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

July 21, 2015

Mr. Robert Braun
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 – PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000272/2015008 AND 05000311/2015008

Dear Mr. Joyce:

On May 22, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an onsite inspection at your Salem Nuclear Generating Station (Salem). The results of the onsite portion of the inspection were discussed with Mr. John Perry, Site Vice President, and other members of your staff. In-office review continued after the conclusion of the onsite inspection, and a telephone exit was conducted on June 18, 2015, with Mr. Kevin Chambliss, Manager of Regulatory Affairs, and staff.

This inspection examined activities conducted under your license as they relate to identification and resolution of problems and compliance with the Commission's rules and regulations and conditions of your license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

Based on the samples selected for review, the inspectors concluded that PSEG was generally effective in identifying, evaluating, and resolving problems. PSEG personnel identified problems and entered them into the corrective action program at a low threshold. PSEG prioritized and evaluated issues commensurate with the safety significance of the problems and corrective actions were generally implemented in a timely manner.

This report documents one NRC-identified finding of very low safety significance (Green). The inspectors determined that this finding also involved a violation of NRC requirements. The NRC is treating this as a non-cited violation (NCV), consistent with Section 2.3.2 of the NRC Enforcement Policy. Further, inspectors documented a licensee-identified violation which was determined to be of very low safety significance. The NRC is also treating this violation as an NCV consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to

the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspectors at Salem. In addition, if you disagree with the cross-cutting aspect assigned to the finding in this report, you should provide a response, within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspectors at Salem.

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 the NRC's document system (ADAMS). ADAMS is accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Glenn T. Dentel, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure:
Inspection Report 05000272/2015008 and 05000311/2015008
w/Attachment: Supplementary 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 Nos.:	05000272/2015008 and 05000311/2015008
Licensee:	PSEG Nuclear LLC
Facility:	Salem Nuclear Generating Station
Location:	Hancocks Bridge, NJ
Dates:	May 4 – June 18, 2015
Team Leader:	Anne DeFrancisco, Project Engineer
Inspectors:	Leonard Cline, Senior Project Engineer Adam Ziedonis, Resident Inspector Brian Lin, Project Engineer
Approved by:	Glenn Dentel, Chief Reactor Projects Branch 3 Division of Reactor Projects

SUMMARY

IR 05000272/2015008 and 05000311/2015008; 05/04/2015 – 06/18/2015; Salem Nuclear Generating Station; Biennial Baseline Inspection of Problem Identification and Resolution. The inspectors identified one finding in the area of effectiveness of corrective actions.

This NRC team inspection was performed by three regional inspectors and one resident inspector. The inspectors identified one finding of very low safety significance (Green) during this inspection and classified it as a non-cited violation (NCV). The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Components Within Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Problem Identification and Resolution

The inspectors concluded that PSEG was generally effective in identifying, evaluating, and resolving problems. PSEG personnel identified problems, entered them into the corrective action program (CAP) at a low threshold, and prioritized issues commensurate with their safety significance. The inspectors concluded that PSEG adequately identified, reviewed, and applied relevant industry operating experience to Salem operations, and completed self-assessments and audits as required. PSEG adequately screened issues for operability and reportability, and generally performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that PSEG typically implemented corrective actions (CAs) that addressed problems identified in the CAP in a timely manner. However, the inspectors identified a violation of NRC requirements in the area of effectiveness of corrective actions.

Based on interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual CAP and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues through various available means.

Cornerstone: Mitigating Systems

Green. The inspectors identified a Green NCV of 10 CFR, Part 50, Appendix B, Criterion XVI, because PSEG did not assure that an identified condition adverse to quality was corrected. The condition adverse to quality was associated with improper maintenance of the 12 chiller which led to the chiller failure on August 23, 2014. Specifically, a procedure related to compressor rebuilds was not effectively updated to address the improper maintenance practice. PSEG entered this violation into the CAP as notification 20690927, has placed compressor rebuilds that would require use of this procedure on hold, and has purchased new compressors for contingent replacement pending completion of the compressor maintenance procedure changes.

The inspectors determined this performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating System cornerstone, and adversely affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, improper torqueing of the No. 4 discharge valve plate bolts for the 12 chiller caused the trip of that chiller on August 23, 2014, and, absent the procedural change, the vulnerability continued to exist for the occurrence of future improper torqueing and subsequent chiller failure. The inspectors determined that this finding screened to Green in accordance with IMC 0609, Appendix A, because the finding did not represent an actual loss of function of at least a single train for greater than its technical specification allowed outage time. The inspectors determined that this finding had a cross-cutting aspect in evaluation, because PSEG Root Cause 70169007 did not identify the improper torqueing of the discharge plate bolts as a condition adverse to quality. Consequently, PSEG assigned an action (ACIT) to address the problem, rather than a corrective action (CA) which, per LS-AA-125, requires additional reviews that verify the quality of completed corrective actions before closure. [P.2] (Section 4OA2.1.c(1))

Other Finding

A violation of very low safety significance (Green), that was identified by the licensee, was reviewed by the inspectors. The issue has been entered into the licensee's corrective action program. This violation and corrective action tracking number are listed in Section 4OA7 of this report.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (71152B)

This inspection constitutes one biennial sample of problem identification and resolution (PI&R) as defined by Inspection Procedure 71152. All documents reviewed during this inspection are listed in the Attachment to this report.

.1 Assessment of Corrective Action Program Effectiveness

a. Inspection Scope

The inspectors reviewed the procedures that describe and implement PSEG's corrective action program at Salem. To assess the effectiveness of the corrective action program, the inspectors reviewed performance in three primary areas: problem identification, prioritization and evaluation of issues, and corrective action implementation. The inspectors compared performance in these areas to the requirements and standards contained in 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” and PSEG procedure LS-AA-125, "Corrective Action Program."

For each of these areas, the inspectors considered risk insights from the station’s risk analysis and reviewed notifications selected across various cornerstones of safety in the NRC's Reactor Oversight Process. The security cornerstone was not covered as part of the scope of this inspection because security issues at Salem and Hope Creek are addressed using the Hope Creek corrective action process. Based on this arrangement correction action process effectiveness under the security cornerstone at Salem was reviewed during the biennial PI&R inspection conducted at PSEG’s Hope Creek station in February 2015. The results of this inspection are documented in IR 05000354/ 2015008 (ML15085A348).

