



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

January 30, 2019

Mr. Peter P. Sena, III
President and Chief Nuclear Officer
PSEG Nuclear LLC - N09
P.O. Box 236
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2 –
INTEGRATED INSPECTION REPORTS 05000272/2018004 AND
05000311/2018004

Dear Mr. Sena:

On December 31, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Salem Nuclear Generating Stations (Salem) Units 1 and 2. On January 10, 2019, the NRC inspectors discussed the results of this inspection with Mr. Charles McFeaters, Salem Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

No NRC-identified or self-revealing findings were identified during this inspection. NRC inspectors documented one PSEG-identified violation which was determined to be Severity Level IV in this report. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at Salem

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Fred L. Bower, III, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos.: 50-272 and 50-311
License Nos.: DPR-70 and DPR-75

P. Sena

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Enclosure:
Inspection Report 05000272/2018004 and
05000311/2018004

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SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2 –
 INTEGRATED INSPECTION REPORT 05000272/2018004 AND
 05000311/2018004 DATED JANUARY 30, 2019

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Nos. 50-272 and 50-311

License Nos. DPR-70 and DPR-75

Report Nos. 05000272/2018004 and 05000311/2018004

Enterprise Identifier: I-2018-004-0060

PSEG: PSEG Nuclear LLC PSEG

Facility: Salem Nuclear Generating Station (Salem) Units 1 and 2

Location: Hancocks Bridge, NJ 08038

Dates: October 1, 2018 through December 31, 2018

Inspectors: P. Finney, Senior Resident Inspector
A. Ziedonis, Resident Inspector
J. Furia, Senior Health Physicist
J. Schoppy, Senior Reactor Inspector
P. Ott, Operations Engineer
J. DeBoer, Emergency Preparedness Inspector
M. Modes, Senior Reactor Inspector
M. Hardgrove, Project Engineer
B. DeBoer, Health Physicist

Approved By: Fred L. Bower, III, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring PSEG's performance at Salem Units 1 and 2 by conducting the baseline inspections described in this report in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. NRC identified and self-revealing findings, violations, and additional items are summarized in the table below. A PSEG-identified non-cited violation is documented in the following Inspection Results sections of the report: 71152.

List of Findings and Violations

No findings or more-than-minor violations were identified.

Additional Tracking Items

Type	Issue number	Title	Inspection Results Section	Status
License Event Report (LER)	05000272/2016-006-01	Technical Specification (TS) for Containment Integrity not met	71153	Closed

PLANT STATUS

Unit 1 began the inspection period at rated thermal power. The unit remained at or near rated thermal power for the remainder of the inspection period.

Unit 2 began the inspection period at rated thermal power. On October 11, 2018, the Salem Unit 2 reactor was manually tripped from 13 percent power as part of a pre-planned evolution to commence the 2R23 refueling outage. A reactor startup was commenced on November 12, 2018, and the unit reached rated thermal power on November 16, 2018. There were no other operational power changes of regulatory significance for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess PSEG's performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather (1 Sample)

The inspectors evaluated readiness for seasonal extreme weather conditions prior to seasonal cold temperatures.

71111.04 - Equipment Alignment

Partial Walkdown (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Unit 2, Service water (SW) following degraded vent and drain repairs on October 25, 2018
- (2) Unit 2, Shutdown cooling during core reload on October 31, 2018
- (3) Unit 2, Safety injection system (post outage) on November 13, 2018

Complete Walkdown (1 Sample)

The inspectors evaluated system configurations during a complete walkdown of the Unit 2 auxiliary feedwater system during the week of November 11, 2018.

