

November 26, 2007

William Levis  
President and CNO  
PSEG Nuclear LLC  
80 Park Plaza, T4B  
Newark, NJ 07102

SUBJECT: HOPE CREEK GENERATING STATION SENIOR REACTOR OPERATOR  
INITIAL EXAMINATION REPORT NO. 05000354/2007-301

Dear Mr. Levis:

This report transmits the results of the Senior Reactor Operator (SRO) licensing examination conducted by the NRC during the period of September 24-28, 2007 and October 1, 2007. This examination addressed areas important to public health and safety and was developed and administered using the guidelines of the "Examination Standards for Power Reactors" (NUREG-1021, Revision 9).

Based on the results of the examination, six Senior Reactor Operator applicants passed all portions of the examination. Two Senior Reactor Operator applicants failed the written examination. The eight applicants included seven instant SROs and one upgrade SRO. Mr. D'Antonio discussed performance insights observed during the examination with Mr. Erv Parker on September 28, 2007. On October 29, 2007, final examination results, including individual license numbers for five of six applicants who passed all portions of the exam, were given during a telephone call between Mr. D'Antonio and Mr. Parker. The final license was withheld pending NRC review of submitted appeals.

In accordance with 10 CFR 2.390 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). These records include the final examination and are available in ADAMS (Master File - Accession Number 062050204; SRO Written - Accession Number ML072920214; SRO Operating Section A - Accession Number ML072920172; SRO Operating Section B - Accession Number ML072920178; and SRO Operating Section C - Accession Number ML072920186, and Facility Post Examination Comments on the Written Exams - not publically available). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Mr. W. Levis

2

Should you have any questions regarding this examination, please contact me at (610) 337-5046, or by E-mail at MDS1@NRC.GOV.

Sincerely,

**/RA/**

Marvin D. Sykes, Chief  
Operations Branch  
Division of Reactor Safety

Docket No: 50-354  
License No(s): NPF-57

Enclosure: Initial Examination Report No. 05000354/2007-301

cc w/encl:

T. Joyce, Senior Vice President, Operations  
G. Barnes, Site Vice President  
K. Chambliss, Director, Nuclear Oversight  
B. Clark, Director of Finance  
J. Perry, Hope Creek Plant Manager  
J. Keenan, General Solicitor, PSEG  
M. Wetterhahn, Esquire, Winston and Strawn, LLP  
Consumer Advocate, Office of Consumer Advocate, Commonwealth of PA  
L. Peterson, Chief of Police and Emergency Management Coordinator  
P. Baldauf, Assistant Director, NJ Radiation Protection Programs  
P. Mulligan, Acting Manager, NJ Bureau of Nuclear Engineering  
H. Otto, Ph.D., Administrator, DE Division of Water Resources  
N. Cohen, Coordinator - Unplug Salem Campaign  
E. Zobian, Coordinator - Jersey Shore Anti Nuclear Alliance

Mr. W. Levis

2

Should you have any questions regarding this examination, please contact me at (610) 337-5046, or by E-mail at MDS1@NRC.GOV.

Sincerely,

**/RA/**

Marvin D. Sykes, Chief  
Operations Branch  
Division of Reactor Safety

Docket No: 50-354  
License No(s): NPF-57

Enclosure: Initial Examination Report No. 05000354/2007-301

cc w/encl:

- T. Joyce, Senior Vice President, Operations
- G. Barnes, Site Vice President
- K. Chambliss, Director, Nuclear Oversight
- B. Clark, Director of Finance
- J. Perry, Hope Creek Plant Manager
- J. Keenan, General Solicitor, PSEG
- M. Wetterhahn, Esquire, Winston and Strawn, LLP
- Consumer Advocate, Office of Consumer Advocate, Commonwealth of PA
- L. Peterson, Chief of Police and Emergency Management Coordinator
- P. Baldauf, Assistant Director, NJ Radiation Protection Programs
- P. Mulligan, Acting Manager, NJ Bureau of Nuclear Engineering
- H. Otto, Ph.D., Adminstrator, DE Division of Water Resources
- N. Cohen, Coordinator - Unplug Salem Campaign
- E. Zobian, Coordinator - Jersey Shore Anti Nuclear Alliance
- E. Parker, Manager, Nuclear Training

**SUNSI Review Complete: JMD (Reviewer's Initials)**

**ADAMS PACKAGE: ML062050204**

**ADAMS ACC#ML073310109**

DOCUMENT NAME: C:\FileNet\ML073310109.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

<b>OFFICE</b>	RI/DRS/OB	RI/DRS/OB	RI/DRS/OB	RI/DRP		
<b>NAME</b>	CJBixler/CJB	JMD'Antonio/JMD	MDSykes/MDS	ALBurritt/ALB		
<b>DATE</b>	11/20/07	11/19/07	11/26/07	11/19/07		

OFFICIAL RECORD COPY

Distribution w/encl:

S. Collins, RA  
M. Dapas, DRA  
M. Gamberoni, DRS  
D. Roberts, DRS  
M. Sykes, DRS  
J. D' Antonio, Chief Examiner, DRS  
D. Lew, DRP  
J. Clifford, DRP  
A. Burritt, DRP  
C. Khan, DRP  
G. Malone, DRP, Senior Resident Inspector  
T. Wingfield, DRP, Resident Inspector  
K. Venuto, DRP, Resident OA  
R. Laufer, RI OEDO  
J. Lubinski, NRR  
H. Chernoff, NRR  
R. Ennis, PM, NRR  
J. Shea, NRR, Backup  
S. Glenn, INPO (GlennSG@Inpo.org)  
ROPreports@nrc.gov  
Region I Docket Room (with concurrences)

Distribution:

DRS Master Exam File (C. Bixler (w/concurrences))  
DRS File

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 50-354

License No: NPF-57

Report No: 05000354/2007-301

Licensee: PSEG Nuclear, LLC

Facility: Hope Creek Generating Station

Dates: October 1, 2007 (Written Examination Administration)  
September 24-28, 2007 (Operating Test Administration)  
October 8-29, 2007 (Examination Grading)  
October 8, 2007 (Final facility post exam comments - end of  
Examination period)

Examiners: Joseph D'Antonio, Senior Operations Engineer (Chief Examiner)  
Todd Fish, Senior Operations Engineer  
Brian Haagensen, Operations Engineer  
Ray McKinley, Operations Engineer

Approved by: Marvin D. Sykes, Chief  
Operations Branch  
Division of Reactor Safety

## **SUMMARY OF FINDINGS**

ER 05000354/2007301; exam dates 9/24-28, 2007; Hope Creek Generating Station; Initial Senior Reactor Operator (SRO) Licensing Examination. Six of eight applicants passed the examination (No reactor operators, seven SRO instants, and one SRO upgrade).

The examinations were developed by the NRC. The written examinations were administered by the facility and the operating tests were administered by four NRC region-based examiners, including one under instruction. There were no inspection findings of significance associated with the examinations.

## REPORT DETAILS

### 1. REACTOR SAFETY

#### Mitigating Systems - Senior Reactor Operator (SRO) Initial License Examination

##### a. Scope of Review

The NRC examination team developed the written and operating initial examination and together with Hope Creek training and operations personnel verified or ensured, as applicable, the following:

- The examination was prepared and developed in accordance with the guidelines of Revision 9 of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." A review was conducted both in the Region I office and at the Hope Creek plant and training facility. Final resolution of comments and incorporation of test revisions were conducted during and following the onsite preparation week.
- Simulation facility operation was proper.
- A test item analysis was completed on the written examination for feedback into the systems approach to training program.
- Examination security requirements were met.

The NRC examiners administered the operating portion of the examination to all applicants from September 24, 2007 to September 28, 2007. The written examination was administered by the Hope Creek training staff on October 1, 2007.

##### b. Findings

###### Grading and Results

Six of eight applicants (all SROs) passed all portions of the initial licensing examination. Two of the eight applicants failed the written examination.

Facility and applicant comments and NRC resolution are provided as Attachment 2.

###### Examination Administration and Performance

No findings of significance were identified.

Enclosure

#### 4OA6 Exit Meeting Summary

On October 29, 2007 the NRC provided conclusions and examination results to Hope Creek management representatives via telephone. License numbers for five of the six applicants who passed all portions of their examinations were also provided during this time. The license number for the remaining applicant was withheld pending NRC review of appeals from the failed applicants due to the possibility of appeal resolution adversely affecting this applicant's written examination result. Mr. Erv Parker of the licensee's training staff was informed that if the appeal period expires or appeal evaluation indicates no potential for changing the written result, the license would be issued to the final passing applicant.

The NRC expressed appreciation for the cooperation and assistance that was provided during the preparation and administration of the examination by the licensee's training staff.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

A1-1

**ATTACHMENT**

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

Erv Parker	Manager, Operator Training
Archie Faulkner	Exam Developer/Reviewer

NRC Personnel

Joseph D'Antonio	Senior Operations Engineer
------------------	----------------------------

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

Opened/Closed/Discussed

None

Post Exam Comments

The facility provided four post exam comments endorsed by the training department. Additional comments from the applicants were also provided and are addressed in this attachment.

**Facility Comments:**

Question #44

Facility Comment:

This question was previously used in an NRC exam with a reference provided to determine whether “backup” or “alternate” is the correct terminology for the regulated power supply. Accept two correct answers.

NRC Response:

**Comment accepted.** “A” (alternate) & “C” (backup) will both be considered correct. The examiner reviewed the exhibits provided by the facility and determined that the terminology “alternate” or “backup” are both used depending on the equipment, and it is minutia to require this as memory knowledge.

Question #89

Facility Comment:

The key answer contains actions not specified in the abnormal operating procedure. Delete question, no correct answer.

NRC Response:

**Comment not accepted.** The key answer states what the procedure step “TERMINATE all Fuel Movement...” means in the context of the conditions provided in the question stem.