Additionally, the inspectors attended Plan-of-the-Day, Station Ownership Committee (SOC), and Management Review Committee (MRC) meetings. The inspectors selected items from the following functional areas for review: engineering, operations, maintenance, radiation protection, chemistry, and oversight programs.

(1) Effectiveness of Problem Identification

In addition to the items described above, the inspectors reviewed system health reports, completed corrective and preventative maintenance work orders, completed surveillance tests, and periodic trend reports. The inspectors completed field walkdowns of various systems and components on site, including the auxiliary building ventilation system, the chilled water system, accessible portions of containment fan cooling unit support systems, the charging system, and a sample of various motor control centers that contained safety and non-safety related breakers. Additionally, the inspectors reviewed a sample of notifications written to document issues identified through internal self-assessments, audits, the operating experience program, and operator

workarounds/burdens. The inspectors completed this review to verify that PSEG entered conditions adverse to quality into their corrective action program as appropriate.

(2) Effectiveness of Prioritization and Evaluation of Issues

The inspectors reviewed the evaluation and prioritization of a sample of notifications issued since the last NRC biennial PI&R inspection completed in July 2013 (IR 05000272;311/2013008, ML13238A066). The inspectors also reviewed notifications that were assigned lower levels of significance that did not include formal cause evaluations to ensure that they were properly classified. The inspectors' review included the appropriateness of the assigned significance, the scope and depth of the causal analysis, and the timeliness of resolution. The inspectors assessed whether the evaluations identified likely causes for the issues and developed appropriate corrective actions to address the identified causes. Further, the inspectors reviewed equipment operability determinations, reportability assessments, maintenance rule functional failure determinations, and extent-of-condition and extent-of-cause reviews for selected problems to verify these processes adequately evaluated equipment operability, reporting of issues to the NRC, maintenance rule impacts, and the extent of the issues.

(3) Effectiveness of Corrective Actions

The inspectors reviewed PSEG's completed corrective actions through documentation review, interviews, and, in some cases, field walkdowns to determine whether the actions addressed the identified causes of the problems. The inspectors also reviewed notifications for adverse trends and repetitive problems to determine whether corrective actions were effective in addressing the broader issues. The inspectors reviewed PSEG's timeliness in implementing corrective actions and PSEG's effectiveness in precluding recurrence for significant conditions adverse to quality. The inspectors also reviewed a sample of notifications associated with previous NCVs and findings to verify that PSEG personnel properly evaluated and resolved these issues. In addition, the inspectors performed an expanded, five year corrective action review to evaluate PSEG's actions related to the Units 1 and 2 radiation monitor process channels, and the auxiliary building ventilation, chiller, and charging systems. Lastly, the inspectors performed a walkdown inspection on the reactor vessel level instrumentation, containment fan cooling unit service water valves, and control power breakers, focusing on the effectiveness of PSEG's processes for identifying and evaluating problems.

b. Assessment

(1) Effectiveness of Problem Identification

Based on the selected samples, plant walkdowns, and interviews of site personnel in multiple functional areas, the inspectors determined that PSEG generally identified problems at a low threshold and entered them into the corrective action program as appropriate. The inspectors observed staff and supervisors at SOC and MRC meetings appropriately questioning and challenging notifications to ensure clarification and proper classification of the issues. Based on the samples reviewed, the inspectors determined that PSEG trended equipment, human performance, and programmatic issues, and generally entered identified problems into the CAP as appropriate. However, the

inspectors identified one unresolved item (described in Section 4OA2.1.c(1)), and two observations regarding PSEG's problem identification (described below).

Entry of Conditions Adverse to Quality into the Corrective Action Program

10 CFR Part 50 Appendix B Criterion XVI requires in part that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, the inspectors identified several examples, between January and May of 2015, where PSEG did not initiate notifications for conditions adverse to quality until prompted by the NRC. These include: (1) notification 20677723, after an equipment operator found an auxiliary feedwater storage tank nitrogen supply valve out of position; (2) notification 20681597, after the 13 chiller control power breaker failed to close during testing; and, (3) notifications 2066873, 20678037, 20677859, 20668732/20668490 regarding an adverse trend in the performance of various relief valves during refueling outage 1R23 testing. Although issues were not entered into the CAP in timely manner, none of these issues were considered more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the impact of the untimely entries did not adversely impact the objective of the applicable cornerstone in each case.

Chiller Stainless Steel Cotter Pin Fatigue Condition Adverse to Quality

Chiller stainless steel cotter pin fatigue failure vulnerability was not identified as a condition adverse to quality and assigned corrective actions in accordance with root cause procedure LS-AA-125-1001, in root cause 70169007. Specifically, the root cause evaluation identified that a previous causal evaluation conclusion on the cause of cotter pin fatigue failures was incorrect - in that the failed cotter pins had been stainless steel, and not carbon steel, as the previous evaluation had concluded. This called into question the current vulnerability of stainless steel cotter pins to repetitive fatigue failures. PSEG did not identify the fatigue failure mechanism of the stainless steel cotter pins as a condition adverse to quality (CAQ), and address the CAQ with formal, documented actions. The lack of formal, documented corrective actions to address the stainless steel fatigues failures was not more than minor, because it did not adversely affect the Mitigating Systems cornerstone objective of mitigating the effects of initiating events to prevent core damage. Specifically, other corrective actions to modify the chiller operating setpoints, and to address gasket leakby, were expected to minimize the likelihood of failure by cotter pin fatigue. In addition, new compressors, which include new stainless steel cotter pins, were installed in the chillers. PSEG initiated notification 20691006 to capture the stainless steel cotter pin fatigue failure vulnerability, and to document the intended corrective actions to address the issue.

(2) Effectiveness of Prioritization and Evaluation of Issues

The inspectors determined that, in general, PSEG appropriately prioritized and evaluated issues commensurate with the safety significance of the identified problem. PSEG screened notifications for operability and reportability, categorized the notifications by significance, and assigned actions to the appropriate department for evaluation and resolution. The notification screening process considered human

performance issues, radiological safety concerns, repetitiveness, and potential impact on the safety conscious work environment.

