



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

August 11, 2015

Mr. Bryan C. Hanson
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNIT 3 - ISSUANCE OF
AMENDMENT RE: CHANGE TO REPLACEMENT STEAM DRYER LICENSE
CONDITION (TAC NO. MF6285)

Dear Mr. Hanson:

The Commission has issued the enclosed Amendment No. 305 to Renewed Facility Operating License No. DPR-56 for the Peach Bottom Atomic Power Station (PBAPS), Unit 3. This amendment changes the Renewed Facility Operating License in response to your application dated May 29, 2015.

The amendment changes a license condition pertaining to the submittal of a report containing revised analysis for the PBAPS, Unit 3, replacement steam dryer. Specifically, the amendment reduces the length of time for the submittal of the report from 90 days prior to the start of the extended power uprate (EPU) outage to 30 days prior to the start of the EPU outage.

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

Sincerely,

A handwritten signature in black ink, appearing to read "R B Ennis", is located below the "Sincerely," text.

Richard B. Ennis, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-278

Enclosures:

1. Amendment No. 305 to Renewed DPR-56
2. Safety Evaluation

cc w/enclosures: Distribution via Listserv



**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. 305
Renewed 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 May 29, 2015, 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.

Enclosure 1

2. Accordingly, the license is amended 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. 305, 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 and shall be implemented within 21 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Douglas A. Broaddus, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License

Date of Issuance: August 11, 2015

ATTACHMENT TO LICENSE AMENDMENT NO. 305

RENEWED FACILITY OPERATING LICENSE NO. DPR-56

DOCKET NO. 50-278

Replace the following pages of the Renewed Facility Operating License with the revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3
7c

Insert

3
7c

- (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 3951 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 305, 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.

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.

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

1. At least 30 days prior to the start of the Peach Bottom Unit 3 EPU outage, Exelon Generation Company shall revise the Peach Bottom Unit 3 replacement steam dryer (RSD) analysis utilizing the Unit 2 on-dryer strain gauge based end-to-end Bias errors and Uncertainties (B/Us) at EPU conditions, and submit the information including the updated limit curves and a list of dominant frequencies for Unit 3, to the NRC as a report in accordance with 10 CFR 50.4.
2. Exelon Generation Company shall evaluate the Unit 3 limit curves prepared in (a)1 above based on new MSL strain gauge data collected following the Unit 3 EPU outage at or near 3514 MWt. If the limit curves change, the new post-EPU outage limit curves shall be provided by e-mail to the NRC Project Manager. Exelon Generation Company shall not increase power above 3514 MWt for at least 96 hours after the NRC Project Manager confirms receipt of the reports unless, prior to expiration of the 96 hour period, the NRC Project Manager advises that the NRC staff has no objections to the continuation of power ascension.
3. Exelon Generation Company shall provide a brief vibration summary report, for piping and valves vibration data collected at or near 3514 MWt, for NRC review before increasing power above 3514 MWt. The summary report shall be provided by e-mail to the NRC Project Manager. Exelon Generation Company shall not increase power above 3514 MWt for at least 96 hours after the NRC Project Manager confirms receipt of the report unless, prior to expiration of the 96 hour period, the NRC Project Manager advises that the NRC staff has no objections to the continuation of power ascension. The vibration summary report shall include the information in items a through c, as follows:
 - a. Vibration data for piping and valve locations deemed prone to vibration and vibration monitoring locations identified in Attachment 13 to the EPU application dated September 28, 2012, and Supplement 16 dated December 20, 2013, including the following locations: MSLs (including those in the drywell, turbine building and in the steam tunnel), Feedwater Lines (including those in the drywell and turbine building), Safety Relief Valves (SRVs) and the Main Steam Isolation Valves in the drywell.
 - b. An evaluation of the measured vibration data collected in item 3.a above compared against acceptance limits.
 - c. Predicted vibration values and associated acceptance limits at approximately 104 percent, 108 percent and 112.4 percent of 3514 MWt using the data collected in item 3.a above.

Renewed License No. DPR-56
Amendment No. 305



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 305

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-56

EXELON GENERATION COMPANY, LLC

PSEG NUCLEAR LLC

PEACH BOTTOM ATOMIC POWER STATION, UNIT 3

DOCKET NO. 50-278

1.0 INTRODUCTION

By application dated May 29, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15149A473), Exelon Generation Company, LLC (Exelon, the licensee), submitted a license amendment request (LAR) to the U.S. Nuclear Regulatory Commission (NRC or the Commission) for Peach Bottom Atomic Power Station (PBAPS), Unit 3. The proposed amendment would change a license condition pertaining to the PBAPS, Unit 3, replacement steam dryer (RSD). Currently, the license condition requires that a revised analysis for the RSD be submitted to the NRC as a report, at least 90 days prior to the start of the PBAPS, Unit 3, extended power uprate (EPU) outage. The proposed amendment would reduce the period before the outage by which the report is to be submitted from 90 days to 30 days. The licensee's application stated that the EPU outage is scheduled to start on September 14, 2015. Subsequent to the submittal of the application, the licensee informally notified the NRC that the scheduled start date for the EPU outage was changed to September 21, 2015.

