UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

July 31, 2013

Mr. Thomas P. Joyce
President and Chief Nuclear Officer
PSEG Nuclear LLC - N09
P.O. Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION UNIT 1 – NRC INTEGRATED INSPECTION REPORT 05000354/2013003

Dear Mr. Joyce:

On June 30, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Hope Creek Generating Station (HCGS). The enclosed inspection report documents the inspection results, which were discussed on July 18, 2013, with Mr. E. Carr, Plant Manager of Hope Creek, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one self-revealing non-cited violation (NCV) of very low safety significance (Green). The finding is determined to involve a violation of NRC requirements. However, because of the very low safety significance, and because it is entered into your corrective action program (CAP), the NRC is treating the finding as a NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at HCGS.

In accordance with 10 *Code of Federal Regulations (*CFR) 2.390 of the NRCs "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly

Available Records component of the NRC's Agencywide Documents Access Management System (ADAMS). ADAMS is accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.htmL (the Public Electronic Reading Room).

Sincerely,

/RA/

Glenn T. Dentel, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket No.: 50-354
License No.: NPF-57

Enclosure: Inspection Report 05000354/2013003
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

License No.:	NPF-57
Report No.:	05000354/2013003
Licensee:	Public Service Enterprise Group (PSEG) Nuclear LLC
Facility:	Hope Creek Generating Station (HCGS)
Location:	P.O. Box 236 Hancocks Bridge, NJ 08038
Dates:	April 1, 2013, through June 30, 2013
Inspectors:	F. Bower, Senior Resident Inspector D. Dodson, Acting Senior Resident Inspector S. Ibarrola, Resident Inspector R. Barkley, Senior Project Engineer R. Fuhrmeister, Senior Reactor Engineer G. Bjorkman, Senior Technical Advisor S. Hammann, Senior Health Physicist R. Nimitz, Senior Health Physicist D. Lawyer, Health Physicist
Approved By:	Glenn T. Dentel, Chief Reactor Projects Branch 3 Division of Reactor Projects

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SUMMARY

IR 05000354/2013003; 04/01/2013 - 06/30/2013; Hope Creek Generating Station; Follow-up of Events and Notices of Enforcement Discretion.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Inspectors identified one self-revealing Green non-cited violation (NCV). The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP), dated June 2, 2011. All violations of Nuclear Regulatory Commission (NRC) requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated January 28, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4.

Cornerstone: Mitigating Systems

- Green. 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 4OA3)

REPORT DETAILS

Summary of Plant Status

Hope Creek began the inspection period at full rated thermal power (RTP). On May 8, 2013, operators reduced power to approximately 99 percent RTP following an emergent failure of the 'A' and 'B' reactor recirculation pump (RRP) speed control uninterruptible power supply (UPS). On May 9, 2013, operators reduced power to approximately 98 percent RTP to reset the 'A' and 'B' RRP scoop tubes and isolate the speed control UPS for corrective maintenance. Operators returned the unit to full power on the same day. On May 10, 2013, operators reduced power to approximately 98 percent RTP to restore the RRP speed control UPS following corrective maintenance. Operators returned the unit to full power on the same day. On May 17, 2013, operators reduced power to approximately 76 percent RTP to support planned turbine valve testing, control rod scram time testing, and a control rod sequence exchange. Following additional planned and contingency corrective maintenance activities, operators returned the unit to full power on May 18, 2013. On June 12, 2013, operators manually scrammed the unit due to a trip of the 'B' circulating water pump (CWP). The unit was synchronized to the grid on June 18, 2013, and returned to 100 percent power on June 19, 2013. On June 19, 2013, operators reduced power to approximately 96 percent and then 88 percent RTP after the 'A' RRP second stage seal cavity temperature exceeded 180 °F on two occasions. Operators returned the unit to full power on June 20, 2013. On each day from June 24, 2013, through June 30, 2013, operators reduced power to as low as 94 percent power to maintain condenser vacuum. Otherwise, the unit remained at or near 100 percent power for the duration of the inspection period except for brief periods to support planned testing and rod pattern adjustments.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of PSEG's readiness for the onset of seasonal high temperatures. The review focused on the emergency diesel generators (EDGs), circulating water, and station service water (SSW) systems. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and TSs to determine what temperatures or other seasonal weather could challenge these systems and to ensure PSEG personnel had adequately prepared for these challenges. The inspectors reviewed station procedures, including PSEG's seasonal weather preparation procedure and applicable operating procedures. The inspectors performed walkdowns of the selected systems to ensure station personnel identified issues that could challenge the operability of the systems during hot weather conditions. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

.2 Summer Readiness of Offsite and Alternate Alternating Current (AC) Power Systems

a. Inspection Scope

The inspectors performed a review of plant features and procedures for the operation and continued availability of the offsite and alternate AC power system to evaluate readiness of the systems prior to seasonal high grid loading. The inspectors reviewed PSEG's procedures affecting these areas and the communications protocols between the transmission system operator and PSEG. This review focused on changes to the established program and material condition of offsite alternate AC power equipment. When required, the inspectors assessed whether PSEG established and implemented appropriate procedures and protocols to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system. The inspectors evaluated the material condition of the associated equipment by interviewing responsible PSEG personnel, reviewing the switchyard summer readiness letter, and walking down portions of the offsite and alternate AC power systems, including the main transformers and the 500 kilovolt (kV) and 13.8 kV switchyards.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial System Walkdowns (71111.04 – 3 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 'B' filtration, recirculation, and ventilation system (FRVS) ventilation fan, 'B' EDG, and 1-E switchgear and logic panels with the 'A' FRVS ventilation fan out-of-service (OOS) for planned maintenance on April 3, 2013
- 'B' safety auxiliaries cooling system (SACS) with the A2 SACS heat exchanger (HX) OOS for planned maintenance on May 9, 2013
- HPCI and reactor core isolation cooling (RCIC) jockey pumps following an emergent failure of the feedwater (FW) line cross-tie valve on May 16, 2013

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the UFSAR, TSs, work orders (WOs), condition reports (notifications), and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted the performance of system safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined

the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether PSEG staff had properly identified equipment issues and entered them into the CAP for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

1R05 Fire Protection

Resident Inspector Quarterly Walkdowns (71111.05Q - 5 samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that PSEG controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for OOS, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- FRH-II-713, service water (SW) intake structure on May 8, 2013
- FRH-II-723, motor control center (MCC) area, reactor auxiliaries cooling pumps, and HX area and safeguard instrument rooms, elevation 77' on May 22, 2013
- FRH-II-531, EDG rooms on May 29, 2013
- FRH-II-412, 'B' residual heat removal (RHR) pump and HX, elevation 54' on June 27, 2013
- FRH-II-551, EDG 125V battery rooms, elevation 146' on June 27, 2013

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

Annual Review of Cables Located in Underground Bunkers/Manholes

a. Inspection Scope

The inspectors conducted an inspection of underground bunkers/manholes subject to flooding that contain cables whose failure could affect risk-significant equipment. The inspectors performed walkdowns of risk-significant areas, including manholes MH-15MM0D08 and MH-15MM0D06, which contain risk significant offsite power cables from the switchyard to the 1AX501 and 1BX501 station power transformers, to verify that the cables were not submerged in water, that cables were intact, and to observe the condition of cable support structures. The inspectors verified proper sump pump

operation and verified level alarm circuits were set in accordance with station procedures and calculations to ensure that the cables will not be submerged.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11Q – 2 samples)

.1 Quarterly Review of Licensed Operator Requalification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator training on April 16, 2013, which included an automatic standby liquid control (SLC) system initiation, a loss of coolant accident (LOCA) sequencer inadvertent initiation, RRP high vibrations, and a small break LOCA. The inspectors evaluated operator performance during the simulated events and verified completion of critical tasks and risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classification made by the shift manager and the TS action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room

a. Inspection Scope

The inspectors observed a planned downpower and subsequent power ascension associated with resetting the ‘A’ and ‘B’ RRP scoop tubes and isolating the RRP speed control UPS for corrective maintenance on May 9, 2013. The inspectors also observed and reviewed a planned downpower and turbine valve testing conducted on May 17, 2013. The inspectors observed reactivity control briefings to verify that the briefings met the criteria specified in OP-AA-101-111-1004, “Operations Standards,” Revision 4, and HU-AA-1211, “Pre-Job Briefings,” Revision 10. Additionally, the inspectors observed reactivity manipulations to verify that procedure use and crew communications met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed CAP documents (notifications), maintenance WOs (orders), and maintenance rule (MR) basis documents to ensure that PSEG was identifying and properly evaluating performance problems within the scope of the MR. For each sample selected, the inspectors verified that the SSC was properly scoped into the MR in accordance with 10 *Code of Federal Regulations* (CFR) 50.65 and verified that the (a)(2) performance criteria established by PSEG staff was reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that PSEG staff was identifying and addressing common cause failures that occurred within and across MR system boundaries.

- 'A' SLC pump discharge relief valve failed setpoint high on February 5, 2012 (Order 70148443)
- FW cross-connect valve (1AE-HV-4144) motor operator stall condition evaluation on May 9, 2013 (Order 80102654-0040)

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 5 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that PSEG performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that PSEG personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When PSEG performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Unplanned maintenance and approved troubleshooting following the failure of the HPCI auxiliary oil pump (AOP) to start on April 8, 2013 (Notification 20602350)
- Unplanned maintenance on the RRP speed control UPS on May 9, 2013 (Order 60110684)
- Unplanned maintenance on the cross connect valve (HV-4144) for the FW supply lines on May 9, 2013 (Notification 20607448)

- Emergent maintenance on the 'D' SSW strainer during planned replacement of the 'C' SSW traveling water screen on June 2, 2013 (Order 60110992)
- Unplanned maintenance and approved troubleshooting on the 'A' nuclear management and control (NUMAC) drawer on June 3, 2013 (Order 60111018)

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 4 samples)

a. Inspection Scope

The inspectors reviewed operability determinations (ODs) for the following degraded or non-conforming conditions:

- Safety relief valve (SRV) (F013R) high temperature alarm on January 30, 2013 (Notification 20593312)
- Potential leakage through the reactor water cleanup (RWCU) drain line valves as it relates to the American Society of Mechanical Engineers (ASME) Code Class 1 pressure boundary criteria on April 18, 2013 (Notification 20602181)
- Loss of power to the 'B' EDG fuel oil storage tank level indicators on April 12, 2013 (Notification 20602818)
- Degraded FW penetration sealing water system to penetrations P2A and P2B on May 9, 2013 (Order 70153980-0010)

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the ODs to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TSs and UFSAR to PSEG's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by PSEG. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 sample)

Permanent Modifications

a. Inspection Scope

The inspectors evaluated revisions to documents that establish SACS room temperatures when no room coolers are available, as implemented by engineering change package 80108856, "SACS Room Temperature without Cooling from Room

Coolers," Revision 0. The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the upgrade and design change, including a revision of design calculation 11-0066, Revision 8, which establishes SACS room (rooms 4307 and 4309) temperatures when all SACS room coolers are not functional and ultimate heat sink temperature is 80 degrees Fahrenheit or less. The inspectors also reviewed procedure OP-HC-108-115-1001, "Operability Assessment and Equipment Control Program," Revision 26, and interviewed engineering and operations personnel to ensure the procedure could be reasonably performed.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 7 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests (PMTs) for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure was consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- 'D' RHR pump following planned motor replacement on April 1, 2013 (Order 30173284)
- 'A' SLC alarm and indication circuit following emergent loss of squib valve continuity alarm and indication on April 1, 2013 (Order 60109525)
- Reactor manual control system following repairs of an emergent system lockup condition on April 3, 2013 through April 5, 2013 (Order 60099516)
- HPCI logic system functional test following emergent failure and replacement of relay 1BJYY-K056-E41A on April 8, 2013 (Order 30098689)
- RCIC planned relay replacements on April 22, 2013 (Order 60109275)
- 'B' RHR system following emergent vent line repair on June 15, 2013 (Order 60111317)
- 'C' SSW pump following planned traveling water screen replacement on June 20, 2013 (Order 30174677)

