



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

August 27, 2020

Mr. Bryan C. Hanson  
Senior VP, Exelon Generation Company, LLC  
President and CNO, Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2—NRC INITIAL LICENSE EXAMINATION  
REPORT 05000456/2020301 AND 05000457/2020301

Dear Mr. Hanson:

On June 27, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed the initial operator licensing examination process for license applicants employed at your Braidwood Station. The enclosed report documents the results of those examinations. Preliminary observations noted during the examination process were discussed on June 10, 2020, with Mr. J. Keenan, Site Vice President, and other members of your staff. An exit meeting was conducted by telephone on July 17, 2020, with Mr. J. Keenan, Site Vice President, other members of your staff, and Mr. R. Baker, Chief Operator Licensing Examiner, to review the final grading of the written examination for the license applicants. The NRC also confirmed that the station submitted documentation noting that there were no post-examination comments for consideration during NRC grading of the examination.

The NRC examiners administered an initial license examination operating test during the weeks of June 1, 2020 and June 8, 2020. The written examination was administered by Braidwood Station training department personnel on May 22, 2020. Nine Senior Reactor Operator and four Reactor Operator applicants were administered license examinations. One of the Senior Reactor Operator applicants was administered only the written examination as a retake examination, with the results of the retake examination finalized on June 11, 2020. The results of the remaining examinations were finalized on July 27, 2020. Thirteen applicants passed all sections of their respective examinations. Nine applicants were issued senior operator licenses and four applicants were issued operator licenses.

The administered written examination and operating test, as well as documents related to the development and review (outlines, review comments and resolution, etc.) of the examination will be withheld from public disclosure until June 27, 2022.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations*, Part 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

Patricia J. Pelke, Chief  
Operations Branch  
Division of Reactor Safety

Docket Nos. 50-456; 50-457  
License Nos. NPF-72; NPF-77

Enclosures:

1. OL Examination  
Report 05000456/2020301  
and 05000457/2020301
2. Simulator Fidelity Report

cc: Distribution via LISTSERV®  
F. Jordan, Senior Manager Site Training

Letter to Bryan C. Hanson from Patricia J. Pelke dated August 27, 2020.

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REPORT 05000456/2020301 AND 05000457/2020301

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 05000456; 05000457

License No: NPF-72; NPF-77

Report No: 05000456/2020301; 05000457/2020301

Enterprise Identifier: L-2020-OLL-0035

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station, Units 1 and 2

Location: Braceville, IL

Dates: May 22, 2020 through June 27, 2020

Examiners: R. Baker, Senior Operations Engineer, Chief Examiner  
G. Roach, Senior Operations Engineer, Examiner  
B. Bergeon, Operations Engineer, Examiner

Approved by: P. Pelke, Chief  
Operations Branch  
Division of Reactor Safety

## **SUMMARY**

Examination Report 05000456/2020301; 05000457/2020301; 05/22/2020–06/27/2020; Exelon Generation Company, LLC; Braidwood Station, Units 1 and 2; Initial License Examination Report.

The announced initial operator licensing examination was conducted by regional U.S. Nuclear Regulatory Commission examiners in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 11.

### Examination Summary

Thirteen applicants passed all sections of their respective examinations. Nine applicants were issued senior operator licenses and four applicants were issued operator licenses. (Section 4OA5.1)

## **REPORT DETAILS**

### 4OA5 Other Activities

#### .1 Initial Licensing Examinations

##### a. Examination Scope

The U.S. Nuclear Regulatory Commission (NRC) examiners and members of the facility licensee's staff used the guidance prescribed in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 11, to develop, validate, administer, and grade the written examination and operating test. The written examination outlines were prepared by the NRC staff and were transmitted to the facility licensee's staff. Members of the facility licensee's staff prepared the operating test outlines and developed the written examination and operating test. The NRC examiners validated the proposed examination during the week of May 11, 2020, with the assistance of members of the facility licensee's staff. During the onsite validation week, the examiners audited three license applications for accuracy. The facility licensee administered the written examination on May 22, 2020. The NRC examiners, with the assistance of members of the facility licensee's staff, administered the operating test, consisting of job performance measures and dynamic simulator scenarios, during the period of June 1, 2020, through June 9, 2020.

##### b. Findings

##### (1) Written Examination

The NRC examiners determined that the written examination, as proposed by the licensee, was within the range of acceptability expected for a proposed examination. Less than or equal to 20 percent of the proposed examination questions were determined to be unsatisfactory and required modification or replacement.

During the validation of the written examination, several questions were modified or replaced. All changes made to the written examination were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and were documented on Form ES-401-9, "Written Examination Review Worksheet." The Form ES-401-9, the written examination outlines (ES-401-1 and ES-401-3), and both the proposed and final written examinations, will be available electronically in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS) on June 27, 2022, (ADAMS Accession Numbers ML19121A238, ML19121A241, ML19121A243, and ML19121A244, respectively).

On June 27, 2020, the licensee submitted documentation noting that there were no post-examination comments for consideration by the NRC examiners when grading the written examination.

