



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

June 26, 2018

Mr. Brad Berryman  
Site Vice President  
Susquehanna Nuclear, LLC  
769 Salem Boulevard  
NUCSB3  
Berwick, PA 18603-0467

**SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 270 AND 252 RE: TECHNICAL SPECIFICATIONS TO ADOPT TSTF-551, "REVISE SECONDARY CONTAINMENT SURVEILLANCE REQUIREMENTS" (EPID L-2017-LLA-0410)**

Dear Mr. Berryman:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 270 to Renewed Facility Operating License No. NPF-14 and Amendment No. 252 to Renewed Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station (SSES), Units 1 and 2, respectively. The amendments consist of changes to the technical specifications (TSs) in response to your application dated December 14, 2017.

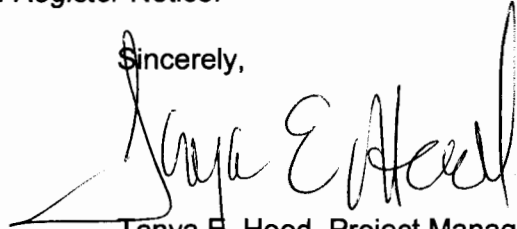
The amendments revise TS 3.6.4.1, "Secondary Containment," Surveillance Requirement (SR) 3.6.4.1.1. The SR is revised to address conditions during which the secondary containment pressure may not meet the SR pressure requirements. The changes are consistent with Technical Specifications Task Force (TSTF) Traveler TSTF-551, Revision 3, "Revise Secondary Containment Surveillance Requirements," dated October 3, 2016.

B. Berryman

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A copy of the related safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's Biweekly *Federal Register* Notice.

Sincerely,

A handwritten signature in black ink, appearing to read "Tanya E. Hood". The signature is written in a cursive style with a large, sweeping initial "T".

Tanya E. Hood, Project Manager  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosures:

1. Amendment No. 270 to  
License No. NPF-14
2. Amendment No. 252 to  
License No. NPF-22
3. Safety Evaluation

cc: Listserv

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 – ISSUANCE OF AMENDMENT NOS. 270 AND 252 RE: TECHNICAL SPECIFICATIONS TO ADOPT TSTF-551, “REVISE SECONDARY CONTAINMENT SURVEILLANCE REQUIREMENTS” (EPID L-2017-LLA-0410) DATED JUNE 26, 2018

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\*by e-mail

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DATE	05/29/2018	06/08/2018	01/25/2018	06/18/2018
OFFICE	OGC	NRR/DORL/LPL1/BC	NRR/DORL/LPL1/PM	
NAME	JWachutka	JDanna <i>JD</i>	THood <i>TH</i>	
DATE	06/25/2018	06/26/2018	06/26/2018	

**OFFICIAL RECORD COPY**

ATTACHMENT TO LICENSE AMENDMENT NO. 270  
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1  
RENEWED FACILITY OPERATING LICENSE NO. NPF-14  
DOCKET NO. 50-387

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE

Page 3

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Page 3

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

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TS / TOC-2  
TS / TOC-3  
TS / TOC-4  
TS / 3.6-36  
TS / 3.6-37

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TS / TOC-1  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SUSQUEHANNA NUCLEAR, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-387

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 270  
Renewed License No. NPF-14

1. The U.S. Nuclear Regulatory Commission (NRC or the Commission) has found that:
  - A. The application for the amendment filed by Susquehanna Nuclear, LLC, dated December 14, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-22 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 252, and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. Susquehanna Nuclear, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



James G. Danna, Chief  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed  
Facility Operating License and  
Technical Specifications

Date of Issuance: June 26, 2018

- (3) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed neutron sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Susquehanna Nuclear, LLC is authorized to operate the facility at reactor core power levels not in excess of 3952 megawatts thermal in accordance with the conditions specified herein. The preoperational tests, startup tests and other items identified in License Conditions 2.C.(36), 2.C.(37), 2.C.(38), and 2.C.(39) to this license shall be completed as specified.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 270, and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. Susquehanna Nuclear, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

For Surveillance Requirements (SRs) that are new in Amendment 178 to Facility Operating License No. NPF-14, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 178. For SRs that existed prior to Amendment 178, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 178.