Based on the sample of notifications reviewed, and the SOC and MRC meetings attended, the inspectors noted that the guidance provided by PSEG's corrective action program implementing procedures was sufficient to ensure consistency in the categorization of issues. Based on the inspected sample, operability and reportability determinations were performed when conditions warranted, and the evaluations supported the conclusion. Causal analyses generally appropriately considered the extent of condition associated with the problem, generic issues, and previous occurrences of the issue. However, in the area of evaluation, the inspectors identified one observation.

Containment Fan Cooler Unit (CFCU) Relay Failure

On January 14, 2015, the 25 CFCU failed to start during the performance of surveillance testing. PSEG captured this issue in the corrective action program (CAP) under notification 20678550, and performed a maintenance rule functional failure cause determination (FFCDE) under order 70173690. FFCDE 70173690, step 9, determined that the cause of the 25 CFCU failure to start was attributed to excessive contact resistance that was introduced from a manufacturing defect. FFCDE 70173690, step 10, evaluated the extent of condition (EOC) for the January 14, 2015 relay failure and determined that "most of the CFCU critical relays have been replaced recently as an extent of condition in accordance with (IAW) equipment apparent cause evaluation (EQACE) 70154315." The inspectors determined that this EOC was not appropriate to address the January 14, 2015, failure, because EQACE 70154315 was performed in response to a May 2013 failure of a "CFCU control scheme relay" of a different model type. The January 14, 2015, failed relay was actually a newer model relay that had been installed as a corrective action for the May 2013 failure and would have had a different extent of condition. ER-AA-310-1004-F1, "Maintenance Rule Functional Failure Cause Determination (FFCDE)," step 10, required documentation of the EOC associated with the Maintenance Rule Functional Failure. The inspectors concluded that due to this error the EOC documented in the FFCDE did not adequately determine the EOC associated with the January 14, 2015, relay failure and this was a performance deficiency. The inspectors determined this performance deficiency was not more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the delay in the timeline for extent of condition corrective actions did not result in additional failures. In addition, at the time of inspection, the inspectors concluded that PSEG's planned corrective actions to address the vulnerability were reasonable to address the EOC going forward.

(3) Effectiveness of Corrective Actions

The inspectors concluded that corrective actions for identified deficiencies were generally timely and adequately implemented. For significant conditions adverse to quality, PSEG identified actions to prevent recurrence. The inspectors concluded that corrective actions to address selected NRC NCVs and findings since the last problem identification and resolution inspection were adequate and timely. However, the inspectors identified one finding that was characterized as an NCV, in the area of

corrective action implementation (described in section 4OA2.1.c(2)). Additionally, there was one licensee identified violation also related to corrective implementation (described in section 4OA7).

c. Findings

(1) Unresolved Item (URI) – Inadequate Maintenance Rule System Performance Criteria Selection

Introduction. The inspectors identified a URI associated with inadequate Maintenance Rule Performance Criteria selection. Specifically, the inspectors determined that PSEG did not follow station procedures to: 1) determine that the number of maintenance preventable functional failures (MPFF) allowed per 10 CFR 50.65(a)(3) evaluation period was consistent with the assumptions in the probabilistic risk assessment (PRA); and 2) review and approve reliability performance criteria (PC) that was higher than the number of PRA-supplied basic event failures. The inspectors determined that additional information was needed to determine if these performance deficiencies were more than minor.

Description. The inspectors performed a review of PSEG's Focused Area Self-Assessment (FASA) of the Maintenance Rule (MRule) Program, completed August 30, 2014, to determine if PSEG was appropriately assessing MRule program performance in accordance with LS-AA-126-1001, "Self-Assessments." The purpose of PSEG's FASA was to ensure the MRule Program was implemented in accordance with 10 CFR 50.65, as well as PSEG program procedures. The inspectors noted that the MRule Program FASA met the requirements of LS-AA-126-1001, was sufficiently critical, identified several "deficiencies" that were entered into the CAP, and resulted in multiple "recommendations." As a result of the FASA, PSEG determined that multiple structures, systems, and components (SSCs) in (a)(2) status had to be re-evaluated for (a)(1) status, due to those SSCs having had their Functional Failure Cause Determinations (FFCDE) and unavailability (UA) amounts incorrectly assessed in the past.

The inspectors reviewed the list of systems re-evaluated for (a)(1) status due to the FASA, as well as a listing of systems that remained in (a)(2) status and actual SSC performance data against the PC established under ER-AA-310-1003, "Maintenance Rule – Performance Criteria Selection." During this review the inspectors noted approximately 25 high safety significant systems (HSS) with reliability PC greater than two maintenance preventable functional failures (MPFFs). According to ER-AA-310-1003, Attachment 3, flowchart "Process for Selecting Reliability Performance Criteria," HSS SSCs, with reliability PC greater than or equal to two MPFFs require SSC past performance documentation. Additionally, Attachment 1, steps 2.B.3 and 2.B.4, state that for HSS SSCs with high risk achievement worth (RAW) values, a reliability PC greater than or equal to zero or one MPFF requires SSC past performance documentation. The inspectors requested that PSEG provide past performance documentation for the HSS SSCs with reliability PC greater than two MPFFs. PSEG provided documentation of HSS SSC PC approval from 1997, when the MRule Program was first implemented by PSEG. The inspectors determined this documentation did not support the assigned PC, because it did not consider the last 18 years of SSC past performance.

The inspectors also reviewed ER-AA-310-1007, "Maintenance Rule – Periodic (a)(3) Assessment." Step 5.11.1.4 states "Determine that the number of MPFFs allowed per evaluation period is consistent with the assumptions in the PRA." Contrary to ER-AA-310-1007, step 5.11.4, the last two periodic (a)(3) assessments performed by PSEG: April 1, 2011 through September 9, 2012; and October 1, 2012 through June 30, 2014; did not verify that the number of MPFFs allowed per evaluation period was consistent with the assumptions in the PRA. Additionally, ER-AA-310-1003, step 4.3.2, states, in part, that "Unless justified and approved by the Maintenance Rule Expert Panel, the number of MPFFs selected, as a Reliability PC, may **not** be higher than the PRA-supplied number of Functional Failures (FFs)."

