Hope Creek 1
3Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
PSEG OPERATORS AND ENGINEERS FAILED TO PROMPTLY IDENTIFY AND INTIATE ACTIONS TO INVESTIGATE A MINOR POWER, PRESSURE, AND LEVEL EXCURSION
During a plant shutdown on March 17, PSEG operators and engineers did not promptly identify and initiate actions to evaluate a reactor pressure control deficiency, which had caused a small power, pressure, and level excursion. This deficiency subsequently resulted in a larger operational transient.

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions, for this performance deficiency. This self-revealing finding was considered to be more than minor, because it resulted in a perturbation in plant stability by causing a power transient. The inspectors determined that the finding was of very low safety significance, because although it caused a transient, it did not increase the likelihood of a primary or secondary system loss of coolant accident (LOCA) initiator, did not contribute to a combination of a reactor trip and loss of mitigation equipment function, and did not increase the likelihood of a fire or internal/external flood.
Inspection Report# : 2003003*(pdf)*

Mitigating Systems

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO MAINTAIN COMPENSATORY FIRE WATCH WITH C EMERGENCY DIESEL GENERATOR CO2 FIRE PROTECTION SYSTEM AUTOMATIC START FUNCTION INOPERABLE
The inspectors determined that ineffective work control regarding the automatic fire suppression system (carbon dioxide-CO2) for the C EDG had resulted in the CO2 system being unnecessarily out of service for weeks, compensatory measures being terminated prior to the CO2 system's return to service, and control of transient combustibles being inadequate. These performance issues are violations of Hope Creek Technical Specification 6.8.1 to correctly implement fire protection program procedures. Additionally, these performance issues have a problem identification aspect, because PSEG operators did not initiate a corrective action notification when initial problems with the C EDG fire impairment were identified.

This finding is more than minor, because it adversely affects the mitigating system cornerstone attribute to maintain the availability of the C EDG room fire protection equipment. The finding is of very low risk significance, because the three hour fire barriers separating the B and D EDGs from the C EDG room were not affected and remained capable of ensuring the B and D EDGs were available for plant safe shutdown in the event of a fire in the C EDG room.
Inspection Report# : 2003005*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
NON-CONFORMING LOW PRESSURE COOLANT INJECTION SUCTION RELIEF VALVE
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions, for engineering's failure to promptly identify and take actions to address a condition adverse to quality concerning a non-conforming low pressure coolant injection (LPCI) suction relief valve. Engineering did not thoroughly evaluate the extent of condition relative to previous relief valve issues and did not promptly evaluate the C LPCI relief valve issue once identified.

The finding was more than minor because engineering failed to adequately evaluate a degraded condition with the potential to impact LPCI equipment performance and adversely affect LPCI availability and reliability. The issue was considered to be of very low safety significance because C LPCI remained operable and there was no loss of safety function.
Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
PERFORMANCE MONITORING TESTING OF THE SAFETY AUXILIARIES COOLING SYSTEM HEAT EXCHANGER DOES NOT PROVIDE ACCEPTANCE LIMITS
The inspectors identified that performance monitoring testing of heat exchangers in the safety auxiliaries cooling system (SACS) was inadequate, in that the procedure did not provide acceptance limits.

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, Test Control, for failure to develop and incorporate acceptance limits to assure that testing demonstrates that systems perform satisfactorily when in service. This finding was more than minor because it is a procedure testing quality issue that affects the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events. Inadequate test controls could allow a degraded heat exchanger to go undetected. This finding is of very low safety significance because the SACS system remained operable and there was no actual loss of SACS safety system function and performance as verified by previously completed visual inspections of the SACS heat exchangers.
Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ENSURE EDG DESIGN SPECIFICATIONS WERE TRANSLATED INTO PLANT DESIGN DOCUMENTATION
The inspectors identified a green NCV for failure to ensure that EDG design specifications used in April 2003 to reassemble the B EDG were translated into design documentation and available on June 17 for troubleshooting of the A EDG intercooler pump leaking seal condition. Additionally, PSEG did not ensure a deviation from design specifications was controlled on June 17 when an on-the-spot procedure change accepted the excessive axial thrust without identifying this deviated from the design specification.
Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ASSURE THAT THE CAUSE OF SIGNIFICANT CONDITION ADVERSE TO QUALITY BE IDENTIFIED AND CORRECTIVE ACTIONS TAKEN
The inspectors identified that PSEG's failure to ensure that the cause of a significant condition adverse to quality was identified and corrected to preclude recurrence regarding use of an incorrect maintenance procedure to replace the A EDG intercooler pump seal.

