



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

January 28, 2010

Mr. Charles G. Pardee
President and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 - ISSUANCE OF LICENSE AMENDMENTS TO INCORPORATE TSTF-478, REVISION 2, "BWR TECHNICAL SPECIFICATIONS CHANGES THAT IMPLEMENT THE REVISED RULE FOR COMBUSTIBLE GAS CONTROL." (TAC NOS. ME1857 AND ME1858)

Dear Mr. Pardee:

The Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 274 and 278 to Renewed Facility Operating License Nos. DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated July 30, 2009, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML092220045), as supplemented by letter dated December 29, 2009 (ADAMS Accession No. ML100130213).

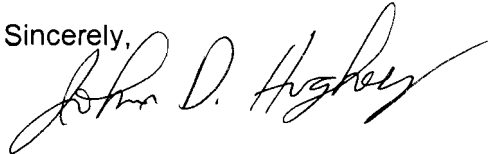
The amendment revises the TSs to incorporate changes consistent with Technical Specification Task Force (TSTF) traveler 478, Revision 2, "Boiling Water Reactor (BWR) Technical Specification Changes that Implement the Revised Rule for Combustible Gas Control." Specifically, the amendments delete the requirements associated with Peach Bottom TS 3.6.3.1, "Containment Atmospheric Dilution (CAD) System," as permitted by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.44, "Combustible gas control for nuclear power reactors."

C. Pardee

- 2 -

A copy of our Safety Evaluation is enclosed and a Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink, appearing to read "John D. Hughey". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

John D. Hughey, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosures:

1. Amendment No. 274 to Renewed DPR-44
2. Amendment No.278 to Renewed DPR-56
3. Safety Evaluation

cc: Distribution via 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. 274
License No. DPR-44

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (Exelon Generation Company), and PSEG Nuclear LLC (the licensees), dated July 30, 2009, as supplemented by letter dated December 29, 2009, 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:

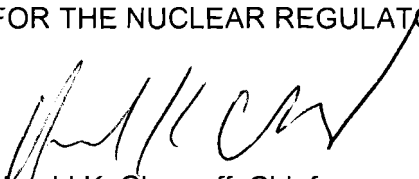
(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.274 , are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications.

3. Implementation Requirements:

This license amendment is effective as of the date of issuance, and shall be implemented within 60 days of issuance. Implementation of the amendment shall include updating the Updated Final Safety Analysis Report in accordance with 10 CFR 50.71(e).

FOR THE NUCLEAR REGULATORY COMMISSION



Harold K. Chernoff, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the License
and Technical Specifications

Date of Issuance: January 28, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 274

RENEWED FACILITY OPERATING LICENSE NO. DPR-44

DOCKET NO. 50-277

Replace the following page of the 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

Page 3

Page 3

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

Remove

Insert

ii
3.6 – 31
3.6 – 32
3.8 – 41

ii
3.6 – 31
3.6 – 32
3.8 – 41

- (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.

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 3514 megawatts thermal.

- (2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 274, 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 plans¹, 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.

- (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:

The Exelon Generation Company may make changes to the approved

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

TABLE OF CONTENTS (continued)

3.4	REACTOR COOLANT SYSTEM (RCS)	3.4-1
3.4.1	Recirculation Loops Operating	3.4-1
3.4.2	Jet Pumps	3.4-6
3.4.3	Safety Relief Valves (SRVs) and Safety Valves (Svs) ..	3.4-8
3.4.4	RCS Operational LEAKAGE	3.4-10
3.4.5	RCS Leakage Detection Instrumentation	3.4-12
3.4.6	RCS Specific Activity	3.4-14
3.4.7	Residual Heat Removal (RHR) Shutdown Cooling System-Hot Shutdown	3.4-16
3.4.8	Residual Heat Removal (RHR) Shutdown Cooling System-Cold Shutdown	3.4-19
3.4.9	RCS Pressure and Temperature (P/T) Limits	3.4-21
3.4.10	Reactor Steam Dome Pressure	3.4-28
3.5	EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM	3.5-1
3.5.1	ECCS-Operating	3.5-1
3.5.2	ECCS-Shutdown	3.5-8
3.5.3	RCIC System	3.5-12
3.6	CONTAINMENT SYSTEMS	3.6-1
3.6.1.1	Primary Containment	3.6-1
3.6.1.2	Primary Containment Air Lock	3.6-3
3.6.1.3	Primary Containment Isolation Valves (PCIVs)	3.6-8
3.6.1.4	Drywell Air Temperature	3.6-17
3.6.1.5	Reactor Building-to-Suppression Chamber Vacuum Breakers	3.6-18
3.6.1.6	Suppression Chamber-to-Drywell Vacuum Breakers	3.6-21
3.6.2.1	Suppression Pool Average Temperature	3.6-23
3.6.2.2	Suppression Pool Water Level	3.6-26
3.6.2.3	Residual Heat Removal (RHR) Suppression Pool Cooling	3.6-27
3.6.2.4	Residual Heat Removal (RHR) Suppression Pool Spray	3.6-29
3.6.3.1	Deleted	3.6-31
3.6.3.2	Primary Containment Oxygen Concentration	3.6-33
3.6.4.1	Secondary Containment	3.6-34
3.6.4.2	Secondary Containment Isolation Valves (SCIVs)	3.6-36
3.6.4.3	Standby Gas Treatment (SGT) System	3.6-40
3.7	PLANT SYSTEMS	3.7-1
3.7.1	High Pressure Service Water (HPSW) System	3.7-1
3.7.2	Emergency Service Water (ESW) System and Normal Heat Sink	3.7-3
3.7.3	Emergency Heat Sink	3.7-5
3.7.4	Main Control Room Emergency Ventilation (MCREV) System	3.7-7
3.7.5	Main Condenser Offgas	3.7-10

