UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406

November 9, 2007

Mr. William Levis
President and Chief Nuclear Officer
PSEG Nuclear LLC
80 Park Plaza, T4B
Newark, NJ 07102

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2 - NRC INTEGRATED INSPECTION REPORT 05000272/2007004 and 05000311/2007004

Dear Mr. Levis:

On September 30, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Salem Nuclear Generating Station Unit Nos. 1 and 2. The enclosed integrated inspection report documents the inspection results discussed on October 4, 2007, with Mr. Bob Braun and other members of your staff.

This 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.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's Rules of Practice, a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document management system (ADAMS). ADAMS is accessible from the NRC web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Arthur L. Burritt, Chief
Projects Branch 3
Division of Reactor Projects

Docket Nos: 50-272; 50-311

License Nos: DPR-70; DPR-75

Enclosure: Inspection Report 05000272/2007004 and 05000311/2007004
w/Attachment: Supplemental Information

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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:	05000272/2007004 and 05000311/2007004
Licensee:	PSEG Nuclear LLC
Facility:	Salem Nuclear Generating Station, Unit Nos. 1 & 2
Location:	P.O. Box 236 Hancocks Bridge, NJ 08038
Dates:	July 1, 2007 through September 30, 2007
Inspectors:	D. Schroeder, Senior Resident Inspector H. Balian, Resident Inspector J. Schoppy, Senior Reactor Inspector S. Pindale, Senior Reactor Inspector A. Patel, Reactor Inspector T. Sicola, Reactor Inspector A. Rosebrook, Project Engineer J. Furia, Senior Health Physicist
Approved By:	Arthur L. Burritt, Chief Projects Branch 3 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000272/2007004, 05000311/2007004; 07/01/2007–09/30/2007; Salem Nuclear Generating Station, Unit Nos. 1 and 2; Routine Integrated Report.

The report covered a three-month period of inspection by resident inspectors and announced inspections by regional specialist inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, Reactor Oversight Process, Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Salem Nuclear Generating Station Unit 1 (Unit 1) began the period at full power and remained at or near full power for the entire quarter.

Salem Nuclear Generating Station Unit 2 (Unit 2) began the period at full power and remained at full power until August 6, 2007, when the unit tripped automatically on low steam generator water level. Unit 2 was returned to service on August 7, 2007, and reached full power on August 9, 2007. Unit 2 remained at full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 1 sample)

a. Inspection Scope

Impending Adverse Weather Preparations. The inspectors completed one adverse weather sample. The inspectors reviewed PSEG's preparation and protection of risk significant systems at Salem Unit 1 and Unit 2 during hot weather conditions between August 6 and 10, 2007. The inspectors evaluated PSEG's implementation of summer readiness procedures and compensatory measures for extreme hot weather that included ultimate heat sink temperatures above 88°F and ambient air temperatures above 96°F. The inspectors walked down risk-significant structures, systems, and components (SSCs) to ensure that weather related conditions did not adversely impact SSC operability. In addition, the inspectors assessed the condition of balance of plant equipment with the potential to initiate plant-level transients. The inspectors performed detailed walkdowns of the service water (SW) intake, emergency diesel generators (EDGs), vital switchgear rooms, the gas turbine generator (GTG), station blackout air compressor, main and unit auxiliary transformers, safety-related chillers, component cooling water heat exchangers, the main turbines and generators, and the station air compressors. On August 9, 2007, the inspectors observed portions of GTG performance testing from the control room and from the GTG local control panel. The inspectors also reviewed PSEG corrective action notifications (NOTF) to ensure that PSEG appropriately identified and resolved weather related problems. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R02 Evaluation of Changes, Tests, or Experiments (71111.02 - 19 samples)

a. Inspection Scope

The inspectors reviewed six safety evaluations to verify that changes and tests were evaluated and documented in accordance with 10 CFR 50.59; and, if required, PSEG obtained NRC approval prior to implementation. The inspectors assessed the adequacy of the safety evaluations through interviews with PSEG personnel and review of supporting information, such as calculations, engineering analyses, design change documentation, the updated final safety analysis report (UFSAR) and technical specifications. In addition, the inspectors reviewed the administrative procedures that control the screening, preparation and issuance of the safety evaluations to ensure that procedures adequately implemented the requirements of 10 CFR 50.59, "Changes, Tests, and Experiments." The inspectors also reviewed a sample of 13 changes that PSEG had evaluated using a screening process and determined that safety evaluations were not required. The inspectors performed this review to assess PSEG's conclusions with respect to 10 CFR 50.59 applicability. The safety evaluations and screenings were selected based on the safety significance of the affected structures, systems, and components.

The inspectors also reviewed issues that entered into the corrective action program to determine whether PSEG was effective in identifying and resolving problems associated with the 10 CFR 50.59 safety evaluation process.

A listing of the safety evaluations, safety evaluation screenings, and other documents reviewed for the inspection is provided in the Attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04 – 2 samples)

.1 Partial Walkdown

a. Inspection Scope

The inspectors completed two partial walkdown inspection samples. The inspectors walked down the systems to verify the operability of redundant or diverse trains and components when safety equipment was inoperable. The inspectors focused their review on potential discrepancies that could impact the function of the system and increase plant risk. The inspectors reviewed applicable operating procedures, walked down control systems components, and verified that selected breakers, valves, and support equipment were in the correct position to support system operation. The inspectors also verified that PSEG properly utilized its corrective action program to identify and resolve equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers. Documents reviewed are listed in the Attachment. The inspectors walked down the systems listed below.

- Unit 1 SW redundant components during the 13 SW pump, strainer, and traveling water screen outage
- Unit 1 chilled water system following the identification of chiller control problems

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05 – 10 samples)

.1 Quarterly Inspection

a. Inspection Scope

The inspectors completed ten fire protection quarterly inspection samples. The inspectors conducted a tour of the areas to assess the material condition and operational status of fire protection features. The inspectors verified that combustibles and ignition sources were controlled in accordance with PSEG's administrative procedures; fire detection and suppression equipment was available for use; that passive fire barriers were maintained in good material condition; and that compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with PSEG's fire plan. Documents reviewed are listed in the Attachment. The inspector evaluated the fire protection areas listed below.