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)

a. Inspection Scope

The inspectors reviewed the station's work schedule and outage risk plan for a unit forced outage (F131), which was conducted June 12 through June 17, 2013, following a trip of the 'B' CWP. The inspectors reviewed PSEG's development and implementation of outage plans and schedules to verify that risk, industry experience, previous site-specific problems, and defense-in-depth were considered. During the outage, the inspectors observed portions of the shutdown and cooldown processes and monitored controls associated with the following outage activities:

- Configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable TSs when taking equipment OOS
- Implementation of clearance activities and confirmation that tags were properly hung and that equipment was appropriately configured to safely support the associated work or testing
- Status and configuration of electrical systems and switchyard activities to ensure that TSs were met
- Monitoring of decay heat removal operations
- Impact of outage work on the ability of the operators to operate the spent fuel pool cooling system
- Reactor water inventory controls, including flow paths, configurations, alternative means for inventory additions, and controls to prevent inventory loss
- Activities that could affect reactivity
- Maintenance of secondary containment as required by TSs
- Fatigue management
- Tracking of startup prerequisites, walkdown of the drywell (primary containment) to verify that debris that could block the emergency core cooling system suction strainers had not been left, and startup and ascension to full power operation
- Identification and resolution of problems related to forced outage activities

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 6 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied TSs, the UFSAR, and PSEG procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- HC.OP-IS.BC-0004, RHR Pump (DP202) 2-year Comprehensive Pump Test on April 1, 2013 (In-service test (IST))
- HC.IC-FT.BJ-0007, Logic System Functional Test, Containment High Pressure/Reactor Low Water Level/Reactor High Water Level HPCI Actuation on April 8, 2013
- HC.IC-CC.SK-0004, HPCI - Division 3 Steam Leak Detection Temperature Monitor, H1SK-1SKXR-11504, on April 9, 2013
- HC.OP-ST.BD-0003, RCIC Functional Verification - 18 months on April 22, 2013
- HC.OP-DL.ZZ-0026, Drywell Floor Drain Leakage Monitoring and HC.CH-SA.HB-0010, Sampling the Drywell Floor Sump on May 1, 2013 (reactor coolant system (RCS) leakage)
- HC.OP-IS.BH-0004(Q), SLC Pump-BP208 – IST on June 11, 2013 (IST)

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 1 sample)

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on May 6, 2013, which required emergency plan implementation by an operations crew. PSEG planned for this evolution to be evaluated and included in performance indicator (PI) data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that PSEG evaluators noted the same issues and entered them into the CAP.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2RS5 Radiation Monitoring Instrumentation (71124.05)

From May 20 to 24, 2013, the inspectors reviewed the accuracy and operability of radiation monitoring instruments. The review was based on 10 CFR 20, 10 CFR 50, 40 CFR 190, applicable regulatory guides (RGs) and industry standards, the TSs and Offsite Dose Calculation Manual (ODCM), and PSEG procedures for determining compliance.

a. Inspection Scope

Inspection Planning

The inspectors reviewed the UFSAR to identify radiation instruments associated with monitoring airborne radioactivity, process streams, and radioactive effluents. Additionally, the inspectors selectively reviewed the associated TS requirements for post-accident monitoring instrumentation.

The inspectors reviewed available third-party evaluation reports of the radiation monitoring program since the last inspection.

The inspectors reviewed effluent monitor alarm setpoints and the calculation methods provided in the ODCM.

Walkdowns and Observations

The inspectors walked down two gaseous effluent radiation monitoring systems. The inspectors assessed whether the effluent/process monitor configurations align with the UFSAR and ODCM specifications.

Calibration and Check Sources

The inspectors reviewed PSEG's waste stream characterization per 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," to assess the types and energies of radiation encountered in the plant.

Problem Identification and Resolution

The inspectors evaluated whether problems associated with radiation monitoring instrumentation were being identified by PSEG at an appropriate threshold and were properly addressed for resolution in Hope Creek's CAP. The inspectors assessed the appropriateness of the corrective actions for a sample of problems documented by Hope Creek that involve radiation monitoring instrumentation.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

From May 20 to May 24, 2013, the inspectors verified that gaseous and liquid effluent processing systems were maintained so radiological discharges were properly reduced, monitored, and released. The inspectors also verified the accuracy of calculations for effluent release and public dose.

The inspectors used the requirements in 10 CFR 20, "Standards for Protection Against Radiation;" 10 CFR 50.36, "TSs;" 10 CFR 50, Appendix A, Criterion 60, "Control of Releases of Radioactive Materials to the Environment," and Criterion 64, "Monitoring Radioactivity Releases;" 10 CFR 50, Appendix I, "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As-Low-As-Is-Reasonably Achievable (ALARA)' for Radioactive Material in Light-Water-Cooled

Nuclear Power Reactor Effluents;" 10 CFR 50.75(g), "Reporting and Recordkeeping for Decommissioning Planning;" 40 CFR 141 Maximum Contaminant Levels for Radionuclides; 40 CFR 190, "Environmental Radiation Protection Standards for Nuclear Power Operations;" RG 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I;" RG 1.21, "Measuring, Evaluating, and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste;" RG 4.1, "Radiological Environmental Monitoring for Nuclear Power Plants;" RG 4.15, "Quality Assurance for Radiological Monitoring Programs;" NUREG 1301, "ODCM Guidance: Standard Radiological Effluent Controls for Pressurized Water Reactors;" applicable industry standards; and licensee procedures required by the TSs and ODCM as criteria for determining compliance.

a. Inspection Scope

Event Report and Effluent Report Reviews

The inspectors reviewed the Hope Creek Station 2012 Radioactive Effluent Release Report and Radiological Environmental Monitoring Report to determine if the reports were submitted as required by the TSs and ODCM. The inspectors reviewed anomalous results, unexpected trends, and abnormal releases that were identified. The inspectors determined if these effluent results were evaluated, were entered in the CAP, and were adequately resolved.

The inspectors identified and reviewed radioactive effluent monitor operability issues to determine if the issues were entered into the CAP and adequately resolved.

ODCM and UFSAR Review

The inspectors reviewed UFSAR descriptions of the radioactive effluent monitoring systems, treatment systems, and effluent flow paths to identify system design features and required functions.

The inspectors reviewed changes to the ODCM made since the last inspection. When differences were identified, the inspectors reviewed the technical basis or evaluations of the change and determined whether they were technically justified and maintained effluent releases ALARA.

The inspectors reviewed documentation to determine if any non-radioactive systems that have become contaminated were either disclosed through an event report or the ODCM.

The inspectors reviewed 10 CFR 50.59 evaluations and made a determination if any newly contaminated systems had an unmonitored effluent discharge path to the environment. The inspectors also reviewed whether required revisions to the ODCM were made to incorporate new public dose pathways.

Groundwater Protection Initiative (GPI) Program

The inspectors reviewed reported groundwater monitoring results and changes to Hope Creek's written program for identifying and controlling contaminated spills/leaks to groundwater.

Procedures, Special Reports, and Other Documents

The inspectors reviewed available event reports and/or special reports related to the effluent program issued since the previous inspection to identify any additional focus areas for the inspection based on the scope/breadth of problems described in these reports.

The inspectors reviewed effluent program implementing procedures, including those associated with effluent sampling, effluent monitor setpoint determinations, and dose calculations.

The inspectors reviewed copies of Hope Creek Station and third party evaluation reports of the effluent monitoring program since the last inspection to gather insights into the effectiveness of the program.

Walkdowns and Observations

The inspectors walked down components of the north and south plant vent gaseous discharge systems to verify equipment configuration and flow paths. During walkdowns, special attention was made to identify potential unmonitored release points, building alterations that could impact airborne or liquid effluent controls, and ventilation system leakage that communicates directly with the environment.

The inspectors reviewed effluent system material condition surveillance records for equipment or areas associated with the systems selected for review that were not readily accessible due to radiological conditions.

The inspectors walked down filtered ventilation systems to verify there were no degraded conditions associated with high-efficiency particulate air/charcoal banks, improper alignment, or system installation issues that would impact the performance or effluent monitoring capability of the effluent system.

The inspectors observed portions of the routine processing and discharge of radioactive gaseous effluent to verify that appropriate treatment equipment was used and that processing activities align with discharge permits. The inspectors verified selected gaseous and liquid dose projection calculations.

The inspectors reviewed if there have been any changes to the Hope Creek effluent release paths. The inspectors verified that appropriate effluent treatment equipment was being used for discharges.

Sampling and Analyses

The inspectors selected three effluent sampling activities (two gaseous and one liquid) and assessed whether adequate controls have been implemented to ensure representative samples were obtained.

The inspectors reviewed effluent discharges with inoperable effluent radiation monitors to verify that controls were in place to ensure compensatory sampling was performed and that controls were adequate to prevent the release of unmonitored liquid and gaseous effluents.

The inspectors determined whether the facility is routinely relying on the use of compensatory sampling in lieu of adequate system maintenance, based on the frequency of compensatory sampling since the last inspection.

The inspectors reviewed the results of the inter-laboratory and intra-laboratory comparison program to verify the quality of the radioactive effluent sample analyses. The inspectors also assessed whether the intra- and inter-laboratory comparison program included hard-to-detect isotopes, as appropriate.

Effluent Flow Measuring Instruments

The inspectors reviewed the methodology that PSEG uses to determine the flow rates of the north and south plant vent and filter recirculation vent to verify that the flow rates were consistent with the TSs, ODCM, and FSAR values. The inspectors reviewed the differences between assumed and actual flow rates to ensure that they do not affect the calculated results of public dose.

Air Cleaning Systems

The inspectors assessed whether surveillance test results for ventilation effluent discharge systems met acceptance criteria.

Dose Calculations

The inspectors reviewed all significant changes in reported dose values compared to the previous radioactive effluent release report to evaluate the factors that may have resulted in any changes.

The inspectors reviewed one radioactive liquid and one gaseous waste discharge permit to verify that the projected doses to members of the public were accurate and based on representative samples of the discharge path.

The inspectors evaluated the methods used to ensure that representative radionuclides in the effluent stream source term were included. The review included the current waste stream analyses to ensure hard-to-detect radionuclides were included in the releases.

The inspectors reviewed changes in offsite dose calculation methodology since the last inspection to verify the changes are consistent with requirements. The inspectors reviewed meteorological dispersion and deposition factors used in the ODCM and effluent dose calculations to ensure appropriate dispersion/deposition factors are being used for public dose calculations.

The inspectors reviewed the latest land use census to verify changes that affect public dose pathways have been factored into the dose calculations and environmental sampling/analysis program.

The inspectors evaluated whether the calculated doses were within the 10 CFR 50, Appendix I and TS dose criteria.

The inspectors reviewed records of abnormal gaseous or liquid tank discharges to ensure the abnormal discharges were monitored by the discharge point effluent monitor. Discharges made with inoperable effluent radiation monitors, or unmonitored leakages

were reviewed to ensure that these discharges were evaluated to account for the effluent releases and that they were included in the report of calculated public doses.

