UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

February 9, 2012

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 05000354/2011005

Dear Mr. Joyce:

On December 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Hope Creek Generating Station. The enclosed inspection report documents the inspection results which were discussed on January 12, 2012, with Mr. J. Perry 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.

No findings were identified during this inspection.

In accordance with 10 CFR 2.390 of the NRC's "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 Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

Arthur L. Burritt, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000354/2011005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

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Sincerely,
/RA/
Arthur L. Burritt, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-354
License No:	NPF-57
Report No:	05000354/2011005
Licensee:	PSEG Nuclear LLC (PSEG)
Facility:	Hope Creek Generating Station
Location:	P.O. Box 236 Hancocks Bridge, NJ 08038
Dates:	October 1, 2011 through December 31, 2011
Inspectors:	F. Bower, Senior Resident Inspector A. Patel, Resident Inspector J. Schoppy, Senior Reactor Inspector J. Furia, Senior Health Physicist B. Fuller, Operations Engineer
Approved By:	Arthur L. Burritt, Chief Reactor Projects Branch 3 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000354/2011005; 10/01/2011 - 12/31/2011; Hope Creek Generating Station; Routine Integrated Inspection Report.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by a Senior Reactor Inspector, a Senior Health Physicist, and an Operations Engineer. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

No findings were identified.

REPORT DETAILS

Summary of Plant Status

The Hope Creek Generating Station operated at or near full rated thermal power (RTP) 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 - 1 sample)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of PSEG's readiness for the onset of seasonal low temperatures. The review focused on the service water (SW) system, SW intake building ventilation system, and the emergency diesel generators (EDGs). The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and technical specifications (TS) to determine what temperatures or other seasonal weather conditions 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 verify that no unidentified issues existed that could challenge the operability of the systems during cold weather conditions. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial System Walkdowns (71111.04Q - 4 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- A residual heat removal (RHR) system with B RHR system out-of-service on October 18
- A, B, and C EDGs with D EDG out-of-service on October 24
- A, C, and D SW with the B SW pump out-of-service during the week of November 14

- High pressure coolant injection (HPCI) while reactor core isolation cooling (RCIC) out-of-service on November 23

The inspectors selected these systems based on their risk-significance for the current plant configuration or following realignment. The inspectors reviewed applicable procedures, system diagrams, the UFSAR, TSs, work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended 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.

b. Findings

No findings were identified.

1R05 Fire Protection

Resident Inspector Quarterly Walkdowns (71111.05Q - 4 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 out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- FRH-II-541, Class 1E Switchgear Rooms
- FRH-II-531, Diesel Generator Rooms
- FRH-II-471, Refuel Floor
- FRH-II-713, Service Water Intake Structure

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07A - 1 sample)

a. Inspection Scope

The inspectors reviewed the B RHR heat exchanger's (HX) thermal performance to determine its readiness and availability to perform its safety functions. The inspectors reviewed the design basis for the component. The inspectors assessed the results of previous inspections of the B RHR HX and similar HXs. As applicable, the inspectors discussed the results of the most recent inspection with engineering staff and assessed documentation of the as-found and as-left conditions. The inspectors observed actual

performance tests for HX/heat sinks or reviewed the data/reports from the performance tests for any obvious problems or errors. The inspectors verified that PSEG initiated appropriate corrective actions for identified deficiencies. The inspectors also verified, if any tubes were plugged, the number of tubes plugged within the HX did not exceed the maximum amount allowed.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Requalification Activities Review by Resident Staff (71111.11Q - 1 sample)

a. Inspection Scope

The inspectors observed licensed operator simulator training on November 9, 2011, which included two simulator scenarios. The first involved the loss of a reactor protection system bus that was followed by an uncontrolled depressurization and a torus leak that required an emergency depressurization. The second involved a loss of the 250 volt DC bus for the HPCI system and a recirculation pump seal leak that was followed by a loss of offsite power coincident with a loss of coolant accident. The inspectors evaluated operator performance during the simulated event and verified completion of 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 technical specification action statements entered by licensed operations personnel. Additionally, the inspectors assessed the ability of the operations personnel and the training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 In-Office Review by Regional Specialist (71111.11A - 1 sample)

a. Inspection Scope

On December 13, 2011, inspectors conducted an in-office review of results of PSEG-administered annual operating tests and comprehensive written exams for 2011. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process." The inspectors verified that:

- Crew pass rate was greater than 80 percent. (Pass rate was 100 percent.)
- Individual pass rate on the dynamic simulator test was greater than 80 percent. (Pass rate was 100 percent.)
- Individual pass rate on the job performance measures of the operating exam was greater than 80 percent. (Pass rate was 98 percent.)

- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75 percent. (Overall pass rate was 98 percent.)

Comprehensive written exams were administered in the last quarter of 2010.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12 - 3 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 corrective action program (CAP) documents, maintenance work orders, and maintenance rule program documents to ensure that PSEG was identifying and properly evaluating performance problems within the scope of the maintenance rule. As applicable, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by PSEG staff was reasonable; for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2); and, the inspectors independently verified that appropriate work practices were followed for the SSCs reviewed. Additionally, the inspectors ensured that PSEG staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- SW system reliability and availability (Order 70120713)
- A EDG engine driven intercooler pump casing failure (Notification 20520292)
- Safety-related 250 VDC reliability and availability (Notification 20535391)

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 4 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. As applicable for each activity, the inspectors verified that PSEG personnel performed risk assessments as required by 10 CFR 60.65(a)(4) and applicable station procedures, 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 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.

- Emergent replacement of Bailey logic cabinet (BC 652) fuse on October 5 - 7, 2012 (Order 60098926)
- B EDG recirculation fan and B RHR out-of-service on October 19, 2011 (Orders 30126184 and 30003568)
- Emergent repairs to A torus spray injection valve torque switch on November 1 - 11, 2011 (Order 60099432)
- Emergent scope expansion of preventive maintenance on the B safety auxiliary cooling system pump on December 13 - 14, 2011 (Notification 20538495)

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- Operability Evaluation 11-06, Seismic effects on boiling-water reactor control rod scram at low reactor pressure (Order 70127666-50)
- HPCI steam piping snubber, 1-P-FD-002-H011, clamp rotation (Notification 20523325)
- Use of demineralized water piping for EDG jacket water (Order 80103518)
- Technical Evaluation for R safety relief valve (SRV) tailpipe temperature (Order 80105271)

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations 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 assumptions in the evaluations.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 - 4 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests 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.

