

Hope Creek 1 2Q/2005 Plant Inspection Findings

Initiating Events

G**Significance:** Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE CORRECTIVE ACTION FOR A CONTROL AREA CHILLED WATER PUMP

A self-revealing non-cited violation was identified for a recurring failure of the 'A' control area chill water (CACW) pump. The 'A' CACW pump malfunctioned about three weeks prior for a similar reason (air binding), but corrective actions were not effective at preventing recurrence. This finding was determined to be a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action."

Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. The finding was more than minor because it was associated with the equipment performance attribute of the initiating events cornerstone and affected the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. In accordance with IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase I SDP screening and determined that the finding contributed to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This required that a Phase 2 SDP analysis be performed. The Region I senior risk analyst (SRA) performed a modified Phase 2 analysis and determined that the issue was of very low safety significance (Green). The performance deficiency had a problem identification and resolution (evaluation and corrective actions) cross cutting aspect.

Inspection Report# : [2005002\(pdf\)](#)**W****Significance:** Dec 31, 2004

Identified By: Self Disclosing

Item Type: FIN Finding

FAILURE TO ADEQUATELY EVALUATE AND CORRECT A FAILED OPEN LEVEL CONTROL VALVE IN THE MOISTURE SEPARATOR DRAIN SYSTEM

A finding of low to moderate safety significance was identified where engineering staff did not properly evaluate and correct a degraded level control valve for the 'A' moisture separator drain tank, as required by station procedures. In addition, engineers did not properly consider a similar occurrence from 1988. The level control valve failed 25 days prior to the event and caused the moisture separator drain system to operate in a condition outside its design. As a result, an 8-inch pipe in that system failed and caused the event on October 10, 2004.

This issue is greater than minor because it is associated with the Equipment Performance attribute of the Initiating Events cornerstone and affected the objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions. A Significance Determination Process Phase 2 risk analysis determined that this finding had low to moderate safety significance based on the increased frequency of a transient with the loss of the power conversion system initiating event over the 25-day exposure period.

Supplemental Inspection Results:

The NRC performed this supplemental inspection to assess PSEG's evaluation of a low to moderate (White) safety significant finding where engineering staff did not properly evaluate and correct a degraded level control valve for the 'A' moisture separator drain tank. In addition, engineers did not properly consider a similar occurrence from 1988. The level control valve failed open 25 days prior to the event and caused the moisture separator drain system to operate in a condition outside its design (unstable two-phase flow). As a result, an 8-inch diameter drain pipe in that system ruptured and caused the initiating event on October 10, 2004. This performance issue was previously characterized as having low to moderate risk significance (White) in NRC Inspection Report 05000354/2004013. During this supplemental inspection, performed in accordance with Inspection Procedure 95001, the inspector determined that the licensee performed a comprehensive evaluation of the degraded level control valve condition and prior occurrence.

PSEG's evaluation of the issue included a formal, structured root cause evaluation to identify the root and contributing causes associated with the level control valve failure. The root cause evaluation was thorough and documented weaknesses associated with the MS drain line rupture. PSEG identified two primary root causes. One was inadequate decisions by engineering and management to continue operating the MS system with the drain valve failed open. Specifically, PSEG did not have a rigorous process to apply effective decision-making principles to management and engineering decisions in response to plant conditions that fall below licensing thresholds and/or were not clearly defined by existing procedures. The second root cause was that operating procedures for the MS level control system were inadequate to prevent extended operation of the system in the condition of unstable two-phase flow.

PSEG's actions to address the root causes included incorporation of engineering and management technical decision making for degraded equipment and provide a program for monitoring degraded plant conditions. In addition, operating procedures were revised to limit the

operation of moisture separators with empty moisture separator drain tanks. Based on the results of the inspection, the inspectors concluded that PSEG had adequately completed a root cause evaluation of the performance deficiencies associated with the event, and planned and completed corrective actions that were reasonable to address the root and contributing causes.

Given PSEG's acceptable performance in addressing the moisture separator drain tank level control valve failure, the White finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program."

