



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
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April 29, 2009

Mr. Thomas Joyce  
President and Chief Nuclear Officer  
PSEG Nuclear LLC - N09  
P.O. Box 236  
Hancock's Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2 -  
NRC INTEGRATED INSPECTION REPORT 05000272/2009002 and  
05000311/2009002

Dear Mr. Joyce:

On March 31, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at the Salem Nuclear Generating Station, Unit Nos. 1 and 2. The enclosed inspection report documents the inspection results discussed on April 3, 2009, with Mr. Braun 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.

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, its enclosure, and your response (if any) 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 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 05000272/2009002 and 05000311/2009002  
w/Attachment: Supplemental Information

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Sincerely,  
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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: 05000272/2009002 and 05000311/2009002

Licensee: PSEG Nuclear LLC (PSEG)

Facility: Salem Nuclear Generating Station, Unit Nos. 1 and 2

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

Dates: January 1, 2009 through March 31, 2009

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**SUMMARY OF FINDINGS**

IR 05000272/2009002, 05000311/2009002; 01/01/2009 - 03/31/2009; 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.

No findings of significance were identified.

## REPORT DETAILS

Summary of Plant Status

Salem Nuclear Generating Station Unit No. 1 (Unit 1) began the period at full power. On March 27, operators lowered Unit 1 to three percent power due to a condensate polishing system malfunction that required the turbine generator to be taken off line. Operators returned Unit 1 to full power on March 31.

Salem Nuclear Generating Station Unit No. 2 (Unit 2) began the period at full power. Unit 2 operated at full power for the duration of the inspection period.

**1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity and Emergency Preparedness

1R01 Adverse Weather Protection (71111.01 - 1 sample)

## .1 Evaluate Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

The inspectors completed one impending adverse weather inspection sample for the onset of high levels of river detritus. The inspectors reviewed PSEG's weather preparation activities related to the potential for river grass intrusion conditions. Inspectors assessed implementation of PSEG's grassing readiness plan through plant walk downs, corrective action program review, and discussions with cognizant managers and engineers. Documents reviewed by inspectors are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04 - 4 samples).1 Partial Walk downa. Inspection Scope

The inspectors completed four partial system walk down inspection samples. The inspectors walked down the applicable 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 1A and 1B Emergency Diesel Generators (EDGs), 11 and 12 auxiliary feedwater (AFW) pumps when 13 AFW pump was unavailable on February 9;
- Unit 2 Service water screens, pumps, and strainers during grassing season on March 19;
- Unit 2 2B and 2C EDGs when 2A EDG was out of service for planned maintenance on January 29; and
- Unit 2 heating systems for the refueling water storage tank (RWST), auxiliary feedwater storage tank (AFWST) and pure water storage tank (PWST) during extreme cold weather on January 20.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q - 4 samples, 71111.05A – 1 sample)

.1 Fire Protection - Tours

a. Inspection Scope

The inspectors completed four fire protection quarterly walkdown inspection samples. The inspectors performed walk downs 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 inspectors evaluated the fire protection areas listed below:

- Unit 1 and 2 AFW pump areas; and
- Unit 1 and 2 spent fuel and component cooling areas.

b. Findings

No findings of significance were identified.

.2 Fire Protection - Drill Observation

a. Inspection Scope

The inspectors completed one fire drill observation inspection sample. The inspectors observed an unannounced fire drill conducted in the 2B emergency diesel generator room. The inspectors observed the drill to evaluate the readiness of the plant fire brigade to fight fires. The inspectors verified that PSEG staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: proper wearing of turnout gear and self-contained breathing apparatus; proper use and layout of fire hoses; employment of appropriate fire fighting techniques; sufficient fire fighting equipment



brought to the scene; effectiveness of fire brigade leader communications, command, and control; search for victims and propagation of the fire into other plant areas; smoke removal operations; utilization of pre-planned strategies; adherence to the pre-planned drill scenario; and drill objectives.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 sample)

a. Inspection Scope

The inspectors completed one flood protection measures inspection sample. The inspectors evaluated flood protection measures for the Unit 1 and Unit 2 auxiliary buildings. The inspectors walked down the areas to assess operational readiness of various features in place to protect redundant safety-related components and vital electric power systems from internal flooding. These features included plant drains, flood barrier curbs, and wall penetration seals. The inspectors also reviewed the results of flood barrier penetration seal inspections, flooding evaluations, preventive maintenance history, and corrective action notifications associated with flood protection measures. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11Q - 1 sample)

.1 Regualification Activities Review by Resident Staff.

a. Inspection Scope

The inspectors completed one quarterly licensed operator regualification program inspection sample. Specifically, the inspectors observed simulator training administered to a single crew on March 3, 2009. The scenario involved biofouling of the circulating water and turbine area cooling systems, loss of two circulating water pumps, a reactor coolant leak that transitioned into a loss of coolant accident requiring a reactor trip and safety injection. This training scenario was developed and administered as a corrective action to a reactor coolant draining incident that occurred in the fourth quarter of 2008. The original issue is discussed in inspection reports 05000272/2008009 and 05000272/2008005. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - 2 samples)

a. Inspection Scope

The inspectors completed two quarterly maintenance effectiveness inspection samples. The inspectors reviewed performance monitoring and maintenance effectiveness issues for two 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 notifications, and preventive maintenance tasks. The documents reviewed are listed in the Attachment. The inspectors evaluated the systems listed below:

