

## Hope Creek 1 1Q/2014 Plant Inspection Findings

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### Initiating Events

**Significance:**  Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Inadequate Preventative Maintenance for Safety-Related Circuit Cards**

A self-revealing Green non-cited violation (NCV) of Technical Specification (TS) 6.8.1.a, “Procedures and Programs,” was identified regarding PSEG failing to adequately establish, implement, and justify the initial replacement frequency for the 1DD481 inverter control circuit cards. As a result, an age-related failure of circuit cards for the safety-related 1E channel ‘D’ (1DD481) Inverter occurred on December 24, 2013, which caused PSEG to enter an unplanned 24 hour shutdown TS 3.8.3.1.a.4 for On-site Power Distribution Systems. PSEG’s corrective actions include conducting an extensive extent of condition review of first-call preventive maintenances (PMs).

The performance deficiency was determined to be more than minor because it was associated with the equipment performance attribute of the Initiating Events cornerstone, and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors determined that this finding was of very low safety significance (Green) using NRC IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” Exhibit 1 – Initiating Events Screening Questions, dated June 19, 2012, because for findings involving support system initiators, i.e. the Loss of a DC [direct current] bus, the result did not involve the complete or partial loss of a support system that contributed to the likelihood of, or cause, an initiating event and affected mitigation equipment. The inspectors determined that there was no cross-cutting aspect associated with this finding because the cause of the performance deficiency occurred more than three years ago, and was not representative of present licensee performance.

Inspection Report# : [2014002](#) (*pdf*)

**Significance:**  Dec 31, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure to Follow Procedure for Configuration Control Adversely Affected Unidentified Leakage in the Drywell.**

A Green self-revealing NCV of TS 6.8.1, “Procedures and Programs,” was identified regarding PSEG’s conduct of maintenance and component configuration control during system restoration from an operation with a potential for draining the reactor vessel (OPDRV) activity. Specifically, PSEG did not close a reactor water cleanup (RWCU) valve in accordance with the maintenance procedure during the refueling outage. This resulted in increased RCS UIL in the reactor drywell area following startup. PSEG restored the mispositioned valves, conducted an extent of condition on other valves in the drywell, completed a prompt investigation concerning the valve mispositioning, and is in the process of conducting an Apparent Cause Evaluation (ACE) on the configuration control event under Order 70161461. PSEG has also placed this issue into CAP as notification 20632003.

The performance deficiency was more than minor because it was associated with the configuration control attribute of the Initiating Events Cornerstone, and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors evaluated the finding using IMC 0609, Attachment 4, Initial Screening and Characterization of Findings,

which required an analysis using Exhibit 1 of IMC 0609, Appendix A,” The Significance Determination Process for Findings At-Power,” dated June 19, 2012. The finding was determined to be of very low safety significance (Green) because the finding could not result in exceeding the RCS leak rate for a small loss of coolant accident (LOCA) or have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function. This finding had a cross-cutting aspect in the area of Human Performance, Work Practices, because PSEG’s communication of human error prevention techniques did not support human performance and proper personnel work practices. Specifically, PSEG did not use adequate human performance tools and valve position verification techniques when controlling valve position for components associated with an OPDRV activity. [H.4(a)] (Section 1R15)

Inspection Report# : [2013005](#) (pdf)

**Significance:**  Dec 31, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Failure to Identify Adverse Trend Regarding Bailey Module and Auxiliary Card Failures**

A Green self-revealing finding was identified for PSEG’s failure to identify and correct an adverse trend regarding 48 Bailey module failures across multiple systems since 2005, including six Bailey module failures in the circulating water (CW) system. As a result of continued problems associated with this previously unidentified adverse trend, on June 12, 2013, the ‘B’ CW pump tripped resulting in a manual scram of the reactor due to degrading condenser vacuum. PSEG corrective actions include addressing the programmatic weakness identified regarding the performance monitoring and trending program for circuit card failures by amending the Bailey Module Reliability Program to include fuse module and auxiliary card failures.