GPI Implementation

The inspectors reviewed implementation and monitoring results of the voluntary Nuclear Energy Institute (NEI) GPI. For anomalous results or missed samples, the inspectors assessed whether PSEG identified and addressed deficiencies through its CAP.

The inspectors discussed identified leakage or spill events and associated documentation in PSEG decommissioning files. The inspectors reviewed evaluations of leaks or spills, and reviewed the effectiveness of remediation actions. The inspectors reviewed onsite contamination events involving contamination of groundwater and assessed whether the source of the leak or spill was identified and isolated/terminated. The inspectors assessed whether an evaluation was performed to determine the type and amount of radioactive material that was discharged. The inspectors assessed whether sufficient radiological surveys were performed to evaluate the extent of the contamination, assessed whether adequate evaluations were performed, and determined whether PSEG completed offsite notifications, as provided in its GPI implementing procedures.

The inspectors reviewed the evaluation of discharges from onsite surface water bodies that contain radioactivity and the potential for groundwater leakage from these onsite surface water bodies. The inspectors assessed whether PSEG was properly accounting for discharges from these surface water bodies as part of their effluent release reports.

The inspectors assessed whether on-site groundwater sample results and a description of any significant on-site leaks/spills into groundwater for each calendar year were documented in applicable reports.

For significant new effluent discharge points the inspectors evaluated whether the Hope Creek ODCM was updated to include the dose calculation method for the new release point and the associated dose calculation methodology.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

RCS Specific Activity and RCS Leak Rate (2 samples)

a. Inspection Scope

The inspectors reviewed PSEG's submittal for the RCS specific activity and RCS leak rate PIs for the period of July 1, 2012, through March 31, 2013. To determine the accuracy of the PI data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment PI Guideline," Revision 6. The inspectors also reviewed RCS sample analysis and control room logs of

daily measurements of RCS leakage and compared that information to the data reported by the performance indicator. Additionally, the inspectors observed surveillance activities that determined the RCS identified leakage rate.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 3 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure (IP) 71152, "Problem Identification and Resolution (PI&R)," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that PSEG entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP and periodically attended notification screening meetings.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, as required by IP 71152, "PI&R," to identify trends that might indicate the existence of more significant safety issues. In this review, the inspectors included repetitive or closely-related issues that may have been documented by PSEG outside of the CAP, such as trend reports, PIs, major equipment problem lists, system health reports, MR assessments, and maintenance or CAP backlogs. The inspection also reviewed PSEG's CAP database for the period from December 2012 to May 2013 to assess notifications written and individual issues identified during NRC's daily notification review. The inspectors reviewed the Hope Creek performance improvement integrated matrix (PIIM) for the first cycle of 2013, conducted under procedure LS-AA-125-1006, "PIIM" to verify that PSEG personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures.

b. Findings and Observations

No findings were identified.

Engineering trends overall equipment reliability using procedure ER-AA-2200, "Equipment Reliability Performance Objectives and Criteria Bubble Chart Analysis." The inspectors reviewed the most current engineering bubble chart. PSEG also performs a

low level trending analysis using Pareto methods. The inspectors reviewed the Pareto analysis for the six-month period ending in March 2013 and Notification 20599573 generated to document a trend in one aspect of human performance.

The inspectors reviewed notifications issued during the six months in question and evaluated licensee corrective actions for performance issues in the following areas based on that review: 1) the reliability of fire alarms and the response to such alarms in high radiation areas; 2) the unavailability of local power range monitors (LPRMs); and 3) the implementation of the MR in response to an observation made during the most recent biennial PI&R team inspection.

The inspectors noted in the previous semi-annual trend review an increasing trend in the number of spurious fire alarms in various locations of the protected area. On April 19, 2013, an Unusual Event (UE) was declared due to a fire alarm spuriously actuating in a locked high radiation area (LHRA). The operations staff that responded could not reach the area and obtain key access to this area within 15 minutes of the time the alarm came in, prompting the UE declaration. As a corrective action, PSEG installed cameras in all LHRAs with fire detection equipment to allow prompt verification of the existence or absence of a fire. PSEG is also developing a PM task to clean the detectors and evaluating replacing the system because of obsolescence.

The inspectors also reviewed a common cause evaluation (CCE) for the number of LPRM failures during the last outage and the current operating cycle. The number of unavailable LPRMs had been declining for a number of years but began increasing in 2008. A CCE was performed, which identified several distinct causes for problems with the LPRM that forced them to be bypassed. In response, PSEG initiated six condition report corrective actions (CRCAs) and action tracking items (ACITs) to address the common causes identified. The inspectors discussed the progress of these corrective actions with the responsible system engineer, verified that the number of OOS LPRMs declined since the CCE was initiated, and reviewed the OOS LPRM repair and replacement plan for the next refueling outage.

Finally, the inspectors reviewed a performance improvement action plan developed to improve the implementation of the MR based on inconsistencies identified by the NRC and PSEG's Nuclear Oversight organization. The evaluation performed as part of the performance improvement plan identified performance issues consistent with the observation in the NRC's 2013 PI&R team inspection. The inspectors reviewed the CRCA and the two implemented ACITs to improve implementation of the MR.

Based on the overall review of the selected sample, the inspectors concluded that PSEG was appropriately identifying and entering issues into the CAP, adequately evaluating the identified issues, and appropriately identifying adverse trends before they become more significant safety concerns.

.3 Annual Sample: Average Power Range Monitor (APRM) Trip Point Settings For Single Loop Operation

a. Inspection Scope

The inspectors performed an in-depth review of PSEG's apparent cause analysis and corrective actions associated with Licensee Event Report (LER) 50-354/2012-01,

"APRM Flow Unit Summers Out of TS Tolerance," and Notification 20549760. This issue was discussed in NRC Integrated Inspection Report 05000354/2012003 as Green NCV 05000354/2012003-02. Specifically, on March 4, 2012, during APRM flow unit summer weekly calibration with the unit in single loop operation, reactor recirculation drive flow was incorrectly calculated, which resulted in an improper trip setpoint being calculated and inserted. As a result, all four APRM flow unit summers were out of tolerance for a period of time greater than permitted by TSs.

The inspectors assessed PSEG's problem identification threshold, cause analyses, extent of condition reviews, compensatory actions, and the prioritization and timeliness of PSEG's corrective actions to determine whether PSEG was appropriately identifying, characterizing, and correcting problems associated with this issue and to determine whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of PSEG's CAP and 10 CFR 50, Appendix B.

b. Findings and Observations

No findings were identified.

PSEG determined the most probable cause was that the calibration of the APRM flow unit summers during single loop operation was not covered by procedural guidance. PSEG also determined that ambiguous instructions in the procedures, which did exist, resulted in calculation of an inaccurate drive flow.

PSEG conducted a thorough technical review of the TS requirements for instrumentation during single loop operation. PSEG's extent of condition review identified that instrumentation and controls (I&C) and reactor engineering personnel were unfamiliar with the determination of recirculation drive flow during single loop operation. Corrective actions included revising reactor engineering procedures to provide instructions for calculating drive flow during single loop operation, and revising I&C procedures for adjusting instruments when transitioning into and out of single loop operation. The inspectors determined PSEG's overall response to the issue was commensurate with the safety significance, was timely, and included appropriate corrective actions. The inspectors determined that the actions taken were reasonable to resolve the issues of instrument calibration during single loop operation.

.4 Annual Sample: Bailey 862 Solid State Logic Module (SSLM) Replacement Program

a. Inspection Scope

The inspectors performed an in-depth review of PSEG's apparent cause analysis and corrective actions associated with Notification 20577641, "Failure in AC653 leads to 'A' Reactor Feed Pump (RFP) Trip." On September 30, 2012, during a plant transient involving a runback of the RRPs, operators noted that the 'A' RFP was tripped without the associated overhead annunciator alarming. The annunciator alarmed several minutes after the RFP tripped. Control room integrated display points associated with the RFP trip came in twice during the transient, approximately 4 minutes apart. Reviews determined that all the indications originated in the H1RL-1A-C-653 panel of the Bailey 862 control system.

The inspectors assessed PSEG's problem identification threshold, cause analyses, extent of condition reviews, compensatory actions, and the prioritization and timeliness of PSEG's corrective actions to determine whether PSEG was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of PSEG's CAP and 10 CFR 50, Appendix B.

b. Findings and Observations

No findings were identified.

PSEG determined the cause of the event was an intermittent loss of the operate bus for cabinet 8 of the AC653 panel. The apparent cause of the loss of the operate bus was a failed optical isolator on input one of H1RL-1RLXIS-AC653080202. PSEG replaced the failed SSLM card and completed required testing within the TS allowed outage time.

PSEG conducted a thorough review of the circumstances surrounding the failure and determined that the potential risk of the card's failure had been previously evaluated under Order 70110566-0250. PSEG determined that the card had been correctly classified as medium risk and appropriately scheduled for replacement under Maintenance Order 60101055. An extent of condition review determined that there are 225 more SSLM's supporting critical components that have not yet been replaced under the Bailey Logic Module Replacement Project. Those remaining modules are currently scheduled for replacement during the next refueling outage.

The inspectors determined PSEG's overall response to the issue was commensurate with the safety significance, was timely, and included appropriate corrective actions. The inspectors determined that the actions taken were reasonable to resolve the issue of Bailey SSLM failures.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 3 samples)

.1 Plant Events

a. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that PSEG made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed PSEG's follow-up actions related to the events to assure that PSEG implemented appropriate corrective actions commensurate with their safety significance.

- Loss of emergency notification system telephone (Event Notifications (ENs) 48905 and 48908)

- UE declared on April 19 due to inability to confirm a fire alarm in the protected area within 15 minutes (EN 48947)
- CWP trip leads to a reactor scram (EN 49108) and subsequent discovery of pressure boundary leakage on June 12 (EN 49110)

b. Findings

No findings were identified.

.2 (Closed) LER 2013-001-00: High Pressure Coolant Injection System Inoperable Due to Control Relay Failure

During the performance of HC.IC-FT.BJ-0007, "Logic System Function Test - Containment High Pressure/Low Water Level/Reactor High Water Level HPCI Actuation" on April 8, 2013, the operator noted that the HPCI Stop Valve (FV-4880) did not open as expected and the operator observed that the HCPI AOP failed to start. The shift manager entered the action statement for TS 3.5.1 and declared the HPCI system inoperable. Preliminary investigation showed that a normally de-energized control relay (1 BJYY-K056-E41A) had failed. This relay was replaced and operability restored on April 8, 2013. The HPCI system was declared inoperable because of the failure of a control relay, which prevented the HPCI AOP from automatically starting on demand. This condition is reportable under 10 CFR 50.73(a)(2)(v)(D) for a condition that could have prevented fulfillment of a safety function of structures or systems that are needed to mitigate the consequences of an accident. The inspectors performed an in-depth review of this LER 50-354/2013-001-00 and PSEG's apparent cause analysis associated with notifications 20602350 and 20602498. During the review of this LER, the inspectors identified one issue that is discussed below. This LER is closed.

b. Findings

Introduction. A self-revealing Green NCV of TS 6.8.1, "Procedures," was identified because PSEG failed to establish an appropriate PM schedule for Tyco/Agastat GP control relays. Specifically, an evaluation PSEG performed to revise HPCI relay replacement periodicities from 22 years to 40 years neither adequately addressed available relay references nor all applicable failure mechanisms; as a result, HPCI failed to respond to logic system actuation signals during surveillance testing on April 8, 2013.

