March 28, 2000

Mr. Harold W. Keiser
President and Chief Nuclear Officer
PSEG Nuclear LLC
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: NRC INTEGRATED INSPECTION REPORT 05000354/2000001

Dear Mr. Keiser:

On February 27, 2000, the NRC completed an integrated inspection of your Hope Creek facility. The enclosed report presents the results of that inspection. The preliminary findings were presented to PSEG Nuclear management led by Mr. Mark Bezilla in an exit meeting on March 9, 2000.

NRC inspectors examined numerous activities as they related to reactor safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspection consisted of selective review of procedures and representative records, observations of activities, and interviews with personnel. Specifically, this inspection involved seven weeks of resident inspection, and one region-based inspection of occupational radiation safety inspection. Findings were assessed using the Significance Determination Process; all findings were determined to be Green. (Very low safety significance)

NRC determined that two violations of NRC requirements existed, involving scaffolding impact on safety-related equipment and a procedural error affecting the service water system alignment. These violations are being treated as non-cited violations (NCVs), consistent with the Interim Enforcement Policy for pilot plants. The NCVs are described in the enclosed inspection report.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be placed in the NRC Public Document Room (PDR).

Sincerely,

/RA/

Glenn W. Meyer, Chief,
Projects Branch 3
Division of Reactor Projects

Docket No. 05000354
License No. NPF-57

Enclosure: Inspection Report 05000354/2000001

cc w/encl:
L. Storz, Senior Vice President - Nuclear Operations
E. Simpson, Senior Vice President and Chief Administrative Officer
M. Bezilla, Vice President - Nuclear Operations
D. Garchow, Vice President - Technical Support
M. Trum, Vice President - Maintenance
T. O'Connor, Vice President - Plant Support
E. Salowitz, Director - Nuclear Business Support
G. Salamon, Manager - Licensing
A. F. Kirby, III, External Operations - Nuclear, Conective Energy
J. McMahon, Director - QA/Nuclear Training/Emergency Preparedness
R. Kankus, Joint Owner Affairs
A. Tapert, Program Administrator
J. J. Keenan, Esquire
Consumer Advocate, Office of Consumer Advocate
W. Conklin, Public Safety Consultant, Lower Alloways Creek Township
M. Wetterhahn, Esquire
State of New Jersey
State of Delaware
J. Guinan, NJ PIRG
N. Cohen, Coalition for Peace and Justice
R. Fisher
F. Berryhill
B. August

Distribution w/encl:
Region I Docket Room (with concurrences)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
PUBLIC
H. Miller, RA
J. Wiggins, DRA
G. Meyer, DRP
S. Barr, DRP
R. Barkley, DRP
B. Platchek, DRP
L. Prividy, DRS

Distribution w/encl: (via e-mail)
J. Shea, OEDO
E. Adensam, NRR
R. Ennis, PDI-2, NRR
Inspection Program Branch, NRR (IPAS)
T. Frye, NRR
W. Scott, NRR
C. See, NRR
DOCDESK

DOCUMENT NAME: G:\BRANCH3\Hope Creek\ir 2000-01 hc.wpd
To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure "**E**" = Copy with attachment/enclosure "**N**" = No copy

OFFICE	RI/DRP		RI/DRP		/				
NAME	Jschoppy GWM f/		Gmeyer GWM						
DATE	03/28/00		03/28/00		04/ /00		04/ /00		04/ /00

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-354
License No:	NPF-57
Report No:	05000354/2000001
Licensee:	PSEG Nuclear LLC
Facility:	Hope Creek Nuclear Generating Station
Location:	P.O. Box 236 Hancocks Bridge, NJ 08038
Dates:	January 10 - February 27, 2000
Inspectors:	J. G. Schoppy, Jr., Senior Resident Inspector J. D. Orr, Resident Inspector J. T. Furia, Senior Radiation Specialist
Approved By:	Glenn W. Meyer, Chief, Projects Branch 3 Division of Reactor Projects

SUMMARY OF FINDINGS

Hope Creek Generating Station
NRC Integrated Inspection Report 05000354/2000001

The report covers a seven-week period of resident inspection using the guidance contained in NRC Inspection Manual Chapter 2515*. The significance of issues is indicated by their color (Green, White, Yellow, or Red) and was determined by the Significance Determination Process in draft Inspection Manual Chapter 0609 (see Attachment 1).