- Unit 1 and Unit 2 Pre-Fire Plan FRS-II-431, 460V Switchgear Rooms
- Unit 1 and Unit 2 Pre-Fire Plan FRS-II-433, Auxiliary Feed Water Pump Area
- Unit 1 and Unit 2 Pre-Fire Plan FRS-II-434, Charging Pump, Spray Additive Tank Area
- Unit 1 and Unit 2 Pre-Fire Plan FRS-II-445, Diesel Generator and Day Tank Areas
- Unit 1 and Unit 2 Pre-Fire Plan FRS-II-914, Outer Penetration Area

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

a. Inspection Scope

Internal Flooding Area. The inspectors completed one internal flooding area inspection sample. The inspectors evaluated flood protection measures for the control area chillers and emergency control air compressor rooms for Unit 1 and 2. The areas were walked down to assess the operational readiness of various features to protect the control area chillers and emergency control air compressors from internal flooding. These features included plant drains, flood barrier curbs, and wall penetration seals. The inspectors interviewed engineers concerning the internal flood design basis for these rooms, including the design flood height and flood detection methods. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11 – 1 sample)

a. Inspection Scope

The inspectors competed one licensed operator requalification training program inspection sample. The inspectors observed a simulator training scenario conducted on September 6, 2007, to assess operator performance and training effectiveness. The scenario involved a failure of the 24 steam generator level channel II, a service water leak in number 2 service water bay with a chlorine release, a steam generator tube leak, and a steam generator tube rupture. The inspectors verified operator actions were consistent with operating, alarm response, abnormal, and emergency procedures. The inspectors assessed simulator fidelity and verified that evaluators identified deficient operator performance where appropriate. The inspectors observed the instructors' critique of operator performance. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q – 3 samples)

a. Inspection Scope

The inspectors completed three quarterly maintenance effectiveness inspection samples. The inspectors reviewed performance monitoring and maintenance effectiveness issues for three systems. The inspectors reviewed PSEG's process for monitoring equipment performance and assessing preventive maintenance effectiveness. The inspectors verified that systems and components were monitored in accordance with the maintenance rule program requirements. The inspectors compared documented functional failure determinations and unavailability hours to those being tracked by PSEG to evaluate the effectiveness of PSEG's condition monitoring activities and to determine whether performance goals were being met. The inspectors reviewed applicable work orders, corrective action NOTFs, and preventive maintenance tasks. The documents reviewed are listed in the Attachment. The inspectors evaluated the systems listed below.

- Unit 1 and 2 115 volt AC power systems (vital instrumentation and essential controls electrical power supplies);
- Unit 2 Control Area Chiller 21; and
- Unit 2 Solid State Protection System.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 6 samples)

a. Inspection Scope

The inspectors completed six maintenance effectiveness and emergent work control inspection samples. The inspectors reviewed the maintenance activities to verify that the appropriate risk assessments were performed as specified by 10 CFR 50.65(a)(4) prior to removing equipment for work. The inspectors reviewed the applicable risk evaluations, work schedules and control room logs for these configurations. PSEG's risk management actions were reviewed during shift turnover meetings, control room tours, and plant walkdowns. The inspectors also used PSEG's on-line risk monitor (Equipment Out-Of-Service workstation) to gain insights into the risk associated with these plant configurations. The inspectors reviewed NOTFs documenting problems associated with risk assessments and emergent work evaluations. Documents reviewed are listed in the Attachment. The inspectors assessed the plant configurations listed below.

- Maintenance on the Unit 2 emergency control air compressor (ECAC) that required concurrent isolation of the station blackout air compressor.
- Emergent maintenance on the RPS channel 21 OT delta T instrument.
- Emergent maintenance on 12 containment fan coil unit with 14 service water pump out for planned maintenance.
- 12A and 12B component cooling heat exchangers out of service for planned maintenance.
- 11 component cooling heat exchanger and 13 control air compressor out of service for planned maintenance.
- Unit 2 reactor coolant temperature circuit card maintenance that required rod control, pressurizer heaters, and pressurizer level control to be in manual.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 – 6 samples)

a. Inspection Scope

The inspectors completed six operability evaluation inspection samples. The inspectors reviewed the technical adequacy of the operability determinations to verify the conclusions were justified. The inspectors also walked down accessible equipment to corroborate the adequacy of PSEG's operability determinations. Additionally, the inspectors reviewed other PSEG identified safety-related equipment deficiencies during this report period and assessed the adequacy of their operability screenings. NOTFs and documents reviewed are listed in the attachment. The inspectors evaluated the issues listed below.

- NOTF 20330998, Unit 2 auxiliary feedwater (AFW) system valve 23AF52 following identification of an air leak from the associated control air solenoid valve 2SV189.

- NOTF 20330487, Concurrent degradation of the 11 and 12 containment fan coil units.
- NOTF 20329699, Temperature controller drift of the 12A component cooling heat exchanger.
- NOTF 20331810, Door not closed on the 21 charging pump breaker cubicle.
- NOTF 20335128, Degradation of the thermostat for the 11 residual heat removal pump room cooler.
- NOTF 20335890, Power range nuclear instrument 2N43 drifting high.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17B - 8 samples)

.1 Biennial Review

a. Inspection Scope

The inspectors reviewed eight permanent plant modification packages to verify that the design bases, licensing bases, and performance capability of risk significant structures, systems, and components were not degraded by the plant modification. Plant changes were selected for review based on risk insights. The inspectors performed walkdowns of selected plant systems and components, interviewed plant staff, and reviewed applicable documents, including procedures, calculations, modification packages, engineering evaluations, drawings, corrective action program documents, the UFSAR and technical specifications.

The inspectors verified that selected attributes including component safety classification, energy requirements supplied by supporting systems, seismic qualification, instrument setpoints, uncertainty calculations, electrical coordination, electrical loads analysis, and equipment environmental qualification were consistent with the design and licensing bases. Design assumptions were reviewed to verify that they were technically appropriate and consistent with the UFSAR. For each modification, the 10 CFR 50.59 screenings or evaluations were reviewed as described in section 1R02 of this report. The inspectors verified that procedures, calculations, and the UFSAR were properly updated with the revised design information. The inspectors also verified that the as-built configuration was accurately reflected in the design documentation and that post-modification testing was adequate to ensure the structures, systems, and components would function properly.

The inspectors also reviewed issues entered into the corrective action program to verify that PSEG was effective in identifying and resolving problems associated with the plant modification process and activities. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 samples)

a. Inspection Scope

The inspectors completed six post-maintenance testing inspection samples. The inspectors observed portions of and/or reviewed the results of the post-maintenance test activities for the maintenance items listed below. The inspectors verified that the effect of testing on the plant was adequately addressed by control room and engineering personnel; testing was adequate for the maintenance performed; acceptance criteria were clear, demonstrated operational readiness and were consistent with design and licensing basis documentation; test instrumentation was calibrated, and the appropriate range and accuracy for the application; tests were performed, as written, with applicable prerequisites satisfied; and equipment was returned to an operational status and ready to perform its safety function. Documents reviewed are listed in the Attachment. The inspectors evaluated the post maintenance tests listed below.

- Work order (WO) 60071153 troubleshooting and repair of solid state protection system train “A” and “B”
- WO 30103524, preventive and corrective maintenance of the 25 service water strainer
- WO 30105220, preventive maintenance of the 2 emergency control air compressor (ECAC) and associated redundant air panel 342-2
- WO 60068858 and 60071642, corrective maintenance of the 13 positive displacement charging pump and associated relief valve (1CV141)
- WO 60067076 and 60068581, planned maintenance of the 23 AFW pump and associated steam supply valve (2MS132)
- WO 30095024, replacement of the 12 service water pump

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)

a. Inspection Scope.

