



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

October 22, 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: JAMES A. FITZPATRICK NUCLEAR POWER PLANT – AUDIT PLAN IN SUPPORT OF REVIEW OF LICENSE AMENDMENT REQUESTS REGARDING TSTF-505, REVISION 2, “PROVIDE RISK-INFORMED EXTENDED COMPLETION TIMES – RITSTF INITIATIVE 4B” AND 10 CFR 50.69, “RISK-INFORMED CATEGORIZATION AND TREATMENT OF STRUCTURES, SYSTEMS AND COMPONENTS FOR NUCLEAR POWER REACTORS” (EPID L-2021-LLA-0143 AND EPID L-2021-LLA-0142)

Dear Mr. Rhoades:

By letters dated July 30, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML21211A053 and ML21211A078), Exelon Generation Company, LLC (Exelon) submitted two license amendment requests (LARs) for James A. FitzPatrick Nuclear Power Plant (FitzPatrick). In its LARs, Exelon requested to amend license DPR-59 to adopt Technical Specifications Task Force (TSTF) Traveler 505 (TSTF-505), “Provide Risk-informed Extended Completion Times, RITSTF Initiative 4b,” and the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.69, “Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors.”

During the initial review of the LARs, the U.S. Nuclear Regulatory Commission (NRC) staff identified several items that require further clarification and detailed explanations. The NRC staff will conduct a regulatory audit to support its review of the LARs in accordance with the enclosed audit plan. A regulatory audit is a planned activity that includes the examination and evaluation of primarily non-docketed information. The audit will be conducted to increase the NRC staff’s understanding of the LARs and identify information that will require docketing to support the NRC staff’s regulatory findings.

Based on the commonalities between the LARs and subsequent overlap in technical content and review personnel, the NRC will conduct a combined audit that addresses both LARs. The combined audit will be conducted using video and teleconferencing and secure, online portal. The audit plan and supporting materials are enclosed.

D. Rhoades

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If you have any questions, please contact me by telephone at 301-415-2048 or by e-mail to Justin.Poole@nrc.gov.

Sincerely,

/RA/

Justin Poole, Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures:
Audit Plan

cc: Listserv



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

REGULATORY AUDIT PLAN

REGARDING LICENSE AMENDMENT REQUESTS TO ADOPT

RISK INFORMED COMPLETION TIMES - TSTF-505 AND 10 CFR 50.69

EXELON GENERATION COMPANY, LLC

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

1.0 BACKGROUND

By letters dated July 30, 2021, Exelon Generation Company, LLC (Exelon), submitted two license amendment requests (LARs) for James A. FitzPatrick Nuclear Power Plant (FitzPatrick) (References 1 and 2). Reference 1 would modify the FitzPatrick Technical Specifications (TSs) to permit the use of Risk-Informed Completion Times (RICTs) in accordance with Technical Specifications Task Force (TSTF)-505, Revision 2, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," (Reference 3). Reference 2 proposes the addition of a license condition that allows implementation of the provisions in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors."

The staff from the Nuclear Regulatory Commission's (NRC's) Office of Nuclear Reactor Regulation (NRR) has initiated its review of the LAR in accordance with NRR Office Instruction (OI) LIC-101, "License Amendment Review Procedures" (Reference 4).

2.0 REGULATORY AUDIT BASES

A regulatory audit is a planned license- or regulation-related activity that includes the examination and evaluation of information that provides the technical basis for the LAR. An audit is conducted to gain understanding, to verify information, and to identify information that will require docketing to support the basis of a licensing or regulatory decision. An audit will assist the NRC staff in efficiently conducting its review and gaining insights to the licensee's processes and procedures. Information that the NRC staff relies upon to make the safety determination must be submitted on the docket. This audit will be conducted in accordance with NRR OI LIC-111, "Regulatory Audits," with exceptions noted within this audit plan (Reference 5).

The NRC staff will perform the audit to support its evaluation of whether the licensee's requests can be approved per 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit." The staff's review will be informed by Standard Review Plan Section 19.2,

“Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis” (Reference 6). The audit will assist the NRC staff with understanding the licensee’s proposed programs for implementing RICTs for certain TSs and categorizing structures systems and components (SSCs) based on their risk significance. Further, due to the overlaps in technical matter and personnel reviewing the two LARs, the NRC staff determined that a combined audit would permit the most efficient use of resources for the NRC and Exelon.

