

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

Region I

Report No. 50-272/80-31

Docket No. 50-272

License No. DPR-70 Priority _____ Category C

Licensee: Public Service Electric and Gas Company
80 Park Plaza -15A
Newark, New Jersey 07101

Facility Name: Salem Nuclear Generating Station, Unit 1

Inspection at: Hancocks Bridge, New Jersey

Inspection conducted: November 17-21, 1980

Inspectors: J. W. Chung, Reactor Inspector

2/19/81
date signed

Approved by: E. G. Greenman, Chief, Nuclear Support
Section No. 2, RO&NS Branch

2/5/81
date signed

Inspection Summary:

Inspection on November 17-21, 1980 (Report No. 50-272/80-31)

Areas Inspected: Routine, unannounced inspection by a region-based inspector of follow-up on prior identified items; administrative controls for facility procedures; conformance to Technical Specifications; verification of temporary and permanent procedure changes in conformance to Technical Specification requirements and licensee procedures; verification of procedural changes in conformance to 50.59(a) and (b) requirements; verification that checklists and related forms incorporated the latest changes; and control room and facility tours.

The inspection involved 29 inspector-hours onsite by one region-based inspector.

Results: Noncompliance: None in six areas and one in one area (paragraph 4.c(1); Failure to properly implement certain facility procedures and to review other facility procedures and changes thereto.)

DETAILS

1. Persons Contacted

Principal Licensee Employees

- J. Bailey, Lead Engineer
- *J. D. Driscoll, Chief Engineer (Acting Plant Manager)
- P. C. Kordigiel, ISI Engineer
- R. MacWatters, Senior Shift Supervisor
- *M. Metcalf, QA Engineer, Resident Group
- J. Miller, Performance Engineer
- F. J. Robertson, Senior Maintenance Supervisor
- J. P. Ronafalvy, Senior Performance Supervisor, I&C
- *E. Rozovsky, EPD QA Engineer
- F. Schnarr, Operating Engineer
- *J. L. Stillman, Station QA Engineer

USNRC

- *L. Norrholm, Senior Resident Inspector
- *A. J. Mateo, Observer, Phillipine Atomic Energy Commission

The inspector also interviewed other licensee employees during the inspection, including Reactor Operators, Technical Support, Maintenance, Performance, and Administrative personnel.

*denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Open) Inspector Followup Item (80-01-06): The diesel generator "overcrank" trip is specified as 550 RPM increasing in Westinghouse Drawing 226663. During a functional test on July 13, 1979 this trip setpoint was recorded at 530 RPM increasing and no further adjustment could be made on the trip setpoint. A licensee representative stated that the diesel generator "overcrank" trip switches were bypassed during emergency operation and the Engineering Department was reviewing the consequences of lowering the trip setpoint. The inspector verified the above by review of Design Change Request Form, 1-SC-0341, submitted to the Engineering Department on April 2, 1980. This item remains unresolved pending NRC:RI re-inspection of the engineering evaluation package and subsequent action.

3. Facility Administrative Control Procedures

The inspector reviewed on a sampling basis the minutes of Station Operations Review Committee (SORC) meetings and administrative procedures for conformance with Technical Specifications, Section 6, "Administrative Controls", ANSI N18.7-1976, "Administrative Controls for Nuclear Power Plants" and Regulatory Guide 1.33, "Quality Assurance Program Requirements" with emphasis in the established controls for format, content, review, and approval of facility procedures. The review included:

- Administrative Procedure (AP) No. 1, Administration Procedure Program, Revision 10, September 8, 1980.
- AP-3, Station Documents, Revision 9, March 22, 1979
- AP-4, Station Operations Review Committee, Revision 7, October 8, 1980
- Performance Department Manual, Section II, Performance Instrumentation, and Control, Revision 9, March 21, 1979
- Maintenance Administrative Procedures A-8, Document Control, Revision 0, April 16, 1979; A-11, Maintenance Department Procedure Writing/Revision Guidelines, Revision 19, July 9, 1980
- Minutes of Station Operations Review Committee (SORC) meetings, 1977-1980
- AP-27, Inservice Inspection Program, Revision 2, February 28, 1980
- Salem Inspection Order System (AP-10), Computer Print-out, Outstanding Review Overdue List; Report Date, November 6, 1980

No unacceptable conditions were identified.