- B RHR after minimum flow check valve (BCV-F030B) open and inspect maintenance October 19, 2011 (Order 30126184)
- HPCI room coolers after HPCI room cooler setpoint change October 26, 2011 (Order 60099133)
- A RHR torus spray valve after torus spray valve torque switch replacement on October 1, 2011 (Order 60099432)
- HPCI pump after HPCI system preventive maintenance during the week of November 28, 2011 (Order 50131685)

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 - 5 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.IC-GP.ZZ-0004, SW strainer outlet temperature element test on October 3, 2011
- HC.OP-IS.BE-0001, A and C core spray pumps inservice test on October 11, 2011
- HC.OP-IS.BC-0001, A RHR surveillance test on November 1, 2011
- HC.OP-ST.KJ-0002, EDG 1BG400 monthly operability test on November 14, 2011
- HC.OP-DL.ZZ-0026, Drywell floor drain leakage monitoring during December 1 - 19, 2011

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Radiation Safety - Public and Occupational

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

The inspectors examined PSEG's physical and programmatic controls for highly activated or contaminated materials stored within spent fuel and other storage pools. The inspectors verified that appropriate controls were in place to preclude inadvertent removal of these materials from the pool. The inspectors reviewed PSEG preparations for the processing of irradiated components stored in the spent fuel pool.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (REMP) (71124.07– 1 sample)

a. Inspection Scope

The inspectors reviewed the annual radiological environmental operating records, and the results of any PSEG assessments since the last inspection to verify that the REMP was implemented in accordance with the plant TSs and the offsite dose calculation manual (ODCM). The inspectors reviewed the report for changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and analysis of data.

The inspectors reviewed the ODCM to identify locations of environmental monitoring stations.

The inspectors reviewed the final safety analysis report (FSAR) for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

The inspectors reviewed the annual effluent release report and the 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," report, to determine if PSEG was sampling, as appropriate, for the predominant and dose-causing radionuclides likely to be released in effluents.

The inspectors walked down air sampling stations and thermoluminescent dosimeter (TLD) monitoring stations to determine whether they were located as described in the ODCM and to determine the equipment material condition.

For the air samplers and TLDs selected above, the inspectors reviewed the calibration and maintenance records to verify that they demonstrate adequate operability of these components. Additionally, the inspectors reviewed the calibration and maintenance records of composite water samplers as available.

The inspectors verified that PSEG had initiated sampling of other appropriate media upon loss of a required sampling station.

The inspectors observed the collection and preparation of environmental samples from different environmental media (e.g., ground and surface water, milk, vegetation, sediment, and soil) as available. The inspectors verified that environmental sampling was representative of the release pathways as specified in the ODCM and that sampling techniques were in accordance with procedures.

Based on direct observation and review of records, the inspectors verified that the meteorological instruments are operable, calibrated, and maintained in accordance with guidance contained in the FSAR, NRC Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," and PSEG procedures. The inspectors verified that the meteorological data readout and recording instruments in the control room and at the tower were operable.

The inspectors verified that missed and or anomalous environmental samples were identified and reported in the annual environmental monitoring report. The inspectors reviewed PSEG's assessment of any positive sample results. The inspectors reviewed the associated radioactive effluent release data that was the source of the released material.

The inspectors selected SSCs that involved or could reasonably involve licensed material for which there is a credible mechanism for licensed material to reach ground water, and verified that PSEG had implemented a sampling and monitoring program sufficient to detect leakage of these SSCs to ground water.

The inspectors verified that records, as required by 10 CFR 50.75(g), of leaks, spills, and remediation since the previous inspection were retained in a retrievable manner.

The inspectors reviewed any significant changes made by PSEG to the ODCM as the result of changes to the land census, long-term meteorological conditions (three-year average), or modifications to the sampler stations since the last inspection. The inspectors reviewed technical justifications for any changed sampling locations. The inspectors verified that PSEG performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors verified that the appropriate detection sensitivities with respect to TS/ODCM were used for counting samples. The inspectors reviewed quality control charts for maintaining radiation measurement instrument status and actions taken for degrading detector performance. The inspectors reviewed the results of PSEGs' interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by PSEG. The inspectors verified that the interlaboratory comparison test included the media/nuclide mix appropriate for the facility.

The inspectors verified that problems associated with the REMP are being identified by PSEG at an appropriate threshold and were properly addressed for resolution in their CAP. The inspectors verified the appropriateness of the corrective actions for a selected sample of problems documented by PSEG that involved the REMP.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08 – 1 sample)

a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the FSAR, the Process Control Program (PCP), and the recent radiological effluent release report for information on the types, amounts, and processing of radioactive waste disposed.

The inspectors reviewed the scope of any quality assurance (QA) audits in this area since the last inspection to gain insights into PSEG's performance and inform the "smart sampling" inspection planning.

The inspectors selected areas where containers of radioactive waste were stored and verified that the containers were labeled in accordance with 10 CFR 20.1904, "Labeling Containers," or controlled in accordance with 10 CFR 20.1905, "Exemptions to Labeling Requirements," as appropriate.

The inspectors verified that the radioactive materials storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20, "Standards for Protection Against Radiation." For materials stored or used in the controlled or unrestricted areas, the inspectors verified that they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801, "Security of Stored Material," and 10 CFR 20.1802, "Control of Material Not in Storage," as appropriate.

The inspectors verified that PSEG had established a process for monitoring the impact of long-term storage (e.g., buildup of any gases produced by waste decomposition, chemical reactions, container deformation, loss of container integrity, or re-release of free-flowing water) sufficient to identify potential unmonitored, unplanned releases or non-conformance with waste disposal requirements. The inspectors selected containers of stored radioactive materials and verified that there were no signs of swelling, leakage, and deformation.

The inspectors selected liquid and solid radioactive waste processing systems, and walked down accessible portions of systems to verify and assess that the current system configuration and operation agreed with the descriptions in the FSAR, the ODCM, and the PCP.

The inspectors selected radioactive waste processing equipment that was not operational and/or was abandoned in place and verified that PSEG had established administrative and/or physical controls to ensure that the equipment would not contribute to an unmonitored release path and/or affect operating systems or be a source of unnecessary personnel exposure. The inspectors verified that PSEG had reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments."