3.0 SCOPE

The audit team will view the documentation and calculations that provide the technical support for the LARs. The scope of the NRC staff’s audit will focus on the following subjects:

- Understand how the licensee’s proposed program implements TSTF-505 and conforms to NRC-endorsed guidance in the Nuclear Energy Institute (NEI) report NEI 06-09, Revision 0-A, “Risk-Informed Technical Specification Initiative 4b, Risk-Managed Technical Specification Guidelines” (Reference 7).
- Understand how the licensee’s proposed program implements 10 CFR 50.69, SSC Categorization to NRC-endorsed guidance in NEI 00-04, Revision 0, “SSC Categorization Guideline” (Reference 8), as endorsed by Regulatory Guide 1.201, Revision 1, “Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance” (Reference 9).
- Gain a better understanding of the detailed calculations, analyses, and bases underlying the LARs and confirm the staff’s understanding of the LARs.
- Gain a better understanding of plant design features and their implications for the LARs.
- Identify any information needed to enable the staff’s evaluation of the technical acceptability of the probabilistic risk assessment (PRA) used for these applications.
- Identify any information needed to enable the staff’s evaluation of whether the proposed changes challenge design-basis functions or adversely affect the capability or capacity of plant equipment to perform design-basis functions.
- Identify questions and requests that may become formal requests for additional information (RAIs) per NRR Office Instruction LIC-115, “Processing Requests for Additional Information” (Reference 10).

The NRC staff will audit the PRA methods that the licensee would use to: (1) categorize SSCs based on their risk significance, and (2) determine the risk impact from which the revised completion times for TSTF-505 would be obtained, including the licensee assessments of internal events (including internal flooding) and fire PRAs. The NRC will also audit the licensee’s quantification of risk from significant external events, whether the licensee uses PRA or bounding methods, treatment of uncertainties, and the licensee’s evaluation of defense-in-depth. In addition, the audit team will request to discuss these topics with Exelon’s subject matter experts.

4.0 INFORMATION AND OTHER MATERIAL NECESSARY
FOR THE REGULATORY AUDIT

The NRC staff will request information and interviews throughout the audit period. The NRC staff will use an "audit items list" to identify the information (e.g., methodology, process information, and calculations) to be audited and the subjects of requested interviews and meetings.

The NRC staff requests the licensee to have the information referenced in the attachment of this audit plan available and accessible for the NRC staff's review via a web portal within two weeks of the date of this audit plan. The NRC staff requests that any supplemental information requested be available and accessible for the NRC staff's review within one week of the date of the NRC's notification to the licensee of the new requests. The NRC staff requests the licensee to notify the review team when an audit item is added to its portal by sending an e-mail to the NRC licensing project manager.

The staff acknowledges and will observe appropriate handling and protection of proprietary information made available for the audit. The NRC staff will not remove non-docketed information from the audit site or web portal.

5.0 AUDIT TEAM

The following table identifies the NRC audit team members, including contractors, and their respective focus areas:

Table 1: NRC Audit Team Composition

Name	E-mail	LAR		Review Area (Organization)
		50.69	RICT	
Justin Poole ⁽¹⁾	Justin.Poole@nrc.gov	X	X	Plant Licensing Branch LPL I (LPL1)
William (Bill) Jessup	William.Jessup@nrc.gov		X	PRA Licensing Branch A (APLA)
Malcolm Patterson	Malcolm.Patterson@nrc.gov	X		
Todd Hilsmeier	Todd.Hilsmeier@nrc.gov	X	X	
Bernard Grenier	Bernard.Grenier@nrc.gov	X	X	PRA Licensing Branch B (APLB)
Charles (Chuck) Moulton	Charles.Moulton@nrc.gov		X	
Robert Vettori	Robert.Vettori@nrc.gov		X	
Steven Alferink	Steven.Alferink@nrc.gov	X	X	PRA Licensing Branch C (APLC)
De (Wesley) Wu	De.Wu@nrc.gov	X	X	Electrical Engineering Branch (EEEB)
Steve Wyman	Stephen.Wyman@nrc.gov	X	X	
Khoi Nguyen	Khoi.Nguyen@nrc.gov	X	X	
Joseph Ashcraft	Joseph.Ashcraft@nrc.gov		X	Instrumentation and Controls Branch (EICB)
Norbert Carte	Norbert.Carte@nrc.gov	X	X	
Gurjendra Bedi	Gurjendra.Bedi@nrc.gov	X	X	Mechanical Engineering and Inservice Testing Branch (EMIB)
Kaihwa Hsu	Kaihwa.Hsu@nrc.gov	X	X	
Dan Widrevitz	Dan.Widrevitz@nrc.gov	X	X	Vessels and Internals Branch (NVIB)
Roger Kalikian	Roger.Kalikian@nrc.gov	X	X	Piping and Head Penetrations (NPHP)
Derek Scully	Derek.Scully@nrc.gov	X	X	Containment and Plant Systems Branch (SCPB)
Hanry Wagage	Hanry.Wagage@nrc.gov		X	
Angelo Stubbs	Angelo.Stubbs@nrc.gov	X		
Fred Forsaty	Fred.Forsaty@nrc.gov	X	X	Nuclear Systems Performance Branch (SNSB)
Andrea Russell	Andrea.Russell@nrc.gov		X	Technical Specifications Branch (STSB)
Steve Short ⁽²⁾	Steve.Short@pnnl.gov		X	Pacific Northwest National Laboratory (PNNL)
Mark Wilk ⁽²⁾	Mark.Wilk@pnnl.gov	X		

