



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

April 10, 2018

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 –
REGULATORY AUDIT SUMMARY REGARDING LICENSE AMENDMENT
REQUEST TO ADOPT TITLE 10 OF THE CODE OF FEDERAL REGULATIONS
SECTION 50.69 (EPID L-2017-LLA-0281)

Dear Mr. Hanson:

By letter dated August 30, 2017, as supplemented by letter dated October 24, 2017 (Agencywide Documents Access and Management System Accession Nos. ML17243A014 and ML172978521, respectively), Exelon Generation Company, LLC (Exelon) requested an amendment to the Renewed Facility Operating License for Peach Bottom Atomic Power Station, Units 2 and 3, to adopt Title 10 of the *Code of Federal Regulations* Section 50.69 for risk-informed categorization and treatment of structures, systems, and components.

To support its review, the U.S. Nuclear Regulatory Commission staff conducted a regulatory audit that started January 31, 2018, and ended February 1, 2018, at the Exelon office, 300 Exelon Way, Kennett Square, PA 19348. The staff reviewed documents and held discussions with members of Exelon and its contractors. The regulatory audit summary is enclosed with this letter.

If you have any questions, please contact me at (301) 415-2328 or Jennifer.Tobin@nrc.gov.

Sincerely,

A handwritten signature in cursive script that reads "Jennifer Tobin".

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

Docket Nos. 50-277 and 50-278

Enclosure:
Regulatory Audit Summary

cc: Listserv



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NUCLEAR REGULATORY COMMISSION
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OFFICE OF NUCLEAR REACTOR REGULATION
REGULATORY AUDIT SUMMARY FOR JANUARY 31 – FEBRUARY 1, 2018, AUDIT
IN SUPPORT OF LICENSE AMENDMENT REQUEST TO ADOPT 10 CFR 50.69
EXELON GENERATION COMPANY, LLC
PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3
DOCKET NOS. 50-277 AND 50-278

1.0 BACKGROUND

By letter dated August 30, 2017 (Reference 1), as supplemented by letter dated October 24, 2017 (Reference 2), Exelon Generation Company, LLC (Exelon) requested an amendment to the Renewed Facility Operating License for Peach Bottom Atomic Power Station (Peach Bottom), Units 2 and 3, to adopt Title 10 of the *Code of Federal Regulations* Section 50.69 (10 CFR 50.69) for risk informed categorization and treatment of structures, systems, and components (SSCs). The proposed license amendment would modify the licensing basis by the addition of a license condition to allow for the implementation of the provisions of 10 CFR 50.69, which allow adjustment of the scope of equipment subject to special treatment controls (e.g., quality assurance, testing, inspection, condition monitoring, assessment, and evaluation).

This voluntary risk-informed alternative rule allows power reactor licensees and license applicants to apply a risk-informed categorization process to categorize SSCs based on their safety significance. The final rule was published in the *Federal Register* on November 22, 2004 (69 FR 68008) (Reference 3). The U.S. Nuclear Regulatory Commission (NRC or the Commission) staff issued Regulatory Guide 1.201, Revision 1, "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance," in May 2006 (Reference 4).

The NRC staff's review of the application has commenced in accordance with the Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-101, "License Amendment Review Procedures." The NRC staff determined that a regulatory audit of Exelon's 10 CFR 50.69 application should be conducted in accordance with NRR Office Instruction LIC-111, "Regulatory Audits," for the staff to gain a better understanding of the licensee's proposed risk-informed categorization process.

The regulatory audit was a planned license or regulation-related activity that included the examination and evaluation of primarily non-docketed information. The regulatory audit was conducted with the intent to gain understanding, to verify information, and/or to identify information that will require docketing to support the basis of a licensing or regulatory decision. Performing a regulatory audit of the licensee's information is expected to assist the staff in

Enclosure

efficiently conducting its review or gain insights on the licensee's processes or procedures. Information that the NRC staff relies upon to make the safety determination must be submitted on the docket. However, the NRC staff may review supporting information retained as records under 10 CFR 50.71 and/or 10 CFR 54.37, which, although not required to be submitted as part of the licensing action, would help the staff better understand the licensee's submitted information.