Description. On April 8, 2013, the HPCI system was declared inoperable during the performance of HC.IC-FT.BJ-0007, "Logic System Function Test - Containment High Pressure/Low Water Level/Reactor High Water Level HPCI Actuation," Revision 12. During the test, I&C technicians inserted a reactor low water level initiation (Level 2) signal to initiate a start of the HPCI AOP. The operator noted that the HPCI stop valve (FV-4880) did not open as expected and observed that the HCPI AOP failed to start. Upon recognizing the HPCI AOP failure to start, operators declared the HPCI system inoperable. Troubleshooting identified that the HPCI AOP control relay (1 BJYY-K056-E41A), a normally de-energized relay, had failed. The relay was replaced, and the HPCI AOP start signal was successfully retested. Hope Creek determined that, in spite of the failure to respond to an automatic actuation signal, HPCI was capable of being manually started, because the failed relay was not part of the manual start circuitry.

In a related event on April 9, 2013, during the performance of HC.IC-CC.SK-0004(Q), "HPCI – Division 3 Steam Leak Detection Temperature Monitoring H1SK-1SKXR-11504," Revision 13, the relay that provides the close signal to the HPCI turbine inboard isolation valve (HV-F002) had a resistance of 47 ohms with a closed contact; the relay was expected to have a resistance of less than 1 ohm with a closed contact. Upon recognizing the HV-F002 failure, operators declared the HPCI system inoperable. The relay was subsequently replaced because of the high resistance and successfully retested. Upon further inspection, all contact surfaces were verified to be properly engaging and not air-gapped, but all eight contacts were found to have high resistances, and two of the normally open contacts' resistances were high enough to cause open circuits. Additional analysis revealed that all of the failed contacts had phosphorus deposits on their respective surfaces that caused the excessive resistance values.

Both of the failed relays were manufactured in 1980 and were installed in the station prior to initial plant startup in 1986. The relay vendor, Tyco, guarantees the relays for 25,000 cycles or ten years. The relays were only cycled a few times each year and had margin to the 25,000 cycle limit. However, the relays were in-service well beyond the vendor's recommended 10 year qualified life (33 years). Both relay failure mechanisms identified by Hope Creek - an open coil caused by corrosion on one relay, and high contact resistance on the second relay - are considered age-related failure mechanisms.

As part of the Hope Creek AGASTAT Relay PM program in 2003, 22-year periodic replacement frequency PM activities were created for the two subject failed relays. In 2007, a population of normally de-energized Agastat GP control relays was reviewed to remove conservatism in the replacement periodicity. The review determined that the replacement periodicity could be revised from 22 years to 40 years. This new periodicity for the Agastat GP control relays was based on calculation, their type, qualification, and failure history.

The PM change procedure in place in 2007, Attachment 4 of NC.ER-DG.ZZ-0100(Z), "Equipment Reliability Analysis," Revision 3, included reference documents that were to be reviewed as part of the PM change evaluation. Contrary to this procedural requirement, PM change evaluations did not show that the specified relay references such as Electric Power Research Institute Technical Report, TR-102067, "Maintenance and Application Guide for Control Relays and Timers," issued December 1993, were reviewed by the station. Consequently, not all applicable failure mechanisms, such as relay coil burnout, high contact resistance, mechanical binding, and lead failure were considered. Additionally, at the time the PM changes were implemented, there was no governing body for the PM program, the PM program coordinator was an administrative position with no enforcement or oversight function, and engineering supervisors had approval authority for PM changes.

PSEG's immediate corrective actions included replacing the failed relays. 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. PSEG entered this issue into its CAP as notifications 20602350 and 20602498.

Analysis. The inspectors determined that the failure to establish an appropriate PM schedule for Tyco/Agastat GP control relays was a performance deficiency that was within PSEG's ability to foresee and correct, and should have been prevented. Specifically, the PM change evaluations conducted in 2007 did not review the relay

references specified in NC.ER-DG-ZZ-0100(Z), “Equipment Reliability Analysis,” and did not consider all applicable failure mechanisms. This finding was more than minor because it is 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 these relays caused the automatic start capability of the HPCI system to be unavailable and caused unplanned inoperability of the HPCI system. The inspectors evaluated the finding using the Phase 1, “Initial Characterization of Findings,” worksheet in Attachment 4 to IMC 0609, “Significance Determination Process,” issued June 2, 2011, which instructs the inspectors to utilize IMC 0609 Appendix A, “The SDP for Findings At-Power,” issued June 19, 2012. Evaluating the finding using Exhibit 2 of IMC 0609, the inspectors determined a detailed risk evaluation was needed, based upon the conservative assumption that the failure of HPCI to automatically start was a loss of safety function. The inspectors noted that although the licensee declared the HPCI system inoperable, HPCI remained available via operator recovery actions. Control room operators could have readily placed HPCI in service via manually starting the system from the control room.

The Region I Senior Reactor Analyst (SRA) used SAPHIRE and the Standardized Plant Analysis Report (SPAR) for Hope Creek to evaluate the risk significance of this issue. The SRA made the following modeling assumptions:

- Basic Event (HCI-TDP-TRAIN) Failure To Start was set to True to represent the failure of the HPCI system to respond to an automatic start signal
- The unavailability time (exposure time period) used was T/2, representing one half of the time between the last successful start of the HPCI system and the discovery of the failed relay and failure to start on April 8, 2013, T/2 = 165 days
- The truncation value used in the analysis was set at 1E-13
- Operator recovery credit was assigned a value of 1E-2 (one in 100 chance of failure) based upon readily available procedures (alarm response cards), operator training, and the simplicity of the operator actions to manually initiate the HPCI system.

Based upon the above modeling assumptions, the change in core damage frequency (delta CDF) of the failure of the HPCI system to respond to an automatic start signal due to the logic circuit relay failure was in the high E-8 range. The dominant core damage sequences involved the loss of condenser heat sink and loss of offsite power initiating events followed by the failure of operators to recover HPCI, failure of the RCIC system, and operator failure to depressurize the RCS to permit low pressure injection.

The SRA reviewed PSEG’s risk assessment, which favorably compared to the SPAR results. The licensee’s risk assessment identified a mid-E-7 delta CDF. PSEG’s risk assessment reflected both internal and external risk contributions. The internal event dominant core damage sequences were similar to the SPAR model results. External event contributions were dominated by fires warranting control room abandonment. Based upon the SPAR model results and similar, but independently derived licensee risk assessment results, this self-revealing performance deficiency was determined to be of very low safety significance (Green).

No cross-cutting aspect was assigned to this finding because PSEG's evaluation of the PM relay replacement periodicity was completed more than 3 years ago, and since the 2007 evaluation, a PM Ownership Committee has been created to review PM change evaluations to enforce evaluation format and level of technical rigor specified in the current PM change process, MA-AA-716-210-1005, "Predefine Change Process." This performance deficiency is thereby not reflective of current plant performance.

Enforcement. TS 6.8.1 states, in part, that written procedures recommended in Appendix A of RG 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, February 1978, shall be established, implemented, and maintained. Section 9.b of Appendix A to RG 1.33 states, in part, that PM schedules should be developed to specify replacement of parts that have a specific service life. Contrary to the above, since 2007, PSEG's PM schedules for normally de-energized Tyco/Agastat GP control relays were inadequate and resulted in a failure of the HPCI logic system to respond to actuation signals during surveillance testing on April 8, 2013. Specifically, HPCI relay replacement periodicities were extended from 22 years to 40 years without adequately addressing available relay references or all applicable failure mechanisms. PSEG's immediate corrective actions included replacing failed relays. 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. Because this violation was determined to be of very low safety significance (Green), and PSEG entered this issue into its CAP as notifications 20602350 and 20602498, this violation is being treated as an NCV consistent with Section 2.3.2 of the Enforcement Policy. **(NCV 05000354/2013003-01, Inadequate Preventive Maintenance Replacement Schedule for Agastat Control Relays)**

4OA5 Other Activities

.1 Institute of Nuclear Power Operations (INPO) Report Review

a. Inspection Scope

The inspectors reviewed the final report for the INPO plant assessment of Hope Creek conducted in June 2012. The inspectors also reviewed the final report for the INPO accreditation team evaluation of the maintenance, engineering, chemistry, and radiological protection technical training programs conducted in March 2013. The inspectors evaluated these reports to ensure that NRC perspectives of PSEG performance were consistent with any issues identified during the assessments. The inspectors also reviewed these reports to determine whether INPO identified any significant safety issues that required further NRC follow-up.

b. Findings

No findings were identified.

.2 Operation of an Independent Spent Fuel Storage Installation (ISFSI) at Operating Plants (60855 and 60855.1)

a. Inspection Scope

From June 10 to June 14, 2013, the inspectors observed and evaluated PSEG's loading of a multi-purpose canister (MPC) associated with PSEG's current ISFSI dry cask

campaign. The inspectors also reviewed PSEG's activities related to long-term operation and monitoring of their ISFSI. The inspectors verified compliance with the Certificate of Compliance (CoC), TSs, regulations, and licensee procedures.

The inspectors observed the MPC inside the transfer cask (HI-TRAC) being moved into the cask pit, the loading of spent fuel assemblies into the MPC, and the MPC/HI-TRAC being moved from the cask pit to the cask washdown area. Inspectors observed cask processing operations including: welding of the lid to the MPC, hydrostatic testing, non-destructive examination of the lid weld, and forced helium dehydration of the MPC. During performance of these activities the inspectors evaluated PSEG's familiarity with procedures, supervisory oversight, and communication and coordination between the personnel involved. The inspectors attended licensee briefings to assess their ability to identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors. The inspectors also reviewed loading and monitoring procedures and evaluated PSEG's adherence to these procedures.

NRC staff reviewed the methodology, assumptions, acceptance criteria, analysis, and results of Holtec Report No. HI-2125352, "Freestanding Stack-Up Analysis in Reactor Building Floor El 102' at HCGS," to assess the response of the HI-TRAC and HI-STORM when in a freestanding stack-up configuration during a design basis seismic event.

The inspectors reviewed PSEG's program associated with fuel characterization and selection for storage. The inspectors reviewed cask fuel selection packages to verify that PSEG was loading fuel in accordance with the CoC and TSs. The inspectors confirmed that PSEG did not plan to load any damaged fuel assemblies during this campaign.

The inspectors reviewed radiation protection procedures and radiation work permits associated with the ISFSI loading campaign. The inspectors also reviewed the ALARA goal for the cask loading to determine the adequacy of PSEG's radiological controls to ensure radiation worker doses were ALARA, and to ensure project dose goals could be achieved. The inspectors reviewed radiological survey records from the current loading campaign to confirm that dose levels on the HI-TRAC surface were as expected.

The inspectors performed tours of the heavy haul path and ISFSI pad to assess the material condition of the path, pad, and the loaded HI-STORM. The inspectors verified that PSEG was appropriately performing daily HI-STORM temperature surveillances in accordance with TS requirements. The inspectors also verified that transient combustibles were not being stored on the ISFSI pad or in the vicinity of the HI-STORM. The inspectors confirmed that vehicle entry onto the ISFSI pad was controlled in accordance with the licensee's procedures. The annual environmental reports were reviewed to verify that areas around the ISFSI site boundary were within limits specified in 10 CFR 20 and 10 CFR 72.104.