(continued)

3.6 CONTAINMENT SYSTEMS

3.6.3.1 Deleted

The information on this page has been deleted.
Intentionally left blank.

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Distribution Systems—Operating

- LCO 3.8.7 The following AC and DC electrical power distribution subsystems shall be OPERABLE:
- a. Unit 2 Division I and Division II AC and DC electrical power distribution subsystems; and
 - b. Unit 3 AC and DC electrical power distribution subsystems needed to support equipment required to be OPERABLE by LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown," LCO 3.5.1, "ECCS—Operating," LCO 3.6.2.3, "RHR Suppression Pool Cooling," LCO 3.6.2.4, "RHR Suppression Pool Spray," "Containment Atmospheric Dilution (CAD) System," LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," LCO 3.7.1, "High Pressure Service Water (HPSW) System," LCO 3.7.2, "Emergency Service Water (ESW) System and Normal Heat Sink," LCO 3.7.3, "Emergency Heat Sink," and LCO 3.8.1, "AC Sources—Operating."

APPLICABILITY: MODES 1, 2, and 3.



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

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. 278
License No. DPR-56

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (Exelon Generation Company), and PSEG Nuclear LLC (the licensees), dated July 30, 2009, as supplemented by letter dated December 29, 2009, 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.278 , are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications.

3. Implementation Requirements:

This license amendment is effective as of the date of issuance, and shall be implemented within 60 days of issuance. Implementation of the amendment shall include updating the Updated Final Safety Analysis Report in accordance with 10 CFR 50.71(e).

FOR THE NUCLEAR REGULATORY COMMISSION



Harold K. Chernoff, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the License
and Technical Specifications

Date of Issuance: January 28, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 278

RENEWED FACILITY OPERATING LICENSE NO. DPR-56

DOCKET NO. 50-278

Replace the following page of the 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

Page 3

Page 3

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

Remove

Insert

ii
3.6 – 31
3.6 – 32
3.8 – 41

ii
3.6 – 31
3.6 – 32
3.8 – 41

- (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.

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 3514 megawatts thermal.

- (2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 278, are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications.¹

- (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 plans², 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.

- (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

¹Licensed power level was revised by Amendment No. 250, dated November 22, 2002, and will be implemented following the 14th refueling outage currently scheduled for Fall 2003.

²The training and Qualification Plan and Safeguards Contingency Plan and Appendices to the Security Plan.

Renewed License No. DPR-56
Revised by letter dated October 28, 2004
Revised by letter dated November 5, 2004
Revised by letter dated May 29, 2007
Amendment No. 278

TABLE OF CONTENTS (continued)