Unit 2 Forced Outage. The inspectors reviewed the Unit 2 forced outage work scope following the automatic reactor trip on August 6, 2007 (see Section 4OA3). The inspectors confirmed that PSEG appropriately considered shutdown plant risk and maintained defense in depth systems while Unit 2 remained in Mode 3. The inspectors reviewed procedures and observed portions of activities in the control room during Mode 3 operations.

Prior to plant restart, the inspectors walked down the equipment related to the cause of the trip, the feedwater (FW) and condensate systems, AFW, EDGs, control room instrumentation and control panels, and the vital switchgear buses to assess their material condition and to ensure adequate configuration control. The inspectors also

reviewed reactor engineering's estimated critical condition calculation and observed portions of the reactor startup, including reactor criticality.

The inspectors reviewed applicable documents, including corrective action reports, associated with the Unit 2 forced outage and plant restart as listed in the Attachment.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 – 3 samples)

a. Inspection Scope

The inspectors completed three surveillance testing inspection samples. The inspectors observed portions of and/or reviewed results for the surveillance tests to verify, as appropriate, whether the applicable system requirements for operability were adequately incorporated into the procedures and that test acceptance criteria were consistent with procedure requirements, the technical specification requirements, the UFSAR, and ASME Section XI for pump and valve testing. Documents reviewed are listed in the Attachment. The inspectors evaluated the surveillance tests listed below.

- Unit 2 service water valve inservice testing (IST)
- 21 charging pump service water fouling monitoring
- 2A emergency diesel generator monthly load test

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23 – 1 sample)

a. Inspection Scope

The inspectors completed one temporary plant modification sample. The inspectors reviewed temporary modification 1ST-07-012 that installed a blank flange on 12SW32. The inspectors assessed whether PSEG followed its administrative process for implementing the modifications, CC-AA-112, "Temporary Configuration Changes," and verified that the temporary modification did not adversely impact the operation and performance of the affected structure, system, or component. The inspectors also verified that the modification did not adversely affect operator response to abnormal or emergency conditions.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 1 sample)

a. Inspection Scope

The inspectors completed one drill evaluation inspection sample. On September 25, 2007, the inspectors observed the drill from the control room simulator. The inspectors evaluated the drill performance relative to developing event classifications and notifications. The inspectors reviewed the Salem Event Classification Guides and Emergency Plans. The inspectors referenced Nuclear Energy Institute 99-02, "Regulatory Assessment PI Guideline", Revision 5, and verified that PSEG correctly counted the drill's contribution to the NRC PI for drill and exercise performance.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01 – 5 samples)

a. Inspection Scope

The inspectors reviewed PSEG's self assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection. The inspectors determined that identified problems were entered into the corrective action program for resolution.

The inspectors reviewed corrective action reports related to access controls. Included in this review were high radiation area radiological incidents that occurred since the last inspection in this area.

For repetitive deficiencies or significant individual deficiencies in problem identification and resolution with respect to access control, the inspectors determined that PSEG's self-assessment activities also identified and addressed these deficiencies, and that there were no repetitive deficiencies of this type since the last inspection of this area.

The inspectors reviewed PSEG documentation packages for all PI events that occurred since the last inspection. There were no events of this type since the last inspection.

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event was due to radiation worker errors. The inspectors determined that there was no observable pattern traceable to a similar cause. The inspectors verified adequate posting and locking of entrances to high dose rate - high radiation areas, and very high radiation areas.

The inspectors reviewed radiological problem reports since the last inspection that found that the cause of the event was radiation protection technician error. The inspectors

determined that there was no observable pattern traceable to a similar cause for these events.

The inspectors evaluated PSEG performance against the requirements contained in 10 CFR 20.1601, technical specifications 6.11 and 6.12, and UFSAR Chapter 12.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 – 6 samples)

a. Inspection Scope

The inspectors evaluated the radiation protection group shielding requests for dose rate reduction problem definition and assigning value. The inspectors also evaluated engineering's response to the shielding requests for follow through.

The inspectors determined that post-job reviews were conducted and that identified problems were entered into PSEG's corrective action program.

The inspectors verified that PSEG developed an understanding of the plant source-term that included knowledge of input mechanisms to reduce the source term. The inspectors determined that PSEG has a source-term control strategy in place.

The inspectors verified that specific sources were identified by PSEG for exposure reduction actions and that priorities established for implementation of these actions. The inspectors also reviewed the results achieved for these priorities since the last refueling cycle. For the current twelve month assessment period, the inspectors verified that source reduction evaluations were made and actions were taken to reduce the overall source-term compared to the previous year.

The inspectors verified that PSEG entered identified problems into the corrective action program for resolution and that the issues were properly characterized, prioritized, and resolved in an expeditious manner. The inspectors reviewed dose significant post-job reviews and post-outage ALARA report critiques of exposure performance.

The inspectors reviewed corrective action reports related to the ALARA program. The inspectors interviewed staff and reviewed documents to determine if the follow-up activities were conducted in an effective and timely manner commensurate with their importance to safety and risk.

The inspectors evaluated PSEG performance against the requirements contained in 10 CFR 20.1101 and UFSAR Section 12.4.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03 – 5 samples)

a. Inspection Scope

The inspectors verified the calibration, operability, and alarm setpoints of several types of instruments and equipment. Verification methods included: review of calibration documentation and observation of PSEG source check or calibrator exposed readings.

The inspectors also verified that actions were taken when, during calibration or source checks, an instrument was found significantly out of calibration (>50%).

The inspectors reviewed PSEG self-assessments, audits, and Licensee Event Reports with a focus on radiological incidents that involved personnel contamination monitor alarms due to personnel internal exposures.

For repetitive deficiencies or significant individual deficiencies in problem identification and resolution with respect to radiation monitoring instrumentation and protective equipment, the inspectors verified that PSEG's self-assessment activities also identified and addressed these deficiencies. There were no repetitive deficiencies of this type since the last inspection of this area.

Based on UFSAR, technical specifications and emergency operating procedures (EOPs) requirements, the inspectors reviewed the status and surveillance records for self contained breathing apparatus (SCBA) staged and ready for use in the plant. Inspections of PSEG's capability for refilling and transporting SCBA air bottles to and from the control room and operations support center during emergency conditions were also conducted. The inspectors verified that control room operators and other emergency response and radiation protection personnel assigned in-plant search and rescue duties or as specified by EOPs or Emergency Plan were trained and qualified in the use of SCBA including personal bottle change-out. The inspectors verified that personnel assigned to refill bottles were trained and qualified for that task.

The inspectors reviewed the qualification documentation for onsite personnel designated to perform maintenance on the vendor-designated vital components, and the vital component maintenance records for three SCBA units currently designated as "ready for service". For the same three units, the inspectors ensured that the required, periodic air cylinder hydrostatic testing was documented and up to date, and the DOT required retest air cylinder markings were in place.

