January 26, 2006

Mr. William Levis
Senior Vice President and Chief Nuclear Officer
PSEG LLC - N09
P. O. Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK AND SALEM NUCLEAR GENERATING STATIONS - NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000354/2005007, 05000272/2005012, AND 05000311/2005012

Dear Mr. Levis:

On December 16, 2005, the U.S. Nuclear Regulatory Commission (NRC) completed a team inspection at the Hope Creek and Salem Nuclear Generating Stations. The enclosed inspection report documents the inspection findings, which were discussed with Mr. T. Joyce and other members of your staff at an exit meeting on December 16, 2005.

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

This inspection was conducted primarily for the purpose of assessing the problem identification and resolution (PI&R) program at Hope Creek, but was expanded to include site-wide PI&R activities, including Salem. This expanded scope was consistent with the implementation of the renewed Reactor Oversight Process Action Matrix Deviation Memorandum for Salem/Hope Creek dated July 29, 2005.

On the basis of the samples selected for review, the team concluded that, in general, problems were properly identified, evaluated, and corrected. The team determined that implementation of the corrective action program in the areas of Problem Identification and Effectiveness of Corrective Actions had improved since the Salem PI&R inspection, which was completed in March 2005. The team identified weaknesses in the area of Problem Evaluation, which was consistent with the results of your corrective action program self assessment.

There were three findings of very low safety significance (Green) associated with insufficient evaluation of degraded conditions. Two of the findings were attributed to Salem and one was for Hope Creek. These findings were determined to be violations of NRC requirements. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) consistent with Section VI.A of the NRC's Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the

Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspectors at Hope Creek and Salem Nuclear Generating Stations.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and 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 the NRC's document 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,

/RA/

Mel Gray, Acting Chief
Projects Branch 3
Division of Reactor Projects

Docket No: 50-354; 50-272; 50-311
License No: NPF-57; DPR-70; DPR-75

Enclosure: Inspection Report 05000354/2005007; 05000272/2005012; 05000311/2005012
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-354; 50-272; 50-311
License No:	NPF-57; DPR-70; DPR-75
Report No:	05000354/2005007, 05000272/2005012, 05000311/2005012
Licensee:	Public Service Enterprise Group (PSEG) Nuclear LLC
Facility:	Hope Creek Nuclear Generating Station Salem Nuclear Generating Station, Units 1 and 2
Location:	P.O. Box 236 Hancocks Bridge, NJ 08038
Dates:	November 28 through December 16, 2005
Inspectors:	B. Welling, Sr. Project Engineer, Team Leader J. Schoppy, Sr. Reactor Inspector G. Malone, Sr. Resident Inspector, Hope Creek A. Rosebrook, Project Engineer T. O'Hara, Reactor Inspector M. Patel, Reactor Inspector R. Bhatia, Reactor Inspector
Approved By:	Mel Gray, Acting Chief Projects Branch 3 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000354/2005007, 05000272/2005012, 05000311/2005012; 11/28/2005 - 12/16/2005; Hope Creek Nuclear Generating Station; Salem Nuclear Generating Station; Biennial Baseline Inspection of the Identification and Resolution of Problems.

This inspection was conducted by regional inspectors and a resident inspector. Three Green findings were identified, all of which were non-cited violations. The significance of most findings is indicated by their color (Green, White, Yellow, 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 3, dated July 2000.

Identification and Resolution of Problems

The team concluded that, in general, PSEG was effective at identifying problems and entering them into the corrective action program. Issues were typically screened and prioritized in a timely manner using established criteria. Causal evaluations for significant issues and events were thorough. However, the team identified deficiencies in the evaluations of some less significant degraded conditions. The team determined that implementation of the corrective action program in the areas of Problem Identification and Effectiveness of Corrective Actions had improved since the Salem PI&R inspection, which was completed in March 2005. The team identified weaknesses in the area of Problem Evaluation, which was consistent with the results of PSEG's corrective action program self-assessment. There were three Green findings identified during this inspection. The findings involved insufficient evaluation of a high pressure coolant injection system minimum flow valve problem, a failure to properly evaluate and correct a degraded emergency diesel generator (EDG) service water inlet valve to ensure EDG operability, and failure to evaluate the effects of freon leaks on chiller availability and develop appropriate corrective actions. Additionally, the team identified examples of minor significance where PSEG did not enter conditions adverse to quality into the corrective action system or did not take timely or effective corrective actions. Audits and self-assessments were generally effective and identified adverse conditions and negative trends.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. (Salem Unit 1) The team identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because PSEG failed to properly evaluate and correct freon leaks on control area chillers. This condition resulted in a trip and unplanned unavailability of the '11' control area chiller. PSEG entered this issue into the corrective action program.

  The finding was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone in that it reduced the availability of systems that respond to initiating events to prevent undesirable consequences. This issue also impacted the Initiating Events cornerstone

because unavailability of one chiller train increased the likelihood of loss of control area ventilation and loss of control air events. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase 2 SDP evaluation and determined the issue to be of very low safety significance (Green). The performance deficiency had a problem identification and resolution cross-cutting aspect, in that previous evaluations were narrow in scope and did not include periodic monitoring of freon inventory to preclude repeat trips. (Section 4OA2.2)

- Green. (Salem Unit 1) The team identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to properly evaluate and correct a known degraded condition on 12SW39, the service water stop valve to the 1B emergency diesel generator (EDG) jacket water and lube oil coolers. PSEG documented degraded operation of the 12SW39 valve in October 2004, when PSEG evaluated a similar failure of the 23SW39 valve to pass its surveillance stroke time test. On September 19, 2005, the 12SW39 valve failed to open causing the 1B EDG to be unavailable until operators opened the valve. PSEG entered this issue into the corrective action program.

  The finding was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. Because the valve was demonstrated operable on September 18, 2005, the exposure time for the failure of 12SW39 was less than one day. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase 1 SDP screening and determined the issue to be of very low safety significance (Green). The finding was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time, and did not screen as potentially risk significant due to external events. The performance deficiency had a problem identification and resolution cross-cutting aspect, in that evaluation of the 12SW39 valve was incomplete and did not provide for adequate corrective actions. (Section 4OA2.2)

- Green. (Hope Creek) The team identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to properly evaluate and correct a condition adverse to quality associated with the high pressure coolant injection (HPCI) system minimum flow valve. This condition was an improperly adjusted motor operated valve limit switch that allowed the minimum flow valve to open under test conditions, but still indicate shut. The anomaly with the minimum flow valve first occurred in January 2005, but it was insufficiently evaluated without any work performed. This problem led to unplanned unavailability of HPCI to troubleshoot and correct the limit switch problem when it repeated in September 2005. PSEG entered this issue into the corrective action program.

  The finding was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone objective to ensure the availability

of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations,” the inspectors conducted a Phase 1 SDP screening and determined the issue to be of very low safety significance (Green). The finding was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time, and did not screen as potentially risk significant due to external events. The performance deficiency had a problem identification and resolution cross-cutting aspect, in that engineering personnel missed a prior opportunity to identify the incorrectly set limit switch in January 2005. (Section 4OA2.2)

REPORT DETAILS

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (Biennial - 71152B)

1. Effectiveness of Problem Identification

a. Inspection Scope

The inspection team reviewed the procedures describing PSEG's corrective action program. PSEG identifies problems by initiating notifications (NOTFs) for conditions adverse to quality, equipment deficiencies and non-conformances, human performance problems, industrial or radiological safety concerns, and other significant issues. The NOTFs are subsequently screened for operability, categorized by priority and significance, and assigned for evaluation and resolution.

The team reviewed NOTFs selected across the seven cornerstones of safety in the NRC Reactor Oversight Process (ROP) to determine whether PSEG was appropriately identifying, characterizing, and entering problems into the corrective action program. Team members chose items from PSEG's maintenance, operations, engineering, emergency planning, security, radiological controls, training, and oversight programs to verify that PSEG appropriately considered problems identified in each functional area.