Notes:

- (1) NRR Division of Operating Reactor Licensing Project Manager
- (2) NRC Contractor

6.0 LOGISTICS

The audit will be conducted remotely using video and teleconferencing and a secure, online portal, established by the licensee. The audit will begin within two weeks of the date of this audit plan and last through May 31, 2022. The NRC will establish an audit meeting(s) (e.g., a single, multi-day audit meeting; periodic audit meetings throughout the audit period) on mutually agreeable dates and times to discuss information needs and questions arising from the NRC's review of the audited items. The NRC's licensing project manager will inform the licensee of audit meeting dates when they are established, including the date of an audit kick-off meeting.

7.0 SPECIAL REQUESTS

The following conditions associated with the online portal must be maintained throughout the duration so that the NRC staff and contractors on the audit team has access to the online portal:

- The online portal will be password-protected, and separate passwords will be assigned to the NRC staff and contractors who are on the audit team.
- The online portal will be sufficiently secure to prevent the NRC staff and contractors from printing, saving, downloading, or collecting any information from the web portal.
- Conditions of use of the online portal will be displayed on the login screen and will require acknowledgment by each user.

Exelon should provide username and password information directly to the NRC staff and contractors on the audit team, listed above. The NRC project manager will provide Exelon the names and contact information of any additional the NRC staff and contractors who are added to the audit team. All other communications should be coordinated with the NRC project manager. The NRC's licensing project manager will inform the licensee via routine communications when the NRC staff no longer needs access to the portal.

No information accessed by the audit team members will be retained by the NRC following the conclusion of the audit.

8.0 DELIVERABLES

The NRC staff will develop any RAIs, as needed, in accordance with NRR OI LIC-115 and issue such RAIs separate from audit-related correspondence. The NRC staff will issue an audit summary report within 90 days of the audit exit interview and prior to completing its safety evaluation of the LAR.

9.0 REFERENCES

1. Letter from D. T. Gudger, Exelon, to the U.S. Nuclear Regulatory Commission, "License Amendment Request To Revise Technical Specifications To Adopt Risk Informed Completion Times TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times—RITSTF Initiative 4b'," July 30, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21211A053).
2. Letter from D. T. Gudger, Exelon, to the U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors'," July 30, 2021 (ADAMS Accession No. ML21211A078).
3. TSTF-505, Revision 2, "TSTF Comments on Draft Safety Evaluation for Traveler TSTF-505, 'Provide Risk-Informed Extended Completion Times,' and Submittal of TSTF-505, Revision 2," July 2, 2018 (ADAMS Accession No. ML18183A493).
4. U.S. Nuclear Regulatory Commission, NRR Office Instruction LIC-101, Revision 6, "License Amendment Review Procedures," July 31, 2020 (ADAMS Accession No. ML19248C539).
5. U.S. Nuclear Regulatory Commission, NRR Office Instruction LIC-111, Revision 1, "Regulatory Audits," October 31, 2019 (ADAMS Accession No. ML19226A274).
6. U.S. Nuclear Regulatory Commission, NUREG-0800, "Standard Review Plan," Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," June 2007 (ADAMS Accession No. ML071700658).
7. Nuclear Energy Institute, NEI 06-09, Revision 0-A, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," November 2006 (ADAMS Accession No. ML12286A322).
8. Nuclear Energy Institute, NEI 00-04, Revision 0, "10 CFR 50.69 SSC Categorization Guideline," July 2005 (ADAMS Accession No. ML052910035).
9. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.201, Revision 1, "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to their Safety Significance," May 2006 (ADAMS Accession No. ML061090627).
10. U.S. Nuclear Regulatory Commission, NRR Office Instruction LIC-115, "Processing Requests for Additional Information," November 6, 2019 (ADAMS Accession No. ML19242B237).

