



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
475 ALLENDALE ROAD  
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January 30, 2009

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

**SUBJECT: HOPE CREEK GENERATING STATION – NRC INTEGRATED  
INSPECTION REPORT 05000354/2008005**

Dear Mr. Joyce:

On December 31, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Hope Creek Generating Station. The enclosed integrated inspection report documents the inspection results discussed on January 20, 2009, with Mr. George Barnes and other members of your staff.

The inspections 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.

The report documents one NRC-identified Severity Level IV violation. Because it was entered into your corrective action program, the NRC is treating this violation as a non-cited violation (NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the 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 the Hope Creek Generating Station.

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

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Sincerely,

**/RA/**

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

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

Enclosure: Inspection Report 05000354/2008005  
w/Attachment: Supplemental Information

cc w/encl:

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Sincerely,  
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Arthur L. Burrirt, Chief  
Projects Branch 3

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U.S NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 50-354

License No: NPF-57

Report No: 05000354/2008005

Licensee: PSEG Nuclear LLC

Facility: Hope Creek Generating Station

Location: P.O. Box 236  
Hancocks Bridge, NJ 08038

Dates: October 1, 2008 through December 31, 2008

Inspectors: B. Welling, Senior Resident Inspector  
A. Patel, Resident Inspector  
T. Fish, Senior Operations Engineer  
J. Furia, Senior Health Physicist  
R. Fuhrmeister, Senior Project Engineer  
H. Jones, Reactor Inspector

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

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## SUMMARY OF FINDINGS

IR 05000354/2008005; 10/01/2008 - 12/31/2008; Hope Creek Generating Station; Event Follow-up.

The report covered a three-month period of inspection by resident inspectors and announced inspections by regional reactor inspectors, a regional operations engineer, and a regional health physics specialist. One Severity Level IV, non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. 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.

### A. NRC-Identified and Self-Revealing Findings

Cornerstone: Miscellaneous

- Severity Level IV. The inspectors identified a non-cited, Severity Level IV violation of 10 CFR 50.73(a)(1) for a failure to submit a licensee event report (LER) within 60 days after the discovery of an event requiring a report. On April 22, 2008, PSEG determined that both trains of the control room emergency filtration (CREF) system were inoperable, which is reportable as a loss of safety function of a system that is designed to mitigate the consequences of an accident. Additionally, operators entered Technical Specification 3.0.3 and commenced a plant shutdown, which is reportable as a condition prohibited by Technical Specifications. PSEG did not submit an LER for this event until October 17, 2008. PSEG's corrective actions included revising the applicable procedure for assessing whether an LER is required.

Traditional enforcement applies because a failure to report an event in a timely manner has the potential to impact the NRC's ability to perform its regulatory function. This violation was determined to be a Severity Level IV violation consistent with Section IV.A.3 and Supplement I.D of the NRC Enforcement Policy. The finding has a cross-cutting aspect in the area of problem identification and resolution, because PSEG did not properly evaluate a condition adverse to quality for reportability. Specifically, PSEG did not correctly evaluate the reportability of both trains of CREF being inoperable. As a result, PSEG failed to submit an LER in a timely manner. (P.1(c)) (Section 40A3)

### B. Licensee Identified Violations

None.

## REPORT DETAILS

### Summary of Plant Status

The Hope Creek Generating Station (HCGS) began the inspection period operating at full power. On November 15, operators reduced reactor power to approximately 50% in order to perform planned testing and maintenance activities. HCGS returned to full power on November 16, and operated at or near full power for the remainder of the inspection period.

#### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

##### 1R01 Adverse Weather Protection (71111.01 - 1 sample)

###### a. Inspection Scope

The inspectors reviewed the scope of PSEG's cold weather preparations to verify that station personnel adequately prepared equipment to operate reliably in freezing conditions. Specifically, inspectors performed a detailed review of PSEG's adverse weather procedures for seasonal extremes, interviewed engineering and operations personnel, and walked down portions of the service water, condensate storage, and fire protection systems that can be impacted by cold temperatures. The inspectors verified that heat tracing and insulation used to protect these systems were functional and that system conditions were adequate to support operation in cold weather. The documents reviewed during this inspection are listed in the Attachment. This inspection satisfied one inspection sample of the station's readiness for extreme seasonal weather.

###### b. Findings

No findings of significance were identified.

##### 1R04 Equipment Alignment (71111.04 - 2 samples)

###### a. Inspection Scope

The inspectors completed partial system walkdown inspection samples for the two systems listed below to verify the operability of redundant or diverse trains and components when safety equipment was unavailable. The inspectors completed walkdowns to determine whether there were discrepancies in the system's alignment that could impact the function of the system, and therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, walked down control system components, and verified that selected breakers, valves, and support equipment were in the correct position to support system operation. The inspectors also verified that PSEG had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program. Documents reviewed are listed in the Attachment.

- Reactor core isolation cooling (RCIC) system during high pressure coolant injection (HPCI) system outage on October 7, 2008

- A core spray (CS) during B CS outage on October 22, 2008

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q - 5 samples; 71111.05A - 1 sample)

.1 Fire Protection - Tours

a. Inspection Scope

The inspectors completed five quarterly fire protection inspection samples. The inspectors conducted tours of the five areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that combustibles and ignition sources were controlled in accordance with PSEG's administrative procedures; fire detection and suppression equipment was available for use; that passive fire barriers were maintained in good material condition; and that compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with PSEG's fire plan. The areas toured are listed below with their associated pre-fire plan designator. Other documents reviewed are listed in the Attachment.

- FRH-II-453, A and C safety auxiliary cooling system (SACS) room
- FRH-II-432, B and D SACS room
- FRH-III-133, Offsite power feed
- FRH-III-714, Fire water pump house
- FRH-II-461, Standby liquid control (SLC) room

b. Findings

No findings of significance were identified.