3.4	REACTOR COOLANT SYSTEM (RCS)	3.4-1
3.4.1	Recirculation Loops Operating	3.4-1
3.4.2	Jet Pumps	3.4-6
3.4.3	Safety Relief Valves (SRVs) and Safety Valves (SVs) ...	3.4-8
3.4.4	RCS Operational LEAKAGE	3.4-10
3.4.5	RCS Leakage Detection Instrumentation	3.4-12
3.4.6	RCS Specific Activity	3.4-14
3.4.7	Residual Heat Removal (RHR) Shutdown Cooling System-Hot Shutdown	3.4-16
3.4.8	Residual Heat Removal (RHR) Shutdown Cooling System-Cold Shutdown	3.4-19
3.4.9	RCS Pressure and Temperature (P/T) Limits	3.4-21
3.4.10	Reactor Steam Dome Pressure	3.4-28
3.5	EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM	3.5-1
3.5.1	ECCS-Operating	3.5-1
3.5.2	ECCS-Shutdown	3.5-8
3.5.3	RCIC System	3.5-12
3.6	CONTAINMENT SYSTEMS	3.6-1
3.6.1.1	Primary Containment	3.6-1
3.6.1.2	Primary Containment Air Lock	3.6-3
3.6.1.3	Primary Containment Isolation Valves (PCIVs)	3.6-8
3.6.1.4	Drywell Air Temperature	3.6-17
3.6.1.5	Reactor Building-to-Suppression Chamber Vacuum Breakers	3.6-18
3.6.1.6	Suppression Chamber-to-Drywell Vacuum Breakers	3.6-21
3.6.2.1	Suppression Pool Average Temperature	3.6-23
3.6.2.2	Suppression Pool Water Level	3.6-26
3.6.2.3	Residual Heat Removal (RHR) Suppression Pool Cooling	3.6-27
3.6.2.4	Residual Heat Removal (RHR) Suppression Pool Spray ...	3.6-29
3.6.3.1	Deleted	3.6-31
3.6.3.2	Primary Containment Oxygen Concentration	3.6-33
3.6.4.1	Secondary Containment	3.6-34
3.6.4.2	Secondary Containment Isolation Valves (SCIVs)	3.6-36
3.6.4.3	Standby Gas Treatment (SGT) System	3.6-40
3.7	PLANT SYSTEMS	3.7-1
3.7.1	High Pressure Service Water (HPSW) System	3.7-1
3.7.2	Emergency Service Water (ESW) System and Normal Heat Sink	3.7-3
3.7.3	Emergency Heat Sink	3.7-5
3.7.4	Main Control Room Emergency Ventilation (MCREV) System	3.7-7
3.7.5	Main Condenser Offgas	3.7-10

(continued)

3.6 CONTAINMENT SYSTEMS

3.6.3.1 Deleted

The information on this page has been deleted.
Intentionally left blank.

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Distribution Systems—Operating

- LCO 3.8.7 The following AC and DC electrical power distribution subsystems shall be OPERABLE:
- a. Unit 2 Division I and Division II AC and DC electrical power distribution subsystems; and
 - b. Unit 3 AC and DC electrical power distribution subsystems needed to support equipment required to be OPERABLE by LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown," LCO 3.5.1, "ECCS—Operating," LCO 3.6.2.3, "RHR Suppression Pool Cooling," LCO 3.6.2.4, "RHR Suppression Pool Spray," "Containment Atmospheric Dilution (CAD) System," LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," LCO 3.7.1, "High Pressure Service Water (HPSW) System," LCO 3.7.2, "Emergency Service Water (ESW) System and Normal Heat Sink," LCO 3.7.3, "Emergency Heat Sink," LCO 3.7.4, "Main Control Room Emergency Ventilation (MCREV) System," and LCO 3.8.1, "AC Sources—Operating."

APPLICABILITY: MODES 1, 2, and 3.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 274 TO RENEWED FACILITY

OPERATING LICENSE NO. DPR-44 AND AMENDMENT NO. 278 TO

RENEWED FACILITY OPERATING LICENSE NO. 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 letter dated July 30, 2009, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML092220045), as supplemented by letter dated December 29, 2009 (ADAMS Accession No. ML100130213), Exelon Generation Company, LLC, the licensee for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3, requested to amend the Technical Specifications (TSs), Appendix A, of Renewed Facility Operating License numbers DPR-44 and DPR-56 for PBAPS Units 2 and 3. The submittal requested that the PBAPS Units 2 and 3 TSs be revised to incorporate changes consistent with Technical Specification Task Force (TSTF) traveler 478, Revision 2, "Boiling Water Reactor (BWR) Technical Specification Changes that Implement the Revised Rule for Combustible Gas Control." Specifically, the amendments delete the requirements associated with Peach Bottom TS 3.6.3.1, "Containment Atmospheric Dilution (CAD) System," as permitted by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.44, "Combustible gas control for nuclear power reactors."