The purpose of the audit was to gain an understanding of the information needed to support the staff's licensing decision regarding the license amendment request (LAR) and to develop appropriate requests for additional information (RAIs), as needed. The information submitted in support of the Peach Bottom LAR is under review, and additional information needed to support the LAR review will be formally communicated by the NRC staff using the RAI process in accordance with NRR Office Instruction LIC-101.

An audit team, which consisted of the NRC staff and NRC contractor from Pacific Northwest National Laboratories (PNNL), conducted the regulatory audit from January 31, 2018, through February 1, 2018, at the Exelon office, 300 Exelon Way, Kennett Square, PA 19348.

2.0 AUDIT ACTIVITIES

The NRC audit team consisted of five staff from the Division of Risk Assessment, Probabilistic Risk Assessment (PRA) Licensing Branch and one PNNL contractor. Several NRC observers including staff from the Division of Operating Reactor Licensing, Division of Engineering, and NRC Region 1 were in attendance for Exelon's Integrated Decision-Making Panel (IDP) meeting which occurred during the morning hours of January 31, 2018. Attachment 1 provides the list of attendees from NRC, PNNL, Exelon, and other participants.

On January 31, Exelon conducted a four-hour demonstration of the IDP associated with the Peach Bottom 10 CFR 50.69 categorization for the residual heat removal (RHR) system. The IDP primarily consisted of presentations and technical discussion of the categorization results from the PRA, non-PRA, passive, defense-in-depth, and qualitative categorization elements of process for each of the functions associated with RHR including final conclusions of how each function translates into categorization of system safety components. For the PRA results, Exelon's 10 CFR 50.69 team presented results of categorization based both on internal events and fire core damage frequency and large early release frequency. The NRC staff were observers and mostly in listening mode for the entire IDP session.

The regulatory audit started in the afternoon immediately following the IDP session, with the NRC audit team and the licensee's staff and contractors. During the audit, team members participated in technical discussions according to the audit plan available in NRC's Agencywide Documents Access and Management System (ADAMS) (Reference 5). Technical discussions focused on the following major review areas: technical adequacy of the internal events and fire PRA, categorization process overview, and review of the audit questions with the licensee's 10 CFR 50.69 team. In addition to reviewing the audit questions, NRC discussed lessons learned from 10 CFR 50.69 audits for other licensees. During the audit, the NRC staff discussed several questions associated with the LAR, some of which will be formally sent as RAIs.

At the conclusion of the audit, the team participated in a summary exit meeting with the Exelon audit team on February 1, 2018. The NRC staff provided a brief conclusion of the audit objectives that were met and details on the path forward. There were no open items in the

discussion and no deviation from the audit plan. Attachment 2 contains a list of documents reviewed by the team during the audit.

3.0 RESULTS OF THE AUDIT

The RAIs were issued to the licensee on April 6, 2018 (ADAMS Accession No. ML18096B506), with a request to submit the response within 30 days.

4.0 REFERENCES

1. Letter from J. Barstow, Exelon, to NRC, "Peach Bottom Atomic Power Station, Units 2 and 3 – Application to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems, and Components (SSCs) for Nuclear Power Plants,'" dated August 30, 2017 (ADAMS Accession No. ML17243A014).
2. Letter from J. Barstow, Exelon, to NRC, "Peach Bottom Atomic Power Station, Units 2 and 3 – Supplement to Application to Adopt 10 CFR 50.69, Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Reactors," dated October 24, 2017 (ADAMS Accession No. ML17297B521).
3. *Federal Register* Notice (69 FR 68008), "Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Plants," dated November 22, 2004 (ADAMS Accession No. ML042960073).
4. NRC Regulatory Guide 1.201, *Revision 1*, "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants according to Their Safety Significance," issued May 2006 (ADAMS Accession No. ML061090627).
5. Peach Bottom Atomic Power Station, Units 2 and 3, Regulatory Audit Plan – License Amendment Request to Adopt 10 CFR Section 50.69, dated January 2018 (ADAMS Accession No. ML18005A077).

