

Salem 1 2Q/2016 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Mar 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Correct Chiller Failures due to Gasket Leakage

A self-revealing Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, was identified when PSEG did not assure that an identified condition adverse to quality was corrected. Specifically, PSEG closed a corrective action to address chiller gasket leakage without performing the designated action. This resulted in four subsequent chiller trips due to gasket failures. PSEG entered this issue in the CAP under notification 20708693, and completed ACE 70181604 on December 21, 2015. Corrective actions from the ACE were completed on February 25, 2016, and included: obtaining the proper gasket material; testing an alternative gasket material (Teflon); and establishing interim performance monitoring under Order 80115963.

The inspectors determined that closing a corrective action to correct a condition adverse to quality evaluated by an ACE without implementing the corrective action was a performance deficiency. This performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating System cornerstone, and adversely affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences, in that safety-related chillers were subsequently rendered inoperable as a result of not having the proper gasket material. 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, Resolution, because PSEG did not take effective corrective action to address recurring chiller evaporator head gasket leaks in a timely manner.

Inspection Report# : [2016001](#) (*pdf*)

Significance: G Dec 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Improper PM Deletion Resulted in Plant Shutdown Required by TSs

A self-revealing Green NCV of TS 6.8.1, "Procedures and Programs," as described in Regulatory Guide 1.33, Revision 2, February 1978, was identified when PSEG did not maintain an appropriate preventive maintenance (PM) schedule for Salem containment fan cooling unit (CFCUs). Specifically, PSEG did not incorporate vendor recommendations and industry operating experience (OE) in 2003 when modifying PM schedules to delete motor air gap measurements for CFCUs. The 14 CFCU subsequently failed to start in low speed for scheduled testing on March 8, 2015. PSEG entered this in their Corrective Action Program (CAP) as notification 20681031, replaced the 14 CFCU motor, completed an apparent cause evaluation (ACE), and re-initiated CFCU motor air gap measurement

PMs.

PSEG's inadequate analysis of PM deletion was a performance deficiency within PSEG's ability to correct and should have been prevented. This issue was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects its cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance (Green) in accordance with IMC 0609, Attachment 4 and Appendix A, Exhibit 2, because the finding was not a design or qualification deficiency, did not represent a loss of safety system function, did not represent the loss of function for any TS system, train, or component beyond the allowed TS outage time, and it did not represent an actual loss of function of any non-TS trains of equipment designated as high safety significance in accordance with PSEG's maintenance rule program. The inspectors determined that there was no cross-cutting aspect associated with this finding since it was not representative of current PSEG performance. Specifically, in accordance with IMC 0612, the causal factors associated with this finding occurred outside the nominal three-year period of consideration and were not considered representative of present performance.

Inspection Report# : [2015004](#) (pdf)

Significance:  Dec 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Inadequate Post Maintenance Testing on OTDT Channels

A self-revealing, Green NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," and associated NCV of TS 3.3.1.1 was identified, with two examples, for not ensuring that all testing required to demonstrate that nuclear instrumentation (NI) would perform satisfactorily in service was identified and performed. As a result, inoperable Over-Temperature Delta-Temperature (OTDT) channels were not placed in the tripped condition within the timeframe required by TS LCO 3.3.1.1, on January 20 and April 21, 2015 respectively. PSEG entered this issue in their CAP and developed corrective actions to provide improved retest requirements for all maintenance performed on the NI system.

The inspectors determined that the failure to ensure the NI channels were operable upon restoration to service was a performance deficiency. The performance deficiency is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected its cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. Inspectors evaluated the finding's significance in accordance with IMC 0609, Attachment 4 and Appendix A, and determined that the finding did not affect a single reactor protection system (RPS) trip signal to initiate a reactor scram AND the function of other redundant trips or diverse methods of reactor shutdown, did not involve control manipulations that unintentionally added positive reactivity and did not result in a mismanagement of reactivity by operator(s). Therefore, the finding screened to Green, or very low safety significance. The finding has a cross-cutting aspect in the area of Human Performance, Documentation, because PSEG did not ensure that plant activities were effectively governed by comprehensive, high-quality, programs, processes and procedures. Specifically, subsequent to completion of calibration and replacement work and PMT per I&C surveillance procedures, work packages did not adequately address or specify activities related to verifying potentially affected RPS indications.

Inspection Report# : [2015004](#) (pdf)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure To Establish Measures for the Selection and Review for Suitability of a TDAFW Room Cooler Temperature Switch

A self-revealing, Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified when PSEG selected a temperature control switch for the auxiliary feedwater (AFW) pump area room cooler that was not suitable for its application. Specifically, installation of a temperature control switch with an inadequate reset deadband resulted in excessive cycling of the room cooler, failure of its associated turbine-driven AFW (TDAFW) pump enclosure inlet damper to fully open, and subsequent inoperability of the TDAFW pump. PSEG entered this issue into their corrective action program (CAP), performed immediate repairs to the failed damper, performed an apparent cause evaluation (ACE), and created corrective actions to replace the temperature switches on both units.