PBAPS Units 2 and 3 are both Boiling Water Reactors (BWRs) with Mark I containments. The application is consistent with NRC-approved Revision 2 to TSTF - 478, with the exception of those changes related to drywell containment cooling fans. Safety-related drywell cooling fans are not installed at PBAPS and the plant TSs have no corresponding requirements for a drywell cooling system. The availability of this TS improvement was announced in the *Federal Register* on November 21, 2007, (72 FR 65610) as part of the Consolidated Line Item Improvement Process (CLIP). Exelon Generation Company, LLC (the licensee), provided supplemental information by letter dated December 29, 2009 (ADAMS Accession No. ML100130213). The supplemental information corrected a typographical error associated with the revised TS pages. The supplement clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on October 6, 2009 (74 FR 51331).

The NRC staff has completed its review and finds that the requested TS modifications are acceptable, as discussed in this safety evaluation.

2.0 REGULATORY EVALUATION

General Design Criterion (GDC) 41, "Containment atmosphere cleanup," of Appendix A to 10 CFR Part 50 states, in part, that systems to control fission products, hydrogen, oxygen, and other substances that may be released into the reactor containment shall be provided as necessary to reduce the concentration and quality of fission products and control the concentration of hydrogen, oxygen, and other substances in the containment atmosphere following postulated accidents to assure that containment integrity is maintained. Section 50.44, "Combustible Gas Control for Nuclear Power Reactors," of 10 CFR 50.44 provides, among other things, standards for controlling combustible gas that may accumulate in the containment atmosphere during accidents.

PBAPS Units 2 and 3, were designed and construction was commenced prior to the codification of the current GDCs, thus the current GDCs are not part of the original design basis of the plant. However, Appendix H of the Updated Final Safety Analysis Report (UFSAR) for PBAPS Units 2 and 3 contains an evaluation of the design bases of the nuclear facility as measured against the General Design Criteria for Nuclear Power Plant Construction Permits that were proposed to be added to 10 CFR Part 50 as Appendix A in July 1967. The licensee concluded that PBAPS Units 2 and 3 conforms with the intent of the proposed General Design Criteria for Nuclear Power Plants, issued by the Atomic Energy Commission in July 1967. In addition, Section 5.2.3.9.1 of the PBAPS UFSAR states that the PBAPS CAD system design meets the requirements of 10 CFR 50.44 and current GDC 41, but is no longer credited in the UFSAR Chapter 14 accident analyses.

10 CFR 50.44 was revised on September 16, 2003 (68 FR 54123), as a result of studies that led to an improved understanding of combustible gas behavior during severe accidents. The studies confirmed that the hydrogen release postulated from a design-basis loss-of-coolant accident (LOCA) was not risk significant because it was not large enough to lead to early containment failure, and that the risk associated with hydrogen combustion was from beyond design-basis (i.e., severe) accidents. As a result, requirements for maintaining hydrogen control equipment associated with a design-basis LOCA were eliminated from 10 CFR 50.44. Regulatory Guide (RG) 1.7, "Control of Combustible Gas Concentrations in Containment Following a Loss-of-Coolant Accident," Revision 3, dated March 2007 (ADAMS Accession No. ML070290080), provides detailed guidance that would be acceptable for implementing 10 CFR 50.44.

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TS as part of the license application. The TS, among other things, help to ensure the operational capability of structures, systems, and components that are required to protect the health and safety of the public. 10 CFR 50.36(c)(2)(i) states, in part, that "limiting conditions for operation 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." TSTF-478, Revision 2, contains changes to remedial actions permitted by the TSs.

The design purpose of the CAD system is to maintain combustible gas concentrations within the primary containment at or below the flammability limits following a postulated LOCA by diluting hydrogen and oxygen with the addition of nitrogen. The CAD system, however, is considered ineffective at mitigating hydrogen releases from the more risk significant beyond design-basis accidents that could threaten primary containment integrity. The revised 10 CFR 50.44 rule requires that systems and measures be in place to reduce the risks associated with combustible gases from beyond design-basis accident and eliminate requirements for maintaining hydrogen and oxygen control equipment associated with a design-basis LOCA. As a result, the CAD system is no longer a mitigating safety system required to be maintained per the revised 10 CFR 50.44 rule and existing TS for this system and can therefore be deleted. However, 10 CFR 50.44 does require that all primary containments have a capability for ensuring a mixed atmosphere.

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Changes

The proposed changes to the PBAPS Unit 2 and Unit 3 TSs are as follows:

- delete specification 3.6.3.1 "Containment Atmospheric Dilution (CAD) System" in its entirety;
- revise specification 3.8.7.b to delete the reference for "LCO 3.6.3.1," which is consistent with deletion of TS 3.6.3.1;
- revise the TS Table of Contents.