List of Participants

U.S. Nuclear Regulatory Commission (NRC) Audit Team

- Stacey Rosenberg NRC Branch Chief
- Leslie Fields NRC Audit Team Leader
- Mihaela Biro NRC Audit Technical Lead
- Jonathan Evans NRC Probabilistic Risk Assessment (PRA)
- Michael Levine NRC PRA

Pacific Northwest National Laboratory (PNNL) Team

- Garill Coles PNNL PRA

NRC Integrated Decision-Making Panel Observation Team

- Jesse Quichocho NRC Branch Chief
- Ali Rezai NRC Electrical Engineer
- Hari Kodali NRC Materials Engineer
- Ed Miller NRC Project Manager
- Jenny Tobin NRC Licensing Project Manager

NRC Regional Staff in Attendance

- Frank Arner RI Senior Resident Analyst
- Chris Cahill RI Senior Resident Analyst

Exelon Generation Company, LLC - Peach Bottom Atomic Power Station, Units 2 and 3 (Peach Bottom) Team

- Glenn Stewart Licensing Lead
- Shannon Rafferty-Czincila Risk Management Senior Manager
- Eugene Kelly Risk Management Senior Engineer
- Preeti Furtado Engineering Manager
- Kirk Lindemen 10 CFR 50.69 Engineer
- Joe Janssen 10 CFR 50.69 Engineer
- Mark Lefever Engineering
- Stephanie Hanson Peach Bottom
- Tom LaMontague Peach Bottom
- Charlotte Couger 10 CFR 50.69 Engineer
- Monica Hurley Exelon
- Mark Uhrich Exelon
- Chris Thomas Exelon
- Chris Weichler Peach Bottom

- Amy Huber Peach Bottom
- Travis Bement Exelon
- Richard Gropp Exelon

Jensen Hughes 10 CFR 50.69 Support Team

- Barry Sloane Director, Exelon Risk Management Program
- David Passehl Technical Lead, 10 CFR 50.69 PRA Categorization
- Ken Saunders 10 CFR 50.69 Engineer
- Charlie Young Operations Support
- Brian Albinson Internal Events/Internal Flooding PRA Model Owner
- Greg Zucal Risk Management Engineer
- Chris Pupek Risk Management Engineer

List of Documents Reviewed During the Audit

Peach Bottom Atomic Power Station, Units 2 and 3, Documents Available for Review on the Exelon Generation Company, LLC Portal/Laptop

The licensee provided an extensive list of supporting documents (e.g., analyses, calculations, reports, drawings, and procedures) on the Limerick document portal available during the week of the audit.

Additional Documents/Procedures Reviewed on Site

- ER-AA-569, 10 CFR 50.69 Program Description
- PB-5069-10-003, Revision 0, Peach Bottom Atomic Power Station, Units 2 and 3, Residual Heat Removal (RHR) 50.69 Categorization
- PB-MISC-032, Revision 0, Peach Bottom RHR Passive 50.69 Categorization
- PB-PRA-10, Component Data Notebook
- PB-LAR-DIS, PRA Technical Adequacy in Support of the License Amendment Request to Implement 10 CFR 50.69 as well as the License Amendment Request to Implement the Risk Informed Completion Time (RICT) Program
- PB-LAR-015, Revision 2, PRA Technical Adequacy – Table 5.1 Peer Review and Peer Review Findings
- 032299-RPT-001, Peach Bottom Atomic Power Station PRA Finding Level F&O Technical Review and Focused Scope Peer Review

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SECTION 50.69 (EPID L-2017-LLA-0281) DATED APRIL 10, 2018

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PM Reading File

RidsNrrDorLp1 Resource

RidsNrrLAIbetts Resource

RidsNrrPMPeachBottom Resource

ADAMS Accession No.: ML18072A372

OFFICE	DORL/LPL1/PM	DORL/LPL1/LA	DORL/LPL1/BC	DORL/LPL1/PM
NAME	JTobin	IBetts	JDanna	JTobin
DATE	03/12/18	03/19/18	04/10/18	04/10/18

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