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

November 4, 2021

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

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2 – ISSUANCE OF AMENDMENT NO. 263 RE: TEMPORARY CHANGE TO UNIT 2 TECHNICAL SPECIFICATION 3.8.7 TO ALLOW REPLACEMENT OF UNIT 1 480-VOLT LOAD CENTER TRANSFORMERS (EPID L-2020-LLA-0245)

Dear Mr. Cimorelli:

The U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued the enclosed Amendment No. 263 to Renewed Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station (Susquehanna), Unit 2. This amendment consists of changes to the technical specifications in response to Susquehanna Nuclear, LLC's (the licensee's) application dated November 5, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20310A231).

This amendment revises Technical Specification (TS) 3.8.7, "Distribution Systems – Operating," to allow (until June 15, 2024) the licensee to increase the completion time for Required Action C.1 from 72 hours to 7 days during the two 480-volt engineered safeguard system load center transformer replacements on Susquehanna, Unit 1. The NRC previously approved a temporary (through June 15, 2020) TS 3.8.7 completion time extension during replacement of four Susquehanna, Unit 1 480-volt engineered safeguard system load center transformers per Amendment No. 248, dated January 26, 2017 (ADAMS Accession No. ML17004A250) for Unit 2; however, the licensee replaced only two of the four transformers by that date. This amendment allows the licensee to complete the transformer replacements.

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

Sincerely,

/RA/

Audrey Klett, Senior Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-388

Enclosures:
1. Amendment No. 263 to
License No. NPF-22
2. Safety Evaluation

cc: Listserv

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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. 263
Renewed License No. NPF-22

1. The U.S. Nuclear Regulatory Commission (the Commission or the NRC) has found that:

   A. The application for the amendment filed by Susquehanna Nuclear, LLC, dated November 5, 2020, 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 Renewed Facility Operating License and 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.C.(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 263, 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

Digitally signed by James G. Danna
Date: 2021.11.04 11:34:41 -04'00'

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: November 4, 2021

ATTACHMENT TO LICENSE AMENDMENT NO. 263

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 No. NPF-22 with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

REMOVE	INSERT
Page 3	Page 3

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE	INSERT
Page 3.8-45	Page 3.8-45

(3) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, posses, 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, posses, 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 nor 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. 263, 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.

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 OR 7 days during the replacement of 480 V ESS Load Center Transformers in Unit 1 (1)
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. AND 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

(1) This temporary 7-day completion time is applicable during the replacement of Unit 1 480 V ESS Load Center Transformers 1X230 and 1X240, while Unit 1 is in MODES 4 or 5, and will expire on June 15, 2024.

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION FOR AMENDMENT NO. 263 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-22 SUSQUEHANNA NUCLEAR, LLC ALLEGHENY ELECTRIC COOPERATIVE, INC. SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2 DOCKET NO. 50-388

1.0 BACKGROUND

1.1 Introduction

By application dated November 5, 2020,[1] Susquehanna Nuclear, LLC (the licensee) submitted a license amendment request (LAR) pertaining to the Susquehanna Steam Electric Station (Susquehanna), Unit 2 technical specifications (TSs), which are Appendix A of the Susquehanna Renewed Facility Operating License No. NPF-22. The proposed change would revise TS 3.8.7, "Distribution Systems – Operating," to allow (until June 15, 2024) the licensee to increase the completion time for Condition C from 72 hours to 7 days during the replacement of two 480-volt (V) engineered safeguard system (ESS) load center transformer replacements on Susquehanna, Unit 1.

The Unit 1 480-V load center transformers provide power to equipment required for operation of Unit 2. The licensee requested that the U.S. Nuclear Regulatory Commission (NRC or the Commission) approve an extension to the TS 3.8.7 completion time for Unit 2 to accommodate replacement of the transformers during a planned Unit 1 refueling outage while Unit 2 is operating to avoid having to shut down both units to replace the Unit 1 transformers. In a previous LAR dated January 28, 2016,[2] as supplemented, the licensee requested an extension of the completion time for TS 3.8.7 Condition C from 72 hours to 7 days. The licensee intended to replace four transformers during Unit 1 refueling outages in 2018 and 2020 (two per outage). The NRC issued Amendment No. 248,[3] dated January 26, 2017, for Unit 2, which allowed a temporary completion time extension through June 15, 2020. After the NRC issued Amendment No. 248 for Unit 2, the licensee replaced only one transformer per refueling outage; therefore, two transformers still require replacement (scheduled for 2022 and 2024) to support continued operation of Susquehanna.