3.2 Containment Atmosphere Dilution System Specification

BWRs with Mark I containment designs have either installed hydrogen recombiners or CAD systems to meet requirements for combustible gas control following a design-basis LOCA. The hydrogen recombiners and the CAD system perform similar functions for post-LOCA gas control by decreasing the hydrogen concentration. Hydrogen recombiners function to reduce the combustible gas concentration in the primary containment by recombining hydrogen and oxygen to form water vapor. The CAD system functions to maintain combustible gas concentrations within the primary containment at or below the flammability limits following a postulated LOCA by diluting hydrogen and oxygen when nitrogen is added to the mixture.

Studies performed in support of the 10 CFR 50.44 rule change (September 16, 2003, 68 FR 54123) confirmed that the hydrogen release postulated from a design-basis LOCA was not risk significant because it was not large enough to lead to early containment failure, and that the risk associated with hydrogen combustion was from beyond design-basis (i.e., severe) accidents. As a result, the revised 10 CFR 50.44 rule eliminates requirements for maintaining hydrogen control equipment associated with a design-basis LOCA and requires systems and measures be in place to reduce the risks associated with hydrogen combustion from beyond design-basis accidents.

The CAD system maintains combustible gas concentrations within the primary containment at or below the flammability limits following a LOCA, however, this system, as discussed in the

10 CFR 50.44 rule change was shown to be ineffective at mitigating hydrogen releases from the more risk significant beyond design-basis accidents that could threaten primary containment integrity, and is no longer required to address a design-basis LOCA. Therefore, the NRC staff finds that the deletion of PBAPS Units 2 and 3 TS 3.6.3.1, "Containment Atmosphere Dilution (CAD) System," is acceptable.

3.3 Containment Mixed Atmosphere Capability

10 CFR 50.44 requires that all primary containments have a capability for ensuring a mixed atmosphere. The drywell unit cooler fans at PBAPS are not relied on for post-LOCA atmosphere mixing. The plant analysis, as summarized in the PBAPS UFSAR, Section 5.2.3.9.5, shows that natural convection and diffusion provide adequate mixing to support the assumption of uniform oxygen concentration. Thus, the PBAPS drywell unit cooler fans do not perform a safety function and there are no TS requirements associated with the Primary Containment Cooling and Ventilation System. The TSTF-478-A, Revision 2, provisions for changing TS requirements for the Drywell Cooling System Fans are not applicable to PBAPS.

3.4 Summary

Based on the 2003 change to 10 CFR 50.44 and implementation consistent with TSTF-478, Revision 2, the NRC staff finds the requested deletion of the CAD system specification from the PBAPS TS to comply with the applicable regulatory requirements. The proposed changes to the TS are consistent with the applicable requirements of 10 CFR 50.44 and intent of GDC 41 and are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official provided comments via e-mail that were considered in the staff's review of the licensee's application. The comments can be viewed in ADAMS (Accession No. ML093520938).

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component 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 Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding issued on October 6, 2009 (74 FR 51331). 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 needs to be prepared in connection with the issuance of the amendment.

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) 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 Contributors: Matthew E. Hamm
Jerome O. Bettie

Date: January 28, 2010

C. Pardee

- 2 -

A copy of our Safety Evaluation is enclosed and a Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/ra/

John D. Hughey, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosures:

1. Amendment No. 274 to Renewed DPR-44
2. Amendment No. 278 to Repewed DPR-56
3. Safety Evaluation

cc: Distribution via ListServ

DISTRIBUTION:

RidsNrrLAABaxter Resource	RidsNRRDorlLpl1-2 Resource	PUBLIC
RidsOgcRP Resource	RidsNrrPMJHughey Resource	RidsRgn1MailCenter Resource
RidsNrrDssScvb Resource	LPLI-2 R/F	RidsAcrcAcnw_MailCTR Resource
RidsNrrDirsltsb Resource	RidsNrrDorlDpr Resource	GHill (2)

Accession No: ML100130814

*by memo dated

OFFICE	LPL1-2/PM	LPL1-2/LA	SCVB/BC	ITSB/BC	OGC (NLO)	LPL1-2/BC
NAME	JHughey	ABaxter	RLDennig*	RElliot*	MSpencer	HChernoff
DATE	1/14/2010	1/14/2010	12/18/2009	09/04/2009	1/19/2010	1/28/2010

OFFICIAL RECORD COPY