and Gas Company

Facility Name: Salem Generating Station, Unit 1

Inspection At: Hancocks Bridge, New Jersey

Inspection Conducted: October 6-7 and October 9-10, 1980

Inspectors: R.A. McBrearty — 10/22/80
R. A. McBrearty, Reactor Inspector — date

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Approved by: L.E. Tripp — 10/27/80
L. E. Tripp, Chief, Engineering Support Section No. 1, RC&ES Branch — date

Inspection Summary:
Inspection on October 6-7 and 9-10, 1980 (Report No. 50-272/80-24)
Areas Inspected: Routine, unannounced inspection of licensee action on previous inspection findings and inservice inspection (ISI) activities including review of NDE procedures, review of data, program plan review, observations of NDE in progress, activities associated with use of mechanized PAR inspection device and licensee audits of the ISI contractor. The inspection involved 34 inspector-hours onsite and 3 hours in the Regional Office by one NRC regional based inspection.
Results: Of the two areas inspected no items of noncompliance were identified in one area; one apparent item of noncompliance (deficiency - failure to control essential personal items - Paragraph 6) was identified in one area.

Region I Form 12
(Rev. April 1977)

Details

1. Persons Contacted

Public Service Electric and Gas Company (PSE&G)

J. Driscoll, Chief Engineer
P. Kordziel, ISI Coordinator
*B. W. Leap, Station QA Supervisor
*M. F. Metcalf, QA Engineer - Resident Group
*H. J. Midura, Manager - Salem Station
W. Reuther, Resident QA Engineer
*J. L. Stillman, Site QA Engineer
R. T. Griffith, Sr. Staff Engineer - QA

Southwest Research Institute (SWRI)

W. McGaughy, NDE Level III
R. Fine, ISI Team Leader

*Denotes those present at the exit interview.

2. Licensee Action on Previously Identified Inspection Findings

(Open) Unresolved Item (79-14-02) Accuracy of ISI data. The inspector interviewed licensee personnel and reviewed a PSE&G Engineering and Construction Department memo from R. T. Griffith Sr. to W. J. Reuther, dated November 30, 1979. The interviews and the memo indicated that PSE&G personnel did perform a data review and considered the data satisfactory. At the exit interview on October 10, 1980, the inspector stated that the item was considered closed.

A subsequent review of the Salem 1 ISI program plan revealed that the ultrasonic examination procedure delineated in the plan did not agree with the procedure referenced on the data sheets for the main steam header upper set studs 12MS-167-USS. The inspector noted that the procedure listed on the data sheets was correct based on the bolt sizes involved and that the referenced calibration block was correct.

The inspector telephoned the licensee and advised him of the discrepancy and was informed that this was identifed by the licensee via an internal "speed letter" from R. T. Griffith to L. Lake. The inspector stated that the item would remain open pending review by an NRC inspector of the speed letter and the resulting corrective action.

3. Inservice Inspection NDE Procedure Review

The inspector selected the following NDE procedures for review to ascertain technical adequacy:

-- SwRI-NDT-200-1, Revision 47, Liquid Penetrant - Color Contrast;

-- SwRI-NDT-300-1, Revision 18, Magnetic Particle - Dry Powder;

-- SwRI-NDT-600-3, Revision 55, Manual Ultrasonic - Pressure Piping Welds;

-- SwRI-NDT-600-6, Revision 20, Manual Ultrasonic - Reactor Coolant Pump Flywheels;

-- SwRI-NDT-600-11, Revision 30, Manual Ultrasonic - Vessel-to-Nozzle Inner Radius Sections;

-- SwRI-NDT-600-14, Revision 10, Manual Ultrasonic - Pressure Retaining Studs and Bolts 2" or greater in diameter;

-- SwRI-NDT-700-5, Revision 3, Mechanized Ultrasonic - Vessel Components, Vessel Welds and Piping Welds;

-- SwRI-NDT-700-6, Revision 4, Mechanized Ultrasonic - Ferritic Vessels 2 1/2" or greater in thickness;

-- PSE&G Procedure No. M17B, Visual Examination - Coded Components and Pipe Supports.

The inspector's review included, but was not limited to, the parameters listed below for the ultrasonic, magnetic particle and liquid penetrant examination technique.

Ultrasonic Examination

(a) The type of apparatus including frequency range is specified.

(b) The extent of coverage, beam angles and size of tranducers are specified.

(c) Calibration requirements are specified and consistent with the applicable ASME Code.

