



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

May 9, 2018

Mr. Timothy S. Rausch  
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 05000387/2018301 and  
05000388/2018301

Dear Mr. Rausch:

On March 14, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at Susquehanna Steam Electric Station, Units 1 and 2. The enclosed examination report documents the examination results, which were discussed on April 11, 2018, with Mr. Brad Berryman, Site Vice-President, and other members of your staff.

The examination included the evaluation of four applicants for reactor operator licenses and five 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 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 April 11, 2018.

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's Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

**/RA/**

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

Docket No. 50-387 and 50-388  
License No. NPF-14 and NPF-22

T. Rausch

2

Enclosure:  
Examination Report 05000387/2018301 and 05000388/2018301  
w/Attachment: Supplementary Information

cc w/encl:  
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SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION – UNITS 1 AND 2 – INITIAL  
OPERATOR LICENSING EXAMINATION REPORT 05000387/2018301 and  
05000388/2018301 DATED MAY 9, 2018

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**EXAMINATION REPORT**

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

Docket: 50-387 and 50-388

License: NPF-14 and NPF-22

Report: 05000387/2018301 and 05000388/2018301

Enterprise Identifier: L-2018-OLL-0016

Licensee: Susquehanna Nuclear, LLC (Susquehanna)

Facility: Susquehanna Steam Electric Station, Units 1 and 2

Location: Berwick, Pennsylvania

Dates: March 5, 2018 – March 9, 2018 (Operating Test Administration)  
March 14, 2018 (Written Examination Administration)  
March 20, 2018 (Licensee Submitted Post Exam Package)  
March 12, 2018 – April 10, 2018 (NRC Examination Grading)  
April 11, 2018 (Exit Call and Licenses Issued)

Examiners: P. Presby, Chief Examiner, Operations Branch  
T. Fish, Senior Operations Engineer  
M. Patel, Operations Engineer  
T. Dunn, Operations Engineer

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

Enclosure

## **SUMMARY**

ER 05000387/2018301 and 05000388/2018301; 03/05/2018 – 04/11/2018;  
Susquehanna Steam Electric Station, Units 1 and 2; Initial Operator Licensing Examination  
Report.

Four NRC examiners evaluated the competency of four reactor operator applicants and five applicants for instant senior reactor operator licenses at Susquehanna Steam Electric Station, Units 1 and 2. The facility licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 11. The NRC examiners administered the operating tests on March 5, 2018 – March 9, 2018. The written examination was administered by the facility on March 14, 2018. 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.

No findings were identified.

## REPORT DETAILS

### 4. OTHER ACTIVITIES (OA)

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

##### .1 License Applications

###### a. Scope

The examiners reviewed the license applications submitted by the facility 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 a sample of the subject applicant's qualifications in detail to confirm the accuracy of the applications. This audit focused on the applicant's experience and control manipulations that provided significant reactivity changes.

###### b. Findings

No findings were identified.

##### .2 Operator Knowledge and Performance

###### a. Examination Scope

On March 14, 2018, the licensee proctored the administration of the written examinations to all nine applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on March 20, 2018.

The NRC examination team administered the various portions of the operating examination to the applicants on March 5, 2018 – March 9, 2018. The four applicants seeking a reactor operator license participated in three dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 11 system tasks, and an administrative test consisting of four tasks. The five 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 tasks.

###### b. Findings

All of the applicants passed all parts of the examination. For the written examinations, the overall examination average score was 91.44 percent and ranged from 85.0 to 96.0 percent. The average scores for the reactor operator and senior reactor operation portions of the exam were 91.7 and 89.6 percent, respectively. The text of the examination questions and the operating test may be accessed in the ADAMS system under the accession numbers noted in Attachment 1. In accordance with current NRC policy, the release of the examination material in ADAMS to the public will be delayed for approximately two years from the date of the last examination activity on site.

The NRC examiners completed the final grading of the written examination on April 10, 2018, and conducted a review of each missed question to determine the accuracy and validity of the examination questions. 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 questions that met these criteria and submitted the analysis to the chief examiner. The licensee did not submit any post-examination comments.

### .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 NRC provided the facility licensee with the written exam outline on July 3, 2017. The facility licensee submitted operating examination outlines on October 5, 2017. 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 December 15, 2017. The chief examiner reviewed the draft examination package against the requirements of NUREG-1021, and provided comments to the licensee. The NRC conducted an onsite validation of the operating examinations and provided further comments during the week of February 5, 2018. The licensee satisfactorily completed comment resolution for the operating test on February 20, 2018, and completed resolution of the written examination comments on February 22, 2018.

#### 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 weeks.

#### b. Findings

No findings were identified.

.5 Examination Security

a. Examination Scope

The examiners reviewed the examination security protocols for this examination effort 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. Brad Berryman, Site Vice President, and other members of his staff on April 11, 2018. The licensee acknowledged the findings presented.

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

## **SUPPLEMENTARY INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee Personnel

A. Rodgers, Operations Training Manager  
M. Wilcox, Exam Developer

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

#### Opened

NONE

#### Closed

NONE

#### Discussed

NONE

### **ADAMS DOCUMENTS REFERENCED**

Accession No. ML18109A326 – 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. ML18109A328 – FINAL-Operating Exam (Note: In accordance with current NRC policy, the release of this operating examination in ADAMS to the public will be delayed for two years.)