Hope Creek 1
3Q/2010 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2010
Identified By: Self-Revealing
Item Type: FIN Finding
REACTOR RECIRCULATION PUMP TRIP
A self-revealing finding of very low safety significance was identified on February 26, 2010, because the A reactor recirculation pump (RRP) tripped. The pump trip caused a reactor coolant system transient and a decrease in reactor power. The RRP tripped due to low motor generator (MG) set lube oil pressure that occurred because PSEG had not refilled a MG set lube oil pump prior to RRP restoration after oil was drained to support lube oil pump maintenance.

The performance deficiency was more than minor because it was associated with the human performance attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that impact plant stability and challenge critical safety functions. Specifically, the failure to refill the lube oil pump with oil caused the A RRP to trip, which is defined as a transient in Hope Creek UFSAR, 15.3.1.1.2.1. As stated in the IMC 0612, Appendix E, more than minor example 4.b, a performance deficiency is, “not minor if: The error caused a reactor trip or other transient.” The inspectors performed a Phase I screening of the finding in accordance with IMC 0609.04, “Phase I - Initial Screening and Characterizing of Findings.” The finding screened as Green (very low safety significance) because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The finding had a cross-cutting aspect in the area of human performance, because PSEG did not appropriately coordinate work activities (H.3(b)). Specifically, PSEG maintenance did not coordinate the change to the work plan with PSEG operations.

Inspection Report# : 2010003 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedure During Scaffold Construction
The inspectors identified a NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings", because PSEG did not properly implement procedural controls for scaffold construction in safety-related areas. Specifically, maintenance installed scaffold in direct contact with several essential safety-related components associated with the B and D service water (SW) trains without engineering review and approval. PSEG's short-term corrective actions included entering the issue into their CAP and removing the deficient scaffolding.
The finding has a cross-cutting aspect in the area of human performance because PSEG personnel did not follow procedures. Specifically, maintenance did not follow procedure requirements during scaffold construction in the B/D SW pump bay.
Inspection Report# : 2010004 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: FIN Finding
RCIC Turbine Bearing Incorrect Oil Level Indication

The inspectors identified a finding of very low safety significance because the reactor core isolation cooling (RCIC) turbine oil level indicator operator aid was incorrect from April 29, 2010, to May 25, 2010. Specifically, PSEG did not use the operator aid posting procedure for the installation of a new RCIC turbine oil level indicator operator aid. This resulted in the maximum oil level mark being set too high and the minimum oil level mark being set too low on the operator aid. PSEG's corrective actions included entering the issue into the CAP and reestablishing the correct bands on the RCIC turbine oil level sight glass.

This finding was more than minor because, it left uncorrected, the condition adverse to quality would lead to a more significant safety concern. Specifically, the incorrect RCIC oil level operator aid would have led operators to refill the oil after the quarterly oil samples at the incorrect maximum level. This would have caused the RCIC turbine to trip on high oil level during operation. The inspectors performed a Phase I screening of the finding using IMC 0609, Attachment 0609.04, Table 4a, Mitigating Systems cornerstone. The inspectors determined the issue was of very low safety significance (Green) because the finding was not a design or qualification deficiency; did not result in an actual loss of safety function; and was not potentially risk significant for external events. The finding had a cross-cutting aspect in the area of human performance, because PSEG did not communicate human error prevention techniques, such as holding pre-job briefings, self and peer check, and proper documentation of activities. Specifically, PSEG did not use self and peer check and did not document the activities of the operator aid installation on April 29, 2010.

Inspection Report# : 2010004 *(pdf)*

Significance: G Sep 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify Inadequate RHR Pipe Vent Configuration
The inspectors identified a NCV of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions", because PSEG did not identify and correct a condition adverse to quality. Specifically, PSEG did not identify that the configuration of the residual heat removal (RHR) pump discharge piping vents would not allow for complete venting of the piping. During a system walkdown to evaluate the adequacy of PSEG's response to Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems", the inspectors identified a vent valve pipe connected to the side rather than the top of the RHR discharge piping. The inspectors determined that this pipe configuration would not allow for complete venting of the RHR discharge pipe and found that this vent was credited by PSEG as the vent path to meet design basis assumptions and referenced in the GL response. Following identification of the issue, PSEG conducted ultrasonic test examinations of the discharge piping to verify the line was filled with water to assure operability of the RHR system and entered the issue into the CAP to evaluate additional corrective actions to address the potential void area.

This finding is more than minor because it is associated with the configuration 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 inspectors determined the finding was of very low safety significance (Green) because the finding was determined to be a design deficiency confirmed not to result in loss of operability.

This finding has a cross-cutting aspect in the area of human performance, because PSEG did not provide sufficient oversight of contractors who performed the assessment for the GL. Specifically, while performing walkdowns to assess the configuration of the RHR piping in 2008, PSEG contractors did not identify that the credited vent would not vent a gas void from the system.

Inspection Report# : 2010004 *(pdf)*

Significance: G Mar 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
CONTROL ROOM CHILLER TRIP
A self-revealing NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," was identified because the B

control room chiller tripped when it was started on November 18, 2009. This reduced the cooling capability of the control area chilled water system. The inspectors determined that the cause of the trip was that PSEG did not identify and correct a condition adverse to quality associated with a safety-related breaker for the B control room chiller. Specifically, PSEG did not identify a loose wiring connection on the breaker during preventive maintenance inspections following refurbishment by a vendor. PSEG's corrective actions included repair of the affected breaker, inspections of other breakers, and a revision to a preventive maintenance procedure.