This issue was more than minor because it was associated with the equipment performance attribute of the Mitigating System cornerstone, and adversely affected its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was evaluated in accordance with IMC 0609, Attachment 4 and Appendix A, Exhibit 2, and screened to Green. Specifically, this finding was a design deficiency whereby the TDAFW pump did not maintain operability; however, this finding did not represent a loss of system or function, and TDAFW did not exceed its Technical Specification (TS) allowed outage time. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, because PSEG did not take effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, PSEG did not complete corrective actions in a timely manner to resolve and correct excessive damper cycling, as identified in 2013; did not ensure that work order operation deferrals to address excessive cycling were minimized; and did not address the fundamental cause of excessive damper cycling while an interim corrective action was established to minimize excessive damper cycling. Inspection Report# : [2015003](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Correct Chronic Chiller Relief Valve Freon Leaks

A self-revealing, Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was identified when the 13 chiller tripped on freeze protection due to insufficient refrigerant. Specifically, timely corrective actions were not implemented in response to repetitive Freon leaks that ultimately rendered the 13 chiller inoperable. In response, PSEG initiated a prompt investigation, conducted troubleshooting and repairs, entered the issue in their CAP, and completed an ACE.

The issue was determined to be more than minor since it affected the equipment performance attribute of the Mitigating System cornerstone and adversely affected its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was evaluated in accordance with IMC 0609, Attachment 4 and Appendix A, Exhibit 2, and screened to Green since it was not a qualification or design deficiency, did not represent a loss of system or function, and did not exceed its TS allowed outage time. The issue was determined to have a cross-cutting aspect in Human Performance, Design Margins, in that a licensee organization operates and maintains equipment within design margins, and places special attention on maintaining safety related equipment. Specifically, PSEG did not minimize a long-standing equipment issue nor carefully maintain its operating margin.

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Mar 31, 2014

Identified By: NRC

Item Type: FIN Finding

Failure to take adequate corrective actions following a PDP failure to couple-on-demand event.

The inspectors identified a Green FIN associated with Unit 1 for PSEG's failure to take adequate corrective actions in accordance with procedure LS-AA-125, "Corrective Action Program," Attachment 1 guidance following a PDP failure to couple-on-demand event, and to preclude subsequent failures during other couple-on-demand events and additional unplanned PDP unavailability. PSEG entered this issue into their CAP, implemented a compensatory measure, and initiated actions to correct the condition causing the failure to couple events.

The performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and affected its objective to ensure the availability and reliability of systems (safe shutdown charging cross-connect) that respond to initiating events (fire) to prevent undesirable consequences (i.e., core damage). The inspectors determined that the finding was very low safety significance as the Unit 2 reactor would have been able to reach and maintain safe shutdown. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, in that PSEG did not take effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, PSEG did not take adequate corrective actions in response to a PDP failure-on-demand event in February 2013 to preclude several additional unexpected PDP failure-on-demand events which resulted in additional unplanned unavailability.

Inspection Report# : [2014002](#) (*pdf*)

Barrier Integrity

Significance:  Mar 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Untimely Identification and Correction of Unsatisfactory Control Room Ventilation Charcoal Testing

A self-revealing Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, was identified when PSEG did not promptly identify and correct a condition adverse to quality (CAQ). Specifically, PSEG did not promptly identify that negative results of a control room emergency air conditioning system (CREACS) charcoal filtration sample had Technical Specification (TS) implications and correct it prior to violating TSs. In response, PSEG entered Unit 1 TS 3.0.3, suspended irradiated fuel movements on Unit 2 to comply with Unit 2 TS 3.7.6, and commenced actions to re-align control area ventilation to Unit 2 supplying in the maintenance mode. Unit 1 TS 3.0.3 was exited at 7:55 a.m. that morning and PSEG reported this via an 8-hour report to the NRC under ENS 51504. PSEG revised the associated surveillance procedure to write a NOTF to replace the charcoal bank in the next system window if methyl iodide results are greater than or equal to 2 percent penetration (0.5% margin). PSEG documented and evaluated the issue in their CAP as Notifications (NOTFs) 20707922, 20707650, and 20712068.

Untimely identification and correction of the charcoal filter performance was a performance deficiency. The issue was more than minor since it was similar to IMC 0612, Appendix E, example 2.a in that a TS limit was exceeded. Further, it was more than minor since it was associated with the system performance attribute of the Barrier Integrity cornerstone and adversely affected its cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, unsatisfactory charcoal filter performance resulted in inoperability of the single filtration train that was in service. The finding was reviewed in accordance with IMC 0609, Attachment 4 and Appendix A, where it was screened to Green since it only represented a degradation of the radiological barrier function provided for the control room. The finding had a cross cutting issue in Human Performance, Teamwork, in that PSEG staff did not collaborate and cooperate in connection with operational activities, such as CAP entry and notification of the control room, associated with the CREACS filter testing and results.

Inspection Report# : [2016001](#) (*pdf*)

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Maintenance Effectiveness of Control Room Ventilation Radiation Monitors

Inspectors identified a Green NCV of 10 CFR 50.65(a)(2) when Control Area Ventilation (CAV) radiation monitor performance was not being effectively controlled through appropriate preventive maintenance. Specifically, there were repetitive foil issues and a repeat maintenance preventable functional failure (RMPFF) during the monitoring period. PSEG placed the system under (a)(1) and entered this in their CAP.

The issue was more than minor since it was associated with the barrier performance attribute of the Barrier Integrity cornerstone and adversely affected its objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was screened in accordance with IMC 0609, Attachment 4 and Appendix A, Exhibit 3, where it screened to Green since it only represented a degradation of the radiological barrier function provided for the control room. The finding had a cross-cutting aspect in Human Performance, Conservative Bias, in that licensees take timely action to address degraded conditions commensurate with their safety significance and take a conservative approach to decision making.

Inspection Report# : [2015004](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

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