



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

July 16, 2019

Mr. Kevin Cimorelli  
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. 273 AND 255 RE: ADOPT TSTF-439, REVISION 2, "ELIMINATE SECOND COMPLETION TIMES LIMITING TIME FROM DISCOVERY OF FAILURE TO MEET AN LCO" (EPID L-2019-LLA-0066)**

Dear Mr. Cimorelli:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 273 to Renewed Facility Operating License No. NPF-14 and Amendment No. 255 to Renewed Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station (Susquehanna), Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated March 28, 2019.

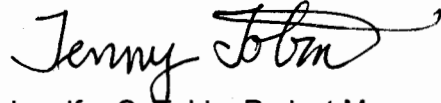
The changes revise TS Section 1.3 to alter the discussion contained in Example 1.3-3 to eliminate second completion times. Consistent with these changes, the second completion times associated with TS 3.8.1, "AC [Alternating Current] Sources – Operating," Required Actions A.3 and B.4, and TS 3.8.7, "Distribution Systems – Operating," Required Actions A.1 and B.1, are deleted. The changes are consistent with Technical Specifications Task Force (TSTF) Traveler TSTF-439, Revision 2, "Eliminate Second Completion Times Limiting Time from Discovery of Failure to Meet an LCO [Limiting Condition for Operation]," dated June 20, 2005.

K. Cimorelli

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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 "Jennifer C. Tobin". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Jennifer C. Tobin, 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. 273 to  
License No. NPF-14
2. Amendment No. 255 to  
License No. NPF-22
3. Safety Evaluation

cc: Listserv



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. 273  
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 March 28, 2019, 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. 273, 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 90 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: July 16, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 273  
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

INSERT  
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  
1.3-2  
1.3-6  
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3.8-37

INSERT  
1.3-2  
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1.3-7  
3.8-2  
3.8-3  
3.8-37

- (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. 273, 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.

1.3 Completion Times

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DESCRIPTION (continued) However, when a subsequent division, subsystem, component, or variable expressed in the Condition is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. To apply this Completion Time extension, two criteria must first be met. The subsequent inoperability:

- a. Must exist concurrent with the first inoperability; and
- b. Must remain inoperable or not within limits after the first inoperability is resolved.

The total Completion Time allowed for completing a Required Action to address the subsequent inoperability shall be limited to the more restrictive of either:

- a. The stated Completion Time, as measured from the initial entry into the Condition, plus an additional 24 hours; or
- b. The stated Completion Time as measured from discovery of the subsequent inoperability.

The above Completion Time extensions do not apply to those Specifications that have exceptions that allow completely separate re-entry into the Condition (for each division, subsystem, component or variable expressed in the Condition) and separate tracking of Completion Times based on this re-entry. These exceptions are stated in individual Specifications.

The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Action versus the time of Condition entry) or as a time modified by the phrase "from discovery . . ."

1.3 Completion Times

EXAMPLES  
(continued)

EXAMPLE 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function X subsystem inoperable.	A.1 Restore Function X subsystem to OPERABLE status.	7 days
B. One Function Y subsystem inoperable.	B.1 Restore Function Y subsystem to OPERABLE status.	72 hours
C. One Function X subsystem inoperable.	C.1 Restore Function X subsystem to OPERABLE status.	72 hours
<u>AND</u>	<u>OR</u>	
One Function Y subsystem inoperable.	C.2 Restore Function Y subsystem to OPERABLE status.	72 hours



1.3 Completion Times

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EXAMPLES  
(continued)

EXAMPLE 1.3-3 (continued)

When one Function X subsystem and one Function Y subsystem are inoperable, Condition A and Condition B are concurrently applicable. The Completion Times for Condition A and Condition B are tracked separately for each subsystem, starting from the time each subsystem was declared inoperable and the Condition was entered. A separate Completion Time is established for Condition C and tracked from the time the second subsystem was declared inoperable (i.e., the time the situation described in Condition C was discovered).

