

March 8, 2001

Mr. Harold W. Keiser
Chief Nuclear Officer and President
PSEG Nuclear LLC - X04
P.O. Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK NUCLEAR GENERATING STATION - NRC INSPECTION
REPORT 05000354/2001-003

Dear Mr. Keiser:

On February 10, 2001, the NRC completed an inspection of your Hope Creek facility. The enclosed report presents the results of that inspection. The preliminary findings were presented to PSEG management led by Mr. Pete Tocci in an exit meeting on February 14.

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 six weeks of resident inspection, two region-based inspections of occupational radiation safety and public radiation safety performance indicator verification, and one in-office review of Physical Security Plan changes.

The inspectors identified an issue of very low safety significance (Green) related to the possible interaction of two scaffolds on instrumentation. The issue was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it has been entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation (NCV), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this non-cited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, and the NRC Resident Inspector at the Hope Creek facility.

Mr. Harold W. Keiser

2

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

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

Docket No: 05000354
License No.: NPF-57

Enclosure: Inspection Report 05000354/2001-003

cc w/encl:

E. Simpson, Senior Vice President and Chief Administrative Officer
M. Bezilla, Vice President - Technical Support
D. Garchow, Vice President - Operations
G. Salamon, Manager - Licensing
R. Kankus, Joint Owner Affairs
J. J. Keenan, Esquire
Consumer Advocate, Office of Consumer Advocate
F. Pompper, Chief of Police and Emergency Management Coordinator
M. Wetterhahn, Esquire
State of New Jersey
State of Delaware

Mr. Harold W. Keiser

3

Distribution w/encl:
 Region I Docket Room (with concurrences)
 J. Schoppy - NRC Resident Inspector
 H. Miller, RA
 J. Wiggins, DRA
 G. Meyer, DRP
 R. Barkley, DRP
 C. O'Daniell, DRP
 L. Privity, DRS
 J. Shea, OEDO
 E. Adensam, NRR
 J. Clifford, NRR
 R. Ennis, PDI-2, NRR

DOCUMENT NAME: C:\HC2001-003.wpd

After declaring this document "An Official Agency Record" it **will** be released to the Public.

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		GMeyer						
DATE	02/15/01		03/08/01		03/ /01		03/ /01		03/ /01

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

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

Report No: 05000354/2001-003

Licensee: PSEG Nuclear LLC

Facility: Hope Creek Nuclear Generating Station

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

Dates: December 31, 2000 - February 10, 2001

Inspectors: Joseph G. Schoppy, Jr., Senior Resident Inspector
Christopher G. Cahill, PE, Resident Inspector
Gregory C. Smith, Senior Physical Security Inspector
Joseph T. Furia, Senior Health Physicist
Leonard S. Cheung, Senior Reactor Inspector
Jason C. Jang, Senior Radiation Specialist

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

Summary of Findings

IR 05000354-01-03, on 12/31/2000 - 2/10/2001 Public Service Electric Gas Nuclear LLC, Hope Creek Generating Station. Operability Evaluations.

This inspection involved six weeks of resident inspection, two region-based inspections of occupational radiation safety and public radiation safety performance indicator verification, and one in-office review of Physical Security Plan changes. This inspection identified one green issue, which was also a non-cited violation. The significance of the finding is indicated by its color (Green, White, Yellow, or Red) and was determined by the Significance Determination Process (SDP) in Inspection Manual Chapter 0609 (see Attachment 1).

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Non-Cited Violation for failure to erect scaffolds in accordance with procedural requirements. Two scaffolds were found attached to four instrument racks containing safety-related instruments. Additional loading to the instrument racks could impact the seismic qualification of those racks. The finding was of very low safety significance because the post-safe shutdown earthquake (SSE) shutdown capability would not be affected. (Section 1R15.1)

B. Licensee Identified Findings

The inspectors did not review any licensee identified violations.