Inspection Report# : [2004013\(pdf\)](#)

Inspection Report# : [2005010\(pdf\)](#)

Mitigating Systems

Significance:  Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE RISK ASSESSMENT

The inspectors identified that PSEG performed an inadequate risk assessment for a planned maintenance activity on the 'D' station service water system (SSWS) train, which resulted in an underestimation of the risk associated with performing the activity. The finding was determined to be a non-cited violation (NCV) of 10 CFR 50.65 (a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."

Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRC's regulatory function, and was not the result of any willful violation of NRC requirements. This finding was more than minor because the risk assessment did not accurately assess the time the 'D' SSWS train was unavailable to provide a key shutdown safety function. As a result, the elevated overall plant risk, when correctly assessed, was greater than 1.0E-6 incremental core damage probability, or would otherwise put the plant into an increased risk category. The inspectors determined that the finding was of very low safety significance (Green) using Appendix K of Inspection Manual Chapter 0609, "Maintenance Risk Assessment and Risk Management Significance Determination Process," because the incremental core damage probability deficit was determined to be less than 1.0 E-6, which indicated the finding was of very low risk significance.

Inspection Report# : [2005003\(pdf\)](#)

Significance:  Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

INCORRECT TECHNICAL SPECIFICATION IMPLEMENTATION FOR TRIPPED DEGRADED RELAY

The inspectors identified that PSEG performed an inadequate operability assessment for a tripped degraded voltage relay that resulted in Technical Specification (TS) action statement 3.8.1.1.a not being entered when required. The finding was determined to be a NCV of TS 3.8.1.1, "Electrical Power Systems - A.C. Sources."

Traditional enforcement does not apply because the finding did not have any actual safety consequence or potential for impacting the NRC's regulatory function, and was not the result of any willful violation of NRC requirements. This finding was more than minor because it was associated with the equipment performance attribute (availability) of the mitigating systems cornerstone and affected the objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance (Green) using a Phase 1 screening in Appendix A of Inspection Manual Chapter 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." The finding was not a design or qualification deficiency that resulted in a loss of function, did not result in an actual loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its Technical Specification allowed outage time, and was not screened as potentially risk significant from external events.

Inspection Report# : [2005003\(pdf\)](#)

Significance:  May 02, 2005

Identified By: NRC

Item Type: FIN Finding

LONGSTANDING RELIABILITY AND UNAVAILABILITY OF THE SERVICE WATER EMERGENCY MAKEUP SUPPLY TO SAFETY AUXILIARIES COOLING SYSTEM

The team identified a finding of very low safety significance because on at least seven occasions neither loop of service water was available to supply emergency makeup to the safety auxiliaries cooling system (SACS). The Hope Creek Updated Final Safety Analysis Report indicates that a safety-related makeup supply from service water is available.

This finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute for equipment performance and

it affected the objective to ensure the availability and reliability of the SACS system. The finding was of very low safety significance (Green), based on a Phase 1 significance determination process (SDP) because it was not a design deficiency, did not result in an actual loss of safety function, and did not screen as potentially risk significant due to external initiating events (seismic, flooding, or severe weather). The issue was similarly of very low risk in the Initiating Events cornerstone because the finding did not increase the likelihood of a loss of SACS event because the trains are not normally cross-connected and an inventory loss on one train would not reasonably be expected to impact the redundant train concurrently. The performance deficiency had a problem identification and resolution (evaluation) cross cutting aspect. Hope Creek did not fully evaluate the impact of this condition on the SACS system.

Inspection Report# : [2005006\(pdf\)](#)

G

Significance: May 02, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

CORE SPRAY INJECTION VALVE FOUND WITH AN IMPROPER OPEN TORQUE SWITCH BYPASS SETTING

The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because PSEG did not identify a condition adverse to quality in August 2004, related to open torque switch bypass settings for a core spray injection valve that did not stroke open during in-service testing and, as a result, did not establish appropriate corrective action.

The finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute for equipment performance and it affected the objective of ensuring the availability and reliability of the core spray system. The finding was of very low safety significance (Green) based upon Inspection Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 analysis, because it was not a design deficiency, did not result in an actual loss of safety function, and did not screen as potentially risk significant due to external initiating events (seismic, flooding, or severe weather). The performance deficiency had a problem identification and resolution (evaluation) cross cutting aspect. Engineering incorrectly evaluated documented data on the open torque switch bypass setting for the valve and as a result did not identify that the settings were outside of range established in the site's procedures.