The inspectors reviewed the adequacy of any changes made to the radioactive waste processing systems since the last inspection. The inspectors verified that changes from what is described in the FSAR were reviewed and documented in accordance with 10 CFR 50.59, as appropriate.

The inspectors selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers. The inspectors verified that the waste stream mixing, sampling procedures, and methodology for waste concentration averaging were consistent with the PCP, and provided representative samples of the waste product for the purposes of waste classification as described in 10 CFR 61.55, "Waste Classification."

For those systems that provide tank recirculation, the inspectors verified that the tank recirculation procedure provides sufficient mixing.

The inspectors verified that PSEG's PCP correctly described the current methods and procedures for dewatering and waste.

The inspectors selected radioactive waste streams, and verified that PSEG's radiochemical sample analysis results were sufficient to support radioactive waste characterization as required by 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." The inspectors verified that PSEG's use of scaling factors and calculations, to account for difficult-to-measure radionuclides, was technically sound and based on current 10 CFR Part 61 analyses.

For the waste streams selected above, the inspectors verified that changes to plant operational parameters were taken into account to (1) maintain the validity of the waste stream composition data between the annual or biennial sample analysis update, and (2) verify that waste shipments continued to meet the requirements of 10 CFR Part 61.

The inspectors verified that PSEG had established and maintained an adequate QA program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56, "Waste Characteristics."

The inspectors observed shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and PSEG verification of shipment readiness. The inspectors verified that the requirements of any applicable transport cask certificate of compliance had been met. The inspectors verified that the receiving licensee was authorized to receive the shipment packages. The inspectors observed the shipment of a Type B quantity of irradiated hardware on December 8, 2011.

The inspectors observed radiation workers during the conduct of radioactive waste processing and radioactive material shipment preparation and receipt activities. The inspectors determined that the shippers were knowledgeable of the shipping regulations and that shipping personnel demonstrated adequate skills to accomplish the package preparation requirements for public transport with respect to PSEG's response to NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," dated August 10, 1979, and 49 CFR Part 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, Training Requirements, and Security Plans," Subpart H, "Training." The inspectors

verified that PSEG's training program provided training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

The inspectors selected non-excepted package shipment records and verified that the shipping documents indicated the proper shipper name; emergency response information and a 24-hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and UN number. The inspectors verified that the shipment placarding was consistent with the information in the shipping documentation.

The inspectors verified that problems associated with radioactive waste processing, handling, storage, and transportation were being identified by PSEG at an appropriate threshold, were properly characterized, and were properly addressed for resolution in their CAP. The inspectors verified the appropriateness of the corrective actions for a selected sample of problems documented by PSEG that involved radioactive waste processing, handling, storage, and transportation.

The inspectors reviewed the results of selected audits performed since the last inspection of this program and evaluated the adequacy of PSEG's corrective actions for issues identified during those audits.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Mitigating Systems Performance Index (5 samples)

a. Inspection Scope

The inspectors reviewed PSEG submittal of the Mitigating Systems Performance Index (MSPI) for the following systems for the period of October 1, 2010 through September 30, 2011:

- Emergency AC Power System
- High Pressure Injection System
- Heat Removal System
- Residual Heat Removal System
- Support Cooling Water System

To determine the accuracy of the PI data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors also reviewed PSEG's operator narrative logs, CAP records, mitigating systems performance index reports, key PI summary records, operating data reports and the MSPI basis document, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

.2 Occupational Radiation Safety Cornerstone (1 sample)

a. Inspection Scope

The inspectors reviewed a listing of PSEG action reports for issues related to the occupational radiation safety PI, which measures non-conformances with high radiation areas greater than 1 Roentgen/hour (R/hr) and unplanned personnel exposures greater than 100 millirem (mrem) total effective dose equivalent (TEDE), 5 rem skin dose equivalent (SDE), 1.5 rem lens dose equivalent (LDE), or 100 mrem to the unborn child.

The inspector determined if any of these PI events involved dose rates >25 R/hr at 30 centimeters or >500 R/hr at one meter. If so, the inspectors determined what barriers had failed and if there were any barriers left to prevent personnel access. For unintended exposures >100 mrem TEDE (or >5 rem SDE or >1.5 rem LDE), the inspectors determined if there were any overexposures or substantial potential for overexposure. The inspectors determined that no PI events for occupational radiation safety had occurred during the assessment period.

b. Findings

No findings were identified.

.3 Public Radiation Safety Cornerstone (1 sample)

a. Inspection Scope

The inspectors reviewed a listing of PSEG action reports for issues related to the public radiation safety PI, which measures radiological effluent release occurrences per site that exceed 1.5 mrem/quarter (qtr) whole body or 5 mrem/qtr organ dose for liquid effluents; or 5 millirads (mrads)/qtr gamma air dose, 10 mrads/qtr beta air dose; or 7.5 mrems/qtr organ doses from Iodine-131, Iodine-133, Hydrogen-3, and particulates for gaseous effluents. The inspectors determined that no PI events for public radiation safety had occurred during the assessment period.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 - 2 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," 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 regular screening of items entered into the CAP and periodically attended management review committee 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 Inspection Procedure 71152, "Problem Identification and Resolution," 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, maintenance rule assessments, and maintenance or CAP backlogs. The inspectors also reviewed PSEG's CAP database for the period from June to November 2011 to assess the notifications written as well as individual issues identified during the NRCs daily condition report review (Section 4OA2.1). The inspectors reviewed the Hope Creek station roll-up meeting report for the second cycle of 2011, conducted under procedure LS-AA-125-1006, "Department/Station Roll-up Meeting," 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.

The inspectors reviewed the results of the 2011 2nd cycle Hope Creek Station Roll-up Meeting and noted that PSEG identified the following station focus areas: work management process implementation; effective leadership development; and effective use of learning programs to prevent events and achieve industry best performance. These efforts were identified for focused station effort to enhance future performance. 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 acceptably identifying adverse trends before they became more safety significant problems.