The inspectors evaluated PSEG performance against the requirements contained in 10 CFR 20.1501, 10 CFR 20.1703 and 10 CFR 20.1704.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01 – 1 sample)

a. Inspection Scope

The inspectors reviewed calculations provided by PSEG to determine the quantity of radioactive material that exited Unit 1 via a hole in the main unit vent creating an unmonitored release pathway. PSEG's analysis was documented in NOTF 20335186, and indicated that for the past three years the amount of additional effluents released via this pathway were insignificant versus the total amount of effluents released from the site. PSEG closed the hole and was developing additional corrective actions that will be subject to review during future inspections.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program (71122.03 – 10 samples)

a. Inspection Scope

The inspectors reviewed the current annual environmental monitoring report and PSEG's assessment to verify that the REMP was implemented in accordance with TS and the offsite dose calculation manual (ODCM). The review included changes to the ODCM with respect to environmental monitoring commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and analysis of data. The inspectors also reviewed the ODCM to identify environmental monitoring stations. In addition, the inspectors reviewed PSEG self-assessments and audits, licensee event reports, inter-laboratory comparison program results, the UFSAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation, and the scope of the audit program to verify that it met the requirements of 10 CFR 20.1101(c).

The inspectors walked down six air particulate and iodine sampling stations; four milk sampling stations; 25 thermoluminescent dosimeter (TLD) monitoring locations. The inspectors verified that they were located as described in the ODCM and equipment material condition was acceptable.

The inspectors observed the collection and preparation of a variety of environmental samples and verified that environmental sampling was representative of the release pathways specified in the ODCM and that sampling techniques were in accordance with procedures.

Based on direct observation and review of records, the inspectors verified that the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, NRC Safety Guide 23, and PSEG procedures. The inspectors verified that the meteorological data readout and recording instruments in the control room and at the tower were operable.

The inspectors reviewed each event documented in the annual environmental monitoring report that involved a missed sample, inoperable sampler, lost TLD, or anomalous measurement for the cause and corrective actions. The inspectors also conducted a review of PSEG's assessment of any positive sample results.

The inspectors reviewed significant changes made by PSEG to the ODCM as a result of changes to the land census or sampler station modifications since the last inspection. The inspectors also reviewed technical justifications for any changed sampling locations and verified that PSEG performed the reviews required to ensure that the changes did not affect its ability to monitor the impact of radioactive effluent releases on the environment.

The inspectors reviewed the calibration and maintenance records for air samplers. The inspectors reviewed: the results of PSEG's interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by PSEG; PSEG's quality control evaluation of the interlaboratory comparison program and the corrective actions for any deficiencies; PSEG's determination of any bias to the data and the overall effect on the REMP; and quality assurance (QA) audit results of the program to determine whether PSEG met the TS/ODCM requirements. The inspectors verified that the appropriate detection sensitivities with respect to TS/ODCM were utilized for counting samples and reviewed the results of the quality control program including the interlaboratory comparison program to verify the adequacy of the program.

The inspectors observed several locations where PSEG monitored potentially contaminated material leaving the radiologically controlled area (RCA), and inspected the methods used for control, survey, and release from these areas, including observing the performance of personnel surveying and releasing material for unrestricted use and verifying that the work was performed in accordance with plant procedures.

The inspectors verified that the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources. The inspectors reviewed PSEG's criteria for the survey and release of potentially contaminated material; verified that there was guidance on how to respond to an alarm that indicates the presence of licensed radioactive material; and reviewed PSEG's equipment to ensure the radiation detection sensitivities were consistent with the NRC guidance contained in IE Circular 81-07 and IE Information Notice 85-92 for surface contamination and HPPOS-221 for volumetrically contaminated material. The inspectors also reviewed PSEG's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters and verified that PSEG did not establish a "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

The inspectors reviewed PSEG's licensee event reports, special reports, and audits related to the REMP performed since the last inspection. The inspectors verified that identified problems were entered into the corrective action program for resolution.

The inspectors also reviewed corrective actions affecting environmental sampling, sample analysis, or meteorological monitoring instrumentation.

The inspectors evaluated PSEG's performance against the requirements contained in 10 CFR 50.36, 10 CFR 50, Appendix I, and Plant Technical Specification 6.9.1.7.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator (PI) Verification (71151 – 8 samples)

a. Inspection Scope

The inspectors reviewed PSEG submittals for the Unit 1 and Unit 2 Mitigating Systems cornerstone performance indicators (PIs) and the Unit 1 and Unit 2 Occupational Radiation and Public Radiation Safety cornerstone performance indicators listed below. To verify the accuracy of the PI data reported during this period the data was compared to the PI definition and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 5.

Cornerstone: Mitigating Systems

- Unit 1 and Unit 2 high pressure safety injection mitigating systems performance index (MSPI)
- Unit 1 and Unit 2 auxiliary feedwater system MSPI
- Unit 1 and Unit 2 residual heat removal system MSPI

For these PIs the inspectors verified the data for the PI results for the second quarter 2006 through the second quarter of 2007. The inspectors reviewed the consolidated data entry MSPI derivation reports for the unavailability and unreliability indexes (UAI and URI) for the monitored systems; the monitored component demands and demand failure data for the monitored systems; and the train and system unavailability data for the monitored systems. The inspectors verified the accuracy of the data by comparing it to corrective action program records, control room operator logs, maintenance rule performance and scope reports, licensee event reports, and the MSPI basis document.

Cornerstone: Occupational Radiation Safety

- Occupational Exposure Control Effectiveness

For this PI the inspectors verified the data for the PI results reported for January through August of 2007. The inspectors reviewed implementation of PSEG's Occupational Exposure Control Effectiveness PI Program. The inspectors reviewed NOTFs for occurrences involving locked HRAs, very HRAs, and unplanned exposures to verify that all occurrences that met the NEI criteria were identified and reported.

Cornerstone: Public Radiation Safety

- RETS/ODCM Radiological Effluent Occurrences

For this PI the inspectors verified the data for the PI results reported for January through August of 2007. The inspectors reviewed relevant PSEG NOTFs for radiological effluent release occurrences that exceed 1.5 mrem/qtr whole body or 5.0 mrem/qtr organ dose for liquid effluents; 5 mrads/qtr gamma air dose, 10 mrad/qtr beta air dose, and 7.5 mrads/qtr for organ dose for gaseous effluents procedures.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152 – 2 samples)

.1 Routine Review of Identification and Resolution of Problems

As specified by Inspection Procedure 71152, "Identification and Resolution of Problems", and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of all items entered into PSEG's corrective action program. This was accomplished by reviewing the description of each new NOTF and attending daily management review committee meetings. Documents reviewed are listed in the Attachment.

