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

October 29, 2019

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 – ISSUANCE OF AMENDMENT NOS. 328 AND 331 REVISING TECHNICAL SPECIFICATION SECTION 3.81, "AC SOURCES – OPERATING," FOR A ONE-TIME EXTENSION OF A COMPLETION TIME (EPID L-2019-LLA-0095)

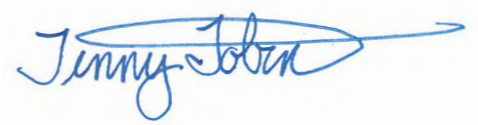
Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment Nos. 328 and 331 to Renewed Facility Operating License Nos. DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station (Peach Bottom), Units 2 and 3, respectively. The amendments consist of changes to the technical specifications (TSs) in response to your application dated April 26, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19116A196), as supplemented by letters dated May 23, 2019 and July 24, 2019 (ADAMS Accession Nos. ML19143A176 and ML19206A056, respectively).

The amendments revise TS 3.8.1, "AC [Alternating Current] Sources - Operating," by allowing a temporary, one-time extension for the Required Action A.3 Completion Time to replace electrical cables that are reaching their service life. Specifically, the amendments authorize a temporary one-time TS change to allow sufficient time to perform physical modification work to replace 27 electrical cables from the 3EA emergency auxiliary transformer to the J-58 junction box serving the 3SU-E 4.16 kilovolt feed switchgear. The amendments also correct an administrative/editorial discrepancy in Peach Bottom Unit 3 TS 3.8.1 related to a previously-approved amendment.

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,



Jennifer C. Tobin, Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosures:
1. Amendment No. 328 to Renewed DPR-44
2. Amendment No. 331 to Renewed DPR-56
3. Safety Evaluation

cc: Listserv

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

EXELON GENERATION COMPANY, LLC

PSEG NUCLEAR LLC

DOCKET NO. 50-277

PEACH BOTTOM ATOMIC POWER STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 328
Renewed License No. DPR-44

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

   A. The application for amendment by Exelon Generation Company, LLC and PSEG Nuclear LLC (the licensees), dated April 26, 2019, as supplemented by letters dated May 23, 2019, and July 24, 2019, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 rules and 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.

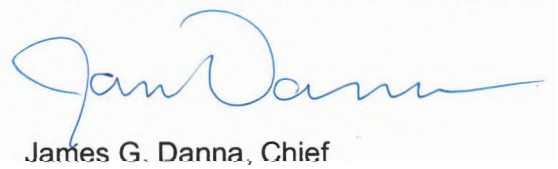
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-44 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 328, are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

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: October 29, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 328

PEACH BOTTOM ATOMIC POWER STATION, UNIT 2

RENEWED FACILITY OPERATING LICENSE NO. DPR-44

DOCKET NO. 50-277

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 a marginal line indicating the area of change.

Remove	Insert
3	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 a marginal line indicating the area of change.

Remove	Insert
3.8-2	3.8-2

(5) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not to separate, such byproduct and special nuclear material as may be produced by operation of the facility, and such Class B and Class C low-level radioactive waste as may be produced by the operation of Limerick Generating Station, Units 1 and 2.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Section 50.54 of Part 50, and Section 70.32 of Part 70; all applicable provisions of the Act and the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

(1) Maximum Power Level

Exelon Generation Company is authorized to operate the Peach Bottom Atomic Power Station, Unit 2, at steady state reactor core power levels not in excess of 4016 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 328, are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications.

(3) Physical Protection

Exelon Generation Company shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822), and the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans[1], submitted by letter dated May 17, 2006, is entitled: "Peach Bottom Atomic Power Station Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, and Independent Spent Fuel Storage Installation Security Program, Revision 3." The set contains Safeguards Information protected under 10 CFR 73.21.

Exelon Generation Company shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Exelon Generation Company CSP was approved by License Amendment No. 281 and modified by Amendment No. 301.

(4) Fire Protection

The Exelon Generation Company shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report for the facility, and as approved in the NRC Safety Evaluation Report (SER) dated May 23, 1979, and Supplements dated August 14, September 15, October 10 and November 24, 1980, and in the NRC SERs dated September 16, 1993, and August 24, 1994, subject to the following provision:

[1] The Training and Qualification Plan and Safeguards Contingency Plan are Appendices to the Security Plan.

ACTIONS

NOTE
LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for OPERABLE offsite circuits.	1 hour AND Once per 8 hours thereafter
	AND	
	A.2 Declare required feature(s) with no offsite power available inoperable when the redundant required feature(s) are inoperable.	24 hours from discovery of no offsite power to one 4 kV emergency bus concurrent with inoperability of redundant required feature(s)
	AND	
	A.3 Restore offsite circuit to OPERABLE status.	7 days (*)

(continued)

(*) Or 21 days, to support installation and testing of new electrical cables routed between the 3EA Emergency Auxiliary Transformer and the J-58 junction box serving the 3SU-E 4.16 kV feed switchgear. The work shall be completed by June 30, 2020.

Prior to entry into the 21-day extended Completion Time, the SBO Line (i.e., 33kV Conowingo AAC source) shall be verified available. During the 21-day Completion Time, the 33kV SBO Line shall be verified available once per shift.

If the SBO Line becomes unavailable after the initial seven (7) days while in the extended 21-day Completion Time period, it shall be made available within 24 hours, or the unit shall be brought to MODE 3 within the next 6 hours and MODE 4 within the following 30 hours.

UNITED STATES
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EXELON GENERATION COMPANY, LLC

PSEG NUCLEAR LLC

DOCKET NO. 50-278

PEACH BOTTOM ATOMIC POWER STATION, UNIT 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 331
Renewed License No. DPR-56

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

   A. The application for amendment by Exelon Generation Company, LLC and PSEG Nuclear LLC (the licensees), dated April 26, 2019, as supplemented by letters dated May 23, 2019, and July 24, 2019, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 rules and 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. DPR-56 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 331, are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

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: October 29, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 331

PEACH BOTTOM ATOMIC POWER STATION, UNIT 3

RENEWED FACILITY OPERATING LICENSE NO. DPR-56

DOCKET NO. 50-278

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	Insert
3	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	Insert
3.8-1	3.8-1
3.8-2	3.8-2

(5) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not to separate, such byproduct and special nuclear material as may be produced by operation of the facility, and such Class B and Class C low-level radioactive waste as may be produced by the operation of Limerick Generating Station, Units 1 and 2.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Section 50.54 of Part 50, and Section 70.32 of Part 70; all applicable provisions of the Act and the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

(1) Maximum Power Level

Exelon Generation Company is authorized to operate the Peach Bottom Atomic Power Station, Unit No. 3, at steady state reactor core power levels not in excess of 4016 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 331, are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications.