71111.05A/Q - Fire Protection Annual/Quarterly

Quarterly Inspection (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Unit 1, Electrical penetration areas during and following chill water pump lube on October 5, 2018
- (2) Unit 1, 480 V switchgear room while controlled as a fire risk management area on November 5, 2018
- (3) Unit 1, 4160 V switchgear room while controlled as a fire risk management area on November 6, 2018
- (4) Unit 2, Containment during core alterations on November 1, 2018
- (5) Unit 2, Emergency diesel generator (EDG) and day tank areas on November 9, 2018

71111.07 - Heat Sink Performance

Heat Sink (1 Sample)

The inspectors evaluated PSEG's monitoring and maintenance of the 21 component cooling heat exchanger on October 17, 2018.

71111.08 – Inservice Inspection Activities (1 Sample)

The inspectors evaluated pressurized water reactor non-destructive testing by reviewing the following examinations from October 22 to 30, 2018:

- (1) Ultrasonic Testing
 - a. Containment liner S2-KNUCKLE-78
 - b. Vessel nozzle 29 RC 1220-1
 - c. Vessel nozzle 29 RC 1210-1
- (2) Visual Examination
 - a. Containment liner S2-KNUCKLE-78
 - b. Residual heat removal piping exterior surfaces
- (3) Liquid Penetrant Examination
 - a. Residual heat removal piping exterior surfaces

The inspectors evaluated the PSEG boric acid control program performance.

71111.11 - Licensed Operator Regualification Program and Licensed Operator Performance

Operator Regualification (1 Sample)

The inspectors observed and evaluated a crew of licensed operators in the plant's simulator during licensed operator regualification training that involved a condensate pump motor fire, loss of one condensate pump, and a steam generator tube leak that further degraded into a tube rupture, on December 3, 2018.

Operator Performance (2 Samples)

The inspectors observed a Unit 2 reactor shutdown and cooldown during a refueling outage on October 11, 2018.

The inspectors observed the Unit 2 post-refueling outage reactor start-up on November 12, 2018.

71111.11 - Licensed Operator Regualification Program and Licensed Operator Performance

Operator Regualification Exam Results (Annual) (1 Sample)

The inspectors reviewed and evaluated regualification examination results on October 19, 2018.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Common, valve and damper linkages on October 9, 2018
- (2) Unit 2, EDG fuel oil leakage on November 9, 2018

Quality Control (1 Sample)

The inspectors evaluated maintenance and quality control activities associated with the following equipment performance issues:

- (1) Common, reactor coolant pump seal injection flexitallic gasket on November 9, 2018

71111.13 - Maintenance Risk Assessments and Emergent Work Control (3 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Common, secondary chemistry leak on 1H 4KV non-vital bus and actuation of 22 auxiliary feedwater (AFW) pump during calibration on October 16, 2018

- (2) Unit 2, Reactor coolant system (RCS) drain down to mid loop for RCS vacuum fill resulting in a planned Orange risk condition on November 4, 2018
- (3) Unit 2, TS 3.4.0.b for 24 and 25 containment fan coil units (CFCU) in operation during transition to mode 4 on November 6, 2018

71111.15 - Operability Determinations and Functionality Assessments (5 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Unit 1, 15 CFCU bearing packing break-in run on November 19, 2018
- (2) Unit 1, Main turbine valve testing overdue on November 28, 2018
- (3) Unit 2, EDG Appendix R transfer switch functionality on October 23, 2018
- (4) Unit 2, 'A' SEC following test failure on October 23, 2018
- (5) Unit 2, 2 Bay SW motor bearing cooler orifice plate degraded on November 27, 2018

71111.18 - Plant Modifications (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Unit 2, Advanced digital feedwater control system operation changes on October 11, 2018
- (2) Unit 2, CFCU SW valve fill line on November 8, 2018

71111.19 - Post Maintenance Testing (6 Samples)

The inspectors evaluated post maintenance testing for the following maintenance/repair activities:

- (1) Unit 1, 13 component cooling water pump outboard pump and oil seal replacement on October 5, 2018
- (2) Unit 1, 12 chiller following freeze penetration trip on October 28, 2018
- (3) Unit 1, 11 chiller following repairs to fix refrigerant leak on November 2, 2018
- (4) Unit 1, 2CC31, component cooler water heat exchange outlet valve to spent fuel pit cooling after motor operated valve stalled on November 2, 2018
- (5) Unit 2, 2C EDG fuel oil leak repair on November 8, 2018
- (6) Unit 2, PR2 pressurizer relief valve leakby on November 19, 2018

71111.20 - Refueling and Other Outage Activities (1 Sample)

The inspectors evaluated Unit 2 refueling outage activities from October 11, 2018, to November 13, 2018.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (3 Samples)

- (1) Unit 2, 2A EDG endurance run and hot restart on October 2, 2018
- (2) Unit 2, Reactor trip bypass breaker testing on October 21, 2018
- (3) Unit 2, "D" Gamma metrics surveillance test on October 25, 2018

Inservice (2 Samples)

- (1) Unit 2, 23 Turbine-driven AFW full flow testing on October 11, 2018
- (2) Unit 2, 22 Safety injection pump full flow testing on October 21, 2018

Reactor Coolant System Leak Detection (1 Sample)

- (1) Unit 2, Inadvertent draining of reactor coolant from letdown system on December 17, 2018

Containment Isolation Valve (2 Samples)

- (1) Reactor coolant pump seal water injection line valve, 21CV99, on October 17, 2018
- (2) Reactor coolant pump seal water injection line valve, 24CV99, on October 17, 2018

71114.04 - Emergency Action Level and Emergency Plan Changes (1 Sample)

The inspectors verified that the changes made to the emergency plan were done in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(q)(3), and any change made to the Emergency Action Levels, Emergency Plan, and its lower-tier implementing procedures, had not resulted in any reduction in effectiveness of the Plan. This evaluation does not constitute NRC approval.

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazards Control and Work Coverage (1 Sample)

The inspectors evaluated in-plant radiological conditions and performed independent radiation measurements during facility walkdowns and observation of radiological work activities. The inspectors examined the physical controls for selected high radiation areas, locked high radiation areas, and very high radiation areas to verify conformance with the occupational performance indicator (PI).

Radiation Worker Performance and Radiation Protection Technician Proficiency (1 Sample)

The inspectors evaluated radiation worker performance with respect to radiation protection work requirements. The inspectors evaluated radiation protection technicians in performance of radiation surveys and in providing radiological job coverage.

71124.02 - Occupational As Low As Reasonably Achievable (ALARA) Planning and Controls

Implementation of ALARA and Radiological Work Control (1 Sample)

The inspectors reviewed radiological work controls and ALARA practices during the observation of in-plant work activities. The inspectors reviewed the results achieved against the intended ALARA estimates to confirm adequate implementation and oversight of radiological work controls.

Radiation Worker Performance (1 Sample)

The inspectors observed radiation worker and radiation protection technician performance during radiological work to evaluate worker ALARA performance according to specified work controls and procedures.

OTHER ACTIVITIES – BASELINE

71003 - Post License Renewal Inspection (Unit 2, Phase II) (5 Samples)

The inspectors verified PSEG's implementation of the portion of the Inservice Inspection Program credited with managing the aging of the:

- (1) Containment liner (NUREG 1201, Appendix A, Commitment 28)
- (2) External surfaces monitoring program applied to the residual heat removal system piping surfaces (NUREG 1201, Appendix A, Commitment 24)
- (3) Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements program (NUREG 1201, Appendix A, Commitment 38)
- (4) Selective Leaching program (NUREG 1201, Appendix A, Commitment 21), and
- (5) Firewater System aging management program (NUREG 1201, Appendix A, Commitment 16)

71151 - Performance Indicator Verification

The inspectors verified PSEG's performance indicators submittals listed below for the period from September 2017 through September 2018. (6 Samples)

- (1) Unit 1, Emergency AC power system (MS06)
- (2) Unit 2, Emergency AC power system (MS06)
- (3) Unit 1, High pressure injection system (MS07)
- (4) Unit 2, High pressure injection system (MS07)
- (5) Unit 1, Cooling water system (MS10)
- (6) Unit 2, Cooling water system (MS10)

71152 - Problem Identification and Resolution

Semiannual Trend Review (1 Sample)

The inspectors reviewed the PSEG's corrective action program for trends that might be indicative of a more significant safety issue.