- Unit 1 and Unit 2 steam driven AFW pumps; and
- Unit 1 and Unit 2 vital instrument bus inverters.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 5 samples)

a. Inspection Scope

The inspectors completed five maintenance risk assessment and emergent work control inspection samples. The inspectors reviewed the applicable 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 walk downs. 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 notifications documenting problems associated with risk assessments and emergent work evaluations. Documents reviewed are listed in the Attachment. For this inspection the inspectors assessed the plant configurations listed below:

- Unit 2 performance of pressurizer pressure functional test on February 3, 2009, which closed both Power Operated Relief Valve (PORV) block valves, 2PR6 and 2PR7;
- Unit 1 unplanned unavailability of the 13 AFW pump concurrent with maintenance on the 5023 offsite power line on February 9, 2009;
- Unit 2 planned unavailability of the 21 component cooling heat exchanger (CCHX) concurrent with unavailability of the 23 service water pump and automatic operation of pressurizer PORV 2PR1 on January 19;
- Unit 2 unplanned unavailability of the 26 service water pump concurrent with planned unavailability of the 23 service water pump and subsequent emergent unavailability of the 25 service water pump on February 20 and 21; and
- Unit 2 planned unavailability of the 21 CCHX and 26 SWP on February 25.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 8 samples)a. Inspection Scope

The inspectors completed eight operability evaluation inspection samples. The inspectors reviewed the operability determinations for degraded or non-conforming conditions associated with:

- 13 charging pump speed control linkage found in the low pressure position during plant power operations;
- 23 chiller low discharge pressure due to the 23SW102 valve failure to close on demand;
- Unit 1 containment integrity given degradation of containment spray valve 12CS2;
- Unit 2 AFW system performance due to degradation of 22 AFW pump minimum recirculation flow control valve 22AF40;
- Unit 1 reactor coolant leak detection given degradation of containment fan coil unit condensate collection system;
- Unit 2 service water system during concurrent planned and unplanned unavailability of up to three service water pumps;
- Unit 1 overhead annunciator system during failure of the annunciator verification system (AVS); and
- Unit 2 solid state protection system (SSPS) given degradation of a time delay relay in the train A test circuitry.

The inspectors reviewed the technical adequacy of the operability determinations to ensure 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. Documents reviewed are listed in the Attachment.

a. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18 - 1 sample).1 Temporary Modificationa. Inspection Scope

The inspectors completed one plant modification inspection sample. The inspectors reviewed a temporary modification for Unit 1 SSPS train A test circuitry. Two leads were lifted to stop a relay in the circuit from chattering. The lifted leads were left in place to facilitate the replacement of a time delay relay in the SSPS train A cabinet. The inspectors reviewed the temporary modification documentation and verified that the

modification did not affect system functionality. Following replacement of the time delay relay, inspectors verified that the temporary modification was removed and that the original system configuration was restored.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 7 samples)

a. Inspection Scope

The inspectors completed seven post-maintenance testing inspection samples. The inspectors observed portions of and/or reviewed the results of the post-maintenance test activities. 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 for the following maintenance items listed below:

- Work Order (WO) 50118530, replacement of the 13 AFW pump speed control governor;
- WO 30175773, repair of the 23SW102 pressure control valve on the 23 chiller;
- WO 60081161, adjustment and repair of 21SW122 flow control valve;
- WO 30060411, replacement of 2A EDG starting air solenoid operated valves;
- WO 60079798, rotation of the pressurizer PORV 2PR2;
- WO 30095033, replacement of the 26 service water pump; and
- WO 60081911, oil change of the 23 AFW pump speed control governor.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 7 samples)

a. Inspection Scope

The inspectors completed seven 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:

- S2.IC-FT.RCP-0018, "2PT-456 Pressurizer Pressure Protection Channel II;"

- S1.OP-ST.DG-0003, "1C Diesel Generator Surveillance Test;"
- S2.OP-ST.SW-0006, "Inservice Testing, 26 Service Water Pump;"
- S2.IC-CC.RCP-0028, "2FT-512 #21 Steam Generator Steam Flow Protection Channel I;"
- SC.OP-PT.CA-0001, "SBO Diesel Control Air Compressor Test;"
- S2.OP-ST.AF-0003, "Inservice Testing – 23 Auxiliary Feedwater Pump;" and
- S2.OP-ST.CVC-0006, "Inservice Testing Chemical and Volume Control Valves Modes 1-6."

b. Findings

No findings of significance were identified.

1EP2 Alert and Notification System (ANS) Evaluation (71114.02 - 1 sample)

a. Inspection Scope

An onsite review was conducted to assess the maintenance and testing of the Salem and Hope Creek ANS. During this inspection, the inspectors interviewed Emergency Preparedness (EP) staff responsible for implementation of the ANS testing and maintenance and reviewed corrective action program notifications pertaining to the ANS for causes, trends, and PSEG's corrective actions. The inspector reviewed the ANS procedures and the ANS design report to ensure PSEG's compliance with system maintenance and testing commitments. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment .02. Planning Standard, 10 CFR 50.47(b) (5) and the related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Staffing and Augmentation System (71114.03 - 1 sample)