.2 Fire Protection – Annual Drill Observation

a. Inspection Scope

The inspectors observed an unannounced fire drill conducted in the class 1E switchgear room in the auxiliary building (130' elevation, room 5411). The inspectors observed the drill to evaluate the readiness of the plant fire brigade to fight fires. The inspectors verified that PSEG staff identified deficiencies, openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient fire fighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

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

a. Inspection Scope

The inspectors observed a licensed operator annual requalification simulator scenario on December 12, 2008, to assess operator performance and training effectiveness. The scenario involved a reactor recirculation pump vibration alarm, reactor water cleanup system leak, loss of coolant accident, and event classification. The inspectors verified that control room staff correctly identified and declared emergency action levels in a timely manner. The inspectors assessed simulator fidelity and observed the simulator instructor's critique of operator performance. The inspectors also observed control room activities with emphasis on simulator identified areas for improvement. Finally, the inspectors reviewed applicable documents associated with licensed operator requalification as listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Biennial Review (71111.11B - 1 sample)

a. Inspection Scope

The following inspection activities were performed using NUREG 1021, Rev. 9, Supplement 1, "Operator Licensing Examination Standards for Power Reactors," and Inspection Procedure 71111.11B, "Licensed Operator Requalification Program."

The inspectors reviewed documentation of operating history since the last requalification program inspection. The inspectors also discussed facility operating events with the resident staff. Documents reviewed included NRC inspection reports and PSEG condition reports that may have involved performance errors by licensed operators. These reports were reviewed to ensure that operational events and operator performance errors were not indicative of possible training deficiencies.

The inspectors reviewed four comprehensive written exams, simulator scenarios, and job performance measures administered during the weeks of September 29, October 6, and October 10, 2008, to ensure the quality of these exams met or exceeded the criteria established in the Examination Standards and 10 CFR 55.59. The inspectors observed the administration of the operating exams to three crews.

Conformance with Simulator Requirements Specified in 10 CFR 55.46

The inspectors observed simulator performance during the conduct of the examinations, and reviewed simulator discrepancy reports to verify facility staff were complying with the requirements of 10 CFR 55.46. The inspectors reviewed a sample of simulator tests including transients, steady state, component malfunctions, and core performance tests.

Conformance with operator license conditions was verified by reviewing the following records:

- five medical records. All records were complete; restrictions noted by the doctor were reflected on the individual's license; and physical exams were given within 24 months of the last physical.
- one license reactivation record. The record indicated the operator conformed with the reactivation requirements of 10 CFR 55.53.

On December 18, 2008, the inspectors conducted an in-office review of the final results of the operator requalification exams. These results included the annual operating tests, and the comprehensive written exams, which were administered in November 2008. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Human Performance Significance Determination Process (SDP)."

The inspectors verified that:

- Crew failure rate on the dynamic simulator was less than 20%. (Failure rate was 14%)
- Individual failure rate on the dynamic simulator test was less than or equal to 20%. (Failure rate was 2.4%)
- Individual failure rate on the walkthrough test (JPMs) was less than or equal to 20%. (Failure rate was 2.4%)
- Individual failure rate on the comprehensive written exam was less than or equal to 20%. (Failure rate was 4.8%)
- More than 75% of the individuals passed all portions of the exam (90.5% of the individuals passed all portions of the exam).

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - 2 samples)

a. Inspection Scope

The inspectors completed two maintenance effectiveness inspection samples. The inspectors evaluated items such as: appropriate work practices; identifying and addressing common cause failures; scoping in accordance with 10 CFR 50.65(b) of the maintenance rule (MR); characterizing reliability issues for performance; trending key parameters for condition monitoring; charging unavailability for performance; classification and reclassification in accordance with 10 CFR 50.65(a)(1) or (a)(2); and appropriateness of performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSCs/functions classified as (a)(1). Documents reviewed are listed in the Attachment.

- A 4160 vital bus
- Remote shutdown panel

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors completed five maintenance risk assessment and emergent work control inspection samples. The inspectors reviewed on-line risk management evaluations through direct observation and document reviews for the following five configurations:

- A service water (SW) system, A technical support center chiller, and 10F104 air dryer out of service on October 1, 2008;
- HPCI and L safety relief valve (SRV) acoustic monitor out of service on October 7, 2008;
- B CS pump and L SRV acoustic monitor out of service on October 22, 2008;
- D SW pump packing leakage and degraded SW sump pumps on November 17, 2008; and
- A residual heat removal (RHR), C RHR, and A SLC out of service on November 25, 2008.

The inspectors reviewed the applicable risk evaluations, work schedules and control room logs for these configurations to verify that concurrent planned and emergent maintenance and test activities did not adversely affect the plant risk already incurred with these configurations. PSEG's risk management actions were reviewed during shift turnover meetings, control room tours, and plant walkdowns. The inspectors also used PSEG's on-line risk monitor (Equipment Out-Of-Service workstation) to gain insights into the risk associated with these plant configurations. Finally, the inspectors reviewed notifications documenting problems associated with risk assessments and emergent work evaluations to verify that problems in this area were identified and corrected. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 2 samples)

a. Inspection Scope

The inspectors completed two operability evaluation inspection samples. The inspectors reviewed the operability determinations for degraded or non-conforming conditions associated with:

- HPCI booster pump missing dowel pin on October 8, 2008; and
- C emergency diesel generator (EDG) 110% load drifting during surveillance test on November 5, 2008.

The inspectors reviewed the technical adequacy of the operability determinations to ensure the conclusions were justified. The inspectors walked down accessible equipment to corroborate the adequacy of PSEG's operability determinations. Additionally, the inspectors reviewed other safety-related equipment deficiencies during this report period and assessed the adequacy of the applicable operability screenings. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18 - 2 samples)

a. Inspection Scope

The inspectors completed reviews of the following two temporary plant modification packages.

