

April 19, 2002

Mr. Harold W. Keiser
Chief Nuclear Officer and President
PSEG Nuclear LLC - N09
P. O. Box 236
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION - NRC INSPECTION REPORT
50-272/02-03, 50-311/02-03

Dear Mr. Keiser:

On March 30, 2002, the NRC completed an inspection of your Salem 1 & 2 reactor facilities. The enclosed report documents the inspection findings which were discussed on April 11, 2002, with Mr. D. Garchow, Mr. T. O'Conner, and Mr. J. Carlin and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Specifically, this inspection involved seven weeks of resident inspection.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories, and although the specific actions cannot be released to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). On February 25, 2002, the NRC issued an Order to all nuclear power plant licensees, requiring them to take certain additional interim compensatory measures to address the generalized high-level threat environment. With the issuance of the Order, we will evaluate PSEG Nuclear's compliance with these interim requirements.

No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/reactors/operating/oversight.html>.

Mr. Harold W. Keiser

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Sincerely,

/RA/

Glenn W. Meyer, Chief
Projects Branch 3
Division of Reactor Projects

Enclosure: Inspection Report 50-272/02-03, 50-311/02-03
Attachment: Supplemental Information

Docket No. 50-272; 50-311
License No. DPR-70; DPR-75

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Mr. Harold W. Keiser

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos: 50-272, 50-311
License Nos: DPR-70, DPR-75

Report No: 50-272/02-03, 50-311/02-03

Licensee: PSEG Nuclear LLC

Facility: Salem Nuclear Generating Station, Units 1 & 2

Location: P.O. Box 236
Hancocks Bridge, NJ 08038

Dates: February 10 - March 30, 2002

Inspectors: Raymond K. Lorson, Senior Resident Inspector
Fred L. Bower, Resident Inspector
Richard Barkley, Senior Project Engineer

Approved By: Glenn W. Meyer, Chief,
Projects Branch 3
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000272-02-03, IR 05000311-02-03, on 2/10 - 3/30/02, Public Service Electric Gas Nuclear LLC, Salem Units 1 and 2. Resident Operations Report.

The inspection was conducted by resident inspectors and a regional projects inspector. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/reactors/operating/oversight.html>

A. Inspector Identified Findings

No findings of significance were identified.

B. Licensee Identified Findings

No findings of significance were identified.

Report Details

SUMMARY OF PLANT STATUS

Unit 1 began the period at full power. On February 15 reactor power was reduced to 37 percent to raise the steam generator lo-lo level reactor trip setpoints and on February 18 the unit was returned to full power (Section R13). On February 26 power was reduced to 72 percent to support a maintenance activity associated with the 13B circulating water pump (CWP), and on February 27 the unit was returned to full power. On February 28 power was reduced to 75 percent to support maintenance to the 13B, 13A and 12B CWPs, traveling screens and associated equipment. On March 2 the unit was returned to full power with maintenance on the 13B CWP ongoing. On March 3 the operators were unexpectedly required to trip the 12B CWP pump while performing a planned power reduction to remove the 13A CWP from service for maintenance. The operators subsequently reduced power to approximately 8% and removed the turbine from service in response to additional CW system problems. The unit was subsequently shut down (placed into Mode 4) to break condenser vacuum in order to repair a failed closed main turbine stop valve bypass valve (13MS901). PSEG Nuclear completed repairs to the 13MS901 valve and to the CW system and restarted the unit on March 12. The unit reached full power on March 14 and remained there for the duration of the period.

Unit 2 began the period at full power. On February 15 reactor power was reduced to 77 percent to raise the steam generator lo-lo level reactor trip setpoints, and on February 17 the unit was returned to full power. On March 5 reactor power was reduced to 98% percent in response to a failed feedwater pressure instrument that affected the online calorimetric validation. After replacing the feedwater instrument, the unit was returned to full power on March 6, where it remained until the end of the period.

1. REACTOR SAFETY

Initiating Events, Mitigating Systems, and Barrier Integrity [Reactor - R]

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors completed a review of PSEG Nuclear's preparations for cold weather conditions, including those for mechanical, fire protection and electrical systems, as well as the status of corrective actions for key heating equipment found inoperable during PSEG Nuclear's preparation activities. The inspectors toured the outlying safety-related structures and components, and verified that most deficient heating system conditions had been identified and/or corrected and that the deficient conditions that remained did not impact the operability of risk significant equipment during cold weather. The few deficient heating equipment conditions noted by the inspector were identified to PSEG Nuclear for entry into their corrective action system. The inspector noted that no significant problems with the heating systems for risk significant components were identified this past winter.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