The finding was more than minor because it was associated with the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, PSEG’s failure to identify and correct the adverse trend regarding Bailey module failures resulted in a manual scram from 100 percent power due to the trip of the ‘B’ CW pump concurrent with the ‘B’ CW discharge valve being gagged in the open position. The finding was determined to be of very low safety significance (Green) in accordance with Appendix A of IMC 0609, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, because the finding did not contribute to both a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because PSEG did not trend and assess information from the CAP and other assessments in the aggregate to identify programmatic and common cause problems. Specifically, PSEG failed to trend or perform an aggregate assessment of Bailey module and auxiliary card failures. [P.1(b)] (Section 4OA3.2)

Inspection Report# : [2013005](#) (pdf)

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## **Mitigating Systems**

**Significance:**  Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Untimely Identification and Corrective Actions for a Condition Adverse to Quality related to 480 VAC Masterpact Breakers**

A self-revealing Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, “Corrective Actions,” was identified because PSEG failed to assure that a condition adverse to quality (CAQ) was promptly identified and corrected. Specifically, PSEG did not initiate a timely notification for a potential design flaw in the operation of some 480 volt alternating current (VAC) Masterpact breaker’s control logic scheme. PSEG’s corrective actions included an extensive operability evaluation, compensatory measures conducted every shift by operators to ensure the operability and reliability of these breakers in the short-term, and a proposed design change to remove the design flaw in the breaker control logic by 2015.

The performance deficiency was determined to be more than minor because it was associated with the equipment performance and design control attributes of the Mitigating Systems cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined that this finding was of very low safety significance (Green) using NRC IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” Exhibit 2 – Mitigating Systems Screening Questions, dated June 19, 2012, because although the breakers’ design is affected, the operability of the breakers is maintained. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the cross-cutting aspect of Problem Identification and Resolution, Identification, because PSEG failed to identify issues completely, accurately, and in a timely manner in accordance with the corrective action program (CAP).

Inspection Report# : [2014002](#) (*pdf*)

**Significance:** G Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Follow Procedure Resulting in the Potential Inoperability of a Safety-Related System**

A self-revealing Green NCV of TS 6.8.1.a, “Procedures and Programs,” was identified for PSEG’s failure to follow procedure HC.OP-SO.BH-0001, “Standby Liquid Control (SLC) System Operation,” when restoring the SLC system after routine maintenance. Specifically, the licensee failed to adequately coordinate the restoration of the SLC system using the work control document (WCD) and the SLC system operating procedure which led to an incorrect SLC system lineup causing the inadvertent addition of demineralized (DI) water to the SLC storage tank. As a result, PSEG had to determine the immediate and prompt operability of the SLC system and enter the associated 8 hour SLC Technical Specification Action Statement (TSAS). PSEG’s corrective actions include restoring the SLC tank concentration, briefing the operating crews on proper WCD turnover process, and addressing operator gaps in the SLC system operation that may have adversely affected the timeline and the inaccuracy of the immediate operability calculation method.

The performance deficiency was determined to be more than minor because it was associated with the configuration control attribute of the Mitigating System cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, failing to follow procedure leading to configuration control issues could have rendered a safety-related system inoperable. This performance deficiency was also similar to examples 3.j and 3.k of NRC IMC 0612, Appendix E, in that the addition of 80 gallons of DI water to the SLC tank created a reasonable doubt of operability of the SLC system. The inspectors determined the finding to be of very low safety significance (Green) in accordance with IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” dated June 19, 2012.” Using Exhibit 2, the inspectors determined that the finding screened as very low safety significance (Green) because although the SLC tank boron concentration was diluted, the SLC system was still capable of providing sufficient negative reactivity to shut down the reactor. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the cross-cutting aspect of Human Performance, Work Management, because PSEG failed to implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority.