71153 Follow-up of Events and Notices of Enforcement Discretion

Licensee Event Reports (1 Sample)

The inspectors evaluated the following licensee event reports which can be accessed at <https://lersearch.inl.gov/LERSearchCriteria.aspx>:

- (1) LER 05000272/2016-006-01 "Technical Specification (TS) for Containment Integrity Not Met" (ADAMS accession: ML17319A152)

The circumstances surrounding this LER are documented in Inspection Report 05000272/2017-003 Section 1R15.2.

INSPECTION RESULTS

Licensee Identified Non-Cited Violation	71152
This violation of very low safety significant was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a Non-Cited Violation, consistent with Section 2.3.2 of the Enforcement Policy.	
<p>Violation: Salem Nuclear Generating Station, Unit No. 1 Renewed License No. DPR-70, Condition 2.C.11.b.3 and Salem Nuclear Generating Station, Unit No. 2 Renewed License No. DPR-75, Condition 2.C.27.b.3 requires, in part, that no disbursements or payments from the [decommissioning] trust shall be made by the trustee until the trustee has first given the NRC 30 days' notice of the payment.</p> <p>Contrary to the above, on occasions between 2001 and 2015, disbursements from the Hope Creek Generating Station decommissioning trust were made by the trustee and the trustee had not first given the NRC 30 days' notice of the payment. Specifically, in 2001, 2012, and 2015, PSEG directed the Bank of New York Mellon (the trustee of the decommissioning trust for Hope Creek Generating Station) to disburse payments equaling \$240,449.04 for decommissioning cost estimates. However, PSEG failed to notify the NRC of these disbursements until October 19, 2018 (ML18295A023).</p> <p>Significance/Severity: This issue is considered within the traditional enforcement process because the failure to inform the NRC prior to disbursing decommissioning funds impacts the ability of the NRC to perform its regulatory oversight function. As noted in Section 2.2.4 of the NRC Enforcement Policy, such violations are dispositioned using traditional enforcement.</p> <p>The inspectors evaluated the violation in accordance with the NRC Enforcement Policy and determined that it is appropriately characterized at Severity Level IV (SL IV) because it is similar to the SL IV example violation 6.9.d.7, describing a licensee's failure to provide or make a 15-day or 30-day written report or notification that does not impact the regulatory response by the NRC. For this Salem issue, the inspectors determined that the disbursements were made for acceptable decommissioning expenses and would not have necessitated further inquiry or caused the NRC to object to the payments.</p> <p>Corrective Action Reference: Notification 20808984</p>	

