



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

January 18, 2011

Mr. Sam Belcher  
Vice President  
Nine Mile Point Nuclear Station, LLC  
P.O. Box 63  
Lycoming, NY 13093-0063

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT 2 - NRC EXAMINATION  
REPORT 05000410/2010302

Dear Mr. Belcher:

On November 22, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at Nine Mile Point, Unit 2. The enclosed report documents the examination findings, which were discussed on December 22, 2010, with Mr. R. Brown of your staff.

The examination included the evaluation of five applicants for reactor operator licenses and two applicants for instant senior reactor operator licenses. 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 six applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses were issued on December 22, 2010.

No findings 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,

A handwritten signature in black ink, appearing to read "Samuel L. Hansell, Jr.", written in a cursive style.

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

Enclosure: NRC Examination Report 05000410/2010302

cc w/encl: Distribution via ListServ

Docket No. 50-410  
License No. NPF-69

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/RA/

Samuel L. Hansell, Jr., Chief  
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**SUNSI Review Complete: SLH (Reviewer's Initials)**

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ROPReportsResource@nrc.gov  
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**EXAMINATION REPORT**  
**U.S. NUCLEAR REGULATORY COMMISSION**  
**REGION I**

Docket: 50-410

License: NPF-69

Report: 05000410/2010302

Licensee: Constellation Energy Group, LLC

Facility: Nine Mile Point Nuclear Station, Unit 2

Location: Oswego, NY

Dates: November 15 - 18, 2010 (Operating Test Administration)  
November 22, 2010 (Written Examination Administration)  
December 3, 2010 (Licensee Submitted Post Exam Package)  
November 18 – December 14, 2010 (NRC Examination Grading)  
December 22, 2010 (Licenses Issued)

Examiners: T. Fish, Chief Examiner  
B. Fuller, Examiner  
B. Litkett, Examiner  
R. Devercelly, Examiner

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

## SUMMARY OF FINDINGS

ER 05000410/2010302; November 15 - 22, 2010; Nine Mile Point, Unit 2; Initial Operator Licensing Examination Report.

NRC examiners evaluated the competency of five applicants for reactor operator licenses and two applicants for instant senior reactor operator licenses. 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 November 22, 2010. Four NRC examiners administered the operating tests from November 15 - 18, 2010. The license examiners determined that six applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

A. NRC-Identified and Self-Revealing Findings

None

B. Licensee-Identified Violations

None

## REPORT DETAILS

### 4. OTHER ACTIVITIES (OA)

#### 4OA5 Other Activities (Initial Operator License Examination)

##### .1 License Applications

###### a. Scope

The chief examiner reviewed all seven license applications submitted by the licensee to ensure the applications reflected that each applicant satisfied relevant 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 also audited one license application in detail to confirm that it accurately reflected the applicant's qualifications. This audit focused on the applicant's experience, on-the-job training, and eligibility to sit for the instant senior reactor operator license exam.

###### b. Findings

No findings were identified.

##### .2 Operator Knowledge and Performance

###### a. Examination Scope

On November 22, 2010, the licensee proctored the administration of the written examinations to all applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on December 3, 2010.

The NRC examination team administered the various portions of the operating examination to all applicants from November 15 - 18, 2010. The applicants for reactor operator licenses participated in two or three dynamic simulator scenarios, in a control room and facilities walkthrough test consisting of 11 system tasks, and an administrative test consisting of four administrative tasks. The applicants for instant senior reactor operator licenses participated in two or three dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 10 system tasks, and an administrative test consisting of five administrative tasks.

###### b. Findings

Six applicants passed all parts of the examinations. For the written examinations, the reactor operator applicants' average score was 85.9 percent, and ranged from 82.7 to 89.3 percent. The senior reactor operator applicants' overall average score was 83.0 percent and ranged from 78.0 to 88.0 percent.

The NRC examiners completed the final grading of the written examination on December 14, 2010, and conducted a review of each missed question to determine the

Enclosure

accuracy and validity of the examination questions. In accordance with current NRC policy the release of this written examination will be delayed for two years. The examination questions may be accessed in the ADAMS system under the accession number noted in Attachment 1.

Chapter ES-403 and Form ES-403-1 of NUREG 1021 require the facility licensee to analyze the validity of any written examination questions that were missed by half or more of the applicants. Five questions met this criterion. The facility licensee conducted the performance analysis and submitted it to the chief examiner.