a. Inspection Scope

The inspectors conducted a review of Salem/Hope Creeks' ERO augmentation staffing requirements and the process for notifying and augmenting the ERO. This was performed to ensure the readiness of key staff for responding to an event and to ensure timely facility activation. The inspectors reviewed the ERO roster, training records, applicable procedures, drill reports for augmentation, quarterly EP drills and corrective action program notifications related to the ERO staffing augmentation system. The inspectors also reviewed the implementation of the change in the ERO augmentation time from 60 to 90 minutes. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment .03. Planning Standard, 10 CFR 50.47(b)(2) and related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes (71114.04 - 1 sample)

a. Inspection Scope

Prior to this inspection, the NRC had received and acknowledged changes made to the Salem/Hope Creek Emergency Plan and its implementing procedures. PSEG developed these changes in accordance with 10 CFR 50.54(q), and determined that the changes did not result in a decrease in effectiveness of the Plan. PSEG also determined that the Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR 50. During this inspection, the inspectors conducted a review of Salem's and Hope Creek's 10 CFR 50.54(q) screenings for all changes made to the EALs, and for a sample of the changes made to the Plan, from May 2008 through March 2009, that could have potentially resulted in a decrease in effectiveness. This review of the EAL, Plan, and EPIP changes did not constitute NRC approval of the changes and, as such, the changes remain subject to future NRC inspection. In addition, the inspectors reviewed notifications written related to this area. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment .04. The requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses (71114.05 - 1 sample)

a. Inspection Scope

The inspectors reviewed a sampling of self-assessment procedures and reports to assess PSEG's ability to evaluate their EP performance and programs. The inspectors reviewed a sampling of notifications written between January 2008 and March 2009 that were initiated by PSEG at Salem and Hope Creek for issues identified during drills, self-assessments and audits. Additionally, the inspectors reviewed: Nuclear Oversight audits; the event report for the August 2008 Unusual Event declaration at Hope Creek; and, the 2007 and 2008 50.54(t) audit reports. This inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment .05. Planning Standard, 10 CFR 50.47(b) (14) and the related requirements of 10 CFR 50 Appendix E were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope (71114.06 - 1 sample)

The inspectors completed one drill evaluation inspection sample. On March 17, 2009, the inspectors observed the drill from the control room simulator, the technical support center (TSC) and the emergency offsite facility (EOF). The inspectors attended the drill

debrief to ensure that PSEG captured drill deficiencies in their critique. 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 Performance Indicator (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 - 6 samples)

a. Inspection Scope

The inspectors identified exposure significant work areas (about 2-3) within radiation areas, high radiation areas (<1 R/hr), or airborne radioactivity areas in the plant and reviewed associated PSEG controls and surveys of these areas to verify that controls (e.g., surveys, postings, barricades) were acceptable.

With a survey instrument, the inspectors walked down these areas or their perimeters to verify that prescribed radiation work permits, procedure, and engineering controls were in place, PSEG surveys and postings were complete and accurate, and air samplers were properly located.

The inspectors reviewed radiation work permits used to access these and other high radiation areas and identify what work control instructions or control barriers were specified. The inspectors used plant-specific technical specification high radiation area requirements as the standard for the necessary barriers. The inspectors reviewed electronic personal dosimeter alarm set points (both integrated dose and dose rate) for conformity with survey indications and plant policy. The inspectors verified that workers knew what actions were required when their electronic personal dosimeter malfunctioned or alarmed.

The inspectors verified adequate posting and locking of all entrances to high dose rate-high radiation areas and very high radiation areas.

The inspectors discussed with the Radiation Protection Manager high dose rate-high radiation area and very high radiation area controls and procedures. The inspectors reviewed procedural changes completed since the last inspection. The inspectors verified that changes to PSEG procedures did not substantially reduce the effectiveness and level of worker protection.

The inspectors discussed with health physics supervisors the controls in place for special areas that have the potential to become very high radiation areas during certain plant operations. The inspectors verified that communication with the health physics

group was required prior to these plant operations to allow proper posting and control of radiation hazards.

The inspectors evaluated PSEG performance in this area against the requirements contained in 10 CFR 20, and Technical Specification 6.12.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 - 4 samples)

a. Inspection Scope

Utilizing PSEG records, the inspectors reviewed the historical trends and current status of tracked plant source terms. The inspectors verified that PSEG made allowances or developed contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry.

The inspectors compared the person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the actual work activity time requirements and evaluated the accuracy of these time estimates.

The inspectors verified that PSEG developed an understanding of the plant source term, including knowledge of input mechanisms to reduce the source term. The inspectors also verified that PSEG had a source-term control strategy in place.

The inspectors reviewed specific sources identified by PSEG for exposure reduction actions and the associated priorities PSEG established for implementation of these actions. The inspectors reviewed results achieved for these priorities since the last refueling cycle. During the previous 12 month assessment period, the inspectors verified that source reduction evaluations were completed and actions taken to reduce the overall source-term compared to the previous year.

The inspectors evaluated PSEG performance in this area against the requirements contained in 10 CFR 20.1101.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03 - 1 sample)

a. Inspection Scope

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 self-contained breathing apparatus (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 reviewed the onsite maintenance procedures governing vital component work and verified agreement between PSEG procedures and the SCBA manufacturer's recommended practices.