(3) Physical Protection

Exelon Generation Company shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822), and the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans[1], submitted by letter dated May 17, 2006, is entitled: "Peach Bottom Atomic Power Station Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, and Independent Spent Fuel Storage Installation Security Program, Revision 3." The set contains Safeguards Information protected under 10 CFR 73.21.

Exelon Generation Company shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Exelon Generation Company CSP was approved by License Amendment No. 283 and modified by Amendment No. 304.

[1] The Training and Qualification Plan and Safeguards Contingency Plan and Appendices to the Security Plan.

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources—Operating

LCO 3.8.1 The following AC electrical power sources shall be OPERABLE:

a. Two qualified circuits between the offsite transmission network and the onsite Unit 3 Class 1E AC Electrical Power Distribution System;

b. Four diesel generators (DGs) capable of supplying the Unit 3 onsite Class 1E AC Electrical Power Distribution System;

c. The qualified circuit(s) between the offsite transmission network and the Unit 2 onsite Class 1E AC electrical power distribution subsystem(s) needed to support the Unit 2 powered equipment required to be OPERABLE by LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," LCO 3.7.2, "Emergency Service Water (ESW) System and Normal Heat Sink," LCO 3.7.4, "Main Control Room Emergency Ventilation (MCREV) System," and LCO 3.8.4, "DC Sources—Operating"; and

d. The DG(s) capable of supplying the Unit 2 onsite Class 1E AC electrical power distribution subsystem(s) needed to support the Unit 2 powered equipment required to be OPERABLE by LCO 3.6.4.3, LCO 3.7.2, LCO 3.7.4, and LCO 3.8.4.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

---------- NOTE ----------
LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One offsite circuit inoperable.	A.1	Perform SR 3.8.1.1 for OPERABLE offsite circuits.	1 hour AND Once per 8 hours thereafter
	AND		
	A.2	Declare required feature(s) with no offsite power available inoperable when the redundant required feature(s) are inoperable.	24 hours from discovery of no offsite power to one 4 kV emergency bus concurrent with inoperability of redundant required feature(s)
	AND		
	A.3	Restore offsite circuit to OPERABLE status.	7 days (*)

(continued)

(*) Or 21 days, to support installation and testing of new electrical cables routed between the 3EA Emergency Auxiliary Transformer and the J-58 junction box serving the 3SU-E 4.16 kV feed switchgear. The work shall be completed by June 30, 2020.

Prior to entry into the 21-day extended Completion Time, the SBO Line (i.e., 33kV Conowingo AAC source) shall be verified available. During the 21-day Completion Time, the 33kV SBO Line shall be verified available once per shift.

If the SBO Line becomes unavailable after the initial seven (7) days while in the extended 21-day Completion Time period, it shall be made available within 24 hours, or the unit shall be brought to MODE 3 within the next 6 hours and MODE 4 within the following 30 hours.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 328 AND 331

TO RENEWED FACILITY OPERATING LICENSE NOS. DPR-44 AND DPR-56

EXELON GENERATION COMPANY, LLC

PSEG NUCLEAR LLC

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-277 AND 50-278

1.0 INTRODUCTION

By application dated April 26, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19116A196), as supplemented by letters dated May 23, 2019, and July 24, 2019 (ADAMS Accession Nos. ML19143A176 and ML19206A056, respectively), Exelon Generation Company, LLC (Exelon, the licensee) requested an amendment to the Renewed Facility Operating License Nos. DPR-44 and DPR-56 for Peach Bottom Atomic Power Station (Peach Bottom or PBAPS), Units 2 and 3. The proposed amendment would revise Technical Specification (TS) 3.8.1, "AC [Alternating Current] Sources – Operating," by allowing a temporary, one-time extension for the Required Action A.3 Completion Time (CT) to replace electrical cables that are reaching their service life. The proposed amendment also correct an administrative/editorial discrepancy in Peach Bottom Unit 3 TS 3.8.1 related to a previously-approved amendment, as discussed in Section 3.6 of this safety evaluation.

This temporary one-time TS change is needed to allow sufficient time to perform physical modification work to replace 27 electrical cables from the 3EA Emergency Auxiliary Transformer to the J-58 junction box serving the 3SU-E 4.16 kilovolt (kV) feed switchgear. These cables are located in an underground duct back and are reaching the end of their dependable service life and need replacement. This work is expected to take no more than 21 days.

Entry into TS Limiting Condition for Operation (LCO) 3.8.1, Required Action A.3, affects both of the Peach Bottom units and failure to satisfy the specified 7-day CT would require a dual-unit shutdown. The current 7-day CT for TS LCO 3.8.1, Required Action A.3, does not provide sufficient time to complete the necessary physical modification work and, therefore, additional time is needed to complete the work. Extending the CT on a temporary one-time basis as requested will help to avoid the unnecessary shutdown of Peach Bottom, Units 2 and 3. The plant will also follow the actions associated with LCO 3.8.1, Required Actions A.1 and A.2, during physical modification work, as applicable. The licensee is not requesting relief for these CTs and operations will perform Required Actions A.1 and A.2 within the currently designated CTs.

The supplemental letters dated May 23, 2019, and July 24, 2019, provided additional information that clarified the application, did not expand the scope of the application as originally noticed and did not change the U.S. Nuclear Regulatory Commission (NRC, the Commission) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on June 18, 2019 (84 FR 28345).

