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

August 9, 2023

ANO Site Vice President
Arkansas Nuclear One
Entergy Operations, Inc.
N-TSB-58
1448 S.R. 333
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 2– REGULATORY AUDIT PLAN IN SUPPORT OF LICENSE AMENDMENT REQUEST TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT RISK-INFORMED COMPLETION TIMES (EPID L-2023-LLA-0052)

Dear Sir or Madam:

By letter dated April 5, 2023 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23095A281), Entergy Operations, Inc. (the licensee) submitted a license amendment request for Arkansas Nuclear One, Unit 2, to adopt Technical Specifications Task Force (TSTF) Traveler 505 (TSTF-505), "Provide Risk-Informed Extended Completion Times, RITSTF [Risk-Informed TSTF] Initiative 4b," to permit the use of risk-informed technical specification completion times for certain actions required when limiting conditions for operation are not met.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's application and determined that a regulatory audit would assist in the timely completion of the review. The NRC staff will conduct a regulatory audit to support its review 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 NRC staff will conduct the audit to increase its understanding of the application and identify information that will require docketing to support the NRC staff's regulatory findings. The NRC staff will conduct the audit virtually as soon as the portal can be established through March 31, 2024.

If you have any questions, please contact me at 301-415-4037 or by email to Thomas.Wengert@nrc.gov.

Sincerely,

/RA/

Thomas J. Wengert, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosure:
Audit Plan

cc: Listserv

REGULATORY AUDIT PLAN

IN SUPPORT OF LICENSE AMENDMENT REQUEST TO REVISE

TECHNICAL SPECIFICATIONS TO ADOPT RISK-INFORMED COMPLETION TIMES

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT 2

DOCKET NO. 50-368

1.0 BACKGROUND

By letter dated April 5, 2023 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23095A281), Entergy Operations, Inc. (the licensee) submitted a license amendment request (LAR) for Arkansas Nuclear One, Unit 2 (ANO-2). The proposed amendment would modify the ANO-2 technical specification (TS) requirements to permit the use of risk-informed completion times (RICTs) in accordance with TSs Task Force (TSTF) Traveler TSTF-505, "Provide Risk-informed Extended Completion Times, RITSTF [Risk-Informed TSTF] Initiative 4b," dated July 2, 2018 (ML18183A493). These RICTs would apply to certain actions required when limiting conditions for operation are not met.

The U.S. Nuclear Regulatory Commission (NRC) staff from the Office of Nuclear Reactor Regulation (NRR) has initiated its review of the LAR in accordance with NRR Office Instruction LIC-101, "License Amendment Review Procedures," Revision 6, dated July 31, 2020 (ML19248C539).

2.0 REGULATORY AUDIT BASIS

A regulatory audit is a planned license- or regulation-related activity that includes the examination and evaluation of primarily non-docketed information associated with 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 identified during the audit 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 Office Instruction LIC-111, "Regulatory Audits," Revision 1, dated October 31, 2019 (ML19226A274), with exceptions noted within this audit plan.

The NRC staff will perform the audit to support its evaluation of whether the licensee's LAR can be approved per Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.90, "Application for amendment of license, construction permit, or early site permit." The NRC staff's review will be informed by NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition," section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis," dated June 2007 (ML071700658). The audit will assist the NRC staff with understanding the licensee's proposed program to implement RICTs for certain TSs.

3.0 REGULATORY AUDIT SCOPE AND METHODOLOGY

NRC's objectives of the audit are the following:

- Learn how the licensee's proposed program implements TSTF-505 and conforms to NRC-endorsed guidance in Nuclear Energy Institute (NEI) report NEI 06-09, Revision 0-A, "Risk-Informed Technical Specification Initiative 4b, Risk-Managed Technical Specification (RMTS) Guidelines," dated November 2006 (ML12286A322).

- Gain a better understanding of the detailed calculations, analyses, and bases underlying the LAR and confirm the NRC staff's understanding of the LAR.

- Gain a better understanding of plant's design features and their implications for the LAR.

- Identify any information needed to enable the NRC staff's evaluation of the technical acceptability of the probabilistic risk assessment (PRA) used for this application.

- Identify any information needed to enable the NRC 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, Revision 1, "Processing Requests for Additional Information," dated August 5, 2021 (ML21141A238).

The NRC staff will audit the PRA methods that the licensee would use to determine the risk impact from which the revised completion times would be obtained, including the licensee's 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, and the licensee's evaluation of defense-in-depth.

4.0 INFORMATION AND OTHER MATERIAL NECESSARY FOR THE 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 will provide the final audit items list as an enclosure to the audit summary report, which will be publicly available. The attachment to this audit plan includes the initial audit items list. Throughout the audit, the NRC staff will supplement this list with audit questions and audit-related requests so that the licensee can better prepare for audit discussions with NRC staff. Any information accessed through the licensee's portal will not be held or retained in any way by NRC staff. The NRC will use the audit items list to support the periodic audit meetings with the licensee, which the NRC staff will schedule as needed. The NRC staff requests the licensee to have the requested audit information listed in the audit items list to be readily available and accessible for the NRC staff's review via a web-based portal.