TABLE OF CONTENTS

1.	REACTOR SAFETY	1
	R01 Adverse Weather Protection	1
	R04 Equipment Alignment	1
	.1 Standby Liquid Control System Walkdown	1
	.2 Emergency Diesel Generator Outage	2
	R05 Fire Protection	2
	R06 Flood Protection Measures	3
	R07 Heat Sink Performance	3
	R11 Licensed Operator Requalification	3
	R12 Maintenance Rule Implementation	4
	R13 Maintenance Risk Assessments and Emergent Work Control	4
	R15 Operability Evaluations	5
	.1 Scaffolding Attached to Instrument Racks	5
	.2 Operability Determination Reviews	6
	R16 Operator Workarounds	6
	R19 Post Maintenance Testing	7
	.1 Emergency Diesel Generator Testing	7
	.2 Review of PMT Results	8
	R22 Surveillance Testing	8
	.1 Emergency Diesel Generator and Power Distribution	8
	.2 B and D Core Spray Pump Testing	9
	.3 Primary Containment Integrity Verification	9
2.	RADIATION SAFETY	10
	OS1 Access Control	10
	OS2 ALARA Planning and Controls	11
	OS3 Radiation Monitoring Instrumentation	11
3.	SAFEGUARDS	12
	PP4 Security Plan Changes	12
4.	OTHER ACTIVITIES	12
	OA1 Performance Indicator Verification	12
	.1 RETS/ODCM Radiological Effluent Occurrences	12
	.2 Emergency AC Power System Unavailability	13
	.3 High Pressure Coolant Injection System Unavailability	13
	OA2 Identification and Resolution of Problems	13
	OA6 Management Meetings	13
	a. Exit Meeting Summary	13
	SUPPLEMENTAL INFORMATION	14
	a. Key Points of Contact	14
	b. List of Items Opened, Closed, and Discussed	14
	c. List of Documents Reviewed	14
	d. List of Acronyms	15

ATTACHMENT 1 16
NRC's REVISED REACTOR OVERSIGHT PROCESS 16

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 power reductions on January 7 for a rod pattern adjustment and February 4 for turbine valve testing and B feedwater train maintenance.

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

R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed several notifications involving adverse weather protection (20051961, 20051962, 20054814, and 20054817).

b. Issues and Findings

No findings of significance were identified.

R04 Equipment Alignment

.1 Standby Liquid Control System Walkdown

a. Inspection Scope

The inspectors performed a complete equipment alignment check on the standby liquid control system to verify that the system was properly configured and to identify any discrepancies that might impact the function of the system. The alignment check included a review of documents to determine the correct system lineup and a field walkdown to identify any discrepancies between the existing lineup and the prescribed lineup. Specifically the following documents and procedures were reviewed:

- OP-EO.ZZ-304(Q), *Boron Injection Using RWCU*
- HC.OP-SO.BH-001(Q), *Standby Liquid Control System Operation*
- System Health Report Standby Liquid Control (SLC) System - BH, Period 7/1/00 to 9/30/00
- HC.OP-IS.BH-001(Q), *Standby Liquid Control Pump-AP208 - Inservice Test*
- HC.OP-IS.BH-002(Q), *Standby Liquid Control Pump-BP208 - Inservice Test*

The inspectors also reviewed various corrective action notifications associated with equipment alignment deficiencies and the standby liquid control system (20033605, 20039619, 20051225, and 20052487).

b. Issues and Findings

No findings of significance were identified.

.2 Emergency Diesel Generator Outage

a. Inspection Scope

The inspectors performed an equipment alignment verification on redundant equipment during an A emergency diesel generator (EDG) planned outage. The inspectors verified by plant walkdowns and main control room tours that the A EDG work did not adversely affect the redundant EDGs and that all emergency core cooling systems on the B, C, and D buses remained operable. The inspectors also verified that the A EDG was restored to an operable condition after the planned maintenance was complete. Additionally, the inspectors reviewed various corrective action notifications associated with equipment alignment deficiencies (20051762, 20052021, 20052487, and 20054954).

b. Issues and Findings

No findings of significance were identified.

R05 Fire Protection

a. Inspection Scope

The Hope Creek Individual Plant Examination for External Events (IPEEE), table 4.31, *Fire IPEEE Results by Initiating Event*, lists the loss of offsite 4kV power as the second highest contributor to core damage frequency. As a result of this risk insight, the inspectors walked down the areas associated with the 4kV phase bus feeds from the 1AX501 and 1BX501 station service transformers to the class 1E buses.

Specifically, the inspectors performed walkdowns of the turbine building (rooms 1315, 1316, and 1317), the radwaste building (rooms 3311, 3312, 3328, and 3330), and the control/diesel building (rooms 5301, 5335, and 5339.) The inspectors also reviewed fire protection impairment reports and several notifications associated with fire protection deficiencies (20013926, 20052353, 20052600, 20052810, 20053808, 20054201, 20055468, and 20056018).

b. Issues and Findings

No findings of significance were identified.

