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

February 11, 2021

Mr. David P. Rhoades
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 REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-505, REVISION 2, "PROVIDE RISK-INFORMED EXTENDED COMPLETION TIMES - RITSTF INITIATIVE 4B" (EPID L-2020-LLA-0120)

Dear Mr. Rhoades:

By letter dated May 29, 2020 (Agencywide Documents Access and Management System Accession No. ML20150A007), Exelon Generation Company, LLC (Exelon) requested an amendment to the Renewed Facility Operating Licenses for Peach Bottom Atomic Power Station, Units 2 and 3, to revise Technical Specifications to adopt risk-informed completion times based on Technical Specifications Task Force (TSTF) Traveler TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b."

To support its review, the U.S. Nuclear Regulatory Commission staff conducted a virtual regulatory audit November 9-12, 2020. 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,

/RA/

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

OFFICE OF NUCLEAR REACTOR REGULATION

REGULATORY AUDIT SUMMARY FOR NOVEMBER 9-12, 2020, AUDIT

IN SUPPORT OF LICENSE AMENDMENT REQUEST TO ADOPT TSTF-505

EXELON GENERATION COMPANY, LLC

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-277 AND 50-278

1.0 BACKGROUND

By application dated May 29, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20150A007), Exelon Generation Company, LLC (Exelon, the licensee) submitted a license amendment request (LAR) for Peach Bottom Atomic Power Station, Units 2 and 3 (Peach Bottom). The amendment would revise technical specification (TS) requirements to permit the use of risk-informed completion times for actions to be taken when limiting conditions for operation are not met. The proposed changes are based on Technical Specifications Task Force (TSTF) Traveler TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times – RITSTF [Risk-Informed TSTF] Initiative 4b," dated July 2, 2018 (ADAMS Accession No. ML18183A493). The U.S. Nuclear Regulatory Commission (NRC) issued a final model safety evaluation approving TSTF-505, Revision 2, on November 21, 2018 (ADAMS Package Accession No. ML18269A041).

An audit team, consisting of NRC staff and contractors from the Pacific Northwest National Laboratory (PNNL), conducted a remote regulatory audit to support the review of the LAR on November 9-12, 2020. The purpose of the audit was to gain an understanding of the information needed to support the NRC staff's licensing decision regarding the LAR and to develop requests for additional information (RAIs). The information submitted in support of the LAR is under final review, and any additional information needed to support the LAR review will be formally requested by the staff using the RAI process in accordance with Office of Nuclear Reactor Regulation Office Instruction LIC–101, "License Amendment Review Procedures" (ADAMS Accession No. ML19248C539, not publicly available).

2.0 AUDIT ACTIVITIES

The NRC audit team consisted of staff from the Division of Risk Assessment, Probabilistic Risk Assessment (PRA) Licensing Branches (A, B, and C) and one PNNL contractor. Several NRC observers, including staff from the Division of Operating Reactor Licensing, Division of Engineering, and Division of Safety Systems were in attendance for the audit. Attachment 1 provides the list of attendees from NRC, PNNL, Exelon, and other participants.

The NRC audit team held an entrance meeting on Monday, November 9, 2020, with the licensee's staff and contractors. During the remainder of the audit, the NRC audit team participated in technical discussions with the licensee based on discipline according to the audit plan (ADAMS Accession No. ML20217L346). Technical discussions were focused on the following major areas: PRA, external hazards, fire protection, TSs, electrical engineering, and instrumentation and controls (I&C). The NRC audit team participated in an audit exit meeting

with the licensee on Thursday, November 12, 2020, where the NRC staff provided a brief conclusion of the team's goals, objectives, and technical discussions.

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. Exelon committed to providing a supplement to the application to address audit discussion points and potential RAIs. Attachment 2 contains a list of documents reviewed by the team during the audit.

3.0 RESULTS OF THE AUDIT

In response to discussions during the audit, Exelon submitted a supplement to the LAR to the NRC on December 2, 2020 (ADAMS Accession No. ML20337A301). The NRC issued RAIs to the licensee on January 5, 2021, and January 13, 2021 (ADAMS Accession Nos. ML20357A097 and ML21012A130, respectively), with a request to submit the responses by February 5, 2021. [Has Exelon submitted the responses?]