The inspectors reviewed PSEG's 10 CFR 72.48 screenings to verify that PSEG had appropriately considered the conditions under which they may make changes without prior NRC approval. The inspectors reviewed revisions to the 10 CFR 72.212 report. The inspectors also reviewed CAP notifications, audit reports, and self-assessments that were generated since PSEG's last loading campaign to ensure that issues were being properly identified, prioritized, and evaluated commensurate with their safety significance.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On July 18, 2013, the inspectors presented the inspection results to Mr. E. Carr, Plant Manager of Hope Creek, and other members of the Hope Creek staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

P. Davison, Site Vice President
E. Carr, Plant Manager
D. Bartlett, Manager, System Engineering
B. Boesch, Hope Creek Training Manager
P. Bonnett, Regulatory Assurance
B. Burgio, Probabilistic Risk Assessment (PRA) Engineer
D. Bush, System Engineer
J. Carlin, Fire Protection Superintendent
E. Casuli, Plant Engineering Manager
R. Chan, Manager, Nuclear Oversight
S. Connelly, System Engineering
B. Daly, Manager, Sustainability, Environmental Affairs
M. Fleming, Chemistry Superintendent
R. Ficarra, Operations
T. Fowler, Operations Training Manager
C. Garver, Operations Shift Supervisor
Z. Horvath, Chemistry Technician
M. Jermusyk, Operations Shift Supervisor
J. Kandasamy, Work Management Director
J. Kepley, Simulator Training Instructor
R. Kitchengs, Work Week Manager
K. Knaide, Engineering Director
W. Kopchick, Operations Director
P. Koppel, Maintenance Superintendent
E. Martin, Senior Nuclear Engineer
V. McPherson, Maintenance Superintendent
M. Meltzer, Chemistry
F. Mooney, Maintenance Director
T. Morin, Regulatory Assurance
J. Morris, Chemistry Technician
L. Myers, Operations Shift Supervisor
C. Neely, Director, Regulatory Affairs
D. Nestle, CFAM, Radiation Protection
J. Pantaze, Manager, Environmental Affairs
K. Powell, Fire Protection Supervisor
J. Price, Supervisor, Chemistry
M. Reed, Manager, Nuclear Shift Operations
J. Russell, Principal Environmental Specialist
S. Simpson, Regulatory Assurance Manager
R. Smith, System Engineer
G. Stith, Manager, Design Engineering
H. Trimble, Radiation Protection Manager

Others

J. Vouglitois, Nuclear Engineer, New Jersey Department of Environmental Protection, Bureau of Nuclear Engineering

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Opened/Closed

05000354/2013003-01	NCV	Inadequate Preventive Maintenance Replacement Schedule for Agastat Control Relays (Section 4OA3.2)

Opened

None

Closed

05000354/2013-001-00	LER	High Pressure Coolant Injection System Inoperable due to Control Relay Failure (Section 4OA3.2)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures
HC.OP-GP.ZZ-0003, Station Preparations for Winter Conditions, Revision 28
HC.OP-GP.ZZ-0011, Placing Instruments in the Tripped Condition, Revision 3
HC.OP-AB.BOP-0004, Grid Disturbances, Revision 21
HC.OP-IO.ZZ-0006, Power Changes During Operation, Revision 56
IT-AA-2002, Nuclear Information Technology Summer Readiness, Revision 5
OP-AA-102-101, Unit Load Changes, Revision 6
OP-AA-108-107-1001, Electric System Emergency Operations and Electric Systems Operator Interface, Revision 3
OP-AA-108-111-1001, Severe Weather and Natural Disaster Guidelines, Revision 9
WC-AA-101, On-line Work Management Process, Revision 21
WC-AA-107, Seasonal Readiness, Revision 12

Notifications
20510076, Circ Water Suction Screen Configuration
20545930, HC YTD Capacity Factor & Gen below Goal
20564332, Open Summer Readiness Action items
20595231, Screen Headshaft has Shift North
20595369, Screen Headshaft has Shift North

20598808, Ops Summer Monitoring Spread Sheet Moni
20606203, Summer Readiness Task Missing on Notifs
20606212, Summer Readiness Timeline Gaps
20609092, Loss of Hope Creek NRC ENS Line
20609742, 'B' CW Pump Disch Vlv – FO Contingency

Maintenance Orders/WOs
30244498, 12M PM 1C-E-108 Clean C-South Waterbox
80105687, 2012 Summer Readiness Action Items
80107747, HC 2013 Summer Readiness

Miscellaneous
2012 Summer Readiness Hope Creek Critique, dated November 16, 2012
2013 Hope Creek Summer Readiness Affirmation Certification Letter, dated April 29, 2013
PSEG Transmission and Distribution Department Letter, from Thomas J. Fries regarding, "Hope Creek Switchyard Readiness for 2013 Summer Period," dated May 7, 2013

Section 1R04: Equipment Alignment

Procedures
HC.OP-ST.EG-0001, SACS Flow Path Verification – Monthly, Revision 9
OP-HC-108-115-1001, Operability Assessment and Equipment Control Program, Revision 26
OP-AA-108-116, Protected Equipment Program, Revision 7

Drawings
M-41-1, Sheet 1, Nuclear Boiler, Revision 38

Miscellaneous
HCGS PRA Risk Evaluation Form for Work Week #1314, Revision 0, dated March 31, 2013
HCGS PRA Risk Evaluation Form for Work Week #1319, Revision 0, dated May 5, 2013
Protected Equipment Log for 'A' FRVS Vent Fan INOP, dated April 3, 2013
Protected Equipment Log for A-2 SACS HX Work, dated May 8, 2013
Protected Equipment Log for FW Line Cross-Tie Isolation H1AE-1AEHS-4144, dated May 10, 2013

Section 1R05: Fire Protection

Procedures
FP-AA-010, Compensatory Measure Firewatch Program, Revision 3
FRH-II-412, Hope Creek Pre-Fire Plan, RCIC Pump & Turbine Room, RHR Pump and HX Rooms & Electrical Equipment Room, Elevation: 54'-0", Revision 3
FRH-II-531, Hope Creek Pre-Fire Plan, Diesel Generator Rooms, Elevation: 102'-0", Revision 8
FRH-II-551, Hope Creek Pre-Fire Plan, Battery Rooms & Cable Chases, Elevations: 146' & 150', Revision 6FRH-II-713, Hope Creek Pre-Fire Plan, SW Intake Structure, Revision 4
FRH-II-723, MCC Area, RHR HX Room, Safeguard Instrument Rooms & RACS Pumps & HX Area, Elevation: 77'-0", Revision 4

Notifications (*NRC identified)
20613557*, H1PK-1D-D-411 Battery #1 Crack
20613557*, H1PK-1C-D-411 Battery #1 Cracked
20613558*, H1PK-1D-D-411 Battery #41 Cracked
20613562*, H1PK-1C-D-411 #2 Battery Crack
20613669*, ELU Normal Light Not Indicating
20613670*, ELU Normal Light Not Indicating
20613671*, ELU 0435 Normal Light Not Indicating

Drawings
M-5004, Fire Protection and Detection, Plan Elevation 120' & Elevation 132'

Section 1R06: Flood Protection Measures

Procedures
HC.OP-SO.EP-0001, SW Traveling Screens System Operation, Revision 19
MA-AA-716-012, Post-Maintenance Testing, Revision 18

Notifications
20590643, Install Sump Pumps for AX501 and BX501

Drawings
601701, Sheet 1, 500, 13.8, 4 kV Elementary One Line Electrical Diagram, Revision 35

Maintenance Orders/WOs
60108105, Install Sump Pumps for AX501 and BX501

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Procedures
HC.OP-AB.BOP-0006, Main Condenser Vacuum, Revision 15
HC.OP-AB.IC-0001, Control Rod, Revision 15
HC.OP-SO.BB-0002, Reactor Recirculation System Operation, Revision 94
HC.OP-SO.DA-0001, Circulating Water System Operation, Revision 60
HC.OP-SO.SF-0001, Reactor Manual Control System Operation, Revision 31
HU-AA-1211, Pre-Job Briefings, Revision 10
OP-AA-101-111-1004, Operations Standards, Revision 4
OP-AA-300, Reactivity Management, Revision 6
OP-AB-300-1001, BWR Control Rod Movement Requirements, Revision 6
OP-HC-108-115-1001, Operability Assessment and Equipment Control Program, Revision 26

Miscellaneous
HC.RE-FM.ZZ-0001, Attachment 4, Modified Rod Pull Listing, Sheet 250, dated May 17, 2013
HC.RE-FM.ZZ-0001, Attachment 4, Modified Rod Pull Listing, Sheet 251, dated May 17, 2013
HC.RE-FM.ZZ-0001, Attachment 4, Modified Rod Pull Listing, Sheet 252, dated May 17, 2013
HC.RE-FM.ZZ-0001, Attachment 5, Modified Rod Pull Listing, Sheet 248, dated May 9, 2013
HC.RE-FM.ZZ-0001, Attachment 5, Modified Rod Pull Listing, Sheet 249, dated May 9, 2013
REMA 2013-0035, May 2013 Downpower for TVT, STT and Sequence Exchange, Revision 0
REMA 2013-0036, May 2013 RR MG Set Scoop Tube Lockup Recovery

Simulator Scenario Guide (SG)-698, 'A' SLC Auto Initiation, 'B' LOCA Sequencer Inadvertent Initiation, 'A' RR Pump High Vibration, Small Break LOCA, dated April 8, 2013

Section 1R12: Maintenance Effectiveness

Procedures
ER-AA-310, Implementation of the MR, Revision 11
ER-HC-310-1009, MR System Function and Risk Significant Guide, Revision 9
ER-HC-321-1011, Testing of Hope Creek ASME Class 1, 2, 3 SRVs, Revision 2

Notifications
20504086, Valve Failed Set Point High
20509833, 1BHPSV-F029A-C41: Expanded Scope Testing
20547157, Valve Failed Set Point High
20589731, Valve Failed Set Point High
20607448, 1AE-HV-4144 Overload/Power Failure Indication
20607974, Replace/Repair Valve Operator
20608179, 1AE-HV-4144 Overload/Power Failure Indication
20608305, Cannibalize MCC Bucket for Parts
20608314, Contingency to Replace MCC 'C' Failed Components

Drawings
M-48-1, SLC, Revision 16

Maintenance Orders/WOs
30253139, 1AE-HV-4144 – Replace Motor on MOV
50113194, ST 8Y 1BHPSV-F029B CATC Relief Valve Test
60085762, (CTGY) 1BHPSV-F029B: Replace Relief Valve
60096938, 1BHPSV-F029A-C41: Expanded Scope Testing
60110751, 1AE-HV-4144 – Replace Actuator SMB-000
70122311, Valve Failed Set Point High
70134653, Valve Failed Set Point High
70148443, Valve Failed Set Point High
80102654-0040, Evaluate MOV Stall Condition on 1AE-HV-4144

Miscellaneous
ASME OM Code 2001
System Health Report, BH - SLC, Q4-2012

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures
HC.MD-CM.EA-0003(Q), SW Strainer Overhaul & Repair, Revision 33
OP-AA-101-112-1002, On-Line Risk Assessment, Revision 6
WC-AA-10, Work Management Process Description, Revision 2
WC-AA-101, On-Line Work Management Process, Revision 19
WC-AA-101, On-Line Work Management Process, Revision 21
WC-AA-105, Work Activity Risk Management, Revision 1
WC-AA-107, Seasonal Readiness, Revision 12