The inspectors then reviewed SC-MRULE-002, "Maintenance Rule Performance Criteria Verification Following Salem SA112A PRA Update," subsequent to the most recent update performed in October 2014. The inspectors noted that to complete this verification, PSEG requantified the PRA model by changing the failure probabilities of the basic events to reflect the MRule PC. The result was "a 98% increase" in "the Salem base core damage frequency (CDF) of 1.55E-05." The inspectors determined that this data was reflective of SSC reliability PC above the PRA-supplied number of basic event failures. As such, contrary to ER-AA-310-1003, step 4.3.2, the number of MPFFs selected as reliability PC was higher than the PRA-supplied number of FFs, and, based on the lack of documentation supplied by PSEG, the inspectors concluded this was not justified or approved by Maintenance Rule Expert Panel.

The inspectors determined that the failure to meet ER-AA-310-1007, step 5.11.4, and ER-AA-310-1003, step 4.3.2, was a performance deficiency. However, at the time of inspection, the inspectors did not have the information needed to determine the consequence of the performance deficiency. Information was needed to determine whether the performance deficiency was more than minor. Specifically, PSEG did not provide SSC past performance documentation for HSS SSCs with reliability PC greater than the PRA-supplied number of basic event failures in accordance with ER-AA-310-1003 Attachment 1 and 3. The inspectors will use this information to determine whether the performance or condition of HSS SSCs was effectively controlled through the performance of appropriate preventive maintenance under 10 CFR 50.65(a)(2), and also to determine if those HSS SSCs being monitored under 10 CFR 50.65(a)(1) were assigned appropriate goals and monitoring when considered against the appropriate reliability PC threshold. This issue was determined to be a URI IAW Inspector Manual Chapter (IMC) 0612. **(URI 05000272;311/2015008-01, Inadequate Maintenance Rule System Performance Criteria Selection)**

(2) Failure to Correct a Condition Adverse to the Quality of the Chillers

Introduction. The inspectors identified a Green NCV of 10 CFR, Part 50, Appendix B, Criterion XVI, because PSEG did not assure that an identified condition adverse to quality was corrected. The condition adverse to quality was associated with improper maintenance of the 12 chiller which led to the chiller failure on August 23, 2014. Specifically, a procedure related to compressor rebuilds was not effectively updated to address the improper maintenance practice.

Description. The chilled water system at Salem consists of three 50% capacity safety-related chillers per unit. The safety functions of the chilled water system are to remove sufficient heat loading from the emergency air conditioning units and emergency control air compressors under accident conditions, and remove sufficient heat loading from the main control room air condition units under normal operating conditions. Therefore, a trip of one of the safety-related chillers adversely affects the reliability of each of those units.

On August 23, 2014, Salem Unit 1, 12 chiller experienced a trip on low oil pressure. Operators immediately entered Technical Specification limiting condition for operation (LCO) 3.7.10.A, which required restoration of 12 chiller to operable status within 14 days, or plant shutdown to Mode 3 if the chiller could not be restored. PSEG performed troubleshooting, replaced the compressor and restored the 12 chiller to operable status on August 29, 2015.

On September 17, 2014, PSEG approved the charter for Root Cause Evaluation (RCE) 70169007, to investigate longstanding and recurring equipment problems in the chilled water system. The approved scope included the equipment failure analyses for three August 2014 chiller failures that included the August 23, 2014 failure. PSEG determined through this evaluation that the cause of the August 23, 2014, 12 chiller trip was maintenance technicians used an improper torque pattern when they re-torqued the chiller compressor No. 4 discharge valve plate. The improper torque pattern caused uneven torque on that plate that allowed plate movement, bolt failure, and eventually internal valve and piston damage that led to compressor failure. To address this cause PSEG ultimately created action tracking item (ACIT) No. 8 to revise the appropriate chiller maintenance procedures to provide more detailed steps to verify the required torque values for the compressor discharge valve plates. Among other items, the additional steps would require the technicians to record the torque applied to each bolt in the procedure step directly adjacent to the torque specified by the procedure. Recording these values in this step would more likely preclude technicians from failing to apply appropriate human performance tools (i.e., self-checking) when they applied the torque to the bolts.

The inspectors reviewed the completed changes for the affected procedures and identified that for procedure, SC.MD-CM.CH-0001, “Acme Chiller Compressor Maintenance,” Revision 21, the assigned action for ACIT No. 8 was not completed as directed. Specifically, the procedure was not updated to include sign-offs for the torque requirements for the discharge valve plate bolts. PSEG procedure LS-AA-120, “Issue Screening and Identification Process,” revision 13, step 4.6.3, states, in part, that ACIT final confirmations will document that the assigned action was completed as directed or describe the bases for why a different action or no action was taken. The inspectors determined that the ACIT No. 8 final confirmation was completed on March 25, 2015, but it did not include the required additional documentation to describe why the action was not taken as specified. The inspectors concluded that not completing the required procedure revision left the chillers susceptible to the cause of the August 23, 2014, failure, if and when the applicable maintenance was performed.

The inspectors also noted that PSEG did not identify the cause of the 12 chiller failure as a condition adverse to quality (CAQ) even though, as described above, the affected chillers performed safety-related functions and 10 CFR 50 Appendix B Criterion XVI states that CAQs include for example, a failure, malfunction, deficiency, deviation, defective material and equipment, or a nonconformance. Similarly, PSEG procedure, LS-AA-120, defined a CAQ as a failure, malfunction, deviation, and/or defective material and equipment associated with structures, systems and components. In accordance with the regulatory definition, and based on the results of PSEG's cause analysis, the inspectors concluded that the inadequate torque applied to the 12 chiller discharge plate was a CAQ. PSEG procedure LS-AA-125, "Corrective Action Program," revision 8, required that a corrective action (CA) be assigned to track completion of corrective actions for a CAQ. The inspectors determined this was important because LS-AA-125 required additional reviews for completing and closing a CA that were not required to close an ACIT. Specifically, closure of a CA required peer review and Department Head approval, as well as department corrective action program coordinator (CAPCO) closure review of the final confirmation for completion of the CA. The inspectors concluded that these additional reviews would likely have prevented the inadequate corrective action for the chiller failure, and therefore, not assigning a CA to track completion of the chiller maintenance procedure changes resulted in the inadequate corrective action.