In addition to NOTFs, the team selected items from other processes at Hope Creek and Salem to verify that PSEG appropriately considered problems identified in these processes for entry into the corrective action program (CAP). Specifically, the team reviewed a sample of operator log entries, control room deficiency and work-around lists, operability determinations, engineering system health reports, completed surveillance tests, and maintenance orders. The documents were reviewed to ensure that problems were appropriately considered for resolution via the CAP. In addition, the team interviewed plant staff and management personnel to determine their understanding of and involvement in the CAP. A list of NOTFs and documents reviewed, and a list of key personnel contacted, are provided in the Attachment to this report.

The team reviewed a sample of PSEG's Quality Assessment/Nuclear Oversight audits, CAP self-assessments, and departmental self-assessments. This review was performed to determine if problems identified through these processes were entered into the CAP. The effectiveness of the audits and self-assessments was evaluated by comparing the results with self-revealing and NRC-identified findings, and observations during the inspection.

The team considered risk insights from the NRC's and PSEG's risk analyses to focus the sample selection and plant tours on risk-significant components. The team selected the high pressure coolant injection, emergency diesel generator, residual heat removal, 4 KV, and 125 VDC systems for in-depth review.

On July 29, 2005, the NRC's Executive Director for Operations renewed a deviation from the NRC's ROP Action Matrix to provide a greater level of oversight for the Salem and Hope Creek stations than would typically be called for by the Action Matrix. In accordance with this deviation, the Hope Creek inspection team was augmented with additional inspectors and the scope of the review was expanded to include site-wide PI&R activities and additional NOTFs.

b. Findings and Assessments

No findings of significance were identified in the area of Problem Identification.

The team determined that PSEG was generally effective at problem identification at Hope Creek and Salem. The station staff had appropriate knowledge of the CAP and entered identified problems into the program at a low threshold. There were approximately 23,000 NOTFs initiated from January to November 2005. Station staff promptly initiated NOTFs, as appropriate, in response to deficiencies or issues raised by the inspection team.

Quality Assessment (QA) audits and self-assessments identified adverse conditions and negative trends. They were generally self-critical and consistent with the team's findings.

The team identified some examples where PSEG did not enter conditions adverse to quality into the CAP and did not identify and correct other minor deficiencies in a timely manner. Some of these issues included (NOTF numbers in parentheses):

- Oil leak on 'B' residual heat removal pump (Hope Creek). (20263133)
- Questionable thread engagement on '11' auxiliary feedwater (AFW) pump packing studs. (20263095)
- Seismic retaining clips for safety-related instrument air tubing were found missing in 3 locations of the 5 checked in Salem Units 1&2 84' Elevation. (20263354, 20263356, 20263357)

The team also observed that the use of equipment malfunction information system (EMIS) tags was inconsistent. During plant walkdowns, the team identified several EMIS tags hanging that should have been removed following corrective maintenance (20204768, 20237698, 20061921, 20152783, 20242745, 20250152, and others). EMIS tags left hanging after work completion potentially mask the degraded condition should it recur. Alternately, the team noted examples where previously identified deficiencies did not have EMIS tags applied (20256258). These EMIS tag deficiencies represent a recurring CAP weakness based upon previous NRC PI&R inspection observations at Salem and Hope Creek. Corrective actions for these observations during the Salem PI&R inspection (NRC inspection report 05000272;311/2005007 and

05000354/2005006; February - March 2005) did not resolve the problem. PSEG initiated NOTF 20263482 to address this repeat issue.

The team independently evaluated the problem identification deficiencies noted above for potential significance. The team determined that none of the individual issues were of more than minor significance because they did not result in a challenge to system availability or reliability. However, these NRC-identified issues indicated an area for improvement in PSEG problem identification.

2. Prioritization and Evaluation of Issues

a. Inspection Scope

The team reviewed the NOTFs listed in the Attachment to this report to assess whether PSEG adequately prioritized and evaluated problems. The team selected NOTFs to cover the seven cornerstones of safety identified in the NRC ROP. The review was expanded to five years for NOTFs on issues in the inservice inspection program and service water system that were age dependent.

The NOTFs encompassed the full range of PSEG evaluations, including root cause, apparent cause, common cause, and simple evaluations. The review included the appropriateness of the assigned significance, the timeliness of resolutions, and the scope and depth of the causal analyses. For significant conditions adverse to quality, the team reviewed PSEG's corrective actions to prevent recurrence. The team also reviewed PSEG's evaluations of industry operating experience information for applicability to their facility.

The team attended PSEG's Initial Screening Committee and Management Screening Committee meetings to observe the review process and to understand the bases for assigned significance levels (i.e., SL 1, 2, or 3). The team also reviewed PSEG's equipment operability determinations, reportability assessments, and extent-of-condition reviews for selected problems and degraded conditions. Additionally, the team reviewed equipment performance results and evaluations documented in completed surveillance test procedures and operator log entries to determine whether the evaluations were technically adequate to identify degrading or non-conforming equipment.

b. Findings and Assessments

There were three Green non-cited violations identified during this inspection involving inadequate evaluation of degraded conditions.

The team determined that, in general, PSEG adequately prioritized and evaluated the issues and concerns entered into the CAP. However, the team noted weaknesses in PSEG's evaluation of degraded conditions. The results of high level evaluations, such as root cause analyses were typically thorough; however, the team's review of lower level evaluations revealed some aspects that were incomplete or less than thorough.

Personnel were generally effective at classifying and performing operability evaluations and reportability determinations for degraded conditions. Notwithstanding, the team identified instances in which PSEG did not adequately perform operability evaluations or did not do so in a timely manner. These involved (NOTF numbers in parentheses):

- Clogged reactor building floor drains at Hope Creek. (20216883 & 20249085)

- Degraded condition of 12SW39, the service water stop valve to the 1B emergency diesel generator (EDG) jacket water and lube oil coolers. This issue is described in the finding below. (Salem)

- For the Salem '13' auxiliary feedwater pump enclosure damper 1ABS4, the loss of a licensing basis emergency function for the damper to close on a high pressure steam line break was identified, but engineering personnel did not fully evaluate the impact of this degraded condition on the operability of nearby safety-related equipment. Also, the impact of the described failure mechanism was not properly considered in re-evaluations. (20255139, 20263228)

- Leakage past the 1CV52 check valve for the '12' charging pump and impact on safety injection flow rate. (Salem) (20257289)

- Foreign material in the torus and impact on emergency core cooling systems. (Hope Creek) (20264863)

The team also noted that some of the apparent cause evaluations, simple evaluations, and reviews of issues related to risk-significant components and systems were incomplete, not well-documented, or less than thorough. Examples included:

- Control rod drive pump room floor plug seal potential flooding impact on core spray pumps. (Hope Creek) (70046707)

- Service water system grassing impact. (Hope Creek) (20265123 & 20263699);

- Extent-of-condition regarding loose bolts identified during a system walkdown of the Hope Creek Class 1E 4 kV system. (20249172);

- Impact of a clogged station service water strainer vent line (Hope Creek) (20255120, 20264599).

- Repeat test failures of the reactor building to torus vacuum breaker and associated pressure buildup between inboard and outboard valves. (Hope Creek) (20263191, 20255217, 20251483).

The team observed that station personnel missed opportunities to more definitively identify failure mechanisms on risk-important components because the parts were not analyzed before disposal. For example:

- The Salem 12SW39 valve was not examined for failure mode.

- The Salem 1ABS4 damper solenoid and damper were disposed of prior to establishing a failure mechanism.

- Foreign material in the reactor core isolation cooling system was not analyzed. (Hope Creek)

The team noted that root cause evaluations were generally complete. The root cause methodology was typically identified in the evaluations.