ATTACHMENT: AUDIT REQUESTS

ITEM	AUDIT REQUEST
R1	"James A. FitzPatrick Nuclear Power Plant PRA Peer Review Report Using ASME PRA Standard Requirements," April 2010.
R2	"James A FitzPatrick NPP PRA Facts and Observations Independent Assessment Report Using NEI 05-04/07-12/12-06 Appendix X," April 2020.
R3	"James A FitzPatrick NPP Focused PRA Peer Review Report Using ASME/ANS PRA Standard Requirements," April 2020.
R4	Jensen Hughes Report 32466-RPT-03, "James A. Fitzpatrick PRA Finding Level Fact and Observation Independent Assessment," April 2021.
R5	Jensen Hughes Report 32434-RPT-03, "FitzPatrick Nuclear Power Plant FPIE and Fire PRA Finding Level Fact and Observation Closure by Independent Assessment," August 2020.
R6	"James A. Fitzpatrick Nuclear Power Plant Fire PRA Peer Review Report Using ASME/ANS PRA Standard Requirements," April 2020.
R7	FitzPatrick fire PRA notebooks containing the results of the fire PRA.
R8	ER-AA-600-1015, "FPIE PRA Model Update."
R9	ER-AA-600-1061, "Fire PRA Model Update and Control."
R10	JF-PRA-021.11 Revision 3, Summary & Quantification (FQ) Notebook, March 2021.
R11	JF-PRA-021.12, "James A. FitzPatrick Nuclear Power Plant Fire PRA Uncertainty and Sensitivity Analysis Notebook," Revision 2, June 2021.
R12	JF-PRA-013, "James A. FitzPatrick Nuclear Power Plant Probabilistic Assessment Summary Document Notebook," Revision 0, May 2018.
R13	JF-PRA-014, "James A. FitzPatrick Nuclear Power Plant Probabilistic Risk Assessment Quantification Notebook," Revision 2, November 2019.
R14	JF-PRA-015, Revision 0, James A. Fitzpatrick Nuclear Power Plant Probabilistic Risk Assessment, Level 2 Analysis, March 2018.
R15	JF-MISC-021, "Assessment of Key Assumptions and Sources of Uncertainty for the James A. FitzPatrick Nuclear Power Plant PRA," Revision 0.
R16	<p>For the internal events, internal flooding, and fire PRAs, any additional plant-specific documentation (e.g., uncertainty notebooks) related to:</p> <ul style="list-style-type: none"> a. The review of the PRA model assumptions and sources of uncertainty (generic and plant-specific assumptions/uncertainties) for the TSTF-505 and 50.69 LARs. b. Identification of key assumptions and sources of uncertainty for the TSTF-505 and 50.69 LARs. c. Parametric uncertainty and state-of-knowledge correlation evaluation for the TSTF-505 and 50.69 LARs.
R17	James A. Fitzpatrick Nuclear Power Plant Individual Plant Examination for External Events, June 1996.