Analysis. The inspectors determined that inadequately implementing procedure changes specified to address the condition adverse to quality was a performance deficiency. The inspectors determined this performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating System cornerstone, and adversely affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, improper torqueing of the No. 4 discharge valve plate bolts for the 12 chiller caused the trip of that chiller on August 23, 2014, and, absent the procedural change, vulnerability continued to exist for the occurrence of future improper torqueing and subsequent chiller failure. The inspectors determined that this finding affected the Mitigating Systems cornerstone in accordance with IMC 0609, Attachment 4, because the safety-related function of the chillers is to provide cooling for main control room ventilation and the emergency air compressors. The inspectors determined that this finding screened to Green in accordance with IMC 0609, Appendix A, because the finding did not represent an actual loss of function of at least a single train for greater than its technical specification allowed outage time.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution, evaluation [P.2], because PSEG's evaluation for the cause of the 12 chiller low oil pressure trip did not ensure that the identified resolutions addressed the cause. Specifically, PSEG Root Cause 70169007 did not identify the improper torqueing of the discharge plate bolts as a condition adverse to quality. Consequently, PSEG assigned an action (ACIT) to address the problem, rather than a corrective action (CA) which, per LS-AA-125, require additional reviews that verify the quality of completed corrective actions before closure.

Enforcement. 10 CFR Part 50, Appendix B, Criterion XVI requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, between March 25 and May 19, 2015,

PSEG measures did not assure that an identified condition adverse to quality associated with the performance of safety-related chiller maintenance was corrected. Specifically, PSEG determined that the cause of the 12 chiller trip on August 23, 2014, was improper torque of the No. 4 discharge valve plate during a compressor rebuild on May 8, 2014. PSEG entered this violation into the CAP as notification 20690927, has placed compressor rebuilds that would require use of this procedure on hold, and has purchased new compressors for contingent replacement pending completion of the compressor maintenance procedure changes. This violation is being treated as an NCV, consistent with section 2.3.2 of the Enforcement Policy. **(05000272;311/2015008-02, Failure to Correct a Condition Adverse to the Quality of the Chillers)**

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The inspectors reviewed a sample of notifications associated with review of industry operating experience (OE) to determine whether PSEG appropriately evaluated the operating experience information for applicability to Salem and took appropriate actions, when warranted. The inspectors also reviewed evaluations of OE documents associated with a sample of NRC generic communications to ensure that PSEG adequately considered the underlying problems associated with the issues for resolution via their corrective action program.

b. Assessment

The inspectors determined that PSEG adequately considered industry OE information for applicability, and used the information to identify and prevent similar issues when appropriate. The inspectors determined that OE was adequately applied and lessons learned were communicated and incorporated into plant operations and procedures when applicable.

c. Findings

No findings were identified.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The inspectors reviewed a sample of audits, including the most recent audit of the corrective action program, departmental self-assessments, and assessments performed by independent organizations. Inspectors performed these reviews to determine if PSEG entered problems identified through these assessments into the corrective action program, when appropriate, and whether PSEG initiated corrective actions to address identified deficiencies. The inspectors evaluated the effectiveness of the audits and assessments by comparing audit and assessment results against self-revealing and NRC-identified observations made during the inspection.

b. Assessment

Based on the inspected sample, the inspectors concluded that self-assessments, audits, and other internal PSEG assessments were adequate to meet program requirements. The inspectors observed that PSEG personnel knowledgeable in the subject completed these audits and self-assessments in a methodical manner. PSEG completed these audits and self-assessments to a sufficient depth to identify issues which were then entered into the corrective action program for evaluation. Based on the inspected sample, the inspectors concluded that the station implemented corrective actions associated with the identified issues commensurate with their safety significance.

c. Findings

No findings were identified.

.4 Assessment of Safety Conscious Work Environment

a. Inspection Scope

During interviews with station personnel, the inspectors assessed the safety conscious work environment at Salem. Specifically, the inspectors interviewed personnel to determine whether they were hesitant to raise safety concerns to their management and/or the NRC. The inspectors also interviewed the station Employee Concerns Program coordinator to determine what actions are implemented to ensure employees were aware of the program and its availability with regards to raising safety concerns. The inspectors reviewed the Employee Concerns Program files to ensure that PSEG entered issues into the corrective action program when appropriate.

b. Assessment

During interviews, Salem staff expressed a willingness to use the corrective action program to identify plant issues and deficiencies and stated that they were willing to raise safety issues. The inspectors noted that no one interviewed stated that they personally experienced or were aware of a situation in which an individual had been retaliated against for raising a safety issue. All persons interviewed demonstrated an adequate knowledge of the corrective action program and the Employee Concerns Program. Based on these limited interviews, the inspectors concluded that there was no evidence of an unacceptable safety conscious work environment and no significant challenges to the free flow of information.

c. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On May 22, 2015, the inspectors presented the inspection results to Mr. John Perry, Site Vice President, and other members of the Salem staff. Following additional inspection activities, the inspectors conducted an exit meeting over the telephone on June 18, 2015 with Mr. Kevin Chambliss, Manager of Regulatory Affairs, and staff. The inspectors

verified that no proprietary information was retained by the inspectors or documented in this report.

4OA7 Licensee-Identified Violation

The following violation of very low security significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for disposition as an NCV.

- 10 CFR Part 50, Appendix B, Criterion XVI requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, PSEG did not establish measures to assure that a condition adverse to the quality related to safety-related chillers was promptly corrected. Specifically, PSEG determined that previous corrective actions for chiller operating temperature setpoint overlap, which were directed in several previous CAP evaluations that were completed between 2009 and 2013, were not implemented in a timely manner. This caused excessive chiller cycling and load sharing and prolonged and cyclic operation at low load conditions, which caused component fatigue and compressor damage. In response to this issue, PSEG completed a root cause evaluation and established corrective actions to develop and install a chiller operating setpoint design change package. The inspectors determined that this finding screened to Green in accordance with IMC 0609, Appendix A, because the finding did not represent an actual loss of function of at least a single train for greater than its technical specification allowed outage time. This issue is tracked in the corrective action program under RCE 70169007.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel
J. Perry, Site Vice President
L. Wagner, Plant Manager
B. Booth, Regulatory Affairs Manager
K. Chambliss, Regulatory Affairs Manager
T. Cachaza, Regulatory Affairs
F. Possessky, Regulatory Affairs
J. Racer-DeSanctis, Performance Improvement Manager
R. DeKnight, Operations Director
S. Taylor, Radiation Protection Manager
R. Truhan, Nuclear Oversight
P. Duke, Regulatory Affairs
D. Schuman, Employee Concerns Program Manager
P. Essner, Engineering
A. Zhang, Engineering
J. Giunta, Engineering
M. Pennington, Engineering
J. Thompson, Procurement Engineering Manager
H. Balian, Engineering
C. Beeson, Engineering
S. Boesch, Engineering
S. Bowers, Engineering
L. Oberembt, Engineering
B. Ohmert, Engineering
J. Hargrave, Operations
P. Martino, Maintenance Director
G. Delp, Maintenance