Cornerstone: Mitigating Systems

- Green. NRC inspectors identified a long-standing degraded condition involving scaffolding interferences with emergency core cooling system (ECCS) room blowout panels. The installed scaffolding in the torus room could potentially have interfered with the proper operation of blowout panels associated with the A residual heat removal room and the high pressure coolant injection (HPCI) room. Subsequently, engineering determined that although the scaffolding would have prevented the blowout panels from fully opening as designed, the panels would have opened enough to provide adequate ECCS room overpressure protection. The inspectors used the significance determination process (SDP) and determined that this long-standing deficiency had minimal impact on safety due to the continued operability of the blowout panels during this period. This issue was treated as a non-cited violation.

- Green. NRC inspectors identified that control room operators did not adequately align the service water system in accordance with operating procedures following a manual service water valve manipulation to control safety auxiliary cooling system (SACS) temperature. Operators had closed the service water valve and maintained the valve controls in manual vice automatic position. The inspectors used the SDP and determined that this procedural error had minimal impact on safety based on the availability of the redundant SACS and service water systems and the limited duration. This issue was treated as a non-cited violation.

TABLE OF CONTENTS

Report Details

SUMMARY OF PLANT STATUS

The Hope Creek plant operated continuously at or near full power for the duration of the inspection period except for planned maintenance power reductions on February 6 and February 18. Power was also reduced to about 90 percent following a feedwater heater trip on January 18.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment

.1 HPCI System

a. Inspection Scope

The inspectors performed a detailed equipment alignment verification for the HPCI system.

b. Observations and Findings

The inspectors identified a long-standing degraded condition involving scaffolding interferences with emergency core cooling system (ECCS) room blowout panels. Maintenance technicians had failed to properly install and control torus room scaffolding, resulting in a potential, adverse impact on safety-related equipment. In each case the scaffolding limited the movement of the blowout panels, such that during a steam-related event in these rooms, the blowout panels may not have performed their design function of relieving elevated room pressure into the adjacent torus room.

Specifically, on February 3, the inspectors identified that installed scaffolding in the torus room potentially interfered with the proper operation of blowout panels associated with the A residual heat removal (RHR) room and the HPCI room. Installation tags on the scaffolding indicated that scaffolding had been in place since August 1997. Once notified, the operations manager took prompt action to address the condition. Maintenance initiated action to remove the scaffolding interference and engineering evaluated the condition relative to loss of design basis function.

PSEG entered this problem into the corrective action program as Notification 20019621. This issue was considered a green finding with minimal impact on safety as determined by the significance determination process. Specifically, engineering determined that although the scaffolding would have prevented the blowout panels from fully opening as designed, the panels would have opened enough to provide adequate ECCS room overpressure protection. Failure to implement the requirements of procedure SH.MD-AP.ZZ-0023, *Scaffolding Erection, Modification and Dismantling Guidelines,* is a violation of 10 CFR 50 Appendix B Criterion V. This violation is being treated as a non-cited violation, consistent with the Interim Enforcement Policy for pilot plants. **(NCV 50-354/00-01-01)**

.2 Safety Auxiliary Cooling System (SACS) Heat Exchanger

a. Inspection Scope

The inspectors performed daily control room panel walkdowns and observed safety system alignments.

b. Observations and Findings

On February 25, the NRC resident inspectors questioned the position of a service water (SW) outlet valve (EA-HV-2355A) to the A2 SACS heat exchanger. The valve was closed and in MANUAL. The valve should normally remain in AUTO. The control room operators immediately recognized that they had failed to follow procedure HC.OP-SO.EG-0001, *Safety and Turbine Auxiliaries Cooling Water System Operation*, in that they had failed to restore the valve in AUTO after completing a SACS system evolution. The operators placed the valve in AUTO after it had remained in MANUAL for about forty minutes.