Notifications (*NRC identified)
20602350, HPCI Aux Oil Pump Failed to Start
20607290, Loss of Rx Rec UPS – Scoop Tube Locks
20607448, 1AE-HV-4144 Overload/Power Failure
20607974, 1AE-HV-4144 – Repair/Replace Valve Operator
20608067, 1AE-HV-4144 Failure Lessons Learned
20608178, Loss of Rx Rec UPS – Scoop Tube Locks
20610170, 'B' SSW Pump Excessive Packing Leak
20610204*, Missing Protected Equipment
20610207, Entered HC.OP-AB.CONT-0002(Q) for RWCU
20610252, 'D' SSW Strainer Motor Gear Box
20610343, 'D' SSW Degraded While 'C' SSW Inop
20610346, 'C' SW Strainer Gearbox Requires Rebuild
20610391, Clarification of Past Operability
20610408, Momentary RWCU Hi Motor Temp OHA
20610439, 1SKXR-11497 'A' MS/RWCU NUMAC Failed
20610516, Lesson Learned from 'D' SSW Strainer GB
20615480*, WC-AA-105

Maintenance Orders/WOs
30230692, 12M Lube SSW Strainer CF509 Gear Reducer
30253139, 1AE-HV-4144 – Replace Motor on MOV
60110684, Loss of Rx Rec UPS – Scoop Tube Locks
60110992, RP-1D-F-509 Replace 'D' SSW Gear Box
60111018, 1SKXR-11497 'A' MS/RWCU NUMAC Failed
70154547, 'D' SSW Strainer Motor Gear Box

Miscellaneous
Action Statement Log Number 13-129, 'C' SSW, dated May 31, 2013
Action Statement Log Number 13-132, 1SKXR-11497, dated June 3, 2013
HCGS PRA Risk Evaluation Form for Work Week #1315, Revision 0, dated April 7, 2013
HCGS PRA Risk Evaluation Form for Work Week #1315, Revision 1, dated April 8, 2013
HCGS PRA Risk Evaluation Form for Work Week #1320, Revision 0, dated May 12, 2013
HCGS PRA Risk Evaluation Form for Work Week #1320, Revision 1, dated May 12, 2013
HCGS PRA Risk Evaluation Form for Work Week #1323, Revision 0, dated June 2, 2013
Operator Narrative Logs for April 8, 2013
Operator Narrative Logs for May 9, 2013
Protected Equipment Log for NUMAC/NSSSS, dated June 3, 2013
Risk Summary Table for Work Week 319, Risk Mitigation Actions (P/D/C) for Resetting the Scoop Tube Positioner Lockup IAW HC.OP-SO.BB-0002, dated May 9, 2013
Tracking Action Statement Log Number 13-130, 'C' SSW vents and drains open at SWIS for WCD, dated May 31, 2013
TS Action Statement Log, LCO Index Number 13-113, dated May 9, 2013
TS Action Statement Log, LCO Index Number 13-094, dated April 18, 2013

Section 1R15: Operability Determinations and Functionality Assessments

Procedures
HC.OP-SO.JE-0001, Diesel Fuel Oil Storage and Transfer System Operation, Revision 32
MA-AA-716-004, Conduct of Troubleshooting, Revision 11

OP-HC-108-115-1001, Operability Assessment and Equipment Control Program, Revision 15
OP-HC-108-115-1001, Operability Assessment and Equipment Control, Revision 26
WC-AA-105, Work Activity Risk Management, Revision 1

Notifications
20559654, 'J' SRV Tailpipe Temperature Indicator Failed High
20602181, Determine Pressure Boundary Criteria
20602357, Leaking Class 1 Pressure Boundary
20602818, 'B' EDG FOST Level Indicators Loss of Power
20603733, Right Side Housing Cracked BF405
20607448, 1AE-HV-4144 Overload/Power Failure Indication
20608108, Accurate Test Method for SRV Leakage
20608179, 1AE-HV-4144 Overload/Power Failure Indication
20608212, TS SSC Inoperable Without Second Screening
20608313, Review of Operability Programmatic Requirements
20608541, HV-4144 Operability Evaluation Support

Maintenance Orders/WOs
30251549, OC#1 – HC Emergent – Investigate and Repair
60103381, SRV (F013J) Discharge Line Temperature – Inspect/Repair Themocouple/Wire
70152368, ASME Class 1 Valve Seat Leakage
70153812-0150, DBA LOCA Occurring with H1AE-AE-HV-4144 Disabled
70153980-0010, Operability Evaluation 13-005 for Containment Penetrations P2A and P2B

Miscellaneous
Adverse Condition Monitoring Plan Number: HC 12-009, 'J' SRV Tailpipe Temperature Monitoring, Revision 5.1, dated April 18, 2013
NRC Generic Letter 80-30: Clarification of the Term "Operable" As It Applies to Single Failure Criterion for Safety Systems Required by TS, dated April 10, 1980
NRC Information Notice 92-71: Partial Plugging of Suppression Pool Strainers at a Foreign BWR, dated September 30, 1992
NRC Information Notice 95-47: Unexpected Opening of a SRV and Complications Involving Suppression Pool Cooling Strainer Blockage, dated October 4, 1995
NRC Information Notice 95-47, Revision 1: Unexpected Opening of a SRV and Complications Involving Suppression Pool Cooling Strainer Blockage, dated November 30, 1995
NRC Information Notice 97-80: Licensee TSs Interpretations, dated November 21, 1997
NRC Inspection Manual Part 9900: Technical Guidance, Standard TSs Section 1, "Operability," Issue Date May 12, 1986
NRC Inspection Manual: NRC Operating Experience Smart Sample (OpESS) 2012/02, "TS Interpretation and OD," Issue Date January 6, 2012
Operational Technical Decision Making Number: HC13-003, SRV Tailpipe Temperatures and 'J' SRV Tailpipe Temperature Indication, Revision 3.1, dated April 18, 2013
USNRC Letter (D. Pickett) to FirstEnergy Nuclear Operating Company (G. Campbell) regarding, "Application of Generic Letter 80-30 Guidance to an Inoperable Non-TS Support Subsystem," dated April 5, 2002

Section 1R18: Plant Modifications

Procedures
OP-HC-108-115-1001, Operability Assessment and Equipment Control Program, Revision 26

Notifications
20594533, Perform Tech Eval for SACS Room Coolers

Miscellaneous
11-0066, HCGS FRVS Drawdown and Long-term Post-LOCA Reactor Building Temperature-EPU, Revision 9
DCR 80108856, SACS Room Temperature without Cooling from Room Coolers, Revision 0

Section 1R19: Post-Maintenance Testing

Procedures
HC.OP-IS.BC-0004, DP202, 'D' RHR Pump IST, Revision 40
HC.OP-ST.BH-0001, SLC Valve Operability Test - Monthly, Revision 8
HC.OP-SO.EP-0001, SW Traveling Screens System Operation, Revision 19
HC.OP-ST.BD-0003, RCIC Functional Verification – 18 Months, Revision 18
HU-AA-1211, Pre-Job Briefings, Revision 10
MA-AA-716-100, Maintenance Alterations Process, Revision 11
MA-AA-716-012, Post-Maintenance Testing, Revision 18
OU-AA-335-002, Liquid Penetrant Examination, Revision 3
OU-AA-335-1008, Code Acceptance & Recording Criteria for Nondestructive Surface Examination, Revision 0

Notifications
20572108, Valves Did Not Stroke HC.OP-ST.BD-003
20592793, Generate PMCR for 'D' RHR UT Measurement
20595657, Fabrication of Lifting Lugs 'D' RHR Mtr
20599422, 'A' SLC Squib Valve Loss of Continuity
20600642, 'D' RHR Motor Feeder Lead Cut
20600995, 'D' RHR Vibe Probe Mounting Issue
20601066, Fill and Vent of 'D' RHR
20601088, Ground Water Intrusion S Wall 'D' RHR Room
20601093, RMCS Lockup - Entered AB.IC-0001
20601279, 'D' RHR Motor Vibe Button Painted
20602350, HPCI Aux Oil Pump Failed to Start
20603740, HPCI Aux Oil Pump Failed to Start
20604520, 30240901 Not Planned to Obtain As Found
20604877, Previous WO History Not Included
20604939, Model Numbers on Relay Not Exact
20605075, CRCA Not Created Per EQACE 70140752
20610200, 'C' SSWS TWS Lift MIF Observation
20610238, Lesson Learned for SSW Outage Windows
20610239, Conflict between MA-AA-716-015/OP-AA-109
20610304, Repairs Required to 'C' SW
20610911, TWS Capstan and Bearing Parts Issue
20610912, TWS Drv. Chain in Warehouse Cannibalized

20610988, 'C' SW Pump Upper Seismic Weld Discrepancy
20611609, Extent of Condition Walkdown - RHR Vents
20611615, Leak Evaluation
20611647, 8 Hour Report Made to NRC
20611742, Crack in Weld Resulting in Approx. 1 GPM

Maintenance Orders/WOs
30098689-026, 40-Year Relay Replacement 1BJYY-K056-E41A
30098689-030, PMT 1BJYY-K056-E41A, HC.IC-FT.BJ-0007
30098704, 22 Year PM – Replace Relays K100, K101, K102-E51A
30173284, PHC-20Y 1D-P-202 RHR Pump Motor Replace
30174677, 4Y 1C-S-501 Rplc Traveling Water Screen
30224815, 2Y/1D-P-202 'D' RHR Pump Comprehensive Test
30240901, 22 Year PM – Replace Relays K100, K101, K102-E51A
50155926, ST 3M HC.OP-IS.BC-0004/'D' RHR Pump IST
50156599, 1M ST OP-ST.BH-0001 SLC Valve Operability
60074471, (POD) 'A' SLC Squib Valve Continuity Alarm
60109275-0030, RT - RMCS In-Service Operation & Indication SAT
60109525, H1BH-1BHXI-M600A-C41 Replace Lamp
60109802-0020, PMT RMCS: Operation/Indication SAT
60111317, Crack in Weld Resulting in Approx. 1 GPM
70143251, Valves Did Not Stroke HC.OP-ST.BD-003

Drawings
J-48-0, SLC Control Injection Pumps Logic Diagram, Sheet 2, Revision 14
PN1-C41-1040-0041, Elementary Diagram SLC System, Sheet 3, Revision 17
M-51-1, Sheet 1, RHR, Revision 43
M-51-1, Sheet 2, RHR, Revision 40

Miscellaneous
HC.IC-FT.BJ-0007, Logic System Functional Test, Containment High Pressure/Reactor Low Water Level/Reactor High Water Level HPCI Actuation, record copy dated April 8, 2013
HC.OP-IS.BC-0004, DP202, 'D' RHR Pump IST, record copy dated April 1, 2013
HC.OP-ST.BH-0001, SLC Valve Operability Test - Monthly, record copy dated April 1, 2013
NRC Information Notice 97-16, Preconditioning Of Plant SSCs before ASME Code In-service Testing or TS Surveillance Testing
NRC Inspection Manual, Part 9900, Technical Guidance, Maintenance - Preconditioning of SSCs before Determining Operability, dated September 28, 1998
Temporary Log Number 13-036 for OHA C1-C1 SLC Squib Valve Loss of Continuity

Section 1R20: Refueling and Other Outage Activities

Procedures
ER-AA-302-1006, Generic letter 96-05 Program Motor-Operated Valve Maintenance and Testing Guidelines, Revision 11
HC.OP-AB.ZZ-0001, Attachment 14, RFPT and S/U Level Control Operation, Revision 28
HC.OP-AM.ZZ-0001(Z), Severe Accident Guidelines, Revision 2
HC.OP-DL.ZZ-0002, Log 2 Control Console Log Condition 4 and 5, Revision 43
HC.OP-IO.ZZ-0002(Q), Preparation for Plant Startup, Revision 64
HC.OP-IO.ZZ-0004, Shutdown from Rated Power to Cold Shutdown, Revision 96