The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Actions, for failure to assure that the cause of significant condition adverse to quality be identified and corrective actions taken to preclude recurrence regarding the use of the wrong procedure to disassemble and replace the EDG A intercooler pump seal on June 15. The finding was more than minor because, if left uncorrected, working safety related components to the incorrect maintenance procedure could become a more significant safety concern due to unreliable component performance. The issue affects the mitigating system cornerstone. However, the inspectors determined that the finding was of very low safety significance (Green) using the significance determination process (SDP) Phase 1 screen worksheet for mitigating systems because there was no actual loss of the A EDG safety function due to this finding.
Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ADEQUATELY FOLLOW PROCEDURAL GUIDANCE ASSOCIATED WITH POST-SCRAM WATER LEVEL CONTROL
The inspectors identified a non-cited violation of Technical Specification (TS) 6.8.1 for operations' failure to adequately follow procedural guidance associated with post-scram water level control. In particular, a control room supervisor (CRS) issued an order that conflicted with the emergency operating procedure (EOP) guidance.

The inspectors determined that this finding was more than minor because operators failing to follow EOP procedures, if left uncorrected, would become a more significant safety concern. Specifically, in a symptoms-based approach to combating emergencies, operators must be relied upon to follow EOP guidance and not deviate without adequate justification. The inspectors determined that the finding was of very low safety significance because there was no actual loss of a TS required train, non-TS risk-significant train, or system safety function due to the low water level condition.
Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE TESTING TO COMPLETELY VERIFY THE EMERGENCY DIESEL GENERATOR FUEL OIL TRANSFER PUMP TRANSFER FEATURES
The inspectors identified a non-cited violation of TS 4.8.1.1.2.h.12 because of inadequate testing to completely verify the EDG fuel oil transfer pump (FOTP) transfer features. PSEG testing did not verify FOTP transfer capability from each fuel oil storage tank as specified in the TS.

This issue was more than minor because a TS required test was not adequately performed (Question 1.c. in Appendix E of NRC Manual Chapter 0612). The inspectors determined that the finding was of very low safety significance because there was no actual loss of EDG safety system function as subsequent testing verified FOTP design functions.

Inspection Report# : 2003004*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: FIN Finding
PSEG FAILED TO PROMPTLY FOLLOW THROUGH ON CORRECTIVE ACTIONS TO ENSURE ADEQUATE STROKING OF ALL APPLICABLE ADHR VALVES
The inspectors identified that PSEG did not follow through on corrective actions regarding adequate stroking of all applicable alternate decay heat removal (ADHR) valves prior to refueling outage 10 (RF10) in October 2001. In addition, inspector follow-up was needed to preclude a similar occurrence in RF11, planned for April 2003.

The finding was more than minor, because it potentially affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events (i.e., loss of normal decay heat removal). The finding was associated with the attribute of equipment performance (availability and reliability of ADHR). The issue was considered to be of very low safety significance based on PSEG's subsequent demonstration of no loss of safety function (ADHR).
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
PSEG ENGINEERING FAILED TO PROMPTLY IDENTIFY AND TAKE ACTIONS TO ADDRESS A CONDITION ADVERSE TO QUALITY CONCERNING DEGRADED HPCI SYSTEM LO PRESSURES
The high pressure coolant injection (HPCI) system lubricating oil (LO) pressures were degraded in multiple tests but were not corrected. The inspectors noted that the auxiliary and shaft-driven LO pump discharge pressures were both outside of the required range during numerous surveillance testing; however, engineering did not initiate any corrective actions to further evaluate or correct the condition.