If Required Action C.2 is completed within the specified Completion Time, Conditions B and C are exited. If the Completion Time for Required Action A.1 has not expired, operation may continue in accordance with Condition A. The remaining Completion Time in Condition A is measured from the time the affected subsystem was declared inoperable (i.e., initial entry into Condition A).

It is possible to alternate between Conditions A, B, and C in such a manner that operation could continue indefinitely without ever restoring systems to meet the LCO. However, doing so would be inconsistent with the basis of the Completion Times. Therefore, there shall be administrative controls to limit the maximum time allowed for any combination of Conditions that result in a single contiguous occurrence of failing to meet the LCO. These administrative controls shall ensure that the Completion Times for those Conditions are not inappropriately extended.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3 Restore offsite circuit to OPERABLE status.	72 hours
B. One required DG inoperable.	B.1 Perform SR 3.8.1.1 for OPERABLE offsite circuits.  <u>AND</u>  B.2 Declare required feature(s), supported by the inoperable DG, inoperable when the redundant required feature(s) are inoperable.  <u>AND</u>	1 hour  <u>AND</u> Once per 8 hours thereafter  4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)  (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. (continued)</p>	<p>B.3.1 Determine OPERABLE DGs are not inoperable due to common cause failure.</p> <p><u>OR</u></p> <p>B.3.2 Perform SR 3.8.1.7 for OPERABLE DGs.</p> <p><u>AND</u></p> <p>B.4 Restore required DG to OPERABLE status.</p>	<p>24 hours</p> <p>24 hours</p> <p><u>OR</u></p> <p>24 hours prior to entering Condition B</p> <p>72 hours</p>
<p>C. Two offsite circuits inoperable.</p>	<p>C.1 Restore one offsite circuit to OPERABLE status.</p>	<p>24 hours</p>
<p>D. One offsite circuit inoperable.</p> <p><u>AND</u></p> <p>One required DG inoperable.</p>	<p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.7, "Distribution Systems – Operating," when Condition D is entered with no AC power source to any 4.16 kV ESS bus.</p> <hr/> <p>D.1 Restore offsite circuit to OPERABLE status.</p> <p><u>OR</u></p> <p>D.2 Restore required DG to OPERABLE status</p>	<p>12 hours</p> <p>12 hours</p>

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Distribution Systems – Operating

LCO 3.8.7 The electrical power distribution subsystems in Table 3.8.7-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

**ACTIONS**

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Not applicable to DG E DC electrical power subsystem. -----</p> <p>One or more Unit 1 AC electrical power distribution subsystems inoperable.</p>	<p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources – Operating," for DC source(s) made inoperable by inoperable power distribution subsystem(s). -----</p> <p>A.1 Restore Unit 1 AC electrical power distribution subsystem(s) to OPERABLE status.</p>	<p>8 hours</p>
<p>B. -----NOTE----- Not applicable to DG E DC electrical power subsystem. -----</p> <p>One or more Unit 1 DC electrical power distribution subsystems inoperable.</p>	<p>B.1 Restore Unit 1 DC electrical power distribution subsystem(s) to OPERABLE status.</p>	<p>2 hours</p>



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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. 255  
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 March 28, 2019, 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. 255, 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 90 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: July 16, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 255  
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.

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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.

REMOVE  
1.3-2  
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3.8-45  
3.8-46

INSERT  
1.3-2  
1.3-6  
1.3-7  
3.8-2  
3.8-3  
3.8-44  
3.8-45  
3.8-46

- (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. 255, 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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**1.3 Completion Times**

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**DESCRIPTION** (continued) However, when a subsequent division, subsystem, component, or variable expressed in the Condition is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. To apply this Completion Time extension, two criteria must first be met. The subsequent inoperability:

- a. Must exist concurrent with the first inoperability; and
- b. Must remain inoperable or not within limits after the first inoperability is resolved.