Observation	71152 Semiannual Trend Review
<p>The inspectors evaluated a sample of notifications (NOTFs) over the past two quarters to identify trends that might indicate the existence of a more significant safety issue, and to identify potential adverse trends in systems, structures, and components (SSCs). The inspectors determined that PSEG personnel were appropriately identifying trends. During the inspection, the inspectors identified a potential adverse trend in procedure use and adherence across several different site departments based on the following minor issues:</p> <p>August 24 - Supplemental workers signed off on a leak injection step for completion of an item that did not exist. (20802380)</p> <p>August 27 - Mechanical technicians used the wrong procedure section and therefore a higher, incorrect torque value during Fuel Handling ventilation damper assembly that caused the center bar to shear and eject under spring force and required rework. (20803019)</p> <p>September 13 - An engineer manipulated a Feedwater regulating valve (FRV) linkage arm that had misaligned without a procedure. (20801852)</p> <p>September 19 – Instrument and control (I&C) technicians installed a shaft collar on a FRV that was not part of temporary configuration change package instructions. (20804188)</p> <p>October 15 - I&C technicians incorrectly justified the “N/A” of a step given plant conditions that resulted in the automatic start of the 22 AFW pump. (20807482)</p> <p>October 25 - Supplemental workers incorrectly “N/A’d” parts of a procedure that resulted in over-torque of a CCW motor-operated valve during a subsequent stroke and required rework. (20808333)</p> <p>October 31 - Supplemental workers installed a Spent Fuel Pool cooling jumper on the incorrect side of a breaker connection and required rework. (20809695)</p> <p>November 7 - During the 2R23 1000 psig walk-down, an active leak was identified at the 24 reactor coolant pump seal water injection bypass line vent valve. PSEG attributed the apparent cause to inadequate procedure use and adherence. (20810767)</p> <p>November 20 - Fire protection operators partially performed a two-part step that resulted in six fire dampers tripping closed and required fire watches for the impairments. (20812894)</p> <p>December 12 - When placing a Unit 2 cation bed demin in service for lithium control in accordance with the system operating procedure, an equipment operator incorrectly manipulated a vent valve that transferred 1100 gallons of RCS to the waste holdup system at a rate of 84 gpm. The valve was reclosed approximately 13 minutes later. (20814748)</p> <p>The inspectors noted that the issues applied to a number of site departments and therefore warranted additional attention. PSEG documented this in their CAP as NOTF 20816452 for station review.</p>	

EXIT MEETINGS AND DEBRIEFS

- On October 30, 2018, the inspector presented the inservice inspection and post license renewal results to PSEG staff and managers. The inspector verified that no proprietary information was retained.
- On November 2, 2018, the inspector presented the radiation safety inspection results to Mr. C. McFeaters, Salem Vice President, and other members of the licensee staff. The inspectors confirmed that proprietary information was controlled to protect from public disclosure.
- On January 10, 2019, the inspectors presented the quarterly resident inspector inspection results to Mr. Charles McFeaters, Salem Vice President, and other members of the PSEG staff.

DOCUMENTS REVIEWED**71111.01 - Adverse Weather Protection**Notifications (*initiated in response to inspection)

20799478*

20816657*

Procedures

SC.OP-AM.FLX-0050, Predicted Hurricane Storm Surge, Revision 2

71111.04 - Equipment AlignmentCompleted Surveillances

S2.OP-ST.AF-0005, Inservice Testing Aux Feed Water Valves Modes 4-6, performed 11/7/18

S2.OP-ST.AF-0006, Inservice Testing Aux Feed Water Valves, performed 11/13/18

Drawings

205332, Residual Heat Removal, Revision 38

205333, Spent Fuel Cooling, Revision 29

205336, No. 2 Unit Auxiliary Feedwater, Revision 53

Miscellaneous

S2 Equipment Off Normal Report, dated 11/16/18

S2 Equipment Off Normal Tagged Report, dated 11/16/18

Notifications (*initiated in response to inspection)

20762074	20810547*	20810906	20812862*
20799420	20810656	20811042	20813027*
20809720	20810724*	20812859*	
20809715*	20810905	20812860*	

Procedures

S2.OP-SO.AF-0001, Auxiliary Feedwater System Operation, Revision 43

Work Orders

30177053	30285580	30310961	50154569
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71111.05 - Fire ProtectionCalculations

S-1-FP-FDC-2202, Combustible Loading Calculation for Fire Area 1FA-AB-84A, Revision 0

S-1-FP-FDC-2199, Combustible Loading Calculation for Fire Area 1FA-AB-64A, Revision 0

S-2-FP-FDC-2254, Combustible Loading Calculation for Fire Area 2FA-DG-100D, Revision 0

Miscellaneous

FP-SA-1531, Salem Pre-Fire Plan - U/1 4160V Switchgear & Battery Rooms El. 64, Revision 0

FP-SA-1541, Salem Pre-Fire Plan - U/1 460V Switchgear Rooms & Corridor El. 84, Revision 0