Inspection Report# : [2014002](#) (*pdf*)

**Significance:**  Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Inadequate Evaluation of 480 VAC Motor Control Center Design Change**

A self-revealing Green NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” was identified for PSEG’s failure to adequately evaluate a modification to the design change package for replacement buckets on the Class 1E 10B232 480 VAC motor control center (MCC) in accordance with PSEG procedure CC-AA-103-1001, “Implementation of Configuration Changes.” This resulted in damage to and de-energization of the 10B232 MCC during maintenance activities to install a new replacement bucket on October 28, 2013. PSEG’s corrective actions included a full extent of condition inspection of all installed modified MCC buckets and removing instructions to install terminal block screws in future modifications.

This issue was more than minor because it was associated with the design control attribute of the Mitigating Systems cornerstone, and adversely affected the cornerstone’s objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Because this finding occurred while the plant was shut down, the inspectors used IMC 0609, Appendix G, “Shutdown Operations Significance Determination Process,” dated February 28, 2005. The inspectors determined the finding to be of very low safety significance (Green) using Checklist 7 of Attachment 1, “Boiling Water Reactor Refueling Operation with Reactor Coolant System (RCS) Level Greater Than 23 Feet,” because qualitative assessment concluded that PSEG maintained adequate mitigation capability and the event was not characterized as a loss of control. The inspectors determined that the finding had a cross-cutting aspect in Human Performance, Procedure Adherence, because PSEG personnel did not follow site procedures.

Inspection Report# : [2014002](#) (pdf)

**Significance:**  Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Maintain B.5b Equipment in a State of Readiness to Support Mitigation Strategies per 10 CFR 50.54 (hh)(2)**

The inspectors identified a Green NCV of 10 CFR 50.54(hh)(2), “Conditions of Licenses.” Specifically, PSEG failed to adequately assess the functionality of the B.5.b portable gas generator on multiple occasions and implement adequate corrective actions in response to repeated failures of the B.5.b portable gas generator. This resulted in an unrecoverable and unavailable individual mitigating strategy associated with the remote operation of safety relief valves (SRV) with reactor pressure vessel (RPV) injection for approximately two and half months while the portable gas generator was unavailable. PSEG’s corrective actions include repairing the B.5.b portable gas generator and returning it to an available, standby condition as well as performing a validation of all B.5.b equipment and associated mitigating strategies.

The inspectors determined the performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). The inspectors determined that this finding was of very low safety significance using NRC IMC 0609, Appendix L, “B.5.b Significance Determination Process,” Table 2 - Significance Characterization, dated December 24, 2009, as specified for 10 CFR 50.54(hh) findings by IMC 0609, Attachment 4, “Initial Characterization of Findings,” dated June 19, 2012, because the finding affected the Mitigating Systems cornerstone while the plant was at power and resulted in an unrecoverable unavailability of an individual mitigating strategy. Specifically, because the B.5.b portable gas generator was not functional for approximately 2.5 months with no compensatory actions in place, the RemoteOperation of SRVs with RPV Injection mitigation strategy per Hope Creek procedure HC.OP-AM.TSC-0024, Revision 8, was determined to be unrecoverable and unavailable during this

time. The inspectors noted that the reactor core isolation cooling (RCIC) system remained functional during this time period and as such the finding did not represent an unrecoverable unavailability of multiple mitigating strategies such that injection to RPV could not have occurred. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the cross-cutting aspect of Problem Identification and Resolution, Evaluation, because PSEG failed to thoroughly evaluate equipment deficiencies related to the B.5.b portable gas generator to ensure that the resolutions addressed causes and extent of conditions commensurate with the B.5.b equipment's safety significance.

Inspection Report# : [2014002](#) (*pdf*)

**Significance:** G Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Use Approved Method of Post-Scram Reactor Pressure Control**

A self-revealing Green NCV of TS 6.8.1, "Procedures and Programs," was identified for PSEG's failure to use procedures during scram recovery on December 5, 2013. Specifically, PSEG failed to use an approved method of post-scram reactor pressure control, causing the main turbine bypass valves (BPVs) to cycle rapidly resulting in a reactor pressure transient, reactor water level transient, and reactor protection system (RPS) actuation. PSEG entered this issue into their CAP under notification (NOTF) 20632369 and chartered a quick human performance investigation. As part of PSEG's corrective actions, the operators involved in the event were removed from shift and retrained, and each shift manager (SM) reviewed post-scram reactor pressure control methods with their crew and received training on this event, decision making, and procedural adherence.