As discussed in the LAR, Exelon requested that the proposed amendment be processed by the NRC on an exigent basis in accordance with the provisions in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.91(a)(6). However, the NRC staff determined there was sufficient time to process the amendment while allowing for the normal 30-day period for public comment and 60-day period to request a hearing. As such, the amendment was not processed on an exigent basis.

Enclosure 2

2.0 REGULATORY EVALUATION

On August 25, 2014, the NRC issued Amendment Nos. 293 and 296 for PBAPS, Units 2 and 3 (ADAMS Accession No. ML14133A046). These amendments authorized an increase in the maximum licensed thermal power level for both units from 3514 megawatts thermal (MWt) to 3951 MWt, which is an increase of approximately 12.4 percent. This change in power level is considered an EPU. The licensee planned to implement the EPU in accordance with the following schedule:

Unit 2: Prior to startup from refueling outage P2R20 (fall 2014)

Unit 3: Prior to startup from refueling outage P3R20 (fall 2015)

The NRC staff approval of the EPU was based, in part, on the capability of the licensee to monitor, evaluate, and take prompt action in response to potential adverse flow effects as a result of EPU operation on plant structures, systems, and components (including verifying the continued structural integrity of the RSD). License condition 2.C(15) was added to the facility operating license for each unit, as part of the EPU amendment, to provide the necessary requirements associated with potential adverse flow effects.

For PBAPS, Unit 2, license condition 2.C(15)(e) states as follows:

The results of the power ascension testing to verify the continued structural integrity of the steam dryer shall be submitted to the NRC staff in a report in accordance with 10 CFR 50.4. The report shall include a final load definition and stress report of the steam dryer, including the results of a complete re-analysis using the end-to-end B/Us [bias errors and uncertainties] determined at EPU conditions and a comparison of predicted and measured pressures and strains (RMS levels and spectra) on the RSD. The report shall be submitted within 90 days of the completion of EPU power ascension testing for Peach Bottom Unit 2.

During the PBAPS, Unit 2, power ascension in December 2014 (at approximately 89 percent of the EPU power level), RSD strain gauge measurements identified strain responses in the low frequency range (0 - 50 Hertz) that were not previously predicted. The licensee determined that the RSD methodology approved during the EPU review could not appropriately predict the loads in the low frequency range. As a result, the licensee developed an approach to quantify the magnitude of the unpredicted loads and integrate the results into the original methodology. In a letter dated February 3, 2015 (ADAMS Accession No. ML15034A573), the licensee requested NRC approval of the revised methodology. The NRC approved the methodology on May 15, 2015, as documented in a letter dated May 19, 2015 (ADAMS Accession No. ML15127A208).

Upon completion of refueling outage P2R20 on December 3, 2014, the EPU power ascension schedule for PBAPS, Unit 2, estimated that power ascension testing would be completed by January 2, 2015. However, due to delays primarily associated with approval of the revised methodology, power ascension testing for the RSD was actually completed on May 18, 2015.

Based on the actual EPU power ascension testing completion date of May 18, 2015, for the Unit 2 RSD, the report containing the revised Unit 2 RSD analysis is required to be submitted to the NRC by August 16, 2015 (i.e., within 90 days of the completion of EPU power ascension testing) in accordance with Unit 2 license condition 2.C(15)(e).

PBAPS, Unit 3, license condition 2.C(15)(a)(1) currently reads as follows:

At least 90 days prior to the start of the Peach Bottom Unit 3 EPU outage, Exelon Generation Company shall revise the Peach Bottom Unit 3 replacement steam dryer (RSD) analysis utilizing the Unit 2 on-dryer strain gauge based end-to-end Bias errors and Uncertainties (B/Us) at EPU conditions, and submit the information including the updated limit curves and a list of dominant frequencies for Unit 3, to the NRC as a report in accordance with 10 CFR 50.4.