- Disabling the B 3/4/5 feedwater heater room cooler low flow trip circuitry
- Lowering the SW chlorination dilution flow trip and alarm setpoint

This review verified that the design bases, licensing bases, and performance capability of the system was not degraded by the temporary modifications. The inspectors verified the new configurations were accurately reflected in the design documentation, and the post-modification testing was adequate to ensure the structures, systems, and components would function properly. The inspectors interviewed plant staff, and reviewed issues that had been entered into the corrective action program to determine whether PSEG had been effective in identifying and resolving problems associated with temporary modifications. The 10 CFR 50.59 evaluations associated with these temporary modifications were also reviewed. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 5 samples)

a. Inspection Scope

The inspectors completed five post-maintenance testing inspection samples. 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 test procedures to verify that the procedure adequately tested safety functions that may have been affected by the maintenance activity and that the acceptance criteria in the procedure were consistent with the UFSAR and other design documentation. The inspectors witnessed the test or reviewed the test data to verify that test results adequately demonstrated restoration of the affected safety functions. Documents reviewed are listed in the Attachment.

- A SW pump planned maintenance outage on October 2, 2008
- HPCI NUMAC repair after failure on October 6, 2008

- D SW pump planned maintenance outage on October 19, 2008
- A SLC pump planned maintenance outage on November 25, 2008
- C SW traveling screen replacement on December 15, 2008

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 3 samples)

a. Inspection Scope

The inspectors completed three surveillance testing (ST) inspection samples. The inspectors witnessed performance of and/or reviewed test data for the risk-significant STs to assess whether the SSCs tested satisfied TS, UFSAR, and procedure requirements. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness and were consistent with design documentation; that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon ST completion, the inspectors verified that the equipment was returned to the status that was required for the system to perform its safety function. Documents reviewed for the inspection are listed in the Attachment.

- B EDG 24 hour in-service surveillance test on October 15, 2008
- D RHR pump in-service surveillance test on October 21, 2008
- Drywell Leak Detection Sump Monitoring System on December 15, 2008

b. Findings

No findings of significance were identified.

2. **RADIATION SAFETY**

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01 - 6 samples)

a. Inspection Scope

The inspectors reviewed all PSEG performance indicators for the occupational exposure cornerstone for follow-up.

The inspectors reviewed corrective action reports related to access controls. The inspectors interviewed staff and reviewed documents to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk.

1. Initial problem identification, characterization, and tracking
2. Disposition of operability/reportability issues
3. Evaluation of safety significance/risk and priority for resolution
4. Identification of repetitive problems
5. Identification of contributing causes

6. Identification and implementation of effective corrective actions
7. Resolution of non-cited violations tracked in the corrective action system
8. Implementation/consideration of risk significant operational experience feedback

For repetitive deficiencies or significant individual deficiencies in problem identification and resolution identified above, the inspectors assessed whether PSEG's self-assessment activities were also identifying and addressing these deficiencies.

The inspectors reviewed PSEG documentation packages for all performance indicator events occurring since the last inspection. The inspectors determined if any of these performance indicator events involved dose rates >25 R/hr at 30 centimeters or >500 R/hr at 1 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 total effective dose equivalent (or >5 rem skin dose equivalent or >1.5 rem lens dose equivalent), the inspectors determined if there were any overexposures or substantial potential for overexposure.

The inspectors reviewed radiological problem reports since the last inspection that found that the cause of the event was due to radiation worker errors. The inspectors determined if there was an observable pattern traceable to a similar cause. The inspectors determined if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. The inspectors discussed with the radiation protection manager any problems with the correction actions planned or taken.

The inspectors reviewed radiological problem reports since the last inspection that found that the cause of the event was radiation protection technician error. The inspectors determined if there was an observable pattern traceable to a similar cause. The inspectors determined if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

The inspectors evaluated PSEG performance against the requirements contained in 10 CFR 20.1601, Plant Technical Specifications 6.12, and UFSAR Chapter 12.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 - 2 samples)

a. Inspection Scope

The inspectors reviewed corrective action reports related to the ALARA program. The inspectors interviewed staff and reviewed documents to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk.

1. Initial problem identification, characterization, and tracking
2. Disposition of operability/reportability issues
3. Evaluation of safety significance/risk and priority for resolution
4. Identification of repetitive problems
5. Identification of contributing causes

6. Identification and implementation of effective corrective actions
7. Resolution of NCVs tracked in the corrective action system
8. Implementation/consideration of risk significant operational experience feedback

For repetitive deficiencies or significant individual deficiencies in problem identification and resolution identified above, the inspectors assessed whether PSEG's self-assessment activities were also identifying and addressing these deficiencies.

The inspectors evaluated PSEG performance against the requirements contained in 10 CFR 20.1101 and UFSAR Section 12.1.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03 - 2 samples)

a. Inspection Scope

The inspectors reviewed corrective action program reports related to exposure significant radiological incidents that involved radiation monitoring instrument deficiencies since the last inspection in this area. The inspectors interviewed staff and reviewed documents to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk.

1. Initial problem identification, characterization, and tracking
2. Disposition of operability/reportability issues
3. Evaluation of safety significance/risk and priority for resolution
4. Identification of repetitive problems
5. Identification of contributing causes
6. Identification and implementation of corrective actions which will achieve lasting results
7. Resolution of NCVs tracked in corrective action system(s)
8. Implementation/consideration of risk significant operational experience feedback

For repetitive deficiencies or significant individual deficiencies in problem identification and resolution identified above, the inspectors assessed whether PSEG's self-assessment activities are also identifying and addressing these deficiencies.