2.0 REGULATORY EVALUATION

2.1. Electrical Power System Design Overview

2.1.1 Offsite Power Sources

There are three independent offsite power sources. One source is an overhead 230 kV transmission line, which is stepped down to 13 kV by the startup and Emergency Auxiliary Transformer No. 2. The second source is the 230 kV Newlinville overhead transmission line, which is stepped down to 13 kV by the Startup Transformer No. 343. The third source is a 13 kV overhead/underground cable from the tertiary winding of the No. 1 autotransformer, which connects the 500 kV system to the 230 kV system transmission lines from the Muddy Run Pumped Storage Generating Station.

Each offsite source can be used to supply the auxiliary buses for plant startup and shutdown and the cooling tower equipment. Each source is then stepped down from 13 kV to 4 kV through an emergency auxiliary transformer and is connected through interlocked circuit breakers to every 4 kV emergency switchgear bus. Every 4 kV emergency switchgear bus is energized from one of these two sources at all times during normal operation. Upon loss of power, automatic transfer is made to the second source. The 4 kV emergency switchgear buses supply all power required for safe shutdown of the plant.

2.1.2 Onsite Standby Power Sources

The onsite standby AC power supply consists of four diesel generators (DGs) (E1, E2, E3, and E4). The continuous (annual, 8,760 hour) rating of the DGs is 2,600 kilowatts (kW). The engine is rated for a 10 percent overload for any 2 of every 24 hours. The 2,000-hour rating is 3,000 kW. The 200-hour rating is 3,100 kW and the 30-minute rating is 3,250 kW. Each DG is automatically started on total loss of offsite power (LOOP), low reactor water level, or high drywell pressure. Each DG is connected to only one 4 kV emergency bus per reactor unit, and the four emergency buses for each reactor unit are operated as separate buses (split bus system) and are not synchronized.

With one DG out of service, the standby AC supply system is capable of furnishing power for safe shutdown of both reactors, assuming the design-basis accident (DBA) has occurred in one reactor. The engineered safeguards loads are divided among the four 4 kV emergency buses for each reactor so that the failure of one DG or one 4 kV emergency bus would not prevent a safe shutdown of both reactor units.

2.1.3 Alternate AC Power Source

An alternate AC (AAC) power source is available in the event of a station blackout (SBO) condition, when both offsite and onsite standby power sources are not available to bring Units 2 and 3 to a safe shutdown condition and maintain that status. A dedicated 34.5 kV submarine cable, powered from the 33 kV bus at Susquehanna Substation, terminates at the SBO

Substation at Peach Bottom. A transformer steps down voltage to 13.8 kV and is available for connection to Unit 2 SUB 00A03C to maintain Units 2 and 3 in shutdown status.

2.2 Description of Proposed change

Currently, TS 3.8.1, Required Action A.3, requires restoration of the inoperable offsite circuit to operable status within 7 days. In the license amendment request (LAR) dated April 26, 2019, the licensee requested a temporary, one-time extension for the Required Action A.3 CT from 7 days to 21 days. The proposed amendment would revise TS 3.8.1 by adding the following footnote to Required Action A.3 CT:

> Or 21 days, to support installation and testing of new electrical cables routed between the 3EA Emergency Auxiliary Transformer and the J-58 junction box serving the 3SU-E 4.16 kV feed switchgear. The work shall be completed by June 30, 2020.
>
> Prior to entry into the 21-day extended Completion Time, the SBO Line (i.e., 33kV Conowingo AAC source) shall be verified available. During the 21-day Completion Time, the 33kV SBO Line shall be verified available once per shift.
>
> If the SBO Line becomes unavailable after the initial seven (7) days while in the extended 21-day Completion Time period, it shall be made available within 24 hours, or the unit shall be brought to MODE 3 within the next 6 hours and MODE 4 within the following 30 hours.

The proposed amendment would also revise Unit 3 TS LCO 3.8.1 to remove the reference to LCO 3.6.3.1, "Containment Atmospheric Dilution (CAD) System," from LCO 3.8.1.

2.3 Regulatory Requirements and Guidance

The NRC staff considered the following regulatory requirements in its review of the LAR:

- Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, "Technical specifications," requires, in part, that the operating license of a nuclear production facility include TSs.

- Paragraph 50.36(c)(2) of 10 CFR requires that the TSs include LCOs, which "are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met."

- Paragraph 50.36(c)(3) of 10 CFR requires that the TSs include surveillance requirements (SRs), which "are requirements relating to rest, calibration, or inspection to assure that the necessary quality of systems and components is maintained, the facility operation will be within safety limits, and that the limiting conditions for operation will be met."

- The regulations in 10 CFR 50.36, "Loss of all alternating current power," requires, in part, that a nuclear power plant shall be able to withstand for a specified duration and recover from a complete loss of offsite and onsite AC sources (i.e., SBO).

- Peach Bottom Updated Final Safety Analysis Report (UFSAR) Appendix H (ADAMS Accession No. ML17130A301) states, in part, that "Units 2 and 3 conform with the intent of the AEC [Atomic Energy Commission] (NRC) proposed General Design Criteria for Nuclear Power Plants, 10CFR50, Appendix A, July 1967." The following draft General Design Criteria (GDC) 24 and 39 are applicable to the Peach Bottom, Units 2 and 3, electrical power systems.

    - Criterion 24, "Emergency Power for Protection Systems," states "In the event of loss of all offsite power, sufficient alternate sources of power shall be provided to permit the required functioning of the protection systems."

    - Criterion 39, "Emergency Power for Engineered Safety Features (Category A)," states, "Alternate power systems shall be provided and designed with adequate independency, redundancy, capacity, and testability to permit the functioning required of the engineered safety features. As a minimum, the onsite power system and the offsite power system shall each, independently, provide this capacity assuming a failure of a single active component in each power system."

- As stated in the LAR, the current regulatory requirements of 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," considered applicable to the proposed change are GDC 5, GDC 17, and GDC 18.

    - GDC 5, "Sharing of structures, systems. and components," states:

        > Structures, systems, and components important to safety shall not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining unit.

    - GDC 17, "Electric power systems," states, in part:

        > "An onsite electric power system and an offsite electric power system be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences, and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.
        >
        > The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.

- GDC 18, "Inspection and testing of electric power systems," states, in part:

  > Electric power systems important to safety shall be designed to permit appropriate periodic inspection and testing of important areas and features....