ATTACHMENT: AUDIT REQUESTS

ITEM	AUDIT REQUEST
R18	U.S. NRC Letter to Mr. James Knubel, "James A. FitzPatrick Nuclear Power Plant - Review of FitzPatrick Individual Plant Examination of External Events (IPEEE) Submittal (TAC No. M83622)," September 21, 2000.
R19	U.S. NRC, "Review of Fitzpatrick Individual Plant Examination of External Events (IPEEE) Submittal (TAC No. M83622)," Attachment 1, "Submittal-Only Screening Review of the Fitzpatrick Unit 1 Individual Plant Examination for External Events, Seismic Portion," letter dated September 21, 2000.
R20	FitzPatrick Individual Plant Examination for External Events, June 1996.
R21	Lettis Consultants International (LCI), Inc., Project No. 1041, "Fitzpatrick Seismic Hazard and Screening Report," February 26, 2014.
R22	FitzPatrick Abnormal Operating Procedure, AOP-13, "Severe Weather"
R23	JF-ASM-002, "JAF TMRE Model Development and Quantification," Revision 0, November 2019.
R24	FitzPatrick Action Request (AR) 04144501, "Tornado Missile Protection Shield Non Conformance," June 5, 2018.
R25	FitzPatrick AR 04144602, Tornado Missile Assessment CR & RR AC System Discrepancy, November 15, 2019.
R26	FitzPatrick Engineering Change 624477, "Op Eval - Control and Relay Room AC System Non Conformance for Tornado Missile Protection (IR 04144602)," Closed November 27, 2019.
R27	Summary and results of the Tornado Missile Risk Evaluator sensitivity analysis performed to assess the impact of maintenance configurations on the risk (CDF) from tornado missiles (see Reference 53 in Enclosure 4 to the TSTF-505 LAR).
R28	Condition Report: SOER 07-2, CR-JAF-2007-04445, "Intake Cooling Water Blockage," December 2007.
R29	ER-AA-340, "GL 89-13 Program Implementing Procedure," Revision 10.
R30	JAF-RPT-14-00035, Rev. 000, "Fukushima Project Walkdown of Plant Features That Are Potentially Subject to BDBEE Flood Water Infiltration," February 2015.
R31	JAFP-15-0036, Flooding Hazard Reevaluation Report
R32	FitzPatrick FSAR Change#: FSAR-19-013, EC 627886, November 2019.
R33	FitzPatrick Op Eval #: 18-003, EC 624475, IR #: 04144501.
R34	Exelon Fleet Procedure OP-AA-201-012-1001, "Operations On-Line Fire Risk Management."
R35	Exelon Fleet Procedure OP-AA-108-118, "Risk Informed Completion Time."
R36	Exelon Fleet Procedure WC-AA-101-1006, "On-Line Risk Management and Assessment."
R37	Exelon Fleet Procedure OP-AA-108-117, "Protected Equipment Program."
R38	Other related plant and PRA configuration control procedures not identified above.

ATTACHMENT: AUDIT REQUESTS

ITEM	AUDIT REQUEST
R39	PRA notebooks for the modeling of FLEX equipment and FLEX human error probabilities credited in the PRAs.
R40	If applicable, PRA notebooks associated with the modeling of Open Phase Condition (OPC) in electrical switchyards and the Open Phase Isolation System (OPIS).
R41	Any draft or final RICT program procedures (e.g., for risk management actions, PRA functionality determination, and recording limiting conditions for operation).
R42	Documentation supporting the example RICT calculations presented in LAR Enclosure 1, Table E1-2.
R43	Relevant design documentation (e.g., single line diagrams of the electrical power distribution systems and piping and instrumentation diagrams).
R44	Plant procedures related to risk management actions for the electrical power systems, if available.
R45	Documentation supporting the development of the real-time risk tool and benchmarking of the tool against the PRA.
R46	Other documentation that the licensee determines to be responsive to the staff's information requests.

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT – AUDIT PLAN IN SUPPORT OF REVIEW OF LICENSE AMENDMENT REQUESTS REGARDING TSTF-505, REVISION 2, “PROVIDE RISK-INFORMED EXTENDED COMPLETION TIMES - RITSTF INITIATIVE 4B” AND 10 CFR 50.69, “RISK-INFORMED CATEGORIZATION AND TREATMENT OF STRUCTURES, SYSTEMS AND COMPONENTS FOR NUCLEAR POWER REACTORS” (EPID L-2021-LLA-0143 AND EPID L-2021-LLA-0142) DATED OCTOBER 22, 2021

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OFFICE	NRR/DORL/LPL1/PM	NRR/DORL/LPL1/LA	NRR/DRA/APLA/BC	NRR/DRA/APLB/BC
NAME	JPoole	KZelevnock	RPascarelli	JWhitman
DATE	10/19/2021	10/18/2021	10/19/2021	10/21/2021
OFFICE	NRR/DRA/APLC/BC	NRR/DORL/LPL1/BC	NRR/DORL/LPL1/PM	
NAME	SRosenberg	JDanna	JPoole	
DATE	10/20/2021	10/22/2021	10/22/2021	

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