

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

Region I

Report No. 50-272/79-08

Docket No. 50-272

License No. DPR-70 Priority -- Category C

Licensee: Public Service Electric and Gas Company
80 Park Place
Newark, New Jersey 07101

Facility Name: Salem Nuclear Generating Station, Unit 1

Inspection at: Hancocks Bridge, New Jersey

Inspection conducted: February 13-16, 1979

Inspectors: W. H. Bannack for 3/2/79
R. Conte, Reactor Inspector date signed

W. H. Bannack for 3/2/79
N. Blumberg, Reactor Inspector date signed

Approved by: H. B. Kister date signed
H. B. Kister, Chief, Nuclear Support Section 3/2/79
No. 2, RO&NS Branch date signed

Inspection Summary:

Inspection on February 13-16, 1979 (Report No. 50-272/79-08)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of station procedures for Administrative Controls; conformance to Technical Specifications; overall technical content and format; temporary and permanent changes made in accordance with Technical Specifications; changes in procedures pursuant to 10 CFR 50.59(a) and (b) requirements; check lists and related forms in plant working files for currency with respect to latest changes; control room observations; and, review of axial flux difference surveillances. The inspection involved 62 inspector-hours on site by two regional based NRC inspectors.

Results: Of the eight areas inspected, no items of noncompliance were identified in seven areas; and one item of noncompliance was found in one area (deficiency - surveillance procedure for determination of axial flux difference was not performed in accordance with procedural requirements - see Paragraph 4).

DETAILS

1. Persons Contacted

A. Kapple, Quality Assurance Specialist
R. Lombard, Operations Department Staff Engineer
*M. Metcalf, Public Service Quality Assurance Resident
*H. Midura, Manager - Salem Generating Station
*M. Murphy, Operations Department Staff Engineer
J. Nichols, Reactor Engineer
*F. Robertson, Senior Maintenance Supervisor
*J. Stillman, Station Quality Assurance Engineer
*J. M. Zupko, Chief Engineer, Operations

The inspector also talked with and interviewed several other licensee employees during the inspection, including reactor operators and quality assurance personnel.

*denotes those present at the exit interview.

2. Administrative Controls for Facility Procedures

The inspector performed an audit of the licensee's administrative controls by conducting a sampling review of the below listed administrative procedures with respect to the requirements of the Technical Specifications, Section 6, "Administrative Controls;" ANSI N18.7, "Administrative Controls for Nuclear Power Plants;" and Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation):"

- AP-1, Administrative Procedure Program, Revision 8, December 15, 1977
- AP-3, Station Documentation, Revision 8, February 28, 1977
- AP-4, Station Operations Review Committee, Revision 5, May 4, 1978

- AP-5, Operating Practices, Revision 8, August 26, 1977
- AP-11, Station Records, Revision 9, February 15, 1979
- AP-12, Document Control, Revision 3, April 26, 1978
- AP-15, Tagging Rules, Revision 0, April 13, 1976
- AP-21, Cleanliness and Housekeeping, Revision 0, February 25, 1976
- A-11 (Maintenance Department Manual), Procedure Writing Guidelines, Revision 11, November 24, 1978.

No items of noncompliance were identified.

3. Review of Facility Procedures

- a. The inspector reviewed facility procedures on a sampling basis to verify the following:
 - Procedures, plus any changes, were reviewed and approved in accordance with the requirements of the Technical Specifications and the licensee's administrative controls.
 - The overall procedure format and contents were in conformance with the requirements of the Technical Specifications and ANSI N18.7, "Administrative Controls for Nuclear Power Plants".
 - Checklists, where applicable, were compatible with the stepwise instructions in the procedures.
 - Temporary changes were made in conformance with Technical Specification requirements and the licensee's administrative controls.

Note: Temporary changes for procedures in addition to those listed in the sample below were also reviewed.