NRC Personnel
P. Finney, Senior Resident Inspector, Salem

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Opened

05000272;311/2015008-01	URI	Inadequate Maintenance Rule System Performance Criteria Selection (Section 4OA2.1.c.(1))
05000272;311/2015008-02	NCV	Failure to Correct a Condition Adverse to the Quality of the Chillers (Section 4OA2.1.c.(2))

LIST OF DOCUMENTS REVIEWED

Section 4OA2: Problem Identification and Resolution

Audits and Self-Assessments

FASA, Fire Protection Triennial Inspection (20637469)
FASA, Locked HR area controls and remote monitor (20595366)
FASA, Maintenance Rule Program (70162305)
FASA, Operations Training (70159592)
FASA, Risk Management Program (70138251)
Maintenance Rule Program Training and Users Group Meeting (70162313)
NOSA-SLM-14-03, Maintenance Audit Report (80111247)
NOSA-SLM-13-08, Radiation Protection Audit (80111776)
NOSA-SLM-14-04, Chemistry, Radwaste, Effluent and Environmental Monitoring Audit (80111776)
NOSA-SLM-15-04, Corrective Action Program Audit (80114016)
NOSPA-SA-14-3C, Nuclear Oversight Performance Assessment Report
NOSA-HPC-14-02
NOSA-HPC-13-02
NOSA-SLM-13-09, Operations, Operations Training, and PORC Audit (80110237)
Operations Fundamental (20637516, 70162930)
Operations Fundamental IBM (70162930)
Operations, Operations Training, and PORC Audit Report (80110237)
Reactivity Management (20592091, 70149516)
Reactivity Management Informal Benchmarking (IBM) (70162929)
Risk Management Documentation (70149585)
Unit 1 and 2 Quarterly Operator Burden Assessment (30279587)

Cause Evaluations

ACE, 13 Chiller Excessive Cycling (70135613)
ACE, 21 Chiller Tripped on Low Oil Pressure (70156720)
ACE, 24NM306 Isolator Found Low (70173371)
ACE, Evaluation of the Unsatisfactory Shutdown Margin that Contributed to the Removal of Unit 2 from Service (70163361)
ACE, POPS Relief During Solid Plant Operations (70165208)
ACE, POPS Actuated during Restoration of Charging Flow Path Following Unexpected Closure of In Service Charging Pump Discharge Valve (70170378)
ACE, Potential Finding for FHB Positive D/P (70173449)
PSEG Failed to Initiate a Notification to Review FIN 2011004-002 and Develop Appropriate Corrective Actions per Procedure LS-AA-1003, “NRC Inspection Preparation and Response” (70160036)
CCE, 12 Chiller Tripped on Freeze Protection (70136073)
CCE, Salem 1 and 2 AC and DC Molded Case Circuit Breakers (70174576)
EQACE, 13 Charging Pump Failed to Couple (70155459)
EQACE, 15 CFCU No Service Water Flow (70154315)
EQACE, 21 CFCU No Flow (70168067)
EQACE, 22 CFCU High Speed Cable Degradation (70160037)
23 Charging Pump Flow Loss, (70172012)
12 CRDM Vent Fan Breaker Tripped (70131132)

RCE, 2014 WANO Related AFI in Maintenance Fundamentals (70170180)
RCE, Increasing Trend in Chiller Failures, 70169007
RCE, Multiple Failures of the 12 and 13 Chillers (70106293)
WGE, 13 Chiller Would Not Fully Unload (70156627)
WGE, 23 Chiller Moore Temperature Switches Failing (70161179)
WGE, Chiller Compressor Cotter Pin Material (70163248)

Non-Cited Violations, Findings and Licensee Event Reports

FIN 05000311/2013008-01 Failure to Evaluate Performance Deficiency for an NRC finding
FIN 05000311/2014002-01 Failure to Follow Fire Protection Test Procedure Resulted in Fuel Oil Spill
NCV 05000311/2014003-01, Inadequate Sold Pressurizer Control Resulted in Low Temp OP Relief Lifting
NCV 05000311/2013003-05 Failure to Follow Rad Protection Procedures
NCV 05000272/2014005-01, Procedural Non-Compliance Resulted in Low Temperature Overpressure Relief Lifting
NCV 05000272/2015001-01, Failure to Ensure Adequate Negative Differential Pressure During Fuel Movements
LER 272013001/08/22/2013 TS Required S/D due to Exceeding Reactor Coolant System Unidentified Leakage Limit
LER 311201400201/31/2014 Manual Reactor Trip due to a Partially Dropped Rod
LER 2722015001/01/16/2015 Fuel Move in Progress with FHB ventilation Inop
LER 3112015001/01/20/2015 Condition Prohibited by TS for one channel OTDT inop

Notifications *(* indicates that notification was generated or updated as a result of this inspection)*

20651917	20664792	20589036	20479848
20617541	20656479	20598974	20649778
20618915	20664264	20621927	20678550
20647016	20664492	20611068	20681954
20653344	20669516	20621927	20521721
20655128	20583256	20632309	20539885
20667095	20595583	20646012	20539888
20681811	20683146	20668809	20604760
20681689	20618979	20622181	20578310
20543399	20628749	20531565	20578312
20609298	20654206	20527578	20602319
20310335	20659685	20502811	20604215
20401984	20680792	20510934	20632422
20672018	20655065	20506179	20642368
20649790	20658461	20511440	20673735
20663696	20680290	20531370	20658404
20669992	20656114	20534320	20658699
20682394	20670175	20535088	20646192
20632413	20670453	20613330	20668883
20607323	20670965	20634555	20638374
20617427	20679120	20570446	20659886
20684460	20503346	20588947	20649575
20645608	20588427	20596644	20655172