4. Facility Procedures

- a. The inspector reviewed facility procedures and temporary procedure changes, on a random basis to verify the following:
 - Procedures and changes, if any, were reviewed and approved in accordance with the requirements of the Technical Specifications and the licensee's administrative controls.
 - The overall procedure format and content were in conformance with the requirements of the Technical Specifications.

- Acceptance and operability criteria were in conformance with the requirements of the Technical Specifications.
 - Procedures, checklists and related forms in plant working files are current with respect to revision and change in conformance with the requirements of the Technical Specifications.
 - Appropriate Technical Specification limitations had been included in the procedure.
 - The applicable checklists were compatible with step-wise instructions in the procedures.
 - Temporary changes were made in conformance with Technical Specification requirements and the licensee's administrative controls.
- b. The following procedures were randomly selected and reviewed.

(1) General Operating Procedures

- *-- Operating Instruction (OI) I-3.1, Refueling to Cold Shutdown, Revision 6, June 5, 1978
- OI I-3.2, Cold Shutdown to Hot Standby, Revision 6, June 5, 1978
- Station Plant Manual, Book 2 and Book 4, Operating and Emergency Instructions, Index/List of Effective Revisions, Revision 4, April 30, 1976

(2) System Operating Procedures

- OI II-1.3.1, Reactor Coolant Pump Operation, Revision 3, May 3, 1977
- *-- OI II-3.3.1, Establishing Charging, Letdown, and Seal Injection Flow, Revision 4, June 19, 1978
- OI II-3.3.2, Operating the Charging Pumps, Revision 8, June 19, 1978
- *-- OI II-3.3.3, Excess Letdown Flow, Revision 8, May 12, 1978

*procedures reviewed for technical adequacy

- OI II-9.3.12, New Fuel Handling Fixture, Revision 5, December 26, 1978
- *-- OI II-16.3.1, Containment Ventilation Operation, Revision 7, October 18, 1978
- OI II-4.3.5, Flushing and Draining the Boron Injection Tank, Revision 0, June 19, 1978
- OI II-11.3.3, Waste Evaporator - Normal Operation, Revision 3, June 2, 1977
- OI II-15.3.2, Personnel Locks and Containment Entry, Revision 2, March 8, 1978
- *-- OI III-10.3.1, Auxiliary Feedwater System Operation, Revision 5, March 27, 1979
- OI III-13.3.2, Steam Generator Blowdown - Normal Operation, Revision 4, December 6, 1978
- OI IV-5.3.2, Battery Charger Operation, Revision 2, February 2, 1979
- OI IV-8.3.1, Rod Control System - Normal Operation, Revision 3, November 15, 1978
- *-- OI IV-16.3.1, Emergency Power - Diesel Operation, Revision 5, December 20, 1978
- OI IV-12.3.1, Emergency Radio Transmission and Receiving Equipment Operation, Revision 2, July 9, 1980
- *-- OI V-1.3.1, Service Water - Normal Operation, Revision 6, December 6, 1978

(3) Emergency Procedures

- Emergency Instructions (EI) I-4.3, Reactor Trip, Revision 6, September 19, 1980
- *-- EI I-4.8, Rod Control System Malfunction, Revision 6, September 5, 1980
- *-- EI I-4.13, Loss of Circulating Water/Loss of Condenser Vacuum, Revision 4, March 10, 1980
- EI I-4.22, Loss of Residual Heat Removal Shutdown Cooling, Revision 3, July 17, 1980