- b. The following procedures were reviewed:

General Plant Operating Procedures

- *-- OI I-3.5, Minimum Load To Hot Standby, Revision 4, August 14, 1978
- *-- OI I-3.6, Hot Standby To Cold Shutdown, Revision 5, August 14, 1978

System Operating Procedures

- OI II-3.3.1, Establishing Charging, Letdown, and Seal Injection Flow, Revision 4, June 9, 1979
- OI II-5.3.1, Fill and Vent of The Containment Spray System, Revision 3, February 2, 1979
- OI III-1.3.1, Turbine Generator Operation, Revision 2, June 9, 1977
- OI III-2.3.1, Main, Reheat, Turbine Bypass Steam Warmup, Revision 2, June 14, 1977
- OI III-9.3.1, Placing Feed and Condensate Systems In Service, Revision 4, December 6, 1978
- OI III-9.3.2, Feed Pump Operation, Revision 3, November 24, 1978
- OI III-9.3.3, Filling and Venting the Steam Generators, Revision 3, November 24, 1978
- OI III-17.3.2, Control Room Vent Operation, Revision 4, September 29, 1978
- *-- OI IV-1.3.1A, 500 KV Bus - Normal Operation No. 1 Main Generator Synchronized, Revision 1, September 15, 1977

*reviewed for technical adequacy

- OI IV-7.3.1, Flux Mapping System Normal Operation, Revision 3, October 15, 1977
- *-- OI III-10.3.1, Auxiliary Feedwater System Operation, Revision 4, November 15, 1978

Emergency Procedures

- *-- EI I-4.4, Loss of Coolant, Revision 7, December 6, 1978
- EI I-4.8, Rod Control Systems Malfunction, Revision 4, October 18, 1978
- *-- EI 4.12, Loss of Feedwater, Revision 1, April 24, 1978
- EI 4.16, Radiation Incident, Revision 4, December 6, 1978
- EI 4.23, Loss of Containment Integrity, April 25, 1978

Alarm Procedures

- *-- C-19, Containment Spray Actuation, Revision 0, March 25, 1976
- *-- C-11, Containment Pressure High 1/3, Revision 0, March 25, 1976
- *-- C-3, Containment Pressure High - High, Revision 0, March 25, 1976
- *-- C-48, Letdown Heat Exchanger Hi Outlet Temperature, Revision 0, March 25, 1976
- *-- C-8, Seal Water Injection 1 High D/P, Revision 0, March 25, 1976
- *-- C-16, Seal Water Injection 2 High D/P, Revision 0, March 25, 1976
- *-- K-2, 500 KV B.S. 5-6 Breaker (10X) Ground/Fail, Revision 0, April 3, 1976

*reviewed for technical adequacy

- *-- K-38, 500 KV Line (11X) Receiver Remote Trip, Revision 0, April 3, 1976
- *-- K-14, 500 KV Line (11X) Regulating Relay Power Failure, Revision 0, April 3, 1976

Maintenance Procedures

- *-- MGC General Instructions for Pumps Disassembly, Seal Replacement and Re-assembly, Revision 4, October 4, 1978
 - *-- M16B, Spray Nozzle Inspection, Revision 4, January 23, 1978
 - *-- M10D, In-Core Flux Thimble Cleaning and Lubrication, Revision 1, October 4, 1978
 - *-- M3N, 500 KV Gas Circuit Breaker Timing, Revision 3, January 22, 1979
- c. The following observations were made in the area of records of changes to facility procedures. (TS 6.10.1.f).
- AP-11, Station Records, Revision 9, February 15, 1979, addresses the retention of only Station Plant Manual Procedures (SPM). SPM procedures cover Refueling Procedures, General Plant Operating Procedures, System Operating Procedures, Emergency/Alarm Procedures and, Surveillance (Operations Department) Procedures. Other types of procedures are listed in Regulatory Guides 1.33 - 1972 and TS 6.8.1 such as administrative and maintenance procedures, however, these are not addressed by the licensee's controls for retention of records.
 - The licensee has recently established a system for the input of procedure revisions into the Microfilm File. Based on a review of a recent index for this file, it appeared that only SPM Operating Instruction Revisions were being kept. One maintenance procedure was listed on the index.