The finding was more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone. The loose wiring connection affected the reliability and availability of the B control room chiller, which provides cooling for the main control room, emergency switchgear rooms, and the safety auxiliaries cooling system pump rooms. The inspectors performed a Phase I screening of the finding using IMC 0609, Attachment 0609.04, Table 4a, Mitigating Systems cornerstone. The inspectors determined the issue was of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not result in an actual loss of safety function because the A chiller was available, and was not potentially risk significant for external events. The finding had a cross-cutting aspect in the area of human performance, because PSEG's breaker preventive maintenance procedure was not complete, accurate, and up-to-date. Specifically, the procedure did not include steps to check for loose wiring connections on key components. (H.2(c))

Inspection Report# : 2010002 *(pdf)*

Significance: G Mar 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
HIGH PRESSURE COOLANT INJECTION BOOSTER PUMP OUTBOARD BEARING LOW OIL LEVEL AND LEAK
The inspectors identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," because PSEG failed to identify and correct a condition adverse to quality. Specifically, PSEG did not identify that the high pressure coolant injection (HPCI) booster pump outboard bearing housing oil level was below the minimum level mark, and the housing was actively leaking. Corrective actions performed by PSEG included restoring the proper oil level, repairing the leak, conducting training for equipment operators, and performing observations of equipment operator rounds.

The inspectors determined that not identifying a condition adverse to quality, the lowering oil level in the HPCI booster pump outboard bearing that could have prevented the HPCI system from performing its safety function, was a performance deficiency. The performance deficiency was more than minor because, if left uncorrected, the condition adverse to quality would lead to a more significant safety concern. The inspectors performed a Phase I screening of the finding using IMC 0609, Attachment 0609.04, Table 4a, Mitigating Systems cornerstone. The inspectors determined the issue was of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not result in an actual loss of safety function, and was not potentially risk significant for external events. The finding had a cross-cutting aspect in the area of problem identification and resolution (PI&R), because PSEG did not identify the HPCI booster pump bearing low oil level condition and leak completely, accurately, and in a timely manner commensurate with its safety significance. (P.1(a))

Inspection Report# : 2010002 *(pdf)*

Significance: G Oct 09, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
NON-CONSERVATIVE INPUT USED IN DESIGN CALCULATION FOR DC CONTROL VOLTAGE FOR 4KV SWITCHGEAR
The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR 50 Appendix B Criterion III, Design Control, in that PSEG had not properly verified that the safety-related 'B' 4 kV switchgear had adequate DC control voltage to operate under all design conditions. Specifically, PSEG did not use the maximum DC control current to the 'B' 4 kV switchgear to calculate the worst case voltage drop between the battery and the switchgear. PSEG relied on this calculation to verify the adequacy of their design and ensure the minimum

voltage at the switchgear satisfied design requirements. In response, PSEG entered the issue into their corrective action program and performed a calculation to ensure that there was sufficient margin to assure operability of the 4kV switchgear.

The finding was more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design deficiency subsequently confirmed not to result in a loss of operability or functionality. This finding did not have a cross-cutting aspect because the issue was not considered to be indicative of current licensee performance.

Inspection Report# : 2009007 *(pdf)*

Significance: G Oct 09, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
EDG OVERHEAD CRANES NOT SEISMICALLY RESTRAINED
The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR 50 Appendix B Criterion III, Design Control, in that PSEG design control measures had not verified the adequacy of design with respect to ensuring adequate two-over-one seismic protection existed for the emergency diesel generators (EDG). Specifically, PSEG had not performed design reviews, calculations or testing to ensure the existing field crane configuration would not adversely impact the EDG function for a design basis safe shutdown earthquake (SSE) event. PSEG entered this issue into their corrective action program, performed Technical Evaluation (TE) 70102445-0050, Diesel Generator Underhung Crane Seismic II/I Evaluation, to calculate the seismic response of the diesel cranes and assess the as-found condition (e.g., crane seismic restraints not installed) and implemented appropriate compensatory measures.
The finding was more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design deficiency subsequently confirmed not to result in a loss of operability or functionality. This finding did not have a cross-cutting aspect because the issue was not considered to be indicative of current licensee performance.

Inspection Report# : 2009007 *(pdf)*

Significance: G Oct 09, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE DESIGN CONTROL FOR 4KV BUS DEGRADED VOLTAGE RELAY BASES
The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, in that PSEG had not verified the adequacy of design with respect to establishing the bases for the degraded voltage relay (DVR) setpoint. Specifically, PSEG's calculation to verify the DVR setpoint utilized a non-conservative voltage input to analyze motor starting during accident load sequencing and assumed an inappropriate modeling technique for running motors that minimized the voltage dips during motor starting. Additionally, PSEG's analyses had not analyzed the capability of motor starting during steady state conditions following load sequencing. PSEG entered the issue into their corrective action program and prepared preliminary calculations to assess the cumulative effect of the non-conservative assumptions on the voltage available to motors starting during load sequencing. The calculations showed that although margins were substantially reduced, the motors would still be afforded their minimum required starting voltage.

The finding was more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was a design deficiency confirmed not to result in a loss of the electrical distribution system operability or functionality. This finding did not have a cross-cutting aspect because the issue was

not considered to be indicative of current licensee performance.

Inspection Report# : 2009007 *(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 : November 29, 2010