



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

October 26, 2018

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

**SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2—NRC INITIAL  
LICENSE EXAMINATION REPORT 05000254/2018301; 05000265/2018301**

Dear Mr. Hanson:

On August 17, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed the initial operator licensing examination process for license applicants employed at your Quad Cities Nuclear Power Station. The enclosed report documents the results of those examinations. Preliminary observations noted during the examination process were discussed on July 27, 2018, with Mr. E. Pannell, Training Manager, and other members of your staff. An exit meeting was conducted by telephone on September 13, 2018, between Mr. E. Pannell, Training Manager, and Mr. D. Reeser, Chief Operator Licensing Examiner, to review the final grading for the license applicants. The NRC confirmed 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 July 16, 2018, and July 23, 2018. The written examination was administered by Quad Cities Nuclear Power Station Training Department personnel on July 30, 2018. Nine Senior Reactor Operator and six Reactor Operator applicants were administered license examinations. The results of the examinations were finalized on September 12, 2018. Eight Senior Reactor Operator and five Reactor Operator applicants passed all sections of their respective examinations. Eight applicants were issued Senior Operator licenses and five applicants were issued Operator Licenses. Two applicants failed one or more sections of the administered examination and were issued Preliminary Results Letters.

The administered written examination and operating test, as well as documents related to the development and review (outlines, proposed examinations, review comments and resolution, etc.) of the examination will be withheld from public disclosure until August 17, 2020. However, because two applicants received a Preliminary Results Letter due to receiving a non-passing grade on any portion of the examination (operating test, written examination, or both), the applicants were provided a copy of those portions of the examination in which they exhibited unsatisfactory performance. For examination security purposes, your staff should consider those portions of the examination uncontrolled and exposed to the public.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System component of NRC's Agencywide Documents Access and Management System, accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Robert J. Orlikowski, Chief  
Operations Branch  
Division of Reactor Safety

Docket Nos. 50-254; 50-265  
License Nos. DPR-29; DPR-30

Enclosures:

1. Examination Report 05000254/2018301;  
05000265/2018301
2. Simulation Facility Report

cc: Distribution via LISTSERV®  
E. Pannell, Training Manager

Letter to Bryan C. Hanson from Robert J. Orlikowski dated October 26, 2018.

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LICENSE EXAMINATION REPORT 05000254/2018301; 05000265/2018301

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-254; 50-265  
License Nos: DPR-29; DPR-30

Report No: 05000254/2018301; 05000265/2018301

Licensee: Exelon Generation Company, LLC

Facility: Quad Cities Nuclear Power Station, Units 1 and 2

Location: Cordova, Illinois

Dates: July 16, 2018, through July 30, 2018

Inspectors: D. Reeser, Operations Engineer—Chief Examiner  
J. Seymour, Operations Engineer—Examiner  
E. Cushing, Operations Engineer—Examiner  
G. Roach, Senior Operations Engineer—Examiner in Training

Approved by: R. Orlikowski, Chief  
Operations Branch  
Division of Reactor Safety

## **SUMMARY OF FINDINGS**

Examination Report 05000254/2018301; 05000265/2018301; 07/16/2018–07/30/2018; Exelon Generation Company, LLC; Quad Cities Nuclear Power Station, Units 1 and 2; Initial License Examination Report.

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

### **Examination Summary**

Thirteen of fifteen applicants passed all sections of their respective examinations. Eight applicants were issued senior operator licenses and five applicants were issued operator licenses. Two applicants failed one or more sections of the administered examination and were issued Preliminary Results Letters. (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 NRC examiners prepared the outline and developed the written examination and operating test. As part of the operating test development, the NRC examine developers visited the facility during the week of March 19, 2018, to pre-validate the events/malfunctions of the NRC drafted scenarios, to ensure that the capabilities of the simulation facility would allow performance of the events, and to obtain feedback from your staff on the validity and complexity of the scenarios. The NRC examiners validated the proposed examination during the week of June 18, 2018, with the assistance of members of the facility licensee's staff. During the onsite validation week, the examiners audited the license applications for accuracy. 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 July 16–26, 2018. The facility licensee administered the written examination on July 30, 2018.