The team independently evaluated the CAP deficiencies noted above for potential significance. The team determined that none of the individual issues were of more than minor significance because they did not result in a challenge to system availability or reliability. However, these issues represented examples where the corrective actions for identified conditions were not adequately prioritized and evaluated.

.1 Control Area Chiller Trips Due to Failure to Identify Freon Leaks

Introduction: The team identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action," in that control area chiller system freon leaks were not promptly evaluated and corrected, which resulted in a trip and unavailability of the '11' control area chiller.

Description: On November 11, 2005, the Salem Unit 1 control area chiller number '11' tripped on a freeze protection signal. Following the trip, technicians discovered freon leaks from two test connections used for periodic diagnostic testing of the chillers. The chiller control system monitors for low suction pressure and low chilled water temperature that can indicate the potential for freezing of heat exchanger tubes. The leaking freon caused compressor suction pressure to decrease until the chiller tripped on a freeze protection signal. PSEG's evaluation determined that there were component monitoring deficiencies that failed to detect early degradation. Specifically, there were no processes in place to periodically monitor the control area chillers to verify proper freon inventory or identify freon leaks. Corrective actions identified in the evaluation included the creation of a monthly preventative maintenance task to check chillers for freon leakage.

A similar event occurred on May 10, 2005, when the Salem Unit 2 control area chiller number 22 tripped on freeze protection. PSEG's evaluation of the trip in May 2005, determined that a slow freon leak in the fittings on a liquid line solenoid valve led to a low suction pressure freeze protection trip. The evaluation documented four additional instances of freon leaks on other control area chillers in 2004 that resulted in unplanned chiller shutdowns or trips. The evaluations and corrective actions for the May 10, 2005, trip and the trips in 2004 were narrow in scope, in that they involved replacing or fixing the leaking components and did not include periodic monitoring of freon inventory to preclude repeat trips.

Analysis: PSEG did not properly evaluate, and correct freon leaks in May 2005, and in 2004, which led to a trip of the '11' control area chiller. This constitutes a performance deficiency. The finding was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone in that it reduced the availability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The chilled water system is listed as a mitigating system in Table 2 of the Risk Informed Inspection Notebook for Salem Generating Station, Revision 2, and provides support and cooling for the control area ventilation system and the emergency control air compressors. This issue also impacted the Initiating Events cornerstone because unavailability of one chiller train increased the likelihood of loss of control area ventilation and loss of control air events. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase 1 SDP screening and determined a more detailed Phase 2 evaluation was required to assess the safety significance because the finding affected two cornerstones (Initiating Events and Mitigating Systems).

The inspectors conducted a Phase 2 evaluation, using the Loss of Control Area Ventilation (LCAV) and Loss of Control Air (LCA) worksheets from Revision 2 of the Risk Informed Inspection Notebook for Salem Generating Station, and concluded that the finding was of very low safety significance (Green). The SDP Phase 2 evaluation used the following assumptions:

- An exposure time of less than three days; and
- The initiating event likelihood for LCAV and LCA was increased by one order of magnitude consistent with Rule 1.2 of IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations."

The loss of control area ventilation core damage sequence was the most dominant core damage sequence and was mitigated by operator actions that established alternate ventilation and shut down the plant using the remote shutdown system. The performance deficiency had a problem identification and resolution cross-cutting aspect, in that previous evaluations were narrow in scope and did not include periodic monitoring of freon inventory to preclude repeat trips.

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, PSEG did not adequately monitor freon inventory to promptly identify and correct slow freon leaks on the '11' control area chiller, prior to a trip on November 11, 2005, even though similar chiller trips had occurred five times since 2004 for similar freon leaks. Because this finding is of very low safety significance and has been entered into the corrective action program as notification 20260955, this violation is being treated as a NCV, consistent with section VI.A of the NRC Enforcement Policy. **(NCV 05000272/2005012-01, Freon Leaks on '11' Control Area Chiller)**

.2 Failure of Salem 12SW39 Valve Rendered 1B Emergency Diesel Generator Unavailable

Introduction: The team identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," in that PSEG did not properly evaluate and correct a degraded condition on Salem valve 12SW39, the service water stop valve to the 1B emergency diesel generator (EDG) jacket water and lube oil coolers. The failure of this valve resulted in unavailability of the 1B EDG.

Description: In October 2004, PSEG documented degraded operation of the 12SW39 valve as part of an evaluation of another, similar valve (23SW39) failing to pass its surveillance stroke time test. Specifically, PSEG noted that the 12SW39 valve passed its stroke time test but stalled at 30-50% open, then traveled full open.

The 12SW39 valve's corresponding valve on the 2C EDG, 23SW39, failed to meet its stroke time requirement in October 2004 and was replaced. The SW39 valves have a safety function to open to admit cooling water to the EDG lube oil and jacket water coolers. The 23SW39 valve had stroked successfully on its previous five surveillance tests since its initial installation in September 2003. When the valve failed its stroke test in October 2004, its behavior (similar to 12SW39) was described as erratic, momentarily stalling in mid-stroke and then traveling full open.

PSEG's inspection of the 23SW39 valve revealed indications of galling or rubbing between the valve body, stem nut, gland ring, and stem. The galling or rubbing was determined to be from misalignment between the actuator and valve. This particular valve design did not include alignment pins between the actuator, the mounting plate, and the valve body. PSEG determined that if not properly aligned, the actuator can generate a force on the valve stem and cause damage. PSEG engineers stated the misalignment could impact valve stroke times and the ability of the valve to open.

PSEG issued an operability evaluation (CROD 04-024, 70041840) that determined that the SW39 valves on the EDGs were operable but degraded because the valves had been passing their surveillance test stroke times. Notably, the operability determination stated that the 12SW39 passed its stroke time test but stalled at 30-50% open, then traveled full open. The CROD established a plan to monitor the stroke times of the affected SW39 valves by changing the surveillance periodicity for the valve from quarterly to monthly and having an engineer, if practical, monitor the valve stroke. If the valve exceeded the acceptable stroke time range limit, or if the valve stroked twice in the required evaluation range, the valve would be declared inoperable, and a temporary modification would be used to maintain the valve in an open position.

On September 19, 2005, the 1B EDG was started for a surveillance test. Operators in the control room were informed that the 12SW39 valve did not indicate open after a period of 17 seconds. Field operators verified that the valve was closed and the 1B EDG was subsequently shutdown. PSEG performed a simple evaluation per procedure NC.WM-AP.ZZ-0002, "Corrective Action Process." PSEG did not quarantine the valve nor attempt to determine the failure mode. The evaluation identified past problems with valve binding as described in the evaluation performed following the failure of the

23SW39 valve. The corrective actions for the 12SW39 valve failure were to replace the valve with a valve of new design that did not have the misalignment issues.

The team determined that the evaluation performed by PSEG for the 23SW39 failure in October 2004, which included the description of the degraded operation of 12SW39, was incomplete and as a result did not provide for adequate corrective actions. PSEG did not fully evaluate the failure mechanism of the 12SW39 valve and provide for timely response. The CROD provided for monitoring and action only during the surveillance tests and did not specify actions to be taken should the valve fail during an actual demand. Operations personnel determined that control room operators would not know that the 12SW39 valve failed to open on an actual demand until a high temperature alarm actuated for high lube oil or high jacket water temperature. PSEG had data that predicted a loaded EDG could operate without cooling water for a period of 5-8 minutes from EDG start before a high temperature alarm actuated. However, PSEG did not evaluate the failure mechanism and response times with respect to an actual demand, such as during a loss of offsite power, when the failure may not be known until an alarm condition occurred.