Inspection Report# : [2005006\(pdf\)](#)

G

Significance: May 02, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

REPEATED CHALLENGES TO STANDBY SERVICE WATER PUMPS DUE TO SILTING AND DEBRIS IN THE STANDBY SERVICE WATER STRAINERS

The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for PSEG's failure to take adequate corrective action to address recurring challenges to standby service water (SW) pumps due to silting and debris in the out of service strainers.

The finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. The finding was associated with the attribute of equipment performance (SW system availability and reliability). This issue also impacted the Initiating Events cornerstone because unavailability of one train of SW increased the likelihood of a loss of service water (LOSW) event. The finding was determined to be of very low safety significance based upon a SDP Phase 2 analysis. The performance deficiency had a problem identification and resolution (corrective actions) cross cutting aspect.

Inspection Report# : [2005006\(pdf\)](#)

G

Significance: Mar 31, 2005

Identified By: NRC

Item Type: FIN Finding

INABILITY TO PROPERLY OPERATE REACTOR RECIRCULATION VIBRATION MONITORING EQUIPMENT

The inspectors identified that control room operators were not able to properly operate the reactor recirculation pump vibration monitoring equipment used to respond to vibration alarms and implement commitments to NRC Confirmatory Action Letter (CAL) 1-05-001. The finding was not a violation of NRC requirements, in that, the performance deficiency was related to operation of non-safety related equipment.

Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. The finding was more than minor because if the condition was left uncorrected the finding would become a more significant safety concern. The finding is not suitable for SDP evaluation because it did not have an actual impact on the initiating events, mitigating systems, or barrier integrity cornerstone. This finding has been reviewed by NRC management and was determined to be a finding of very low safety significance (Green). The performance deficiency had a problem identification and resolution (corrective action) cross cutting aspect.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

CONTROL ROD DRIVE PUMP ROOM DEGRADED FLOOD BARRIER AND DRAINS

The inspectors identified that PSEG did not correct a degraded condition associated with the control rod drive (CRD) pump room floor access hatches and floor drains after the condition resulted in water leaking onto the 'B' and 'D' core spray pumps in December 2004. This finding was determined to be a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action."

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function, and was not the result of any willful violation of NRC requirements. The finding was more than minor because it was associated with the protection against external factors (flood hazard) attribute of the mitigating systems cornerstone and affected the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with Inspector Manual Chapter (IMC) 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase I SDP screening and determined the finding to be of very low safety significance (Green). The finding was of very low safety significance because the issue was not a design or qualification deficiency that resulted in a loss of function, did not result in an actual loss of safety function of a single train of equipment for greater than its Technical Specification allowed outage time, did not result in an actual loss of safety function of equipment considered risk significant in the maintenance rule program for greater than 24 hours, and the finding does not screen as potentially risk significant due to external events. The "Seismic, Flooding and Severe Weather Screening Criteria" worksheet in the SDP Phase 1 worksheet was used to determine that the finding was not risk significant due to flooding. The finding does involve the degradation of equipment designed to mitigate flooding events, but it would not cause an initiating event, does not degrade more than one train of the core spray system, and does not degrade a support system. The performance deficiency had a problem identification and resolution (identification and evaluation) cross cutting aspect.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: NRC

Item Type: FIN Finding

SCOPE OF SIMULATION ON THE HOPE CREEK SIMULATOR FAILED TO MEET THE STANDARDS AS SPECIFIED IN ANSI/ANS-3.5-1993

The inspectors identified that PSEG did not include the core monitoring system in the scope of simulation or conduct a formal assessment to document a deviation of the simulator compared to the plant as specified in ANSI/ANS 3.5 1993. The finding was not a violation of NRC requirements.

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. The finding was more than minor because it was associated with the human performance attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability and reliability of mitigating systems equipment. Specifically, in this case how the operators actually monitored the core during a reactor startup was different in the simulator. The inspectors determined the finding to be of very low safety significance (Green) in accordance with IMC 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process." The discrepancy did not have an adverse impact on operator actions such that safety-related equipment was inoperable during normal operations or in response to a plant transient.