### .3 Initial Licensing Examination Development

#### a. Examination Scope

The facility licensee developed the examinations in accordance with the Examination Standards. All licensee facility training and operations staff involved in examination preparation and validation were on a security agreement. The facility licensee submitted the written and operating examination outlines on August 17, 2010. The chief examiner reviewed the outlines against the requirements of the Standards, and provided comments to the licensee. The facility licensee submitted the draft examination package on September 27, 2010. The chief examiner reviewed the draft examination against the requirements of the Standards, and provided comments to the licensee on the examination on October 8, 2010. The examinations were within the range of acceptability for a proposed examination. The NRC conducted an onsite validation of the operating examinations and provided associated comments during the week of October 11, 2010. The facility licensee satisfactorily completed comment resolution on October 27, 2010.

#### b. Findings

No findings 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 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 the Examination Standards. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

No findings were identified.

40A6 Meetings, Including Exit

The chief examiner presented the examination results to Mr. R. Brown of the facility licensee's staff on December 22, 2010.

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

ATTACHMENT 1: SUPPLEMENTAL INFORMATION

ATTACHMENT 2: FACILITY COMMENTS ON WRITTEN EXAM AND NRC RESOLUTION

Enclosure

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**ATTACHMENT 1**

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

J. Reid, Facility Exam Developer  
R. Brown, Operations Training Manager

**ITEMS OPENED, CLOSED, AND DISCUSSED**

None

**ADAMS DOCUMENTS REFERENCED**

Accession No. ML103640340	FINAL-Written Exam
Accession No. ML103640349	FINAL-Operating Exam

**ATTACHMENT 2**

**FACILITY COMMENTS ON WRITTEN EXAM AND NRC RESOLUTION**

**Question RO #41:**

The plant is operating at 100 percent power, with the following:

- Annunciator 849105 FIRE DETECTED PNL127 SW STAIR/237 (for the Control Building EI 237) alarms
- Fire is confirmed
- HVC\*ACU1A, CONTROL ROOM AC FAN tripped
- HVC\*ACU2A, RELAY ROOM AC FAN tripped

Which one of the following identifies the actions required to be taken for Control Building Ventilation (HVC) and the reason?

- A. Defeat cross divisional interlocks to prevent a Control Room evacuation due to smoke infiltration.
- B. Actuate Appendix R disconnects to prevent tripping the Division II ACUs due to faulty electrical circuits.
- C. Defeat cross divisional interlocks to ensure Control Room Envelope temperature can be maintained 90 or less.
- D. Actuate Appendix R disconnects to place HVC in a lineup that ensures the Control Room Envelope pressure does not become negative.

Original correct answer: C

Facility Comment

The Nine Mile Point Unit 2 USAR section 9.4.1, Control Building and Normal Switchgear Building Heating, Ventilating, and Air Conditioning System, contains the following with regards to system design:

9.4.1.1 Design Bases

The design bases for the system are:

1. Provide an environment that ensures habitability of the areas served, consistent with personnel comfort and optimum performance of equipment, within the temperature limits shown in Table 9.4-1.

2. ***Maintain a positive space pressure in the control room and relay room to inhibit infiltration into these areas*** (facility emphasis).
3. Detect and limit the introduction of airborne radioactive contamination into the control room and relay room, and remove any airborne radioactive materials from the control room.

Answer choice A states that the reason for defeating the cross divisional interlocks is to prevent a Control Room evacuation due to smoke infiltration. This reasoning is supported by NMP2 USAR section 9.4.1.1, Design Bases, stated above. Therefore, both answer choices A and C are correct answers.

### **NRC resolution**

The facility's comment is not accepted.

One of the USAR design bases of the HVC system is indeed to "Maintain a positive space pressure in the control room ... to inhibit infiltration ...". However, given the location of this fire, smoke could still be introduced into the control room once operators defeat cross-divisional interlocks. That is, even after interlocks are defeated, smoke from the given fire areas could still be sucked into the HVC system and distributed to the control room via the control room ductwork. Thus, answer choice A, which indicates smoke infiltration would be prevented, is not an additional correct answer.