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Secondary containment inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p>	<p>C.1 -----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>Suspend movement of irradiated fuel assemblies in the secondary containment.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
	<p>C.2 Suspend CORE ALTERATIONS.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
	<p>C.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.4.1.1 -----NOTE----- Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required secondary containment vacuum. -----</p> <p>Verify secondary containment vacuum is <math>\geq 0.25</math> inch of vacuum water gauge.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.2 Verify all required secondary containment removable walls and equipment hatches required to be closed are closed and sealed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.4.1.3 Verify one secondary containment access door in each access opening is closed, except when the access opening is being used for entry and exit.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.4 -----NOTE----- The maximum time allowed for secondary containment draw down is dependent on the secondary containment configuration. -----  Verify each SGT subsystem will draw down the secondary containment to <math>\geq 0.25</math> inch of vacuum water gauge in less than or equal to the maximum time allowed for the secondary containment configuration that is OPERABLE.</p>	<p>-----NOTE----- Test each configuration at least one time every 60 months. -----  In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.5 -----NOTE----- The maximum flow allowed for maintaining secondary containment vacuum is dependent on the secondary containment configuration. -----  Verify each SGT subsystem can maintain <math>\geq 0.25</math> inch of vacuum water gauge in the secondary containment for at least 1 hour at a flow rate less than or equal to the maximum flow rate permitted for the secondary containment configuration that is OPERABLE.</p>	<p>-----NOTE----- Test each configuration at least one time every 60 months. -----  In accordance with the Surveillance Frequency Control Program</p>

ATTACHMENT TO LICENSE AMENDMENT NO. 252  
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2  
RENEWED FACILITY OPERATING LICENSE NO. NPF-22  
DOCKET NO. 50-388

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE

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Page 3

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

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TS / TOC-2  
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INSERT

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UNITED STATES  
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WASHINGTON, D.C. 20555-0001

SUSQUEHANNA NUCLEAR, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 252  
Renewed License No. NPF-22

1. The U.S. Nuclear Regulatory Commission (NRC or the Commission) has found that:
  - A. The application for the amendment filed by the Susquehanna Nuclear, LLC, dated December 14, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-14 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 270, and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. Susquehanna Nuclear, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



James G. Danna, Chief  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License and  
Technical Specifications

Date of Issuance: June 26, 2018



- (3) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed neutron sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Susquehanna Nuclear, LLC is authorized to operate the facility at reactor core power levels not in excess of 3952 megawatts thermal in accordance with the conditions specified herein. The preoperational tests, startup tests and other items identified in License Conditions 2.C.(20), 2.C.(21), 2.C.(22), and 2.C.(23) to this license shall be completed as specified.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 252, and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. Susquehanna Nuclear, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

For Surveillance Requirements (SRs) that are new in Amendment 151 to Facility Operating License No. NPF-22, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 151. For SRs that existed prior to Amendment 151, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 151.

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Secondary containment inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p>	<p>C.1 -----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p><u>AND</u></p> <p>C.2 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p> <p>C.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.4.1.1 -----NOTE----- Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required secondary containment vacuum. -----</p> <p>Verify secondary containment vacuum is <math>\geq 0.25</math> inch of vacuum water gauge.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.2 Verify all required secondary containment removable walls and equipment hatches required to be closed are closed and sealed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.4.1.3 Verify one secondary containment access door in each access opening is closed, except when the access opening is being used for entry and exit.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.4 -----NOTE----- The maximum time allowed for secondary containment draw down is dependent on the secondary containment configuration. ----- Verify each SGT subsystem will draw down the secondary containment to <math>\geq 0.25</math> inch of vacuum water gauge in less than or equal to the maximum time allowed for the secondary containment configuration that is OPERABLE.</p>	<p>-----NOTE----- Test each configuration at least one time every 60 months. ----- In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.5 -----NOTE----- The maximum flow allowed for maintaining secondary containment vacuum is dependent on the secondary containment configuration. ----- Verify each SGT subsystem can maintain <math>\geq 0.25</math> inch of vacuum water gauge in the secondary containment for at least 1 hour at a flow rate less than or equal to the maximum flow rate permitted for the secondary containment configuration that is OPERABLE.</p>	<p>-----NOTE----- Test each configuration at least one time every 60 months. ----- In accordance with the Surveillance Frequency Control Program</p>