The inspectors determined that the performance deficiency was more than minor because it is associated with the human performance attribute of the Mitigating Systems cornerstone and adversely affected its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, PSEG's failure to implement procedures resulted in an unplanned reactor pressure transient, reactor water level transient, and ultimately resulted in RPS actuation and a trip signal to standby safety injection systems during scram recovery. Using IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding was determined to be of very low safety significance (Green) because it was not a deficiency affecting the design or qualification of a mitigating structure, system or component; it did not represent a loss of system or function; it did not represent the loss of function for any TS system, train, or component beyond the allowed TS outage time; and it did not represent an actual loss of function of any non TS trains of equipment designated as high safety-significant in accordance with the PSEG's maintenance rule program. This finding was determined to have a cross-cutting aspect in Human Performance, Consistent Process, because PSEG failed to ensure that individuals use a consistent, systematic approach to make decisions and incorporate risk insights as appropriate. Specifically, operators did not use a systematic approach when making the decision to lower reactor pressure using the digital electro-hydraulic control (DEHC) system cooldown controller on December 5, 2013.

Inspection Report# : [2014002](#) (*pdf*)

**Significance:** G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Follow the Primary Containment Closeout Procedure when Declaring the Drywell Ready for Power Operation**

The inspectors identified a finding of very low safety significance (Green) and associated NCV of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for PSEG's failure to conduct primary containment (drywell) close-out activities in accordance with site procedures. Specifically, during the NRC's drywell closeout inspection, the inspectors identified several outage-related items that were not removed from the various elevations of the drywell. As a result, PSEG did not properly inspect the drywell

in preparation for power operation. PSEG corrective actions included removing the items identified during the NRC drywell closeout inspection and placing the issue in the corrective action program (CAP).

The performance deficiency was determined to be more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using NRC IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," dated February 28, 2005, the finding was determined to be of very low safety significance (Green) because the inspectors qualitatively determined that the finding involved adequate mitigation capability and was not an event that could be characterized as a loss of control. This finding had a cross-cutting aspect in the area of Human Performance, Work Practices, because PSEG did not define and effectively communicate expectations regarding procedural compliance and personnel did not follow procedures. Specifically, PSEG personnel did not ensure that the drywell was ready for power operations as required by site procedures. [H.4(b)] (Section 1R20)

Inspection Report# : [2013005](#) (pdf)

**Significance:**  Dec 31, 2013

Identified By: NRC

Item Type: FIN Finding

#### **Inadequate Evaluation of Containment Vent Functionality**

The inspectors identified a finding of very low safety significance (Green) for PSEG's failure to ensure evaluations addressed identified issues in accordance with PSEG procedure LS-AA-125, "Corrective Action Program." Specifically, PSEG failed to adequately assess the functionality of the containment vent following NRC identification of inadequate maintenance practices for an instrument air check valve (1KBV-300) and that design calculation H-1-KB-MDC-1007, "Backup Pneumatic Supply for 1GSHV-4964 and 1GSHV-11541 Valves," did not account for leakage through the valve. PSEG's corrective actions included installation of a design change to modify instrument air piping to support leak rate testing of 1KBV-300 and addition of 1KBV-300 to its check valve monitoring and preventive maintenance program. PSEG also completed a revision to design calculation H-1-KB-MDC-1007 to credit up to 500 standard cubic centimeter per minute (scm) of leakage through 1KBV-300.