PSEG considered the A2 SACS heat exchanger inoperable during this time. Fortuitously, the plant configuration was such that redundant SACS components and associated SW components were operable, and this alignment was allowed by technical specifications. The valve in MANUAL would have performed as designed during a loss of offsite power event or a loss of coolant accident. However, the valve would have remained closed and would not have operated as designed from a refuel floor or reactor building exhaust high radiation signal.

This issue was considered a green finding with minimal impact on safety as determined by the Significance Determination Process. Specifically, the redundant SACS and SW components were operable and the condition existed for only about forty minutes compared to a technical specification allowed outage time of 72 hours. This procedure violation is being treated as a non-cited violation, consistent with the Interim Enforcement Policy for pilot plants. This violation is in the corrective action program as Notification 20021563. **(NCV 50-354/00-01-02)**

.3 Redundant Equipment

a. Inspection Scope

The inspectors performed alignment verifications on redundant equipment during system outages on the D station SW pump, the D-D-411 125Vdc battery, and the 1AF-104 air dryer. Additionally, the inspectors reviewed various corrective action notifications associated with equipment alignment issues (20021198, 20011450, 20020310, 20023718, 20020016, 20020855, and 20021134).

b. Observations and Findings

There were no findings identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors performed walkdowns of the control rod drive (CRD) pump room (risk significant because a CRD pump room fire may cause a complete loss of electrical division II cables), the remote shutdown panel room, and the 4kV safety-related infeed offsite line bus ducts. The inspectors also reviewed the existing electrical isolation for the emergency diesel generators between the control room and the local control panels. Additionally, the inspectors reviewed several notifications associated with fire protection issues (20021336, 20019263, 20019355, 20019791, and 20019852).

b. Observations and Findings

There were no findings identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed all corrective action notifications initiated in November 1999 for maintenance rule screening. The inspectors further reviewed eight notifications that included system engineer functional failure determinations (20013250, 20012932, 20011721, 20011934, 20012175, 20011840, 20011675, and 20011596). In addition, the inspectors reviewed Notification 20006769/RHR heat exchanger SACS return valve failed to open and Notification 20006096/HPCI transmitter failure. The inspectors also reviewed two notifications (200222680, 20022682) concerning implementation of maintenance rule tasks.

b. Observations and Findings

There were no findings identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors evaluated PSEG's on-line risk management for the D station SW pump replacement, the A RHR subsystem outage, and the 1AF104 instrument air dryer outage. The inspectors observed emergent work on the D SW pump discharge valve actuator and an emergent leak, not able to be isolated at power, on an instrument air header. In addition, the inspectors reviewed notifications involving emergent work related to A control room vent train trip (20020539) and erratic drywell temperature indications (20019363).

b. Observations and Findings

There were no findings identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed an operability determination for spurious tripping of the A safety-related panel room chilled water circulating pump that occurred on February 7, 2000.

b. Observations and Findings

There were no findings identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed the operator work-around list, corrective action notifications, operator logs, and instrument panel status to evaluate potential impacts on the operators' ability to implement abnormal or emergency operating procedures.

b. Observations and Findings

There were no findings identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed the results of post maintenance tests associated with the D station SW pump replacement, hydraulic control unit accumulator and scram solenoid pilot valve replacements, the A control room emergency filtration train interlock fuse module replacement, and the A emergency diesel generator outage.

b. Observations and Findings

There were no findings identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed portions of and reviewed the results of the reactor core isolation cooling (RCIC) pump quarterly inservice test, the A emergency diesel generator 24-hour operability run, and a drywell high pressure indicating switch, B21-N694E, calibration functional test. Pressure switch B21-N694E provides input to core spray, low pressure coolant injection, and HPCI initiation logics. The inspectors also reviewed notifications concerning problems encountered during surveillance testing (20021142, 20021199, 20020222, and 20021194).

b. Observations and Findings

There were no findings identified.

2. RADIATION SAFETY
Cornerstone: Occupational Radiation Safety

2OS1 Access Control

a. Inspection Scope

The inspector reviewed the access control program by examining the controls established for exposure significant areas, including postings, markings, control of access, dosimetry, surveys and alarm set points. Areas selected were located in the reactor, turbine and radwaste/services buildings.

b. Observations and Findings

There were no findings identified.