20675102	20644832	20661236	20657565
20683706	20645604	20668102	20661289
20670965	20645603	20681427	20660250
20623581	20645495	20626619	20660309
20616484	20622295	20624037	20660381
20635706	20631083	20672486	20660382
20618915	20645130	20672484	20660383
20506179	20647927	20649720	20660385
20628749	20651469	20610353	20660386
20624740	20655074	20673569	20660387
20626855	20658116	20620137	20660388
20626854	20659577	20638020	20660390
20626923	20660393	20668967	20660430
20626922	20672684	20671524	20660434
20624153	20675581	20681597	20678417
20626637	20681567	20681717	20658821
20626638	20667538	20681718	20693283
20626636	20628740	20614075	20693282
20626434	20683745	20632057	20693281
20624128	20653263	20638818	20692902
20626181	20629925	20656909	20692901
20626807	20689323*	20658821	20694648*
20626921	20690095*	20668967	20692343
20626805	20616485	20681597	20693625
20626853	20638387	20614075	20684033
20624214	20681569	20632057	20682668
20651092	20683841	20681285	20682669
20651237	20672190	20639058	20689323
20650976	20601766	20643693	20691064*
20649040	20639301	20643777	20691243
20651578	20645039	20672190	20691859
20651615	20666000	20637517	20679690
20651558	20666129	20637516	20460584
20651557	20636958	20592091	20676392
20651468	20669487	20689529	20676395
20651569	20597430	20661782	20676396
20651823	20601403	20680377	20676397
20651444	20675662	20680379	20675783
20651605	20655041	20680384	20679690
20651255	20653895	20665176	20676930
20645528	20677723	20661743	20675624
20645053	20683640	20688764*	20684726
20645115	20608365	20688863*	20684495
20645064	20681427	20688859*	20684496
20645276	20626619	20689866*	20684498
20645445	20624037	20690713*	20688601
20644775	20629217	20694641*	20625500
20644774	20629218	20690095*	20664247
20645454	20637653	20592558	20672883

20677161	20657303	20677028	20667519
20673027	20657304	20646740	20686521
20673028	20657772	20665897	20658384
20673133	20657773	20687727	20645763
20673134	20657774	20690927*	20641084
20673129	20657775	20690237*	20641025
20673240	20657776	20682921	20640006
20653344	20682394	20691006*	20666615
20649640	20677427	20498660	20584272
20638803	20678063	20680655	20688508
20657300	20687732	20680822	20688517
20657301	20676871	20675158	
20657302	20677581	20679740	

NRC Generic Communications and Industry Operating Experience

RIS 2007-21, Adherence to Licensed Power Limits
OPEX309627, Misalignment of Two Control Rods during Moveable Control Assembly Surveillance
TR-109641, Guidance on Routine Preventative Maintenance for Magne-Blast Circuit Breakers
IN 91-78, Status Indication of Control Power for Circuit Breakers Used in Safety Related Applications
IN 2010-09, Importance of Understanding Circuit Breaker Control Power Indications
IN 96-43, Failure of General Electric Magne-Blast Circuit Breakers

Procedures

EI-AA-101-1001, Employee Concerns Program Process, Revision 9
CC-AA-309-101, Engineering Technical Evaluations, Revision 10
PIA-004, Work Group Evaluation, Revision 3
RP-AA-401-1001, Special Instructions for Highly Radioactive Incore Components, Revision 0
NO-AA-200-002, NOS Regulatory Audit Procedure, Revision 17
FP-AA-024, Fire Drill Performance Revision 0
NOS-AA-200-002-1001, NOS Audit Handbook, Revision 20
WC-AA-101-1002, On-line Scheduling Process, Revision 17
ER-AA-310-1005, Maintenance Rule – Dispositioning Between (a)(1) and (a)(2), Revision 9
ER-AA-310-1003, Maintenance Rule – Performance Criteria Selection, Revision 6
ER-AA-310-1007, Maintenance Rule – Periodic (a)(3) Assessment, Revision 7
ER-AA-600-1044, Maintenance Rule Support, Revision 5
ER-AA-2002, System Health Indicator Program, Revision 13
ER-AA-2001-1001, Evaluation of Equipment Reliability Strategies, Revision 1
ER-SA-310-1009, Salem Generating Station – Maintenance Rule Scoping, Revision 5
WC-AA-105, Work Activity Risk Management, Revision 3
OP-AA-108-111, Adverse Condition Monitoring and Contingency Plan, Revision 8
S2.IC-SC.RVL-0020(Q), Reactor Vessel Level Instrumentation System Transmitter Calibration, Revision 16
SC.MD-PM.ZZ-0135(Q), Ventilation Damper Inspection and Guidelines, Revision 16
HU-AA-104-101, Procedure Use and Adherence, Revision 6
LS-AA-115-1006, Manual for Processing OE6 Documents (Vendor 10CFR Part 21 Documents), Revision 0
LS-AA-120, Issue Identification and Screening Process, Revision 13

LS-AA-125, Corrective Action Program, Revision 18
LS-AA-125-1001, Root Cause Evaluation Manual, Revision 9
LS-AA-125-1002, Common Cause Evaluation Manual, Revision 7
LS-AA-125-1003, Apparent Cause Evaluation Manual, Revision 14
LS-AA-125-1004, Effectiveness Review Manual, Revision 5
LS-AA-125-1005, Coding and Analysis Manual, Revision 7
LS-AA-125-1006, Performance Improvement Integrated Matrix (PIIM), Revision 5
LS-AA-126, Self-Assessment/Benchmarking, Revision 13
LS-AA-126-1001, Self-Assessments, Revision 7
OP-AA-108-115, Operability Determinations and Functionality Assessments, Revision 4
OP-AA-102-103, Operator Workaround Program, Revision 3
OP-AA-102-103-1001, Operator Burdens Program, Revision 2
PIA-004, Work Group Evaluation, Revision 3
LS-AA-115, Operating Experience Program, Revision 13
SC.RE-ST.ZZ-0002(Q), Shutdown Margin Calculation, Revision 23
SC.MD.IS.4KV-0001, 4KV and 13 KV Magne-Blast Circuit Breakers Inspection and Test, Revision 28
LS-AA-1003, NRC Inspection Preparation and Response, Revision 13
MA-AA-716-210, Preventative Maintenance (PM) Program, Revision 10
IST-SC-I4-PROG-U1PUMP TBL, Salem Generating Station Units 1 and 2 Fourth Interval
S1.OP-SO.CVC-0002, Charging Pump Operation, Revision 37
S1.OP-PT.CVC-0003, Appendix R Testing – 13/23 Charging Pump
S1.OP-ST.CVC-0005, In-service Testing – 13/23 Charging Pump
S1.OP-SO.CVC-0023, CVCS Cross-Connect Alignment to Unit 2, Revision 8
SC.MD-CM.CVC-0001, Numbers 13 and 23 Charging Pump Repacking Plunger and Valve Repair or Replacement, Revision 17
SC.MD-CM.CVC-0005, 13 and 23, Charging Pump: Bearing Inspection; Power Frame disassembly, Inspection, Repair, and Reassembly And Fluid Cylinder Replacement, Revision 12
SC.MD-CM.CVC-0013, Replacement and Charging of Suction Stabilizer and Discharge Pulsation Dampener Bladders, Revision 9
SC.MD-CM.CH-0001, ACME Chiller Compressor Maintenance, Revisions 1 and 2
SC.MD-PM.CH-0001, ACME Chiller Compressor Inspection and Repair, Revisions 20 and 21
S1.OP-SO.CH-0001, Chilled Water System Operation, Revision 28
S2.OP-SO.CH-0001, Chilled Water System Operation, Revision 31