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions, for PSEG engineering's failure to promptly identify and take actions to address a condition adverse to quality. The finding was more than minor because PSEG engineering failed to adequately evaluate a degraded condition with the potential to impact HPCI equipment performance and adversely affect HPCI availability and reliability. The issue was considered to be of very low safety significance, because HPCI remained operable.
Inspection Report# : 2003003*(pdf)*

Significance: G Dec 28, 2002
Identified By: NRC
Item Type: FIN Finding
LICENSED OPERATOR REQUALIFICATION PROGRAM
The inspectors identified a finding associated with crew performance on the simulator. Of the nine crews evaluated, three failed to pass their facility-administered requalification examinations.

The Operator Requalification Human Performance SDP establishes the risk importance for crew failure rate. The failure rate for Hope Creek crews was 3 of 9, or 33 percent. A failure rate of 20 percent to 34 percent is considered to be a Green finding, and is turned over to the facility licensee for corrective action. The finding is of very low safety significance because the failures occurred during annual testing of the operators on the simulator, because there were no actual consequences to the failures, and because all three crews were re-trained and re-evaluated before they were

authorized to return to control room watches.
Inspection Report# : 2002007*(pdf)*

Significance: G Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
STANDBY LIQUID CONTROL PUMP FAILED INSERVICE TEST
The inspectors determined that PSEG failed to take adequate corrective actions to preclude repetition of a safety-related component failure. PSEG corrective actions for a B standby liquid control (SLC) pump inservice test (IST) failure in March 2002 did not adequately preclude a similar degraded condition from causing an A SLC pump IST failure on October 16, 2002.

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions, for this performance deficiency. This finding was considered to be more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of the SLC system to respond to initiating events (ATWS) to prevent undesirable conditions. The inspectors determined that the finding was of very low safety significance (Green) because the B SLC pump remained operable and there was no loss of the SLC system safety function.
Inspection Report# : 2002007*(pdf)*

Significance: G Dec 16, 2002
Identified By: NRC
Item Type: FIN Finding
INADEQUATE MODIFICATION AND SYSTEM DESIGN CONTROLS WITH RESPECT TO THE STATION ATWS EVALUATION
NRC Team identified a finding concerning inadequate modification and system design controls with respect to the station anticipated transient without scram (ATWS) evaluation. The team identified two modifications as well as other configuration differences that could change the results for the ATWS evaluation of record.

There was no violation of NRC requirements because the licensee did evaluate design basis events such as loss of offsite power (LOP) and loss of coolant accident (LOCA) to verify design inputs and limits for the modifications. The finding is greater than minor because the condition if left uncorrected had the potential to affect the availability and reliability of HPCI. The finding is of very low safety significance because there was no loss of safety function and the reconciled and corrected ATWS evaluation demonstrated that suppression pool temperature remains below design limits and would provide adequate net positive suction head (NPSH) and LO cooling.
Inspection Report# : 2003002*(pdf)*

Significance: G Dec 16, 2002
Identified By: NRC
Item Type: AV Apparent Violation
INADEQUATE EMERGENCY DIESEL GENERATOR LOCKOUT RELAY TESTING FREQUENCY
NRC Team identified an apparent violation of Technical Specification (TS) 4.8.1.1.2.h.14 (a, b, and c) because of inadequate testing to verify that the emergency diesel generator (EDG) features associated with the 86R, 86B, and 86F lockout relays prevent EDG starting only when required. The licensee failed, in several cases, to test that the actual lockout features (i.e., lockout relay inputs) tripped the specific lockout relays as specified in the TS.

This issue was more than minor because a TS required test was not performed within the required periodicity (Question

1.C in Appendix E of NRC Manual Chapter 0612). There was no actual loss of the safety system function, and subsequent testing indicated that the lockout features would have been able to accomplish their design safety functions. Enforcement action for this apparent violation will be handled by separate correspondence at a later date.
Inspection Report# : 2003002*(pdf)*

Significance: G Dec 16, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE INSERVICE TEST ACCEPTABLE CRITERIA FOR HIGH PRESSURE COOLANT INJECTION DEVELOPED PUMP FLOW
NRC Team identified a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III (Design Control) was identified for inadequate acceptance limits for HPCI quarterly operability surveillance testing requirements for developed pump flow. The licensee calculations that established the required test pressure and flows for the quarterly operability test were found to be non-conservative and no calculation was done to ensure that the system could meet design requirements.