Analysis: The team determined the failure to properly evaluate the degraded condition of valve 12SW39 was a performance deficiency. The finding was more than minor because the failure of valve 12SW39 to open caused unavailability of the 1B EDG and affected the equipment performance attribute of the Mitigating Systems cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. Because the valve was demonstrated operable on September 18, 2005, the exposure time for the failure mechanism on valve 12SW39 was less than one day. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase 1 SDP screening and determined the issue to be of very low safety significance (Green). The finding was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time, and did not screen as potentially risk significant due to external events. The performance deficiency had a problem identification and resolution cross-cutting aspect, in that evaluation of the 12SW39 valve was incomplete and did not provide for adequate corrective actions.

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, that measures shall be established to assure conditions adverse to quality are promptly identified and corrected. Contrary to the above, PSEG did not promptly correct a condition adverse to quality associated with valve 12SW39 that led to its failure to open on September 19, 2005. The failure of valve 12SW39 rendered the 1B EDG unavailable. Because this finding is of very low safety significance and has been entered into the corrective action program as notification 20267341, this violation is being treated as a NCV, consistent with section VI.A of the NRC Enforcement Policy. **(NCV 05000272/2005012-02, Failure of 12SW39 Rendered 1B Emergency Diesel Generator Unavailable)**

.3 High Pressure Coolant Injection System Minimum Flow Valve Degraded Condition

Introduction: The team identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to identify and correct a condition adverse to quality associated with the high pressure coolant injection (HPCI) minimum flow valve, which led to unplanned unavailability of the HPCI system.

Description: On January 20, 2005, following governor testing of the Hope Creek HPCI system, operators observed that the torus water level was unexpectedly increasing. During the course of troubleshooting this problem, operators cycled the HPCI minimum flow valve (F012) and the level rise ceased. Station personnel concluded that the F012 valve was leaking by, allowing water to flow from the condensate storage tank to the torus. NOTF 20220743 was initiated for corrective maintenance on the F012 valve.

Subsequently, on January 24, 2005, operations personnel initiated NOTF 20221030, which questioned the basis for operability of the HPCI system, given the anomalous behavior of the F012 valve. They were concerned that a partially open F012 valve would divert HPCI injection if called upon to perform its safety function. Engineering personnel performed evaluations in support of both NOTFs. Engineers determined that the valve opened partially during the test, even though the valve indicated shut, and they attributed the problem to the specific test conditions for the governor tuning test. However, despite the question on operability, the evaluations did not lead to corrective maintenance, diagnostic testing of the F012 motor operated valve, or a full investigation into the cause of the malfunction. Both NOTFs were closed with no work performed on the F012 valve.

On September 16, 2005, during surveillance testing, the HPCI system failed to meet test pressure acceptance criteria. Also, as occurred in January 2005, the torus water level continued to rise after the test was completed, and the F012 valve was found partially open. Troubleshooting and investigation following this occurrence revealed an incorrectly set limit switch on the F012 motor operated valve. The incorrectly set limit switch allowed the valve to remain partially open even though it indicated shut. Engineering personnel also concluded that the limit switch problem should have been detected during diagnostic testing prior to the January 2005 test.

Engineering personnel determined that the incorrectly set limit switch did not affect the safety function of HPCI, because under an automatic or manual initiation, the F012 valve would receive a seal-in signal to fully open and fully shut. However, under testing conditions, the valve may or may not receive the seal-in signal, and the incorrectly set limit switch would allow the valve to remain partially open, but indicate shut.

The inspection team concluded that the F012 valve malfunction was insufficiently evaluated in January 2005. Engineers incorrectly assumed that the valve behavior was due to governor test conditions and did not perform testing, corrective maintenance, or causal investigation. Consequently, engineering personnel missed an opportunity to identify the incorrectly set limit switch in January 2005. The insufficient evaluation led to

unplanned unavailability of the HPCI system in September 2005, to troubleshoot and correct the limit switch problem.

Analysis: PSEG did not properly evaluate and correct an observed degraded condition of the HPCI minimum flow valve in January 2005, which constitutes a performance deficiency. The insufficient evaluation led to unplanned unavailability of the HPCI system in September 2005, to troubleshoot and correct the limit switch problem, when the malfunction repeated. This finding was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase 1 SDP screening and determined the issue to be of very low safety significance (Green). The finding was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time, and did not screen as potentially risk significant due to external events. The performance deficiency had a problem identification and resolution cross-cutting aspect, in that engineering personnel missed a prior opportunity to identify the incorrectly set limit switch in January 2005.

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, that measures shall be established to assure conditions adverse to quality are promptly identified and corrected. Contrary to the above, PSEG did not promptly identify and correct a condition adverse to quality associated with the HPCI minimum flow valve when a malfunction anomaly was first observed in January 2005. Because this finding is of very low safety significance and has been entered into the corrective action program as notifications 20264759, 20253009, and 20254514, this violation is being treated as a NCV, consistent with section VI.A of the NRC Enforcement Policy. **(NCV 05000354/2005007-03, High Pressure Coolant Injection Minimum Flow Valve Degraded Condition)**

3. Effectiveness of Corrective Actions

a. Inspection Scope

The team reviewed the corrective actions associated with selected NOTFs to determine whether the actions addressed the identified causes of the problems. The team reviewed NOTFs for repetitive problems to determine whether previous corrective actions were effective. The team also reviewed PSEG's timeliness in implementing corrective actions and their effectiveness in preventing recurrence of significant conditions adverse to quality. In addition, the team reviewed NOTFs associated with selected NCVs and findings, to determine whether PSEG properly evaluated and resolved these issues. Furthermore, the team assessed the backlog of corrective actions to determine, if any, individually or collectively, represented an increased plant risk due to the delay in implementation.

b. Findings and Assessments

Overall, the team determined that corrective actions were completed in a timely manner and implemented as intended. The team observed that stricter administrative controls were put in place to ensure corrective actions are completed as scheduled and actions are properly implemented. In most cases, the team found that corrective actions were appropriate, effective, and completed in a timely manner. The team noted that there were fewer repeat issues than identified in previous NRC PI&R inspections at Salem and Hope Creek. However, the team observed some instances in which corrective actions did not appear to be effective or timely in addressing conditions adverse to quality. Examples included:

- Repetitive problems with EMIS tag usage, as described in Section 4OA2.1 of this report.

- Repeat flooding of Hope Creek valve pit no. 2, due to ineffective corrective actions. This valve pit contains non-safety related cold weather protection features for service water. (20263311)

- Several service water valve failures on containment fan cooler units. (Salem)

- Corrective actions for a high pressure coolant injection system oscillation problem did not include revising the applicable maintenance procedure. (Hope Creek) (20263227)

For NRC non-cited violations (NCVs) and findings, the team noted instances in which PSEG did not adequately evaluate or address the performance deficiencies associated with these NCVs. This is a repetitive observation from the Salem PI&R inspection (February - March 2005). Corrective actions for these observations did not resolve the issue. PSEG initiated NOTFs 20264465 and 20265676 to address this repeat issue. PSEG's CAP self-assessment documented a similar observation. Examples included:

- Repeated challenges to standby service water pumps due to silting documented in NCV 354/2005006-07. (20265676)

- Degraded control rod drive (CRD) pump room flood barrier and drains documented in NCV 354/2005002-01. (20263789)

- Failure of Salem auxiliary feedwater system valve 1MS132 documented in NCV 272/2004003-06. (20264465)

The team independently evaluated the CAP deficiencies noted above for potential significance. The team determined that none of the individual issues were of more than minor significance because they did not result in a challenge to system availability or reliability. However, these issues represented examples where the corrective actions for identified conditions were not fully effective.

4. Assessment of Safety Conscious Work Environment

a. Inspection Scope

Team members interviewed plant staff, observed various activities throughout the plant, reviewed selected NOTFs, and attended a cross section of meetings to determine if conditions existed that would result in personnel being hesitant to raise safety concerns to their management and/or the NRC. The team also reviewed the Employee Concerns Program.

b. Findings and Assessments

No findings of significance were identified.