This issue was more than minor because it was associated with the design control attribute of the mitigating systems cornerstone, and affected the cornerstone's objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined the finding to be of very low safety significance (Green) in accordance with Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, because: it was not a deficiency affecting the design or qualification of the containment vent; it did not represent a loss of system or function; it did not represent the loss of function for any technical specification (TS) system, train, or component beyond the allowed TS outage time; and it did not represent an actual loss of function of any non TS trains of equipment designated as highly safety-significant in accordance with PSEG's maintenance rule program. The inspectors determined that the finding had a cross cutting aspect in the Human Performance area associated with Resources, because PSEG did not ensure that personnel, equipment, procedures, and other resources are available and adequate to assure nuclear safety, specifically, those necessary for maintaining long term plant safety by maintenance of design margins. Specifically, PSEG did not ensure maintenance of design margin for the containment vent system when concerns were identified regarding its functionality. This included PSEG relying upon operation of the containment vents with hydraulic jacks that have not been operated since 1992 following their installation [H.2(a)]. (Section 4OA2.5)

Inspection Report# : [2013005](#) (pdf)

**Significance:**  Jun 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Inadequate Preventive Maintenance Replacement Schedule for Tyco/Agastat General Purpose Control Relays**

A self-revealing Green NCV of Technical Specifications (TS) 6.8.1, "Procedures," was identified because PSEG failed to establish an appropriate preventive maintenance (PM) schedule for Tyco/Agastat General Purpose (GP) control relays. Specifically, the evaluation PSEG performed to revise the relay replacement periodicity from 22 years to 40 years neither adequately addressed available relay references nor all applicable failure mechanisms. As a result, high pressure coolant injection (HPCI) failed to respond to logic system actuation signals during surveillance testing on April 8, 2013. PSEG's immediate corrective actions included replacing failed relays and placing the issues in the corrective action program (CAP). Additionally, PSEG plans to revise the replacement frequency and to replace other Tyco/Agastat GP control relays of high safety significance, as identified in their extent of condition review.

This finding was more than minor because it was associated with the equipment performance 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. Specifically, the failure of a control relay caused the HPCI system to fail to automatically actuate during testing, and the HPCI system was unexpectedly declared inoperable. The inspectors evaluated the finding in accordance with IMC 0609, "Significance Determination Process," issued June 2, 2011, and determined the finding is of very low safety significance (Green) following a detailed risk evaluation. No cross-cutting aspect was assigned to this finding because PSEG decisions made with regard to evaluating the PM replacement periodicity were made more than 3 years ago and a PM Ownership Committee has since been created to review PM change evaluations; therefore, this performance deficiency is not reflective of current plant performance. (Section 40A3)

Inspection Report# : [2013003](#) (pdf)

**Significance:**  Apr 05, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Post-Fire Safe Shutdown Procedures**

The team identified a Green, Non-Cited Violation (NCV) of License Condition 2.C(7) of the Hope Creek operating license, in that the procedures for shutting down the plant in response to a fire in the cable spreading room, control equipment room, or control room were not adequate. Specifically, the alternative (remote) post-fire safe shutdown procedures were not adequate 1) to prevent overfilling of the reactor vessel following a spurious, fire-induced start of High Pressure Coolant Injection (HPCI) or 2) to ensure that cooling water is provided to the Emergency Diesel Generators (EDG) prior to overheating. Corrective actions included initiating revisions to the safe shutdown procedures and entering this issue into the corrective action program (CAP) as notifications 20600413 and 20601659.

The finding was more than minor because it affected the procedure quality attribute associated with the mitigating systems cornerstone as related to the objective of ensuring the reliability and availability of mitigating systems under postulated fire safe shutdown conditions. The finding screened as very low safety significance (Green) based upon IMC 0609, Appendix F, "Fire Protection Significance Determination Process," Attachment 1, "Fire Protection SDP Phase 1 Worksheet," because the procedural inadequacies would not have prevented the ability of the operators to safely shutdown the plant in a fire event. The team determined that operators had adequate operator training, there was operable detection/suppression systems in the fire areas of concern, there was no/limited ignition sources in the fire areas of concern, there was

adequate administrative controls of transient combustibles and ignition sources, and the control room was continually manned. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Resources, because PSEG did not provide complete and accurate procedures. Specifically the safe shutdown procedures were not adequate to prevent overfilling the reactor vessel or overheating the EDGs [H.2(c)] (Section 1R05.05).