Consistent with the above license condition, the licensee is required to revise the PBAPS, Unit 3, RSD analysis, based on the revised Unit 2 RSD analysis at EPU conditions. The license condition requires that the revised Unit 3 RSD analysis be submitted as a report at least 90 days prior to the start of the Unit 3 EPU outage. Based on the current estimated Unit 3 EPU outage start date of September 21, 2015, the report should have been submitted to the NRC by June 23, 2015¹. However, due to delays in completing the Unit 2 power ascension testing and associated delays in revising the Unit 2 RSD analysis, the Unit 3 RSD analysis could not be revised in a timeframe conforming with the 90-day requirement in Unit 3 license condition 2.C(15)(a)(1). As such, the licensee's LAR proposed to change the "90 days" requirement in the license condition to "30 days." The revised PBAPS, Unit 3, license condition 2.C(15)(a)(1) would read as follows:

At least 30 days prior to the start of the Peach Bottom Unit 3 EPU outage, Exelon Generation Company shall revise the Peach Bottom Unit 3 replacement steam dryer (RSD) analysis utilizing the Unit 2 on-dryer strain gauge based end-to-end Bias errors and Uncertainties (B/Us) at EPU conditions, and submit the information including the updated limit curves and a list of dominant frequencies for Unit 3, to the NRC as a report in accordance with 10 CFR 50.4.

3.0 TECHNICAL EVALUATION

For PBAPS, Unit 2, as part of the implementation of the EPU, the licensee replaced the original equipment manufacturer (OEM) General Electric (GE) steam dryer with a Westinghouse steam dryer, during the fall 2014 refueling outage. For PBAPS, Unit 3, the licensee plans to replace the OEM GE steam dryer with a Westinghouse steam dryer during the fall 2015 refueling outage. The Westinghouse steam dryers are referred to as the RSDs.

Section 2.2.6 of the NRC staff's safety evaluation for the PBAPS, Units 2 and 3, EPU amendments (i.e., Amendment Nos. 293 and 296 dated August 25, 2014), discusses the staff's review regarding the RSDs. The staff's review focused on potential adverse flow effects due to increased flow at EPU conditions in order to assure the structural integrity of the RSDs.

¹ Although the licensee did not submit the report by June 23, 2015, the licensee would not be in violation of the license until the outage were to start (i.e., thus establishing the actual 90-day period).

As part of the NRC staff review of the PBAPS EPU, the staff reviewed the licensee's power ascension program (PAP) for the RSDs. The three main elements of the RSD PAP are as follows: (1) a slow and deliberate power ascension with defined hold points and durations allowing time for monitoring and analysis; (2) a detailed power ascension monitoring and analysis program to trend RSD performance; and (3) an inspection and analysis program to verify RSD and piping system performance. Relevant information is transmitted to the NRC staff prior to and during the power ascension, in accordance with license condition 2.C(15).

Consistent with the requirements in the license condition 2.C(15)(a)(1), the Unit 3 RSD analysis is to be revised prior to the Unit 3 EPU outage based on the revised Unit 2 RSD analysis at EPU conditions. The information to be submitted to the NRC in accordance with this license condition provides a baseline of the expected performance of the RSD during power ascension. The information to be submitted also provides acceptance criteria that is used to assess actual performance of the Unit 3 RSD during the power ascension process. There is no formal NRC staff review and approval associated with the information to be submitted in accordance with license condition 2.C(15)(a)(1).

Based on the above discussion, the NRC staff finds that the proposed change from "90 days" to "30 days" in PBAPS, Unit 3, license condition 2.C(15)(a)(1) is administrative in nature, will provide the licensee with a reasonable amount of time to complete the revised RSD analysis for PBAPS, Unit 3, prior to the start of the EPU outage, and is reasonable given the delays associated with completing the revised RSD analysis for PBAPS, Unit 2. Therefore, the NRC staff concludes that the proposed amendment is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment relates to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

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

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

Principal Contributor: R. Ennis

Date: August 11, 2015

August 11, 2015

Mr. Bryan C. Hanson
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNIT 3 - ISSUANCE OF
AMENDMENT RE: CHANGE TO REPLACEMENT STEAM DRYER LICENSE
CONDITION (TAC NO. MF6285)

Dear Mr. Hanson:

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The amendment changes a license condition pertaining to the submittal of a report containing revised analysis for the PBAPS, Unit 3, replacement steam dryer. Specifically, the amendment reduces the length of time for the submittal of the report from 90 days prior to the start of the extended power uprate (EPU) outage to 30 days prior to the start of the EPU outage.

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

Sincerely,

/RA/

Richard B. Ennis, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-278

Enclosures:

1. Amendment No. 305 to Renewed DPR-56
2. Safety Evaluation

cc w/enclosures: Distribution via Listserv

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ADAMS Accession No.: ML15189A185

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