.2 Annual Sample: Oil Level Control and Monitoring

a. Inspection Scope

During a plant walkdown on December 22, 2009, the inspectors observed that the HPCI system booster pump outboard bearing oil level in the sight glass was below the minimum level mark, and that there was an active minor leak (NCV 05000354/2010002-02). During a plant walkdown on May 21, 2010, the inspectors observed that the

maximum and minimum level marks for the new operator aid on the RCIC system turbine oil level sight glass were incorrect and non-conservative (FIN 05000354/2010004-02). During a plant walkdown on December 15, 2010, the inspectors observed that the RCIC turbine oil level in the sight glass was above the maximum level mark (NCV 05000354/2010005-03). The inspectors performed a focused review of PSEG's technical evaluations and corrective actions associated with these NRC-identified findings to ensure that PSEG implemented timely corrective actions, effectively addressed the underlying casual factors, and appropriately considered the extent-of-condition. The inspectors compared the actions taken to the requirements of PSEG's CAP and 10 CFR Part 50, Appendix B, Criterion XVI.

The inspectors reviewed PSEG's associated apparent cause evaluations, common cause evaluations, technical evaluations, extent-of-condition reviews, and short and long-term corrective actions. The inspectors also reviewed a sample of equipment operator rounds, completed surveillance tests, system health and walkdown reports, the HPCI and RCIC vendor manuals, operator training material, work orders, and operating procedures to assess the adequacy of PSEG's corrective actions and to ensure alignment with vendor recommendations. The inspectors performed several walkdowns of the four RHR pump motors, the four core spray pump motors, the HPCI pump and turbine, and the RCIC pump and turbine. The inspectors also observed an equipment operator perform their daily rounds in the HPCI room, RCIC room, and several RHR and core spray rooms. The inspectors performed these walkdowns to independently assess the oil level, the operator aids, the material condition, the operating environment, potential operator challenges, and configuration control. The inspectors also discussed oil level monitoring and control with the system engineer, senior reactor operators, and equipment operators to assess their awareness and knowledge level, to assess the training effectiveness relative to the previous issues, and to obtain historical performance and trend data.

The inspectors reviewed a sample of emergency core cooling system and RCIC oil-related issues that PSEG entered into the CAP since April 2009. The inspectors reviewed these issues to verify an appropriate threshold for identifying issues and to evaluate the effectiveness of corrective actions. In addition, the inspectors reviewed corrective action notifications written on issues identified during the inspection to verify adequate problem identification and incorporation of the problem into the CAP.

b. Findings and Observations

No findings were identified.

The inspectors noted that PSEG's corrective actions included an extent-of-condition review of other oil level markings to determine adequacy, developing and maintaining appropriate oil level operator aids in the field, improving operator logs and procedures, direct operations management observations of operator rounds, and additional training for nuclear equipment operators.

The inspectors concluded that PSEG had taken timely and appropriate action in accordance with vendor recommendations, surveillance and operating procedures, operating logs, and PSEG's CAP. The inspectors determined that PSEG's associated technical evaluations were sufficiently thorough and based on focused plant walkdowns, vendor guidance, sound engineering judgment, and relevant operating experience.

PSEG's assigned corrective actions were aligned with the identified casual factors, adequately tracked, appropriately documented, and completed as scheduled. Based on the documents reviewed, plant walkdowns (including operator rounds observations), and operator interviews, the inspectors noted that PSEG personnel identified problems and entered them into the CAP at a low threshold.

4OA6 Meetings, including Exit

On January 12, 2012, the inspectors presented inspection results to with Mr. J. Perry and other members of his staff. The inspectors asked PSEG whether any materials examined during the inspection were proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

PSEG Personnel

J. Perry, Hope Creek Site Vice President
D. Lewis, Hope Creek Plant Manager
E. Carr, Operations Director
K. Knaide, Work Management Director
W. Kopchick, Engineering Director
F. Mooney, Maintenance Director
M. Gaffney, Regulatory Assurance Manager
H. Trimble, Radiation Protection Manager
D. Boyle, Operations Support Manager
P. Duca, Senior Engineer, Regulatory Assurance
J. Shelton, Environmental Affairs, Nuclear

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

None.

LIST OF DOCUMENTS REVIEWED

In addition to the documents identified in the body of this report, the inspectors reviewed the following documents and records:

Hope Creek Generating Station UFSAR
Technical Specification Action Statement Log
HCGS NCO Narrative Logs

Section 1R01: Adverse Weather Protection

Procedures
HC.OP-AR.GQ-0001, Intake Structure HVAC Local Panel 1EC581, Revision 7
HC.OP-AR.FA-0002, House Heating Aux Boiler Local Panel BC502, Revision 5
HC.OP-GP.ZZ-0003, Station Preparations for Winter Conditions, Revisions 24, 25, & 26
HC.OP-SO.DA-0001, Circulating Water System Operation, Revision 53
HC.OP-SO.EA-0001, Service Water System Operation, Revision 34
HC.OP-SO.FA-0002, Auxiliary Steam System Operation, Revision 15
HC.OP-SO.GA-0001, Heating Steam and Water System Operation, Revision 15
HC.OP-SO.GM-0001, Diesel Area Ventilation System Operation, Revision 17
HC.OP-SO.KJ-0001, Emergency Diesel Generators Operation, Revision 60
WC-AA-107, Seasonal Readiness, Revision 11

Other Documents
Hope Creek Event Classification Guide Technical Basis, Revision 46
Hope Creek Event Classification Guide, Revision 98

Orders

60058565	60089004	60090178	60090424	60094295	60094672
70104286	70105981	80104029			

Notifications

20440276	20446722	20449537	20491261	20527774	20527857
20527858	20534869	20535418			

Section 1R04: Equipment Alignment

Procedures
HC.OP-SO.BC-0001, Residual Heat Removal System Operation, Revision 49
HC.OP-EO.ZZ-0101, Reactor Pressure Vessel Control, Revision 11
HC.OP-SO.KJ-0001, Emergency Diesel Generator, Revision 60
HC.OP-SO.BJ-0001, High Pressure Coolant Injection System Operation, Revision 42
HC.OP-SO.EA-0001, Service Water System Operation, Revision 34
HC.OP-SO.EP-0001, Service Water Traveling Screens System Operation, Revision 17

Notifications (*NRC-identified)
20530759*, Pressure Indicator Mismatch

Drawings
M-30-1, Diesel Engine Auxiliary Systems Starting Air and Lube Oil, Revision 19
M-55-1, High Pressure Coolant Injection, Revision 39

Calculations
BC-11, RHR Minimum Flow Bypass Line Size, Revision 2

Orders
30126184, 8 Yr 1BCV-030 B RHR Min Flow Check Valve Open and Inspect

Other Documents
Work Control Document (WCD) 4306566

Section 1R05: Fire Protection Measures

Procedures
FRH-II-541, Class 1E Switchgear Rooms, Revision 7
FRH-II-531, Diesel Generator Rooms, Revision 8
FRH-II-471, Refuel Floor, Elevation: 201'-0"
FRH-II-713, Service Water Intake Structure