The inspectors evaluated PSEG performance against the requirements contained in 10 CFR 20.1501, 10 CFR 20.1703 and 10 CFR 20.1704.

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151 - 7 samples)

a. Inspection Scope

### Cornerstone: Mitigating Systems

The inspectors sampled PSEG submittals for the five performance indicators (PIs) listed below. The inspectors reviewed data from the fourth quarter of 2007 through the third quarter of 2008. The inspectors used definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 5, to verify the basis in determining failure criteria.

- heat removal system (reactor core isolation cooling)
- emergency AC power system (emergency diesel generators)
- residual heat removal (RHR) system
- high pressure coolant injection (HPCI) system
- support cooling water system (service water and safety auxiliary cooling)

The inspectors reviewed portions of the operations logs and raw PI data developed from monthly operating reports and discussed the method of compiling and reporting the PIs with cognizant engineering personnel. The inspectors also reviewed maintenance rule failure reports, corrective action reports, and operability screenings to calculate unavailability or failures to compare with what PSEG had calculated.

### Cornerstone: Occupational Radiation Safety

- Occupational Exposure Control Effectiveness

The inspectors reviewed all PSEG PIs for the Occupational Exposure cornerstone. The inspectors reviewed a listing of PSEG action reports for the period January 1, 2008, through September 15, 2008, for issues related to the occupational radiation safety performance indicator, which measures non-conformances with high radiation areas greater than 1R/hr and unplanned personnel exposures greater than 100 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 inspectors determined if any of these PI events involved dose rates >25 R/hr at 30 centimeters or >500 R/hr at 1 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 inspector determined if there were any overexposures or substantial potential for overexposure. The inspectors determined that no PI events had occurred during the assessment period.

### Cornerstone: Public Radiation Safety

- RETS/ODCM Radiological Effluent Occurrences

The inspectors reviewed a listing of PSEG action reports for the period January 1, 2008, through September 17, 2008, for issues related to the public radiation safety performance indicator, which measures radiological effluent release occurrences per site that exceed 1.5 mrem/qtr whole body or 5 mrem/qtr organ dose for liquid effluents; or 5 mrad/qtr gamma air dose, 10 mrad/qtr beta air dose; or 7.5 mrems/qtr organ doses from I-131, I-133, H-3 and particulates for gaseous effluents.

#### b. Findings

No findings of significance were identified.

## 4OA2 Identification and Resolution of Problems (71152 - 2 samples)

### .1 Review of Items Entered into the Corrective Action Program

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of all items entered into PSEG's corrective action program. This was accomplished by reviewing the description of each new notification and attending management review committee meetings.

### .2 Annual Sample: Corrective Actions Associated with Service Water Component Reliability

#### a. Inspection Scope

The inspectors performed a focused review of the actions taken and planned in response to a number of service water (SW) component reliability issues regarding the strainers and traveling screens. The review included events that occurred between January 2007 and August 2008. The inspectors reviewed causal evaluations contained in the associated notifications, maintenance rule evaluations, corrective actions, ongoing troubleshooting efforts, and relevant operating experience. The inspectors also interviewed personnel and performed a plant walk down of the SW system and control room indications which were recently modified to indicate a wider range of SW strainer differential pressures.

#### b. Findings and Observations

No findings of significance were identified.

PSEG determined the most likely causes of SW strainer failures were aging and exposure to conditions which exceeded design and structural limitations. PSEG determined the most likely cause of the SW traveling screen failures was galvanic corrosion. PSEG initiated actions to address these causes through a more robust strainer design and by shortening preventive maintenance intervals. The inspectors identified no concerns with these corrective actions.

The inspectors noted that PSEG's abnormal operating procedures for the SW system included actions for responding to high differential pressures across a strainer. However, the inspectors also observed that PSEG's abnormal procedures had not been updated to specify actions when the strainer reaches its differential pressure limit for maintaining structural integrity, as was determined by the vendor. PSEG initiated actions to address this observation.

### .3 Semi-Annual Trend Review: Corrective Actions Related to the Safety Conscious Work Environment

#### a. Inspection Scope

In 2004 through 2006, PSEG undertook a number of actions and commitments to improve the safety conscious work environment (SCWE) at the Salem and Hope Creek Generating Stations. The NRC reviewed the status of these actions during two team inspections, in August/September 2005 and June 2006. The inspection report for the

second inspection (Inspection Report 05000272;311/2006012 and 05000354/2006011, dated July 31, 2006) documented that the improvements to the SCWE were substantial and sustainable. PSEG's commitments in this area included performing periodic cultural surveys through 2008. PSEG completed its last committed survey in July and August 2008, and documented this in a letter to NRC Region I, dated December 2, 2008.

The inspectors performed a problem identification and resolution semi-annual trend inspection to review the results of this cultural survey and to evaluate PSEG's corrective action plans to address work environment related issues revealed by the survey. The inspectors reviewed the cultural survey report, examined PSEG's action plans for specific work groups, and discussed the information with staff and management personnel at both Salem and Hope Creek Generating Stations.

b. Assessment and Observations

No findings of significance were identified.

The inspectors noted that the cultural survey report provided detailed information for PSEG management to assess the work environment and culture in the various individual work groups. Overall, the survey indicated that the site-wide work environment ratings remained generally steady from the last cultural survey performed in 2006. The results for individual work groups varied, with some showing improvement and others indicating some decline. With respect to all organizations, including those showing some decline, the inspectors identified no significant concerns in the area of SCWE. The survey indicated that personnel remain willing to raise safety concerns without fear of retaliation.