The inspectors evaluated PSEG performance in this area 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.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator (PI) Verification (71151 - 9 samples)

a. Inspection Scope

The inspectors reviewed PSEG submittals for the Unit 1 and Unit 2 Mitigating Systems cornerstone PIs and the Unit 1 and Unit 2 Barrier Integrity cornerstone PIs discussed below. Data reviewed was for all four quarters of calendar year 2008. Emergency preparedness PI data was reviewed from the second through the fourth quarters of 2008. 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 2 Safety System Functional Failures

Cornerstone: Barrier Integrity

- Unit 1 and 2 Reactor Coolant System (RCS) Unidentified Leak Rate; and
- Unit 1 and 2 RCS Specific Activity

The inspectors reviewed main control room logs and were familiar with leak rate data through plant status reviews required by NRC Inspection Manual Chapter 2515, Appendix D, "Plant Status."

Cornerstone: Emergency Preparedness

- Drill and Exercise Performance (DEP)
- ERO Drill Participation; and
- ANS Reliability.

For the PIs listed above to verify the accuracy of the reported data the inspectors reviewed the PI data, supporting documentation, and the information PSEG reported, from the second quarter through the fourth quarter of 2008.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Review of Items Entered into the Corrective Action Program:

As required 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 notification and attending daily management review committee meetings.

4OA3 Event Followup (71153 - 1 sample)

.1 (Closed) LER 05000272/2008002-00, Missed Containment Spray Valve Surveillance per Technical Specification 4.0.5

On December 9, 2008, with Salem Unit 1 in Mode 1, it was identified that containment spray pressure relief (vacuum breaker) valve 1CS12 could not be located to perform a required post removal as-found surveillance test in accordance with the requirements of the technical specifications (TS) and the ASME OMa-1988, Part 1, Requirements for Inservice Performance Testing of Nuclear Power Plant pressure Relief Devices. The inability to perform the test because of the loss of the 1CS12 resulted in a conservative determination that the valve would not have passed the TS surveillance pressure test.

The valve misplacement was attributed to failure to follow work order instructions to properly retain the valve for testing. The valve testing scope was expanded to the second redundant valve on the tank. The test of the redundant valve concluded that the valve would have performed its function. All pressure relief valves on the containment spray additive tank were replaced with new valves. The failure to comply with TS 4.0.5, "Surveillance Requirements for Inservice Inspection," constituted a violation of minor significance not subject to enforcement action in accordance with NRC's Enforcement Policy. The inspectors reviewed this LER and identified no additional findings of significance or violations of NRC requirements. PSEG documented the cause and corrective actions for this failure in notification 20394390. This LER is closed.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with PSEG security procedures and regulatory requirements related to nuclear plant security. These observations took place during both normal and off-normal plant working hours. These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.2 TI 2515/173, Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative

a. Inspection Scope

On March 9-13, 2009, the inspectors assessed PSEG's ground water protection program to verify that PSEG implemented the voluntary industry Ground Water Protection Initiative (GPI). The GPI was unanimously approved by a formal vote of the Nuclear Energy Institute member utility chief nuclear officers. This established the industry's commitment to implement the initiative. The GPI identifies the actions the industry deemed necessary for implementation of a timely and effective ground water protection program.

The inspectors verified that the following objectives for the GPI were contained in PSEG's program:

- 1.1 Site Hydrology and Geology
- 1.2 Site Risk Management
- 1.3 On-Site Ground Water Monitoring
- 1.4 Remediation Process
- 1.5 Record Keeping
- 2.1 Stakeholder Briefing
- 2.2 Voluntary Communication
- 2.3 Thirty-Day Reports
- 2.4 Annual Reporting
- 3.1 Perform a Self-Assessment
- 3.2 Review the Program Under the Auspices of NEI

Unit 1 Tritium Ground Water Monitoring

The inspectors reviewed PSEG actions regarding the tritium in ground water from the Unit 1 fuel pool, first identified in 2002. The inspectors discussed with PSEG current activity levels of tritium, historical trends, remediation activities and future plans regarding this issue.

b. Findings

No findings of significance were identified.

.3 World Association of Nuclear Operators (WANO) Plant Assessment Report Review

The inspectors reviewed the final report for the WANO plant assessment of the Salem Generating Station, August 2008 evaluation, dated March 2009. No new safety issues were identified.

.4 Emergency Response Organization, Drill/Exercise PI, Program Review

The inspectors performed NRC Temporary Instruction (TI) 2515/175, ensured the completeness of PSEG's completed Attachment 1 from the TI, and forwarded that data to NRC Headquarters.

4OA6 Meetings, Including Exit

On April 3, 2009, the resident inspectors presented the inspection results to Mr. Braun. PSEG acknowledged that none of the information reviewed by the inspectors during the inspection period was proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee personnel:

H. Berrick, Senior Engineer Nuclear, Regulatory Assurance  
L. Cataldo, Nuclear Technical Supervisor, Chemistry  
R. Gary, Radiation Protection Manager  
G. Gellrich, Plant Manager  
M. Gwartz, Director Operations  
E. Keating, Environmental Manager, Regulatory Affairs  
D. McCollum, Component Maintenance Organization  
E. Villar, Licensing Engineer  
H. Miller, Technical Support Specialist  
G. Rich, Chemist  
T. Davis, Environmental Specialist  
L. Rajkowski, Design Engineering Manager  
L. Oberembt, NSSS Systems Manager  
M. Rahmani, Electrical Systems Engineer  
A. Garcia, BoP Systems Engineer  
G. Pawha, Programs Engineer  
P. Quick, Salem EP Manager  
P. Williams, LOR Instructor  
J. Gebely, Fire Department Shift Supervisor  
D. Burgin, Manager Emergency Preparedness  
D. Kabachinski, D&E Coordinator  
C. Banner, Emergency Preparedness Coordinator  
B. Vondrasek, Emergency Preparedness Training Coordinator  
C. Simmermon, Emergency Preparedness Facility and Equipment Coordinator