4OA6 Meetings, Including Exit

The team presented the inspection results to Mr. T. Joyce and other members of PSEG management on December 16, 2005. PSEG management acknowledged the results presented. No proprietary information was identified during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

G. Barnes, Hope Creek Station Vice President
J. Barstow, Corrective Action Program Manager
D. Benyak, Regulatory Assurance Director
J. DeFebo, Hope Creek Nuclear Oversight Manager
C. Fricker, Salem Plant Manager
T. Gierich, Salem Operations Director
H. Hanson, Hope Creek Operations Director
M. Jesse, Hope Creek Regulatory Assurance Manager
S. Jones, Employee Concerns Program
T. Joyce, Salem Station Vice President
S. Mannon, Salem Regulatory Assurance Manager
M. Massaro, Hope Creek Plant Manager
W. Mattingly, Salem Nuclear Oversight Manager
J. Perry, Hope Creek Maintenance Manager
D. Romashko, Nuclear Oversight Director
B. Thomas, Sr. Licensing Engineer
J. Williams, Hope Creek Engineering Director

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed

05000272/2005012-01	NCV	Freon Leaks on '11' Control Area Chiller (Section 4OA2.2)
05000272/2005012-02	NCV	Failure of 12SW39 Rendered 1B Emergency Diesel Generator Unavailable (Section 4OA2.2)
05000354/2005007-03	NCV	High Pressure Coolant Injection Minimum Flow Valve Degraded Condition (Section 4OA2.2)

LIST OF DOCUMENTS REVIEWED

Audits, QA Reports, and Self-Assessments

Safety Observations (Hope Creek RP) (Oct 2005)
Hope Creek (HC) RP Paired Observations (Sept/Oct 2005)
HC RP Monthly Coaching Card (Oct 2005)

Housekeeping (HC RP & Supplemental) (Sept/Oct 2005)
RP Human Performance Card (Sept 2005)
RP PAOWF Cards (Sept/Oct 2005)
Operations PAOWFs (Sept/Oct 2005)
HC RP DRUM 2nd and 3rd Quarter 2005
HC Operations 1st and 2nd Quarter 2005 DRUM
QA Report 2004-0041, Corrective Action Program Effectiveness, dated 3/30/04
QA Report 2004-0161, Corrective Action Program, dated 10/29/04
QA Monitoring Feedback 2004-0030, Power Transient SL1 Corrective Actions, dated 2/8/04
HC/Salem 2005 PI&R Inspection Preparations (80077849 Operation 0021), dated 11/15/05
QA Monitoring Feedback 2005-0067; March 17, 2003 HC Event Synopsis; dated6/27/05
Salem 2005 Problem Identification & Resolution Inspection Preparations, 2/21/2005
Corrective Action Program GAP Analysis Report, June 11, 2004
QA Report 2004-0023, EP Hope Creek Practice Exercise, dated 3/15/04
QA Report 2004-0045, Grassing Readiness, dated 4/5/04
QA Report 2004-0046, Environmental Qualification Program, dated 4/12/04
QA Report 2004-0119, HC EPU Assessment, dated 10/11/04
QA Report 2005-0052, 10CFR50.54t Audit of Emergency Preparedness, dated 5/31/05
QA Report 2005-0079, 2 year Traditional Operations, dated 9/21/05
QA Report 2005-0082, Salem Fire Protection Audit, dated 9/28/05
QA Report 2005-0084, Salem Design Engineering Audit, dated 10/5/05
Self-Assessment 80067943, HC Practice EP Exercise, dated 3/15/04
Self-Assessment 80067946, HC Simulator Training, dated 7/22/05
Self-Assessment 80067948, Salem Simulator Training, dated 10/21/05
Self-Assessment 80067949, HC EP Training Drill, dated 11/15/04
Self-Assessment 80067950, Unannounced EP Callout Drill, dated 1/14/05
NOS Report NOSPA-HC-05-3Q - Implementation of Quality Programs by Ops, Eng, Mnt, PS
PSEG Nuclear LLC QA Assessment Monitoring Feedback 2004-0061, Engineering Resolution of the Hope Creek RHR - Recirc Pipe Vibration Issue, 4/20/04
PSEG Nuclear LLC QA Assessment Monitoring Feedback 2004-0048, Hope Creek Extraction Steam Leak Repairs, 3/15/04
PSEG Nuclear LLC QA Assessment Monitoring Feedback 2004-0030, Power Transient SLI Corrective Actions, 2/8/04
PSEG Nuclear LLC QA Assessment Monitoring Feedback 2004-0028, Hope Creek Cycle 12 Power Suppression Testing, 2/11/04
PSEG Nuclear LLC QA Assessment Monitoring Feedback 2004-0027, Power Suppression Testing Activities, 2/3/04
PSEG Nuclear LLC QA Assessment Monitoring Feedback 2005-0035, Plant Health Committee Meetings, 6/23/05
PSEG Nuclear LLC QA Assessment Monitoring Feedback 2005-0021, Procurement Engineering, 3/30/05
Operations Functional Area NOS Audit NOSA-HPC-05-07, Revision 1, Hope Creek Generating Station, September 19 to September 30, 2005
Engineering Design Control Audit Report NOS Audit NOSA-HPC-05-05, (2005-0085), Hope Creek Generating Station, October 3 to October 14, 2005
Audit Report Salem and Hope Creek Corrective Action Program NOS Audit NOSA-PSEG-05-01 (2005-0078), July 25 - August 11, 2005

Calculations

EG-0009, Process Setpoints for the SACS Expansion Tanks, Rev. 3
XX-C-008, Drawing of Graphs to Show Contents of Tanks at all Levels, Rev. 1
EG-0048, Evaluation of SACS System Capabilities Following a Design Basis Earthquake, Rev. 1
11 - 92, Reactor Bldg. Flooding - El. 54' and 77', Rev. 5
E-4.1 (Q) HC Class 1E VDC Station Battery & Charger Sizing
EG-0020, Rev. 8, STACS - Required Flows and Heat Loads
H-1-BJ-MDC-1997, Revision 0, 6/29/04, HPCI Lube Oil System Analysis

Completed Surveillances

HC.OP-IS.BJ-0001, HPCI Main and Booster Pump Set - OP204 and OP217 - Inservice Test, dated 9/17/05
HC.OP-IS.BC-0104, Residual Heat Removal Subsystem D Valves - Inservice Test, dated 11/27/05
HC.OP-IS.BE-0002, B & D Core Spray Pumps - BP206 and DP206 - Inservice Test, dated 11/23/05
HC.OP-IS.BC-0001, AP202, A Residual Heat Removal Pump Inservice Test, dated 11/9/05
HC.OP-IS.BE-0002, B & D Core Spray Pumps - BP206 and DP206 - Inservice Test, dated 9/26/05
HC.OP-IS.BH-0001, Standby Liquid Control Pump - AP208 - Inservice Test, dated 10/13/05
HC.OP-IS.BJ-0001, HPCI Main and Booster Pump Set - OP204 and OP217 - Inservice Test, dated 01/21/05, 3/2/05, 4/27/05, 9/15/05, 9/16/05, 12/6/05
HC.OP-IS.BJ-0001, HPCI Main and Booster Pump Set - OP204 and OP217 - Inservice Test, dated 12/6/05
HC.OP-IS.EA-0001, A Service Water Pump - AP502 - Inservice Test, dated 10/15/05
HC.OP-IS.EG-0004, D SACS Pump - DP210 - Inservice Test, dated 10/2/05
HC.OP-IS.JE-0006, F Diesel Fuel Oil Transfer Pump - FP401 - Inservice Test dated 10/20/05
HC.OP-ST.BC-0001, RHR System Piping and Flow Path Verification - Monthly, dated 11/22/05
HC.OP-ST.BH-0001, SLC Valve Operability Test - Monthly, dated 11/9/05
HC.OP-ST.KJ-0002, Emergency Diesel Generator 1BG400 Operability Test - Monthly, dated 11/21/05
HC.OP-ST.KJ-0003, Emergency Diesel Generator 1CG400 Operability Test - Monthly, dated 12/13/05
HC.OP-ST.KJ-0001, Emergency Diesel Generator 1AG400 Operability Test - Monthly, dated 08/17/05
SC.MD-PM.ZZ-0135(Q), Rev 6, Ventilation Damper Inspection and Guidelines Dtd 10/26/05 and 10/27/05
Inservice Testing - 11 Auxiliary Feedwater Pump (S1.OP-ST.AF-0001), dated 07/20/05
Inservice Testing - 21 Auxiliary Feedwater Pump (S2.OP-ST.AF-0001), dated 02/26/05
Inservice Testing - 21 Auxiliary Feedwater Pump (S2.OP-ST.AF-0001), dated 05/25/05
Inservice Testing - 21 Auxiliary Feedwater Pump (S2.OP-ST.AF-0001), dated 08/16/05