Inspection Report# : [2004005\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: NRC

Item Type: FIN Finding

SIMULATOR PERFORMANCE TESTING ON THE HOPE CREEK SIMULATOR FAILED TO MEET THE STANDARDS SPECIFIED IN ANSI/ANS 3.5-1993

The inspectors identified that PSEG did not perform and document required simulator testing in accordance with ANSI/ANS 3.5-1993. Specifically, core performance testing similar to the plant and acceptable simulator validation testing on the simulator was not performed prior to using the RELAP model for training. The finding was not a violation of NRC requirements.

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. The finding was more than minor because it was associated with the human performance attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability and reliability of mitigating systems equipment. PSEG did not perform the testing required to verify that the simulator matched the plant's response and did not properly document the results of testing that identified difference between the simulator and the plant. The inspectors determined the finding to be of very low safety significance (Green) in accordance with IMC 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process." The discrepancy did not have an adverse impact on operator actions such that safety-related equipment was inoperable during normal operations or in response to a plant transient.

Inspection Report# : [2004005\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

MAINTENANCE RULE NEUTRON MONITORING SYSTEM (a)(2) DEMONSTRATION INVALIDATED

The inspectors identified that PSEG failed to identify and properly account for three maintenance preventable functional failures (MPFF) of the

neutron monitoring system and the 10 CFR 50.65(a)(2) demonstration became invalid. This finding was determined to be a violation of 10 CFR 50.65(a)(2), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."

Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. The finding was more than minor because it is similar to more than minor example 1.f in NRC Inspection Manual 0612, Appendix E, "Examples of Minor Issues," in that, the 10 CFR 50.65(a)(2) demonstration became invalid as a result of considering the three additional MPFFs. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase I SDP screening and determined the finding to be of very low safety significance (Green). The finding was of very low safety significance because the issue was not a design or qualification deficiency that resulted in a loss of function, did not result in an actual loss of safety function of a single train of equipment for greater than allowed by technical specifications, did not result in an actual loss of safety function of equipment considered risk significant in the maintenance rule program for greater than 24 hours, and was not screened as potentially risk significant from external events.

Inspection Report# : [2004005\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: Self Disclosing

Item Type: FIN Finding

FAILURE TO EFFECTIVELY IMPLEMENT PREVENTIVE MAINTENANCE FOR THE HPCI BAROMETRIC CONDENSER VACUUM PUMP

A finding was identified as a result of the October 10, 2004, event in that PSEG did not effectively implement preventive maintenance for the HPCI system barometric condenser vacuum pump. As a result, with the HPCI system operating in the pressure control mode, the vacuum pump tripped twice due to improper lubrication of the vacuum pump shaft. Due to the vacuum pump failure, operators removed the HPCI system from service and continued a vessel cooldown with alternate safety related equipment (safety relief valves).

The finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and affects the cornerstone's objective of ensuring the reliability of systems that respond to initiating events. The finding is of very low safety significance because per design basis, with the vacuum pump not available, the HPCI system remained operable and was able to perform its mitigation function if required.

Inspection Report# : [2004013\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY SET LIMIT AND TORQUE SWITCHES ON HPCI VALVE IN ACCORDANCE WITH PROCEDURES

A finding was identified as a result of the October 10, 2004, event, and was a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V (Instructions, Procedures, and Drawings). Technicians did not comply with a procedure to properly set a limit switch on a high pressure coolant injection (HPCI) system injection valve, which is interlocked with the HPCI full flow test valve. As a result, the full flow test valve did not open as required on initial demand when control room operators attempted to place the HPCI system in the pressure control mode of operation. Operators were subsequently successful in opening the valve about five minutes later after additional actions were taken.

This finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and affects the cornerstone's objective to maintain mitigation equipment reliable. This finding is of very low safety significance because the finding did not represent the actual loss of the safety function for the HPCI system. Also, reactor pressure remained relatively stable when the issue occurred and alternate pressure control methods were available (safety relief valves) if required.

