Salem 2
1Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2010
Identified By: Self-Revealing
Item Type: FIN Finding
21 Steam Generator Feed Pump Trip
A self-revealing finding of very low safety significance was identified on January 21, 2010, because a control system short circuit caused the 21 steam generator feed pump (SGFP) to trip. This caused a turbine runback and ultimately an automatic Unit 2 reactor trip due to low water level in one of four steam generators (SGs). The short circuit occurred because technicians did not use the correct procedure to repair degraded insulation on the barrel of a connector lug that was identified in the 21 SGFP control system in November 2009. PSEG repaired the short circuit prior to restart of Unit 2 on January 23, 2010. The issue was entered into the corrective action program as notification 20448229. PSEG's immediate corrective actions for this issue included repairing the degraded insulation, fixing lug alignment, and performing extent of condition inspections on the other Unit 2 SGFP panels for degraded insulation. No other deficiencies were identified.

This performance deficiency is more than minor because it is associated with the human performance attribute of the Initiating Events cornerstone, and it adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions. Specifically, not following PSEG procedure SC.DE-TS.ZZ-2039 on November 11, 2009, caused the 21 SGFP trip and subsequent automatic reactor trip due to low SG water level on January 21, 2010. The finding was evaluated under IMC 0609, Attachment 4. The inspectors determined that the finding is of very low safety significance because it does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. The inspectors determined that this finding has a cross-cutting aspect in the area of human performance because PSEG personnel did not follow procedure requirements while repairing plant equipment. Specifically, technicians applied electrical tape to the 21 SGFP pressure switch connector lug barrel on November 11, 2009, which did not meet PSEG procedure SC.DE-TS.ZZ-2039 requirements.
Inspection Report# : 2010003 *(pdf)*

Mitigating Systems

Significance: G Feb 18, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE CALCULATIONS FOR DEGRADED VOLTAGE RELAY VOLTAGE SETPOINT
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion III, “Design Control”, because PSEG had not verified the adequacy of the design for the DVR voltage setpoint. Specifically, PSEG had not performed calculations for motor starting and running conditions, and for operation of other safety-related equipment based on voltages afforded by the degraded voltage relays. PSEG entered this issue into their corrective action program and performed preliminary calculations to demonstrate reasonable assurance of operability.

The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding in accordance with IMC 0609, Attachment 0609.04, Phase 1 – Initial Screening and Characterization of Findings, Table

4a for the Mitigating Systems Cornerstone. The team determined that the finding was of very low safety significance because it was a design deficiency confirmed not to result in loss of operability.

The team determined that this finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience Component, because PSEG did not ensure that relevant internal and external operating experience was collected, evaluated, and communicated to affected internal stakeholders in a timely manner. Specifically, PSEG did not adequately evaluate a similar finding documented in a Hope Creek Generating Station NRC component design bases inspection report in November 2009 (NCV 05000354/2009007-03) and missed an opportunity in their internal response to NRC Information Notice 2008-02, “Findings Identified During Component Design Bases Inspections”, issued in March 2008.

Inspection Report# : 2011007 *(pdf)*

Barrier Integrity

Significance: G Feb 18, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IDENTIFY AND CORRECT A CONDITION ADVERSE TO QUALITY AFFECTING THE CREACS EXPANSION JOINTS
The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action”, because PSEG did not identify and correct a condition adverse to quality. Specifically, PSEG did not identify and correct the degraded condition of the Unit 1 and Unit 2 control room emergency air conditioning system (CREACS) common suction expansion joints because they did not implement appropriate preventive maintenance (PM) per their performance-centered maintenance (PCM) template. PSEG placed the finding and the associated issues in its corrective action program. In response to the identified control room envelope (CRE) breach, operators promptly entered TS 3.7.6 and initiated mitigation actions. PSEG affected prompt repairs, performed an appropriate post maintenance test, declared the CRE fully operable, and exited the TS limiting condition for operation action statement.

The finding is more than minor because it is associated with the barrier performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the control room operators from radionuclide releases caused by accidents or events. The finding was evaluated in accordance with IMC 0609, Attachment 4, Table 4a for the containment barrier. Since the finding had the potential to impact more than the radiological barrier function, a Region I Senior Reactor Analyst (SRA) performed a Phase 3 analysis. The SRA determined that the dominant sequence involved a sufficient degradation of the CREACS barrier that would allow sufficient in-leakage to force an evacuation of the control room during a fire or toxic gas event. The areas with the degradation were in room 15615 and 25615 for Units 1 and 2, respectively. The SRA evaluated these areas and determined that the potential impact due to in-leakage through the degraded barrier from fire and toxic gas would be negligible. The SRA also reviewed the results of recent CRE in-leakage testing conducted in September 2010. The condition of the expansion joint tearing and wear could reasonably be assumed to have existed during the September testing. This testing also confirmed that the total in-leakage in these areas was small. Based on the above factors, the SRA determined the finding was of very low safety significance (Green).

The team determined that this finding has a cross-cutting aspect in the area of Human Performance, Work Control Component, because PSEG did not plan work activities to support long-term equipment reliability by ensuring that maintenance scheduling was more preventive than reactive. Specifically, PSEG did not implement appropriate PMs on the CREACS filter expansion joints necessitating several reactive corrective maintenance activities.

Inspection Report# : 2011007 *(pdf)*

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 07, 2011