Drawings

P-8131-1, Plumbing & Drainage Reactor Building Plan at EL. 54'-0" Area 13, Rev. 9
P-8132-1, Plumbing & Drainage Reactor Building Plan at EL. 77'-0" Area 13, Rev. 9
M-97-1, Building and Equipment Drain Reactor Building, Rev. 15
A-0531-0, Separation Criteria Reactor Building Plan EL. 54'-0", Rev. 4
A-0532-0, Separation Criteria Reactor Building Plan EL. 77'-0", Rev. 4
P-0041-1, Equipment Location Reactor Building Unit 1 Plan EL. 54'-0", Rev. 14
P-0042-1, Equipment Location Reactor Building Unit 1 Plan EL. 77'-0", Rev. 21
SW-1 Nuclear Service Water, Rev. 2
240608 Reactor Coolant System Piping P&ID Sheet 19
205301 Reactor Coolant System Piping P&ID Sheet 2
E-0001-1-0(Q), Hope Creek Generating Station Single Line Diagram, Rev. 23
E-0002-1, Hope Creek Station Single Line Meter & Relay Diagram Power System, Sheet 1, Rev. 12
E-0002-1, Hope Creek Station Single Line Meter & Relay Diagram Power System, Sheet 2, Rev. 9
E-0006-1(Q)-11, Hope Creek Station Single Line Meter & Relay Diagram 4.16 kV Class 1E Power System, Sheet 1, Rev. 11
E-0006-1(Q)-10, Hope Creek Station Single Line Meter & Relay Diagram 4.16 kV Class 1E Power System, Sheet 2, Rev. 10
E-0009-1(Q), Hope Creek Single Line Meter & Relay Diagram 125 V. DC System-Channel A&C, Sheet 1, Rev. 18
E-0009-1(Q), Hope Creek Single Line Meter & Relay Diagram 125 V. DC System-Channel B&D, Sheet 2, Rev. 10
E-0009-1(Q), Hope Creek Single Line Meter & Relay Diagram 125 V. DC System, Sheet 3, Rev. 15
E-0107-0, Hope Creek Electrical Schematic Diagram Diesel Generator Regular & Backup Lockout Relaying, Sheet 1, Rev. 10
E-0107-0, Hope Creek Electrical Schematic Diagram Diesel Generator Regular & Backup Lockout Relaying, Sheet 2, Rev. 6
E-0107-0, Hope Creek Electrical Schematic Diagram Diesel Generator Regular & Backup Lockout Relaying, Sheet 3, Rev. 7
M-10-1(Q)-46 Hope Creek Generating Station, Service Water, Sh. 1 of 4, Revision 48, 6/21/05
M-10-1(Q)-36 Hope Creek Generating Station, Service Water, Sh. 2, Revision 36, 9/22/00

Evaluations/Analyses/Work Orders/Design Change Packages

30043391	60023223	60038627	60049338	60058284	70021623
30070873	60027015	60040507	60050342	60058414	70023241
30078701	60027888	60041018	60050794	60058744	70023816
30108591	60027890	60041912	60051019	70000697	70024635
30132080	60027891	60042176	60051353	70005488	70025623
50045528	60027892	60042404	60053478	70016037	70028464
50073308	60031820	60042830	60053807	70017562	70028866
50082666	60032802	60045599	60053870	70018148	70029457
50086974	60035321	60047445	60055663	70019458	70030919
50089483	60037561	60049336	60055747	70020278	70030988
60017643	60037838	60049337	60056025	70020531	70031105

70035150	70041984	70044721	70047185	70050075	80022926
70035208	70042074	70044915	70047229	70050582	80030512
70035377	70042125	70045241	70047320	70050609	80038109
70035458	70042368	70045256	70047404	70050632	80043251
70035650	70042421	70045259	70047509	70050633	80055245
70035790	70042506	70045286	70047548	70050692	80064120
70035859	70042710	70045369	70048000	70050737	80074240
70035952	70042721	70045453	70048059	70050799	80074403
70036974	70042942	70045455	70048175	70050911	80074528
70037643	70043117	70045518	70048262	70050918	80075502
70038357	70043682	70045555	70048412	70051038	80076224
70038964	70043752	70045648	70048624	70051041	80076903
70039223	70043834	70045666	70048661	70051157	80078833
70039691	70043837	70045742	70049357	70051236	80081889
70040142	70043848	70045873	70049579	70051282	80082342
70040362	70043947	70045955	70049661	70051392	80083836
70040967	70044112	70046035	70049699	70051902	80085090
70041580	70044126	70046110	70049720	70051903	80085527
70041672	70044201	70046361	70049754	80001609	80085709
70041840	70044326	70046707	70049942	80001697	80085930
70041941	70044669	70047031	70049988	80020042	90327107
70041974	70044681	70047171	70050067	80022924	

Miscellaneous

Salem/HC CAP Excellence Plan, 11/22/05
HC Safety Standdown Brief, dated 12/1/05
HC ISC Review Report, dated 12/1/05
Troubleshooting/Evolution Plan, dated 10/21/05
HC Operations Concerns List, dated 11/28/05
HC 05-90, Uniform Low-Level Radioactive Waste Manifest Shipping Paper, dated 10/5/05
HC 05-88, Radioactive Material Manifest Shipping Paper, dated 9/21/05
HC 05-82, Radioactive Material Manifest Shipping Paper, dated 9/7/05
HC 05-95, Radioactive Material Manifest Shipping Paper, dated 10/27/05
HC 05-89, Uniform Low-Level Radioactive Waste Manifest Shipping Paper, dated 10/1/05
HC 05-98, Uniform Low-Level Radioactive Waste Manifest Shipping Paper, dated 11/23/05
Daily Temporary Log Record, dated 12/13/05
VTD 130887 Model D Packaged Liquid Chiller
VTD PM018Q Colt-Pielstik Diesel Engines
T-Mod 04-034 Temporary Removal of Power to S1SW-1SV591
Temporary Standing Order TSO 05-09 Rev. 1 dated 03/21/2005
Top Ten Risk Significant Systems for Hope Creek and Salem
List of Maintenance Rule (a) (1) Systems
List of Open Temporary Modifications
List of Open Operator Workarounds
CAP Performance Indicators (various)
List of Operating Experience Reviews (past 2 years)

Operational Challenges Response Checklist, 12SW39 Failed to Open, dated 09/19/05
Root Cause Analysis FA-A041102, Binding of 6" Flangeless Valve
HC Ops Workaround List, dated 10/25/05
HC Burdens List, dated 11/25/05
Temporary Standing Order Log, dated 11/28/05
Hope Creek SW Grassing Notifications (dated 3/1/05 – 12/15/05)
Hope Creek SW Pump Standby Status (dated 3/1/05 – 12/14/05)