FP-SA-2555, Salem Pre-Fire Plan - U/2 Diesel Generator Area El. 100, Revision 0

Notifications (*initiated in response to inspection)

20799936* 20811947* 20811968* 20812729*

Procedures

FP-AA-011, Control of Transient Combustible Material, Revision 5

FP-SA-003, Actions for Inoperable Fire Protection - Salem Station, Revision 5

SC.FP-SV.ZZ-0058, Inspection of Class 1 Fire Doors and Safety Related Areas for Transient Combustibles, Revision 22

Work Orders

30270183

30275135

71111.07 - Heat Sink PerformanceNotifications

20807809

20808232

Work Orders

30310512

7111108P – Inservice Inspection and 71003 - Post-Approval Site Inspection For License RenewalMiscellaneous

AREVA Inc. Engineering Information Record Document No.: 51 - 9266511 - 001 Salem 2R22 Degradation Assessment – Spring 2017

AREVA Inc. Engineering Information Record Document No.: 51 - 9272400 - 000 Salem Unit 2 Steam Generator Condition Monitoring for 2R22 and Final Operational Assessment for Cycles 23, 24, and 25

FASA / FBM Report, LS-AA-126-F4 Rev 0, 70162988, 09/30/2014, "Inservice Inspection (ISI) Program FASA, Station: PSEG Nuclear (Salem and Hope Creek)" (Focused Area Self-Assessment)

Order 000070195677 Operation 0020 Confirmation 0014792464 Confirmation counter 00000002, "Review of NRC Information Notice 17-01 indicates low risk of CRDM Housing Vent Plug leakage at Salem"

Ultrasonic Test Report, 50182341, Component 4-PS-1211-23

Steam Generator Degradation & Operational Assessment Validation Technical Evaluation Order 80122740

Worksheet for Selection of Encoded vs. Non-Encoded UT Technology for Dissimilar Metal Weld Examination, Weld 29-RC-1210-1 and 29-RC-1220-1

Order 000070190624 Operation 0060 Confirmation 0014888704, "Add RCS leakage to CRDM Cable Insp Scope"

PSEG NUCLEAR L.L.C Salem Common Engineering Services ER-AP-330-1001 - Revision 5 Alloy 600 Management Plan

PSEG NUCLEAR L.L.C Salem Common Engineering Oversight ER-AP-331 - Revision 7 BORIC Acid Corrosion Control (Bacc) Program

CISI-SC-LTP2-TOC Revision 2, "Salem Generating Station Units 1 & 2 Containment Inservice Inspection (CISI) Program Plan Second Ten-Year Inspection Interval"

PSEG NUCLEAR L.L.C Salem and Hope Creek Common Corporate Engineering Services
 ER-AA-330 - Revision 12 Conduct Of Inservice Inspection Activities
 PSEG NUCLEAR L.L.C Salem Common Equipment Reliability Program Engineering
 ER-AP-333, Revision 1 Pressurized Water Reactor Vessel Internals Aging Management
 Program
 ER-AA-330-007 Revision 9, PSEG NUCLEAR L.L.C. Visual Examination Of Section Xi Class
 Mc Surfaces And Class CC Liners
 ER-AA-330-005 Revision 10, PSEG NUCLEAR L.L.C. Visual Examination Of Section Xi Class
 CC Concrete Containment Structures
 NRC to PSEG Nuclear LLC, April 18, 2013, Salem Nuclear Generating Station, Unit No.2 -
 Safety Evaluation Of Relief Request No. S2-14r-123 Regarding The Fourth 10-Year
 Inservice Inspection Interval (TAC NO. ME8847)
 ER-AA-330-005 Revision 10 Visual Examination Of Section Xi Class Cc Concrete Containment
 Structures
 Report No. 0901179.404, Revision 0, Project No. 0901179, April 2013, Risk-Informed Inservice
 Inspection Interval Evaluation for Salem Generating Station Unit 2
 Liquid Penetrant Examination, 573390/50182341
 Multiple Weld History Record: 80418, Order #: 60135577, S2-KNUCKLE-78 WELD BUILDUP
 Multiple Weld History Record: 80411, Order #: 60135577, WELD I.D.: S2-60135577-TEST
 BOX-FW1 TO FW4
 Ultrasonic Examination Report S2-004620, Weld 29-RC-1220-1
 Ultrasonic Examination Report S2-004630, Weld 29-RC-1210-1
 Commercial Change Package 80121603 "Salem Switchyard De-watering project – Mechanical
 & Civil/Structural Scope"
 Commercial Change Package 80121604 "Salem Switchyard De-watering project – Electrical
 Scope"
 Multiple Weld History Record: 80411, Weld I.D.: S2-60135577-Test Box-FW1 TO FW4*,
 SALEM 2 CONTAINMENT 100' Liner Plate Repair
 Multiple Weld History Record: 80418, Weld I.D.: S2-Knuckle-78 Weld Buildup, Salem 2
 Containment 78' Knuckle Plate