Inspection Report# : [2004013\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO INCORPORATE OPERATING EXPERIENCE FOR LOW FLOW OPERATIONS OF RCIC INTO OPERATING PROCEDURES AND OPERATOR TRAINING

A finding was identified as a result of the October 10, 2004, event, and was a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V (Instructions, Procedures, and Drawings) in that procedures for operating the reactor core isolation cooling (RCIC) system at low flow conditions were inadequate. As a result, while operating the RCIC system during a plant transient, the system exhibited unexpected flow oscillations in the automatic mode when control room operators ran the system at low flow conditions.

This finding is greater than minor because it is associated with the Procedure Quality attribute of the Mitigating Systems cornerstone and affects the cornerstone's objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. This finding is of very low safety significance because the finding did not result in the actual loss of the safety function for the RCIC system. Also, reactor vessel level was maintained in the appropriate range in accordance with procedures and the HPCI system was available for reactor vessel level makeup if required.

Inspection Report# : [2004013\(pdf\)](#)

G**Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE CONTROL OF TRANSIENT COMBUSTIBLE MATERIAL

The inspectors identified that fire protection procedure requirements were not met when seven drums of lubrication oil removed from the C emergency diesel generator were stored in the adjacent common corridor without the required transient combustible permit (TCP). The finding was of very low safety significance and constituted a non-cited violation of Technical Specification 6.8.1.

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. This finding was greater than minor because it was associated with the protection against external factors attribute of the mitigating systems cornerstone and affected the objective to maintain the reliability of mitigating systems. The increased combustible loading from improperly stored lubrication oil potentially reduced the availability of mitigating systems in and adjacent to the emergency diesel generator common corridor in the event of a postulated fire. Additionally, this finding is similar to example 4.k in NRC Inspection Manual 0612, Appendix E. The finding was evaluated in accordance with NRC Inspection Manual 0609, Appendix F and determined to be of very low safety significance. The lubrication oil stored without a TCP had a high flashpoint and resulted in a low degradation of the combustible controls program. In addition, there were no in-progress maintenance tasks that resulted in a credible ignition source in the area where this oil was stored.

Inspection Report# : [2004004\(pdf\)](#)**G****Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

SIMULATOR INCORRECTLY REPLICATED PLANT DESIGN

The inspectors identified that the Hope Creek simulator did not replicate the plant design during a station blackout (SBO) condition because the reactor core isolation cooling (RCIC) pump suction swapped from the condensate storage tank (CST) to the suppression pool. The finding was determined to be of very low safety significance and a non-cited violation of 10 CFR 55.46(c)(1), "Plant-Referenced Simulators."

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. This finding was more than minor because it was associated with the human performance attribute and affected the mitigating systems cornerstone objective to ensure the availability and reliability of mitigating systems equipment. The finding was evaluated using the Operator Requalification Human Performance SDP (MC 0609 Appendix I). The finding was determined to be of very low safety significance based upon the SDP contained in MC 0609, Appendix I. The discrepancy did not have an adverse impact on operator actions such that safety-related equipment was inoperable during normal operations or in response to a plant transient.

Inspection Report# : [2004004\(pdf\)](#)**G****Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE ABNORMAL PROCEDURES FOR RESPONDING TO ELECTRICAL EQUIPMENT PROBLEMS

The inspectors identified that abnormal operating procedures contained errors in describing the expected reactor core isolation cooling (RCIC) and high pressure isolation cooling (HPCI) pump suction alignment during electrical equipment problems. The finding was determined to be a non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control."

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. This finding was more than minor because it was associated with the procedure quality attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems to respond to initiating events. These procedure errors would require operators to evaluate HPCI and RCIC pump suction alignments during electrical equipment problems because the alignments would be different than described in abnormal operating procedures. The finding was determined to be of very low safety significance because the finding was not a design or qualification deficiency, did not result in an actual loss of safety function, and the finding was not screened as a potentially risk significant for external events.

Inspection Report# : [2004004\(pdf\)](#)**G****Significance:** Sep 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE PROCEDURES RESULTED IN B SERVICE WATER PUMP PACKING FAILURE

A self-revealing finding was identified regarding inadequate procedure guidance when the B station service water system (SSWS) pump packing failed on July 14, 2004. The finding was determined to be a non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings."

