



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
2100 RENAISSANCE BLVD., SUITE 100  
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

September 17, 2021

Mr. Brad Berryman  
President and Chief Nuclear Officer  
Susquehanna Nuclear, LLC  
769 Salem Blvd., NUCSB3  
Berwick, PA 18603

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 – INITIAL  
OPERATOR LICENSING EXAMINATION REPORT 05000387/2021301 AND  
05000388/2021301

Dear Mr. Berryman:

On August 5, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at the Susquehanna facility. The enclosed examination report documents the examination results, which were discussed on September 1, 2021, with Mr. J. Goodbred, Manager – Nuclear Training, and other members of your staff.

The examination included the evaluation of six applicants for reactor operator licenses, ten 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 all applicants satisfied the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 55, and the appropriate licenses were issued on September 1, 2021.

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

Sincerely,

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

Docket Nos. 50-387 and 50-388  
License Nos. NPF-14 and NPF-22

Enclosure:  
Examination Report 05000387/2021301 and  
05000388/2021301 w/Attachment: Supplementary  
Information

cc w/encl: Distribution via ListServ®

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION – UNITS 1 AND 2 – INITIAL OPERATOR LICENSING EXAMINATION REPORT 05000387/2021301 AND 05000388/2021301 DATED SEPTEMBER 17, 2021

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

Docket Nos. 50-387 and 50-388

License Nos. NPF-14 and NPF-22

Enterprise Identifier: L-2021-OLL-0003

Report Nos. 05000387/2021301 and 05000388/2021301

Licensee: Susquehanna Nuclear, LLC

Facility: Susquehanna Steam Electric Station, Units 1 and 2

Location: Berwick, PA

Dates: July 26 - August 2, 2021 (Operating Test Administration)  
August 5, 2021 (Written Examination Administration)  
August 16, 2021 (SSES Submitted Post Exam Package)  
August 2 - 30, 2021 (NRC Examination Grading)  
September 1, 2021 (Licenses Issued)

Examiners: T. Fish, Chief Examiner  
T. Wingfield, Operations Engineer  
T. Hedigan, Operations Engineer  
C. Crisden, Operations Engineer  
J. Dolecki, Examiner

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

## SUMMARY

ER 05000387/2021301 and 05000388/2021301; July 26 – August 5, 2021; Susquehanna Steam Electric Station, Units 1 and 2; Initial Operator Licensing Examination Report.

Five NRC examiners evaluated the competency of six applicants for reactor operator licenses, ten applicants for instant senior reactor operator licenses, and two applicants for upgrade senior reactor operator licenses. 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 August 5, 2021. NRC examiners administered the operating tests July 26 – August 2, 2021. The NRC examiners determined that all 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 (OA)

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

##### .1 License Applications

###### a. Scope

The examiners reviewed all 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 the license applications 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 August 5, 2021, the licensee proctored the administration of the written examinations to all applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on August 16, 2021.

The NRC examination team administered various portions of the operating examination July 26 – August 2, 2021. The applicants for reactor operator licenses participated in at least two 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 applicants for instant senior reactor operator licenses participated in at least 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 applicants for upgrade senior reactor operator licenses participated in at least 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

No findings were identified.

All applicants passed the operating test and the written examination. For the written examinations, the reactor operator applicants' average score was 88.4 percent and ranged from 82.6 to 96.0 percent. The senior operator applicants' average score

was 91.6 percent and ranged from 86.0 to 95.0 percent. The text of the examination questions may be accessed in the ADAMS system under the accession numbers noted in the Attachment. In accordance with current NRC policy, the release of the written examination in ADAMS to the public will be delayed for two years.

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 analysis and submitted it to the chief examiner.

### .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 January 21, 2021. 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 April 16, 2021. The chief examiner reviewed the draft examination package against the requirements of NUREG-1021, and provided comments to the licensee on the examination. The NRC conducted an onsite validation of the operating examinations and provided further comments during the week of May 24, 2021. The licensee satisfactorily completed comment resolution on July 16, 2021.

#### b. Findings

No findings were identified.

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.

### .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 Mr. J. Goodbred, Manager – Nuclear Training, and other members of the licensee's staff on September 1, 2021.

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

**ATTACHMENT: SUPPLEMENTARY INFORMATION**



**SUPPLEMENTARY INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

G. van den Berg, Lead, Exam Author  
G. Jenson, Exam Author

**ITEMS OPENED, CLOSED, AND DISCUSSED**

NONE

**ADAMS DOCUMENTS REFERENCED**

Accession No. M21252A189 – FINAL-Written Exam (Note: In accordance with current NRC policy, the release of this examination in ADAMS to the public will be delayed for two years.)

Accession No. M21252A190 – FINAL-Operating Exam (Note: In accordance with current NRC policy, the release of this examination in ADAMS to the public will be delayed for two years.)