*procedures reviewed for technical adequacy

(4) Alarm Response Procedures(a) Annunciator Alarms

- Alarm Location (AL) B-6, Service Water Header 11 High Pressure, Revision 1, February 2, 1979
- AL B-7, Service Water Header 12 High Pressure, Revision 1, February 2, 1979
- *-- AL A-37, Fire Protection CO₂ High/Low Pressure, Revision 1, February 2, 1979
- AL A-12, 1B Vital Instrument Inverter Failure, Fuse Blown, Revision 1, February 2, 1979
- AL C-1, Containment Fan Coil II Air Flow Trouble, Revision 1, February 15, 1979
- *-- AL C-8, Seal Water Injection Filter 1 High ΔP , Revision 1, February 15, 1979
- AL C-20, Spent Fuel Pit High Temperature, Revision 1, February 15, 1979
- AL D-16, Rod Insertion Low Low Limit, Revision 1, January 17, 1979
- *-- AL D-27, Reactor Sump Overflow, Revision 1, January 17, 1979
- *-- AL D-28, Spray Additive Tank Low Level, Revision 1, January 17, 1979
- AL E-3, Reactor Coolant High Pressure, Revision 1, January 17, 1979
- AL E-19, Reactor Coolant Lo Pressure Coincidence 1/3, Revision 1, January 17, 1979
- AL F-9, Reactor Coolant Lo Pressure Reactor Trip, Revision 1, January 17, 1979
- *-- AL G-30, CO₂ Storage High/Low Pressure, Revision 1, February 2, 1979
- AL J-6, 4KV Group Bus 1F Diff. or Overload, Revision 1, February 2, 1979

*procedures reviewed for technical adequacy

(b) Console Alarm Procedures (March 21, 1979)

- RHR System; Low CCW Flow, Bezel Drawing No. 202051-1, Revision 2
- Hi-Hi Level FW Isolation, Bezel Drawing No. 202051-1, Revision 2
- *-- Accumulator 11 (12) Hi-Lo Pressure, Bezel Drawing No. 202067-4, Revision 2
- Service Water Start, Bezel Drawing No. 202066-2, Revision 1
- Steam Flow Deviation Fs > Fw, Bezel Drawing No. 202051-1, Revision 2
- Pressurizer Level High/Low, Bezel Drawing No. 202061-2, Revision 1
- *-- Water Treatment System: Twelve alarm procedures associated with the Water Treatment System, Bezel Drawing No. 202074-3 (Reference Findings Detail 6.b)

(5) *Maintenance Procedures(a) I&C

- IPD-2.7.013, TE-441A/B, #14 Reactor Coolant Loop $\Delta T/T_{ave}$ Protection Channel IV, Revision 2, August 14, 1979
- IPD-14.3.002, Instrument Response Time Test - Master, Revision 2, October 24, 1980
- IPD-2.9.001, 1LT-102, Boric Acid Tank #12 Level Indicator and Alarm, Revision 0, October 27, 1976 (Reference Findings Detail 4.c.(1))

(b) Mechanical and Electrical

- M2D, Fuel Transfer System Operational Test, Revision 3, August 14, 1979
- M3T, Undervoltage and Underfrequency Trip Checks and Time Response Test, Revision 11, September 24, 1980

*procedures reviewed for technical adequacy

- M3R, Heat Tracing Testing, Revision 3, March 1, 1979
- M6F, No. 11 and 12 S.G.F.P Disassembly (Inspection and Overhaul), Revision 2, January 29, 1979
- M6A, CP Seal Disassembly, Inspection, and Repair, Revision 8, December 10, 1979
- M8G, Control Rod Position Indicator Coil, Revision 2, March 1, 1979
- M8K, CP Flywheel Inspection, Revision 5, November 6, 1978
- M10A, In-core Flux Thimble Retraction and Reinsertion, Revision 1, August 14, 1979
- M13A(6), WPS Shielded Metal Arc Welding of Butt Joints with Backing Rings in Austenite Stainless Steel (p-8 to p-8), Revision 3, January 3, 1980