[1] Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML20310A231 (public) and ML20310A232 (withheld from public disclosure because it has security-related information))
[2] ADAMS Accession No. ML16029A031
[3] ADAMS Accession No. ML17004A250

1.2 Onsite Class 1E Alternating Current (AC) Power Design and Operation and Current Requirements

The LAR dated November 5, 2020, states that the Class 1E AC power system distributes power at 4,160 V, 480 V, and 208/120 V to safety-related loads. The system is divided into four load group channels (i.e., channels A, B, C, and D) per Susquehanna unit. Each unit's Class 1E AC power system also has two divisions, each of which has two load group channels. Division 1 on each unit has load group channels A and C, and Division 2 on each unit has load group channels B and D.

Section 8.1.5.1, "Safety Design Bases," of the Updated Final Safety Analysis Report (UFSAR)[4] states that the standby AC power supplies are shared by both units, and the total standby capacity is sufficient to operate the engineered safety feature loads following a design basis accident on one unit and a concurrent forced shutdown of the other unit. Five diesel generators (DGs) (i.e., DGs A, B, C, D, and E) are available to provide the required power supply if a total loss of the preferred and alternate supplies occurs.

The two units share four DGs (i.e., DGs A, B, C, and D) that provide emergency power for one of the four Class 1E AC load group channels in each unit when normal offsite sources are lost (i.e., DG A powers each unit's load group channel A, DG B powers the "B" load group channels, etc.). The licensee can manually align the spare DG E as a replacement for any of the other four DGs. Section 1.2.2.6.2, "Electric Power Distribution Systems," of the UFSAR states that assuming the total loss of off-site power and failure of one diesel generator, the remaining diesel generators have sufficient capacity to operate all the equipment necessary to prevent undue risk to public health and safety in the event of a design basis accident on one unit and a forced shutdown of the second unit.

Section 8.1.3, "Onsite Power Systems," of the UFSAR states that any combination of three-out-of-the-four load group channels meets the design basis requirements, and Section 8.1.5.1 of the UFSAR states that any three-out-of-the-four load group channels meet the minimum engineered safety feature loads required to shut down the unit (having the design basis accident) safely and maintain it in a safe shutdown condition. In its LAR, the licensee stated that any three-out-of-the-four load group (channels) have the capability of supplying the minimum required safety loads. The licensee further stated that each ESS bus powers a 4,160/480-V ESS load center transformer that supplies an essential 480-V single-ended load center. The associated 4,160-V ESS bus is the only source of power to the respected load center through the load center transformer.

Table 1, "4,160/480-V Distribution System Components," shows each unit's combination of divisions, load group channels, and the ESS 4,160-V buses, load center transformers, and 480-V buses.

[4] ADAMS Package Accession No. ML19317D885

Table 1, "4,160/480-V Distribution System Components"

Division Nos.	Load Group Channels	4,160-V ESS Bus (Subsystem)	Connecting Load Center Transformer (4,160/480 V)	480-V Load Center ESS Bus (Subsystem)
Unit 1 Division 1	A	1A201	1X210	1B210
	C	1A203	1X230	1B230
Unit 1 Division 2	B	1A202	1X220	1B220
	D	1A204	1X240	1B240
Unit 2 Division 1	A	2A201	2X210	2B210
	C	2A203	2X230	2B230
Unit 2 Division 2	B	2A202	2X220	2B220
	D	2A204	2X240	2B240

