



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

February 7, 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: LIMERICK GENERATING STATION, UNITS 1 and 2 - NRC INITIAL OPERATOR
LICENSING EXAMINATION REPORT ER 05000352/2018301; 05000353/2018301

Dear Mr. Hanson:

On December 6, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at Limerick Generating Station, Units 1 and 2. The enclosed examination report documents the examination results, which were discussed on January 3, 2019, with Messrs. Frank Sturniolo, Keith Kemper, and other members of your staff.

The examination included the evaluation of two applicants for reactor operator licenses, three applicants for instant senior reactor operator licenses, and two applicants for upgrade 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 seven of the applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses were issued on January 3, 2019.

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 website <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

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

B. Hanson

2

Docket Nos.: 50-352 and 50-353

License Nos.: NPF-39 and NPF-85

Enclosure: Examination Report 05000352/2018301
and 05000353/2018301

w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

SUBJECT: Limerick Generating Station, Units 1 and 2 - NRC Initial Operator Licensing Examination Report ER 05000352/2018301; 05000353/2018301 dated February 7, 2019

DISTRIBUTION w/encl: (via email)

DLew, RA (R1ORAMAIL Resource)
 RLorson, DRA (R1ORAMAIL Resource)
 DCollins, DRP (R1DRPMAIL Resource)
 DPelton, DRP (R1DRPMAIL Resource)
 JYerokun, DRS (R1DRSMAIL Resource)
 BWellington, DRS (R1DRSMAIL Resource)
 JGreives, DRP
 GCroon, DRP
 MRossi, DRP
 SRutenkroger, DRP, SRI
 MFannon, DRP, RI
 NEsch, DRP, AA
 MMcCopin, RI, OEDO
 DJackson, DRS
 BFuller, DRS
 CBixler, DRS
 RIDSNrrPMLimerick Resource
 RIDSNrrDorLpl1 Resource
 ROPReports Resource

FILE: G:\DRS\Operations Branch\FULLER\Exam FY19 - Limerick\LIM FY19 EXAM REPORT.docx
 ADAMS PKG: ML18116A036 ADAMS ACCESSION NO.: ML19042A154

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> <input type="checkbox"/>	
OFFICE	RI/DRS/OB	RI/DRS/OB			
NAME	BFuller	DEJackson			
DATE	02/07/2019	02/07/2019			

OFFICIAL RECORD COPY

EXAMINATION REPORT

U.S. NUCLEAR REGULATORY COMMISSION REGION I

Dockets: 50-352, 50-353

Licenses: NPF-39 and NPF-85

Report : 05000352/2018301; 05000353/2018301

Licensee: Exelon Generation Company, LLC

Facility: Limerick Generating Station Units 1 and 2

Location: Sanatoga, PA 19464

Dates: November 26 - 29, 2018 (Operating Test Administration)
December 6, 2018 (Written Examination Administration)
December 14, 2018 (Licensee Submitted Post Exam Package)
December 17, 2018 (NRC Examination Grading)
January 3, 2019 (Licenses Issued)

Examiners: B. Fuller, Chief Examiner, Operations Branch
J. D'Antonio, Senior Operations Engineer
T. Setzer, Senior Project Engineer
C. Lally, Project Engineer

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

Enclosure

SUMMARY

ER 05000352/2018301; 05000353/2018301; 11/26-12/06/2018; Limerick Generating Station, Units 1 and 2; Initial Operator Licensing Examination Report

Four NRC examiners evaluated the competency of two applicants for reactor operator licenses; three applicants for instant senior reactor operator licenses and two applicants for upgrade senior reactor operator licenses at Limerick Generating Station, Units 1 and 2. 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 December 6, 2018. NRC examiners administered the operating tests on November 26-29, 2018. The NRC examiners determined that all seven of the 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 seven 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 examiner also audited seven 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 December 6, 2018, the licensee proctored the administration of the written examinations to all seven applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on December 14, 2018.

The NRC examination team administered the various portions of the operating examination to all seven applicants on November 26-29, 2018. The two applicants for reactor operator licenses participated in two or three dynamic simulator scenarios, in a control room and facilities walkthrough test consisting of eleven system tasks, and an administrative test consisting of four administrative tasks. The three applicants seeking an instant senior reactor operator license participated in two or 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. The two applicants for upgrade senior reactor operator licenses participated in one dynamic simulator scenario, a control room and facilities walkthrough test consisting of five system tasks, and an administrative test consisting of five administrative tasks.

b. Findings

All seven of the applicants passed all parts of the operating test and written examination. For the written examinations, the reactor operator applicants' average score was 91.33 percent and ranged from 88.00 to 94.67 percent, the senior operator applicants' average score was 91.20 percent and ranged from 86.00 to 94.00 percent. The overall

written examination average was 91.23 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 December 17, 2018, 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 three questions that met these criteria and submitted the analysis to the chief examiner.

The licensee submitted one post-examination question comment for Question #85 on December 14, 2018. The NRC reviewed the facility's post-exam comment submittal package and did not accept the facility recommendation on this question. The NRC did not accept Choice "D" as a second correct answer for Question 85. Question 85 was deleted from the SRO exam. 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 11. All licensee facility training and operations staff involved in examination preparation and validation were listed on a security agreement. The facility licensee submitted the operating examination outline on June 29, 2018. 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 September 25, 2018. 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 13, 2018. The NRC conducted an onsite validation of the operating examinations and provided further comments during the week of October 9, 2018. The licensee satisfactorily completed comment resolution on November 9, 2018.

b. Findings

The NRC approved the initial examination outline and advised the licensee to proceed with the operating examination development.

Enclosure

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.

40A6 Meetings, Including Exit

The chief examiner presented the examination results to Mr. Frank Sturniolo, Plant Manager, and other members of the licensee's management staff on January 3, 2019.

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

ATTACHMENTS:

1. SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Semeter, Operations Training Manager
T. Byers, Exam Author
C. Bihl, Exam Author

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

NONE

Opened and Closed

NONE

Closed

NONE

Discussed

NONE

ADAMS DOCUMENTS REFERENCED

Accession No. ML19038A101 – 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. ML19038A054 – FINAL-Operating Exam

Accession No. ML19038A126 – FINAL-Post Exam Comments, Resolutions, and Technical References