The NRC staff also considered the following NRC regulatory guidance in its review of the LAR:

- Peach Bottom UFSAR Section 8.0 (ADAMS Accession No. ML17130A241) states, in part, that "The overall plant design, including the design of the onsite electrical power systems, was approved by the AEC/NRC and a construction permit issued significantly before the issuance of AEC/NRC Safety Guide No. 6, "Independence Between Redundant Standby (Onsite) Power Sources and Between Their Distribution Systems...[and] Safety Guide No. 9, "Selection of Diesel-Generator Set Capacity For Standby Power Supplies." However, Peach Bottom Units 2 and 3 have been evaluated with respect to Safety Guides No. 6 and No. 9 with exceptions.

- Regulatory Guide (RG) 1.93, Revision 1, "Availability of Electric Power Sources," dated March 2012 (ADAMS Accession No. ML003740292), provides guidance with respect to operating restrictions or CT if the number of available AC sources is less than that required by the TS LCO. In particular, this guide recommends a maximum CT of 72 hours for an inoperable onsite or offsite AC source.

- RG 1.155, "Station Blackout," dated August 1988 (ADAMS Accession No. ML003740034), provides guidance for complying with the requirement in 10 CFR 50.63 that nuclear power plants be capable of coping with an SBO event for a specified duration.

- RG 1.9, Revision 4, "Application and Testing of Safety-Related Diesel Generators in Nuclear Power Plants," dated March 2007 (ADAMS Accession No. ML070380553), in describing the reliability of the emergency diesel generators (EDGs), states that "The design of the emergency diesel generators should also incorporate high operational reliability, and this high reliability should be maintained throughout their lifetime by initiating a reliability program that is designed to monitor, improve, and maintain reliability. Increased operational reliability can be achieved through appropriate testing and maintenance, as well as an effective root cause analysis of all emergency diesel generator failures."

- NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition," Branch Technical Position (BTP) 8-8, "Onsite (Emergency Diesel Generators) and Offsite Power Sources Allowed Outage Time Extensions," dated February 2012 (ADAMS Accession No. ML113640138), provides guidance to the NRC staff in reviewing LARs for licensees proposing a one-time or permanent TS change to extend an EDG allowed outage time (AOT) beyond 72 hours.

- NRC Generic Letter 80-30, "Clarification of the Term 'Operable' as it Applies to Single Failure Criterion for Safety Systems Required by TS," dated April 10, 1980, states that when a plant condition does not meet the LCO requirement and is relying on the provisions of the ACTIONS table, the single failure criterion consideration is suspended.

3.0 TECHNICAL EVALUATION

The NRC staff's evaluation of the proposed change considered various potential plant conditions that could be encountered while exercising the temporary CT extensions. The NRC staff also considered the available redundant or diverse means to respond to various plant conditions. The NRC staff reviewed information pertaining to the electrical power systems in the application, the UFSAR, applicable TS LCO and TS Bases to verify the capability of the affected electrical power systems to perform their safety functions (assuming no additional failures of electrical components) is maintained. To achieve that objective, the NRC staff reviewed the capacity of the remaining and alternate power sources to verify whether these power sources are capable of providing power to the emergency buses if the normal power source for the affected buses is declared inoperable. In conjunction with reviewing the remaining and alternate power sources, the NRC staff considered supplemental electrical power sources (not necessarily required by the LCOs and can be either safety or nonsafety-related) that are available at Peach Bottom and capable of performing the same function as the inoperable electrical power source.

With respect to the power sources for the engineered safety feature (ESF) systems, as stated in the LAR supplement dated May 23, 2019, TS LCO 3.8.1 requires:

a. Two qualified circuits between the offsite transmission network and the unit onsite Class 1E AC electrical power distribution subsystems

b. Four DGs capable of supplying power to the unit onsite Class 1E AC electrical power distribution system

c. The qualified circuit(s) between the offsite transmission network and the other unit onsite Class 1E AC electrical power distribution subsystem(s) needed to support the other unit powered equipment required to be operable by LCOs for standby gas treatment system, emergency heat sink (Unit 2 only), emergency service water system and normal heat sink (Unit 3 only), main control room emergency ventilation system (Unit 3 only), and direct current (DC) sources – operating.

d. The DG(s) capable of supplying the other unit onsite Class 1E AC electrical power distribution subsystem(s) needed to support the other unit powered equipment required to be operable by LCOs for standby gas treatment system, emergency heat sink (Unit 2 only), emergency service water system and normal heat sink (Unit 3 only), main control room emergency ventilation system (Unit 3 only), and operating DC sources

3.1 Evaluation of Impacts on Required Offsite Power Sources

As stated in the LAR dated April 26, 2019, the plant startup and the emergency auxiliary power is provided from three independent offsite power sources:

1. The tap on the 230 kV Nottingham-Cooper line feeds the 230/13 kV regulating transformer (Startup and Emergency Auxiliary Transformer No. 2) at the station.

2. 13 kV from the tertiary winding on the 500/230 kV #1 auto-transformer feeds the 13/13 kV regulating transformer (Startup and Emergency Auxiliary Regulating Transformer No. 3) which connects to the 13 kV switchgear at the station.

3. 13 kV can be supplied from the 230/13 kV regulating transformer (Startup Transformer No. 343) which is supplied by the 230 kV Peach Bottom-Newlinville line and connects to the 13 kV switchgear.

According to the LAR, this configuration will remain unchanged during the proposed extended CT period. Each of the above offsite power sources is stepped down from 13 kV to 4.16 kV. During normal plant operation, auxiliary power to the 4.16 kV emergency buses is supplied from two preferred offsite sources via an emergency auxiliary transformer. Every 4.16 kV emergency bus is energized from one of these two sources at all times. This configuration for the 4.16 kV emergency buses will be temporarily changed during the proposed one-time extended CT period, as described below.

During the proposed one-time extended CT period, Peach Bottom Units 2 and 3 will be in normal power operation. The 3EA Transformer will be taken out of service to de-energize all 27 cables planned for replacement. The 4.16 kV emergency buses normally fed from the 3EA Transformer will be transferred to the 2EA Transformer. Replacement of the 3EA Transformer load cables will not impact 2EA Transformer load cables since these cables are routed separately. In the LAR, the licensee further stated, in part, that the plant "will not conduct any discretionary testing or maintenance... of safety systems and important non-safety equipment in the offsite power systems while in the extended 21-day Completion Time period."