(c) Inservice Inspection

- M17, Maintenance Department In-service Inspection Program, Revision 4, April 27, 1979
- M17B, Coded Component and Pipe Support Visual Examination Nuclear Class 1, 2, and 3, Revision 6, August 28, 1980
- M17D, Pump Surveillance Test Results Analysis, Revision 5, June 4, 1980

(d) Preventive Maintenance Cards

- E-210, Procedure M3V, 28 Volt Battery 1A/18 Month Battery Service Test
- E-500, No. 1 Generator Metering and Relaying
- E-110, SF1 Breakers
- E-110, 11 Station Power Trans. and Neutral Ground Resistor

* procedures reviewed for technical adequacy

c. Findings

- (1) Technical Specification 6.8 addresses the requirements of plant procedures in that Paragraph 6.8.1 requires written procedures be established, implemented and maintained covering activities recommended in Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978; Paragraph 6.8.2 requires each procedure including format changes be reviewed by the SORC prior to implementation and periodically as set forth in administrative procedures; Paragraph 6.8.3 requires the review of "on the spot" procedure changes by SORC within 14 days of implementation.

The following are examples of instances where plant written procedures were either improperly implemented or not reviewed:

- (a) Administrative Procedure AP-3 requires that the Station Procedures be reviewed at least every two years.

Contrary to the above, the licensee had neither any objective evidence nor documentation of the procedure review in accordance with the administrative procedures. The inspector verified by review of selected procedures that the following procedures in the Control Room Master Files had not been reviewed during the last two year review cycle.

- OI II-1.3.1, Revision 3, May 3, 1977
- OI II-1.3.3, Revision 8, May 12, 1978
- OI II-11.3.3, Revision 3, June 2, 1977
- OI II-15.3.2, Revision 2, March 8, 1978
- IPD-2.9.001, Revision 0, October 27, 1976

- (b) (b) The Index/List of Effective Revisions, Station Manual Books 2 and 4, in the Control Room Master Copies was last reviewed on April 30, 1976, and does not reflect the corresponding revision numbers and dates of the procedures in the Control Room Files, as required by Administrative Procedure AP-1, Paragraph 5.b, Index and List of Effective Pages.
- (c) The following procedure revision numbers and dates in the Control Room Files were pencil-changed without any objective evidence of review or corresponding references to SORC review, as required by AP-3, Section 6.0, Control of Station Materials.

- OI II-1.3.1: Revision 3, May 3, 1977 was deleted and Revision 4 was entered in the procedure by pencil.
 - OI II-3.3.2: Revision 7, February 18, 1977 was changed to Revision 8 using a pencil.
- (d) The following on-the-spot permanent changes to procedures were not reviewed within 14 days of implementation by SORC in accordance with the Administrative Procedures.
- OI II-3.3.1, permanent change (P-3), May 3, 1979; P-4, May 10, 1979; P-5, May 11, 1979
 - OI V-1.3.1, D-7, April 29, 1979, which was reviewed on November 13, 1979, SORC No. 85-79
 - OI IV-16.3.1, P-6, September 6, 1980
- (e) Emergency Communication System Operating Instruction IV-12.3.1, Revision 2, July 9, 1980, had not been reviewed by SORC prior to implementation. This type of procedure is listed in Regulatory Guide 1.33, Appendix A, Item 1m.

The licensee representative acknowledged the inspector's findings, and stated that all of the station procedures are being reviewed or revised and would be updated by June 1, 1981.

The above findings are contrary to the requirements specified in Technical Specifications 6.8.1, 6.8.2, 6.8.3, and Administrative Procedure AP-3, and collectively constitute an item of noncompliance (272/80-31-01).