Completed Surveillances

18 month Unit 2 ST RVLIS Trains A&B Scaling and Calibration, completed April 15, 2014
18 month Unit 1 ST RVLIS Trains A&B Scaling and Calibration, completed October 6, 2014
18 month Unit 1 ST RVLIS Trains A&B Scaling and Calibration, completed April 19, 2013'
18 month Unit 2 ST RVLIS Trains A&B Scaling and Calibration, completed October 11, 2013
S1.OP-ST.INST-0001(Q), Revision 20, Instrumentation – Accident Monitoring, completed March 25, 2015
S1.OP-ST.INST-0001(Q), Revision 20, Instrumentation – Accident Monitoring, completed February 21, 2015
S1.OP-ST.INST-0001(Q), Revision 20, Instrumentation – Accident Monitoring, completed April 24, 2015
S2.OP-ST.INST-0001(Q), Revision 16, Instrumentation – Accident Monitoring, completed March 7, 2015
S2.OP-ST.INST-0001(Q), Revision 16, Instrumentation – Accident Monitoring, completed

February 7, 2015
S2.OP-ST.INST-0001(Q), Revision 16, Instrumentation – Accident Monitoring, completed April 11, 2015

Work Orders

60121389	70174930	70170894
60122687	60121389	70171684
70167903	60122687	70172181
70168048	70149711	70173261
70168874	70167903	70173690
70172181	70168048	70174280
70173261	70168409	70174554
70173690	70168504	70174875
70174280	70168645	70174930
70174554	70168874	70164312
70174875	70169007	

Miscellaneous

12 SI Pump Breaker Fail to Close on Demand, 20660365
Chilled Water System ILOT 13-1 Systems Training, 07/23/2013
Event Notification 51053, Potential Part 21 Involving Struthers Dunn Relays With Contact Resistance Greater Than One Ohm, dated 05/07/2015
Maintenance Rule Performance Criteria Verification Following Salem SA112A PRA Update, SC-MRULE-002, Revision 3
Maintenance Strategy: S1CVC-1CVE22 (Unit 1), Revision 1
MRC Meeting 04/22/15, 0900-0930 OOB
Operability Evaluation 16-006, Relays Manufactured with Fiberglass Reinforced Actuator Boards, Revision 0
Operator Burdens Program Action Plan, Revision 1
Plan of the Day, Wednesday, April 22, 2015
RVLIS Train B 14 Hot Leg Hydraulic Isolator Monitoring, OP-AA-108-111, Adverse Condition Monitoring and Contingency Plan, Revision 8
Salem Maintenance Rule 2014 – Periodic (a)(3) Assessment, SC-MRULE-005, Revision 0 (70149711)
Salem Station Ownership Committee Agenda for 4/22/15
System Health Report, Chemical & Volume Control, Unit 1 and 2
System Health Report, Chilled Water System, Unit 1 and 2, Q1-2015
System Health Report, Containment Building Ventilation, Unit 1 and 2, Q1-2015
System Health Report, Radiation Monitoring System, May 5, 2015
Temporary Modification, 1 ST14-007, Cut and Cap RVLIS Train A Capillary
VTD 130887, Chilled Water System Compressor Vendor Manual, dated 11/01/04
VTD 325458, Chilled Water System Evaporator Vendor Manual, dated 01/17/03
Utilities Service Alliance Nuclear Safety Culture Assessment, February 2015
Safety Culture Monitoring Panel 2014, 2015 Meeting Minutes

LIST OF ACRONYMS

ACE	Apparent Cause Evaluation
ACIT	Action Item
ADAMS	Agency-wide Documents Access and Management System
CA	Corrective Action
CAP	Corrective Action Program
CAQ	Condition Adverse to Quality
CCE	Common Cause Evaluation
CFCU	Containment Fan Cooling Unit
CFR	Code of Federal Regulations
CR	Condition Report
DCP	Design Change Package
EQACE	Equipment Apparent Cause Evaluation
FASA	Focused Area Self-Assessment
FIN	Finding
FF	Functional Failure
FFCDE	Functional Failure Cause Determination Evaluation
HSS	High Safety Significance
IMC	Inspection Manual Chapter
LCO	Limiting Condition on Operation
LER	Licensee Event Report
MPFF	Maintenance Preventable Functional Failure
MRC	Management Review Committee
NCV	Non-cited Violation
NOTF	Notification
NRC	Nuclear Regulatory Commission
OE	Operating Experience
PARS	Publicly Available Records System
PC	Performance Criteria
PCM	Performance Centered Maintenance
PCR	PM Change Request
PDP	Positive Displacement Pump
PI&R	Problem Identification and Resolution
PM	Preventive Maintenance
POPS	Pressurizer Overtemperature Protection System
PRA	Probabilistic Risk Assessment
RCE	Root Cause Evaluation
RMCS	Reactor Manual Control System
RPS	Reactor Protection System
RVLIS	Reactor Vessel Level Indication System
SCAQ	Significant Condition Adverse to Quality
SDP	Significance Determination Process
SOC	Station Ownership Committee
SSC	System, Structure, or Component
TS	Technical Specifications
URI	Unresolved Item
WGE	Work Group Evaluation