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 270 TO RENEWED FACILITY OPERATING

LICENSE NO. NPF-14

AND AMENDMENT NO. 252 TO RENEWED FACILITY OPERATING

LICENSE NO. NPF-22

SUSQUEHANNA NUCLEAR, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2

DOCKET NOS. 50-387 AND 50-388

1.0 INTRODUCTION

By application dated December 14, 2017,<sup>1</sup> Susquehanna Nuclear, LLC (the licensee) requested changes to the technical specifications (TSs) for Susquehanna Steam Electric Station, Units 1 and 2 (SSES). Specifically, the licensee requested changes to the TSs to adopt Technical Specifications Task Force (TSTF) Traveler TSTF-551, Revision 3, "Revise Secondary Containment Surveillance Requirements," dated October 3, 2016.<sup>2</sup> The U.S. Nuclear Regulatory Commission (NRC) approved the traveler on September 21, 2017.<sup>3</sup>

The proposed changes would allow the secondary containment vacuum limit to not be met for up to 4 hours provided that the standby gas treatment (SGT) system remains capable of establishing the required secondary containment vacuum.

2.0 REGULATORY EVALUATION

2.1 System Description

The SSES secondary containment consists of three distinct zones. Zones I and II are the portions of the Units 1 and 2 reactor buildings below the 779-foot elevation surrounding the Units 1 and 2 primary containment, respectively. Zone III consists of the portion of the Units 1 and 2 reactor buildings above the 779-foot elevation with the exception of heating, ventilation, and air conditioning rooms which are not part of the secondary containment. The

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<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession No. ML17348B097.

<sup>2</sup> ADAMS Accession No. ML16277A226.

<sup>3</sup> ADAMS Package Accession No. ML17236A365.



secondary containment is a structure that encloses the primary containment, including components that may contain primary system fluid. The safety function of the secondary containment is to contain, dilute, and hold up fission products that may leak from primary containment following a design-basis accident (DBA) to ensure the control room operator and offsite doses are within the regulatory limits. There is no redundant train or system that can perform the secondary containment function should the secondary containment be inoperable.

The secondary containment boundary is the combination of walls, floor, roof, ducting, doors, hatches, penetrations, and equipment that physically form the secondary containment. Routinely used secondary containment access openings contain at least one inner and one outer door in an airlock configuration. In some cases, secondary containment access openings are shared such that there are multiple inner or outer doors. All secondary containment access doors are normally kept closed, except when the access opening is being used for entry and exit of personnel, equipment, or material.

Secondary containment operability is based on its ability to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. To prevent ground-level exfiltration of radioactive material while allowing the secondary containment to be designed as a mostly conventional structure, the secondary containment requires support systems to maintain the pressure at less than atmospheric pressure. During normal operation, non-safety related systems are used to maintain the secondary containment at a slight negative pressure to ensure that any leakage is into the building and that any secondary containment atmosphere exiting is via a pathway monitored for radioactive material. However, during normal operation, it is possible for the secondary containment vacuum to be momentarily less than the required vacuum for a number of reasons, such as during wind gusts or swapping of the normal ventilation subsystems.

During emergency conditions, the SGT system is designed to be capable of drawing down the secondary containment to a required vacuum within a prescribed time and continue to maintain the negative pressure as assumed in the accident analysis. For SSES, the SGT system must be able to establish the required vacuum within 10 minutes. The leak tightness of the secondary containment together with the SGT system ensure that radioactive material is either contained in the secondary containment or filtered through the SGT system filter trains before being discharged to the outside environment via the elevated release point.