The total Completion Time allowed for completing a Required Action to address the subsequent inoperability shall be limited to the more restrictive of either:

- a. The stated Completion Time, as measured from the initial entry into the Condition, plus an additional 24 hours; or
- b. The stated Completion Time as measured from discovery of the subsequent inoperability.

The above Completion Time extensions do not apply to those Specifications that have exceptions that allow completely separate re-entry into the Condition (for each division, subsystem, component or variable expressed in the Condition) and separate tracking of Completion Times based on this re-entry. These exceptions are stated in individual Specifications.

The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Action versus the time of Condition entry) or as a time modified by the phrase "from discovery . . ."

1.3 Completion Times

EXAMPLES  
(continued)

EXAMPLE 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function X subsystem inoperable.	A.1 Restore Function X subsystem to OPERABLE status.	7 days
B. One Function Y subsystem inoperable.	B.1 Restore Function Y subsystem to OPERABLE status.	72 hours
C. One Function X subsystem inoperable.	C.1 Restore Function X subsystem to OPERABLE status.	72 hours
<u>AND</u>	<u>OR</u>	
One Function Y subsystem inoperable.	C.2 Restore Function Y subsystem to OPERABLE status.	72 hours

1.3 Completion Times

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EXAMPLES  
(continued)

EXAMPLE 1.3-3 (continued)

When one Function X subsystem and one Function Y subsystem are inoperable, Condition A and Condition B are concurrently applicable. The Completion Times for Condition A and Condition B are tracked separately for each subsystem, starting from the time each subsystem was declared inoperable and the Condition was entered. A separate Completion Time is established for Condition C and tracked from the time the second subsystem was declared inoperable (i.e., the time the situation described in Condition C was discovered).

If Required Action C.2 is completed within the specified Completion Time, Conditions B and C are exited. If the Completion Time for Required Action A.1 has not expired, operation may continue in accordance with Condition A. The remaining Completion Time in Condition A is measured from the time the affected subsystem was declared inoperable (i.e., initial entry into Condition A).

It is possible to alternate between Conditions A, B, and C in such a manner that operation could continue indefinitely without ever restoring systems to meet the LCO. However, doing so would be inconsistent with the basis of the Completion Times. Therefore, there shall be administrative controls to limit the maximum time allowed for any combination of Conditions that result in a single contiguous occurrence of failing to meet the LCO. These administrative controls shall ensure that the Completion Times for those Conditions are not inappropriately extended.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p><u>AND</u></p> <p>A.2 Declare required feature(s) with no offsite power available inoperable when the redundant required feature(s) are inoperable.</p> <p><u>AND</u></p> <p>A.3 Restore offsite circuit to OPERABLE status.</p>	<p>24 hours from discovery of no offsite power to one 4.16 kV ESS bus concurrent with inoperability of redundant required feature(s)</p> <p>72 hours</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One required DG inoperable.</p>	<p>B.1 Perform SR 3.8.1.1 for OPERABLE offsite circuits.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 8 hours thereafter</p>
	<p><u>AND</u></p> <p>B.2 Declare required feature(s), supported by the inoperable DG, inoperable when the redundant required feature(s) are inoperable.</p>	<p>4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)</p>
	<p><u>AND</u></p> <p>B.3.1 Determine OPERABLE DGs are not inoperable due to common cause failure.</p>	<p>24 hours</p>
	<p><u>OR</u></p> <p>B.3.2 Perform SR 3.8.1.7 for OPERABLE DGs.</p>	<p>24 hours</p> <p><u>OR</u></p> <p>24 hours prior to entering Condition B</p>
	<p><u>AND</u></p> <p>B.4 Restore required DG to OPERABLE status.</p>	<p>72 hours</p>

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Distribution Systems – Operating