.2 Annual Sample - Review of Operator Workaround Program

a. Inspection Scope

The inspectors conducted a cumulative review of operator workarounds for Units 1 and 2 and assessed the effectiveness of PSEG's operator workaround program. The inspectors focused on the potential impact on mitigating systems and the potential to affect operator ability to implement abnormal and emergency operating procedures. The review included interviews with licensed operators and walk downs of main control room panels. The inspectors reviewed PSEG's operator burden list, control room distraction report, and operator burden self assessment.

b. Findings and Observations

No findings of significance were identified.

PSEG has identified fourteen operator challenges at Unit 1 and Unit 2. None of these are classified as operator workarounds. The inspectors did not identify additional operator challenges or workarounds. The inspectors reviewed OP-AA-102-103, "Operator Work-Around Program", and SH.OP-AP.ZZ-0030, "Operator Burden Program", for PSEG program requirements, and found that PSEG adequately implemented these procedures. The most recent quarterly operator burden assessment was reviewed for each unit. The cumulative impact of operator challenges was found to be within manageable limits.

.3 Annual Sample - 230 and 460 Volt Circuit Breakers

a. Inspection Scope

The inspectors selected NOTFs and other reports associated with 230 and 460 circuit breakers for detailed review. The issues were associated with slow closing or trip functions, failure to operate remotely, and/or failed preventative maintenance (PM) tests. The reports were reviewed to ensure that the full extent of the issues was identified, an appropriate evaluation was performed, and appropriate corrective actions specified and prioritized. The inspectors interviewed plant personnel involved in breaker maintenance, refurbishment and overhaul. Inspectors referenced procedures SC.MD-PM.230-0003(Q)-Rev. 1 "230 and 460 Volt ABB K-Line Circuit breaker Preventive Maintenance," and SC.MD-ST.230-0003(Q) – Rev. 21 "230 and 460 Volt ABB K-Line Circuit Breaker Refurbishment," NOTFs, technical evaluations and work orders.

b. Findings and Observations

No findings of significance identified.

4OA3 Event Followup (71153 – 3 samples)

.1 Unit 2 Automatic Reactor Trip

a. Inspection Scope

On August 6, 2007, Unit 2 tripped due to low-low level in the 22 steam generator. Auxiliary Feedwater (AFW) pumps automatically started on the 22 SG low-low level signal and restored SG water level. Operators stabilized the plant in Mode 3, Hot Standby. The cause of the SG low-low level was a failed output driver card in the solid state protection system. PSEG replaced the failed card and verified the condition did not exist in other potentially affected areas of the plant. Operators commenced a reactor startup on August 7, 2007. Unit 2 returned to full power on August 9, 2007.

The inspectors observed control room operators' reactor trip response including: the control room supervisor's command and control; establishing and maintaining stable hot-standby conditions; and the transition from EOPs to normal operating procedures. Following plant stabilization the inspectors walked down the feedwater and condensate systems, the AFW system, and control room instrumentation to assess their post-trip condition, configuration control, and equipment performance. The inspectors also independently verified that safety equipment functioned as designed.

The inspectors reviewed the sequence of events report, auxiliary alarm system printer report, EOP charts, and selected recorder data. The inspectors also reviewed PSEG's post-reactor trip report and observed the Plant Operations Review Committee (PORC) meeting on the trip and restart issues.

b. Findings

No findings of significance were identified.

.2 (Closed) LER 05000272/2007002-00, Manual Reactor Trips Due to Degraded Condenser Heat Removal

On April 24, 2007, at approximately 10:48 p.m., a manual reactor trip of Unit 1 was initiated with reactor power level at approximately 40 percent. The manual reactor trip was initiated in response to a degraded circulating water system (CWS) and in accordance with operating procedures. The degradation of the CWS was due to extremely heavy river debris loadings that affected the ability of plant equipment to operate under these conditions.

Unit 1 was returned to service on April 26, 2007, at 12:36 p.m. following the cleaning of the condenser water boxes and the lowering river debris conditions. On April 30, 2007, at approximately 3:02 p.m. with Unit 1 at approximately 80 percent power, a sudden localized significant amount of river debris again entered the CWS intake. This resulted in the loss of four circulating water pumps due to high traveling screen differential levels, and a manual reactor trip.

The cause of the April 24 and April 30 manual reactor trips was attributed to unusual and severe external environmental conditions resulting in record high amounts of river debris that challenged the CWS. Unit 1 was returned to service on May 3, 2007, following cleaning and inspection of the circulating water traveling screens and condenser waterboxes. This LER was reviewed by the inspectors. No findings of significance, and no violation of NRC requirements was identified. This LER is closed.

.3 (Closed) LER 05000311/2007002-00, Reactor Trip Due to a Breach in the Condensate System

On May 24, 2007, at 2:32 p.m., Unit 2 tripped due to 22 steam generator (SG) low-low level. The cause of the low SG level trip was the failure of the 24 demineralizer vessel (DMV) upper sight glass that resulted in a loss of condensate inventory, suction pressure and ultimately a trip of 21 steam generator feedwater pump (SGFP).

The 21 SGFP trip resulted in a turbine runback signal and level decrease in the 22 SG. An automatic reactor trip occurred when 2 of 3 channels reached the low-low level set point on the 22 SG. The root cause for failure of the 24 DMV upper sight glass was attributed to PSEG's failure to use vendor guidance pertaining to the installation and maintenance of SMV sight glass windows. Corrective actions included replacing all Unit 2 sight glass windows prior to placing the DMV's back into service and the replacement of Unit 1 sight glass windows as the DMV's were removed from service during routine operation. All DMV sight glasses were replaced. The results of the inspectors review of this event were documented in section 4OA3.3 of NRC inspection report 05000272/2007003 and 05000311/2007003. This LER was reviewed by the inspectors and no additional findings of significance or violations of NRC requirements were identified. This LER is closed.

4OA5 Other Activities

.1 (Closed) URI 05000272/2006007-02, 05000311/2006007-02, Temperature Levels in the Control Area Relay Room During a Loss of HVAC Event

In NRC inspection report 05000272/2006007 and 05000311/2006007 the inspectors documented that the computer model used to verify the adequacy of proceduralized compensatory measures implemented following a loss of ventilation in a control area relay room was inadequate. PSEG revised the computer model to address the inspectors concerns. The inspectors reviewed the revised model and confirmed that based on the results of the revised model the proceduralized compensatory measures were adequate. This URI is closed.

.2 (Closed) URI 05000272/2007006-01, Evaluation of Past Operability of the Turbine-Driven Auxiliary Feedwater Pump due to Multiple High Energy Line Break Damper Failures

In inspection report 05000272/2007006 and 05000311/2007006 the inspectors determined that the failure of two turbine driven auxiliary feedwater pump high energy line break enclosure dampers at Unit 1 potentially affected the operability of the Unit 1 turbine driven auxiliary feedwater pump. PSEG contracted MPR Associates to develop a model for the condition. The inspectors reviewed MPR's analysis and PSEG's Appendix R calculations and determined that PSEG's review of the issue was adequate and the conclusions reasonable. Operability of the turbine driven auxiliary feedwater pump was not affected by the damper failures. This URI is closed.