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened

None

Opened/Closed

05000272/2008002-00	LER	Missed Containment Spray Valve Surveillance per Technical Specification 4.0.5 (Section 4OA3.1)
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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

WC-AA-107, Seasonal Readiness, Rev. 8

EN-SA-403-1001, Salem Rivergrass Predictive Methodology, Rev. 0

#### Notification

20399054

### **Section 1R04: Equipment Alignment**

#### Procedure

S2.OP-SO.DG-0002, 2A Diesel Generation Operation, Rev. 33

#### Drawings

205334            205336

#### Notification

20398093

### **Section 1R05: Fire Protection**

#### Procedures

FRS-II-432, Spent Fuel / Component Cooling Heat Exchanger & Pump Area, Elevation: 84' – 0",  
Rev. 5

FRS-II-433, Auxiliary Feedwater Pumps Area, Elevation: 84' – 0", Rev. 6

FRS-II-445, Diesel Generator Area, Elevations: 100' & 122', Rev. 11

#### Other Document

Controller/Observer Drill Evaluation Form for fire drill conducted March 17, 2009

### **Section 1R06: Flood Protection Measures**

#### Other Documents

S-C-ZZ-SDC-1203, Moderate Energy Break Analysis (Reconstitution), Rev. 3

VTD 317095, Safe Shutdown Equipment List, Salem Generating Station Unit 2, Rev. 1

S-C-ZZ-MDC-0572, Design Pressure Criteria for Salem Generating Station Barriers, Rev. 8

S-C-ZZ-SDC-1419, Salem Generating Station Environmental Design Criteria, Rev. 3

### **Section 1R11: Licensed Operator Regualification Program**

#### Procedures

OP-AA-101-111-1003, Use of Procedures, Rev. 1  
 2-EOP-TRIP-1, Reactor Trip or Safety Injection, Rev. 27  
 2-EOP-TRIP-2, Reactor Trip Response, Rev. 27  
 2-EOP-LOCA-1, Loss of Reactor Coolant, Rev. 28  
 2-EOP-LOCA-2, Post LOCA Cooldown and Depressurization, Rev. 25  
 S2.OP-AB.CHEM-0001, Abnormal Secondary Plant Chemistry, Rev. 20  
 S2.OP-AB.LOAD-0001, Rapid Load Reduction, Rev. 17  
 S2.OP-AB.CW-0001, Circulating Water System Malfunction, Rev. 29  
 SC.OP-AB.ZZ-0003, Component Fouling, Rev. 12  
 SC.OP-SO.ZZ-0003, Component Biofouling, Rev. 7

Notification

20400594

Other Document

SG-0911, Simulator Training Scenario – Biofouling, AB-CHEM, AB-RC-1, LOCA-1 &amp; 2, Rev 1

**Section 1R12: Maintenance Effectiveness**Procedures

S1.OP-AB.115-0003, Loss of 1C 115V Vital Instrument Bus, Rev. 15  
 S2.OP-AB.115-0003, Loss of 2C 115V Vital Instrument Bus, Rev. 13  
 MA-AA-716-210-1001, Performance Centered Maintenance (PCM Templates), Rev. 8  
 MA-AA-716-210, Performance Centered Maintenance (PCM) Process, Rev. 5  
 SC.MD-PM.115-0001, 10/12 kVA Vital Instrument Bus Inverter Preventive Maintenance,  
 Rev. 10  
 S2.OP-SO.115-0013, 2C Vital Instrument Bus UPS System Operation, Rev. 9  
 S1.RA-ST.AF-0007, Inservice Testing Auxiliary Feedwater System Mode 3 Acceptance Criteria,  
 Rev. 5  
 S2.RA-ST.AF-0007, Inservice Testing Auxiliary Feedwater System Mode 3 Acceptance Criteria,  
 Rev. 7  
 S1.OP-ST.AF-0007, Inservice Testing Auxiliary Feedwater Valves Mode 3, Rev. 18  
 ER-SA-310-1009, System Function Level Maintenance Rule Scoping vs. Risk Reference,  
 Rev. 0

Drawings

610575	601241	601242	211370	601402	203007
211370	218681				

Notifications

20399813	20399787	20398811	20398049	203966605	20396663
20402348	20405548	20259635	20365475	20401620	20349198

Orders

60077309	60080560	70093360	70094138	70037915
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Other Documents

Maplewood Testing Services Fuse Failure Analysis, 2B & 2C Vital Bus Inverters, dated January 30, 2009  
 UCI Power Supply Logic Assembly Failure Report, dated March 3, 2009

eSHIP Quarterly System Health Reports for Salem Units 1 and 2 115 VAC systems  
 Salem Maintenance Rule Status & Projections dated March 4, 2009  
 Salem 10CFR 50.65(a)(3) Report for the period 5/1/2005 to 5/1/2007  
 PCM Template for Inverters  $\geq$  5 kVA  
 Salem Inservice Testing Program Basis for 11SW223, Rev. 4  
 AIAA-2000-2933, Impact of Failure of Uninterruptible Power Supplies on Nuclear Power  
 Generating Stations  
 VTD 309945, One Line Diagram 10 kVA Vital Bus UPS, Rev. E  
 VTD 311353, Cyberex 10 kVA Vital Uninterruptible Power Supply, Rev. 9  
 S-C-AF-MDC-0445, Auxiliary Feedwater Hydraulic Analysis, Rev. 2  
 S-C-AF-MDC-0445, Auxiliary Feedwater Hydraulic Analysis, Rev. 3