2OS2 ALARA Planning and Controls

a. Inspection Scope

The inspector reviewed 1999 work planning and results. Selected jobs which exceeded their exposure estimates were examined relative to: work integration; coordination between working groups; shielding and other engineering controls to minimize exposures; accuracy of person-hour and effective dose rate estimates; post-job reviews; and, ALARA reports. The inspector also reviewed preparations for the upcoming April 2000 refueling outage (RF09).

b. Observations and Findings

There were no findings identified.

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

The inspector reviewed process radiation monitoring instrumentation, based on a listing of these devices found in the Updated Final Safety Analysis Report (UFSAR). These included monitors for: main steam line; refueling floor exhaust; reactor building exhaust;

drywell atmosphere post-accident; turbine building exhaust; radwaste exhaust; reactor auxiliaries cooling; turbine building circulating water; personnel airlock; safeguards instrument room; reactor water clean-up demineralizer system equipment area; spent fuel pool area, technical support center; and, radwaste drum shipping area. Records reviewed included the most recent calibration and channel functional tests performed.

b. Observations and Findings

There were no findings identified.

4. OTHER ACTIVITIES [OA]

4OA1 Identification and Resolution of Problems

Inspection findings in previous sections of this report also had implications regarding PSEG's identification, evaluation, and resolution of problems, as follows:

a. Section 1R04.1 - Failure to properly install and control scaffolding resulting in adverse impact on safety-related equipment. This demonstrated weak identification of a configuration control problem.

b. Section 1R04.2 - Failure to follow procedure resulting in SW valve misalignment. This demonstrated weak identification of an equipment control deficiency.

Additional items associated with PSEG's corrective action program were reviewed without findings and are listed in Sections 1R04, 1R05, 1R12, 1R13, 1R16, and 1R22 of this report.

4OA2 Performance Indicator Verification

Occupational Radiation Safety

a. Inspection Scope

The inspector reviewed performance indicator (PI) data submitted by PSEG in the area of occupational radiation safety. The data reviewed represented a sampling of records from July 15, 1999 through February 10, 2000, for occurrences of non-conformance with high radiation areas greater than 1 Rad per hour (1 R/hr) and unplanned personnel exposures greater than 100 millirem total effective dose equivalent (TEDE), 5 rem shallow dose equivalent (SDE), 1.5 rem lens dose equivalent (LDE) or 100 millirem to the unborn child.

b. Observations and Findings

There were no findings identified.

4OA5 Management Meetings

a. Exit Meeting Summary

On March 9, 2000, the inspectors presented their overall findings to members of PSEG Nuclear management led by Mr. Mark Bezilla. PSEG Nuclear management acknowledged the findings presented and did not contest any of the inspectors' conclusions. Additionally, they stated that none of the information reviewed by the inspectors was considered proprietary.

During this inspection, the NRC identified two non-cited violations as discussed in the report. If PSEG chooses to contest these NCVs, a response should be provided 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, and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001, and the NRC Resident Inspector at the Hope Creek facility.

ITEMS OPENED AND CLOSED

Opened/Closed

50-354/00-01-01	NCV	Failure to properly install and control scaffolding resulting in adverse impact on safety-related equipment. (Section 1RO4.1)
50-354/00-01-02	NCV	Failure to follow procedure resulting in SW valve misalignment. (Section 1RO4.2)

LIST OF ACRONYMS USED

ALARA	As Low As Is Reasonably Achievable
CRD	Control Rod Drive
ECCS	Emergency Core Cooling System
HPCI	High Pressure Coolant Injection
LDE	Lens Dose Equivalent
NRC	Nuclear Regulatory Commission
PDR	Public Document Room
PI	Performance Indicator
PSEG	Public Service Electric Gas
RF09	Refueling Outage
RHR	Residual Heat Removal
SDE	Shallow Dose Equivalent
SACS	Safety Auxiliary Cooling System
SDP	Significance Determination Process
SW	Service Water
TEDE	Total Effective Dose Equivalent
UFSAR	Updated Final Safety Analysis Report

ATTACHMENT 1

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	**Radiation Safety**	**Safeguards**
! Initiating Events	! Occupational	! Physical Protection
! Mitigating Systems	! Public	
! Barrier Integrity		
! Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.