*reviewed for technical adequacy

-- The licensee representative stated that SORC reviewed procedures and revisions, thereto, are filed with the SORC Meeting Minutes. On a sampling basis it was identified that two administrative procedures could not be traced to a SORC meeting and one revision to an operating instruction was not attached to the SORC Meeting Minutes File, however, it was listed in the file as being reviewed. The subject procedures were AP-15, Tagging Rules, Revision 0, April 13, 1976; AP-21, Cleanliness and Housekeeping, Revision 0, February 25, 1976; and, OI I-3.6, Hot Standby to Cold Shutdown, Revision 4.

The licensee representative stated that an attempt will be made to locate the associated documentation addressed above.

Further, the licensee representative stated that, as a result of Office of Inspection and Enforcement Inspection No. 50-311/79-03 (Unit 2 Item 311/79-03-13), formal department procedures are being established in the record retention area.

The inspector stated this area is unresolved pending NRC:RI review of the established department controls associated with changes to facility procedures (272/79-08-01).

- d. It was observed that the following procedures were not SORC reviewed, although all are within the scope of categories listed in the Regulatory Guide 1.33: OI III-1.3.1, Turbine Generator Operation; OI III-2.3.1, Main, Reheat, Turbine Bypass Steam Warmup; OI III-9.3.1, Placing Feed and Condensate Systems In Service; OI III-9.3.2, Feed Pump Operation; OI III-9.3.3, Filling and Venting the Steam Generators; and OI IV-10.1.3A, 500 KV Bus Normal Operations No. 1 Main Generator Synchronized.

This area had previously been identified in Office of Inspection and Enforcement Inspection Report No. 50-311/79-08 (Unit 2 Item 311/79-08-04). The licensee representative stated that Regulatory Guide (RG) 1.33 will be reviewed in detail to ensure that facility procedures within the scope of RG-1.33 are SORC reviewed.

The inspector stated that the above item is apparently one example of other items noted on specific Unit 2 procedures that have applicability to specific Unit 1 procedures. The licensee representative stated that Unit 2 preliminary items will be reviewed for applicability to Unit 1 and that appropriate corrective action will be taken for Unit 1 procedures.

This area will be reviewed on a subsequent inspection.

4. Axial Flux Difference Surveillance Requirements

- a. Procedures which implement the Technical Specification (TS) Surveillance Requirements (TS 4.2.1) associated with Axial Flux Difference Limiting Conditions for Operation (TS 3.2.1) were reviewed to verify the following:
 - Procedures required by TS are available and covered by properly approved procedures;
 - Procedure format and content are adequate and provide for satisfactory testing as required by TS;
 - Test results are in conformance with procedural acceptance criteria and TS;
 - Frequency of data acquisition is in accordance with TS;
 - Updated Target Flux Values are being used by the plant operators.
- b. The selected procedures and associated applicable data (indicated by date of performance) are listed below.
 - Operating Procedure IV-6.3.2, Operation of the Axial Flux Deviation System, Revision 3, April 7, 1978.
 - Surveillance Procedure SP(0) 4.2.1.1, Power Distribution-Axial Flux Difference, Unit 1, Revision 2, March 10, 1978; Data: Check-off sheet 4.1, Axial Flux Difference (AFD) Data, 15 acquisitions between August 29, 1978 and January 9, 1979; Check-off sheet 4.2, AFD Alarm Inoperable, 4 acquisitions between September 2, 1978 and January 9, 1979; Check-off sheet 4.3, Axial Flux Deviation Log, 18 acquisitions between September 3, 1978 and January 9, 1979.

- Reactor Engineering Manual, Part 8, Target Axial Flux Difference Measurement, 9 acquisitions between June 30, 1978 and January 23, 1979.

c. During this review the below listed observations were made.