This issue was more than minor because applying the non-conservative or unreviewed acceptance limits for the pump operability test did not assure the availability and reliability of the HPCI system. This issue is considered a very low safety significance finding, because while established acceptance limits may not have been correct, there was no loss of safety function.
Inspection Report# : 2003002*(pdf)*

Significance: G Dec 16, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IDENTIFY AND CORRECT ISSUES WITH THE HIGH PRESSURE COOLANT INJECTION LUBRICATING OIL TEMPERATURE MONITORING INSTRUMENTATION
NRC Team identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Actions), for not assuring that conditions adverse to quality concerning the high pressure coolant injection (HPCI) system lubricating oil (LO) temperature monitoring were promptly identified and corrected. The temperature alarm actuated during observed inservice testing after which the team identified several deficiencies with plant drawings and procedures and at least six notifications related to uncalibrated instruments, high temperature alarms, and defective temperature switches entered into the corrective action program during the past two years.

The finding was more than minor because the licensee failed to provide reliable indication in the control room potentially affecting the ability to monitor and assess equipment performance, which could affect the availability and reliability of HPCI. The issue was considered to be of very low safety significance because there was no loss of safety function and the actual oil temperature was below the technical manual temperature limit.
Inspection Report# : 2003002*(pdf)*

Significance: G Dec 16, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
INCOMPLETE HIGH PRESSURE COOLANT INJECTION TECHNICAL SPECIFICATION VALVE LINE-UP
NRC Team identified a TS violation dispositioned as an NCV for failure to demonstrate the HPCI system operability by, at least once per 31 days, verifying that each valve, manual or automatic, in the system flow path that is not locked,

sealed or otherwise secured in position is in its correct position. The team identified that manual valve BJ-048 was not accounted for in the HPCI system valve lineup.

The finding is more than minor because a TS required valve position verification was not performed (Question 1.c in Appendix E Manual Chapter 0612), which had the potential to impact HPCI availability and reliability in reference to the configuration control attribute for operating equipment. Mis-positioning of this valve could result in damage due to inadequate LO cooling. The risk of this finding is determined to be of very low safety significance because there was no loss of safety function, and the valve was found to be in the proper positions during a subsequent valve line-up.
Inspection Report# : 2003002*(pdf)*

Significance: G Dec 16, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO EVALUATE THE POTENTIAL EFFECTS OF STEAM LEAKS ON STATION BLACKOUT COPING ASSUMPTIONS
An NCV of 10CFR50.63 (a) (2) Station Blackout (SBO) was identified due to the lack of an operability determination or engineering evaluation for the multiple steam leaks in the HPCI pump room. The degraded plant material condition of elevated HPCI room temperatures and humidity were not evaluated for the direct impact on the station's ability to cope following an SBO.

The finding was more than minor because, for an SBO event, both the expected HPCI pump room temperatures and HPCI DC bus room temperatures would be above the evaluated temperature limits potentially affecting the availability and reliability of HPCI. The finding is of very low safety significance because there was no loss of safety function. Draft calculations and subsequent engineering review of the conservatism in the original calculation method provided evidence that the resulting elevated room temperatures were not likely to cause a short term failure of HPCI or a risk significant failure on the DC bus components during the four-hour coping period.
Inspection Report# : 2003002*(pdf)*

Barrier Integrity

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
PSEG FAILED TO PROPERLY PLAN A WORK ACTIVITY ASSOCIATED WITH SCHEDULED MAINTENANCE ON THE A CRVS
PSEG did not properly plan scheduled maintenance on the A control room ventilation system (CRVS), which resulted in the inoperability of both the A and B control room emergency filtration (CREF) subsystems. Work planning did not identify that a ductwork hatch affected both trains prior to its removal.

The inspectors identified a non-cited violation of TS 3.7.2, Control Room Emergency Filtration System, for this performance deficiency. This self-revealing finding was considered to be more than minor because it affected the Barrier Integrity cornerstone and was associated with the configuration control attribute as it impacted the control room envelope. The inspectors determined that the finding was of very low safety significance because: (1) the likelihood of an initiating event that would challenge the control room barrier function was low; (2) the B CRVS and CREF subsystem was recoverable; (3) full faced, self-contained breathing apparatus and protective clothing were available for

use by control room operators; and (4) the duration that the condition existed was very short, approximately 10 minutes.
Inspection Report# : 2003003*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

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