The NRC staff notes that during the proposed one-time extended CT period, when the 3EA Transformer is taken out of service for the cable replacement, the emergency buses will be powered from the offsite sources via the remaining emergency auxiliary transformer (2AE). Therefore, the staff finds that during the proposed one-time extended CT period, the capacity and capability of the required offsite power system to provide power to the emergency buses is maintained (assuming no additional failures or inoperability of electrical components).

3.2 Evaluation of Impacts on Onsite Standby Power Sources

As described in the LAR, the 4.16 kV system supplies nominal 4160 V (volt) power to, or is available to supply power to, Class 1E and non-Class 1E components during all operating conditions. The primary components of the 4.16 kV system are the Emergency Auxiliary Switchgear Buses E12, E22, E32, E42 for Unit 2 and E13, E23, E33, E43 for Unit 3. Each emergency auxiliary switchgear bus can be supplied from any one of three common sources: Unit 2 Emergency Auxiliary Transformer (0AX04), Unit 3 Emergency Auxiliary Transformer (0BX04), and the DGs for that bus. If neither offsite source is available, the 4.16 kV emergency buses are supplied from DGs. Each DG can supply two dedicated emergency buses, one for each unit as shown below.

- E1 DG supplies E12 (Unit 2) and E13 (Unit 3) buses
- E2 DG supplies E22 (Unit 2) and E23 (Unit 3) buses
- E3 DG supplies E32 (Unit 2) and E33 (Unit 3) buses
- E4 DG supplies E42 (Unit 2) and E43 (Unit 3) buses

According to the licensee, the failure of one DG does not impair safe shutdown because each DG serves an independent, redundant 4 kV emergency bus for each unit. The remaining DGs and emergency buses have sufficient capability to mitigate the consequences of a DBA, support the shutdown of the other unit, and maintain both units in a safe condition. In the LAR, the licensee further stated that the DGs will be controlled as protected equipment during the proposed one-time extended CT period.

The NRC staff notes that in the event of a LOOP, during the proposed one-time extended CT period, the emergency buses will be powered from the DGs. Therefore, the staff finds that during the proposed one-time extended CT period, the capacity and capability of the onsite standby power system to provide power to the emergency buses is maintained (assuming no additional failures nor inoperability of electrical components).

3.3 Evaluation of Alternate Power Sources

In the LAR dated April 26, 2019, the licensee states, in part, that,

> Defense-in-Depth (DID) will be assured using a designated Alternate AC (AAC) power source, the installed Station Blackout (SBO) line, to provide supplemental AC power to station Emergency Buses, as required to compensate for inoperable AC sources. Additional DID strategies include use of FLEX pumps and DGs (at 480 V Load Center level) to support safety functions following a loss of offsite power. There are three FLEX DGs rated at 500 kW, 600 Amp [ampere] 480V each.

In the LAR and its supplements, the licensee stated that the SBO line is credited as an AAC source at Peach Bottom and is designed for minimum safe shutdown loading for both units. An AAC source is available in the event of an SBO condition, when offsite power sources and emergency DG power is not available to bring Units 2 and 3 to a safe shutdown condition and maintain that status. A dedicated 34.5 kV submarine/underwater cable, powered from the 33 kV bus at Susquehanna Substation, terminates at the SBO Substation at Peach Bottom. The power from the Susquehanna 33 kV bus is dependent only on operation of a minimum number of hydro-generation units at the Conowingo Power Station, which can be made available in 1 hour without any dependence on the transmission grid from which normal offsite power is supplied. A transformer steps down voltage to 13.8 kV and is available for connection to Unit 2 SUB 00A03C to maintain Units 2 and 3 in shutdown status. This AAC source is dedicated to Peach Bottom through a series of manual breaker and switch manipulations performed at both sites. Therefore, the SBO line (7000 kW) has the capability of providing the necessary power to maintain Units 2 and 3 in a safe shutdown condition. The licensee further stated that the SBO line was most recently tested in 2015 and was demonstrated to start and carry 7000 kW of load.

According to the TS Bases, the 33 kV Conowingo Tie-Line can be used to supply the circuit normally supplied by startup and Emergency Auxiliary Transformer No. 2. While not a qualified circuit, this alternate source is a direct tie to the Conowingo Hydro Station that provides a highly reliable source of power because: the line and transformers at both ends of the line are dedicated to the support of Peach Bottom; the tie line is not subject to damage from adverse weather conditions; and, the tie line can be isolated from other parts of the grid when necessary to ensure its availability and stability to support the plant. The availability of this offsite power source permits an extension of the allowable out of service time for a DG to 14 days from the discovery of failure to meet LCO 3.8.1.[b] (per Required Action B.5).

As for the compensatory action, the licensee states in the LAR that Peach Bottom will verify the availability of the SBO line prior to entry into the 21-day extended CT period and will check the operability of the SBO line once per shift (12 hours) during the 21-day extended CT period.

The NRC staff notes that Required Action B.1 of TS 3.8.1, Condition B requires verification of correct breaker alignment, required equipment available, and indicated power available for the Conowingo Tie-Line upon a DG being declared inoperable.

The NRC staff also notes that although power from the SBO line cannot be available within 10 seconds to support the assumptions of the design basis loss-of-coolant accident analysis in the UFSAR, this AAC source has been credited in Peach Bottom TSs as an alternate power source. The NRC staff finds, with reasonable assurance, that if an EDG becomes inoperable during the proposed one-time extended CT period, the SBO line appears to be an adequate alternate power source because (a) this alternate power source has sufficient capacity to supply the power required to maintain both units in a safe shutdown condition, (b) the SBO line can be made available within 60 minutes, which is consistent with the BTP 8-8 time critical action (60 minutes), and (c) the SBO line will be verified available prior to and during the 21-day CT periods.

3.4 NUREG-0800 BTP 8-8 Defense-in Depth Considerations

In the LAR, the licensee states that the proposed change meets the intent of NUREG-0800, BTP 8-8 by proposing additional DID actions and procedures and using a currently installed AAC power source (e.g., SBO line) to provide supplemental AC power to station emergency buses, as required to compensate for inoperable AC sources.