### **Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

#### Procedures

OP-AA-101-112-1002, On-Line Risk Assessment, Rev. 3  
 ER-AA-321, Administrative Requirements for Inservice Testing, Rev. 9

#### Notifications

20402831	20402620	20401620	20402450	20402443	20402257
20400695	20400979	20400868			

#### Orders

60081623	30130092	80097872
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#### Other Documents

Protected Equipment/Heightened Awareness Log dated February 25, 2009  
 S-C-SW-MDC-1350, Service Water System MODE OPS Analysis, Rev. 8  
 Protected Equipment/Heightened Awareness Log dated February 20, 2009  
 Protected Equipment/Heightened Awareness Log dated January 19, 2009  
 SGS Unit 2 PRA Risk Evaluation Form for work week 904 (January 18 to 24, 2009)  
 Salem Inservice Testing Program Basis for 22AF40  
 OP-AA-101-112-1002, On-Line Risk Assessment, Rev. 3

### **Section 1R15: Operability Evaluations**

#### Procedures

OP-AA-101-112-1002, On-Line Risk Assessment, Rev. 3  
 ER-AA-321, Administrative Requirements for Inservice Testing, Rev. 9  
 S1.OP-ST.SSP-0009, Engineered Safety Features SSPS Slave Relays Test – Train “A”,  
 Rev. 32  
 S1.OP-SO.CBV-0001, Containment Ventilation Operation, Rev. 25  
 S1.OP-AR.ZZ-0003, Overhead Annunciators Window C, Rev. 15  
 S1.OP-SO.RC-0004, Identifying and Measuring Leakage, Rev. 13  
 S1.OP-AB.ANN-0001, Loss of Overhead Annunciators, Rev. 24  
 S1.OP-AR.ZZ-0001, Overhead Annunciators Window A, Rev. 45  
 MA-AA-716-003, Tool Pouch / Minor Maintenance, Rev. 4  
 MA-AA-716-010, Maintenance Planning Process, Rev. 12  
 MA-AA-716,234, FIN Team, Rev. 2  
 MA-AA-716-004, Conduct of Troubleshooting, Rev. 8



Drawings

232306	205227	207634	220061	901167	604567
205234	211661	ABV-B2-40-0002			

Notifications

20402831	20402620	20401620	20402450	20402443	20402257
20401854	20399081	20398760	20398486	20398893	20401670
20401722	20399001	20398208	20394550	20397453	

Orders

30130092	80097872	70094059	30167370	30174094	70086275
30159545					

Other Documents

S-C-SW-MDC-1350, Service Water System MODE OPS Analysis, Rev. 8  
 MPR Associates Failure Analysis of Salem Unit 2 Annunciator Verification System, Rev. 0  
 Tagging Work List 4238897, 12CS2 Containment Integrity, dated January 9, 2009

**Section 1R18: Plant Modifications**Procedures

S1.OP-ST.SSP-0009, Engineered Safety Features SSPS Slave Relays Test – Train “A”,  
 Rev. 33  
 MA-AA-716-100-, Maintenance Alterations Process, Rev. 9  
 LS-AA-104, Exelon 50.59 Review Process, Rev. 5  
 CC-AA-112, Temporary Configuration Changes, Rev. 11  
 CC-AA-112-1001, Temporary Configuration Change Implementation T&RM, Rev. 1  
 MA-AA-716-004, Conduct of Troubleshooting, Revs. 7 and 8  
 CC-AA-309-101, Engineering Technical Evaluations, Rev. 9  
 MA-AA-716-011, Work Execution and Close Out, Rev. 10

Drawing

232011

Notifications

20402554	20407440	20402869	20402937	20402881
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Orders

60081697	70094842
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Other Document

HU-AA-1211, HLA/IPA Briefing Worksheet, Rev. 6

**Section 1R19: Post-Maintenance Testing**Procedures

NC.NA-AP/TS.ZZ-0005,  
 SC.MD-EU.SW-0002, Johnston Service Water Pump Removal and Installation, Rev. 18  
 S2.OP-ST.SW-0006, Inservice Testing - 26 Service Water Pump, Rev. 28

S2.OP-ST.DG-0006, 2A Diesel Generator Auxiliaries – Air Start Valve Test, Rev. 9  
 S2.OP-ST.AF-0003, Inservice Testing – 23 Auxiliary Feedwater Pump, Rev. 44  
 S2.IC-ZZ.AF-0018, Woodward Governor Removal, Replacement and Linkage Adjustment 23  
 Aux Feedwater Pump, Rev. 7  
 CC-AA-309-101, Past Operability of the 13 Aux Feed Pump with Governor Oscillations, Rev. 9  
 S1.OP-ST.AF-0003, Inservice Testing - 13 Auxiliary Feedwater Pump, Rev. 35  
 S2.OP-ST.CH-0004, Chilled Water System - Chillers, Rev. 16

Notifications

20394073      20406640

Orders

60079798      30095033      50118591      30060411      60081911      50119380  
 70094466