The inspectors observed that PSEG developed a site-wide Action Plan to communicate and address the results of the survey. Both Salem and Hope Creek drafted action plans, called "Work Environment Improvement Excellence Plans," for each major work group. The Excellence Plans considered the specific survey results for the affected work group and included various communications, meetings, and discussions to address perceptions revealed in the survey. In the case of groups identified as having low ratings in certain areas of the survey, supervisors and staff members were scheduled to participate in specific activities aimed at addressing these areas.

The inspectors concluded that PSEG's Action Plan and work group Excellence Plans appropriately addressed the results of the 2008 cultural survey. These plans provided specific actions to maintain a focus on improvements in the work environment.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153 - 2 samples)

.1 (Closed) URI 05000354/2008004-02, Service Water Intake Structure Flooding Unusual Event

a. Inspection Scope

On August 28, 2008, PSEG declared an Unusual Event for flooding in the service water intake structure, based upon receipt of the B and D service water intake structure flooded alarm and visual verification of water on the intake structure floor. The inspectors responded to assess plant conditions and to observe operator performance during the event. PSEG determined that the service water intake structure flooded

because of a degraded sump float switch and a failed sump alarm switch, combined with increased packing leakage on the D service water pump.

In NRC Inspection Report 2008004, the inspectors opened unresolved item 05000354/2008004-02 to review three PSEG causal evaluations related to the Unusual Event.

During this inspection period, the inspectors performed a detailed review of the causal evaluations. Additionally, the inspectors:

- Performed walkdowns of the service water intake structure and inspected degraded sump pump discharge piping, which had become partially clogged with silt and contributed to the Unusual Event;
- Discussed, with engineering personnel, the causal evaluation for the equipment deficiencies related to the event; and,
- Discussed operator communications deficiencies during the event.

b. Findings

No findings of significance were identified.

2. (Closed) LER 05000354/2008-002, Blown 1E Inverter Main Fuse with One Emergency Diesel Generator Inoperable Causes Loss of Control Room Emergency Filtration Loss of Safety Function

a. Inspection Scope

The inspectors reviewed the reportability, per 10 CFR 50.73, of an issue associated with the control room emergency filtration (CREF) system. In April 2008, PSEG determined that the A and B CREF trains were inoperable, resulting in a Technical Specification (TS) limiting condition for operation not being met without an applicable action statement. Consequently, operators entered TS 3.0.3, and commenced a plant shutdown.

b. Findings

Introduction: The inspectors identified a non-cited, Severity Level IV violation of 10 CFR 50.73(a)(1) for a failure to submit a licensee event report (LER) within 60 days after the discovery of an event requiring a report. On April 22, 2008, PSEG determined that both trains of CREF were inoperable, which is reportable as a loss of safety function for CREF. Additionally, operators entered Technical Specification 3.0.3 and commenced a plant shutdown, which is reportable as a condition prohibited by Technical Specifications. PSEG did not submit an LER for this event until October 17, 2008.

Description: On April 22, 2008, while the D EDG was inoperable due to planned maintenance, the CD481 inverter failed, which caused the C EDG to be declared inoperable because the inverter powers the load sequencer for the C EDG. As a result, both A and B CREF trains were declared inoperable because, during a design basis accident with a loss of offsite power, they are powered from the C EDG and D EDG, respectively. PSEG entered TS 3.0.3 because both the A and B CREF trains were inoperable, resulting in a limiting condition for operation not being met without an applicable action statement.

In October 2008, the inspectors identified that the condition associated with the inoperable CREF systems was reportable to the NRC. 10 CFR 50.73 states, in part, that the licensee shall report any operation or condition which was prohibited by the plant's TS and shall report any event or condition that could have prevented the fulfillment of the safety function of structures or systems that mitigate the consequences of an accident. The inspectors identified that these conditions were met and brought this to the attention of PSEG management.

The inspectors reviewed PSEG's causal evaluation for the failure to meet the 10 CFR 50.73 reporting requirements. PSEG concluded that they failed to recognize that the TS 3.0.3 entry and commencement of a plant shutdown was a condition prohibited by TS. Additionally, they did not recognize the inoperability of both trains of CREF as a loss of a safety function of a system designed to mitigate the consequences of an accident. Therefore, they did not consider these conditions as events that required an LER as specified in 10 CFR 50.73.

PSEG entered this problem into their corrective action program in notification 20385385. PSEG's corrective actions included revising the applicable procedure for assessing whether an LER is required.

Analysis: The performance deficiency involved a failure to report a loss of function of a safety system designed to mitigate the consequences of an accident and a condition prohibited by TS within the time required by 10 CFR 50.73, "Licensee Event Report System." Traditional enforcement applies because a failure to report an event in a timely manner has the potential to impact the NRC's ability to perform its regulatory function. The finding was determined to be a Severity Level IV violation consistent with Section IV.A.3 and Supplement I.D of the NRC Enforcement Policy.

The finding has a cross-cutting aspect in the area of problem identification and resolution, because PSEG did not properly evaluate a condition adverse to quality for reportability. Specifically, PSEG did not correctly evaluate the reportability of both trains of CREF being inoperable. As a result, PSEG failed to submit an LER in a timely manner. (P.1(c))

Enforcement: 10 CFR 50.73(a)(1) requires, in part, that the licensee submit an LER for any event of the type described in this paragraph within 60 days after the discovery of the event. 10 CFR 50.73(a)(2)(v)(D) requires, in part, that the licensee report any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. 10 CFR 50.73(a)(2)(i)(B) requires, in part, that the licensee report any operation or condition prohibited by the plant's TS. Contrary to the above, PSEG failed to submit an LER within 60 days after the discovery that both trains of CREF were inoperable, which constituted a loss of safety function of a system that is designed to mitigate the consequences of an accident and led to a condition prohibited by TS. This event occurred on April 22, 2008, and PSEG submitted the LER on October 17, 2008, which exceeded 60 days. PSEG entered this problem into their corrective action program in notification 20385385. This Severity Level IV violation is being treated as a non-cited violation (NCV), consistent with section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000354/2008005-01, Untimely Licensee Event Report for Reportable Conditions Associated with the CREF system)**

#### 4OA5 Other Activities

##### .1 Quarterly Resident Inspector Observations of Security Personnel and Activities

###### a. Inspection Scope

During the inspection period the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours. These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

###### b. Findings

No findings of significance were identified.