System Health Reports and Trending Data

Hope Creek Residual Heat Removal - BC, 2nd Quarter 2005
Hope Creek Safety and Turbine Auxiliary Cooling System (STACS) - EG, 2nd Quarter 2005
Hope Creek HPCI, 2nd & 3rd Quarter 2005
Hope Creek Emergency Diesel Generators, 2nd & 3rd Quarter 2005
Hope Creek Fire Protection, 3rd Quarter 2005
Hope Creek Fire Protection, 2nd Quarter 2005
Hope Creek Fire Protection, 1st Quarter 2005
Hope Creek Fire Protection, 4th Quarter 2004
Hope Creek Fire Protection, 3rd Quarter 2004
Hope Creek 4kV system, 1st Quarter 2004
Hope Creek 4kV system, 2nd Quarter 2004
Hope Creek 4kV system, 3rd Quarter 2004
Hope Creek 4kV system, 4th Quarter 2004
Hope Creek 4kV system, 1st Quarter 2005
Hope Creek 4kV system, 2nd Quarter 2005
Hope Creek 4kV system, 3rd Quarter 2005
Hope Creek 125V DC system, 1st Quarter 2004
Hope Creek 125V DC system, 2nd Quarter 2004
Hope Creek 125V DC system, 3rd Quarter 2004
Hope Creek 125V DC system, 4th Quarter 2004
Hope Creek 125V DC system, 1st Quarter 2005
Hope Creek 125V DC system, 2nd Quarter 2005
Hope Creek 125V DC system, 3rd Quarter 2005
Hope Creek Service Water System
Salem 2 Service Water System, 4th Quarter 2004-3rd Quarter 2005
Salem 1 Service Water System, 4th Quarter 2004-3rd Quarter 2005
Salem 2 Safety Injection System, 4th Quarter 2004-3rd Quarter 2005
Salem 1 Safety Injection System, 4th Quarter 2004-3rd Quarter 2005
Salem 2 Control Air System, 4th Quarter 2004-3rd Quarter 2005
Salem 1 Control Air System, 4th Quarter 2004-3rd Quarter 2005
Salem 2, Component Cooling System, 4th Quarter 2004-3rd Quarter 2005
Salem 1, Component Cooling System, 4th Quarter 2004-3rd Quarter 2005
Salem 2 Chemical Volume Control, 4th Quarter 2004
Salem 2 Service Water System, 2nd Quarter 2005
Salem 1 Chilled Water System, 3rd Quarter 2005
Salem 2 Chilled Water System, 3rd Quarter 2005
Salem 1 Chemical Volume Control, 4th Quarter 2004

Salem 2 Auxiliary Feedwater System Health Reports, 4th Quarter 2004-3rd Quarter 2005
Salem 1 Auxiliary Feedwater System Health Reports, 4th Quarter 2004-3rd Quarter 2005

Non-Cited Violations & Findings

05000311/2004002-04
05000272/2004002-05
05000311/2004003-03
05000272/2004003-06
05000272/2004003-09
05000272/2004003-11
05000311/2004003-12
05000272/2004004-06
05000272/2004006-02
05000311/2004006-02
05000311/2004006-03
05000354/2005002-01
05000354/2005002-03
05000354/2005002-04
05000354/2005002-05
05000354/2005006-07
05000354/2005006-02
05000354/2005006-03
05000272/2005002-05
05000272/2005003-01
05000311/2005003-02
05000311/2005003-04
05000311/2005003-06
05000272/2005003-08
05000272/2005003-09
05000311/2005003-09
05000272/2005007-04
05000311/2005007-06

Notifications (corrective action reports) Reviewed/Written for this Inspection

20003198	20090596	20141548	20167412	20170771	20175625
20003757	20092171	20143880	20167618	20170906	20178772
20019473	20094932	20143892	20167825	20170973	20179150
20023463	20095020	20144886	20168032	20171100	20180148
20047355	20097225	20145033	20168670	20171136	20180238
20052766	20097226	20145097	20168733	20171311	20182452
20053100	20097227	20146593	20168955	20171346	20182453
20053321	20097228	20150111	20169182	20171377	20182536
20054472	20098085	20150272	20169284	20171401	20183701
20061998	20103992	20152783	20169309	20171617	20183856
20062699	20111290	20152926	20169370	20171686	20184229
20064153	20115979	20153844	20169388	20171931	20184417
20068492	20123601	20154885	20169842	20171992	20186523
20070629	20124773	20155610	20170190	20172027	20187593
20070699	20125664	20158983	20170246	20172072	20187848
20071789	20126291	20164830	20170248	20172139	20188674
20075166	20128444	20165358	20170345	20172157	20189244
20075862	20128828	20165523	20170376	20172167	20189393
20076002	20130308	20166573	20170379	20172847	20189972
20079638	20134450	20166619	20170411	20173087	20190641
20081258	20134556	20166842	20170460	20173392	20190856
20084056	20140378	20167372	20170613	20173847	20192083
20085143	20140985	20167377	20170671	20174874	20193933

20194511	20209103	20218993	20232674	20240175	20247555
20195054	20209145	20219070	20232675	20240629	20247624
20195846	20209163	20219119	20232779	20241015	20247969
20195996	20209815	20219290	20232789	20241195	20248032
20196498	20209818	20219368	20232957	20241410	20248060
20196637	20210240	20219734	20233044	20241498	20248325
20196684	20210259	20219761	20233494	20241534	20248488
20197067	20210982	20219768	20233532	20241863	20248567
20197549	20211055	20219802	20233661	20241924	20248656
20197580	20211135	20219926	20233704	20241943	20248701
20197627	20211740	20220743	20233874	20241946	20249133
20197826	20212288	20221030	20234143	20242081	20249329
20197903	20212926	20221274	20234255	20242243	20249822
20197909	20213355	20222034	20234417	20242297	20249860
20198666	20213691	20222456	20234660	20242336	20250152
20199527	20213859	20222780	20234670	20242450	20250226
20200080	20213860	20222800	20234867	20242586	20250244
20201712	20214080	20222848	20235033	20242712	20250326
20201713	20214199	20223178	20235604	20242812	20250328
20201904	20214260	20223228	20235695	20242819	20250394
20202041	20215099	20223870	20235755	20242853	20250481
20202180	20215521	20224050	20235758	20243153	20250597
20202262	20215522	20224587	20235988	20243272	20250662
20202854	20215653	20226546	20236264	20243423	20250674
20203051	20216052	20226645	20236353	20243936	20250851
20203230	20216188	20226720	20236374	20244303	20250990
20203629	20216189	20226883	20236527	20244358	20251038
20203710	20216190	20226933	20236611	20244484	20251188
20204012	20216413	20227046	20236612	20244523	20251223
20204685	20216525	20227172	20236693	20245314	20251232
20204883	20216883	20227187	20236825	20245315	20251234
20206090	20216899	20227348	20236872	20245316	20251323
20206192	20216902	20227627	20236889	20245496	20251358
20206453	20216915	20227653	20237018	20245571	20251476
20206633	20216990	20228458	20237022	20245686	20251483
20206865	20217152	20228464	20237235	20245708	20251542
20206908	20217371	20228676	20237758	20245824	20251588
20207024	20217534	20228742	20237825	20246081	20252069
20207049	20217545	20229384	20237971	20246310	20252204
20207343	20217745	20230029	20238954	20246333	20252276
20207426	20217757	20230185	20238995	20246389	20252333
20207427	20217787	20231095	20239267	20246549	20252445
20207428	20217788	20231322	20239469	20246779	20252627
20208191	20218013	20231773	20239521	20246789	20252646
20208370	20218014	20232452	20239968	20247031	20252659
20208591	20218717	20232503	20239976	20247291	20252921
20208613	20218744	20232673	20240104	20247543	20253066