MA-AA-716-012, Post-Maintenance Testing, Revision 18
OP-AA-108-108, Unit Restart Review, Revision 11
OP-AA-108-114, Post-Transient Review, Revision 4
OP-HC-108-114-1001, Hope Creek Post-Trip Data Collection Guidelines, Revision 6
OU-HC-105, Shutdown Safety Management Program – Hope Creek Annex, Revision 3

Notifications
20607046, H1DA -DA-HV-2152B Failed to Close
20611405, 'A' RFPT Would Not Go On Turning Gear
20611406, 'C' RFPT Would Not Go On Turning Gear
20611420, CRDM 30-07 Flange Leakage > 100DPM
20611605, CRDM 26-35 Minor Leakage
20611606, CRDM 10-47 Minor Leakage
20611609, Extent of Condition Walkdown - RHR Vents
20611615, Leak Evaluation
20611647, 8 Hour Report Made to NRC
20611674, 'B' Circ Water Pump Reverse Rotation
20611694, Failed Limit Indication F060B
20611696, 'B' Circ Water Pump Trip Troubleshooting
20611697, Revise Setpoint 'A' CW Pump Protect Trip
20611698, Revise 'B' CW Setpoint
20611699, Revise 'C' CW Setpoint
20611700, Revise 'D' CW Setpoint
20611707, OTDM for 'B' Circ Water Pump
20611721, RX Scram Due to Trip of 'B' CWP
20611722, Trip of 'B' CW Pump
20611724, Trip of 'B' SCP during Scram Transient
20611741, Significant Packing Leak From Valve
20611742, Crack in Weld Resulting in Approx. 1 GPM
20611744, 'B' Recirc Pump Seal Leak at 100 DPM
20611745, 30 DPM Leak at Drywell Unit Cooler Valve
20611821, 'C' SCP Min Flow Valve Did Not Close
20611845, Post-Scram RPV Level Response
20611856, H1BC-BC-HV-F122B Dual Indication
20612825, Debris during Drywell Closeout
20613167, Lessons Learned from Forced Outage

Drawings
M-51-1, Sheet 1, RHR, Revision 43
M-51-1, Sheet 2, RHR, Revision 40

Maintenance Orders/WOs
30253139, RP- 1AEHV-4144- Close to 60110751 RF18

Miscellaneous
HC-MODE-003, Mode Change with Inoperable SSW Pump, Revision 1
HCGS, ORAM-Sentinel – All Modes Maintenance and Safety Function Advisor, SFAT Logic Database Report, AC-2: Electrical Power, All Other, dated February 3, 2012
HCGS, ORAM-Sentinel – All Modes Maintenance and Safety Function Advisor, SFAT Logic Database Report, FPC-1: Fuel Pool Cooling – Gate In, dated February 3, 2012

HCGS, ORAM-Sentinel – All Modes Maintenance and Safety Function Advisor, SFAT Logic Database Report, FPI-1: Fuel Pool Inventory, dated February 3, 2012
HCGS, ORAM-Sentinel – All Modes Maintenance and Safety Function Advisor, SFAT Logic Database Report, IC-1: Inventory Control, Gate In, dated February 3, 2012
HCGS, ORAM-Sentinel – All Modes Maintenance and Safety Function Advisor, SFAT Logic Database Report, SDC-6: SDC, All other Cases, dated February 3, 2012
OP-AA-102-104, Recirc Runback Circuit Daily Order, dated June 16, 2013
Protected Equipment Log for 'A' RHR in Shutdown Cooling, dated June 13, 2013

Section 1R22: Surveillance Testing

Procedures
ER-AB-331-1006, BWR RCS Leakage Monitoring and Action Plan, Revision 0
HC.CH-SA.HB-0010, Sampling the Drywell Floor Sump, Revision 2
HC.OP-AB.CONT-0006, Drywell Leakage, Revision 8
HC.OP-DL.ZZ-0026, Surveillance Log, Revision 135
HC.OP-GP.ZZ-0005, Drywell Leakage Source Detection, Revision 9
HC.OP-IS.BC-0004, DP202, 'D' RHR Pump IST, Revision 40
HC.OP-ST.SK-0001, Alternate RCS Leakage Determination, Revision 9
HC.OP-IS.BH-0004(Q), SLC Pump-BP208 – IST, Revision 12
OP-AA-106-101-1006, Operational and Technical Decision Making Process, Revision 7
OP-AA-108-111, Adverse Condition Monitoring and Contingency Planning, Revision 7

Drawings
M-25-1, Sheet 1, Plant Leak Detection, Revision 20
M-48-1(Q)-16, SLC, Revision 11, Sheet 1

Notifications
20309420, Review 22 year PM Frequency – Agastat ND Relays
20543838, H1SK-1SKLT-4931 DW Rate of Rise Alarm
20551646, IER L4 12-16 – Relay Related Problems
20573735, Drywell Floor Drain Flow Alarm
20601066, Fill and Vent of D RHR
20601088, Ground Water Intrusion S Wall 'D' RHR Room
20601279, 'D' RHR Motor Vibe Button Painted
20602350, HPCI Aux Oil Pump Failed to Start
20602498, HPCI Relay Contacts High Resistance
20603688, DWFD – Second Leak Source
20603740, HPCI Aux Oil Pump Failed to Start
20604012, Two Relay Failures (HPCI System) in One Week
20604365, Two Challenges to the HPCI System in 7 Months
20604344, OE Action Coding LTA
20606367, Drywell Floor Drain Flow Alarm
20608203, T/S Drywell Unit Cooler Inlet Valves

Maintenance Orders/WOs
30173284, PHC-20Y 1D-P-202 RHR Pump Motor Replace
30224815, 2Y/1D-P-202 'D' RHR Pmp Cmprhnsv Test
50144601, ST 18M IC-CC.SK-0004, HPCI Div-3, Ch. 'C'
50145006, ST 18M HC.OP-ST.BD-0003, Functional Logic on RCIC

50145699, ST-18M HC.IC-FT.BJ-0007, HPCI Div-N, Ch-N
50155926, ST 3M HC.OP-IS.BC-0004/ 'D' RHR Pump IST
70065167, Design Engineering Has Completed Review of PM Frequency of 22 years
70136423, IER L4 12-16 – Relay Related Problems
70152218, HPCI Aux Oil Pump Failed to Start

Miscellaneous
ACM HC 12-010, Drywell Leakage, Revision 9
EN 48897, HPCI Declared Inoperable during Surveillance Testing, dated April 8, 2013
Exelon PowerLabs Project Number PSE-56683, Failure Analysis of (2) Amerace Relays, Model FGPDC750, dated May 1, 2013
HC.IC-CC.SK-0004, HPCI - Division 3 Steam Leak Detection Temperature Monitor, H1SK-1SKXR-11504, dated April 9, 2013
HC.IC-FT.BJ-0007, Logic System Functional Test, Containment High Pressure/Reactor Low Water Level/Reactor High Water Level HPCI Actuation, dated April 8, 2013
HC.OP-ST.BD-0003, RCIC Functional Verification - 18 Months, dated April 22, 2013
HC.OP-IS.BC-0004, DP202, 'D' RHR Pump IST, dated April 1, 2013
HC.OP-ST.BJ-0003, HPCI System Valve Actuation Functional Test, dated April 9, 2013
HC-2012-012, Drywell Floor Drain Sump Unidentified Leakage, Revision 1
HPCI Relay Failure Evaluation Charter (Order 70152218, Notifications 20602350/20602498)
NRC Information Notice 84-20, Service Life Of Relays In Safety-Related Systems, dated March 21, 1984
SC-SK-0119, Drywell Leak Detection SMS (Floor Drain Unidentified Leakage), Revision 2

Section 1EP6: Drill Evaluation

Procedures
HC.OP-AB.ZZ-0001, Transient Plant Conditions, Revision 27
HC.OP-SO.BJ-0001, HPCI System Operation, Revision 48
OP-AA-101-111-1003, Use of Procedures, Revision 4

Notifications (*NRC identified)
20608316,* Revise HPCI Hard Card

Miscellaneous
Control Room Supervisor Competency Summary Sheet, TQ-AA-106-0113, Attachment 1, Revision 6, completed in simulated main control room for Simulator Scenario Guide (SG) Reference Number SG-698, May 6, 2013
Reactor/Plant Operator (3rd NCO) Competency Summary Sheet, TQ-AA-106-0113, Attachment 2, Revision 6, completed in simulated main control room for SG-698, May 6, 2013
Reactor/Plant Operator (PO) Competency Summary Sheet, TQ-AA-106-0113, Attachment 2, Revision 6, completed in simulated main control room for SG-698, May 6, 2013
Reactor/Plant Operator (RO) Competency Summary Sheet, TQ-AA-106-0113, Attachment 2, Revision 6, completed in simulated main control room for SG-698, May 6, 2013
Simulator Demonstration Examination Crew Competency Evaluation Form, TQ-AA-106-0114, Revision 6, completed in simulated main control room for SG-698, May 6, 2013
Simulator Demonstration Examination Shift Manager Competency Evaluation Form, TQ-AA-106-0115, Revision 9, completed in simulated main control room for SG-698, May 6, 2013

Simulator Examination STA/IA Competency Evaluation Form, TQ-AA-108-0101, Revision 3, completed in simulated main control room for SG-698, May 6, 2013
SG-605, SOER 99-1 Grid Disturbance/LOP/SBO, March 28, 2013
SG-698, 'A' SLC Auto Initiation, 'B' LOCA Sequencer Inadvertent Initiation, 'A' RR Pump High Vibration, Small Break LOCA, April 8, 2013

Section 2RS5: Radiation Monitoring Instrumentation

Procedures
NC.RS-TI.ZZ-0590(Q), Operating Instructions for the MDH 2025 and 9010 radiation Monitors, Revision 0
NC.RS-TI.ZZ-0593(Q), Certification of Gamma Standard Exposure/Dose rate Source, Revision 1
RP-AA-302, Determination of ALPHA Monitoring Levels, Revision 3
RP-AA-503, Unconditional Release Survey Method, Revision 7
S1.IC-CC. RM-0088(Q), 1R41 Plant Vent Noble Gas Sample and Process Flow Calibration, Revision 15
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Miscellaneous
Source Term data (10 CFR 61)

Section 2RS6: Radioactive Gaseous and Liquid Effluent Treatment

Procedures
CY-AA-130-200, Chemistry Quality Control, Revision 9
CY-AA-170-000, Radioactive Effluent and Environmental Monitoring Program, Revision 5
CY-AA-170-100, Radioactive Environmental Monitoring Program, Revision 5
CY-AA-170-400, Radiological Groundwater Protection Program, Revision 4
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CY-AA-170-4170, Sampling and Analysis for Tritium Precipitation and Effluent Recapture, Revision 0
EN-AA-170-4160, Station RGPP Controlled Sample Point Parameters, Revision 0
HC.IC-SC.SP-0004, Process Radiation Monitoring Non-Divisional Sensor FT-4816 South Plant Vent Flow Rate Monitor, Revision 13

Notifications
20507003, SA Quality Control
20538962, MCC in Salem Lab is Loose on Pallet
20538978, Tritium Bubbler Collection Efficiency
20539081, Charcoal Filter Adsorption of Tritium
20539162, Revise the 2010 Annual Report for C-14

Miscellaneous
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Ground Water Monitoring Data
HC.IC-SC.SP-066(Q), North Plant Vent Process Flow
Hope Creek ODCM
Teledyne Brown Quality Assurance Reports

Section 4OA1: Performance Indicator Verification

Procedures
HC.OP-DL.ZZ-0026, Surveillance Log, Revision 134
HC.OP-DL.ZZ-0026, Surveillance Log, Revision 135
LS-AA-2001, Collection and Reporting of NRC PI Data, Revision 11
LS-AA-2090, Monthly Data Elements for NRC RCS Activity, Revision 5
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NC.CH-RC.ZZ-2525, Gamma Spectroscopy Analysis Using CAS, Revision 4