##### .2 Implementation of Temporary Instruction (TI) 2515/176 – Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

###### a. Inspection Scope

The objective of TI 2515/176, "Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing," was to gather information to assess the adequacy of nuclear power plant emergency diesel generator (EDG) endurance and margin testing as prescribed in plant-specific technical specifications (TS). The inspectors reviewed emergency diesel generator ratings, design basis event load calculations, surveillance testing requirements, and emergency diesel generator vendor's specifications and gathered information in accordance with TI 2515/176.

The inspectors' assessment and information gathered while completing this TI was discussed with licensee personnel. This information was forwarded on to the Office of Nuclear Reactor Regulation for further review and evaluation.

###### b. Findings

No findings of significance were identified.

#### 4OA6 Meetings, Including Exit

The resident inspectors presented the inspection results to Mr. George Barnes and other members of PSEG staff on January 20, 2009. The inspectors verified that proprietary material reviewed by the inspectors during this period was properly controlled.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee Personnel

G. Barnes, Site Vice President  
 B. Booth, Operations Director  
 R. Canziani, Maintenance Director  
 E. Casulli, Shift Operations Superintendent  
 K. Chambliss, Assistant Plant Manager  
 K. Knaide, Engineering Director  
 M. Gaffney, Regulatory Assurance Manager  
 J. Perry, Plant Manager  
 H. Trimble, Radiation Protection Manager

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened/Closed

05000354/2008005-01	NCV	Untimely Licensee Event Report for Reportable Conditions Associated with the CREF System (Section 4OA3.2)
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#### Closed

05000354/2008004-02	URI	Service Water Intake Structure Flooding Unusual Event (Section 4OA3.1)
05000354/2008-002	LER	Blown 1E Inverter Main Fuse with One Emergency Diesel Generator Inoperable Causes Loss of Control Room Emergency Filtration Loss of Safety Function (Section 4OA3.2)

### 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 (HCGS) Updated Final Safety Analysis Report  
 Technical Specification Action Statement Log  
 HCGS Narrative Logs  
 HCGS Plant Status Reports  
 Reactor Engineering Guidance to Hope Creek Operations  
 Hope Creek Operations Night Orders and Temporary Standing Orders

**Section 1R01: Adverse Weather Protection**

Procedures

SH.FP-TI.FP-0001, Freeze Prevention and Winter Readiness of Fire Protection Systems, Revision 3  
HC.OP-DL.ZZ-0007, Log 7 Yard Data Log – Sunday Day Shift, Revision 43  
HC.OP-AR.MH-0001, Switchyard Gas Breaker Local Panels, Revision 6  
HC.OP-GP.ZZ-0003, Station Preparations for Winter Conditions, Revision 20  
WC-AA-107, Seasonal Readiness, Revision 8

Drawings

Condensate Storage Tank  
M-10-1, Service Water, Revision 39  
Fire Protection System

**Section 1R04: Equipment Alignment**

Procedures

HC.OP-SO.BD-0001, RCIC System Operation, Revision 34  
HC.OP-SO.BE-0001, Core Spray System Operation, Revision 10

Drawings

M-49-1, Reactor Core Isolation Cooling, Revision 29  
M-52-1, Core Spray, Revision 30

**Section 1R05: Fire Protection**

Procedures

NC.FP-AP.ZZ-0005, Fire Protection Surveillance and Periodic Test Program, Revision 14  
NC.FP-AP.ZZ-0025, Operational Fire Protection Program, Revision 7  
OP-AA-201-009, Control of Transient Combustible Material, Revision 1  
HC.FP-SV.ZZ-0026(F), Flood and Fire Barrier Penetration Seal Inspection, Revision 4  
NC.FP-AP.ZZ-0009, Fire Protection Training Program, Revision 5

Notification

20391885

Order

52300993

Other Documents

Hope Creek Generating Station Pre Fire plan, M10-FRH-II-541, Class 1E Switchgear Rooms  
Hope Creek Generating Station Pre Fire plan, M10-FRH-II-433, A SACS Heat Exchanger & Pump Room  
Hope Creek Generating Station Pre Fire plan, M10-FRH-II-432, B SACS Heat Exchanger & Pump Room  
Hope Creek Generating Station Pre Fire plan, M10-FRH-II-461, FRVS Rooms, MCC Area, Recombiner Areas, Spent Fuel Pool & Gamma Scan Detector Area  
Hope Creek Generating Station Pre Fire plan, M10-FRH-III-133, Turbine Building  
Hope Creek Generating Station Pre Fire plan, M10-FRH-III-714, Fire Water Pump House

**Section 1R11: Licensed Operator Requalification Program**

Procedures

HC.OP-AB.CONT-0004, Radioactive Gas Release, Revision 3  
HC.OP-AB.CONT-0002, Primary Containment, Revision 7  
HC.OP-AB.RPV-0005, Reactor Pressure, Revision 5  
HC.OP-AB.RPV-0003, Recirculation System/Power Oscillations, Revision 19  
HC.OP-AB.RPV-0004, Reactor Level Control, Revision 5

Other Documents

Hope Creek Generating Station Emergency Classification Guide  
Simulator Scenario Guide SG-322, RPS Bus Power Supply Transfer / Secondary Condensate Pump Trip / RWCU Leak in the Reactor Building / LOCA