- As of February 16, 1979, the target axial flux difference value (-1.7%) being used by the plant operators was measured on September 5, 1978. However, Reactor Engineering computed new values on 4 occasions subsequent to that date as of January 23, 1979, and three new values were not provided to the plant operators. This was also evident from review of data (used to verify axial flux difference $\pm 5\%$ of target value) acquired between October 2, 1978 and January 9, 1979. The latest target value was -2.29% as of January 23, 1979. This error (approximately .6%) is the maximum error noted for the data reviewed. The inspector verified that, with this error taken into account, actual flux difference was within the TS limit of $\pm 5\%$ of updated target value.

Further investigation revealed that SP(0) 4.2.1.1 Check-off sheet 4.1, step 3, requires, in part, that the operator refer to the target value on Data Sheet No. 1, Part 8 of the Reactor Engineering Manual. This data sheet was not available to the operators in the control room. It was noted that an informal sheet of paper with the target value, dated September 5, 1978, was posted in the control room.

- The cover sheet for SP(0) 4.2.1.1, Power Distribution - Axial Flux Difference, requires that the appropriate section on the cover sheet be initialed to indicate usage of the surveillance procedure, i.e., for AFD Monitor Alarm Operable/Inoperable or Accumulation of Penalty Minutes. In 12 of 37 instances no cover sheet was completed or no indication of usage was marked.

- Two instances were noted where data required by SP(0) 4.2.1.1 were not properly completed. Check-off sheet 4.2, AFD Alarm Inoperable, requires the computation of the deviation between target and actual values along with operator and shift supervisor signatures for review. On September 6, 1978 this was not done. The inspector calculated values for the deviation, and these results indicated compliance with the TS limit of $\pm 5\%$.

Further, Check-off 4.2 Axial Flux Deviation Log requires the recording of "Power Range Channels Outside Target Band." On September 3, 1978, penalty minutes were accumulated for axial flux being outside the target band ($\pm 5\%$ of target value) yet no power range channels were recorded (listed as "none").

The inspector noted that the above items could have affected the test results with respect to compliance with the TS requirements and stated that collectively these items represent a failure to follow established procedures for implementing Axial Flux TS Requirements.

This represents noncompliance (deficiency level) with TS 6.8.1 and SP(0) 4.2.1.1 (272/79-08-02).

5. Procedure Changes Resulting From License Amendments

License Amendments (9 through 12), which included Technical Specification Changes, were reviewed to verify that applicable procedures were revised, as necessary, to reflect these changes. Major changes were in the area of the Fire Protection System and Administrative Control which involve procedure changes common to Units 1 and 2. These areas are being reviewed in detail as noted in the Office of Inspection and Enforcement Inspection Report No. 50-311/79-04 and 50-311/79-08 for Unit 2.

No items of noncompliance were identified.

6. Changes to Procedures as Detailed in the Safety Analysis Report Pursuant to 10 CFR 50.59(a) and (b)

Applicable sections of the Final Safety Analysis Report (FSAR) were reviewed with respect to systems listed in the previous paragraph (Review of Facility Procedures) to identify procedures described therein. Records reviewed included the Onsite Safety Committee Meeting Minutes File and associated procedure revisions.

Results of this review indicated that, where applicable, facility procedures are consistent with procedures as described in the FSAR.

No items of noncompliance were identified.

7. Checklists and Related Forms

Operations Department Procedures including checklists and related forms in working files were reviewed to see that current revisions and on-the-spot changes were posted.

No items of noncompliance were identified.

8. Control Room Observations

The inspector toured the control room and discussed operations with several operators. During this tour, the inspector reviewed plant operations by observing control board switch positions, indicators, and annunciators. In addition, the inspector questioned operators as to annunciator status and compared several plant conditions with various Technical Specification Limiting Conditions of Operations to verify compliance.

No items of noncompliance were identified.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. An unresolved item identified during this inspection is discussed in Paragraph 3.c.

10. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on February 16, 1979. and summarized the purpose, scope, and findings of the inspection. A subsequent telephone discussion concerning inspection findings was held between Mr. H. Midura and Mr. R. Conte of this office on February 21, 1979.