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. The finding was more than minor, because it was associated with the mitigating systems cornerstone attribute for equipment performance and affected the objective to ensure the availability of the B station service water system (SSWS) pump. This issue also impacted the initiating events cornerstone objective because the unavailability of one train of SSWS increased the likelihood of a loss of service water (LOSW) event. The finding was determined to be of very low safety significance based upon a SDP Phase 3 analysis.

Inspection Report# : [2004004\(pdf\)](#)

G

Significance: Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY ESTABLISH AND TRANSLATE MINIMUM BUS VOLTAGE LIMITS INTO PROCEDURES

The inspectors identified that operating procedures allowed operation of the 4.16 kV vital electrical buses at voltage levels that would have caused the safety buses to separate from the offsite power source during the starting of emergency equipment loads following a loss of coolant accident. The finding was determined to be a non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control."

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. This finding was more than minor because it affected the design control attribute of the mitigating systems cornerstone and the objective to ensure the availability, reliability, and capability of electrical systems to prevent undesirable consequences. The finding was determined to be of very low safety significance based on a SDP Phase 3 analysis.

Inspection Report# : [2004004\(pdf\)](#)

G

Significance: Jul 30, 2004

Identified By: NRC

Item Type: FIN Finding

INVALID TECHNICAL BASES FOR REACTOR CORE ISOLATION COOLING NONCONFORMANCE

The team identified that the basis for a reactor core isolation cooling (RCIC) system operability determination (CROD) and its associated follow-up assessment (CRFA) was not supported with technically correct information for evaluating a nonconformance to the original design performance specifications. Specifically, the RCIC turbine/pump speed control system response as described in the licensee's CROD / CRFA was incorrect and did not accurately reflect the actual system capability as described in the licensee's available vendor documentation and calibration procedures.

This finding was more than minor because the error in the assumption that the turbine control system would compensate for pump degradation resulted in a nonconservative assessment of equipment capabilities. The issue affected the equipment performance attribute of the mitigating systems cornerstone objective of ensuring the capability of the RCIC system with respect to performing its licensing bases function identified in the Updated Final Safety Analysis Report (UFSAR). The finding was determined to be of very low safety significance because it did not represent an actual loss of safety function of the RCIC system.

Inspection Report# : [2004009\(pdf\)](#)

G

Significance: Jul 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE HIGH PRESSURE COOLANT INJECTION DESIGN ANALYSIS

The team identified a finding of very low safety significance (Green) associated with a technically invalid high pressure coolant injection (HPCI) system analysis. The design analysis utilized an inaccurate design input relative to the capability of the turbine to increase speed above the maximum rated design value. This resulted in an invalid basis for determining that HPCI could inject its design flowrate against the assumed licensing basis vessel backpressure. The issue was determined to be a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III.

The finding was more than minor because it was associated with the mitigating system cornerstone attributes of design control and equipment performance and affected the objective of ensuring the capability of the HPCI system in performing its licensing basis function. The finding screened to very low safety significance (Green) in SDP Phase 1, because it did not result in an actual loss of system safety function. The team identified that a contributing cause of the finding was related to the cross-cutting area of Problem Identification and Resolution. PSEG missed several prior opportunities to identify and resolve this design issue.

Inspection Report# : [2004009\(pdf\)](#)

Emergency Preparedness

Significance:  Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE 10 CFR 50.54(t) AUDIT

The inspectors identified that PSEG did not complete an independent quality assurance audit to assess all elements of the emergency preparedness program as required by federal regulations. The finding was determined to be a NCV of 10 CFR 50.54(t), "Conditions of Licenses."

Traditional enforcement does not apply because the finding did not have any actual safety consequence or potential for impacting the NRC's regulatory function, and was not the result of any willful violation of NRC requirements. This finding was more than minor because it was associated with all attributes of the emergency preparedness cornerstone and affected the objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors determined that the finding was of very low safety significance (Green) using Appendix B of Inspection Manual Chapter 0609, "Emergency Preparedness Significance Determination Process, Sheet 1, Failure to Comply," because it did not constitute a failure to meet an Emergency Preparedness planning standard or risk significant planning standard.