The NRC examiners graded the written examination on July 7, 2020, and conducted a review of each missed question to determine the accuracy and validity of the examination questions.

(2) Operating Test

The NRC examiners determined that the operating test, as originally proposed by the licensee, was within the range of acceptability expected for a proposed examination.

Following the review and validation of the operating test, minor modifications were made to several job performance measures, and some minor modifications were made to the dynamic simulator scenarios. All changes made to the operating test were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and were documented on Form ES-301-7, "Operating Test Review Worksheet." The Form ES-301-7, the operating test outlines (ES-301-1, ES-301-2, and ES-D-1s), and both the proposed and final operating tests, will be available electronically in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS on April 3, 2022, (ADAMS Accession Numbers ML19121A238, ML19121A241, ML19121A243, and ML19121A244, respectively).

The NRC examiners completed operating test grading on July 27, 2020.

(3) Examination Results

Nine applicants at the Senior Reactor Operator level and four applicants at the Reactor Operator level were administered written examinations and operating tests. One of the Senior Reactor Operator applicants was administered only the written examination as a retake examination.

Thirteen applicants passed all portions of their examinations. A senior operator license was issued on June 11, 2020, to the applicant who was administered the retake written examination; the remaining applicants were issued their respective operating licenses on July 27, 2020.

.2 Examination Security

a. Scope

The NRC examiners reviewed and observed the licensee's implementation of examination security requirements during the examination validation and administration to assure compliance with Title 10 of the *Code of Federal Regulations*, Part 55.49, "Integrity of Examinations and Tests." The examiners used the guidelines provided in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," to determine acceptability of the licensee's examination security activities.

b. Findings

None.

4OA6 Management Meetings

.1 Debrief

The chief examiner presented the examination team's preliminary observations and findings on June 10, 2020, to Mr. J. Keenan, Site Vice President, and other members of the Braidwood Station staff.

.2 Exit Meeting

The chief examiner conducted an exit meeting on July 17, 2020, with Mr. J. Keenan, Site Vice President, and other members of the Braidwood Station staff, by telephone. The chief examiner asked the licensee whether any of the material used to develop or administer the examination should be considered proprietary. Proprietary or sensitive information identified during the examination or debrief/exit meetings will be handled in accordance with the applicable requirements.

ATTACHMENT: SUPPLEMENTAL INFORMATION



## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

J. Keenan, Site Vice President  
G. Gugle, Plant Manager  
F. Jordan, Senior Manager Site Training  
K. Lueshen, Regulatory Assurance Manager  
A. Grabowski, Manager Operations Services  
J. Taff, Operations Training Manager  
D. Brunswick, Lead Exam Developer  
E. Steinberg, Operations Training

#### U.S. Nuclear Regulatory Commission

P. Pelke, Operations Branch Chief  
D. Kimble, Senior Resident Inspector  
P. Smagacz, Resident Inspector  
R. Baker, Senior Operations Engineer, Chief Examiner  
G. Roach, Senior Operations Engineer, Examiner  
B. Bergeon, Operations Engineer, Examiner

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

#### Opened, Closed, and Discussed

None

### **LIST OF ACRONYMS USED**

ADAMS	Agencywide Document Access and Management System
NRC	U.S. Nuclear Regulatory Commission

## SIMULATOR FIDELITY REPORT

Facility Licensee: Braidwood Station

Facility Docket No: 050-456; 050-457

Operating Tests Administered: June 1, 2020 through June 9, 2020

The following documents observations made by the U.S. Nuclear Regulatory Commission examination team during the initial operator license examination. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of non-compliance with Title 10 of the *Code of Federal Regulations*, Part 55.45(b). These observations do not affect U.S. Nuclear Regulatory Commission certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the operating tests, the following items were observed:

ITEM	DESCRIPTION
Control Rod Motion Audio Counter	During the first scenario that caused control rods to begin stepping into the core due to a failed control instrument, the control rod motion audio counter failed to generate the requisite "clicking" sound that identifies the rod motion. All other visible indications of rod motion operated correctly, and the crew responded appropriately to the instrument failure. As control rods were being withdrawn to their original positions prior to the instrument failure, the audio counter again began functioning properly. The audio failure did not repeat itself throughout the remainder of the administration of the operating test and was subsequently attributed to sticky contacts. No simulator work request (SWR) was required.
Main Control Panel Audible Annunciator Alarm	During the later portion of a scenario where the crew was implementing the Emergency Operating Procedures, the main control panel audible annunciator alarm stopped working and when subsequent annunciators went into alarm, an accompanying audible alarm was no longer activated. Shortly following the occurrence, as visible alarms were being reset, the audible alarm again began functioning properly, and continued to do so throughout the remainder of the administration of the operating test scenarios and Job Performance Measures. Following investigation by the facility at the completion of the effected scenario, the failure of the audible alarm was attributed to a sticky RESET button on the control module for the main panel's annunciators. No SWR was required.