## 2.2 Proposed Revision to Surveillance Requirements

### 2.2.1 *Proposed Revision to Surveillance Requirement 3.6.4.1.1*

Surveillance requirement (SR) 3.6.4.1.1 requires verification that secondary containment vacuum is  $\geq 0.25$  inch of vacuum water gauge. This SR would be modified by adding a note that states:

Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required secondary containment vacuum.

### 2.2.2 *Proposed Revision to Surveillance Requirement 3.6.4.1.3*

A note in SR 3.6.4.1.3 allows single door access openings between required zones within the secondary containment boundary to be opened for entry and exit. This SR would be modified by deleting this note.

### 2.2.3 *Proposed Revision to Surveillance Requirement 3.6.4.1.4*

An editorial change would be made to SR 3.6.4.1.4 in which the words "standby gas treatment" would be replaced with the abbreviation "SGT."

## 2.3 Regulatory Requirements and Guidance

The regulation under Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(a)(1) requires an applicant for an operating license to include in the application proposed TS in accordance with the requirements of 10 CFR 50.36. The applicant must include in the application a "summary statement of the bases or reasons for such specifications, other than those covering administrative controls." However, per 10 CFR 50.36(a)(1), these TS bases "shall not become part of the technical specifications."

Additionally, 10 CFR 50.36(b) states:

Each license authorizing operation of a ... utilization facility ... will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to [10 CFR] 50.34 ["Contents of applications; technical information"]. The Commission may include such additional technical specifications as the Commission finds appropriate.

The categories of items required to be included in the TSs are provided in 10 CFR 50.36(c). As required by 10 CFR 50.36(c)(2)(i), the TSs will include limiting conditions for operation (LCOs), which are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Per 10 CFR 50.36(c)(2)(i), when an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

The regulation under 10 CFR 50.36(c)(3) requires TSs to include items in the category of SRs, which are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met.

The NRC staff's guidance for the review of TSs is in Chapter 16, "*Technical Specifications*," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition" (SRP), dated March 2010.<sup>4</sup>

SRP Section 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," Revision 0, dated July 2000,<sup>5</sup> provides guidance to the NRC staff for the review of alternate source term (AST) amendment requests. It states that the NRC reviewer should evaluate the

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<sup>4</sup> ADAMS Accession No. ML100351425.

<sup>5</sup> ADAMS Accession No. ML003734190.

proposed change against the guidance in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," Revision 0, dated July 2000.<sup>6</sup>

The RG 1.183 provides an acceptable methodology for analyzing the radiological consequences of several design basis accidents to show compliance with 10 CFR 50.67, "Accident source term." The RG 1.183 provides guidance to licensees on acceptable application of AST (also known as the accident source term) submittals, including acceptable radiological analysis assumptions for use in conjunction with the accepted AST.

The regulations under 10 CFR 50.67(b)(2) state:

The NRC may issue the amendment only if the applicant's analysis demonstrates with reasonable assurance that:

- (i) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 0.25 Sv [Sievert] (25 rem [roentgen equivalent man])<sup>7</sup> total effective dose equivalent (TEDE).
- (ii) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage), would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE).
- (iii) Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) total effective dose equivalent (TEDE) for the duration of the accident.

### 3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's application in accordance with the regulatory requirements and guidance discussed in Section 2.3 of this safety evaluation (SE) and the NRC-approved traveler TSTF-551, Revision 3. In determining whether an amendment to a license will be issued, the Commission is guided by the considerations that govern the issuance of initial licenses to the extent applicable and appropriate. In making its determination as to whether to amend the license, the NRC staff considered those regulatory requirements that are automatically conditions of the license through 10 CFR 50.54. The application also included proposed changes to the TS bases. Although the TS bases are not part of the TS, the NRC staff confirmed that the TS bases described the basis for each revised TS requirement accurately as described in Chapter 16 of NUREG-0800.

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<sup>6</sup> ADAMS Accession No. ML003716792.

<sup>7</sup> The use of 0.25 Sv (25 rem) TEDE is not intended to imply that this value constitutes an acceptable limit for emergency doses to the public under accident conditions. Rather, this 0.25 Sv (25 rem) TEDE value has been stated in this section as a reference value, which can be used in the evaluation of proposed design basis changes with respect to potential reactor accidents of exceedingly low probability of occurrence and low risk of public exposure to radiation.