Also, per a NOTE in the procedure used for this evolution (N2-OP-53A, Control Building Ventilation, Section 15.0), operators must defeat cross-divisional interlocks within 13 minutes of an air conditioning unit trip to *ensure control room envelope temperature remains < 90 degrees*. Since the question conditions indicate an air conditioning unit has tripped, the procedure NOTE is applicable. Therefore, temperature concerns, and not smoke infiltration concerns, are the reason for the actions taken.

In summary, the only correct answer for this question is C.

**Question RO #44:**

While executing the EOPs the following conditions exist:

- The Narrow Range RPV Level indicators are steady +152 inches.
- The hottest reactor building temperature is 170 degrees.
- All drywell temperature instruments are now pegged high at > 350 degrees
- RPV pressure is stable at 1000 psig.

Utilizing Table C from N2-EOP-RPV, which one of the following is correct regarding the Narrow Range RPV level indication?

C	Minimum Indicated Levels		
	Instrument	Hottest Reactor Building or Drywell Area Temperature	
		≤ 350°F	> 350°F
Shutdown Range	195 in.	250 in.	
Upset Range	190 in.	260 in.	
Narrow Range	150 in.	155 in.	
Wide Range	25 in.	25 in.	
Fuel Zone	-150 in.	-160 in.	

Narrow Range Level indication...

- CANNOT be used. Flashing of the reference legs may be occurring.
- CANNOT be used. Actual RPV Level may be below the variable leg tap.
- CAN be used for trending purposes. Indicated level is lower than actual.
- CAN be used for trending purposes. Indicated level is higher than actual.

Original correct answer: B

Facility Comment

The question gives drywell temperature instruments reading > 350 degrees (pegged high) and RPV pressure stable at 1000 psig. The saturation temperature for 1000 psig is ~550 degrees. Based on the drywell temperature being greater than 350 degrees (or unknown) it is possible

Attachment

then that the drywell is at saturation temperature (i.e. ~550 degrees) and flashing of the reference legs may be occurring. This would then make choice A also a correct answer.

NRC Resolution

The facility's comment is not accepted.

Please note the information given in the question stem related to level "... the Narrow Range RPV Level indicators are **steady** +152 inches" (emphasis added). The facility's proposed additional correct answer includes the statement that "Flashing of reference legs may be occurring." Reference leg flashing is a random process that causes the level indication to be both inconsistent between level instruments and erratic. However, stem conditions say level indications are **steady** +152 inches. Those given level conditions refute the facility's position that reference legs may be flashing. Therefore, answer A is not an additional correct answer.

**Question RO #49:**

Following a plant transient, the following conditions exist:

- Drywell Pressure is 3.8 psig
- Drywell Temperature is 200°F
- Suppression Chamber Pressure is 2.6 psig
- Suppression Pool Temperature is 92°F
- Suppression Pool Level is 200 feet

Which one of the following actions is required?

Initiate...

- A. Suppression Pool Cooling ONLY.
- B. Suppression Chamber Sprays AND Drywell Sprays ONLY.
- C. Suppression Chamber Sprays AND Suppression Pool Cooling ONLY.
- D. Suppression Chamber Sprays AND Suppression Pool Cooling AND Drywell Sprays.

Original correct answer: C

Facility comment

The question provides the following plant conditions:

- Drywell Pressure is 3.8 psig
- Drywell Temperature is 200°F
- Suppression Chamber Pressure is 2.6 psig
- Suppression Pool Temperature is 92°F
- Suppression Pool Level is 200 feet

Based on these conditions EOP-PC, Primary Containment Control, is entered on Drywell Pressure above 1.68 psig, Drywell Temperature above 150°F, and Suppression Pool Temperature above 90°F. The question then asks, based on these conditions, what action is **required**. The only **required** action at this time, in accordance with EOP-PC, is placing Suppression Pool Cooling in service (steps SPT-2 & 3 if suppression pool temperature cannot be maintained below 90°F). Placing Suppression Chamber Sprays in service is **allowed** by EOP-PC at step PCP-2 but is only **required** to be in service prior to suppression chamber pressure reaching 10 psig. Therefore, the only correct answer is choice A.

NRC resolution

A-7

The facility's comment is accepted. While the procedure allows the crew to initiate suppression chamber sprays for the given conditions, the crew is not required to put sprays into service. Therefore, the only correct answer is choice A, and the answer key has been changed accordingly.

Attachment