20253108	20254514	20256862	20261540	20263227*	20264489*
20253127	20254567	20257106	20261562	20263228*	20264594*
20253158	20254747	20257288	20261651	20263235*	20264599*
20253160	20254756	20257289	20261652	20263291*	20264675
20253170	20254831	20257421	20261802	20263296*	20264681*
20253172	20254874	20257535	20261817	20263311*	20264759*
20253173	20254882	20257578	20262680	20263354*	20264811
20253223	20255097	20257634	20262840*	20263356*	20264862*
20253248	20255120	20257948	20262876	20263357*	20264863*
20253327	20255217	20257979	20262979*	20263406*	20264864*
20253347	20255245	20258065	20262986*	20263408*	20264907*
20253353	20255344	20258213	20262989*	20263446*	20264917*
20253370	20255403	20258257	20263031*	20263449*	20264948*
20253380	20255466	20258371	20263056*	20263479*	20265002*
20253402	20255484	20258440	20263059*	20263482*	20265046*
20253453	20255549	20258443	20263065*	20263519*	20265056*
20253635	20255591	20258456	20263068*	20263562	20265088*
20253672	20255636	20258469	20263069*	20263589*	20265095*
20253702	20255678	20258566	20263095*	20263593	20265096*
20253733	20255721	20258642	20263133*	20263627*	20265123*
20253767	20255982	20258687	20263154*	20263699*	20265126*
20253876	20256209	20259109	20263155*	20263789*	20265148*
20254150	20256258	20260531	20263177*	20263853*	20265283*
20254186	20256288	20260935	20263182*	20263987*	20265291*
20254260	20256290	20260955	20263191	20264237*	20265378*
20254387	20256355	20261092	20263203	20264379*	20265676*
20254427	20256490	20261405	20263220*	20264465*	
20254513	20256559	20261496			

* indicates Notifications written as a result of the team's inspection activities

Procedures

HC.OP-IS.BD - 0002, Revision 34, 11/30/04, Reactor Core Isolation Cooling Jockey Pump - BP 228 - Inservice Test
HC.FP-AP.ZZ-004(Q), Rev. 9, Actions For Inoperable Fire Protection
HC.MD-PM.EA - 0001, Revision 20, 8/16/05, Service Water Strainer - Clean and Inspect
HC.OP-DL.ZZ-0006, Rev 42, Log 6 Auxiliary Building Data Log - Day Shift
HC.OP-FT.BF-0001, Rev. 21, CRD Insertion and Withdrawal Speed Test, Adjustment and Stall Flows
HC.OP-SO.DA-0001, Rev. 35, Circulating Water System Operation
HC.OP-SO.GM-0001(Q), Rev. 10, Diesel Area Ventilation System Operation
HC.OP-SO.SF-0001, Rev. 21, Reactor Manual Control System
HC.OP-ST.BF-0001, Rev. 26, Control Rod Drive Exercise - Weekly
NC.CA-DG.ZZ-0101(Z), Rev. 5, Operational Challenges Desk Guide
NC.CA-DG.ZZ-0103, Rev. 1, Adverse Condition Monitoring and Contingency Planning
NC.CA-TM.ZZ-0001(Z), Rev. 1, Nonconforming Material/Component Evaluation Template

NC.CA-TM.ZZ-0002(Z), Rev. 4, Coding and Trending Guideline
NC.CA-TM.ZZ-0003(Z), Rev. 2, Root Cause Evaluation Guideline
NC.CA-TM.ZZ-0004(Z), Rev. 3, Root Cause Evaluation Template
NC.CA-TM.ZZ-0005(Z), Rev. 7, Apparent Cause Evaluation Guideline
NC.CA-TM.ZZ-0006(Z), Rev. 19, Corrective Action Review Board Process
NC.CA-TM.ZZ-0007(Z), Rev. 1, Effectiveness Review Process
NC.CA-TM.ZZ-0008(Z), Rev. 0, Common Cause Evaluation Guideline
NC.CA-TM-ZZ-0001(Z), Rev.2, Non Conformance Material/ Component Evaluation
NC.LR-AP.ZZ-0054(Q), Rev. 2, Operating Experience (OE) Program
NC.LR-AP.ZZ-0077(Z), Revision 0, 6/27/05, Self-Assessment Process
NC.NA-AP.ZZ-0016(Q), Rev. 5, Monitoring the Effectiveness of Maintenance
NC.NA-AP.ZZ-0004(Q), Revision 12, 4/27/04, Station Operations Review Committee
NC.PF-AP.ZZ-0082(Z), Rev. 9, Review, Prioritization and Approval Process
NC.QA-AP.ZZ-0026(Q), Rev. 21, QA Audits
NC.QA-AP.ZZ-0031(Q), Rev. 11, Onsite Independent Review Program
NC.QA-AP.ZZ-0032(Q), Rev. 5, Independent Inspector Certification Program
NC.QA-AP.ZZ-0030(Q), Rev. 0, Nuclear Review Board
NC.QA-AP.ZZ-0034(Q), Rev. 0, QA Performance Based Inspection Program
NC.RP-RW.ZZ-0906, Rev. 10, Shipment of Radioactive Material
NC.RP-TI.ZZ-0602, Rev. 5, Radiation and Contamination Surveys
NC.WM-AP.ZZ-0000(Q), Rev. 11, Notification Process
NC.WM-AP.ZZ-0002(Q), Rev. 11, Corrective Action Process
NC-CH-AP.ZZ-0021(Z), Rev 2, RCS Tube Inspection Program
S1.OP-SO.SW-0001, Rev. 21, Service Water Pump Operation
SC.IC-GP.ZZ-0177(Q), Rev. 14, Panametrics Flow Instrument Data Procedure
SC.MD-PM.ZZ-0135(Q), Rev 6, Ventilation Damper Inspection and Guidelines
SH.ER-DG.ZZ-0001(Z), Rev. 3, Preventable and Repeat System Func. Failure Determination
SH.ER-DG.ZZ-0002(Z), Rev. 1, Maintenance Rule (A)(1) Evaluations and Goal Monitoring
SH.MD-AP.ZZ-0023, Rev. 6, Scaffold Program
SH.MD-DG.ZZ-0007 (Z), Rev. 10, Maintenance Standards
SH.MD-DG.ZZ-0023, Rev. 3, Scaffold Erection, Modification and Dismantling Desk Top Guide
SH.OP-AP.ZZ-0103(Q), Rev. 9, Component Configuration Control
SH.OP-AP.ZZ-0107, Rev. 13, Equipment Status Checklist
SH.OP-AP.ZZ-0108(Q), Rev. 16, Operability Assessment and Equipment Control Program
SH.OP-AP.ZZ-0110(Q), Rev. 11, Use and Development of Operating Logs
SH.OP-DL.ZZ-0027, Rev. 5, Temporary Reading Log & Log Supplements
Wackenhut Nuclear Services Safe-2-Say Program, Number 113, Rev. 3

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CRD	Control Rod Drive
CROD	Condition Resolution Operability Determination
DC	Direct Current

EDG	Emergency Diesel Generator
EMIS	Equipment Malfunction Information System
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
KV	Kilovolts
NCV	Non-Cited Violation
NOS	Nuclear Oversight
NOTF	Notification (PSEG input into their CAP)
PAOWF	Proactive Assessment of Organization and Workplace Factors
PI&R	Problem Identification and Resolution
PSEG	Public Service Enterprise Group, LLC
QA	Quality Assessment
RHR	Residual Heat Removal
ROP	Reactor Oversight Process
SACS	Safety Auxiliaries Cooling System
SCWE	Safety Conscious Work Environment
SDP	Significant Determination Process
SI	Safety Injection
SL	Significance Level
UFSAR	Updated Final Safety Analysis Report
VDC	Volts Direct Current