Unit 2 TS 3.8.7 has limiting condition for operation (LCO) 3.8.7, which states, "The electrical power distribution subsystems in Table 3.8.7-1 shall be OPERABLE," when Unit 2 is in MODE 1 (power operation), 2 (startup), or 3 (hot shutdown). If one Unit 1 AC electrical power distribution subsystem is inoperable, then the licensee must enter Condition C of TS 3.8.7, which requires the licensee to restore the Unit 1 AC electrical power distribution subsystem to OPERABLE status within 72 hours or 7 days during the replacement of 480-V ESS load center transformers in Unit 1. If the licensee cannot restore the distribution subsystem to operable status, then Required Actions E.1 and E.2 direct entry into MODE 3 (hot shutdown) within 12 hours and MODE 4 (cold shutdown) within 36 hours, respectively. As previously discussed in Section 1.1 of this safety evaluation, the 7-day completion time requirement was temporary and expired on June 15, 2020.

1.3 Description of the Proposed Change

The LAR states that transformers 1X230 and 1X240 (one in each of Unit 1's load divisions) are approaching the end of their intended service life. The LAR also states that the licensee is proactively replacing the transformers to ensure continued reliable operation of the Susquehanna units. Removing transformer 1X230 or 1X240 from service with Unit 1 in MODE 4 or 5 (refueling) and Unit 2 not in Mode 4 or 5 requires entry into Condition C of Unit 2 TS 3.8.7. The associated completion time of 72 hours is insufficient because the replacement of each transformer requires approximately 108 hours. The proposed change would revise a note to the TS 3.8.7 completion time to allow (until June 15, 2024) the licensee to extend the completion time from 72 hours to 7 days for Condition C during replacement of the transformers.

Per the previous LAR dated January 28, 2016, the licensee intended to replace two transformers per outage (for a total of four transformers (i.e., 1X210, 1X220, 1X230, and 1X240)) during Unit 1 refueling outages in 2018 and 2020. As such, the licensee believed the temporary completion time extension was necessary only through June 15, 2020. Therefore, via Amendment No. 248, the NRC added a footnote in TS 3.8.7 stating that the optional 7-day extension expires on June 15, 2020. Subsequently, the licensee decided to replace only one transformer per refueling outage and replaced 1X220 in 2018 and 1X210 in 2020. Therefore, transformers 1X230 and 1X240 still require replacement to support continued

reliable operation of the Susquehanna units. The licensee scheduled replacement of transformer 1X240 in 2022 and transformer 1X230 in 2024. Therefore, the licensee requested in its current LAR that the NRC revise the footnote for the 7-day completion time for Condition C, Required Action C.1 in TS 3.8.7 to state that the temporary completion time expires on June 15, 2024.

2.0 REGULATORY EVALUATION

The NRC staff considered the following regulatory requirements and licensing and design-basis information during its review of the proposed change.

2.1 Regulatory Requirements

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," Section 50.36, "Technical Specifications," establishes the requirements related to the content of the TSs. Pursuant to 10 CFR 50.36(c), TSs are required to include LCOs. Section 50.36(c)(2)(i) states, in part, that LCOs are the lowest functional capability or performance level of equipment required for safe operation of the facility, and when LCOs are not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the LCO can be met.

2.2 Licensing Basis

The NRC staff considered the following licensing basis during its review:

- Amendment No. 248 to Renewed Facility Operating License No. NPF-22 for Susquehanna, Unit 2, which authorized a temporary change to TSs to allow replacement of the ESS load center transformers

- Susquehanna's UFSAR, Sections 1.2.2.6.2, 8.1.3, and 8.1.5.1, which describe the design and performance of the AC power distribution system

3.0 TECHNICAL EVALUATION

In determining whether an amendment to a license will be issued, the NRC is guided by the considerations that govern the issuance of initial licenses to the extent applicable and appropriate. The NRC staff evaluated the licensee's LAR to determine whether the proposed change is consistent with the regulations and licensing basis discussed in Section 2.0 of this safety evaluation. The NRC staff reviewed the proposed TS change to determine whether it meets the requirements of 10 CFR 50.36 and provides reasonable assurance that the continued operation of Unit 2 during the proposed 7-day completion time will not endanger the health and safety of the public.