LCO 3.8.7 The electrical power distribution subsystems in Table 3.8.7-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Not applicable to DG E DC Bus 0D597 -----</p> <p>One or more Unit 2 AC electrical power distribution subsystems inoperable.</p>	<p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources – Operating," for DC source(s) made inoperable by inoperable power distribution subsystem(s). -----</p> <p>A.1 Restore Unit 2 AC electrical power distribution subsystem(s) to OPERABLE status.</p>	<p>8 hours</p>
<p>B. -----NOTE----- Not applicable to DG E DC Bus 0D597 -----</p> <p>One or more Unit 2 DC electrical power distribution subsystems inoperable.</p>	<p>B.1 Restore Unit 2 DC electrical power distribution subsystem(s) to OPERABLE status.</p>	<p>2 hours</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One Unit 1 AC electrical power distribution subsystem inoperable.	C.1 Restore Unit 1 AC electrical power distribution subsystem to OPERABLE status.	72 hours  <u>OR</u>  7 days during the replacement of 480 V ESS Load Center Transformers in Unit 1 <sup>(1)</sup>
D. Two Unit 1 AC electrical power distribution subsystems on one Division inoperable for performance of Unit 1 SR 3.8.1.19.	D.1 Restore at least one Unit 1 AC electrical power distribution subsystems to OPERABLE status.	8 hours
E. Required Action and Associated Completion Time of Condition A, B or C not met.	E.1 Be in MODE 3.  <u>AND</u>  E.2 Be in MODE 4.	12 hours    36 hours
F. Diesel Generator E DC electrical power subsystem inoperable, while not aligned to the Class 1E distribution system.	F.1 Verify that all ESW valves associated with Diesel Generator E are closed.	2 hours
G. Diesel Generator E DC electrical power subsystem inoperable, while aligned to the Class 1E distribution system.	G.1 Declare Diesel Generator E inoperable.	2 hours

<sup>(1)</sup> This temporary 7-day completion time is applicable during the replacement of all Unit 1 480 V ESS Load Center Transformers, while Unit 1 is in MODES 4 or 5, and will expire on June 15, 2020.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>H. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.</p>	<p>H.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>
<p>I. -----NOTE----- Not applicable to DG E DC Bus 0D597 -----  One or more Unit 1 DC electrical power distribution subsystem(s) inoperable.</p>	<p>I.1 Transfer associated Unit 1 and common loads to corresponding Unit 2 DC electrical power distribution subsystem.  <u>AND</u>  I.2 Restore Unit 1 and common loads to corresponding Unit 1 DC electrical power distribution subsystem.</p>	<p>2 hours          72 hours after Unit 1 DC electrical power subsystem is restored to OPERABLE status</p>
<p>J. Required Actions and Associated Completion Times of Condition I not met.</p>	<p>J.1 Declare associated common loads inoperable.</p>	<p>Immediately</p>





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 273 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-14

AND AMENDMENT NO. 255 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 March 28, 2019,<sup>1</sup> Susquehanna Nuclear, LLC (the licensee) requested changes to the Technical Specifications (TSs) for Susquehanna Steam Electric Station, Units 1 and 2 (Susquehanna or SSES). Specifically, the licensee requested changes to the TSs to adopt Technical Specifications Task Force (TSTF) Traveler TSTF-439, Revision 2, "Eliminate Second Completion Times Limiting Time from Discovery of Failure to Meet an LCO [Limiting Condition for Operation],"<sup>2</sup> dated December 20, 2005. The U.S. Nuclear Regulatory Commission (NRC or the Commission) approved the traveler on January 11, 2006.<sup>3</sup>

The proposed changes would allow the elimination of second completion times that limit the time from discovery of the failure to meet an LCO.

2.0 REGULATORY EVALUATION

2.1 System Description

The unit Class 1E AC electrical power distribution system alternating current (AC) sources consist of two offsite power sources and the onsite standby power sources (diesel generators (DGs) A, B, C, and D). The onsite standby power source for each emergency bus is a dedicated DG. A fifth DG (E) can be used as a substitute for any one of the four DGs A, B, C, or D. TS 3.8.1, "AC Sources – Operating," requires four operable DGs and two qualified circuits

<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession No. ML19087A208

<sup>2</sup> ADAMS Accession No. ML051860296

<sup>3</sup> ADAMS Accession No. ML060120272

between the offsite transmission network and the onsite Class 1E AC electrical power distribution system.