4OA6 Meetings, Including Exit

On October 4, 2007, the resident inspectors presented the inspection results to Mr. Robert Braun. PSEG acknowledged that none of the information reviewed by the inspectors was proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

R. Braun, Site Vice President
J. D'Souza, Chemist-Hope Creek
J. Garecht, Assistant Operations Manager
R. Gary, Radiation Protection Manager
G. Gellrich, Plant Manager
M. Gwirtz, Operations Director
A. Johnson, Mechanical/Structural Design Manager
J. Konovalchick, Operations Shift Manager
T. Neufang, Radiological Engineering Manager
R. Olsen, Maintenance Director
G. Sosson, Engineering Director

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened/Closed

0500272/2007002-00	LER	Manual Reactor Trips Due to Degraded Condenser Heat Removal (Section 4OA3.2)
0500311/2007002-00	LER	Reactor Trip Due to a Breach in the Condensate System (Section 4OA3.3)

Closed

05000272&311/2006007-002	URI	Temperature Levels in the Control Area Relay Room During a Loss of HVAC Event (Section 4OA5.1)
05000272/2007006-01	URI	Evaluation of Past Operability of the Turbine Driven Auxiliary Feedwater Pump due to Multiple High Energy Line Break Damper Failures (Section 4OA5.2)

Discussed

None

LIST OF DOCUMENTS REVIEWED

In addition to the documents identified in the body of this report, the inspectors reviewed the following documents and records:

Section 1R01: Adverse Weather Protection

Procedures
S1.OP-SO.SW-0005, Service Water System Operation, Rev. 36
S3.OP-SO.JET-0001, Gas Turbine Operation, Rev. 26
OP-SH-108-111-1001, Severe Weather and Natural Disaster Guidelines, Rev. 0
SC.OP-AB.ZZ-0001, Adverse Environmental Conditions, Rev. 10
SC.OP-PT.ZZ-0002, Station Preparations for Seasonal Conditions, Rev. 11
SH.OP-DG-0011, Station Seasonal Readiness Guide, Rev. 7

Notifications
20332307 20332371

Other Documents
Operator Summer Readiness Training, dated April 2006
WCD 4206532

Section 1R02: Evaluation of Changes Test, or Experiments

10 CFR 50.59 Safety Evaluations
S2004-005, Salem Unit 2 Integrated Head Assembly Design, Rev. 4
S2005-003, Increase Salem 2 Tavg/Normalize Turbine Inlet Pressure Instrument Loops, Rev. 1
S2005-004, Implementation of TS Amendments 264[U1] and 246 [U2], Rev. 0
S2005-005, Re-configuration of the Reactor Core for Salem Unit 1 Cycle 15 - Safety Evaluation for Operation in All Modes, Rev. 0
S2006-002, Salem Unit 2 Steam Generator Snubber Removal, Rev. 0
S2006-075, EAB, LPZ, and CR Doses Due to Non-LOCA Releases, Rev. 0

10 CFR 50.59 Safety Evaluation Screens and Applicability Reviews
DCP 80059610, Containment Fan Coil Units R13 Radiation Monitor Replacement, Rev. 0
DCP 80089286, Change Closing Circuit for MOVs 2SJ4/5 From Torque to Limit Seating, Rev. 1
DCP 80062692, Install Stand-Alone UPS PWR Units for SGFP Woodwards, Rev. 1
DCP 80071283, Valve Discrepancies at CW Intake Structures, Rev. 0
DCP 80073189, SGFP Relay Race Condition with AFW Auto Start, Rev. 1
DCP 80070383, Install Variable Frequency Drive on CW Screens 13B & 23B, Rev. 2
DCP 80072413, Steam Generator Programmed Level Setpoint Change, Rev. 1
DCP 80074228, Installation of Fisher Type 164A 3-way Switching Valve on 22RH18, Rev. 1
DCP 80075675, Replacement of Salem's Station Air Compressors, Rev. 2
DCP 80078546, Increase Service Water Header High Pressure Alarm Setpoint - Unit 2, Rev. 0
DCP 80078682, Wiring Modification for MOV 22C16 Motor Control Circuit, Rev. 0
DCP 80080010, Replacement of Service Water Valves SW22 and SW23, Rev. 1
DCP 80080781, Remove Containment Spray Test Piping and Storage Rack, Rev. 2

Procedures

LS-AA-104, Exelon 50.59 Review Process, Rev. 5
LS-AA-104-100, 50.59 Applicability Review Form, Rev. 2
LS-AA-104-1001, 50.59 Review Coversheet Form, Rev. 2
LS-AA-104-1003, 50.59 Screening Form, Rev. 1
LS-AA-104-1004, 50.59 Evaluation Form, Rev. 2
LS-AA-104-1006, Exelon 50.59 Training and Qualification, Rev. 2
NO-AA-100-003, Independent Review of 10 CFR 50.59 and 10 CFR 72.48 Evaluations, Rev. 7

Calculations / Evaluations
S-C-ZZ-MDC-1987, Input Parameters for Salem AST Dose Calculations, Rev. 2

Section 1R04: Equipment Alignment

Procedures
S1.OP-SO.SW-0001, Service Water Pump Operation, Rev. 23
S1.OP-SO.SW-0005, Service Water System Operation, Rev. 36
S1.OP-SO.CH-0001, Chilled Water System Operation, Rev. 22
S1.OP-ST.CH-0005, Chilled Water Valve Verification, Rev. 1
S1.IC-GP.CH-0001, Chilled Water Instrument Valve Lineup Verification, Rev. 1

Drawings
205216

Notifications
20331326 20331756 20331897 20332330 20332499

Other Documents
WCD 4204640 and 4206099
S-C-CH-MEE-1243, Engineering Evaluation of Auxiliary Building Chilled Water Subsystem Loading – Salem Units 1 and 2, Rev. 2

Section 1R05: Fire Protection

Procedures
Salem - Unit 1, (Unit 2) Pre-Fire Plan FRS-II-431, 460V Switchgear Rooms and Corridor Elevation: 84' - 0", Rev. 6
Salem - Unit 1, (Unit 2) Pre-Fire Plan FRS-II-433, Auxiliary Feed Water Pumps Area Elevation: 84' - 0", Rev. 5
Salem - Unit 1, (Unit 2) Pre-Fire Plan FRS-II-434, Charging Pump, Spray Additive Tank Area Elevation: 84' - 0", Rev. 2
Salem – Unit 1, (Unit 2) Pre-Fire Plan FRS-II-445, Diesel Generator Area Elevations: 100’ & 122’, Rev. 10
Salem - Unit 1, (Unit 2) Pre-Fire Plan FRS-II-914, Outer Penetration Area, Rev. 2
SC.FP-AP.ZZ-0003, Actions for Inoperable Fire Protection – Salem Station, Rev. 11

