

Hope Creek 1

4Q/2010 Plant Inspection Findings

Initiating Events

Significance:  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:  Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

RCIC TURBINE BEARING HIGH OIL LEVEL

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 reactor core isolation cooling (RCIC) turbine oil level was above the maximum level mark. Corrective actions performed by PSEG included restoring the proper oil level, revising the RCIC quarterly oil sample procedure, conducting training for equipment operators, and reinforcing to senior reactor operators the significance of the oil levels on RCIC operability. The violation was entered into the CAP as notifications 20490150 and 20490446.

The performance deficiency was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. 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, because PSEG did not identify the RCIC turbine high oil level condition completely, accurately, and in a timely manner commensurate with safety

significance.

Inspection Report# : [2010005](#) (pdf)

Significance:  Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW SCAFFOLD PROCEDURE

The inspectors identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” because PSEG did not properly implement procedural controls for scaffolds located in safety-related areas. Specifically, scaffolding had been installed in contact with or in close vicinity of several safety-related components in multiple systems without engineering review and approval, contrary to station procedures. PSEG’s corrective actions included entering the issue into the corrective action program and removing or modifying the deficient scaffolding.

The performance deficiency was more than minor because it is similar to IMC 0612, Appendix E, “Examples of Minor Issues,” Example 4a, which states that scaffold clearance issues would be more than minor if the licensee routinely failed to perform engineering evaluations for these issues. In this case, the inspectors identified several non-compliances with scaffold clearance requirements for safety-related components, and PSEG had not performed engineering evaluations for these issues. The inspectors performed a Phase I Significance Determination Process (SDP) 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. This finding had a cross-cutting aspect in the area of human performance, because PSEG did not define and effectively communicate expectations regarding procedure compliance, and PSEG personnel did not follow procedures. Specifically, maintenance personnel did not follow procedure requirements for scaffolds located in close proximity to safety-related equipment. (H.4(b))

Inspection Report# : [2010004](#) (pdf)

Significance:  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 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 sightglass.

The performance deficiency was more than minor because, if 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 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 SDP 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 self and peer checking, and proper documentation of activities. Specifically, PSEG did not use self and peer checking and did not document the installation of the operator aid. (H.4(a))

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 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 the PSEG 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 was referenced in the GL response. Following identification of the issue, PSEG conducted ultrasonic test (UT) 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.

The performance deficiency was 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. The inspectors performed a Phase I SDP 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 determined to be a design deficiency confirmed not to result in loss of operability. This finding had a cross-cutting aspect in the area of human performance, because PSEG did not ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported. Specifically, PSEG did not properly oversee contractors who performed the assessment for the GL, and the contractors did not identify that the credited RHR vent path would not allow complete venting of the system. (H.4(c))

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*)

Barrier Integrity

Significance: G Dec 31, 2010

Identified By: NRC

Item Type: FIN Finding

RHR HEAT EXCHANGER DEFICIENT OPERABILITY EVALUATION

The inspectors identified a finding for a deficient operability evaluation involving leakage from the residual heat removal (RHR) system into the reactor building through a degraded gasket on the B RHR heat exchanger (HX). PSEG's operability evaluation did not fully account for the continuing degradation of the condition, and would have allowed the leakage rate from the HX to exceed the value analyzed in a supporting technical evaluation. Consequently, during the assumed mission time for the HX following a postulated accident, the post-accident control room dose could have exceeded the regulatory limit of 5 Rem. PSEG's corrective actions included revising both the operability and technical evaluations, and completing repairs to the RHR HX.

This finding is associated with the structure, system, and component (SSC) and barrier performance (Containment) attributes of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the performance deficiency is similar to IMC 0612, Appendix E, Example 3i, that states an issue with accident analysis calculations is more than minor if the calculations needed to be re-performed to assure accident analysis requirements were met. In this case, accident analysis calculations were re-performed to assure control room dose requirements were met. The inspectors determined that the finding was Green, based on a Phase 2 SDP review using Appendix H, "Containment Integrity". The finding had a cross-cutting aspect in the area of problem identification and resolution, because PSEG did not thoroughly evaluate the degraded condition on the B RHR HX, including classifying, prioritizing, and evaluating for operability. Specifically, PSEG's operability evaluation did not fully account for the dose impact of increased leakage during the post-accident mission time of the RHR HX.

Inspection Report# : [2010005](#) (*pdf*)

Significance: SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE 10 CFR 50.59 SAFETY EVALUATION

The inspectors identified a NCV of 10 CFR 50.59, “Changes, Tests, and Experiments”, for PSEG’s failure to perform an adequate safety evaluation for an approved design change involving primary containment isolation valves (PCIVs). Specifically, the safety evaluation did not identify the impact of a design change that increased the allowable closing stroke times of several PCIVs, which resulted in more than a minimal increase in the potential radiological consequences of an accident. PSEG’s corrective actions included blocking procedure changes that incorporated the design change and implementing a new design change to return the PCIV stroke times back to their original design values.

Violations of 10 CFR 50.59 potentially impede or impact the regulatory process and are, therefore, dispositioned using the NRC Enforcement Policy. In accordance with the Enforcement Policy, the performance deficiency was more than minor because it is associated with the design control attribute of the Barrier Integrity cornerstone, and it adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors performed a Phase I screening of the finding using IMC 0609, Attachment 0609.04, Table 4a, Barrier Integrity cornerstone. The issue screened as Green, because there was no actual open pathway in the physical integrity of the primary containment and because the design change, although approved for implementation, was not actually incorporated into station procedures. Therefore, the violation is categorized as Severity Level IV in accordance with Section 6.1.d of the NRC Enforcement Policy. The underlying finding had a cross-cutting aspect in the area of human performance, because the station did not provide proper supervisory and management oversight of work activities, including contractors. Specifically, engineers, supervisors, and managers did not properly oversee contractor engineering products, including performing a rigorous technical review of the products for a design change, that resulted in an inadequate 10 CFR 50.59 safety evaluation.

Inspection Report# : [2010005](#) (*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 : March 03, 2011