



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

October 7, 2015

Mr. Timothy S. Rausch  
President and Chief Nuclear Officer  
Susquehanna Nuclear, LLC  
769 Salem Blvd - NUCSB3  
Berwick, PA 18603-0467

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 –  
NRC INITIAL OPERATOR LICENSING EXAMINATION REPORT  
05000387/2015302 AND 05000388/2015302

Dear Mr. Rausch:

On August 27, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at the Susquehanna facility. The enclosed report documents the examination findings, which were discussed on September 23, 2015, with Mr. Bradley Drysdale, Training Manager, and other members of your staff.

The examination included the evaluation of five applicants for reactor operator licenses, six applicants for instant senior operator licenses, and one applicant for an upgrade senior operator license. The written and operating examinations were developed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 10. The license examiners determined that all applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses were issued on September 23, 2015.

No findings were identified during this examination.

In accordance with 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 document system Agencywide Documents Access and Management System (ADAMS).

T. Rausch

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ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams/web-based.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

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

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

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Enclosure: NRC Initial Operator Licensing  
Examination Report 05000387/2015302 and  
05000388/2015302 w/Attachment:  
Supplemental Information

T. Rausch

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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 : 05000387/2015302 and 05000388/2015302

Licensee: Susquehanna Nuclear, LLC  
Talen Energy

Facility: Susquehanna Steam Electric Station, Units 1 and 2

Location: Berwick, PA 18603-0467

Dates: August 17-21, 2015 (Operating Test Administration)  
August 27, 2015 (Written Examination Administration)  
September 2, 2015 (Licensee Submitted Post Exam Package)  
August 21 – September 18, 2015 (NRC Examination Grading)  
September 23, 2015 (Licenses Issued)

Examiners: T. Fish, Chief Examiner, Operations Branch  
J. De Marshall, Sr. Operations Engineer  
B. Fuller, Sr. Operations Engineer  
C. Lally, Operations Engineer

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

## **SUMMARY OF FINDINGS**

ER 05000387/2015302 and 05000388/2015302; August 17-21, 2015 and August 27, 2015; Susquehanna Steam Electric Station, Units 1 and 2; Initial Operator Licensing Examination Report.

NRC examiners evaluated the competency of five applicants for reactor operator licenses, six applicants for instant senior operator licenses, and one applicant for an upgrade senior operator license at the facility. The facility licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 10. The written examination was administered by the facility on August 27, 2015. NRC examiners administered the operating tests August 17-21, 2015. The license examiners determined that all applicants satisfied the requirements of 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 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 six of the license applications in detail to confirm that they accurately reflected the subject applicant's qualifications. This audit focused on each 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 27, 2015, 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 September 2, 2015.

The NRC examination team administered the various portions of the operating examination to all applicants August 17-21, 2015. The five applicants for reactor operator licenses participated in at least two 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 six applicants seeking an instant senior operator license participated in at least two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 10 system tasks, and an administrative test consisting of five administrative tasks. The applicant for an upgrade senior operator license participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of five system tasks, and an administrative test consisting of five administrative tasks.

b. Findings

All of the applicants passed all parts of the operating test and the written examination. For the written examinations, the reactor operator applicants' average score was 85.06 percent and ranged from 80.00 to 90.66 percent; the senior operator applicants' average score was 90.14 percent and ranged from 86.00 to 93.00 percent. The text of the examination questions 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 2 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 performance analysis and submitted the analysis to the chief examiner.

The licensee also submitted one post-examination question comment on September 2, 2015. The NRC reviewed the facility's post-exam comment submittal and accepted the facility recommendation for the question. The answer key was changed accordingly. The licensee's post-examination comments with the NRC resolution may be accessed in the ADAMS system under the accession number noted in Attachment 1.

.3 Initial Licensing Examination Development

a. Examination Scope

The facility licensee developed the examinations in accordance with NUREG-1021, Revision 10. All facility licensee 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 April 15, 2015. 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 June 8, 2015. 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 July 20, 2015. The licensee satisfactorily completed comment resolution on August 9, 2015.

b. Findings

The NRC approved the initial examination outline and advised the licensee to proceed with 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 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. B. Drysdale, Training Manager, and other licensee staff on September 23, 2015. The licensee acknowledged the findings presented.

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

Attachment:  
Supplemental Information



**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

G. van den Berg, Facility Exam Lead

R. Bolduc, Facility Exam Author

**ITEMS OPENED, CLOSED, AND DISCUSSED**

None

**ADAMS DOCUMENTS REFERENCED**

Accession No. ML15275A364 – 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. ML15275A365 – Operating Exam

Accession No. ML15278A362 – Facility Post Exam Comments and NRC Resolution