Notifications
*20533834, Extinguishers Moved from Proper Location
*20539974, ELU 0687 Required Battery Change
*20539891, Equipment Stored in C RHR Room

Section 1R07: Heat Sink Performance

Procedures
HC.OP-ST.BC-0009, Residual Heat Removal System RHR Heat Exchanger Flow Measurement - 18 Month, Revision 14
HC.OP-EO.ZZ-0102, Primary Containment Control, Revision 12
HC.OP-AB.ZZ-0001, Transient Plant Conditions, Revision 22
HC.OP-IS.BC-0001, A Residual Heat Removal Pump In-Service Test, Revision 42
HC.OP-IS.BC-0003, B Residual Heat Removal Pump In-Service Test, Revision 43
ER-AA-340-1003, GL 89-13 Program Performance Indicators, Revision 3

Notifications (*NRC identified)
20525566*, NRC Resident Question
20540094*, NRC Question on RHR Supp. Pool Clg Flow
20525050, Procedure Difference for SACS Pump Trip
20525478, ECT Inspect RHR HXs

Calculations
EG-0020, STACS Required Flows and Heat Loads - EPU, Revision 10
SC-BC-0071-1, RHR Loop Tolerance Calculation, Revision 7

Orders
70128659, NRC Resident Question on RHR Suppression Pool Cooling
80091864, RHR Hydraulic Analyses
80105705, RHR Torus Cooling/Spray Flow

Section 1R11: Licensed Operator Requalification Program

Other Documents
Simulator Examination Scenario Guide (ESG)-009, Loss of RPS Bus, Uncontrolled Depressurization, Torus Leak, and ED, Revision 17, Dated 11/8/2011
ESG-068, HPCI 250 VDC, Recirc Seal Failure, LOP, LOCA, and ED, Revision 11, Dated 10/4/2011

Section 1R12: Maintenance Effectiveness

Procedures
HC.CH-SO.EQ-0001, Service Water Chlorination System Operation, Revision 25
HC.OP-AR.GQ-0001, Intake Structure HVAC Local Panel 1EC581, Revision 7
HC.OP-SO.EA-0001, Service Water System Operation, Revision 34
HC.OP-SO.EP-0001, Service Water Traveling Screens System Operation, Revision 17
WC-AA-106 Appendix A, Condition Based Monitoring Program, Revision 11

Notifications (*NRC identified)

20446558	20449537	20451039	20461147	20461503	20470641
20479941	20488384	20497449	20500636	20511739	20512292
20519067	20534718	20534867	20534869	20534877	20535202
20535348	20535535	20535536	20535537	20535550	20535636

20533403*, NRC Identified Flange Fit-Up Question
20520292, A EDG Jacket Water Leak
20520658, Procure and Setup Temporary Diesel Generators

20520943, B EDG Jacket Water Pump Pipe Stress Check
20520944, B EDG Intercooler Pump Pipe Stress Check
20520945, C EDG Jacket Water Pump Pipe Stress Check
20520946, C EDG Intercooler Pump Pipe Stress Check
20520947, D EDG Jacket Water Pump Pipe Stress Check
20520948, D EDG Intercooler Pump Pipe Stress Check
20535391, RCIC Battery Room Temp Low
20534849, Ready Maint Cart for HPCI Battery Charge
20533788, Refurbish H1PJ-10-D-424
20530572, HC.MD-ST.PJ-0001 Revision Request
20529835, Minor Corrosion on Battery
20506263*, 10-D-431 Battery Inter-cell Resistance - NRC

Orders

30175388	30185109	30195545	30201444	30203789	30207677
30208181	30201444	30214478	30215078	70106501	80101579

70127265, A EDG Jacket Water Leak
70131046*, NRC Identified Flange Fit-up Question
60098087, A EDG Jacket Water Leak
70130974, Refurbish H1PJ-10-D-424
60099904, Ready Maint Cart for HPCI Battery Charge
60096676, 10-D-431 Battery Inter-cell Resistance - NRC

Completed Surveillances
HC.OP-IS.EA-0001, A Service Water Pump - AP502 - In-Service Test, dated 10/7/2011
HC.OP-IS.EA-0002, B Service Water Pump - BP502 - In-Service Test, dated 8/17/2011
HC.OP-IS.EA-0003, C Service Water Pump - CP502 - In-Service Test, dated 9/7/2011
HC.OP-IS.EA-0004, D Service Water Pump - DP502 - In-Service Test, dated 8/25/2011
HC.OP-IS.EA-0101, Service Water Subsystem A Valves - In-Service Test, dated 10/9/2011
HC.OP-IS.EA-0102, Service Water Subsystem B Valves - In-Service Test, dated 9/21/2011
HC.OP-ST.EA-0001, Service Water Flow Path Verification - Monthly, dated 11/11/2011
HC.OP-ST.EA-0002, Service Water System Functional Test - 18 Months, dated 10/22/2010

Evaluations
70088819, B/D SSW Pump Room Flooded Alarm, Revision 0
70107200, Review of Station Service Water (SSW) Grassing Event, dated 2/26/2010
70109824, Review of D Station Service Water (SSW) Grassing Event, dated 5/13/2010
70120713, B SSW Train Unavailability, dated 8/18/2011
70124418, D SSW Pump Motor Cables Operability Evaluation, Revision 2

System Health, System Walkdowns, and Trending
HC Service Water System Reliability (Cumulative), dated 11/1/2008 - 11/1/2011
Service Water System MRule Checkbook, October 2011
Service Water System Health Report, Q3-2011
Service Water System Walkdown Report, dated 2/28/2011, 5/31/2011, and 8/22/2011

Other Documents
Hope Creek Event Classification Guide Technical Basis, Revision 46
Hope Creek Event Classification Guide, Revision 98
Hope Creek Valid SFFs, dated 5/1/2009 - 10/11/2011
MRule PSFF Database, dated 10/6/2009 - 11/17/2011

Service Water System Monitoring Basis Form, updated 4/23/2010
WCD 4306566

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Notifications
20528379, Spurious Alarms in Control Room
20528193, Entered AB.Cont-001 for Rising Drywell Pressure
20532275, A Torus Spray Valve Did Not Close
20538896, B SACS Pump Suction Valve Leakby
20538495, Probable Metal Shavings B SACS Pump Outboard Bearing