The onsite Class 1E AC and direct current (DC) electrical power distribution system ensures the availability of AC, DC, and DG E electrical power distribution subsystems for the structures, systems, and components required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated design-basis accident (DBA). The AC and DC electrical power distribution subsystems are divided into two divisions, Division 1 and Division 2. TS 3.8.7, "Distribution Systems – Operating," requires Division 1 and Division 2 AC and DC buses to be operable, along with the DC bus of DG E.

The licensee proposes to alter the discussion contained in TS Example 1.3-3 to eliminate second completion times. Consistent with the proposed change to TS Example 1.3-3, the licensee proposes to delete the second completion times associated with TS 3.8.1 Required Actions A.3 and B.4 and TS 3.8.7 Required Actions A.1 and B.1.

## 2.2 Proposed Revision to Required Actions

### 2.2.1 Proposed Revision of TS Example 1.3-3

TS Example 1.3-3 is revised by removing the second completion times for Required Actions A.1 and B.1, and the discussion in the example is replaced with a discussion on procedural limits for failing to meet the LCO.

### 2.2.2 Proposed Revision to LCO 3.8.1

LCO 3.8.1 requires two qualified circuits between the offsite transmission network and the onsite Class 1E AC electrical power distribution system, and four DGs shall be operable in Modes 1, 2, and 3. With one offsite circuit inoperable, existing TS Required Action A.3 requires that the offsite circuit be restored to operable status with a completion time of "72 hours AND 6 days from discovery of failure to meet LCO." With one DG inoperable, existing TS Required Action B.4 requires that the DG be restored to operable status with a completion time of "72 hours AND 6 days from discovery of failure to meet LCO." The second completion times associated with TS 3.8.1 Required Actions A.3 and B.4, which state, "AND 6 days from discovery of failure to meet LCO," are deleted.

### 2.2.3 Proposed Revision to LCO 3.8.7

LCO 3.8.7 requires the specified AC and DC electrical power distribution subsystems listed in Table 3.8.7-1 to be operable in Modes 1, 2, and 3. With one or more Unit 1 AC electrical power distribution subsystems inoperable, TS Required Action A.1 requires that the subsystem(s) be restored to operable within "8 hours AND 16 hours from discovery of failure to meet LCO 3.8.7 except for Condition D(F) or E(G)." With one or more Unit 2 AC electrical power distribution subsystems inoperable, TS Required Action A.1 requires that the subsystem(s) be restored to operable within "8 hours AND 16 hours from discovery of failure to meet LCO 3.8.7 except for Condition F or G." With one or more Unit 1 DC electrical power distribution subsystems inoperable, TS Required Action B.1 requires that the subsystem(s) be restored to operable within "2 hours AND 16 hours from discovery of failure to meet LCO 3.8.7 except for Condition D or E." With one or more Unit 2 DC electrical power distribution subsystems inoperable, TS Required Action B.1 requires that the subsystem(s) be restored to operable within "2 hours AND 16 hours from discovery of failure to meet LCO 3.8.7 except for Condition F

or G.” The second completion times associated with TS 3.8.7 Required Actions A.1 and B.1, which state, “AND 16 hours from discovery of failure to meet LCO 3.8.7 except for Condition D or E,” for Unit 1 and “AND 16 hours from discovery of failure to meet LCO 3.8.7 except for Condition F or G,” for Unit 2 are deleted.

### 2.3 Regulatory Requirements and Guidance

The regulation in 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 TSs 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 production or utilization facility of a type described in § 50.21 or § 50.22 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 § 50.34. 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 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 in 10 CFR 50.36(c)(3) requires TSs to include items in the category of surveillance requirements (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” (Standard Review Plan), dated March 2010.<sup>4</sup>

### 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 and the NRC-approved Traveler TSTF-439, Revision 2. 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

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

proposed changes to the TS Bases. Although the TS Bases are not part of the TSs, 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.