3.1 Work Evolution Measures

The LAR states that the licensee will take the following defense-in-depth measures when replacing the transformers:

- All four Unit 2 4,160-V ESS buses will remain energized and operable.
- All four common DGs will remain operable.
- All 125-volt direct current (VDC) and 250-VDC battery chargers, batteries, and distribution systems for Unit 2 will remain operable.
- The transformer replacements will not affect operation of the Unit 2 emergency core cooling systems.
- Operators will take actions required by existing station procedures for responding to severe weather in response to forecasted severe weather. Such actions could include termination of nonessential or operational risk significant activities. Furthermore, severe weather conditions are inputs to the standard work management processes.
- The licensee will address emergent plant conditions per applicable station processes, including work management and maintenance rule guidelines.
- The licensee will protect equipment and control discretionary maintenance in accordance with plant procedure NDAP-QA-0340, "Protected Equipment Program." The licensee will evaluate the transformer replacement and protect equipment in accordance with this program during the replacement. Currently, the list of protected equipment would include:
    - offsite power sources
    - opposite division of shutdown cooling if it is in service
    - opposite division DGs
    - opposite division of core spray system
    - opposite division of standby gas treatment (SGT) system
    - opposite division of control room emergency outside air supply (CREOAS) system
    - opposite division control structure chiller
    - opposite division Unit 1 emergency switchgear cooling

The NRC staff evaluated these measures and determined that they constitute acceptable remedial actions during the proposed extended completion time because they reduce maintenance risk during the extended completion time and because at least one required division of equipment required for safe shutdown (e.g., DGs, core spray system, SGT system, and CREOAS system) would remain available. Therefore, the staff concludes that these measures (required by TSs 3.8, "Electrical Power Systems," 3.5, "Emergency Core Cooling Systems (ECCS), Reactor Pressure Vessel (RPV) Water Inventory Control, and Reactor Core Isolation Cooling (RCIC) System," 3.6, "Containment Systems," and 3.7, "Plant Systems," and plant procedure NDAP-QA-0340) are acceptable.

3.2 Evaluation of Impacts on Other Systems

The LAR states that removing transformers 1X230 and 1X240 from service during replacement will impact some TS-related systems, which are listed in Table 2, “Impacted Systems.”

Table 2, “Impacted Systems”

Transformer	Equipment Impacted	Associated Unit 2 TS	Associated Completion Time
1X230	SGT system, Division 1	3.6.4.3	7 days
	CREOAS system, Division 1	3.7.3	7 days
	Control room floor cooling system, Division 1	3.7.4	30 days
1X240	SGT system, Division 2	3.6.4.3	7 days
	CREOAS system, Division 2	3.7.3	7 days
	Control room floor cooling system, Division 2	3.7.4	30 days

3.2.1 Standby Gas Treatment System

The SGT system ensures that radioactive materials leaked from the primary containment into the secondary containment following a design basis accident are filtered and adsorbed prior to airborne releases exhausting to the environment. The LAR states that the SGT system is comprised of two independent, 100 percent capacity subsystems, each containing an air fan, demister, heater, filters, charcoal adsorber, dampers, and ductwork. Transformer 1X230 provides power to components in Division 1 of the SGT system. Transformer 1X240 provides power to components in Division 2 of the SGT system.

The NRC staff evaluated the proposed change’s impacts on the SGT system. Because the licensee will replace only one transformer during each refueling outage, the other transformer will be operable and capable of providing power to the other SGT subsystem. Thus, the other SGT subsystem can perform the required filtration if there is an accident on Unit 2 during a transformer replacement. Furthermore, LCO 3.6.4.3 allows one division of the SGT system to be inoperable for up to 7 days, which is the same period to which the licensee will limit the transformer replacement. If the transformer replacement exceeds 7 days, then the TS would require a shutdown of Unit 2, which is the same requirement when a division of the SGT system is inoperable more than 7 days. Therefore, the staff concludes that the proposed extended completion time would not adversely impact the capability or performance level of SGT system.