Notifications
20330746 20330801 20331721 20331912

Other Documents

Salem and Hope Creek fire Impairment Log Book, dated 7/27/07

Section 1R06: Flood Protection Measures

Other Documents
Salem Generating Station Individualized Plant Examination Manual

Section 1R11: Licensed Operator Requalification Program

Other Documents
TQ-AA-106-0204, AB.SW-0001, AB.ROD-0001, SGTR, Rev. 1

Section 1R12: Maintenance Effectiveness

Procedures
SC.ER-DG.ZZ-0002, System Functional Level Maintenance Rule Scoping vs. Risk Reference, Rev. 2
SH.ER-DG.ZZ-0001, Preventable and Repeat Preventable System Functional Failure Determination, Rev. 3

Notifications

20331879	20331909	20331957	20332293	20332325	20332347
20332497	20334286	20316199	20316264	20316263	20316262
20291622	20296403	20296404	20296405	20296387	20296354
20296349	20296348	20296345	20292252	20291947	20291480
20256660	20311719	20307094	20274829	20274155	20234218
20308042	20050506	20049634	20318068		

Orders

70054883	70058084	70039685	70054359	70069249	70061150
70054946	70009498	70019245	60015286	30128323	

Other Documents
Quarterly SHIP System Summary Report for 115 VAC Systems
ER-AA-310, Exelon Implementation of the Maintenance Rule, Rev. 6
ER-AA-310-1004, Exelon Maintenance Rule - Performance Monitoring, Rev. 5
ER-AA-310-1005, Exelon Maintenance Rule - Dispositioning Between (a)(1) and (a)(2), Rev. 5

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures
SH.OP-AP.ZZ-0027, On-line Risk Assessment, Rev. 13

Notifications

20331412	20332205	20332410

Other Documents
SGS U1 & U2 PRA Risk Evaluation Form for 08/19/07 - 08/20/07

SGS U1 & U2 PRA Risk Evaluation Form for 09/02/07 - 09/08/07
SGS U1 & U2 PRA Risk Evaluation Form for 09/09/07 - 09/15/07
SGS U1 & U2 PRA Risk Evaluation Form for 09/16/07 - 09/22/07
SGS U1 & U2 PRA Risk Evaluation Form for 09/23/07 - 09/29/07
SGS U1 & U2 PRA Risk Evaluation Form for 09/30/07 - 10/06/07

Section 1R15: Operability Evaluations

Procedures
S2.OP-SO.AF-0001, Auxiliary Feedwater System Operation, Rev. 29
2-EOP-FRHS-1, Response to Loss of Secondary Heat Sink, Rev. 21
S2.OP-PT.SW-0004(Q), Service Water Fouling Monitoring Safety Injection and Charging Pumps, Rev. 8
S1.OP-ST.AF-0003(Q), Inservice Testing - 13 Auxiliary Feedwater Pump, Rev. 34
S1.RA-ST.AF-0003(Q), Inservice Testing 13 Auxiliary Feedwater Pump Acceptance Criteria, Rev. 15
S1.OP-ST.AF-0003(Q), Inservice Testing - 13 Auxiliary Feedwater Pump, Rev. 34
SH.IC-TI.ZZ-0001(Q), Electronic Soldering/Desoldering, Rev. 2
SC.IC-ST.NIS-0003(Q), N43 Power Range, Rev. 8
SC.IC-PT.NIX-0009(Q), Power Range Detector Post-Installation Electrical Tests, Rev. 2
S2.IC-GP.NIS-0001(Q), Nuclear Instrumentation System Data Procedure, Rev. 233

Notifications

20332022	20332206	20330998	20329699	20331810	20336237
20336236	20336234	20335128	20335410	20332005	20333469
20335251	20312715	20330807	20337861		

Orders

50105659	60071817	70072171	70072024	70071335	70071089
70073418					

Other Documents
WCD 4206732
Salem Inservice Testing Program Basis Data Sheets – Valves for 23AF52
DE-CB.AF-0010, Configuration Baseline Documentation for Auxiliary Feedwater System, Rev. 5
CROD 07-026, NUCR 70071844, Operability Determination, 07/25/07
CROD 07-027, NUCR 70072310, Operability Determination, 08/06/07
CROD 07-032, NUCR 70073345, Operability Determination, 09/05/07
CROD 07-035, NUCR 70073746, Operability Determination, 09/14/07

Section 1R17: Permanent Plant Modifications

Modifications
DCP 80059610, Containment Fan Coil Units R13 Radiation Monitor Replacement, Rev. 0
DCP 80070383, Install VFD (Variable Frequency Drive) on CW Screens 13B & 23B, Rev. 2

DCP 80072413, Steam Generator Programmed Level Setpoint Change, Rev. 1
DCP 80075675, Replacement of Salem's Station Air Compressors, Rev. 2
DCP 80078546, Increase Service Water Header High Pressure Alarm Setpoint - Unit 2, Rev. 0

DCP 80080010, Replacement of Service Water Valves SW22 and SW23, Rev. 1
DCP 80086030, RHR Letdown Booster Pump Installation, 10/10/06
DCP 80089286, Change Closing Circuit for MOVs 2SJ4/5 From Torque to Limit Seating, Rev. 1

Procedures
S2.CH-IO.ZZ-1112, Salem Unit 2 Shutdown Chemistry Plan, Rev. 0
S2.OP-AB.RHR-0001, Loss of RHR, Rev. 16
S2.OP-AR.ZZ-0002, Overload Annunciators Window B, Rev. 34
S2.OP-SO.CVC-0001, Charging, Letdown, and Seal Injection, Rev. 30
S2.OP-SO.CVC-0012, CVCS Demineralizer Normal Operation, Rev. 28
S2.OP-SO.RHR-0001, Initiating RHR, Rev. 23
S2.OP-SP.SW-0001, Service Water Pump Operation, Rev. 0
S2.RA-ST.CC-0005(Q), IST Component Cooling Valves Modes 5-6 Acceptance Criteria, Rev. 4
SH.MD-GP.ZZ-0009, Butterfly Valve Overhaul and Inspection, Rev. 4

Completed Test
S2.OP-ST.CC-0005, Inservice Testing Component Cooling Valves Modes 5-6, Rev. 11, completed 10/26/06

Calculations / Evaluations
Evaluation S-C-SW-MEE-1764, Compliance Demonstration with IE Circular No. 81-09, Rev. 0
Evaluation S-C-RM-CEE-1787, Design Considerations for Containment Fan Coil Unit Process Radiation Monitoring Units, Rev. 0
S-C-CA-MDC-1639, Air Load Management Program Update, Rev. 2
S-C-E0000-CEE-0195-0, Engineering Evaluation of Electrical Power and Control Circuit Potential Deficiencies Found During the Appendix R Improvement Program for Safety Significance and/or Conformance to Separation Requirements, 12/29/88
S-C-SA-MDC-2009, Salem Station Air Compressor Heat Exchanger, Rev. 0
S-C-SA-MEE-1876, Replacement of Sation Air Compressors Capacity Study, Rev. 0
S-C-SW-MEE-1882, Salem Service Water Heat Exchanger Suitability for Operation at Higher Pressure, Rev. 1