**Section 1R12: Maintenance Effectiveness**

Procedures

WC-AA-101, On-line Work Management Process, Revision 16  
ER-AA-310, Implementation of the Maintenance Rule, Revision 6  
ER-AA-310-1001, Maintenance Rule - Scoping, Revision 3  
ER-AA-310-1003, Maintenance Rule – Performance Criteria Selection, Revision 3  
ER-AA-310-1004, Performance Monitoring, Revision 7

Notifications

20392101      20375690

Orders

70085388      60076006      60076007      60076008      60076009      60076010

Other Documents

Class 1E & Non-1E 3<sup>rd</sup> quarter system health report

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

Procedures

OP-AA-101-112-1002, On-Line Risk Assessment, Revision 2  
WC-AA-101, On-Line Work Management Process, Revision 16

Notifications

20393091      20385744

**Section 1R15: Operability Evaluations**

Procedures

OP-AA-101-112-1002, On-Line Risk Assessment, Revision 2  
OP-AA-108-115, Operability Determinations, Revision 1  
HC.OP-ST.KJ-0016, EDG 1CG400 - 24 Hour Operability Run and Hot Restart Test, Revision 27

Calculation

E-9, Standby Class 1E Diesel Generator Sizing, Revision 8

Drawings

M-55-1, HPCI P&ID Mech/Cont, Revision 39

Notifications

20390163      20390880      20386088

Orders

70091363      70089912

**Section 1R18: Plant Modifications**

Procedures

CC-AA-112-1001, Temporary Configuration Change Implementation, Revision 1

LS-AA-104, Exelon 50.59 Review Process, Revision 5

LS-AA-104-1001, 50.59 Review Coversheet Form, Revision 2

Orders

80096687      80097085

Other Documents

TCCP 08-017, Disable the B 3/4/5 FWH Room Cooler Low Flow Trip Circuitry, Revision 0

TCCP 08-019, Lower SW Chlorination Dilution flow trip/alarm setpoint, Revision 0

**Section 1R19: Post-Maintenance Testing**

Procedures

HC.OP-IS.BJ-0001, HPCI Main and Booster Pump Set – op204 and op217 – Inservice Test, Revision 50

HC.IC-LC.FD-0001, HPCI Turbine Speed Control System, Revision 7

HC.OP-IS.EA-0101, Service Water Subsystem A Valves – Inservice Test, Revision 49

HC.OP-IS.EA-0003, C Service Water Pump – Inservice Test, Revision 43

Notifications

20385744      20385783

Orders

50116890      30151315      30130852      50104718      50116852

**Section 1R22: Surveillance Testing**

Procedures

HC.OP-ST.KJ-0015, EDG 1BG400 – 24 Hour Operability Run and Hot Restart Test, 10/13/2008

HC.OP-IS.BC-0004, DP202, D Residual Heat Removal Pump In-Service Test, 10/21/2008

HC.IC-FT.SK-0016, Drywell Leak Detection Sump Monitoring System, 12/15/2008

Notifications

20376020

20386934

Orders

50104512

**Section 2OS1: Access Control to Radiologically Significant Areas**Procedures

MA-AA-176-008, Rev 3, Foreign Material Exclusion Program  
 EN-AA-501, Rev 1, Controlled Material and Hazardous Communication Program  
 TQ-AA-203, Rev 3, On-the-Job Training and Task Performance Evaluation

Condition Reports

20351493      20352193      20353513      20357130      20366051      20367822

Other Documents

Lesson Plan NITOJTTPLECT-01, Instructor Training/OJT Trainer – TPE Evaluator Continuing Training

**Section 2OS2: ALARA Planning and Controls**Condition Reports

20352331      20352871      20353861      20353876      20362927      20367849  
 20370668      20380184

**Section 2OS3: Radiation Monitoring Instrumentation and Protective Equipment**Condition Reports

20351049      20360407      20360866      20363592      20363783      20366164  
 20369314      20369336

**Section 4OA2: Identification and Resolution of Problems**Procedures

HC.OP-AB.COOL-0001(Q), Station Service Water, Rev. 15  
 HC.MD-PM.EP-0001(Q), Service Water Traveling Screen Inspection, Rev. 22  
 HC.MD-CM.EP-0002(Q), Service Water Traveling Screen Removal and Replacement, Rev. 15  
 HC.MD-CM.EP-0003(Q), Service Water Traveling Screen Overhaul and Repair, Rev. 17  
 HC.MD-PM.EA-0001(Q), Service Water Strainer – Clean and Inspect, Rev. 23  
 HC.MD-CM.EA-0003(Q), Service Water Strainer Overhaul and Repair, Rev. 30

Drawings

I-03511, Strainer Element Assembly, Rev. 0-5

Calculations

Calculation No. EA-0003, Station Service Water Hydraulic Analysis, Rev. 9

Vendor Documents

PM076Q-0028(001), Strain-o-matic Instruction Manual Service Water Self-Cleaning Strainer, Rev. 3

Condition Reports

20326039      20331505      20336451      20339451      20358018      20363005  
 20366059      20370553      20375007

Work Orders

30165424	70062078	70062939	70070358	70072902	70073034
70077305	70080720	70082759	70083192	70083327	70085713
70087617					

(a)(1) Determination Issue Report

70077169	70081134
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Miscellaneous

Hope Creek Generating Station System Function Level Maintenance Rule Scoping for Service Water

PSEG Nuclear 2008 Comprehensive Cultural Assessment, October 3, 2008

Action Plan for Work Environment Improvement Excellence Plans

Work Group Excellence Plans

**Section 4OA3: Followup of Events and Notices of Enforcement Discretion**Procedures

LS-AA-1400, Event Reporting Guidelines 10 CFR 50.72 and 10 CFR 50.73, Revision 3

HC.OP-SO.PN-0001, 120 VAC Electrical Distribution, Revision 21

HC.OP-AB.ZZ-0136, Loss of 120 VAC Inverter, Revision 11

Notifications

20385385	20381778	20383249	20382009	20381936	20381960
20379575	20381482	20388792	20337309	20289911	20174638
20244757					

