March 20, 2009

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

SUBJECT: HOPE CREEK GENERATING STATION - NRC EXAMINATION REPORT 05000354/2009301

Dear Mr. Joyce:

On February 11, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at Hope Creek Generating Station. The enclosed report documents the examination findings, which were discussed on March 6, 2009, with Mr. Mark Parrish of your training department.

The examination included the evaluation of five applicants for reactor operator licenses, four applicants for instant senior operator licenses and one applicant for an upgrade senior operator license. The written and operating examinations were developed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1. The license examiners determined that all applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

No findings of significance were identified during this examination.

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). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Samuel L. Hansell, Jr., Chief
Operations Branch
Division of Reactor Safety

Docket Nos. 50-354
License Nos. NPF-57

Enclosure: NRC Examination Report 05000354/2009301

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DATE	03/17/09		03/17/09		03/20/09			

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EXAMINATION REPORT
U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Dockets:	50-354
Licenses:	NPF-57
Report :	05000354/2009301
Licensee:	PSEG Nuclear, L.L.C.
Facility:	Hope Creek Generating Station
Location:	P.O. Box 236 Hancock's Bridge, NJ, 08038
Dates:	February 2-18, 2009
Examiners:	Joseph M. D'Antonio, Chief Examiner, Operations Branch Brian Fuller, Operations Engineer Gilbert Johnson, Operations Engineer Joyce Tomlinson, Operations Engineer
Approved By:	Samuel L. Hansell, Jr., Chief Operations Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

ER 05000354/2009301; February 2-18, 2009; Hope Creek Generating Station; Initial Operator Licensing Examination Report.

NRC examiners evaluated the competency of five applicants for reactor operator licenses, four applicants for an instant senior operator license and one applicant for upgrade senior operator licenses at Hope Creek Generating Station. The facility licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1. The written examination was administered by the facility on February 11, 2009. NRC examiners administered the operating tests on February 2-6, 2009. The license examiners determined that all applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations

None.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA5 Other Activities (Initial Operator License Examination)

.1 License Applications

a. Scope

The examiners reviewed all ten license applications submitted by the licensee to ensure the applications reflected that each applicant satisfied relevant license eligibility requirements. The applications were submitted on NRC Form 398, "Personal Qualification Statement," and NRC Form 396, "Certification of Medical Examination by Facility Licensee." The examiner audited all ten of the license applications in detail to confirm that they accurately reflected the subject applicant's qualifications. This audit focused on the applicant's experience and on-the-job training, including control manipulations that provided significant reactivity changes.

b. Findings

No findings of significance were identified.

.2 Operator Knowledge and Performance

a. Examination Scope

On February 11, 2009, the licensee proctored the administration of the written examinations to ten applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on February 18, 2009.

The NRC examination team administered the various portions of the operating examination to all ten applicants on February 2 - 6, 2009. The five applicants for reactor operator licenses participated in two or three dynamic simulator scenarios, in a control room and facilities walkthrough test consisting of eleven system tasks, and an administrative test consisting of four administrative tasks. The four applicants seeking an instant senior operator license participated in three dynamic simulator scenarios, a control room and facilities walkthrough test consisting of ten system tasks, and an administrative test consisting of five administrative tasks. The one applicant for upgrade senior operator license participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of five system tasks, and an administrative test consisting of five administrative tasks.

b. Findings

All ten of the applicants passed all parts of their examination. For the written examinations, the reactor operator applicants' average score was 85.3 percent and ranged from 80 to 93.3 percent, the senior operator applicants' average score was 87 percent and ranged from 80 to 91 percent. The overall written examination average was 86.2 percent. The text of the examination questions, the licensee's examination

analysis, and the licensee's post-examination comments may be accessed in the ADAMS system under the accession numbers noted in the attachment.

Chapter ES-403 and Form ES-403-1 of NUREG 1021 require the licensee to analyze the validity of any written examination questions that were missed by half or more of the applicants. The licensee conducted this performance analysis for nine questions that met these criteria and submitted the analysis to the chief examiner. The licensee requested that the correct answer be changed for one question; the NRC approved this request. The facility comment on this question and the NRC resolution are provided as attachment 2 to this report.

.3 Initial Licensing Examination Development

a. Examination Scope

The facility licensee developed the examinations in accordance with NUREG-1021, Revision 9, Supplement 1. All licensee facility training and operations staff involved in examination preparation and validation were on a security agreement. The facility licensee submitted both the written and operating examination outlines on November 21, 2008. The chief examiner reviewed the outlines against the requirements of NUREG-1021, Revision 9, Supplement 1, and provided comments to the licensee. The facility licensee submitted the draft examination package on December 12, 2008. The chief examiner reviewed the draft examination package against the requirements of NUREG-1021, Revision 9, Supplement 1, and provided comments to the licensee, and conducted an onsite validation of the operating examinations comments during the week of January 4, 2009. The licensee satisfactorily completed comment resolution prior to the actual examination week.

b. Findings

The NRC approved the initial examination outline and advised the licensee to proceed with the operating examination development.

The examiners determined that the written and operating examinations initially submitted by the licensee were within the range of acceptability expected for a proposed examination.

No findings of significance were identified.

.4 Simulation Facility Performance

a. Examination Scope

The examiners observed simulator performance with regard to plant fidelity during the examination validation and administration.

b. Findings

No findings of significance were identified.