**Section 1R22: Surveillance Testing**Procedures

S2.IC-CC.RCP-0028, 2FT-512 #21 Steam Generator Steam Flow Protection Channel I, Rev. 30  
 SC.OP-PT.CA-0001, SBO Diesel Control Air Compressor Test, Rev. 12  
 S2.OP-ST.AF-0003, Inservice Testing – 23 Auxiliary Feedwater Pump, Rev. 44  
 S2.OP-SO.CVC-0023, CVCS Cross-Connect Alignment to Unit 1, Rev. 8  
 S2.OP-ST.CVC-0007, Inservice Testing Chemical and Volume Control Valves Modes 5-6,  
 Rev. 18  
 S2.OP-SO.CVC-0001, Charging, Letdown, and Seal Injection, Rev. 32  
 S2.OP-SO.CVC-0002, Charging Pump Operation, Rev. 37  
 S2.OP-ST.CVC-0006, Inservice Testing Chemical and Volume Control Valves Modes 1-6,  
 Rev. 22  
 S1.OP-ST.DG-0003, 1C Diesel Generator Surveillance Test, Rev. 42  
 ER-AA-321, Administrative Requirements for Inservice Testing, Rev. 9

Drawings

205228      205325      205234      205334      205328      205342

Notifications

20399040      20406205      20406540      20403776      20403807      20403772  
 20403730      20403654      20382308      20403653

Orders

30174749      50118220      80094814      70088618

Other Documents

VTD 108170, Rockwell Right Angle Stem Valve, Rev. 0  
 VTD 324339, Anchor/Darling Glove Valve, Rev. 1  
 VTD 325191, Velan Bolted Cover Swing Check Valve, Rev. 1  
 VTD 325188, Velan Bolted Bonnet Gate Valve, Rev. 1  
 NRC Regulatory Issue Summary 2006-17, NRC Staff Position on the Requirements of 10 CFR  
 50.36, "Technical Specifications," Regarding Limiting Safety System Settings During  
 Periodic Testing and Calibration of Instrument Channels

**Section 1EP6: Drill Evaluation**

Procedure

Salem Event Classification Guide

Notifications

20403765    20397972    20406179    20406199    20406179

Other Documents

PSEG Nuclear Salem – Drill (03/17/09) Scenario Synopsis

PSEG Nuclear Salem – Drill (03/17/09) Major Events Timeline

**Section 2OS2: ALARA Planning and Controls**

Other Documents

S1R19 Outage Dose & Time Performance

Salem Unit 2 16<sup>th</sup> Refueling Outage & Steam Generator Replacement Project Radiological Performance Report

**Section 2OS3: Radiation Monitoring Instrumentation**

Procedure

RP-AA-825, Rev 2, Maintenance, Care and Inspection of Respiratory Protective Equipment

Other Documents

Eberline Gamma Calibrator S-783 Source Check Readings, 3/7/07

3 Ci Source # 7001 Certification, 11/10/08

400 Ci Source # 9038 Certification, 8/6/08

100 mCi Source Certification, 9/4/08

K&S Associates Calibration Report, 10/26/07

Municipal Emergency Services Scot PosiChek3 visual/functional test results 11/27/08 & 12/4/08

Lesson Plans: NRP1009BD05, Inspect/Repair Respiratory Protection Equipment

NRP2007BG02, Refill SCBA Bottles

NRP3010BA12, Operate Portable Breathing Air Systems

**Section 1EP2: Alert and Notification System (ANS) Evaluation**

American Signal Corporation Final REP-10 Design Review Report, PSEG Salem and Hope Creek Generating Stations

EP-AA-121, Emergency Response Facilities and Equipment Readiness, Revision 0

EP-AA-121-1002, PSEG Alert Notification System (ANS) Program, Revision 0

EP-AA-121-1004, PSEG ANS Corrective Maintenance, Revision 0

EP-AA-121-1005, PSEG ANS Preventive Maintenance Program, Revision 1

EP-AA-121-1006, PSEG ANS Siren Monitoring, Troubleshooting, and Testing, Revision 0

ANS-related Condition Reports, dated January 2008 - March 2009

**Section 1EP3: Emergency Response Organization (ERO) Staffing and Augmentation System**

PSEG Nuclear LLC Emergency Plan, Revision 62

EP-AA-121-1001, Automated Call-Out System Maintenance  
NC.EP-AP.ZZ-1011 (Z), Maintenance of Emergency Response Organization, Revision 9  
EPIP 204S, Emergency Response Callout/Personnel Recall, Revision 70  
EPIP 204H, Emergency Response Callout/Personnel Recall, Revision 70  
January Monthly Callout Check (pagers)  
February Monthly Callout Check (pagers)  
ERO Roster  
ERO Assignment  
ERO Qualifications

#### **Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes**

PSEG Nuclear LLC Emergency Plan, Revision 62  
EP-AA-120, Emergency Plan Administration, Revision 0  
EP-AA-120-1001, 10CFR50.54(q) Change Evaluation, Revision 0  
EP-AA-120-1003, Emergency Preparedness Document Processing, Revision 0  
EP-AA-120-1005, Emergency Plan and Event Classification Guide Content/Format, Revision 1  
EP-AA-124, Inventories and Surveillances, Revision 0  
EP-AA-124-1001, Facilities Inventories and Equipment Tests, Revision 0  
LS-AA-104, Exelon 50.59 Review Process, Revision 5  
LS-AA-104-1000, 50.59 Resource Manual, Revision 4  
LS-AA-104-1007, Emergency Plan Guidance for Salem and Hope Creek Stations, Revision 0  
Emergency Preparedness 10CFR50.54(q) screenings performed between May 2008 – March 2009