### 3.1 NRC Staff Evaluation

Additional secondary completion times (such as limits on the period of time from discovery of the failure to meet the LCO) were specified for these instances to prevent repeated entry and exit from alternating TS required actions. Administrative controls will replace second completion times as described in the licensee's request. In addition, two programs provide a strong disincentive to licensees continuing operation with alternating required actions as described above. These programs are the maintenance rule (10 CFR 50.65 "Requirements for monitoring the effectiveness of maintenance at nuclear power plants") program and the reactor oversight process (ROP).

The licensee's application of March 28, 2019, states the following regarding the maintenance rule:

Under 10 CFR 50.65(a)(4), the risk impact of all inoperable risk-significant equipment is assessed and managed when performing preventative or corrective maintenance. Risk assessments at SSES are conducted using the procedures and guidance endorsed by Regulatory Guide (RG) 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." RG 1.160 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to:

- plan and conduct other activities in a manner that controls overall risk,
- increased risk awareness by shift and management personnel,
- reduce the duration of the condition,
- minimize the magnitude of risk increases through the establishment of backup success paths or compensatory measures, and
- determination that the proposed maintenance is acceptable.

TSs are part of the operating license and set forth requirements governing operations, including what equipment must normally be in service, how long equipment can be out of service, compensatory actions, and surveillance testing to demonstrate equipment readiness. TSs provide adequate assurance of the availability and reliability of equipment needed to prevent, and if necessary, mitigate accidents and transients.

The maintenance rule requires that commercial nuclear power plant licensees perform certain assessments of the status of plant equipment before performing proposed maintenance activities. The maintenance rule also requires that licensees assess and manage the increase in risk that may result from the proposed maintenance activities. The Commission believes that proper implementation of the rule will reduce the likelihood and consequences of an accidental release of radioactive material caused by imprudently prioritized, planned, or scheduled maintenance.

Under the TSs, the completion time for one system within an LCO is not generally affected by inoperable equipment in another LCO. However, the second completion time influenced the completion time for one system based on the condition of another system, but only if the two systems were required by the same LCO.

Plant maintenance rule programs implement risk-based configuration management programs that augment the deterministic completion times in the TSs. The NRC resident inspectors also monitor the licensee's corrective action process and could take action within the bounds of the ROP if the licensee's maintenance program allowed the systems required by a single LCO to become concurrently inoperable multiple times. The performance and condition monitoring activities required by 10 CFR 50.65 identify maintenance practices that would result from multiple alternating overlapping entries into and out of different actions of the same TSs that contribute to unacceptable cumulative unavailability of these structures, systems, and components.

The licensee's application states the following regarding the ROP:

[Nuclear Energy Institute] NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," describes the tracking and reporting of performance indicators to support the NRC's ROP. The NRC noted endorsement of NEI 99-02 in Regulatory Information Summary 2001-11, "Voluntary Submission of Performance Indicator Data." NEI 99-02, Section 2.2, describes the Mitigating Systems Cornerstone. NEI 99-02 specifically addresses the emergency AC Sources, which encompasses the AC Sources and Distribution Systems LCOs. Extended unavailability due to multiple entries into the Actions would affect the NRC's evaluation of the licensee's performance under the ROP.

The objective of this mitigating systems cornerstone is to monitor the availability, reliability, and capability of systems that mitigate the effects of initiating events to prevent core damage. Licensees also reduce the likelihood of reactor accidents by maintaining the availability and reliability of mitigating systems. Mitigating systems include those systems associated with safety injection, decay heat removal, and their support systems, such as emergency AC power systems (which encompass the AC sources distribution system LCOs as noted by the licensee), and the auxiliary feedwater system. Inputs to the mitigating systems cornerstone include both inspection procedures and performance indicators to ensure that all ROP objectives are being met. Satisfactory licensee performance within the mitigating systems ROP cornerstone provides reasonable assurance in monitoring the inappropriate use of TS condition completion times.