Orders

70090128	70089314	70088819	80096631	30094362
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Other Documents

LER 2008-002-000, Blown 1E Inverter Main Fuse with One Emergency Diesel Generator Inoperable Causes Loss of Control Room Emergency Filtration Loss of Safety Function

**Section 4OA5: Implementation of Temporary Instruction (TI) 2515/176 – Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing**Completed Surveillance Procedures

HC.OP-ST.KJ-0001(Q), Emergency Diesel Generator 1AG400 Operability Test – Monthly, completed October 27 (Rev. 67), September 24 (Rev. 67) and August 25, 2008 (Rev. 66)

HC.OP-ST.KJ-0002(Q), Emergency Diesel Generator 1BG400 Operability Test – Monthly, completed November 10 (Rev. 66), October 16 (Rev. 66), and September 8, 2008 (Rev. 65)

HC.OP-ST.KJ-0003(Q), Emergency Diesel Generator 1CG400 Operability Test – Monthly, completed November 5 (Rev. 65), October 6 (Rev. 65), and September 1, 2008 (Rev. 64)

HC.OP-ST.KJ-0004(Q), Emergency Diesel Generator 1DG400 Operability Test – Monthly, completed October 20 (Rev. 67), September 15 (Rev. 66), and August 21, 2008 (Rev. 66)

HC.OP-ST.KJ-0017 (Q), EDG 1DG400 - 24 Hour operability Run and Hot Restart Test, completed September 10, 2007 (Rev. 22), June 17, 2004 (Rev. 19)

HC.OP-ST.KJ-0014(Q), EDG 1AG400 – 24 Hour Operability Run and Hot Restart Test, completed June 27, 2007 (Rev25), April 5, 2007 (Rev. 23), and October 12, 2005 (Rev. 22)

HC.OP-ST.KJ-0016(Q), EDG 1CG400 – 24 Hour Operability Run and Hot Restart Test, completed November 7, 2008 (Rev. 27), April 14, 2007 (Rev. 24), November 15, 2005 (Rev. 23), and June 7, 2004 (Rev. 20)

HC.OP-ST.KJ-0015(Q), EDG 1BG400 – 24 Hour Operability Run and Hot Restart Test, completed April 22, 2007 (Rev. 26),

HC.OP-ST.KJ-0005(Q), Integrated Emergency Diesel Generator 1AG400 Test – 18 Months, completed October 24, 2007 (Rev. 28), April 29, 2006 (Rev. 28), October 28 2004 (Rev. 25)

HC.OP-ST.KJ-0006(Q), Integrated Emergency Diesel Generator 1BG400 Test – 18 Months, completed April 21, 2006 (Rev. 31) and December 31, 2004 (Rev. 30)

HC.OP-ST.KJ-0007(Q), Integrated Emergency Diesel Generator 1CG400 Test – 18 Months, completed October 16, 2007 (Rev. 31), April 30 2006 (Rev. 31), and October 24, 2004 (Rev. 27)

HC.OP-ST.KJ-0008(Q), Integrated Emergency Diesel Generator 1DG400 Test – 18 Months, completed October 29, 2007 (Rev. 33), April 11, 2006 (Rev. 33), and January 1, 2005 (Rev. 31)

#### Procedures

HC.OP-ST.KJ-0001(Q), Rev. 67, Emergency Diesel Generator 1AG400 Operability Test – Monthly

HC.OP-ST.KJ-0007(Q), Rev. 33, Integrated Emergency Diesel Generator 1CG400 Test – 18 Months

HC.OP-ST.KJ-0016(Q), Rev. 28, EDG 1CG400 – 24 Hour Operability Run and Hot Restart Test

#### Calculations

E-9(Q), Rev. 8, Standby Class 1E Diesel Generator Sizing

7.6(Q) Diesel Generator Protective Relaying

#### Other Documents

Updated Final Safety Analysis Report, Section 8.3, Rev. 16, Onsite power Systems Notification 20390880, Calc E-9 Does Not Address Frequency Impact

Notification 20394640, Run Time Meter on B EDG

White Paper – Hope Creek EDG Action During LOP Event

#### Drawings

E-3065-0, Sh. 1, Rev. 8, Logic Diagram Diesel Generator Lockout Relaying

E-3060-0, Rev. 16, Logic Diagram, Class 1E Station Power SWGR – 4.16 kV System Main Circuit breaker

E-3080-0, Sh. 2, Rev. 12, Logic Diagram, Class 1E Station Power SWGR – 4.16 kV System, Diesel Generator Circuit breaker

**LIST OF ACRONYMS**

ALARA	As Low As Reasonably Achievable
CREF	Control Room Emergency Filtration
CS	Core Spray
EDG	Emergency Diesel Generator
HCGS	Hope Creek Generating Station
HPCI	High Pressure Coolant Injection
LDE	Lens Dose Equivalent
LER	Licensee Event Report
MR	Maintenance Rule
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
PIs	Performance Indicators
PSEG	Public Service Enterprise Group Nuclear LLC
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
SACS	Safety Auxiliaries Cooling System
SCWE	Safety Conscious Work Environment
SDE	Skin Dose Equivalent
SDP	Significance Determination Process
SLC	Standby Liquid Control
SRV	Safety Relief Valve
SSCs	Structures, Systems, and Components
ST	Surveillance Testing
SW	Service Water
TEDE	Total Effective Dose Equivalent
TI	Temporary Instruction
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report