R06 Flood Protection Measures

a. Inspection Scope

The inspectors evaluated operator action in response to a degraded service water intake structure flood protection watertight door (notification 20053334). The inspectors reviewed preventive maintenance procedure HC.MD-PM.ZZ-0007, *Missile Resistant and Watertight Doors P.M.* and various corrective action notifications associated with flood protection (20052595, 20052595, and 20053334).

b. Issues and Findings

No findings of significance were identified.

R07 Heat Sink Performance

The inspectors reviewed the safety auxiliaries cooling system (SACS) heat exchanger performance trending completed through January 1, 2001, to verify that the results were within the range of expected heat exchanger degradation. Specifically, the following documents and procedures were reviewed:

- HC.OP-FT.EA-001(Q), *Validating SSWS Flow Through SACS HXS*
- *System Health Report SACS-EG, Period 7/1/00 to 9/30/00*
- Work Order 30031010, *92D Press Test - SACS Heat Exchanger Flow*

The inspectors also reviewed various corrective action notifications associated with heat sink performance (20049930, 20051170, 20054471, 20054472, 20055614).

b. Issues and Findings

No findings of significance were identified.

R11 Licensed Operator Requalification

- a. The inspectors observed one simulator training scenario to assess operator performance and training effectiveness. The scenario involved the risk significant operator actions in response to a complete closure of the main steam isolation valves. The inspectors assessed simulator fidelity and observed the simulator instructor's critique of operator performance. Proper procedure usage, communications, and briefing were the primary focus areas critiqued for the scenario. The inspectors also reviewed notification 20053641 involving a simulator training issue.

b. Issues and Findings

No findings of significance were identified.

R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed all corrective action notifications initiated from September 16 to November 8, 2000, for Maintenance Rule screening. The inspectors further reviewed six notifications that included system engineer functional failure determinations (20040467, 20043042, 20043442, 20043649, 20044733, and 20044964), four maintenance preventable functional failure evaluations (70010473, 70012018, 70013434, and 70013688), and two notifications involving PSEG Nuclear's implementation of their Maintenance Rule program (20052157 and 20053791). The inspectors also reviewed the 1E 125 Vdc and core spray system health reports and discussed system reliability and availability monitoring with the respective system engineers.

To assess PSEG Nuclear's implementation of 10 CFR 50.65 *Maintenance Rule* requirements, the inspectors reviewed the following documents:

- SE.MR.HC.02, *System Function Level Maintenance Rule VS Risk Reference*
- NRC Regulatory Guide 1.160, *Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Revision 2*
- NUMARC 93-01, *Industry Guideline For Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Revision 2*

b. Issues and Findings

No findings of significance were identified.

R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated on-line risk management during concurrent planned maintenance on the high pressure coolant injection (HPCI) system and the A filtration, recirculation, and ventilation system (FRVS). The inspectors reviewed maintenance risk evaluations, work schedules, recent corrective action notifications, and control room logs to verify that other concurrent planned and emergent maintenance or surveillance activities did not adversely affect the plant risk already incurred with the HPCI and A FRVS maintenance. The inspectors also reviewed operator action and risk management following an unexpected isolation of several backdraft dampers. Although there was no immediate adverse impact on safety-related equipment, continued ventilation isolation to several of the affected rooms could have quickly caused temperature concerns. The inspectors reviewed the associated corrective action report (notification 20055118) and observed operations' self-critique of their recovery actions. In addition, the inspectors reviewed other notifications involving risk assessment and emergent work (20052187, 20052745, 20055058, 20055134, 20055453, 20055489, 20055614, and 20056021).

To assess PSEG Nuclear's risk management, the inspectors reviewed the following documents:

- SE.MR.HC.02, *System Function Level Maintenance Rule VS Risk Reference*
- HCGS PSA Risk Evaluation Forms for Work Week Nos. 156 - 161
- SH.OP-AP.ZZ-108, *On-Line Risk Assessment*
- *EOOS Training for Operators* [equipment out of service risk monitor training]
- NRC Regulatory Guide 1.182, *Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants*
- Section 11, *Assessment of Risk Resulting from Performance of Maintenance Activities*, dated February 11, 2000, of NUMARC 93-01, *Industry Guideline For Monitoring the Effectiveness of Maintenance at Nuclear Power Plants*

b. Issues and Findings

No findings of significance were identified.