Inspection Report# : [2005003\(pdf\)](#)

Occupational Radiation Safety

Significance:  Mar 31, 2005

Identified By: Self Disclosing

Item Type: FIN Finding

WORK ACTIVITIES DURING RF12 EXCEEDED COLLECTIVE DOSE ESTIMATE

A self-revealing finding was identified when work activities during refueling outage 12 (RF12) in the general torus and torus room exceeded their collective dose estimate by 312 percent (%). PSEG failed to evaluate the expanded work scope that occurred in these areas for dose minimization. The finding was not a violation of NRC requirements, because overall exposure performance of the nuclear power plant is used to determine compliance with the as low as reasonably achievable (ALARA) rule.

Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. This finding was more than minor because it was associated with the ALARA planning attribute of the occupational radiation safety cornerstone and affected the objective to ensure the adequate protection of worker health and safety from exposure of radiation from radioactive material during routine civilian nuclear reactor operations. This finding was also similar to more than minor example 6.a in NRC Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues," in that, the actual dose achieved exceeded the planned, intended dose by more than fifty percent. This finding was evaluated using IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," because the issue involved ALARA. The inspectors determined the finding to be of very low safety significance (Green) because Hope Creek's three-year-rolling-average (2001-2003) is 126 person-rem, which is below the SDP criteria of 240 person-rem for Boiling Water Reactors (BWRs). The performance deficiency had a problem identification and resolution (identification) cross cutting aspect.

Inspection Report# : [2005002\(pdf\)](#)

Public Radiation Safety

Significance:  Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

HOPE CREEK SHIPPED A RADIOACTIVE MATERIAL PACKAGE WITH RADIATION LEVELS IN EXCESS OF 200 MILLIREM PER HOUR

A self-revealing non-cited violation was identified when a PSEG shipment of outage related equipment received by a vendor had external radiation levels in excess of regulatory limits. This finding was determined to be a violation of 10 CFR 71.5, "Transportation of Licensed Material," and 49 CFR 173.441(a), "Radiation Level Limitations."

Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. This finding was more than minor because it was associated with the program and process attribute of the public radiation safety cornerstone and affected the objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operations. This finding was evaluated using Inspection Manual Chapter (IMC) 0609, Appendix D, "Public Radiation Safety Significance Determination Process," because it was a radiation material control (radioactive material packaging and transportation) issue. The inspectors determined the finding to be of very low safety significance (Green) because the transportation issue resulted in a radiation limit being exceeded that involved external radiation levels that was not readily accessible by the public and not more than two times the federal limit. The inspectors also determined that the finding did not involve a breach in the package, a certificate of non-compliance issue, a low-level burial ground non-conformance, and that surface contamination limits were not exceeded.

Inspection Report# : [2005002\(pdf\)](#)

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous



Significance: Jun 30, 2005

Identified By: NRC

Item Type: FIN Finding

FAILURE TO IMPLEMENT THE EXECUTIVE REVIEW BOARD PROCESS

The inspectors identified a finding for several lapses in the use of the Executive Review Board (ERB) process. This finding involved not properly implementing a corrective action which had been intended to improve management effectiveness in detecting and preventing retaliation and the creation of a chilling effect. This finding was not a violation of regulatory requirements.

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function, and was not the result of any willful violation of NRC requirements. This finding was more than minor, because if left uncorrected, it would lead to the potential for retaliation and a chilled work environment. This finding was of very low safety significance (Green), based on management review, because there was no direct impact on human performance or equipment reliability. The performance deficiency had problem identification and resolution (corrective action) and safety conscious work environment cross cutting aspects.

Inspection Report# : [2005003\(pdf\)](#)

Significance: N/A May 02, 2005

Identified By: NRC

Item Type: FIN Finding

SALEM AND HOPE CREEK PROBLEM IDENTIFICATION AND RESOLUTION BIENNIAL INSPECTION

The team determined that, in general, problems were adequately identified, evaluated and corrected. However, the team noted that PSEG's implementation of their corrective action program was inconsistent. The team identified weaknesses in each of the three fundamental areas: problem identification, evaluation, and the effectiveness of corrective actions. The team identified six findings in which PSEG did not properly evaluate and correct conditions adverse to quality. Several staff interviews were conducted during the inspection. The team identified no new safety conscious work environment issues.

Inspection Report# : [2005006\(pdf\)](#)

Last modified : August 24, 2005