NRC inspection findings for each plant are documented in inspection reports in accordance with Inspection Manual Chapter 0612 and summarized in plant issues matrices. Inspection findings are evaluated using the significance determination process in accordance with Inspection Manual Chapter 0609 to evaluate the safety significance of the findings.

TS Example 1.3-3 is revised to eliminate the second completion time for Required Actions A.1 and B.1, and to replace the discussion regarding second completion time with the following:

It is possible to alternate between Conditions A, B, and C in such a manner that operation could continue indefinitely without ever restoring systems to meet the LCO. However, doing so would be inconsistent with the basis of the Completion Times. Therefore, there shall be administrative controls to limit the maximum

time allowed for any combination of Conditions that result in a single contiguous occurrence of failing to meet the LCO. These administrative controls shall ensure that the Completion Times for those Conditions are not inappropriately extended.

The completion times associated with TS 3.8.1 Required Actions A.3 and B.4, which state, "AND 6 days from discovery of failure to meet LCO," currently provide a limit on the time allowed in a specified condition after discovery of failure to meet the LCO. This limit was considered reasonable for situations in which Conditions A and B are entered concurrently prior to NRC staff approval of TSTF-439. Likewise, the completion times associated with TS 3.8.7 Required Actions A.1 and B.1, which state, "AND 16 hours from discovery of failure to meet LCO 3.8.7 except for Condition D or E," for Unit 1 and "AND 16 hours from discovery of failure to meet LCO 3.8.7 except for Condition F or G," for Unit 2 currently provide a limit on the time allowed in a specified condition after discovery of failure to meet the LCO.

With the proposed deletion of portions of TSs 3.8.1 and 3.8.7 completion times described above, the TSs will still have a mechanism to limit the maximum time allowed for any combination of conditions that results in a single contiguous occurrence of failing to meet the LCO. As described above, the proposed TS Example 1.3-3 will require administrative controls to limit the maximum time allowed for any combination of conditions that result in a single contiguous occurrence of failing to meet the LCO. Therefore, the NRC staff finds the proposed changes are acceptable.

In addition, the NRC staff finds that assessment of the licensee's performance within the mitigating systems ROP cornerstone provides reasonable assurance in monitoring the inappropriate use of TS condition completion times.

Finally, the NRC staff concludes that the TSs, as modified by the proposed changes, continue to meet the regulatory requirements of 10 CFR 50.36 for the following reasons. In accordance with 10 CFR 50.36(c)(2)(i), when an LCO is not met, the licensee is required to shut down the reactor or follow any remedial action permitted by the TSs until the LCO can be met. The license amendment request would remove part of the permissible remedial actions from LCOs 3.8.1 and 3.8.7. Under the Commission's regulations in 10 CFR 50.92 and 50.57, to issue the amended TSs, the Commission must be able to find, among other things, that operation with the amended remedial actions (i.e., without the additional completion times) provides reasonable assurance of public health and safety.

Action 3.8.1 A provides reasonable assurance of public health and safety because with one offsite circuit inoperable, TS Required Action A.3 still requires that the offsite circuit be restored to operable status with a completion time of "72 hours." The NRC staff finds this action acceptable because the completion times take into account the capacity and capability of the remaining AC sources, reasonable time for repairs, and the low probability of a DBA occurring during this period.

Action 3.8.1 B provides reasonable assurance of public health and safety because with one DG inoperable, TS Required Action B.4 still requires that the DG be restored to operable status with a completion time of "72 hours." The NRC staff finds this action acceptable because the completion times take into account the capacity and capability of the remaining AC sources, reasonable time for repairs, and the low probability of a DBA occurring during this period.