Drawings
M-25-1, Sheet 1, Plant Leak Detection, Revision 20

Miscellaneous
Daily Dose Equivalent Iodine-131 Sample Data
Daily Surveillance Log Data
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SC-SK-0119, Drywell Leak Detection SMS – Equipment Drain Sump, Revision 1

Section 4OA2: Problem Identification and Resolution

Procedures
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HC.IC-AP.ZZ-0017(Q), Bailey Module Reliability Program, Revision 0
HC.IC-FT.SE-0058(Q), Nuclear Instrument System APRM Single Loop Flow Operations, Revision 0
HC.IC-CC.SE-0032(Q), Nuclear Instrumentation System APRM Flow Unit Summers, Revision 23
HC.OP-DL.ZZ-0026, Attachment 3, Single Loop Operation (SLO) T/S 3.4.1.1 Actions, Revision 131
HC.OP-IO.ZZ-006(Q), Power Changes during Operation, Revision 53
HC.OP-IO.ZZ-0006(Q), Power Changes during Operation, Revision 54
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HC.OP-ST.BB-0001(Q), Recirculation Jet Pump Operability – Daily, Revision 50
HC.OP-ST.BB-0007(Q), Recirculation Jet Pump Operability – Single Loop – Daily, Revision 16
HU-AA-104-101, Procedure Use and Adherence, Revision 4
OP-HC-108-115-1001, Operability Assessment and Equipment Control Program, Revision 17
NT-HC-701-1003, Reactor Engineering Guidance for Single Loop Operation, Revision 5

Notifications
20549232, HC.IC-FT.SE-0028(Q) Revision Request
20549760, HC.IC-CC.SE-0032 Not Completed
20554024, Reactor Eng Review Jet Pump Curves
20554452, Jet Pump 14 Unsat Surveillance Reading
20557175, ‘A’ SACS SRV Lift & Head Tank Drained
20568409, LPRM Failure CCE
20570981, NRC Green NCV for APRM Flow Unit
20571330, New Procedure APRM Single Loop
20571697, 1D-C-652 Blown Bailey Fuse to CS

20573137, OE Review of RCIC Response Time Test
20577025, 'A' RFPT Trip – Recirc
20577030, Simulator Training Opportunity
20577641, 'A' RFPT Trip – Recirc Runback
20592801, 500kV Breaker 1-5 Sect 5 Phase A
20597937, Engineering PIIM Gap - MR Program
20599573, LL Adverse Trend-Assumptions
20604194, FIRE ALARM – UE
20611250, PCM Template – Circuit Cards – GE RRCS
20611251, PCM Template – Circuit Cards – RPS MG
20611252, PCM Template – Circuit Cards – GE NUMAC
20611261, PCM Template – Circuit Cards – Bailey 6000
20611262, PCM Template – Circuit Cards – GE Main Gen
20611266, PCM Template – Circuit Cards – GE DC

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Maintenance Orders/WOs
60101778, RX Recirc Pump Single Loop Ops
70110566, Partial Isolation of 'B' PCIG
70135578, HC.IC-CC.SE-0032 Not Completed
70144022, 'A' RFPT Trip – Recirc Runback
70141539, LPRM Failure CCE
70153147, FIRE ALARM - UE
80107405, TE for H1RL -1A-C-653 card replacement

Miscellaneous
Alarm Printer Output, September 30, 2012, 7:00 a.m. to 9:00 a.m.
Circuit Boards – Bailey 862 Logic System – Basis Document
Facility Operating License NPF-57
HC.OP-DL.ZZ-0026(Q), Attachment 1, March 1, 2012
HC.OP-IO.ZZ-0006(Q), Power Change during Operation, March 1, 2012
HC.RE-ST.ZZ-0001(Q), Core Thermal Limits Surveillances, March 1, 2012
Hope Creek Narrative Log, March 1 through March12, 2012
Hope Creek Plan Of the Day, October 2, 2012
LER 50-354/2012-01-00, APRM Flow Unit Summers Out Of TS Tolerance
TS Action Statement Log – LCO Index No. 12-058
TS Action Statement Log – LCO Index No. 12-065
TS Action Statement Log – LCO Index No. 12-068

Section 4OA3: Follow-up of Events and Notices of Enforcement Discretion

Procedures
HC.IC-CC.SK-0004, HPCI – Division 3 Steam Leak Detection Temperature Monitoring H1SK-1SKXR-11504, Revision 13
HC.IC-FT.BJ-0007, Logic System Function Test, Revision 12
MA-AA-716-210-1003, PM Ownership Committee, Revision 2

MA-AA-716-210-1005, Predefine Change Processing, Revision 3
NC.ER-DG.ZZ-0100, Equipment Reliability Analysis, Revision 3

Notifications
20602350, HPCI Aux Oil Pump Failed to Start
20602498, HPCI Relay Contacts High Resistance
20602622, 8-Hour Report for Loss of ENS Line
20602732, 8-Hour Report for Loss of NRC ENS Line
20603740, HPCI Aux Oil Pump Failed to Start
20603855, HC Fire Computer Not Redundant
20604012, Two Relay Failures (HPCI) In One Week
20604194, Fire Alarm – UE
20604196, EAL – Fire Alarm Zone 3308
20604922, Zone 3308 Locked In
20611609, Extent of Condition Walkdown - RHR Vents
20611615, Leak Evaluation
20611647, 8 Hour Report Made to NRC
20611721, RX Scram Due to Trip of 'B' CWP
20611722, Trip of 'B' CW Pump
20611742, Crack in Weld Resulting in Approx. 1 GPM
20611821, 'C' SCP Min Flow Valve Did Not Close
20611845, Post-Scram RPV Level Response

Maintenance Orders/WOs
70152218, HPCI Aux Oil Pump Failed to Start

Miscellaneous
EP·AA-125-1002-F01, DEP Observation Checklist, for Actual Event, EAL # HU2.1, dated April 19, 2013
EP-HC-111-F1, Initial Contact Message Form for Actual Event, EAL # HU2.1, Fire within the Protected Area, at 1518 hours on April 19, 2013
EP-HC-111-F6, Communications Log, dated April 19, 2013
EPRI Technical Report 102067, Maintenance and Application Guide for Control Relays and Timers, dated December 1993
LER-2013-001-00, HPCI System Inoperable due to Control Relay Failure, dated June 5, 2013

Section 4OA5: Other Activities

Procedures
HC.MD-FR.DCS-0001(Q), "HI-STORM System Receipt Inspection," Revision 1
HC.MD-FR.DCS-0002(Q), "Offloading and receiving Dry Cask Storage Components," Revision 2
HC.MD-FR.DCS-0003(Q), "Transport Loaded and Un-loaded Hi-STORM and Hi-Trac," Revision 3
HC.MD-FR.DCS-0004(Q), "MPC Preparation for Loading," Revision 2
HC.MD-FR.DCS-0005(Q), "Handling and Loading MPC," Revision 2
HC.MD.FR-DCS-0006(Q), "Sealing, Drying, and Backfilling of a loaded MPC," Revision 6
HC.MD-FR.DCS-0007(Q), "Stack-Up and Transfer of Loaded MPC," Revision 4
HC.MD-PM.DCS-0013 (Q), "Dry Cask Storage Special Lifting Device Inspection," Revision 3
HC.OP-AB.MISC-0001(Q), "Acts of Nature," Revision 22

HC.OP-DL-ZZ.0026 (Q), Attachment 1e, “Surveillance Log - Yard,” Revision 137
HC.RE-FR.DCS-0002(Q), “Dry Cask Storage Fuel Selection for Cask Loading,” Revision 3
HR-AA-1004, “Staff Qualification Requirement and Organizational and Structure Control,” Revision 9
HSP-504, “Procedure to Perform Closure Welds on the MPC,” Revision 18
HSP-506, “Liquid Penetrant Exam,” Revision 8
OP-HC-103-102-1012, “Thermal Monitoring System Computer Operation,” Revision 0
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RP-AA-210-1001, “Dosimetry Logs and Forms,” Revision 3
RP-AA-400, “ALARA Program,” Revision 6

Notifications
20452708, TE Not Meeting NUREG 0612 Criteria?
20469475, HI-TRAC Relief Valve Removal
20476752, Metal Debris Found on Rail of SF Crane.
20477361, Lessons Learned DCS Cask #1 Fuel Load
20477668, SC.MD-FR.DCS-0006(Q) Revision Request
20478677, Holtec Thermal Analysis Assumptions
20571179, Alignment of Hi-Storm Lid
20572157, Gaps DCS Lifting and Rigging
20572071, Gaps in DCS PU&A
20595803, Hope Creek Interim Report Response

Drawings
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Miscellaneous
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Certificate No. 1014, CoC for Spent Fuel Storage Casks, Amendment 5
HC.MD-PM.KF-0004 (Q), “Polar Crane Annual Preventative Maintenance,” Order 30238283
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PSEG Nuclear LLC,” 2012 Annual Radioactive Effluent Release Report for the Salem and HCGSs”
Radiation Work Permit 5, “Radwaste Processing Activities”
Salem/ HCGS, ISFSI 10 CFR 72.212 Evaluation Report, Revision 8
Technician Qualification Certifications for Holtec Contractors

LIST OF ACRONYMS

AC	alternating current
ACIT	action tracking item
ADAMS	Agencywide Documents Access and Management System
ALARA	as-low-as-is-reasonably achievable
AOP	auxiliary oil pump
APRM	average power range monitor
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CCE	common cause evaluation
CDF	core damage frequency
CFR	Code of Federal Regulations
CoC	certificate of compliance
CRCA	condition report corrective action
CWP	circulating water pump
EDG	emergency diesel generator
EN	event notification
FRVS	filtration, recirculation, and ventilation system
FW	feedwater
GP	general purpose
GPI	groundwater protection initiative
HCGS	Hope Creek Generating Station
HPCI	high pressure coolant injection
HX	heat exchanger
I&C	instrumentation and control
IP	inspection procedure
IMC	Inspection Manual Chapter
INPO	Institute of Nuclear Power Operations
ISFSI	independent spent fuel storage installation
IST	in-service test
kV	kilovolt
LER	licensee event report
LHRA	locked high radiation area
LOCA	loss of coolant accident
LPRM	local power range monitor
MCC	motor control center
MPC	multi-purpose canister
MR	maintenance rule
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NUMAC	Nuclear Management and Control
OD	operability determination
ODCM	Offsite Dose Calculation Manual
OOS	out-of-service
PIs	performance indicators
PIIM	performance improvement integrated matrix
PI&R	problem identification and resolution

PM	preventive maintenance
PMT	post-maintenance test
PRA	probabilistic risk assessment
PSEG	Public Service Enterprise Group
RCIC	reactor core isolation cooling
RCS	reactor coolant system
RFP	reactor feed pump
RG	regulatory guide
RHR	residual heat removal
RRP	reactor recirculation pump
RTP	rated thermal power
RWCU	reactor water cleanup
SACS	safety auxiliaries cooling system
SDP	Significance Determination Process
SLC	standby liquid control
SPAR	Standardized Plant Analysis Report
SRA	Senior Reactor Analyst
SRV	safety relief valve
SSC	structure, system, or component
SSLM	solid state logic module
SSW	station service water
SW	service water
TS	Technical Specification
UE	unusual event
UFSAR	Updated Final Safety Analysis Report
UPS	uninterruptible power supply
WO	work order