Attachments:
1. List of Participants
2. List of Documents Reviewed During Audit

List of Participants

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

Tobin, Jennifer	Project Manager, NRR/DORL/LPL1
Hilsmeier, Todd	Team Lead, PRA Licensing Reviewer, DRA/APLA
Danna, James	Plant Licensing Branch Chief, NRR/DORL/LPL1
Pascarelli, Robert	PRA Licensing A Branch Chief, DRA/APLA
Borromeo, Joshua	PRA Licensing B Branch Chief, DRA/APLB
Cusumano, Vic	Technical Specifications Branch Chief, DSS/STSB
Titus, Brett	Electrical Engineering Branch Chief, DEX/EEEB
Circle, Jeff	PRA Licensing Reviewer, DRA/APLA
Vettori, Robert	PRA Licensing Reviewer, DRA/APLB
Wu, De	PRA Licensing Reviewer, DRA/APLC
Valentin-Olmeda, Milton	PRA Licensing Reviewer, DRA/APLC
Russell, Andrea	Technical Specifications Reviewer, DSS/STSB
Wyman, Stephen	Electrical Engineering Reviewer, DEX/EEEB
Nguyen, Khoi	Electrical Engineering Reviewer, DEX/EEEB
Li, Ming	Instrumentation & Controls Reviewer, DEX/EICB
Carte, Norbert	Instrumentation & Controls Reviewer, DEX/EICB
Karipineni, Nageswara	Containment Systems Reviewer, DSS/SCPB
Wong, Yuken	Mechanical Engineering Reviewer, DEX/EMIB
Bedi, Gurjendra	Mechanical Engineering Reviewer, DEX/EMIB
Wilk, Mark	Contractor, PNNL
Biro, Mihaela	Observer, DRA/APLA
Chang, James	Observer, RES/HFRB
Dukehart, Corey	Observer, NRAN
Hartage, Kayleh	Observer, NRAN
Kichline, Michelle	Observer, DRA/APOB
Marchlewski, Henry	Observer, NRAN
Patel, Jigar	Observer, DRA/APLA
Tetter, Keith	Observer, DRA/APLC

Acronyms:

APLA – PRA Licensing Branch A; APLB – PRA Licensing Branch B; APLC – PRA Licensing Branch C; APOB – PRA Oversight Branch; DEX – Division of Engineering and External Hazards; DORL – Division of Operating Reactor Licensing; DRA – Division of Risk Assessment; DSS – Division of Safety Systems; EEEB – Electrical Engineering Branch; EICB – Instrumentation & Controls Branch; EMIB – Mechanical Engineering and Inservice Testing Branch; HFRB – Human Factors and Reliability Branch; LPL1 – Plant Licensing Branch 1; NRAN – Nuclear Regulator Apprenticeship Network Program; PNNL – Pacific Northwest National Laboratory; RES – Office of Nuclear Regulatory Research; SCPB – Containment and Plant Systems Branch; STSB – Technical Specifications Branch.

Exelon Generation Company, LLC Participants

Licensing:
Shannon Rafferty-Czincila, Dir.
Rick Gropp, Engr.
Glenn Stewart, Engr.

PEA Site:
Matthew Rector, Reg Assurance, Mgr.
Mike Smith, I&C Support Engr.
Brian Wright, OPS, SSV (RTR)
Ross Moonitz, Sr, OPS Training Instr.
Victor Molina, OPS, SSV (CAL RTR)

Risk Management:
Jeff Stone, Director.
Gene Kelly, Sr. Mgr.
Suzanne Loyd, Sr. Mgr.
Rachelle Slawta, Engr., RICT RTR
Phil Tarpinian, Engr

Corporate Eng:
Jenna Burr, Engr, MRule SME
Scott Diven, Engr, MRule SME

Jensen Hughes 10 CFR 50.69 Support Team
Nick Sternowski, Director, PM
Leo Shanley, RM, Mgr.
Ed Parsley, RM, Mgr., R-I Services
Arthur Holtz, RM, FRME (lead)
Eric Heilman, RM, SRME
Zach Ballert, RM, co-SRME
Vicki Warren, RM, Engr.
Jon Facemire, RM, RICT RTR SME
Brian Albinson, RM, FPIE M.O.
Greg Zucal, RM, FPRA M.O.
Charlie Young, RM, Engr
Jeff Schappaugh, RM, FRME
Dave Passehl, RM, Engr
Ben Chen, RM, Engr
Lynn Kolonauski, RM, HRA Analyst
Larry Lee, RM, Seismic SME
Vincent Andersen, RM, Seismic SME
Don MacLeod, RM, HRA Analyst

RM = Risk Management (PRA) SRME = Site Risk Mgmt Engr.
FRME = Fleet Risk Mgmt Engr MO = Model Owner

List of Documents Reviewed During the Audit

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

Application Specific Documents

- Exelon Report PB-LAR-017, Revision 2, "Peach Bottom Atomic Power Station, Units 2 and 3, PRA Application Notebook, RICT Estimates for TSTF-505 (RICT) Program LAR Submittal."
- Exelon Report PB-ASM-15, Revision 0, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Application-Specific Model (ASM)."
- Exelon Report PB-ASM-20, Revision 0, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Application-Specific Model (ASM)."
- Exelon Report PB-MISC-045, Revision 0, "Peach Bottom 10 CFR 50.69 NRC Safety Evaluation LAR Implementation Items."