Orders
30126184, 8 Yr 1BCV-030 B RHR Min Flow Check Valve Open and Inspect
30003568, 12 Yr 1 EGHV-2398B: Overhaul/Rep
60099432, Troubleshoot, Repair and Lubricate Stem of 1BC-HV-F027A
30198890, 12 Month Sample 1B-P-210 - SACS Pump Bearing Oil

Other Documents
TS Action Statement Log Entry 11-265, TS 3.3.2.b, dated 10/5/2011
LCO Action Statement Log Index Number 11-331, B SACS pump outage, dated 12/13/2011
HCGS PRA Risk Evaluation Form for Work Week 1150, 12/11/2011 - 12/17/2011, Revision 0, dated 12/11/2011

Section 1R15: Operability Evaluations

Procedures
HC.OP-SO.KJ-0001, Emergency Diesel Generators Operation, Revision 60
HC.OP-ST.KJ-0001, Emergency Diesel Generator 1AG400 Operability Test, Revision 74 and Revision 75
LS-AA-104-1000, 50.59 Resource Manual, Revision 6
AD-AA-101-1004, Requesting Changes to PSEG Procedures and T&RMS, Revision 3

Notifications (*NRC identified)
20536109*, TEVL Issue with Procedure Revision
20521711, GEH Part 21 Communication SC 10-21
20410043, Control Rod Settle Problems
20523325, Snubber 1-P-FD-002-H011 HPCI Steam Piping Clamp Rotation
20526847, Test Snubber 1-P-FD-002-H011
20530007, EDG JW Leak Rate - Revision Request
20535430, Replacement of F013H Pilot
20535429, Replacement of F013R Pilot
20501679, R SRV Tailpipe Temperature Greater Than 200°F

Orders
70127666, GEH Part 21 Failure to include seismic
70127966, Request for Engineering Evaluation IAW ASME OM ISTD
60098319, Align Snubber and Clamp 1-P-FD-002-H011
70128286, NRC Question of Point of Discovery
80103518, Use of Demineralized Water Piping for Emergency Diesel Generator Jacket Water
70036674, MRule Impact of C EDG JW Leaks

Calculations
H-1-AB-MDC-2024, Main Steam SRV Tailpipe Temperature Monitoring Criteria, Revision 0

Other Documents
MFN 10-245 R4, Part 21 Reportable Condition Notification, Failure to Include Seismic Input in Channel-Control Blade Interference Customer Guidance, dated September 26, 2011
HC.OP-DL.ZZ-0003, Attachment 1, Log 3 Control Console Condition 1, 2, and 3, page 3 of 13, Revision 79
Numerical Applications, Inc. (NAI), NAI Calculation Approval and Release, Report Number: NAI-1571-001, SRV Tail Pipe Thermal Analysis for PSV-F013R Leak Detection, Revision 0

Section 1R19: Post-Maintenance Testing

Procedures
MA-AA-716-012, Post Maintenance Testing, Revision 17
HC.OP-SO.GR-0001, Reactor Building Ventilation System Operation, Revision 22
HC.OP-IS.BC-0001, A Residual Heat Removal Pump In-Service Test, Revision 42
HC.OP-IS.BJ-0001, HPCI Main and Booster Pump Set - OP204 and OP217 - In-Service Test, Revision 54

Completed Surveillances
HC.OP-IS.BC-0102, Residual Heat Removal Subsystem B Valves - Inservice Test, dated 10/18/2011
HC.OP-FT.ZZ-0001, Emergency Area Cooling System (EACS) Room Coolers Functional Test, Revision 9
HC.OP-IS.BC-0101, Residual Heat Removal Subsystem A Valves - In-Service Test, dated 11/2/2011

Notifications (*NRC identified)
20531575, EACS Room Coolers Functional Test
20532275, A Torus Spray Valve Did Not Close
20537172, All HPCI ST steps not verified documented complete

Orders
30126184, 8 Yr 1BCV-030 B RHR Min Flow Check Valve Open and Inspect
60099133, Revise HPCI Room Cooler Temperature Switch Setpoints
80104863, HPCI Room Cooler Setpoint Change
60099432, T/R - 1BC-HV-027A - T/R & Lube Stem
50131685, 18-Month MOV Thermal Overload - BJHV-F004
50121658, 18-Month HC.IC-FT.BJ-0007 - HPCI Logic System Functional Test
50144530, 18-Month HC.OP-IS.BJ-0001 - HPCI System IST
50135633, 18-Month HPCI Valve Actuation Functional Test

Drawings
M-51-1, Residual Heat Removal, Revision 41

Calculations
SC-GR-0024, Unit Coolers, Revision 1a

Other Documents
DCP 80104863, HPCI Room Cooler Setpoint Change 50.59 Evaluation, Revision 0
TS Action Statement Log Index Number 11-313, HPCI Pump, HPCI 250 VDC, BJHV-F004 Overload Bypass, BJHV-F007 Overload Bypass

Section 1R22: Surveillance Testing

Procedures
CY-AB-140-410, Hope Creek Station Diesel Fuel Oil Testing Program, Revision 4
HC.OP-SO.GM-0001, Diesel Area Ventilation System Operation, Revision 17
HC.OP-SO.KJ-0001, Emergency Diesel Generators Operation, Revision 60
HC.OP-ST.KJ-0002, Emergency Diesel Generator 1BG400 Operability Test - Monthly, Revision 74
HC.IC-GP.ZZ-0004, Thermocouples (T/C) and Resistance Temperature Detectors (RTD)
HC.OP-DL.ZZ-0026, Surveillance Log, Revision 128
HC.OP-ST.SK-0001, Alternate RCS Leakage Determination, Revision 7
HC.OP-GP.ZZ-0005, Drywell Leakage Source Detection, Revision 9

Completed Surveillances
HC.OP-IS.BE-0001, A & C Core Spray Pumps - AP206 and CP206 - Inservice Test, dated 10/11/2011
HC.OP-IS.BC-0001, A Residual Heat Removal Pump Inservice Test, dated 11/1/2011
HC.OP-ST.KJ-0002, Emergency Diesel Generator 1BG400 Operability Test - Monthly, dated 10/17/2011 and 11/14/2011