Action 3.8.7 A provides reasonable assurance of public health and safety because with one or more Unit 1 or 2 AC electrical power distribution subsystem(s) inoperable, TS 3.8.7 Required Action A.1 requires that the subsystem(s) be restored to operable within "8 hours." The NRC staff finds this acceptable because of:

1. The potential for decreased safety if the attention of the unit operators is diverted from the evaluations and actions necessary to restore power to the affected division to the actions associated with taking the unit to shutdown within this time limit; and
2. The potential for an event in conjunction with a single failure of a redundant component in the division with AC power.

Action 3.8.7 B provides reasonable assurance of public health and safety because with one or more Unit 1 or 2 DC electrical power distribution subsystem(s) inoperable, TS 3.8.7 Required Action B.1 requires that the subsystem(s) be restored to operable within "2 hours." The NRC staff finds this acceptable because of:

1. The potential for decreased safety when requiring a change in plant conditions (i.e., requiring a shutdown) while not allowing stable operation to continue;
2. The potential for decreased safety when requiring entry into numerous applicable conditions and required actions for components without DC power, while not providing sufficient time for the operators to perform the evaluations and actions necessary to restore power to the affected division; and
3. The potential for an event in conjunction with a single failure of a redundant component.

### 3.2 TS Bases Changes

The regulation in 10 CFR 50.36(a)(1) states that a summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the TSs. Consistent with 10 CFR 50.36(a)(1), the licensee submitted corresponding TS Bases changes that provide the reasons for the proposed TSs changes. The NRC staff notes that the proposed TS Bases changes describe the bases for the affected TSs and follow the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58 FR 39132); however, the NRC staff does not approve the LAR TS Bases that have been submitted as 'information only.'

### 3.3 Variations from the NRC-Approved Traveler

The licensee is proposing the following variations from the TS changes described in NRC-approved TSTF-439, Revision 2, or the applicable parts of the NRC staff's safety evaluation for TSTF-439. These variations do not affect the applicability of TSTF-439 or the NRC staff's safety evaluation for TSTF-439 to the proposed amendments.

The licensee proposes administrative changes for the Susquehanna TSs. Specifically, the licensee proposes:

1. In the Units 1 and 2 TSs, for TS 3.1.7, "Standby Liquid Control System," Required Actions A.1 and B.1, the Susquehanna equivalent TS does not include a second completion time.
2. In the Units 1 and 2 TSs, for TS 3.8.9, "Distribution Systems – Operating," the Susquehanna equivalent TS has different numbering.
3. In the Units 1 and 2 TSs, for TS 3.8.9, Required Action B.1, the Susquehanna equivalent TS does not include a second completion time.
4. In the Units 1 and 2 TSs, for TS 3.8.9, Required Action C.1, the Susquehanna equivalent TS has different numbering.

These changes are administrative and do not affect the applicability of TSTF-439 to the Susquehanna TSs. In addition, the proposed changes do not change any requirements in the Susquehanna TSs. Therefore, the NRC staff finds these changes to be acceptable.

### 3.4 Technical Summary

The NRC staff reviewed the proposed changes to the TSs and determined that they meet the standards for TSs 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 TSs were reviewed for technical clarity and consistency with customary terminology and format in accordance with Chapter 16 of the Standard Review Plan.

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 safety evaluation. 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 regarding 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 June 12, 2019. 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 May 7, 2019 (84 FR 19973). 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.

Principal Contributor: Kristy Bucholtz

Date: July 16, 2019

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 273 AND 255 RE: ADOPT TSTF-439, REVISION 2, "ELIMINATE SECOND COMPLETION TIMES LIMITING TIME FROM DISCOVERY OF FAILURE TO MEET AN LCO" (EPID L-2019-LLA-0066) DATED JULY 16, 2019

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NAME	JTobin	LRonewicz	PSnyder
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OFFICE	OGC – NLO**	NRR/DORL/LPL1/BC	NRR/DORL/LPL1/PM
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