R15 Operability Evaluations

.1 Scaffolding Attached to Instrument Racks

a. Inspection Scope

During a field walk-down in the reactor building, the inspectors identified a scaffold that was attached to safety-related instrument racks. Subsequently, PSEG Nuclear identified a second scaffold with a similar configuration. The inspectors reviewed Station Procedure SH.MD-AP.ZZ-0023(Q), *Scaffolding Erection, Modification and Dismantling Guidelines*, dated September 21, 2000, and discussed the scaffolding configuration with responsible PSEG Nuclear personnel to assess the impact on safety-related equipment. The inspectors also reviewed associated plant drawings and the operability determination (70013888) for the affected instrument racks.

b. Issues and Findings

The inspectors identified a Non-Cited Violation for failure to erect scaffolds in accordance with procedural requirements. Two scaffolds were found attached to four instrument racks containing safety-related instruments. Additional loading to the instrument racks could have affected the seismic qualification of those racks. The finding was determined to be Green (of very low safety significance) using Phase 1 of the SDP because the post-safe shutdown earthquake (SSE) shutdown capability would not have been affected.

On January 16, 2001, the inspectors observed that Scaffold 5114 was attached (in two places the attachments were bolted) to three instrument racks (10C-208, -211, -212)

that contained reactor core isolation cooling system (RCIC) instruments which were required for a safe shutdown. The scaffold was erected through Work Order 99061809, a 1999 work order. Further field walkdown by PSEG Nuclear indicated that Scaffold 6777 was also attached to an instrument rack (10C-018) in the HPCI area. The affected instrument rack contained Channel A residual heat removal (RHR) instruments required for Channel A automatic depressurization system initiation. PSEG Nuclear promptly issued notification 20053887 into their corrective action program and removed the two scaffolds. PSEG Nuclear completed an engineering evaluation and determined that the affected instruments could still perform their safety function following a postulated SSE.

Station Procedure SH.MD-AP.ZZ-0023(Q), *Scaffolding Erection, Modification and Dismantling Guidelines*, Section 5.5.6 required the scaffolding and bracing members to have a minimum clearance of 4 inches from all safety-related components. PSEG Nuclear attributed the cause for this deficiency to a misinterpretation of the scaffolding procedure. This issue is being treated as a Non-Cited Violation consistent with Section VI.A of the Enforcement Policy, issued on May 1, 2000 (65 FR 25368) **(NCV 05000354/2001-003-01)**.

.2 Operability Determination Reviews

a. Inspection Scope

The inspectors reviewed operability determinations involving an apparent RCIC testable check valve failure (notification 20051671) and an inoperable bailey logic cabinet cooling fan (notification 20051782). The inspectors also reviewed all other PSEG Nuclear identified safety-related equipment deficiencies during this report period and assessed the adequacy of the operability screenings.

b. Issues and Findings

No findings of significance were identified.

R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed corrective action notifications, operator logs, and instrument panel status to evaluate potential impacts on the operators' ability to implement abnormal or emergency operating procedures. The inspectors evaluated the cumulative effects of operator workarounds as related to (1) the reliability, availability, and potential for mis-operation of plant systems; (2) the potential to increase an initiating event frequency or to affect multiple mitigating systems; and (3) operator ability to respond in a correct and timely manner to plant transients and accidents. In addition, the inspectors reviewed two notifications involving PSEG Nuclear's Operator Burden Program (20040682 and 20053385).

The inspectors also reviewed the following documents:

- Condition Resolution Operability Determination Notebook
- Inoperable Instrument/Alarm/Indicators/Lamps/Device Log
- Inoperable Computer Point Log
- Hope Creek Operator Workarounds List
- Hope Creek Operator Concerns List
- Operator Burden Program (SH.OP-AP.ZZ-0030)

b. Issues and Findings

No findings of significance were identified.

R19 Post Maintenance Testing

.1 Emergency Diesel Generator Testing

a. Inspection Scope

The inspectors witnessed portions of the A EDG post maintenance testing (PMT) and reviewed the test data. The inspectors reviewed NC.NA-TS.ZZ-0050, *Maintenance Testing Program Matrix*, and verified that the PMTs were adequate for the scope of maintenance performed. The inspectors also reviewed notifications concerning problems encountered during these PMTs (20053101, 20053066, and 20053102).