- (2) Alarm procedures G-30 and A-37 specified the Fire Protection System CO₂ pressure low setpoint as 275 psig and 275 psi respectively, while the Technical Specification 3.7.10.3 requires a minimum CO₂ pressure of 285 psig. A licensee representative stated that the low pressure setpoint had been set conservatively, and therefore meets the Technical Specification requirements; and, that both procedures would be changed by January 1, 1981 to reflect the correct low pressure setpoint of 285 psi in gauge pressure. This item is unresolved pending review of the revised procedures during a subsequent NRC:RI re-inspection (272/80-31-02).

5. Technical Content of Facility Procedures

The inspector reviewed facility procedures on a sampling basis, using facility system descriptions, diagrams and technical specifications, to verify that procedures were sufficiently detailed and contained sufficient technical information to control the operation or evolution as described in Technical Specifications and applicable requirements. The procedures reviewed are marked with an asterisk (*) in Paragraph 4 (Facility Procedures) of this report.

One inadequacy was identified (Reference Paragraph 4.c.(2)).

6. Procedure Changes Resulting From License Amendment

- a. Licensee Amendments (numbers 13 through 26) were reviewed to verify the applicable changes in Technical Specifications were incorporated in associated procedures as necessary to reflect the amendments.
- b. Findings

The Console Alarm Procedures for the Water Treatment System, Bezel Drawing No. 202074-3, refer to Technical Specification 3.7.1.5 in their action statements. However, Licensee Amendment No. 25, April 22, 1980, deleted the Secondary Water Chemistry provisions in the Technical Specifications. A licensee representative acknowledged the finding and stated that the corresponding alarm procedures would be changed by June 1, 1981. The procedures to be changed are:

- SG Inlet High pH
- SG Inlet High Hydrazine
- SG Inlet Low Hydrazine
- Hotwell Outlet High Conductivity
- SG Blowdown High Conductivity Hi/Low Range
- Condensate Pump High Conductivity
- SG Blowdown High pH
- SG Blowdown Low pH
- SG Inlet Low pH
- SG Inlet High Dissolved O₂
- SG Inlet High Conductivity
- Condensate High Sodium

This item is unresolved pending review of the listed procedure revisions during a subsequent NRC:RI inspection (272/80-31/03).

7. Checklists and Related Forms

Checklists, data sheets, acknowledgement forms, and other forms related to facility operating procedures were reviewed to see that current revisions and on-the-spot changes were posted.

No unacceptable conditions were identified.

8. Changes to Procedures Pursuant to 10 CFR 50.59(a) and (b)

The inspector verified, on a random sampling basis, that changes made to facility procedures were in compliance with 10 CFR 50.59(a) requirements and that records of these changes were maintained in compliance with 10 CFR 50.59(b).

No unacceptable conditions were identified.

9. Control Room Observations and Facility Tours

The inspector observed Control Room Operations for control room manning, shift turnover and log sheets, and facility operation in accordance with the administrative procedures and Technical Specification requirements. Inspection tours of turbine/generator building and selected protected areas were conducted.

No unacceptable conditions were identified.

10. Unresolved Items

Unresolved items are matters about which more information is required to clarify whether they are acceptable items, items of noncompliance, or deviations. Unresolved items were identified and detailed in Paragraphs 4.c.(2) and 6.b.

11. Entrance and Exit Interviews

Licensee management was informed of the purpose and scope of the inspection at the entrance interview, and the findings of the inspection were periodically discussed with the licensee representatives as summarized in the following:

<u>Date</u>	<u>Reportable Details Covered</u>
November 17, 1980	Entrance Interview
November 18, 1980	4.c.(1)
November 19, 1980	6.b
November 20, 1980	4.c.(1), 4.c.(2)
November 21, 1980	4.c.(1), 4.c.(2), 6.b, Exit

The inspector conducted an exit interview with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection. The licensee acknowledged the inspection findings.