



**UNITED STATES**  
**NUCLEAR REGULATORY COMMISSION**  
REGION I  
2100 RENAISSANCE BOULEVARD, SUITE 100  
KING OF PRUSSIA, PA 19406-2713

August 15, 2019

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

SUBJECT: THREE MILE ISLAND NUCLEAR GENERATING STATION, UNIT 1 – INITIAL  
OPERATOR LICENSING EXAMINATION REPORT 05000289/2019301

Dear Mr. Hanson:

On June 17, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at Three Mile Island Nuclear Generating Station, Unit 1. The enclosed examination report documents the examination results, which were discussed on July 29, 2019, with Messrs. Ed Callan, Joe Duling, Dave Lewis, Jeff Goldman, Lynn Florey, Ed Carreras, and other members of your staff.

The examination included the evaluation of four 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 11. The license examiners determined that all six of the applicants satisfied the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 55, and the appropriate licenses were issued on January 25, 2019.

No findings were identified during this examination.

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 the NRC Public Document Room in accordance with 10 CFR Part 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

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

Docket No. 50-289  
License No. DPR-50

Enclosure:  
Examination Report 05000289/2019301  
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

SUBJECT: THREE MILE ISLAND NUCLEAR GENERATING STATION, UNIT 1 – INITIAL  
OPERATOR LICENSING EXAMINATION REPORT 05000289/2019301 DATED  
AUGUST 15, 2019

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**EXAMINATION REPORT****U.S. NUCLEAR REGULATORY COMMISSION  
REGION I**

Docket No. 50-289

License No. DPR-50

Report No. 05000289/2019301

Licensee: Exelon Generation Company, LLC

Facility: Three Mile Island Nuclear Generating Station, Unit 1

Location: Middletown, PA 17057

Dates: June 10, 2019 – June 13, 2019 (Operating Test Administration)  
June 17, 2019 (Written Examination Administration)  
June 26, 2019 (Licensee Submitted Post Exam Package)  
June 18, 2019 – July 26, 2019 (NRC Examination Grading)  
July 29, 2019 (Licenses Issued)

Examiners: P. Presby, Chief Examiner, Operations Branch  
B. Fuller, Senior Operations Engineer  
T. Setzer, Senior Operations Engineer  
T. Hedigan, Operations Engineer  
P. Ott, Operations Engineer

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

Enclosure

## SUMMARY

ER 05000289/2019301; June 10-13, 2019, June 17, 2019; Three Mile Island Nuclear Generating Station, Unit 1; Initial Operator Licensing Examination Report.

Five NRC examiners evaluated the competency of four applicants for reactor operator licenses, and two applicants for instant senior reactor operator licenses at Three Mile Island Nuclear Generating Station, Unit 1. The facility licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 11. The written examination was administered by the facility on June 17, 2019. NRC examiners administered the operating tests on June 10-13, 2019. The NRC examiners determined that all six of the applicants satisfied the requirements of Title 10 of the *Code of Federal Regulations* (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

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

##### .1 License Applications

###### a. Scope

The examiners reviewed all six 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 reviewed 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 June 17, 2019, the licensee proctored the administration of the written examinations to all six applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on June 26, 2019.

The NRC examination team administered the various portions of the operating examination to all six applicants on June 10-13, 2019. The four 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 two applicants seeking an instant senior reactor 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.

###### b. Findings

All six of the applicants passed all parts of the operating test. For the written examinations, the reactor operator applicants' average score was 82.67 percent and ranged from 80 to 85.33 percent, and the senior operator applicants' average score was 83.84 percent and ranged from 82.83 to 84.85 percent. 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 20 questions that met these criteria and submitted the analysis to the chief examiner. The NRC examiners completed the final

grading of the written examination on July 26, 2019, and conducted a review of each missed question to determine the accuracy and validity of the examination questions.

The licensee submitted four post-examination comments on the written exam, reevaluated the expected technical specification action requirements for Event 4 in Simulator Scenario 2 and commented on aspects of a critical task in Scenario 2. The NRC reviewed the facility's post-exam comment submittal package and generally agreed with the facility analysis. The NRC accepted multiple answers on three questions, deleted a question, and graded the operating test technical specification action statements in accordance with the revised Scenario 2. The text of the written examination questions, the operating test, 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 these documents will be delayed for 2 years.

### .3 Initial Licensing Examination Development

#### a. Examination Scope

The facility licensee developed the examinations in accordance with NUREG-1021, Revision 11. 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 January 11, 2019. 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 March 27, 2019. The chief examiner reviewed the draft examination package against the requirements of NUREG-1021. The NRC conducted an onsite validation of the operating examinations and provided comments during the week of May 13, 2019. The licensee satisfactorily completed comment resolution on June 5, 2019.

#### 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, Revision 11 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. Ed Callan (Site Vice President), Joe Duling (Plant Manager), Dave Lewis (Operations Director), Jeff Goldman (Manager, Regulatory Assurance), Lynn Florey (Training Director), Ed Carreras (Manager, Operations Training), and other members of the licensee's management staff on July 29, 2019. 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

None

**ATTACHMENT: SUPPLEMENTARY INFORMATION**

**SUPPLEMENTARY INFORMATION**

**KEY POINTS OF CONTACT**

**Licensee Personnel**

E. Carreras, Operations Training Manager  
T. Beaver, Exam Developer  
S. Sallade, Initial License Training Lead

**ITEMS OPENED, CLOSED, AND DISCUSSED**

**Opened**

NONE

**Opened and Closed**

NONE

**Closed**

NONE

**Discussed**

NONE

**ADAMS DOCUMENTS REFERENCED**

Accession No. ML19217A272 – FINAL-Written Exam (Note: In accordance with current NRC policy, the release of this document in ADAMS to the public will be delayed for 2 years.)  
Accession No. ML19217A274 – FINAL-Operating Exam (Note: In accordance with current NRC policy, the release of this document in ADAMS to the public will be delayed for 2 years.)  
Accession No. ML19217A269 – FINAL-Post Exam Comments, Resolutions, and Technical References (Note: In accordance with current NRC policy, the release of this document in ADAMS to the public will be delayed for 2 years.)