



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
2100 RENAISSANCE BLVD., SUITE 100  
KING OF PRUSSIA, PA 19406-2713

November 6, 2014

Mr. George Gellrich, Site Vice President  
Calvert Cliffs Nuclear Power Plant, LLC  
Exelon Generation Company, LLC  
1650 Calvert Cliffs Pkwy  
Lusby, MD 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 -  
NRC INITIAL OPERATOR LICENSING EXAMINATION REPORT  
05000317/2014301; 05000318/2014301

Dear Mr. Gellrich:

On September 5, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at the Calvert Cliffs Nuclear Power Plant, Units 1 and 2. The enclosed examination report documents the examination results, which were discussed on October 9, 2014, with Messrs. Mark Moore, Director of Training, Todd Tierney, Director of Operations, and other members of your staff.

The examination included the evaluation of six applicants for reactor operator licenses, four applicants for instant senior reactor operator licenses, and three applicants for upgrade senior 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 13 of the 13 applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses were issued on October 9, 2014.

No findings were identified during this examination.

In accordance with Title 10 of "*Code of Federal Regulation* (CFR)," 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 Agencywide Documents Access Management System (ADAMS). ADAMS is accessible from the NRC Web site <http://www.nrc.gov/reading-rm/adams.html#web-based-adams> (the Public Electronic Reading Room).

Sincerely,

/RA/

Donald E. Jackson, Chief  
Operations Branch  
Division of Reactor Safety

G. Gellrich

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Docket Nos.: 50-317 and 50-318

License Nos.: DPR-53 and DPR-69

Enclosure: Examination Report 05000317/2014301; 05000318/2014301  
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

G. Gellrich

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ADAMS PKG: ML14079A469 ADAMS ACCESSION NO.: ML14310A660

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## **EXAMINATION REPORT**

### **U.S. NUCLEAR REGULATORY COMMISSION REGION I**

Dockets: 50-317, 50-318

Licenses: DPR-53, DPR-69

Report : 05000317/2014301; 05000318/2014301

Licensee: Exelon Generation Company, LLC

Facility: Calvert Cliffs Nuclear Power Plant, Units 1 and 2

Location: Lusby, MD 20657-4702

Dates: August 25-29, 2014 (Operating Test Administration)  
September 5, 2014 (Written Examination Administration)  
September 10, 2014 (Licensee Submitted Post Exam Package)  
October 2, 2014 (NRC Examination Grading)  
October 9, 2014 (Licenses Issued)

Examiners: Chris Lally, Chief Examiner, Operations Branch  
Peter Presby, Senior Operations Engineer  
Brian Fuller, Senior Operations Engineer  
Tom Hedigan, Operations Engineer

Approved By: Donald E. Jackson, Chief  
Operations Branch  
Division of Reactor Safety

## SUMMARY

ER 05000317/2014301; 05000318/2014301; August 25-September 5, 2014; Calvert Cliffs Nuclear Power Plant, Units 1 and 2; Initial Operator Licensing Examination Report.

Four NRC examiners evaluated the competency of six applicants for reactor operator licenses; four applicants for instant senior reactor operator licenses and three applicants for upgrade senior reactor operator licenses at Calvert Cliffs Nuclear Power Plant, Units 1 and 2. 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 September 5, 2014. NRC examiners administered the operating tests during the weeks of August 25, 2014 and September 1, 2014. The NRC examiners determined that 13 of the 13 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 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 13 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 examiners also audited two 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 were identified.

##### .2 Operator Knowledge and Performance

###### a. Examination Scope

On September 5, 2014, the licensee proctored the administration of the written examinations to all 13 applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on September 10, 2014.

The NRC examination team administered the various portions of the operating examination to all 13 applicants during the weeks of August 25, 2014 and September 1, 2014. The six applicants for reactor operator licenses participated in two 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 four applicants seeking an instant senior reactor operator license participated in two 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 three applicants for upgrade senior reactor operator licenses 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 13 of the applicants passed all parts of the operating test. For the written examinations, the reactor operator applicants' average score was 85.77 percent and ranged from 80.00 to 89.33 percent, the senior operator applicants' average score was 88.57 percent and ranged from 82.00 to 98.00 percent. The overall written examination average was 87.28 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 Attachment 1. In accordance with current NRC policy, the release of this written examination in ADAMS to the public will be delayed for two years.

The NRC examiners completed the final grading of the written examination on October 2, 2014, and conducted a review of each missed question to determine the 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 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 five questions that met these criteria and submitted the analysis to the chief examiner. This analysis concluded that two of the questions (Exam question #9 and 65) required minor rewording in the question stem.

The licensee submitted two post-examination question comments on September 10, 2014. The NRC reviewed the facility's post-exam comment submittal package and accepted facility recommendations on one of the two questions. The NRC accepted Choice "B" as a second correct answer for Question #9. The NRC did not accept Choice "D" as a second correct answer for Question #65. The text of the examination questions, the licensee's examination analysis, and the licensee's post-examination comments with the NRC resolutions may be accessed in the ADAMS system under the accession numbers noted in the Attachment 1. In accordance with current NRC policy the release of this written examination will be delayed for two years.

.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 listed on a security agreement. The facility licensee submitted both the written and operating examination outlines on June 9, 2014.

The chief examiner reviewed the outlines against the requirements of NUREG-1021, and provided comments to the licensee. The facility licensee submitted the draft examination package on July 9, 2014. The chief examiner reviewed the draft examination package against the requirements of NUREG-1021, and provided comments to the licensee on the examination on July 21, 2014. The NRC conducted an onsite validation of the operating examinations and provided further comments during the week of July 28, 2014. The licensee satisfactorily completed comment resolution on August 18, 2014.

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 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 NUREG-1021 requirements. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

No findings were identified.



4OA6 Meetings, Including Exit

The chief examiner presented the examination results to Messrs. Mark Moore, Director of Training, Todd Tierney, Director of Operations, and other members of the licensee's management staff on October 9, 2014. The licensee acknowledged the findings presented.

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

4OA7 Licensee-Identified Violations

No findings were identified.

ATTACHMENT:  
SUPPLEMENTARY INFORMATION

## **SUPPLEMENTARY INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

Pete Beavers, Operations Training Manager  
Jeff Heiska, Exam Author  
Nick Lavato, Exam Author  
Dwayne Robertson, Simulator Test Specialist

#### **NRC Personnel**

Chris Lally, Chief Examiner  
Rodney Clagg, Senior Resident Inspector

### **ITEMS OPENED, CLOSED, AND DISCUSSED**

#### **Opened**

NONE

#### **Opened and Closed**

NONE

#### **Closed**

NONE

#### **Discussed**

NONE

### **ADAMS DOCUMENTS REFERENCED**

Accession No. ML14307B051 – FINAL-Written Exam (Note: In accordance with current NRC policy, the release of this written examination in ADAMS to the public will be delayed for two years)

Accession No. ML14307B104 – FINAL-Operating Exam

Accession No. ML14308A032 – FINAL-Post Exam Comments, Resolutions, and Technical References