On March 20 the inspectors performed walkdowns of the 1A and 1B emergency diesel generators (EDGs), and the 11/12 charging and safety injection pumps while the 1C EDG was removed from service for planned maintenance. The inspectors also performed walkdowns of the charging system during the pump maintenance outages to clean the pump lubricating oil coolers. During these walkdowns the inspectors verified that redundant components were available to perform their intended safety functions, protected by administrative controls, and in good material condition.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors toured four areas important to reactor safety to evaluate conditions related to: (1) control of transient combustibles and ignition sources; (2) the material condition, operational status, and operational lineup of fire protection systems, equipment and features; and, (3) the fire barriers used to prevent fire damage or fire propagation. The inspectors referred to administrative procedure NC.NA-AP.ZZ-0025(Q), Operational Fire Protection Program, during this inspection. The tours included reviews of Pre-Fire Preplans to determine: (1) 10 CFR 50, Appendix R, safe shutdown equipment; (2) construction and fire barrier information; (3) fire detection equipment; (4) fire suppression equipment; and, (5) diagrams of the fire area. The inspectors reviewed the following Pre-Fire Preplans and associated fire areas:

- Unit 1 - FRS-II-433, Auxiliary Feed Water Pumps Area, Elevation: 84'-0"
- Unit 2 - FRS-II-433, Auxiliary Feed Water Pumps Area, Elevation: 84'-0"
- Unit 1 - FRS-II-435, Diesel Fuel Oil Storage Area, Elevation: 84'-0"
- Unit 2 - FRS-II-435, Diesel Fuel Oil Storage Area, Elevation: 84'-0"

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors identified an issue in NRC Inspection Report 50-272 & 311/2001-011 involving the deferral of a preventive maintenance activity on the 22 CVC pump speed increaser. Subsequently, the speed increaser overheated and failed due to the failure of the coupling drive pins on the attached lubricating oil pump. Since the failure resulted from the failure to perform timely preventive maintenance, the inspectors selected the performance of similar preventive maintenance activities for review. The inspectors reviewed selected portions of the in-progress maintenance and applicable documentation for the activities listed below:

- 12 and 21 charging pumps using procedure, SC.MD-PM.CVC-0001(Q), Centrifugal Charging Pump High Speed Gear Drive Periodic Inspection, under preventive maintenance Orders 30030820 and 30038115, respectively.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed selected maintenance activities through direct observation, document review (risk assessment reviews, operating logs, industry operating experience and notifications), and personnel interviews. This review was performed to determine whether PSEG Nuclear properly assessed and managed the risk, and performed these activities in accordance with applicable technical specification (TS) and work control requirements. The following activities were reviewed:

- Emergent issue that involved the measurement of the steam generator (SG) water level. This issue affected the affected the ability of the SG narrow range water level instruments to provide a TS required reactor trip signal.
- March 2002, forced outage conducted to repair a stuck main turbine stop valve bypass valve and to improve the condition of the CW system.
- Removal of the 1PR2 valve from service on February 24, 2002 to perform pressurizer pressure channel functional testing.

The inspectors also reviewed Notification 20092498 which documented an inspector-identified issue that the risk assessment did not properly consider the impact of the pressurizer pressure functional testing on the operability of the 2PR1 valve.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions

.1 Start-up from Unit 1 Forced Outage

a. Inspection Scope

The inspectors observed selected portions of the preparations, pre-briefing and reactor start-up on March 12, following the Unit 1 shutdown and forced outage that began on March 3. The inspectors verified that the start-up activities were performed in accordance with S1.OP-IO.ZZ-0003(Q), Hot Standby to Minimum Load, on January 15, 2002. Start-up support was provided by nuclear fuels engineers. The inspectors noted that management oversight of the start-up was selectively provided by the director of site operations, an assistant operations manager, and the manager of nuclear fuels and reactor engineering.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors observed the performance of post maintenance testing or reviewed documentation for selected risk-significant systems to assess whether the systems would satisfy TSs, Updated Final Safety Analysis Report and PSEG Nuclear procedural requirements. The inspectors assessed whether the testing appropriately demonstrated that the systems were operationally ready and capable of performing their intended safety functions. The following test activities were reviewed:

- Post-maintenance testing of the 12 charging pump in accordance with procedure S1.OP-ST.CVC-0004(Q), Inservice Testing - 12 Charging Pump, following preventive maintenance in accordance with Order 30030820.
- Post-maintenance tests S1.OP-ST.DG-0003 (Q), "1C Diesel Generator Surveillance Test," and S1.OP-ST.DG-0021 (Q), "Diesel Generator Hot Restart Test." These tests were performed in response to work performed on the EDG to replace a DC control breaker and several gages as well as to check the turbocharger vibration levels.

