

Salem 2

1Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

SALEM UNIT 2 LOSS OF ALL THREE CHILLERS

The inspectors identified a self-revealing non-cited violation of Technical Specification 6.8.1.a, "Procedures and Programs" when the 23 chiller failed to start on January 22, 2008. PSEG personnel did not start the 23 chiller and verify proper operation before removing the 21 and 22 chillers from service. This resulted in the plant operating for five hours with all three chillers out of service. The inspectors determined that the procedure for chiller operation was inadequate because it did not provide sufficient guidance to operators when removing two chillers from service. PSEG's corrective actions included revising the chiller operating procedure and replacement of the solenoid valve that caused the 23 chiller not to start.

The finding is more than minor because it is associated with the configuration control attribute of the Initiating Events cornerstone, and it adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, unavailability of all three chillers increased the likelihood of a loss of control air. The inspectors determined that the finding was of very low safety significance using the Salem plant-specific Phase 2 pre-solved worksheets in accordance with IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations."

This performance deficiency has a cross-cutting aspect in the area of human performance because PSEG personnel did not effectively communicate human error prevention techniques, such as holding pre-job briefings, self checking, and peer checking, and these techniques were not used commensurate with the risk of the assigned task [H.4(a)]. Specifically, PSEG personnel did not verify the proper operation of the 23 chiller before removing the 21 and 22 chillers from service.

Inspection Report# : [2008002](#) (*pdf*)

Significance: G May 12, 2007

Identified By: Self-Revealing

Item Type: FIN Finding

SALEM UNIT 2 AUTOMATIC REACTOR TRIP

A self-revealing finding for improper maintenance on a demineralizer sight glass was identified when the sight glass catastrophically failed and initiated a condensate system transient that resulted in a reactor trip. Contrary to vendor recommendations that each sight glass be installed and torqued in place only one time, maintenance technicians had re-installed the sight glass on the demineralizer following vessel maintenance. PSEG replaced all Unit 2 demineralizer sight glasses before the subsequent Unit 2 startup. The finding is greater than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone, and because it adversely affects the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609 and determined that the finding is of very low safety significance.

The finding has a cross-cutting aspect in the area of human performance because PSEG did not ensure that complete, accurate, and up to date design documentation, procedures, and work packages were available (H.2.c). Specifically, vendor documentation for the demineralizer sight glass was not available on site, and as a result, PSEG did not incorporate appropriate vendor guidance regarding reinstallation and torque requirements for the sight glass into plant procedures.

Inspection Report# : [2007003](#) (*pdf*)

Mitigating Systems

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Significance: Mar 31, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

25SW24 FAILURE CAUSED 25 SERVICE WATER PUMP UNAVAILABILITY

The inspectors identified a self-revealing non-cited violation of Technical Specification 6.8.1.a, "Procedures and Programs." The inspectors determined that maintenance procedures for the 25 service water strainer (SWS) blow down valve (25SW24) were inadequate because they did not ensure proper alignment of the valve and actuator. This resulted in the 25 service water pump (SWP) being inoperable for approximately 35 hours. PSEG returned the 25 SW train to service following completion of corrective maintenance on the blow down valve and verification of proper alignment of the valve and actuator. PSEG also revised the applicable maintenance procedures for future maintenance activities.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase 1 screen and determined that this finding was of very low safety significance.

The finding has a cross-cutting aspect in the area of problem identification and resolution because PSEG did not implement and institutionalize operating experience, including internally generated lessons learned, through changes to station processes, procedures, equipment, and training programs [P.2(b)]. Specifically, PSEG procedures did not incorporate internal operating experience to ensure proper alignment between the service water strainer blow down valve actuator and valve stem.

Inspection Report# : [2008002](#) (*pdf*)

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Significance: Jun 29, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO INSPECT TUBING ON THE 22 CONTROL AREA CHILLER

A self-revealing NCV for failure to comply with 10 CFR, Appendix B, Criterion V, "Instruction, Procedures, and Drawings," was identified when operators discovered a significant leak in the copper oil filter tubing on the 22 CAC on May 1, 2007, that made the 22 CAC inoperable. PSEG had not inspected or replaced the affected tubing as specified in the maintenance procedure. PSEG replaced the tubing and returned the 22 CAC to service. This resulted in ten hours of unplanned unavailability on the 22 CAC. The finding is greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609 and determined that the finding is of very low safety significance.

The finding has a cross-cutting aspect in the area of problem identification and resolution because PSEG did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner commensurate with their safety significance (P.1.d). Specifically, corrective actions to prevent CAC tubing failures were ineffective because the visual inspections required by the procedure revision incorporated after previous CAC oil tubing failures, may not have identified degraded copper tubing in time to prevent tubing failure.

Inspection Report# : [2007003](#) (*pdf*)

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Significance: May 01, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

21 CONTROL AREA CHILLER INOPERABLE DUE TO OPERATOR PROCEDURAL ERROR

A self-revealing NCV for failure to comply with 10 CFR 50, Appendix B, Criterion V, "Instruction, Procedures, and Drawings," was identified when operators discovered the 21 CAC in an inoperable condition on May 1, 2007. In accordance with post-maintenance testing procedures for the 22 CAC, operators placed the 21 CAC in the pump down

mode. When the test of the 22 CAC was aborted, operators did not return the 21 CAC to operable status in accordance with procedures. The 21 CAC was inoperable for approximately six hours. PSEG restored the 21 CAC to operable status and entered the issue into the corrective action program (CAP) as notifications 20322784 and 20322793. This finding is greater than minor because the performance deficiency is associated with the equipment performance attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, and determined the finding is of very low risk significance.

The finding has a cross-cutting aspect in the area of human performance because PSEG personnel did not use human error prevention techniques (H.4.a). Specifically, an operator did not identify an incorrect switch position because the operator did not verify the expected system response when placing the 21 CAC switch to run.

Inspection Report# : [2007003](#) (*pdf*)

Significance:  May 01, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IMPLEMENT STEP 3.6.2 OF THE COMPONENT FOULING PROCEDURE

The inspectors identified an NCV for failure to comply with 10 CFR 50, Appendix B, Criterion V, "Instruction, Procedures, and Drawings," when operators did not implement additional log readings for service water (SW) heat exchangers (HXs) as specified by plant procedures during extended periods of high river detritus from March through May of 2007. This required PSEG to take the 12 CC HX out of service for 45 hours to complete system flushes in May and June 2007 to restore full operability. The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609 and determined that the finding is of very low safety significance.

The finding has a cross-cutting aspect in the area of human performance because PSEG personnel did not follow plant procedures (H.4.b). Specifically, operators did not implement additional log readings for SW HXs as specified by plant procedures during extended periods of high river detritus from March through May of 2007.

Inspection Report# : [2007003](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : June 05, 2008