Drawings
205332, Residual Heat Removal, Sh. 2, Rev. 31
205242-A-8761-83, No 1. Unit Service Water Nuclear Area, Rev. 84
219461-A-8933.23, No. 2 Unit Service Water Screen Wash Control Panel 361-2A, Rev. 23
219462-A-8933-23, No. 2 Unit Service Water Screen Wash Control Panel 361-2B, Rev. 24

Notifications
20173259 20300899 20330005 20318431 20179066 20180087 20252305

Orders
30096116 30066687 70037106 70037127

Section 1R19: Post-Maintenance Testing

Procedures

SC.ER-DG.ZZ-0002, System Function Level Maintenance Rule Scoping vs. Risk Reference, Rev. 2
SC.MD-PM.SW-0003, Service Water Auto Strainer Adjustment, Inspection, Repair, and Replacement, Rev. 26
S2.IC-DC.CA-0001, Calibration of Redundant Air System Panels, Rev. 4
SC.IC-CM.CA-0001, Maintenance of Redundant Air System Valves and Actuators, Rev. 11
NC.MD-AP.ZZ-0050, Maintenance Testing Program Matrix, Rev. 9
SC.MD-CM.CVC-0001, Numbers 13 and 23 Charging Pump Repacking Plunger and Valve Repair or Replacement, Rev. 11
SC.MD-CM.CVC-0013, Replacement of Suction Stabilizer and Pulsation Damper Bladders, Rev. 2
SC.MD-CM.CVC-0005, 13 and 23 Charging Pump: Bearing Inspection; Power Frame Disassembly, Inspection, Repair, and Reassembly; Fluid Cylinder Replacement; and Suction Stabilizer/Pulsation Dampener Charging, Rev. 11
SH.MD-SP.ZZ-0012, Use of Ridgid Superfreeze SF-2500 Freeze Seal System, Rev. 0
S1.OP-ST.CVC-0005, Inservice Testing – 13 Charging Pump, Rev. 16
S1.RA-ST.CVC-0005, Inservice Testing 13 Charging Pump Acceptance Criteria, Rev. 9
SH.MD-GP.ZZ-0003, General Instructions for Valve Packing, Rev. 9
SC.MD-EU.SW-0002, Johnston Service Water Pump Removal and Installation, Rev. 17
S1.OP-ST.SW-0002, Inservice Testing - 12 Service Water Pump, Rev. 25

Completed Surveillance
SC.IC-ST.SSP-0008(Q), Solid State Protection System Train A Functional Test, 8/6/07
S2.OP-ST.AF-0003, Inservice Testing – 23 Auxiliary Feedwater Pump, Rev. 43
S2.RA-ST.AF-0003, Inservice Testing 23 Auxiliary Feedwater Pump Acceptance Criteria, Rev. 17
S2.OP-PT.AF-0002, Auxiliary Feedwater Backleakage, Rev. 8
S2.OP-PT.SW-0008, Service Water Fouling Monitoring Chiller Condensers, Rev. 9

Drawings

221062	218980	232548	205675		

Notifications

20330461	20331089	20332923	20334328	20334324	20306347

Orders

70071821	30103524	30105220	30121040	70034432	60067076
50106070	60068581	30095024	30095024	30144225	60071153

Other Documents
DE-CB.CA-0014, Configuration Baseline Documentation for Control Air and Station Air Systems, Rev. 5
Salem 2 Narrative Log, dated 12/03/06

Inspection Related Notifications:
* NRC identified Notifications

Notifications

*20332317 *20332235

Orders
60071153

Section 1R20: Refueling and Outage Activities

Procedures
S2.OP-IO.ZZ-0003, Hot Standby to Minimum Load, Rev. 27
S2.OP-IO.ZZ-0004, Power Operation, Rev. 60
S2.OP-IO.ZZ-0008, Maintaining Hot Standby, Rev. 12
S2.OP-PT.CAN-0001, Containment Walkdown, Rev. 17
SC.RE-RA.ZZ-0001, Estimated Critical Conditions, Rev. 7
SC.RE-RA.ZZ-0011, Tables, Rev. 233
SC.OP-DG.ZZ-0101, Salem Post-Trip Data Collection Guidelines, Rev. 8

Drawings
221062 B 9545-9, Reactor Protection System Feedwater Control and Isolation Logic Controls, 4/10/86

Notifications
20332186 20332187 20332071 20332074 20332022

Other Documents
NF-AP-543, Beacon Estimated Critical Condition (ECC) Calculation, dated 8/6/07
S2.OP-PT.CAN-0001, Containment Walkdown, dated 8/6/07
SC.RE-RA.ZZ-0001, Estimated Critical Conditions, dated 8/6/07

Section 1R22: Surveillance Testing

Procedures
S2.OP-ST.DG-0001(Q), 2A Diesel Generator Surveillance Test, Rev. 44

Completed Surveillances
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ECAL-3.5.3, Multipoint Energy/Shape Calibration
3PT-G-3.5.4A, System QC Using a 500ml Marinelli Three Nuclide Check Source
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Section 4OA1: Performance Indicator Verification

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2-EOP-TRIP-2, Reactor Trip Response, Rev. 26
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Section 4OA5: Other Activities

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LIST OF ACRONYMS

AFW	Auxiliary Feedwater
ALARA	As Low As Is Reasonably Achievable
CARR	Control Area Relay Room
CFR	Code of Federal Regulations
CWS	Circulating Water System
DMV	Demineralizer Vessel
ECAC	Emergency Control Air Compressor
ECC	Estimated Critical Condition
EDGs	Emergency Diesel Generators
EOPs	Emergency Operator Procedures
FW	Feedwater
GTG	Gas Turbine Generator
HELB	High Energy Line Break
LDE	Lens Dose Equivalent
LOCA	Loss of Coolant Accident
MOV	Motor Operated Valve
NCV	Non-cited Violation
NOTF	Notification (PSEG corrective action report)
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PARS	Publicly Available Records
PI	Performance Indicator
PM	Preventative Maintenance
PORC	Plant Operations Review Committee
PSEG	Public Service Enterprise Group Nuclear LLC
PWR	Pressurized Water Reactor
QA	Quality Assurance
RCA	Radiologically Controlled Area
REMP	Radiological Environmental Monitoring Program
RPS	Reactor Protection System
SCBA	Self Contained Breathing Apparatus
SDE	Skin Dose Equivalent
SGs	Steam Generators
SGFP	Steam Generator Feedwater Pump
SSCs	Structure, System, and Components
SSPS	Solid State Protection System

SW	Service Water
TDAFW	Turbine-driven Auxiliary Feedwater
TEDE	Total Effective Dose Equivalent
TLD	Thermoluminescent Dosimeter
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WCD	Work Clearance Document
WO	Work Order