Inspection Report# : [2013008](#) (*pdf*)

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## Barrier Integrity

**Significance:**  Sep 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Follow Post-Maintenance Testing Procedure Prior to Returning the 'B' Filtration, Recirculation and Ventilation System (FRVS) Recirculation Fan to Service Following System Maintenance.**

A finding of very low safety significance (Green) and associated NCV of 10 Code of Federal Regulation (CFR) Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," was self-revealed for the licensee's failure to test the 'B' Filtration, Recirculation and Ventilation System (FRVS) recirculation fan following maintenance in accordance with site procedures. Specifically, on June 3, 2013, the licensee did not perform the required post-maintenance test (PMT) prior to returning the system to service. Consequently, when the fan failed during its surveillance on June 24, 2013, there was no reasonable assurance that the fan was operable since the last time maintenance was performed on it. PSEG entered this issue into its corrective action program (CAP).

The performance deficiency (PD) was determined to be more than minor because it is associated with the system, structure, or component (SSC) and Barrier Performance attribute of the Barrier Integrity cornerstone, and affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Using IMC 0609, Appendix A, "The SDP for Findings At-Power," dated June 19, 2012, the finding was determined to have very low safety significance (Green) because it only represented a degradation of the radiological barrier function provided for the standby gas treatment system. This finding had a cross cutting aspect in the area of Human Performance, Decision-Making, because the Hope Creek's decisions did not demonstrate that nuclear safety is an overriding priority [H.1(b)]. (Section 1R19)

Inspection Report# : [2013004](#) (*pdf*)

**Significance:**  Sep 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Perform Maintenance in Accordance with Station Procedures Led to Reactor Coolant System Pressure Boundary Leakage.**

A finding of very low safety-significance (Green) and associated NCV of Technical Specifications (TS) 3.4.3.2, "Reactor Coolant System (RCS) Operational Leakage," was self-revealed on June 12, 2013, when a through-wall flaw was identified in the RCS pressure boundary. Specifically, because Hope Creek failed to perform maintenance on the 'B' residual heat removal (RHR) shutdown cooling (SDC) system in accordance with PSEG maintenance procedures, the plant operated with RCS pressure boundary leakage for a period of time prohibited by TS. Immediate corrective

actions included vent line assembly replacement and examination of additional vent line assemblies installed on RHR piping in the drywell under the same design change. Planned corrective actions include visual examination of other components that had work involving cutting on small bore piping in the drywell.

The finding is more than minor because it is associated with the RCS Equipment and Barrier Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, RCS, and containment) protect the public from radionuclide releases caused by accidents or events. PSEG's failure to perform maintenance in accordance with station procedures resulted in plant operation with a condition prohibited by TS and the degradation of a principal safety barrier. The inspectors determined that the finding is of very low safety significance (Green) because the PD, after a reasonable assessment of degradation, could not result in exceeding the RCS leak rate for a small loss of coolant accident (LOCA) and could not likely affect other systems used to mitigate a LOCA resulting in a total loss of their function. This finding had a cross-cutting aspect in the Human Performance area associated with Work Practices, because PSEG did not ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported. Specifically, management did not appropriately supervise workers to ensure work was performed in accordance with site maintenance procedures. Even though the PD could have occurred any time between November 2007 and May 2012, the inspectors determined that the performance characteristic associated with ineffective work activity oversight could not be conclusively placed in the earlier portion of that time window and that if it were to occur again, would not go undetected. As a result, the inspectors concluded that the PD is indicative of current performance [H.4(c)]. (Section 4OA3)

Inspection Report# : [2013004](#) (*pdf*)

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **Security**

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

Last modified : May 30, 2014