Problems encountered during the PMTs resulted in an extended outage of the A EDG. PSEG Nuclear recognized midway through their EDG allowed outage time (72 hours) that the work needed to restore EDG operability may not have been completed within the Technical Specification (TS) 3.8.1.1 required time. On January 10, 2001, PSEG Nuclear initiated a conference call with the NRC to discuss possible enforcement discretion to avoid an unnecessary plant transient. The discussion focused on the apparent root causes of the failures, status of the repair efforts, conditional core damage probability, and the availability of the remaining EDGs and the offsite electrical system. The NRC verbally granted a Notice of Enforcement Discretion (NOED) on January 10 and documented the NOED in a letter dated January 19, 2001. PSEG Nuclear restored the A EDG to an operable status at 10:09 a.m. on January 11 (without NOED approval, TS 3.8.1.1 would have required the unit to be in HOT SHUTDOWN (reactor shutdown with average coolant temperature > 200°F) by 2:00 p.m. on January 11.

The inspectors observed the associated Hope Creek Station Operations Review Committee meeting and participated in the NOED conference call. The inspectors witnessed portions of the A EDG troubleshooting, corrective maintenance, PMTs, and reviewed the test data. In addition, the inspectors reviewed the root causes for the failures that led to PSEG Nuclear's NOED request.

b. Issues and Findings

No findings of significance were identified.

.2 Review of PMT Results

a. Inspection Scope

The inspectors reviewed the test data following planned maintenance on the B control room emergency filtration system and a RHR heat exchanger sample isolation valve (F079A). The inspectors reviewed NC.NA-TS.ZZ-0050, *Maintenance Testing Program Matrix*, and verified that the PMTs were adequate for the scope of maintenance performed. The inspectors also reviewed notifications concerning problems associated with PMTs (20052664, 20052693, 20052698, 20052747, 20053210, 20053272, 20053349, and 20055513).

The inspectors reviewed the following documents:

- B Control Room Emergency Filtration System Functional Test - Monthly (HC.OP-ST.GK-0003)
- Residual Heat Removal Subsystem A Valves - Inservice Test (HC.OP-IS.BC-0101)

b. Issues and Findings

No findings of significance were identified.

R22 Surveillance Testing

.1 Emergency Diesel Generator and Power Distribution

a. Inspection Scope

The inspectors observed portions of and reviewed the results of EDG testing and power distribution lineups. The inspectors reviewed the test and lineup procedures to verify that applicable system requirements for operability were incorporated correctly into the procedures, acceptance criteria were consistent with the technical specification and updated final safety analysis requirements, and the systems were capable of performing their intended safety functions. The inspectors also reviewed notifications concerning problems encountered during surveillance testing (20051592, 20051671, 20052907, 20053150, 20053300, 20054471, 20054902, 20054999, 20055213, 20056021, and 20056025).

The inspectors reviewed the following documents:

- *Emergency Diesel Generator CG400 Operability Test - Monthly (HC.OP-ST.KJ-0001)*

- *Power Distribution Lineup - Weekly (HC.OP-ST.ZZ-001)*

b. Issues and Findings

No findings of significance were identified.

.2 B and D Core Spray Pump Testing

a. Inspection Scope

The inspectors observed the surveillance test from the control room and reviewed the results of the B and D core spray pumps' inservice testing. The inspectors reviewed the test and lineup procedures to verify that applicable system requirements for operability were incorporated correctly into the procedures, acceptance criteria were consistent with the technical specification and updated final safety analysis requirements, and the systems were capable of performing their intended safety functions. The inspectors also reviewed notification number 20044132 concerning problems encountered during testing.

The inspectors reviewed portions of the following documents:

- *B & D Core Spray Pumps - BP206 and DP206 - In Service - Test*
- *Core Spray System Hydraulic Analysis, Calculation No. BE-0016*

b. Issues and Findings

No findings of significance were identified.