3.2.2 Control Room Emergency Outside Air Supply System

The CREOAS system provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The LAR states that this system is comprised of two independent and redundant high efficiency air filtration subsystems for emergency treatment of outside supply air and a control room envelope boundary that limits the inleakage of unfiltered air. Each CREOAS subsystem consists of an electric heater, filters, charcoal adsorber, fans, and the associated ductwork, valves or dampers, doors, barriers, and instrumentation. Transformer 1X230 provides power to components in

Division 1 of the CREOAS system. Transformer 1X240 provides power to components in Division 2 of the CREOAS system.

The NRC staff evaluated the proposed change's impacts on the CREOAS system. Because the licensee will replace only one transformer during each refueling outage, the other transformer will be operable and capable of providing power to the other CREOAS subsystem. Thus, the other CREOAS subsystem can perform the required filtration if there is an accident on Unit 2 during a transformer replacement. Furthermore, LCO 3.7.3 allows one division of the CREOAS system to be inoperable for up to 7 days, which is the same period to which the licensee will limit transformer replacement. If the transformer replacement exceeds 7 days, then the TSs would require a shutdown of Unit 2, which is the same requirement when a division of the CREOAS system is inoperable for more than 7 days. Therefore, the staff concludes that the proposed extended completion time would not adversely impact the capability or performance level of CREOAS system.

3.2.3 Control Room Floor Cooling System

The control room floor cooling system provides temperature control for the control room and pressure control for the control room habitability envelope. The LAR states that the system is comprised of two independent, redundant systems that provide cooling of recirculated control room air. Each subsystem consists of cooling coils, fans, chillers, compressors, ductwork, dampers, and instrumentation and controls to provide temperature control. Transformer 1X230 provides power to components in Division 1 of the control room floor cooling system. Transformer 1X240 provides power to components in Division 2 of the control room floor cooling system.

The NRC staff evaluated the proposed change's impacts on the control room floor cooling system. Because the licensee will replace only one transformer during each refueling outage, the other transformer will be operable and capable of providing power to the other control room floor cooling subsystem. Thus, other control room floor cooling subsystem can perform the required cooling and pressurization of the control room if there is an accident on Unit 2 during the transformer replacement. Furthermore, LCO 3.7.4 allows one division of the control room floor cooling system to be inoperable for up to 30 days, which is more than the period to which the licensee will limit the transformer replacement. If the transformer replacement exceeds 7 days, then the TS would require a shutdown of Unit 2, which is a more conservative action than required when a division of the control room floor cooling system is inoperable for more than 7 days. Therefore, the staff concludes that the proposed extended completion time would not adversely impact the capability or performance level of control room floor cooling system.

3.2.4 Unit 2 and Common Electrical Loads

The LAR states that the impacted Unit 2 AC and DC power system loads are the Unit 2 125-VDC battery chargers 2D633 and 2D643. Motor control centers 0B536 and 0B546 power the Unit 2 125-VDC battery chargers 2D633 and 2D643, respectively. Motor control center 0B536 is typically powered from load center 1B230 (which is powered by transformer 1X230), but can be aligned to load center 2B230 (which is powered by transformer 2X230) via automatic transfer switch 0-ATS-536. Similarly, motor control center 0B546 is typically powered from load center 1B240 (which is powered by transformer 1X240) but can be aligned to load center 2B240 (which is powered by transformer 2X240) via automatic transfer switch 0-ATS-546.

The NRC staff evaluated the proposed change's impacts on the Unit 2 125-VDC battery chargers 2D633 and 2D643. Because alternate sources will power motor control centers 0B536 and 0B546 via the appropriate automatic transfer switch during the transformer replacement evolution, all Class 1E power sources will power Unit 2 and common direct current loads, which will continue to allow functioning of structures, systems, and components important to safety during the transformer replacement. Therefore, the staff concludes that the proposed extended completion time would not adversely impact the capability or performance level of the Unit 2 125-VDC battery chargers 2D633 and 2D643.

3.3 Evaluation of Proposed 7-Day Completion Time

Condition C of TS 3.8.7 requires the licensee to restore the Unit 1 AC electrical power distribution subsystem to OPERABLE status within 72 hours. If the distribution subsystem cannot be restored to operable status, then Required Actions E.1 and E.2 direct the licensee to enter the unit into MODE 3 within 12 hours and MODE 4 within 36 hours, respectively. The licensee requested to extend the 72-hour completion time to 7 days (i.e., 168 hours) for each transformer replacement.