### 3.1 Proposed Change to Surveillance Requirement 3.6.4.1.1

The licensee proposes to add a note to SR 3.6.4.1.1. The note would allow the SR to not be met for up to 4 hours if an analysis demonstrates that one SGT subsystem is capable of establishing the required secondary containment vacuum. During normal operation, conditions may occur that result in SR 3.6.4.1.1 not being met for short durations. For example, wind gusts that lower external pressure or loss of the normal ventilation system that maintains secondary containment vacuum may affect secondary containment vacuum. These conditions may not be indicative of degradations of the secondary containment boundary or of the ability of the SGT system to perform its specified safety function.

The proposed note would provide an allowance for the licensee to confirm secondary containment operability by confirming that one SGT subsystem is capable of performing its specified safety function. This confirmation is necessary to apply the exception to meeting the SR acceptance criterion. While the duration of these occurrences is anticipated to be very brief, the allowance would be permitted for a maximum of 4 hours, which is consistent with the time permitted for secondary containment to be inoperable per Condition A of LCO 3.6.4.1.

The NRC staff has evaluated the impact of this proposed note on the licensee's design basis radiological consequence analyses to ensure that the proposed change will not result in an increase in the dose consequences and that the resulting calculated doses remain within the current radiological consequence analyses.

The proposed addition of the note to SR 3.6.4.1.1 does not change the TS requirement to meet SR 3.6.4.1.4 and SR 3.6.4.1.5. Surveillance Requirement 3.6.4.1.4 requires verification that the secondary containment can be drawn down to  $\geq 0.25$  inch of vacuum water gauge in less than or equal to the maximum time allowed for the secondary containment configuration that is operable using one SGT subsystem. Surveillance Requirement 3.6.4.1.5 requires verification that the secondary containment can be maintained  $\geq 0.25$  inch of vacuum water gauge for at least 1 hour at a flow rate less than or equal to the maximum flow rate permitted for the secondary containment configuration that is operable using one SGT subsystem. In addition, TS LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," must be met; otherwise, the licensee shall shut down the reactor or follow any remedial action permitted by TSs until the condition can be met.

As discussed above, secondary containment operability is based on its ability to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. To prevent ground-level exfiltration of radioactive material the secondary containment pressure must be maintained at a pressure that is less than atmospheric pressure. The secondary containment requires support systems to maintain the control volume pressure less than atmospheric pressure. Following an accident, the SGT system ensures that the secondary containment pressure is less than the external atmospheric pressure. During normal operation, non-safety related systems are used to maintain the secondary containment at a negative pressure. However, during normal operation it is possible for the secondary containment vacuum to be momentarily less than the required vacuum for a number of reasons. These conditions may not be indicative of degradations of the secondary containment boundary or of the ability of the SGT system to perform its specified safety function. Since the licensee meets the requirements of SR 3.6.4.1.4 and SR 3.6.4.1.5, meets the LCO or is following the Actions of TS LCO 3.6.4.3, and the licensee's analysis confirms secondary containment operability by confirming that one SGT subsystem is capable of performing its specified safety function, then

there is reasonable assurance that the secondary containment and SGT subsystem will maintain the vacuum requirements during a DBA.

Therefore, the NRC staff has determined that if the conditions do not affect (1) the ability to maintain the secondary containment pressure during an accident, at a vacuum that is consistent with the accident analyses, and (2) the time assumed in the accident analyses to draw down the secondary containment pressure, then the secondary containment can perform its safety function and may be considered TS operable. This is evident by being able to successfully perform and meet SR 3.6.4.1.4 and SR 3.6.4.1.5. These SRs require the SGT system to establish and maintain the required vacuum in the secondary containment as assumed in the accident analyses.

Furthermore, because the specified safety functions of the secondary containment and SGT subsystem can be performed in the time assumed in the licensee's accident analysis, then the fission products that bypass or leak from primary containment, or are released from the reactor coolant pressure boundary components located in secondary containment prior to release to the environment, will be contained and processed as assumed in the licensee's design basis radiological consequence dose analyses. Therefore, the NRC staff finds that the proposed change does not affect the current radiological consequence analyses and concludes that the proposed change is acceptable with respect to the radiological consequences of the DBAs.