NUREG-0800, BTP 8-8, provides guidance, from a deterministic perspective, for reviewing a one-time CT extension request. The NRC staff's evaluation of the proposed change against the BTP 8-8 DID aspects is provided below.

3.4.1 Supplemental Power Source Capacity

The guidance in NUREG-0800, BTP 8-8 states, in part:

> The supplemental source must have the capacity to bring a unit to safe shutdown (cold shutdown) in case of a loss of offsite power (LOOP) concurrent with a single failure during plant operation (Mode 1).

In the LAR, the licensee states, in part, that "the Station Blackout (SBO) line is credited as an Alternate AC (AAC) source at PBAPS. Per UFSAR Sections 8.3.2.2 and 8.4.6.2, an AAC source is available in the event of an SBO condition, when offsite power sources and emergency DG power are not available, to bring Units 2 and 3 to a safe shutdown condition and maintain that status."

The NRC staff notes that the SBO line has the capacity to bring Units 2 and 3 to safe shutdown condition and maintain that status. Therefore, the staff finds that the proposed change meets the intent of the BTP 8-8 position with respect to the supplemental power source capacity.

3.4.2 Inoperable Emergency Diesel Generator Substitution

The guidance in NUREG-0800, BTP 8-8 states, in part:

> Multi-unit sites that have installed a single AAC power source for SBO cannot substitute it for the inoperable diesel when requesting AOT extensions unless the AAC source has enough capacity to carry all LOOP loads to bring the unit to a cold shutdown as a substitute for the EDG in an extended AOT and carry all SBO loads for the unit that has an SBO event without any load shedding.

In the LAR, the licensee states, in part, that Peach Bottom is a dual-unit site that has installed a single AAC power source for the SBO event and that the SBO line is credited as an AAC power source. According to UFSAR Section 8.4.6.2, "Loss of Auxiliary Power," "In the event the emergency diesels and offsite power sources are not available, a station blackout source is available for connection, via the SBO Substation, to the 13 kV buses and thence to the 4 kV buses via one or both emergency auxiliary transformers."

The NRC staff notes that the SBO line appears to be an adequate AAC power source that has sufficient capacity to carry all LOOP loads to bring both units to a cold shutdown if the EDG becomes inoperable during the one-time extended CT period and carries all SBO loads for the unit that has an SBO event. Therefore, the staff finds that the proposed change meets the intent of the BTP 8-8 position with respect to the inoperable EDG substitution.

3.4.3 Time to Make AAC Source Available

The guidance in NUREG-0800, BTP 8-8 states, in part:

> For plants using AAC or supplemental power sources discussed above, the time to make the AAC or supplemental power source available, including accomplishing the cross-connection, should be approximately one hour to enable restoration of battery chargers and control reactor coolant system inventory.

In the LAR, the licensee states, in part, that,

> Per UFSAR Sections 8.3.2.2 and 8.4.6.2, an AAC source is available in the event of an SBO condition, when offsite power sources and emergency DG power is not available to bring Units 2 and 3 to a safe shutdown condition and maintain that status. A dedicated 34.5 kV submarine/underwater cable, powered from the 33 kV bus at Susquehanna Substation, terminates at the SBO Substation at PBAPS. The power from the Susquehanna 33 kV bus is dependent only on operation of a minimum number of hydro-generation units at the Conowingo Power Station, which can be made available in one hour without any dependence on the transmission grid from which normal offsite power is supplied.

The NRC notes that upon the loss of all AC sources, AAC power source (SBO line) can be made available within 1 hour. Therefore, the NRC finds that the proposed change meets the intent of the BTP 8-8 position with respect to time required to make the AAC source available.

3.4.4 AAC Source Operability Verification

The guidance in NUREG-0800, BTP 8-8 states, in part:

> The availability of AAC or supplemental power source should be verified within the last 30 days before entering extended AOT by operating or bringing the power source to its rated voltage and frequency for 5 minutes and ensuring all its auxiliary support systems are available or operational.

In the LAR, the licensee states, in part, that the SBO line operability verification will be performed within 30 days prior to entry into the temporary one-time 21-day CT period.

The NRC finds that the proposed change meets the intent of the BTP 8-8 position with respect to verification of AAC source operability.

3.4.5 Coping with Loss of All AC Power

The guidance in NUREG-0800, BTP 8-8 states, in part:

> To support the one-hour time for making this power source available, plants must assess their ability to cope with loss of all AC power for one hour independent of an AAC power source.

In the LAR, the licensee states, in part that,

> essential DC [direct current] batteries supply breaker control and protection for, Safety Relief Valve (SRV) solenoids, High Pressure Coolant Injection (HPCI) control and Motor Operated Valves (MOVs), Reactor Core Isolation Cooling (RCIC) control and MOVs, Main Control Room (MCR) indication, and DG logic. Following loss of a battery charger, two hours is the quickest the batteries would be expected to be depleted based on full-load and a worst-case battery environment. HPCI and RCIC are the steam-driven emergency feedwater pumps used as a coping mechanism to ensure sufficient reactor water inventory is maintained in the vessel to permit adequate core cooling.

The NRC notes that upon the loss of all AC sources, the essential DC batteries would be able to support the 1-hour coping time for making the AAC source available. Therefore, the staff finds that the proposed change meets the intent of the BTP 8-8 position with respect to coping with loss of all AC power sources.

3.4.6 Calculations and Procedures for the AAC Power Source

The guidance in NUREG-0800, BTP 8-8 states, in part:

> The plant should have formal engineering calculations for equipment sizing and protection and have approved procedures for connecting the AAC or supplemental power sources to the safety buses.

As described in the LAR and supplement dated July 24, 2019, Calculation PE-0154, "Station Blackout Voltage Regulation – Conowingo Source," performs a voltage drop study to determine the voltage drop under SBO conditions using the 33 kV feeder from Conowingo and establishes

that the proposed arrangement will meet the electrical requirements of the plant. Plant Procedure SE-11, "Loss of Offsite Power," directs the performance of Procedure SE-11.1, "Operating Station Blackout Line During LOOP Event." SE-11.1, "Operating Station Blackout Line During a LOOP Event," provides instructions for operating the SBO line during a LOOP event when the station EDGs are not capable of supporting operation of safe shutdown loads. Procedure SE-11.1 specifically delineates the prerequisites, precautions, and procedural steps for connecting the SBO line to the safety buses for both units.