##### b. Findings

##### (1) Written Examination

All changes made to the proposed written examination, were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and documented on Form ES-401-9, "Written Examination Review Worksheet." On August 17, 2018, 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 August 20, 2018, and conducted a review of each missed question to determine the accuracy and validity of the examination questions.

The written examination outlines and worksheets, the proposed written examination and review worksheet, as well as the final as-administered examination and answer key (ADAMS Accession Number ML18296A021), will be made publicly available, on August 17, 2020, at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room.

##### (2) Operating Test

Changes made to the operating test, were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and documented on Form ES-301-7, "Operating Test Review Worksheet."

The NRC examiners completed operating test grading on September 12, 2018.

The operating test outlines and worksheets, the proposed operating test and review worksheet, as well as the final as administered dynamic simulator scenarios and job performance measures, will be made available, on August 17, 2020, at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room.

(3) Examination Results

Nine applicants at the Senior Reactor Operator level and six applicants at the Reactor Operator level were administered written examinations and operating tests. Eight Senior Reactor Operator applicants and five Reactor Operator applicants passed all portions of their examinations and were issued their respective operating licenses.

.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 Regulation*, 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

Three minor examination security-related issues were identified during exam preparation and administration. During exam review, an NRC examiner sent an email with attached comments on a written examination question to the facility licensee's staff without the appropriate password protection. The question was replaced prior to exam administration. During operating test administration two examples occurred where applicants noted simulator procedures contained place-keeping markups that had not been sanitized from the procedures. In both instances, the procedures were immediately closed by the applicants and turned over to NRC examiners and facility licensee staff. The NRC staff determined that in both instances the inappropriate writing did not affect the fair and equitable administration of the examination.

4OA6 Management Meetings

.1 Debrief

The Chief Examiner presented the examination team's preliminary observations on July 27, 2018, with Mr. E. Pannell, Training Manager, and other members of the Quad Cities Nuclear Power Station staff.

.2 Exit Meeting

The chief examiner conducted an exit meeting on September 13, 2018, with Mr. E. Pannell, Training Manager, by telephone. The NRC's final disposition of the examination was discussed with Mr. Pannell during the telephone discussion. The

examiners asked the licensee whether any of the material used to develop or administer the examination should be considered proprietary. No proprietary or sensitive information was identified during the examination or debrief/exit meetings.

ATTACHMENT: SUPPLEMENTAL INFORMATION



## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

K. Ohr, Site Vice President  
E. Pannell, Training Manager  
D. Pratt, Facility Representative  
N. Kenderdine, ILT Group  
R. Venci, ILT Group

#### NRC

D. Reeser, Operations Engineer—Chief Examiner  
J. Seymour, Operations Engineer—Examiner  
E. Cushing, Operations Engineer—Examiner

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

None

### **LIST OF DOCUMENTS REVIEWED**

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

IR 4150856; NRC ID-ILT 17-1 INITIAL LICENSE APPLICATION AND PHYSICALS;  
June 27, 2018

### **LIST OF ACRONYMS USED**

NRC	U.S. Nuclear Regulatory Commission
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## **SIMULATION FACILITY REPORT**

Facility Licensee: Quad Cities Nuclear Power Station, Units 1 and 2

Facility Docket Nos: 50-254; 50-265

Operating Tests Administered: July 16–26, 2018

The following documents observations made by the NRC 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 10 CFR 55.45(b). These observations do not affect NRC 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:

<b>ITEM</b>	<b>DESCRIPTION</b>
Control Rod Drive Pump Amperage	During administration of a scenario event, control rod drive pump amperage at main control room panel 901-5, continued to indicate 15 amps with the pump's motor breaker open.
Plant Process Computer	During administration of a scenario event, an applicant was unable to generate an operator demandable core characteristics plot (OD-20) from the Plant Process Computer.