The inspectors observed a portion of the two hour EDG test run as well as the hot restart test evolution. The inspectors questioned the responsible performance engineer regarding the schedule for replacing the lube oil filters on the EDG due to a differential pressure reading on the engine that was elevated, but still within the acceptance band. The engineer confirmed that PSEG Nuclear's acceptance band on the filters is overly conservative based on the vendor's recommendation and that the filter is bypassed upon reaching a high differential pressure.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

a. Inspection Scope

The inspectors reviewed the key activities planned and scheduled for the Unit 2 refueling outage (2R12), the 2R12 risk assessment report, and the contingency plans developed for the two reactor coolant system (RCS) mid-loop operating periods and for the removal of the 22 service water header from service. This review was performed to determine whether PSEG Nuclear appropriately assessed and had planned actions to manage the risk associated with the 2R12 activities.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed the performance of surveillance test procedures or reviewed test data of selected risk-significant SSCs to assess whether the SSCs satisfied the Technical Specifications, the Updated Final Safety Analysis Report, and PSEG Nuclear procedure requirements. The inspectors assessed whether the testing appropriately demonstrated that the SSCs were operationally ready and capable of performing their intended safety functions. The following tests and activities were reviewed:

- SC.RE-ST.ZZ-0002(Q) Shutdown Margin Calculation (Unit 1)
- S1.OP-ST.SJ-0020(Q) Periodic Leakage Test, RCS Pressure Isolation Valves, Mode 4
- SH.RA-AP.ZZ-0101(Q) Ultrasonic examination of residual heat removal system high points.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the open temporary modifications (TMs) at Unit 1 and Unit 2 to evaluate the impact of the TMs on risk significant systems and to determine the aggregate impact on plant operations.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA3 Event Follow-up

- .1 (Closed) LER 311/01-008-00: Reactor Trip Due to Pressurizer Spray Valve 2PS3 Failure. This LER described a Unit 2 reactor trip that occurred on December 31, 2001 due to a failed open spray valve (2PS3). This event was described in NRC Inspection Report 01-12. No new information was identified and this LER is closed.
- .2 (Closed) LER 311/02-001-00: Technical Specification shutdown due to 2A EDG being declared inoperable. This LER described an event where Unit 2 was shutdown as a result of reaching the TS allowed out of service time for the 2A EDG. This event was described in NRC Inspection Report 01-12. No new information was identified and this LER is closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

On April 11, 2002, the inspectors presented their overall findings to members of PSEG Nuclear management including Mr. D. Garchow, Mr. T. O'Conner, Mr. J. Carlin and others of your staff. PSEG Nuclear management did not indicate that any of the information reviewed by the inspectors was considered proprietary.

.2 PSEG Nuclear/NRC Management Meeting

The NRC conducted the annual assessment meeting with PSEG Nuclear on March 26, 2002. During the meeting the NRC discussed the status of the performance indicators, inspection findings, and performance trends for the past assessment cycle. PSEG Nuclear provided a brief synopsis of ongoing initiatives to address areas of concern. The meeting occurred at the PSEG Nuclear Training Center and was open for public observation. A copy of the slide presentation can be found in ADAMS under Accession #ML020870584.

.3 Tour with United States Office of Homeland Defense

On March 29, 2002, the resident inspectors participated in a tour of the Salem and Hope Creek sites led by PSEG Nuclear personnel for officials from the United States Office of Homeland Defense. The tour included a review of security features for selected portions of the owner-controlled and protected areas.

SUPPLEMENTAL INFORMATION

a. Key Points of ContactPSEG Nuclear

D. Garchow, Vice President - Operations
 T. O'Conner, Vice President - Maintenance
 J. Carlin, Vice President - Nuclear Reliability
 L. Waldinger, Director - Site Operations
 K. Davison, Salem Operations Manager

b. List of Items Opened, Closed, and Discussed**Opened/Closed**

311/01-008-00	LER	Reactor trip due to pressurizer spray valve 2PS3 failure. (Section OA3)
311/02-001-00	LER	Technical specification shutdown due to 2A EDG being declared inoperable. (Section OA3)

c. List of Acronyms

CWP	Circulating Water Pump
DBT	Design Basis Threat
EDGs	Emergency Diesel Generators
NCV	Non Cited Violation
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PSEG	Public Service Electric Gas
RCS	Reactor Coolant System
SDP	Significance Determination Process
SG	Steam Generator
TM	Temporary Modification
TS	Technical Specification