Notifications (*NRC identified)
20315250 20534953 20535366
20518350*, HCGS SSW Temp TES and ULT Heat Sink Spec
20517601, Category B Instrument PM not in DCRMS
20523941, Evaluate TE Calibration Method
20534633, Drywell Floor Drain Flow at 0.05 GPM

Orders
60092116
50143023, 3 Month ST: OP-IS.BC-0001, A RHR PMP AP202 IST
30187366, C Service Water Strainer Outlet Temperature RTD
30180710, C Service Water Strainer Outlet Temperature RTD
30186335, B Service Water Strainer Outlet Temperature RTD
30186658, D Service Water Strainer Outlet Temperature RTD
30192109, A Service Water Strainer Outlet Temperature RTD
70126009, Station Service Water Strainer Outlet Temperature Elements
80104650, Service Water Pump Discharge Temperature Element Acceptable Tolerances

Calculations
BE-0016, Core Spray System Hydraulic Analysis, Revision 5
BC-0056, RHR Hydraulic Analysis, Revision 5
SC-JE-0051-1, Diesel Fuel Oil Stor TK A LVL, Revision 3
EG-0047, HCGS Ultimate Heat Sink - EPU, Revision 5

Evaluations
60092116 Op 1, Emergency Diesel Generating Lubricating Oil Leakage Data Analysis, dated 3/16/2011
ACM 2011-007, B EDG Lube Oil Level Adverse Condition Monitoring and Contingency Plan, dated 4/5/2011

Other Documents
NRC Information Notice 89-07, Failures of Small-Diameter Tubing in Control Air, Fuel Oil, and Lube Oil Systems which Render Emergency Diesel Generators Inoperable, dated 1/25/1989
NRC Information Notice 2007-27, Recurring Events Involving Emergency Diesel Generator Operability, dated 8/6/2007

Section 2RS7: Radiological Environmental Monitoring Program (REMP)

Maplewood Testing Services Work Instructions
MLKCEN-0.3.1, Salem/Hope Creek Generating Stations Census of Milk Animals, Revision 4
NRECEN-0.3.3, Salem/Hope Creek Generating Stations nearest Residence Census, Revision 3
VEGCEN-0.3.2, Salem/Hope Creek Generating Stations Vegetable Garden Census, Revision 4
AQUACOLL-1.1.10, Collection of Aquatic Samples, Revision 5
H2OSA-1.1.1, Collection of Water Samples, Revision 10
NASSV-1.2.2, Servicing of Low Volume Air Particulate Samplers, Revision 5

Other Documents
2010 Annual Radiological Environmental Operating Report - January 1 - December 31, 2010
Hope Creek Offsite Dose Calculation Manual, Revision 26
May 2011 REMP Sample Analysis For: Air Particulate and Iodine; Fish; Milk; Surface Water; Well Water; and Vegetation
Teledyne Brown Engineering Environmental Services Operational Quality Control Report for January - March 2011
Teledyne Brown Engineering Environmental Services Interlaboratory Results 2010
Evaluation of Salem and Hope Creek's 2010 and Use Census, dated 4/27/2011
PSEG Census of Milk Animals, dated 9/28/2010
PSEG Nearest Resident Survey, dated 9/28/2010
PSEG Vegetable Garden Survey, dated 9/28/2010
Environmental Supply Company, Inc. Dry Gas Meter Calibration Reports for No: 180381, 180459, 180541, 180380, 180456, and 180539
Salem/Hope Creek Met Data Recovery, January 1 - December 31, 2010
Focused Area Self Assessment Report No. 70118151, Public Rad. Safety - Radiological Effluent Monitoring Program Self-Assessment
Maplewood Testing Services Quality Assurance/Control Plan, Revision 15
Notification 20519099*, Missed ODCM REMP Air Sample

Section 2RS8: Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Procedures
RW-AA-100, Process Control Program for Radioactive Wastes, Revision 8

Notifications

20488307	20452306	20452442	20452637	20522425	20524785
20475966	20427445	20538586	20533776		

Audits

NOSA-HPC-11-07, Radiation Protection Audit Report, dated 10/26/2011
NOSA-HPC-10-04, Chemistry, Radwaste, Effluents and Environmental Engineering, dated 5/12/2010
NUPIC Audit Nos. 22572, 22698, 22603, 22601, and 22600 for EnergySolutions, dated 6/15/2010

Other Documents

Nuclear Training Center Lesson Plan NRP9902RMATC-01, NRC Bulleting 79-19 and 49 CFR Subpart H Required Periodic Training
Teledyne Brown Engineering Report for Analysis for: Feedwater Heater Smears; Dry Active Waste; Waste Sludge; and Bead Resin
Check-In Self-Assessment Report No. 70123903, dated 10/7/2011
Radioactive Material Shipments: 11-084, 11-049, 11-050, 11-085, and 11-105

Section 4OA1: Performance Indicator Verification

Procedures

LS-AA-2200, Mitigating System Performance Index Data Acquisition & Reporting, Revision 3

Notifications

20530858, NRC PI Change - MSPI EAC scope w/FOTP
20530859, NRC PI Change - MSPI EDG Run Hour
20530860, NRC PI Change - MSPI CW boundary
20530070, NRC PI Change - MSPI EAC scope w/FOTP
20530071, NRC PI Change - MSPI EDG Failure Def'ns

Section 4OA2: Problem Identification and Resolution

Procedures

ER-AA-2030, Conduct of Plant Engineering Manual, Revision 10
HC.OP-IS.BC-0003, BP202, B Residual Heat Removal Pump In-Service Test, Revision 43
HC.OP-IS.BD-0001, Reactor Core Isolation Cooling Pump - OP203 - In-Service Test, Revision 53
HC.OP-SO.BC-0001, Residual Heat Removal System Operation, Revision 49
HC.OP-SO.BD-0001, Reactor Core Isolation Cooling System Operation, Revision 39
HC.OP-SO.BE-0001, Core Spray System Operation, Revision 13
HC.OP-SO.BJ-0001, High Pressure Coolant Injection System Operation, Revision 42
LS-AA-125-1004, Effectiveness Review Manual, Revision 4
MA-AA-716-026, Station Housekeeping/Material Condition Program, Revision 9
OP-AA-102-102, General Area Checks and Operator Field Rounds, Revision 7
OP-AA-111-1001, Use and Development of Operating Logs, Revision 2
OP-A-115-101, Operator Aid Postings, Revision 3
WC-AA-106, Work Screening and Processing, Revision 11