Internal Events PRA

- Exelon Report PB-PRA-013, Revision 6, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Summary Notebook PBB218A2 and PB318A2 Models."
- Exelon Report PB-MISC-043, Revision 1, "Assessment of Key Assumptions and Sources of Uncertainty for the Peach Bottom Atomic Power Station PRA."
- Exelon Report PB-PRA-004, Revision 5, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Human Reliability Analysis Notebook Volume 1."
- Exelon Report PB-PRA-005.25, Revision 0, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Portable Equipment (FLEX) System Notebook."
- Exelon Report PB-PRA-005.07, Revision 3, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Offsite & 13kV AC (13kV) System Notebook."
- Exelon Report PB-PRA-005.08, Revision 3, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, 4kV and 480V AC (4kV/480V) System Notebook."
- Exelon Report PB-PRA-005.11, Revision 4, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Emergency Service Water (ESW) Emergency Cooling Water (ECW) System Notebook."
- Exelon Report PB-PRA-005.12, Revision 4, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, High Pressure Service Water (HPSW) System Notebook."
- Exelon Report PB-PRA-005.15, Revision 3, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Instrument Air/Service Air (IA/SA) System Notebook."
- Exelon Report PB-PRA-005.17, Revision 4, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Emergency Diesel Generator (EDG) System Notebook."
- Exelon Report PB-PRA-010, Revision 4, "Peach Bottom Atomic Power Station, Probabilistic Risk Assessment, Component Data Notebook, Volume 1, 2018 PRA Update."

Fire PRA

- Exelon Report PB-PRA-021.62, Revision 2, "Peach Bottom Atomic Power Station, Fire Probabilistic Risk Assessment, Uncertainty and Sensitivity Notebook."

- Exelon Report PB-PRA-021.61, Revision 2, “Peach Bottom Atomic Power Station, Fire Probabilistic Risk Assessment, Summary & Quantification Notebook.”
- Exelon Report PB-PRA-021.56, Revision 2, “Peach Bottom Atomic Power Station, Fire Probabilistic Risk Assessment, Fire Ignition Frequency Notebook.”
- Exelon Report PB-PRA-021.57.01, Revision 2, “Peach Bottom Atomic Power Station, Fire Probabilistic Risk Assessment, Fire Scenario Development Notebook.”
- Exelon Report PB-PRA-021.57.02, Revision 2, “Peach Bottom Atomic Power Station, Fire Probabilistic Risk Assessment, Fire Modeling Treatments Notebook.”
- Exelon Report PB-PRA-021.57.05, Revision 2, “Peach Bottom Atomic Power Station, Fire Probabilistic Risk Assessment, Control Room Fire Modeling Notebook.”
- Exelon Report PB-PRA-021.59, Revision 1, “Peach Bottom Atomic Power Station, Fire Probabilistic Risk Assessment, Human Reliability Analysis Notebook, Volume 1.”
- Exelon Report PB-PRA-021.59, Revision 2, “Peach Bottom Atomic Power Station, Fire Probabilistic Risk Assessment, Human Reliability Analysis Notebook, Volume 2.”

PRA Acceptability

- Exelon Report 032299-RPT-001, Revision 1, “Risk Management Finding Level F&O Technical Review & Focused-Scope Peer Review, Peach Bottom Atomic Power Station, Units 2 and 3.”
- Exelon Report 032434-RPT-02, Revision 1, “Peach Bottom Nuclear Generating Station FPIE and Fire PRA Finding Level Fact and Observation Closure by Independent Assessment.”
- Exelon Report 023424-RPT-03, Revision 0, “Peach Bottom PRA Focused-Scope Peer Review.”
- BWR Owners Group Report, “Peach Bottom Atomic Power Station PRA Peer Review Report Using ASME PRA Standard Requirements,” dated May 2011.
- BWR Owners Group Report, “Peach Bottom Atomic Power Station (PB), Unit 2 Fire PRA Peer Review Report Using ASME/ANS PRA Standard Requirements,” dated April 2013.
- Exelon Report PB-MISC-046, Revision 0, “Peer Review Findings Closing Summary.”

External Hazards

- Exelon Report PB-MISC-027, Revision 5, “External Hazards Assessment for Peach Bottom Atomic Power Station.”

Plant Procedures

- Exelon Procedure OP-AA-108-118, Revision 1, “Risk-Informed Completion Time.”
- Exelon Procedure ER-AA-600-1014, Revision 8, “Risk Management Configuration Control.”
- Exelon Procedure ER-AA-600-1015, Revision 20, “FPIE PRA Model Update.”
- Exelon Procedure ER-AA-320-1004, Revision 01, “Maintenance Rule 18-10-Performance Monitoring and Dispositioning Between (a)(1) and (a)(2).”
- Exelon Procedure ER-AA-320-1007, Revision 00, “Maintenance Rule 18-10- Periodic (a)(3) Assessment.”
- Exelon Procedure ER-AA-600-1042, Revision 12, “On-line Risk Management.”
- Exelon Procedure OP-AA-108-117, Revision 5, “Protected Equipment Program.”
- Exelon Procedure OP-AA-108-118, Revision 2, “Risk Informed Completion Time.”
- Exelon Procedure OP-PB-102-106, Revision 10, “Operator Response Time Program at Peach Bottom.”

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