In its LAR, the licensee stated that it would need approximately 108 hours (4.5 days) to replace a transformer, which includes the time to perform all work that the licensee cannot perform outside of the completion time window, such as: clearance order application; pre-evolution testing and maintenance; engineering review of test results that may influence the scope or schedule of work to be performed; the replacement itself; work that supports the replacement evolution such as scaffold, rigging, and welding; and post-evolution testing and maintenance. The licensee also stated that its schedule considers human factors (such as shift turnover and fatigue rule restrictions), but does not consider any contingent replacements (e.g., surge arrestors, cables, and various components) that may occur. The licensee stated that the anticipated duration is approximately 65 percent of the requested time to accommodate unexpected responses or maintenance that may result during the transformer replacement.

The NRC staff determined that the proposed 7-day completion time for each transformer replacement is reasonable because of the following:

- The proposed time is consistent with the completion times for the SSCs (i.e., the SGT, CREOAS, and control room floor cooling systems) that would be inoperable when the transformer is taken out of service. If any unexpected responses or maintenance results during the replacement that needed longer than the proposed completion time to address, then the licensee would be required to follow Required Actions E.1 and E.2 of TS 3.8.7.

- The planned protected equipment and compensatory measures would minimize the risk incurred by extending the completion time.

- The proposed time does not alter any accident analysis assumptions or affect the function of plant systems or how the licensee operates, maintains, tests, or inspects the systems.

As noted above, the proposed 7-day completion time for the transformer replacements would not adversely impact the capability or performance level of safety-related systems, but would only extend that time that remedial action can be taken to satisfy LCO TS 3.8.7. Therefore, the NRC staff finds that the proposed TS change continues to meet the 10 CFR 50.36(c)(2)(i)

requirement to specify the lowest functional capability or performance level of equipment required for safe operation of the facility and to require reactor shut down or a permissible remedial action until the LCO can be met.

3.4 Technical Evaluation Conclusion

Based on the technical evaluation above, the staff finds that the licensee's proposed defense-in-depth measures to be taken during the replacement work will provide assurance that one division of equipment (i.e., the SGT, CREOAS, and control room floor cooling systems) and the Unit 2 125-VDC battery chargers 2D633 and 2D643 will remain available, as required by TSs and licensee procedures, for the safe operation and, if required, safe shutdown of Unit 2. The NRC staff also finds that the licensee's analysis of the potential impact of the proposed 7-day completion time on the operation of safety-related equipment during the replacement of transformers 1X230 and 1X240 is adequate to provides assurance of safe operation. The NRC staff concludes that the proposed extended completion time does not change the lowest functional capability or performance level of the electrical power distribution subsystems in TS Table 3.8.7-1.

The NRC staff further concludes that the proposed 7-day completion time in TS 3.8.7, Required Action C.1 is reasonable and that the June 15, 2024, expiration date is acceptable for replacing the Unit 1 480-V ESS load center transformers 1X230 and 1X240. Moreover, the TS change enables continued compliance with 10 CFR 50.36(c)(2)(i).

Accordingly, there is reasonable assurance that operation of the facility under the proposed amendment will not endanger the health and safety of the public.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, on June 11, 2021,[5] the NRC staff notified the Commonwealth of Pennsylvania official of the proposed issuance of the amendment. The Commonwealth official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves 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 NRC has previously issued a proposed finding in the *Federal Register* (FR) that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (86 FR 23749; May 4, 2021). Accordingly, the amendment meets 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 amendment.

[5] ADAMS Accession No. ML21190A170

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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Vijay Goel, NRR

Date: November 4, 2021

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2 – ISSUANCE OF AMENDMENT NO. 263 RE: TEMPORARY CHANGE TO UNIT 2 TECHNICAL SPECIFICATION 3.8.7 TO ALLOW REPLACEMENT OF UNIT 1 480-VOLT LOAD CENTER TRANSFORMERS (EPID L-2020-LLA-0245) DATED NOVEMBER 4, 2021

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