Notifications

20400502	20406523	20409269	20416727	20420548	20436692
20442190	20444949	20445932	20445933	20447201	20459223
20464254	20464921	20468129	20469377	20471864	20475090
20490150	20490446	20490537	20497814	20498688	20518846
20530267	20530302	20530497	20530814	20530895	20530962
20530985	20530986	20531121	20531236	20521256	20526053
20535408	20535622				

20521494, Security Waivers for Cycle End - 7/29
20506107, Security WHR Issues
20519802, Personnel Search Issues - CCE
20528932, Weaknesses in Security Oversight
20510469, Security Compensatory Measures
20530354, Negative Trend in Security Temporary Post Order Program
20525076, SRV Setpoint Drift Root Cause Evaluation
20522378, PA Opening Discovered - 1 Hour Report
20539260, HC 2C2011 SRUM Top Focus Area #1 - Work Management Process Implementation
20539262, HC 2C2011 SRUM Top Focus Area #2 - Effective Leadership Development
20539264, HC 2C2011 SRUM Top Focus Area #3 - Effective Use of Learning Programs to Prevent Events and Achieve Industry Best Performance
20506558, HC 3C2010 SRUM Top Focus Area #1 - Technical Rigor
20506559, HC 3C2010 SRUM Top Focus Area #2 - Industrial Safety Compliance
20506560, HC 3C2010 SRUM Top Focus Area #3 - Corrective Action Program Rigor
20539259, HC 1C2011 SRUM Top Issues
20542052, Q4 2011 Fatigue Related Performance

Orders

30153096	30173284	30184002	60088792

70128407, SRV Setpoint Drift Root Cause Evaluation
70127652, PA Opening Discovered - 1 Hour Report
70122974-0020, Security WHR Issues - CCE
70126743, Personnel Search Issues - CCE
70129972, Negative Trend in Security Temporary Post Order Program
70129790, Weaknesses in Security Oversight
70124637, Security Compensatory Measures

Completed Surveillances

HC.OP-IS.BC-0001, AP202, A RHR Pump In-Service Test, dated 8/2/2011
HC.OP-IS.BC-0002, CP202, C RHR Pump In-Service Test, dated 9/18/2011
HC.OP-IS.BC-0003, BP202, B RHR Pump In-Service Test, dated 7/1/2011 and 9/14/2011
HC.OP-IS.BC-0004, DP202, D RHR Pump In-Service Test, dated 7/28/2011
HC.OP-IS.BD-0001, RCIC Pump - OP203 - In-Service Test, dated 6/14/2011 and 9/15/2011
HC.OP-IS.BE-0001, A & C Core Spray Pumps - AP206 and CP206 - In-Service Test, dated 10/11/2011
HC.OP-IS.BE-0002, B & D Core Spray Pumps - BP206 and DP206 - In-Service Test, dated 9/21/2011
HC.OP-IS.BJ-0001, HPCI Main and Booster Pump Set - OP204 and OP217 - In-Service Test, dated 7/6/2011 and 10/10/2011

Evaluations
70105517 (Op 030), Inadequate Identification of Equipment Deficiencies Common Cause Analysis Report, dated 2/9/2010
70105640 (Op 010), Oil Seeping from Outboard Bearing Technical Evaluation, dated 3/8/2010
70110754 (Op 010), Incorrect Indication Installed - RCIC Work Group Evaluation, dated 7/28/2010
70110754 (Op 050), RCIC Turbine Coupling Oil Level Gage Technical Evaluation, dated 6/17/2010
70110754 (Op 110), Create a Technical Evaluation to Document the Correct Oil Levels in the ECCS Pumps and Turbines, dated 8/31/2010
70111927 (Op 010), Operator Aid Review - RCIC/HPCI Work Group Evaluation, dated 8/2/2010
70117600 (Op 020), RCIC Reservoir Oil Level above Max Apparent Cause Evaluation Report, dated 3/9/2011
70117600 (Op 060), RCIC Reservoir Oil Level above Max Effectiveness Review, dated 4/19/2011
70117723 (Op 010), RCIC Oil Level Operability Screening Work Group Evaluation, dated 1/24/2011
70105517
70105676
70106066

System Health, System Walkdowns, and Trending
1B-P-202-L Lubricant Condition Report, dated 3/24/2011
1B-P-202-U Lubricant Condition Report, dated 3/24/2011
A RHR System Walkdown Report, dated 3/1/2011
B RHR System Walkdown Report, dated 6/22/2010
Core Spray System Health Report, Q3-2011
Core Spray System Walkdown Report, dated 5/17/2011
C RHR System Walkdown Report, dated 8/23/2011
D RHR System Walkdown Report, dated 8/23/2011
HPCI System Health Report, Q3-2011
HPCI/RCIC System Walkdown Report, dated 6/16/2011
RCIC System Health Report, Q3-2011
RHR System Health Report, Q3-2011

Other Documents
323601, RCIC Turbine, Revision 2
323602, HPCI Turbine, Revision 3
70111927 (Op 040), Standing Order 2010-34 Guidance, dated 9/16/2010
HC.OP-DL.ZZ-0004-F1, HC-Reactor Bldg Log 4, dated 9/19/2011-9/30/2011
OP-AA-115-101, Operator Aids Program Notebook, dated 10/25/2011
PN1-E41-C002-0054, HPCI Governor, Revision 22
PN1-E51-C002-0054, RCIC Governor, Revision 13

LIST OF ACRONYMS

ADAMS	Agency-wide Documents Access and Management System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
FSAR	Final Safety Analysis Report
HPCI	High Pressure Coolant Injection
HX	Heat Exchanger
LDE	Lens Dose Equivalent
MSPI	Mitigating Systems Performance Index
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PCP	Process Control Program
PI	Performance Indicator
PSEG	Public Service Enterprise Group Nuclear LLC
QA	Quality Assurance
RCE	Root Cause Evaluation
RCIC	Reactor Core Isolation Cooling
REMP	Radiological Environmental Monitoring Program
RHR	Residual Heat Removal
SDE	Skin Dose Equivalent
SRV	Safety Relief Valve
SSC	Structures, Systems, and Components
SW	Service Water
TEDE	Total Effective Dose Equivalent
TLD	Thermoluminescent Dosimeter
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WHR	Work Hour Rule