The NRC notes that Peach Bottom has a calculation for the SBO sizing and procedures for connecting the SBO line to the safety busses. Therefore, the staff finds that the proposed change meets the intent of the BTP 8-8 position with respect to calculation and procedure.

3.4.7 Justification of 21-Day Completion Time

The guidance in NUREG-0800, BTP 8-8 states, in part:

> The EDG or offsite power AOT should be limited to 14 days to perform maintenance activities. The licensee must provide justification for the duration of the requested AOT.

In the LAR, the licensee states, in part that it "is estimated that up to 21 days is required to replace all 27 electrical cables based on lessons learned from implementation of Engineering Change (EC) 555777 that replaced three (3) out of the 27 load cables associated with the 3EA Transformer. It took four (4) days to remove three (3) cables and install and test three (3) new cables. In addition, the schedule for Medium Voltage (MV) cables recently replaced at PBAPS per ECs 625819, 626191, and 626878 were reviewed for reference." The duration of the requested 21 days is based on plant operating experience, lessons learned from implementation of ECs noted above, and a walk down conducted with installers for the 3EA cables running from # 3EA Transformer to junction box to the 4.16 kV switchgear. Attachment 5 of the LAR lists the estimated time for planned and contingent cable replacement activities, which totaled to 488 hours (20.3 days).

As described in the LAR, compensatory measures will be implemented to minimize risk to the station. The compensatory measures include protecting equipment, verifying the AAC power source availability, briefing the operators, and performing fire risk management actions.

The NRC staff finds that although the proposed CT is beyond the BTP-8-8 14-day limit, the licensee's estimate for the time required to complete the cable replacement, based on the past experiences, lessons learned, and actual walk down, is reasonable. The NRC review of the licensee's consideration of risk for the proposed CT extension is provided in Section 3.5 of this safety evaluation.

3.4.8 AAC Source Verification

The guidance in NUREG-0800, BTP 8-8 states, in part:

> The TS must contain Required Actions and Completion Times to verify that the supplemental AC source is available before entering extended AOT.

and

> The availability of the AAC or supplemental power source shall be checked every 8-12 hours (once per shift).

The footnote of the proposed TS 3.8.1, states, in part, that "Prior to entry into the 21-day extended Completion Time, the SBO Line... shall be verified available. During the 21-day Completion Time, the 33 kV SBO Line shall be verified available once per shift." In the LAR, the licensee further states that "Surveillance Test ST-O-51H-200-2, "Station Blackout Line Operability Verification," will be performed to verify the operability of the SBO line."

The NRC finds that the proposed change meets the intent of the BTP 8-8 position with respect to the verification of the AAC source availability.

3.4.9 Actions When AAC Source Unavailable

The guidance in NUREG-0800, BTP 8-8 states, in part:

> If the AAC or supplemental power source become unavailable any time during extended AOT, the unit shall enter the LCO and start shutting down within 24 hours.

The footnote of the proposed TS 3.8.1 states that "If the SBO Line becomes unavailable after the initial seven (7) days while in the extended 21-day Completion Time period, it shall be made available within 24 hours, or the unit shall be brought to MODE 3 [hot shutdown] within the next 6 hours and MODE 4 [cold shutdown] within the following 30 hours."

The NRC finds that the proposed change meets the intent of the BTP 8-8 position with respect to actions needed to be taken when the AAC source becomes unavailable.

3.4.10 Extended Completion Time Limitation

The guidance in NUREG-0800, BTP 8-8 states, in part:

> The extended AOT will be used no more than once in a 24-month period (or refueling interval) on a per diesel basis to perform EDG maintenance activities, or any major maintenance on offsite power transformer or bus.

In the LAR, the licensee states, in part, that the requested "21-day Completion Time will be used once to support replacement of all 27 load electrical cables during the 3EA Transformer out-of-service window."

The NRC finds that the proposed change meets the intent of the BTP 8-8 position with respect to the extended CT limitation.

3.4.11 Severe Weather Conditions Restriction

The guidance in NUREG-0800, BTP 8-8 states, in part:

> The preplanned maintenance will not be scheduled if severe weather conditions are anticipated.

In a supplement dated July 24, 2019, the licensee states, in part, that "Should extreme or adverse weather conditions be forecasted for the currently scheduled outage period..., the project start date could be delayed, or the entire project schedule could be moved. This determination will be made by Plant Operations the week prior to the start of the currently scheduled system outage window."

The NRC finds that the proposed change meets the intent of the BTP 8-8 position with respect to severe weather conditions restriction.

3.4.12 Grid Perturbation Monitoring

The guidance in NUREG-0800, BTP 8-8 states, in part:

> The system load dispatcher will be contacted once per day to ensure no significant grid perturbations (high grid loading unable to withstand a single contingency of line or generation outage) are expected during the extended AOT.

In the LAR, the licensee states, in part, that "station Operations will contact the grid operator (Load Dispatcher) once per day during the extended 21-day Completion Time period to ensure no significant grid disturbances are expected during the extended Completion Time period."

The NRC finds that the proposed change meets the intent of the BTP 8-8 position with respect to grid perturbation monitoring.

3.4.13 Testing and Maintenance Restriction

The guidance in NUREG-0800, BTP 8-8 states, in part:

> Component testing or maintenance of safety systems and important non safety equipment in the offsite power systems that can increase the likelihood of a plant transient (unit trip) or LOOP will be avoided. In addition, no discretionary switchyard maintenance will be performed.

and

> TS required systems, subsystems, trains, components, and devices that depend on the remaining power sources will be verified to be operable and positive measures will be provided to preclude subsequent testing or maintenance activities on these systems, subsystems, trains, components, and devices.

In the LAR, the licensee states, in part that,

> PBAPS will not conduct any discretionary testing or maintenance, which can increase the likelihood of a plant transient (unit trip) or LOOP, of safety systems and important non-safety equipment in the offsite power systems while in the extended 21-day Completion Time period.
>
> ...No discretionary switchyard maintenance will be performed on protected equipment.