### 3.2 Proposed Change to Surveillance Requirement 3.6.4.1.3

The licensee proposes to delete the existing note in SR 3.6.4.1.3 which states, "Single door access openings between required zones within the secondary containment boundary may be opened for entry and exit." The licensee states that this note is not necessary because it is redundant to the SR itself which contains an allowance for entry and exit through each access opening in the secondary containment and that this deletion does not change the intent of the existing SR.

The NRC staff reviewed the proposed change to SR 3.6.4.1.3. The NRC staff determined that SR 3.6.4.1.3 continues to provide appropriate confirmation that secondary containment boundary doors are properly positioned and capable of performing their function in preserving the secondary containment boundary. The NRC staff determined that SR 3.6.4.1.3 continues to appropriately verify the operability of the secondary containment and provides assurance that the necessary quality of systems and components are maintained in accordance with 10 CFR 50.36(c)(3).

Additionally, the NRC staff evaluated the impact of deleting the SR note on the licensee's design-basis radiological consequence dose analyses to ensure that the modification will not result in an increase in the radiation dose consequences and that the resulting calculated radiation doses will remain within the design criteria specified in the current radiological consequence analyses. The NRC staff finds that the licensee's proposed change to SR 3.6.4.1.3 is editorial and does not change any technical aspects of the SR. The proposed change does not impact the licensee's design basis radiological consequence analyses and will not result in an increase in any onsite or offsite dose. Therefore, the NRC staff concludes that this change is acceptable with respect to the radiological consequences of the DBAs.

### 3.3 Proposed Change to Surveillance Requirement 3.6.4.1.4

The change to SR 3.6.4.1.4 is editorial only and does not change any technical aspects of SR 3.6.4.1.4. The NRC staff determined that the change is acceptable.

### 3.4 Variations from the Approved Traveler

The licensee is proposing the following variations from the TS changes described in NRC-approved TSTF-551, Revision 3 or the applicable parts of the NRC staff's safety evaluation for TSTF-551. These variations do not affect the applicability of TSTF-551 or the NRC staff's SE for TSTF-551 to the proposed license amendment.

The SSES TS already contains an allowance similar to that made to SR 3.6.4.1.3 in TSTF-551. Therefore, the proposed change does not contain this portion of TSTF-551.

The licensee proposes administrative updates to the table of contents (TOC) for the SSES TS. Specifically, the licensee proposes:

1. In the Unit 1 TOC, the misspelled word, "INSTURMENTATION," on page TS/TOC - 2 would be corrected so that it reads, "INSTRUMENTATION."
2. In the Units 1 and 2 TOCs, on page TS/TOC - 3, the following would be added to the TOC, "3.7.8 Main Turbine Pressure Regulation System ... 3.7-18."
3. In the Units 1 and 2 TOCs, on pages TS/TOC - 1 through 4, the annotation, "PPL Rev." would be removed from the page header.

These changes are administrative and do not affect the applicability of TSTF-551 to the SSES TS. In addition, the proposed changes do not change any requirements in the SSES TS. Therefore, the NRC staff finds these changes to be acceptable.

### 3.5 Summary

The NRC staff reviewed the proposed changes to the TS and determined that they meet the standards for TS in 10 CFR 50.36(b). The proposed SRs assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met, and satisfy 10 CFR 50.36(c)(3). Additionally, the changes to the TS were reviewed for technical clarity and consistency with customary terminology and format in accordance with SRP Chapter 16.

The NRC staff also evaluated the impact of the proposed changes on the design basis radiological consequence analyses against the regulatory requirements and guidance identified in Section 2.3 of this SE. The NRC staff finds that with the proposed changes, the TSs will continue to comply with the requirements of the current radiological consequence analyses. Therefore, the proposed changes are acceptable with regard to the radiological consequences of the postulated DBAs.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments on May 29, 2018. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and change SRs. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on February 27, 2018 (83 FR 8520). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

#### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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