.5 Examination Security

a. Examination Scope

The examiners reviewed examination security for examination development and during both the onsite preparation week and examination administration week for compliance with NUREG-1021 requirements. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

The chief examiner presented observations concerning examination conduct to Mr. Ervin Parker, Hope Creek Station Training Manger, and other facility staff personnel in an outbrief on February 6, 2009. Examination results were provided to Mr. Mark Parrish, Operations Training Manager, during a telephone exit meeting on March 6, 2009. License numbers were provided during this call.

The licensee did not identify any information or materials used during the examination as proprietary.

ATTACHMENT 1: SUPPLEMENTAL INFORMATION
ATTACHMENT 2: NRC RESOLUTION OF FACILITY COMMENTS

Attachment 1

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

Mark Parrish, Operations Training Manager
Archie Faulkner, Nuclear Training Instructor

NRC Personnel

Joseph D'Antonio, Senior Operations Engineer

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

NONE

Opened and Closed

NONE

Closed

NONE

Discussed

NONE

ADAMS DOCUMENTS REFERENCED

Accession No. ML090720842 – FINAL-Written Exam
Accession No. ML090720939 – FINAL-Operating Exam

Attachment 2

NRC Resolution of Facility Comments

The facility submitted one post exam comment on the written examination:

Question:

SRO 97
Given the following conditions:

- Reactor Power is at 6%
- Reactor Pressure is being controlled by SRV's at 950 psig
- Reactor Water Level is (-10) inches, slowly lowering
- Drywell Temperature is 355°F, and rising
- Drywell Pressure is 23 psig, and rising
- Suppression Pool Temperature is 115°F, and rising
- Suppression Pool Level is 85 inches, steady
- Suppression Chamber Pressure is 21.7 psig, and rising
- NO operator actions have been taken

Which one of the following action(s) is(are) required?

A. ONLY initiate Drywell Sprays IAW EOP-102.

B. ONLY initiate Drywell Sprays and Suppression Pool Cooling/Sprays IAW EOP-102.

C. Enter EOP-202 and Emergency Depressurize.

D. Place Suppression Pool Cooling/Sprays in service then Emergency Depressurize IAW EOP-202.

Original Answer: C

Facility Comment:

Analysis:

The stem condition presents the plant in an ATWS condition (6%). RPV level is (-10") and lowering slowly, while RPV pressure is being controlled by SRVs at 950 psig. The drywell pressure is at 23 psig and rising and 355 degrees F temperature and rising. The suppression pool is at 85" and steady and 21.7 psig and rising.

The stem states NO operator actions have been taken, therefore RHR has realigned automatically to LPCI mode when drywell pressure reached 1.68 psig.

The above parameters lead the operator to step DW/T-8 of EOP-102 which asks: “Can Drywell Temperature be Restored and Maintained <340F?”.

HC.OP-EO.ZZ-0102, Containment Control, defines the following terms:
Restore – take appropriate action to return the value of an identified parameter to within its specified limits.
Maintain – take appropriate action to hold the value of an identified parameter within specified limits.

“Restore” has operators take action to return drywell temperature to within its stated band. It is only after it is determined that this action did not lower temperature within limits, that it is required to answer ‘NO’ to DW/T-8 and continue to DW/T-9 which requires EOP-202 entry and emergency depressurization. Per HC.OP-EO.ZZ-0102, the definition of Can/Cannot be restored above/below is “the value of the identified parameter(s) is/is not able to be returned to above/below specified limits after having passed those limits. This determination includes the evaluation of both current and future system performance in relation to the current value and trend of the parameter(s). Does not imply any specific time interval but does not permit prolonged operation beyond a limit without taking the specified action.”

Step DWT-7 of EOP-102 states: Initiate one loop of drywell spray at rated flow. Performing all legs of the EOP concurrently, step SP/T-3 states: Operate all available suppression pool cooling. DW/P-5 states: Initiate suppression chamber sprays. Based on these actions, all actions of exam choice ‘B’ are required by EOP-102.

In the drywell, with typical drywell spray flowrates, evaporative cooling process results in an immediate, rapid, large reduction in pressure, and therefore temperature per lesson plan NOH01EO102P-01, HC.OP-EO.ZZ-0102 Primary Containment Control Drywell/Temperature/ Pressure and Hydrogen for step DWT-7.

When the question was originally written and validated answer C was determined to be correct. It was mistakenly overlooked that operators would first take actions to address the EOP step which asks “Can Drywell Temperature be Restored and Maintained <340F?” The “restore” portion of the EOP statement “restore and maintain” was inadvertently not taken into account when originally determining a correct answer for this question.

Conclusion:

Initiating Drywell Spray IAW EOP-102 is the correct action to restore and maintain drywell temperature less than 340F. Initiating Suppression Pool Cooling and Sprays are required by other steps of EOP-102. Therefore “B” is the correct answer.

Recommendation:

Change the answer key to accept choice B as correct.

NRC Resolution:

Accept two correct answers, B and C.
The examiner reviewed the EOP and EOP background document and determined that both the EOP implementation of this step and the facility interpretation of required actions are correct. Given the stem conditions which included drywell temperature above the “restore and maintain” limit but also “NO operator actions taken” to perform EOP required actions for those conditions, it then appears to be a matter of judgment whether the operator should take the time to initiate sprays and evaluate their effectiveness, or if he should immediately ED. Accordingly, the examiner accepted both the original answer and the facility proposed changed answer as correct.