.3 Primary Containment Integrity Verification

a. Inspection Scope

The inspectors reviewed the surveillance test results from the operator's monthly primary containment integrity verification. The inspectors reviewed the procedure to verify that the acceptance criteria were consistent with the technical specifications. In addition, the inspectors independently verified (by visual observation) the positions of several core spray, RHR, HPCI, and RCIC containment isolation valves. As a corrective action follow-up to previous deficiencies (see NRC Inspection Report 05000354/99007 Section 4OA3.4), the inspector independently validated the exemption claimed for several posted high radiation areas. The inspectors also reviewed notification number 20052907 concerning a documentation deficiency.

The inspectors reviewed the following document:

- *Primary Containment Integrity Verification - Monthly (HC.OP-ST.ZZ-0002)*

b. Issues and Findings

No findings of significance were identified.

2. RADIATION SAFETY

Occupation Radiation Safety [OS]

OS1 Access Control

a. Inspection Scope

The inspector reviewed the access control program (as required under Hope Creek Technical Specifications and 10 CFR 20.1601) by examining the controls established for exposure significant areas, including postings, markings, control of access, dosimetry, surveys and alarm set points. Controls reviewed included: key control for locked high and very high radiation areas; use of radiation work permits to control access to radiologically significant areas; and pre-job radiological briefings. The inspector focused on controls being utilized for work on the refueling floor (reactor building elevation 201') during the processing of irradiated hardware (requiring very high radiation area controls): replacement of the reactor water clean-up system chemistry sample panel (posted high radiation area); and repairs to the reactor water clean-up system hold pump B (posted high radiation area). The inspector toured areas throughout the radiologically controlled area and verified the postings, barricades and locks (where applicable) for some of the accessible high (19 areas), locked high (13 areas) and very high (12 areas) radiation areas in the reactor, turbine and services/radwaste buildings.

The inspector reviewed recent PSEG Nuclear notifications concerning radiological issues related to control of access to radiologically significant areas. The review focused on observable patterns traceable to similar causes. Notification Nos. 20038557, 20040915, and 20044088 documented instances of improper access and/or control of high radiation areas and improper response to electronic dosimetry alarms.

b. Issues and Findings

No findings of significance were identified.

OS2 ALARA Planning and Controls

a. Inspection Scope

The inspector reviewed the results achieved in occupational exposure reductions during 2000, and reviewed exposure goals established for 2001. In accordance with 10 CFR 20.1101(b), areas reviewed included: a review of the use of low dose waiting areas; review of on-job supervision provided to workers; and a review of individual exposures from selected work groups. The inspector evaluated engineering controls utilized to achieve dose reductions and PSEG Nuclear's source term reduction plans. For 2000 total occupational exposure was 199.5 person-rem against a goal of 245 person-rem. For 2001 no final goal has been established, pending resolution of scope of the Fall 2001 refueling outage.

The inspector reviewed recent PSEG Nuclear notifications concerning radiological issues related to control of occupational exposure. The review focused on observable patterns traceable to similar causes. Notification 20040927 documented an instance of an ALARA concern with work performance in a steam affected area during full power operations.

b. Issues and Findings

No findings of significance were identified.

OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

The inspector reviewed field instrumentation utilized by health physics technicians and plant workers to measure radioactivity, including portable field survey instruments, friskers, portal monitors, and small article monitors. The inspector reviewed instruments in the reactor, turbine, and service/radwaste buildings. Specifically, verification of proper function and certification of appropriate source checks for these instruments which are utilized to ensure that occupational exposures are maintained in accordance with 10 CFR 20.1201.

The inspector reviewed self-contained breathing apparatus equipment used and maintained by PSEG Nuclear. This review included: surveillance records; capabilities for filling and transportation of bottles; and training and qualification of users.

The inspector reviewed recent PSEG Nuclear notifications concerning radiological issues related to the calibration and utilization of radiological instruments. The review focused on observable patterns traceable to similar causes. Notification no. 20041043 documented an instance of a worker with a particle of contamination on their carry bag not being identified until he attempted to exit the protected area.

b. Issues and Findings

No findings of significance were identified.

3. SAFEGUARDS

Physical Protection [PP]

PP4 Security Plan Changes

a. Inspection Scope

An in-office review was conducted of changes to the Physical Security Plan, identified as Revision 14, and submitted to the NRC on July 14, 2000. The review of the plan revision confirmed that the changes were made in accordance with 10 CFR 50.54(p), and did not decrease the effectiveness of the Plan.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

OA1 Performance Indicator Verification

.1 RETS/ODCM Radiological Effluent Occurrences

a. Inspection Scope

The inspector reviewed the following documents to ensure PSEG Nuclear met all guidance for this performance indicator (PI) from the third quarter 1999 to the fourth quarter 2000 (6 quarters):

- monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases;
- quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases; and
- associated procedures.

b. Issues and Findings

No findings of significance were identified.