Drawings

203000 S 8789-70 No. 1 and No. 2 Units Generators and Main Transformers One Line Control
 205420 A 8765-34 Salem Nuclear Switching Station, 500KV Switchyard, Cable Trench,
 Conduits, and Lighting
 264901 A 2126-2 13KV South Substation Bus Plan

Notifications

20796846	20795460	20740531	20800332
20806851	20794692	20806851	20799892
20797354	20793553	20796846	20793715
20740531	20793263	20808113	20793189
20788433	20788164	20808656	20793191
20751387	20786449	20807736	20791975
20751323	20783302	20807735	20784509
20751220	20790836	20807503	20808931
20750086	20790707	20750603	20807503
20750084	20790716	20806424	20808186
20802005	20797354	20796243	20807460

Work Orders

70201609	60138288	60110275	60121591
70200947	60138233	30253047	60108481
60136309	60139561	60110254	60100159
60137335	60109316	60110581	60114932
60137909	60113259	60114132	

71111.11 - Licensed Operator Regualification ProgramProcedures

NF-AP-543, Beacon Estimated Critical Condition (ECC) Calculation, Revision 8
 S2.OP-IO.ZZ-0003, Hot Standby to Minimum Load, Revision 46
 S2.OP-IO.ZZ-0103, Hot Standby to Minimum Load Administrative Requirements, Revision 13
 SC.RE-IO.ZZ-0002, Low Power Physics Testing and Power Ascension, Revision 20
 SC.RE-RA.ZZ-0002, Inverse Count Rate Ratio During Reactor Startup, Revision 12
 SC.RE-ST.ZZ-0013, Initial Criticality and Testing Advanced Digital Reactivity Computer, Revision 22

71111.12 - Maintenance EffectivenessCompleted Surveillances

S2.OP-ST.DG-0005, 22 Fuel Oil Transfer System Operability Tes, performed 11/10/18

Notifications (*initiated in response to inspection)

20699313	20808653	20776183	20808971
20710872	20764722	20803845	20810709
20715499	20765029	20804790	20813025*
20762826	20769477	20804810	

Work Orders

30206495	30219066	30302710	70203109
30206906	30219333	60127383	
30206922	30220323	60137362	

71111.13 - Maintenance Risk Assessments and Emergent Work ControlCalculations

S-C-RC-MDC-1911, Analysis of RCS Fill and Vent Piping Modification, Revision 0

Evaluations

80118806, Outage 2R23 Shutdown Safety Evaluation and Approval, dated 9/29/18

Notifications (*initiated in response to inspection)

20799942*	20807480	20810744*
20807482	20810724*	20811624
20807077	20810725*	20813929*