Question #87

Facility Comment:

The key answer is correct; however, there is no procedural guidance to perform these actions.

NRC Response:

**Comment not accepted.** This issue was recognized during validation, and the facility accepted the NRC modification to clearly word the question to ask what is permitted by Technical Specifications. The key answer is correct, and the facility comment is insufficient basis to delete the question.

Question #91

Facility Comment:

The key answer is an abnormal procedure subsequent action, which the applicants are not expected to know from memory. Delete the question.

NRC Response:

**Comment not accepted.** The applicant is correct in that there is no NRC expectation that subsequent actions be memorized. However, the key answer can be determined based on knowledge of the operation of the Traversing Incore Probe system and evaluation of the conditions in the question stem. Memorization of subsequent actions is not necessary to answer the question.

**Applicant Comments:**

Question #6:

Applicant Comment:

To determine the answer to this question requires knowledge of abnormal procedure subsequent actions, which are not required memory actions.

NRC Response:

**Comment not accepted.** The applicant is correct in that there is no NRC expectation that subsequent actions be memorized. However, the key answer can be determined from a knowledge of mitigating strategy for a control room evacuation, and does not require memorization of detailed procedural steps.

Question #18

Applicant Comment:

The question states that an emergency declaration has been made. This implies that initial transient response, including plant announcements (the key answer), have been made. Accept "A - states and counties" as a second correct answer.

NRC Response:

**Comment accepted.** The question states that a Site Area Emergency has been declared, and the examiner determined that the applicant's logic is correct - it is reasonable to conclude that plant page announcements of the casualty would have been made by the time an Event Classification Guide evaluation was performed.

Question #51:

Applicant Comment:

The Residual Heat Removal (RHR) check valve referred to in the question is not a major component, delete question due to lack of a Piping & Instrument Diagram (P&ID) reference.

NRC Response:

**Comment not accepted.** The question specifies the component by noun name and the question is technically valid. Lack of a P&ID for the applicant is insufficient basis to delete the question.

Question #70:

Applicant Comment:

It is not reasonable to have students know High Pressure Coolant Injection (HPCI) room cooler impact on HPCI operability from memory. Technical Specifications do not specifically identify the room coolers. Delete question or accept two correct answers.

NRC Response:

**Comment not accepted.** The NRC considers it reasonable for license applicants to understand the need for support systems for equipment operability despite the fact that individual component Technical Specifications do not list all associated support systems. This question is supported by both the lesson objective and Knowledge/Ability value and is technically correct.

Question #78:

Applicant Comment:

The stem included indications of Shutdown Cooling (SDC) core bypass flow or inadequate core mixing. Accept raising vessel level as a second correct answer or delete question due to no answer addressing core bypass. Precaution 3.2.8 of HC-OP-SO.BC-0002 states that if there is indication that RHR Heat Exchanger (HX) inlet temperature is not indicative of actual bulk coolant temperature, refer to HC.OP-AB.RPV-009, which provides no actions consistent with the answer choices.

NRC Response:

**Comment not accepted.** Vessel level stated in the stem is already adequate in accordance with the procedures referenced by the applicant. SDC flow is not adequate. Precaution 3.2.6 of HC-OP-SO.BC-0002 states that maintaining rated SDC flow is essential to ensure RHR HX inlet temperature is representative of actual bulk coolant temperature, and therefore correcting this flow inadequacy is the appropriate response. The key answer is correct.

Question #92:

Applicant Comment:

Accept "A" as a second correct answer. The inadvertent HPCI initiation in the stem will cause a significant level transient for which "A - reduce feedwater flow ..." is an immediate action.

NRC Response:

**Comment not accepted.** The Reactor Level Control AB referenced by the applicant would be entered for an unanticipated level increase; however, the requested answer is the immediate action for an automatic level control malfunction. The question states the actual malfunction - inadvertent HPCI initiation. This malfunction is addressed in the Reactor Power AB, for which the immediate action is the key answer and subsequent action is to throttle HPCI. Neither procedure calls for the operator to take manual control of feedwater in an attempt to outperform a functional automatic control system.

---

**ES 501 Simulation Facility Report**

---

Facility Licensee: Hope Creek  
Facility Docket No: 50-354  
Operating Tests Administered on: 9/24-9/28, 2007

This form is to be used only to report observations. These observations do not constitute audit or inspection findings and, without further verification and review, are not indicative of noncompliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information that may be used in future evaluations. No licensee action is required in response to these observations.

While conducting the simulator portion of the operating test, examiners observed the following items:

- The simulator “locked up” prior to the completion of the last task of scenario 1, which was to place suppression pool cooling in service. This had no impact on the evaluation since for all runs of the scenario. This task had been ordered by the CRS and control manipulations could be evaluated by simulation with the examiner supplying cues to the affected individual.
- During performance of a ventilation JPM, opposite train components activated in response to control manipulations. This was determined to be due to an incorrect connector hookup resulting from preparations to relocate the simulator.

NUREG-1021 Revision 9

Attachment