.2 Emergency AC Power System Unavailability

a. Inspection Scope

The inspectors reviewed the methods used to calculate the PI on *Safety System Unavailability, Emergency AC Power System*, and reviewed the PI data through December 2000. The inspectors reviewed the limiting condition for operation logs and control room operating logs for the months of October through December 2000. In addition, the inspectors reviewed PSEG Nuclear's Maintenance Rule electronic databases and Licensee Event Reports for 2000.

b. Observations and Findings

No findings of significance were identified.

.3 High Pressure Coolant Injection System Unavailability

a. Inspection Scope

The inspectors verified the methods used to calculate the *High Pressure Coolant Injection System Unavailability* PI and reviewed the data for the period January 1, 2000, through December 31, 2000. The inspectors reviewed limiting condition for operation logs, control room operating logs and Maintenance Rule electronic data bases.

b. Observations and Findings

No findings of significance were identified.

OA2 Identification and Resolution of Problems

An inspection finding in Section 1R15.1 of this report also had implications regarding PSEG Nuclear's identification, evaluation, and resolution of problems, as follows:

- Failure to erect scaffolding in accordance with procedural requirements. This demonstrated weak identification of a configuration control deficiency.

Additional items associated with PSEG Nuclear's corrective action program were reviewed without findings and are listed in Sections 1R04, 1R05, 1R06, 1R07, 1R11, 1R12, 1R13, 1R15.2, 1R16, 1R19, 1R22, OS1, OS2, and OS3 of this report.

OA6 Management Meetings

a. Exit Meeting Summary

On February 14 the inspectors presented their overall findings to members of PSEG Nuclear led by Mr. Pete Tocci. PSEG Nuclear management stated that none of the information reviewed by the inspectors was considered proprietary.

SUPPLEMENTAL INFORMATION

a. Key Points of Contact

Mike Dammann, Maintenance Manager - Controls & Power Distribution
 Matt Conroy, Maintenance Rule Supervisor
 Kurt Krueger, Operations Manager
 Lou Santilli, Production Engineering Manager
 Devon Price, Assistant Operations Manager
 Gabor Salamon, Licensing Manager
 Larry Wagner, Work Management Department Lead
 T. Cellmer, Radiation Protection Manager
 R. Gary, Support Superintendent
 D. Kelly, Supervisor, Radiation Protection Instrumentation
 R. Krupa, Radiation Protection Instructor
 K. O'Hare, ALARA Superintendent
 B. Sebastian, Radiation Protection Operations Superintendent - Hope Creek
 T. Wallender, Supervisor, Radiation Protection Operations - Hope Creek
 S. Ziegler, ALARA Supervisor - Hope Creek

b. List of Items Opened, Closed, and Discussed

Opened/Closed

050000354/2001-003-01	NCV	Failure to erect scaffolding in accordance with procedural requirements. (Section 1R15.1)
-----------------------	-----	---

c. List of Documents Reviewed

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

Hope Creek Generating Station (HCGS) Updated Final Safety Analysis Report
 Technical Specification Action Statement Log (SH.OP-AP.ZZ-108)
 HCGS NCO Narrative
 HCGS Plant Status Report
 Drawing M-49-1 Reactor Core Isolation Cooling, Revision 28, Dated January 17, 2000
 Drawing M-51-1 Residual Heat Removal, Revision 28, Dated February 9, 1999

d. List of Acronyms

ALARA	As Low As Is Reasonably Achievable
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
FRVS	Filtration, Recirculation, and Ventilation System
HCGS	Hope Creek Generating Station
HPCI	High Pressure Coolant Injection
IPEEE	Individual Plant Examination for External Events
NCV	Non-Cited Violation
NOED	Notice of Enforcement Discretion
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicator
PMT	Post Maintenance Testing
PSEG	Public Service Electric Gas
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
SACS	Safety Auxiliaries Cooling System
SDP	Significance Determination Process
SSE	Safe Shutdown Earthquake
TS	Technical Specification

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

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

Radiation Safety

- Occupational
- Public

Safeguards

- Physical Protection

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.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.