Procedures

OP-AA-108-116, Protected Equipment Program, Revision 12

S2.OP-SO.RC-0002, Vacuum Fill of the RCS, Revision 37

S2.OP-SO.RC-0006, Draining the Reactor Coolant System Less Than 101 FT EL with Fuel in the Vessel, Revision 40

S2.OP-ST.CAN-0007, Refueling Operations – Containment Closure, Revision 30

71111.15 - Operability Determinations and Functionality AssessmentsNotifications (*initiated in response to inspection)

20799821*	20810351	20811243*	20811643
20811828*	20810352	20813764*	

Work Orders

60140541

70203667

Other

S1-SURV-010, Risk Assessment of Missed Surveillance – Turbine Overspeed Test, Revision 0

WCAP-16054-P, Probabilistic Analysis of Reduction in Turbine Valve Test Frequency for Nuclera Plants with Siemens-Westinghouse BB-95/96 Turbines, April 2003

WCAP-11525, Probabilistic Evaluation of Reduction on Turbine Valve Test Frequency, June 1987

71111.18 - Plant ModificationsNotifications (*initiated in response to inspection)

20807069*

71111.19 - Post-Maintenance TestingCompleted Surveillances

S2.OP-ST.DG-0003, 2C Diesel Generator Surveillance Test, performed 11/8/18

Notifications

20804901	20804750	20808333
20804102	20810709	20810678
20803972	20809696	20811332

Procedures

SC.MD-CM.RC-0004, PR1, PR2, and CV2 Valves Overhaul/Repacking, Revision 16

MA-AA-716-012, Post-Maintenance Testing, Revision 20

ER-AA-302, Motor-Operated Valve Program Engineering Procedure, Revision 7

Work Orders

50204827	60140803	60111177
60139650	30166226	

71111.20 - Refueling and Other Outage ActivitiesMiscellaneous

OP-AP-300-1003 Attachment 1, Salem 2 Cycle 24 BOC Startup and Power Ascension
Reactivity Maneuver Plan, dated 11/7/18

Notifications (*initiated in response to inspection)

20682685	20810550*	20810875*	20811841
20806864*	20810694*	20811645	20812727*
20807065*	20810868*	20811648	20812861*
20807437*	20810874*	20811827*	20813024*

Procedures

2-EOP-TRIP-1, Reactor Trip or Safety Injection, Revision 33
2-EOP-TRIP-2, Reactor Trip Response, Revision 33
S2.OP-IO.ZZ-0004, Power Operation, Revision 81
S2.OP-IO.ZZ-0005, Minimum Load to Hot Standby, Revision 25
S2.OP-IO.ZZ-0006, Hot Standby to Cold Shutdown, Revision 48
S2.OP-SO.RHR-0001, Initiating RHR, Revision 29

Other

CLP Salem 2 April 2018, Revision 8
Salem 2 Move Sheet package, Report 513, S2R23 Core Reload Using N31/32 Indications

71111.22 Surveillance TestingNotifications (*initiated in response to inspection)

20654970	20806071	20647175	20762363
20807629*	20809202*	20708157	20807413

Procedures

S2.OP-ST.DG-0012, 2A Diesel Generator Endurance Run, Revision 26
S2.OP-ST.AF-0007, Inservice Testing Auxiliary Feedwater Valves Modes 1-3, Revision 23
S2.OP-LR.CVC-0004, Type C Leak Rate Test 21CV99, Revision 1
S2.OP-SO.CVC-0012, CVCS Demineralizer Normal Operations, Revision 34

Work Orders

70203044	50205365	50194605
50206250	50194482	50196304
50205352	50194486	50195415

Other

TS 3.4.7.2

71151 - Performance Indicator VerificationOther

Unavailability and Unreliability Indices for MSPIs

71152 - Problem Identification and ResolutionNotifications (*initiated in response to inspection)

20806821*	20811243*	20813601*
20809849*	20813764*	

Procedures

AD-AA-101-1005, Procedure Revision Priority Coding and Expectations, Revision 1

Other

PSEG Nuclear: Salem Station October Metrics