(d) The reference level for monitoring discontinuties is defined and the scanning level is specified and consistent with the applicable ASME Code.

(e) The method of recording significant indications is established and the reporting requirements are in accordance with licensee requirements.

(f) Acceptance limits are specified or referenced and are consistent with the applicable ASME Code.

Magnetic Particle Examination

(a) The examination is to be done by the continuous method.

(b) The dry particle color provides good contrast with background.

(c) The examination is conducted with sufficient overlap to achieve 100% coverage and two separate examinations are made with field directions perpendicular to each other.

(d) Acceptance criteria are specified or referenced and are consistent with the applicable ASME Code.

Liquid Penetrant Examination

(a) The examination method is consistent with ASME Code requirements.

(b) Penetrant materials used for nickel base alloys and austenitic stainless steel are required to be analyzed for compliance with allowable residual sulfur and halogen content.

(c) Examination surface requirements, including temperature limitations, are specified and consistent with ASME Code requirements.

(d) Methods for removal of solvent removeable penetrant are specified and consistent with the applicable ASME Code.

(e) Evaluation and acceptance standards are specified and are consistent with the applicable ASME Code.

No items of noncompliance were identified.

4. Observations of ISI NDE in Progress

The inspector observed the ultrasonic examination of number 11 steam generator manway bolts number 14 and 20.

The bolts were scanned from each end in accordance with the applicable requirements of procedure SwRI-NDT-600-36. The examination system was calibrated using bolt calibration block number 1.250-8-B-CS-100-SAM which contains reflectors in the threaded and unthreaded section of the bolt.

Equipment used for the examination included a Sonic MARK-I flaw detector, serial number 01103E and a 3/8" diameter, 2.25 MHz straight beam transducer, serial number SwRI 1086.

No items of noncompliance were identified.

5. Inservice Inspection Data Review

The inspector reviewed data including calibration records, examination records and indication resolution sheets associated with the ultrasonic examination of the following regenerative heat exchanger welds:

- 1-RHE-1, cap to shell weld
- 1-RHE-2, shell to tube sheet weld
- 1-RHE-3, tube sheet to shell weld

In addition to the above, magnetic particle examination data associated with main steam system lug weld 1PL-8 were reviewed by the inspector.

The review was done to ascertain compliance with applicable ASME code and licensee requirements.

No items of noncompliance were identified.

6. Ultrasonic Examination of Vessel Welds Using Mechanized PAR Inspection Device

The inspector observed preparations for the ultrasonic examination from inside the reactor pressure vessel (RPV) of RPV welds using the SwRI mechanized PAR inspection device. The observation was made from the operating floor.

At the time of the inspection the RPV head was removed and removal of the upper internals by PSE&G maintenance personnel was in progress.

Members of the work crew, including the maintenance supervisor working from a vantage point over the reactor pit, were observed with film badge, pocket dosimeter and entry badge not secured to their body as required by procedure M11F to prevent the items from falling into the reactor pit.

Maintenance procedure M11F lists the reactor vessel pit as a control area when the reactor vessel is open. It further states that control of tools and items in a control area is by securing essential personal items by taping to the body or restraining by bands or lanyards.

When questioned about the untaped items the maintenance supervisor acknowledged that the items should be secured by taping. The inspector observed that the control requirement was met before he left the area.

This is considered an item of noncompliance (272/80-24-01).

7. Licensee Inservice Inspection (ISI) Audits and QA Surveillance Activities

The inspector reviewed selected licensee surveillance and audit reports related to ISI inspection contractor activities. These were considered with respect to areas examined, findings and method of close out of noncomforming items. The following were included in the inspector's review:

- QA Surveillance Log No. 594, dated 10/7/80
- QA Surveillance Log No. 579, dated 10/4/80
- QA Surveillance Log No. 570, dated 10/4/80
- QA Surveillance Log No. 568, dated 10/4/80
- QA Surveillance Log No. 562, dated 10/3/80
- QA Surveillance Log No. 533, dated 9/25/80
- QA Surveillance Log No. 524, dated 9/18/80
- Audit report M-80-3, conducted April 28 to May 2, 1980 at Southwest Research Institute, San Antonio, Texas

The above audit and surveillances included various activities performed at Salem 1 by SwRI and record keeping, document control, data storage, etc. done at SwRI, San Antonio, Texas.

No items of noncompliance were identified.

8. Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on October 10, 1980. The inspector summarized the purpose and the scope of the inspection and the findings.