#### **Section 1EP5: Correction of Emergency Preparedness Weaknesses**

LS-AA-120, Issue Identification and Screening Process, Revision 8  
LS-AA-125, Corrective Action Program (CAP) Procedure, Revision 12  
EP-AA-122, Drills and Exercises, Revision 0  
EP-AA-122-1001-F10, Drill and Exercise Post Event Critique and Report Development Guidance, Revision 0  
EP-AA-121-1001, Automated Call-Out System Maintenance, Revision 0  
Nuclear Oversight Audits:  
    NOSA-HPC-08-02  
    NOSA-HPC-07-04  
    NOSA-HPC-06-03  
Event Follow-up Report for the Hope Creek August 2008 Unusual Event Declaration  
ERO Common Cause Analysis Report  
ERO Common Cause Analysis Report, Revision 1  
Emergency Preparedness Drill Reports, dated January 2008 – March 2009  
Emergency Preparedness-related Condition Reports, dated January 2008 – March 2009

#### **Section 4OA1: Performance Indicator Verification**

##### Other Documents

Safety System Functional Failures (PWR), 4th Quarter/2008  
Reactor Coolant System Activity (PWR), 4th Quarter/2008  
LS-AA-2001, Collecting and Reporting of NRC Performance Indicator Data, Revision 10  
LS-AA-2001, Qualification of NRC PI Data Steward, Attachment 2, Revision 10

EP-AA-125-1001, EP Performance Indicator Guidance, Revision 0  
DEP PI data, April 2008 – December 2008  
ERO Drill Participation PI data, April 2008 - December 2008  
ANS Reliability PI data, April 2008 - December 2008

**Section 40A5: Other Activities**

Procedures

CY-AA-170-400, Rev 3, Radiological Ground Water Protection Program  
ER-AA-5400, Rev 1, Buried Piping Program Guide  
ER-AA-5400-1002, Rev 1, Buried Piping Examination Guide  
SH.RA-IS.ZZ-0109(Q), Rev 4, Storage Tank Integrity Testing  
OP-SH-111-101-1001, Rev 1, Use and Development of Operating Logs  
LS-AA-125, Rev 12, Corrective Action Program Procedure  
CY-AA-170-4000, Rev 6, Radiological Ground Water Protection Program Implementation  
CY-AA-170-4160, Rev 1, Station RGPP Controlled Sample Point Parameters  
Maplewood Testing Services, Work Instruction HBLF-68, Groundwater Sampling Procedure  
CY-AA-170-000, Rev 3, Radioactive Effluent and Environmental Monitoring Programs  
RP-AA-228, Rev 0, 10CFR50.75(G) and 10CFR72.30(D) Documentation Requirements  
NC.CH-AP.ZZ-8011(Q), Rev 1, Unplanned Radiological Effluent Releases

Notifications

20399501      20399800      20399730      20399061      20397273      20398952

Other Documents

Preliminary Assessment and Site Investigation Work Plan – Salem Generating Station,  
April 2006  
Site Investigation Report, Salem Generating Station, July 2006  
Updated Final Safety Analysis Report, Section 2.4 – Hydrology  
American Nuclear Insurers Nuclear Liability Insurance Inspection – Report L071108.230,  
Salem/Hope Creek Nuclear Power Plant, July 23, 2008  
Memorandum from E. Keating to J. Shelton, March 6, 2009, Subject: NEI 07-07 Objective 2.1.a  
and 2.1.b  
Off-Site Dose Calculation Manual, Rev 21  
CY-AA-170-100, Rev 2, Radiological Environmental Monitoring Program  
Check-In Self-Assessment, Tritium Ground Water, SAP Order # 70087553  
LA-AA-126-1005, Rev 3, Check-In Self-Assessment

**LIST OF ACRONYMS**

AFW	Auxiliary Feedwater
AFWST	Auxiliary Feedwater Storage Tank
ANS	Alert and Notification System
ASME	American Society of Mechanical Engineers
AVS	Annunciator Verification System
CCHX	Component Cooling Heat Exchanger
CFR	Code of Federal Regulations
CS	Containment Spray
DEP	Drill and Exercise Performance
EAL	Emergency Action Level
EDGs	Emergency Diesel Generators
EOF	Emergency Offsite Facility
EP	Emergency Preparedness
EPIP	Emergency Plan Implementing Procedure
ERO	Emergency Response Organization
GPI	Ground Water Protection Initiative
IMC	Inspection Manual Chapter
IR	Incident Report
LER	Licensee Event Report
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicator
PORV	Power Operated Relief Valve
PS	Planning Standard
PSEG	Public Service Enterprise Group Nuclear LLC
PWST	Pure Water Storage Tank
RCS	Reactor Coolant System
RWST	Refueling Water Storage Tank
SCBA	Self-Contained Breathing Apparatus
SSPS	Solid State Protection System
SW	Service Water
SWP	Service Water Pump
TI	Temporary Instruction
TS	Technical Specification
TSC	Technical Support Center
WANO	World Association of Nuclear Operations
WO	Work Order