In the supplement dated July 24, 2019, the licensee further states, in part that,

> No unnecessary work will be authorized on or around the protected remaining operable offsite circuit, EDGs, and SBO line during the 3EA circuit system outage window. This equipment will remain protected throughout the duration of the extended Completion Time period and no unnecessary work will be authorized on or around the protected equipment during the 3EA circuit system outage window.

The NRC finds that the proposed change meets the intent of the BTP 8-8 position with respect to testing and maintenance restriction.

3.4.14 Other Protected Equipment

The guidance in NUREG-0800, BTP 8-8 states, in part:

> Reactor Core Isolation Cooling and High-Pressure Coolant Injection systems in case of BWR [boiling-water reactor] units will be controlled as "protected equipment."

In the LAR, the licensee states, in part, that "HPCI and RCIC pumps on the operating units will be controlled as protected equipment for the duration of the Completion Time period."

The NRC finds that the proposed change meets the intent of the BTP 8-8 position with respect to protecting the HPCI and RCIC systems.

3.5 Risk Insights

In the LAR, the licensee stated that the basis for the proposed one-time TS change is based upon a deterministic evaluation centered on meeting the intent of NUREG-0800, BTP 8-8.

The licensee submitted risk analysis insights as part of the deterministic LAR. Because this is not a risk-informed application, the probabilistic risk analysis models used to derive risk insights in the LAR were not reviewed by the NRC staff to determine their technical acceptability as a basis to support this application. As a result, the staff did not rely on the numerical results provided by the licensee. However, the staff considered the licensee-provided risk insights to aid in the deterministic review of the proposed change. The staff also performed an independent assessment using the NRC's standardized plant analysis risk model for Peach Bottom, Units 2 and 3, to evaluate the risk contribution from internal events. The staff's independent assessment identified that losses of offsite power and transients coupled with failures of the EDGs are the dominant accident sequences that contribute to the increase in risk due to the proposed one-time TS change, which is consistent with the proposed risk management actions.

The licensee-provided risk insights and the risk insights developed by the NRC both support the engineering conclusions associated with the appropriateness of the licensee's proposed risk management actions. The currently available risk insights and results did not challenge the engineering conclusions that the proposed change maintains DID.

3.6 Evaluation of LCO 3.6.3.1 Reference Removal

Peach Bottom, Unit 3, TS LCO 3.8.1 currently requires, in part, that "The following AC electrical power sources shall be operable:

c. The qualified circuit(s) between the offsite transmission network and the Unit 2 onsite Class 1E AC electrical power distribution subsystem(s) needed to support the Unit 2 powered equipment required to be OPERABLE by LCO 3.6.3.1, "Containment Atmospheric Dilution (CAD) System...

d. The DG(s) capable of supplying the Unit 2 onsite Class 1E AC electrical power distribution subsystem(s) needed to support the Unit 2 powered equipment required to be OPERABLE by LCO 3.6.3.1...."

The amendment would revise Unit 3 TS 3.8.1 to remove the reference to LCO 3.6.3.1 from LCO 3.8.1. Peach Bottom, Unit 2, TS LCO 3.8.1 requirements would remain unchanged.

The licensee stated, in part, in the LAR supplement dated May 23, 2019, that:

> The NRC approved the removal of the CAD System requirements from the TS as documented in a letter dated January 28, 2010 (ADAMS Accession No. ML100130814), issuing Amendment Nos. 274 and 278 to Renewed Facility Operating License Nos. DPR-44 and DPR-56 for PBAPS, Units 2 and 3, respectively and the requirements associated with TS 3.6.3.1 were deleted for the Unit 2 and Unit 3 TS in support of implementation of the approved amendments. It was later identified that an administrative/editorial discrepancy existed with the Unit 3 TS 3.8.1 LCO description since it still included references to LCO 3.6.3.1.

The licensee further stated, in part, in the LAR supplement date May 23, 2019, that:

> The changes described to remove the reference to LCO 3.6.3.1 from the Unit 3 TS 3.8.1 LCO requirements "c" and "d" strictly involve an editorial correction. The reference to LCO 3.6.3.1 was inadvertently retained and should have been deleted as part of the... submittal approved by the NRC [as stated above]. These proposed changes to the Unit 3 TS... have no impact on safe operation of the plant in that they do not involve any physical changes to Structures, Systems, and Components (SSCs) in the plant, or the way SSCs are operated or controlled.

The NRC notes that the removal of LCO 3.6.3.1 requirements from TSs was previously approved by the NRC, but the supposed removal of LCO 3.6.3.1 references from Unit 3 TS 3.8.1 LCO were not performed. Therefore, the NRC finds that the removal of the LCO 3.6.3.1 reference is acceptable because (1) it is only an administrative change based on the previous NRC approval, (2) it does not involve physical change to any plant's safety limits, SSCs' settings, LCOs, surveillance requirements, design features, or administrative controls required by 10 CFR 50.36, and (3) it would not impact the safe operation of the plant.

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 September 25, 2019. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of facility components located within the restricted areas as defined in 10 CFR Part 20. 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 has previously issued a proposed finding that the amendments involve no significant hazards consideration, published in the *Federal Register* on June 18, 2019 (84 FR 28345) and there has been no public comment on such finding. 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 Contributors: K. Nguyen
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Date: October 29, 2019

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 – ISSUANCE OF AMENDMENT NOS. 328 AND 331 REVISING TECHNICAL SPECIFICATION SECTION 3.81, "AC SOURCES – OPERATING," FOR A ONE-TIME EXTENSION OF A COMPLETION TIME (EPID L-2019-LLA-0095) DATED OCTOBER 29, 2019

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NAME	JTobin	CSmith (PBlechman for w/comments)	DWilliams
DATE	10/16/19	09/27/19	09/13/19
OFFICE	NRR/DSS/STSB/BC**	NRR/DSS/SCPB/BC (A)**	NRR/DRA/APOB/BC**
NAME	VCusumano	SJones	AZoulis
DATE	10/03/19	10/04/19	08/26/19
OFFICE	OGC – NLO**	NRR/DORL/LPL1/BC	NRR/DORL/LPL1/PM
NAME	KGamin	JDanna	JTobin
DATE	10/15/19	10/25/19	10/29/19

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