5.0 TEAM ASSIGNMENTS

The audit team will consist of the following NRC staff from NRR and an NRC contractor.

- Thomas Wengert, Plant Licensing Branch 4 (LPL4)
- Thomas Byrd, LPL4
- April Pulvirenti, PRA Licensing Branch A (APLA)
- Jeff Circle, APLA
- Alissa Neuhausen, PRA Licensing Branch C (APLC)
- Anne-Marie Grady, APLC
- Edmund Kleeh, Electrical Engineering Branch (EEEB)
- Hari Kodali, EEEB
- Ming Li, Instrumentation and Controls Branch (EICB)
- Norbert Carte, EICB
- Gurjendra Bedi, Mechanical Engineering and Inservice Testing Branch (EMIB)
- Michael Breach, EMIB
- Angelo Stubbs, Containment and Plant Systems Branch (SCPB)
- Derek Scully, SCPB
- Diana Woodyatt, Nuclear Systems Performance Branch (SNSB)
- Andrea Russell, Technical Specifications Branch (STSB)
- Khadijah West, STSB
- Steve Short, Pacific Northwest National Laboratory

6.0 LOGISTICS

To support the schedule established when the NRC staff accepted the LAR for technical review, audit activities will be performed remotely and virtually using Microsoft Teams, teleconference, and a Web-based portal or meeting space created by the licensee. NRC information requests and communications with licensee staff will be coordinated through the NRC's licensing project manager.

The interactive audit will occur from October 17 – October 19, 2023. The audit portal should be established as soon as possible and closed on March 31, 2024. The NRC intends to establish periodic (e.g., biweekly) meetings on mutually agreeable dates and times (to be determined) to discuss information needs and questions arising from the NRC's review of the audited items.

The NRC staff requests the licensee to have the information referenced in section 4.0 of this audit plan available and accessible for the NRC staff's review via an internet-based portal within 2 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 1 week of the date of the NRC's notification to the licensee of the new requests. The NRC's licensing project manager will inform the licensee via routine communications when the NRC staff no longer needs access to the portal. The NRC staff requests the licensee to notify the review team when an audit item is added to its portal by sending an email to the NRC licensing project manager.

7.0 SPECIAL REQUESTS

The NRC requests access to requested documents and information through a web-based portal that allows the NRC staff and contractors to access documents over the Internet. The following

conditions associated with the online portal must be maintained while the NRC staff and contractors have access to the online portal:

- The online portal will be password-protected. A separate password will be assigned to each member of the NRC staff and NRC contractors participating in the audit.

- The online portal will prevent the NRC participants from printing, saving, downloading, or collecting any information directly from the online portal.

- Conditions of use of the online portal will be displayed on the login screen and will require acknowledgment by each user.

Username and password information should be provided directly to members of the NRC staff and contractors as needed. The NRC licensing project manager will provide the licensee with names and contact information of the NRC staff and contractors participating in the audit. All other communications should be coordinated through the NRC project manager.

8.0 DELIVERABLES

The NRC staff will develop any RAIs, as needed, in accordance with NRR Office Instruction LIC-115 and will issue such RAIs separately from audit-related correspondence. The NRC staff will prepare and issue an audit summary within 90 days of the completion of the audit.

Attachment:
Initial Audit Items List

TECHNICAL SPECIFICATIONS TASK FORCE (TSTF)-505 INITIAL AUDIT ITEMS LIST

ITEM NO.	AUDIT REQUEST
1	Near-term: Presentation of an overview of the risk-informed completion time (RICT) program procedures, including those for determining risk management actions, a demonstration of the process for calculating RICTs (including use of the configuration risk management program tool), and a demonstration of how to use the licensee's Web-based portal.
2	Results of the fire probabilistic risk assessment (PRA).
3	Reports of full-scope and focused-scope peer reviews (and facts and observations (F&Os) closure reviews) and any self-assessment performed for the internal events, internal flooding, and fire PRAs cited in the license amendment request (LAR).
4	Closure reports on F&Os from these assessments.
5	For the internal events, internal flooding, and fire PRAs, plant-specific documentation (e.g., uncertainty notebooks) related to: a. The review of the PRA model assumptions and sources of uncertainty. b. Identification of key assumptions and sources of uncertainty for the application.
6	PRA notebooks for the modeling of diverse and flexible coping strategies (FLEX) equipment and FLEX human error probabilities credited in the PRA.
7	Documentation supporting the example RICT calculations presented in enclosure 1, table E1-2, of the LAR, including PSA-ANO2-06-4B-EST, "ANO-2 PRA – RICT Estimates for TSTF-505 (RICT) Program LAR Submittal."
8	All documentation that supports the determination of the seismic and tornado missile penalties, including: • Calculations of the seismic and high winds penalties for the RICT program, including all input parameters and their justification for use. • Discussions on key assumptions and sources of uncertainty for the penalty calculations with licensee disposition relevant to this application. • Reports related to tornado generated missile vulnerability evaluation, tornado missile protection structural barriers, and evaluation of tornado missile barriers for RICT program. • PSA-A2-06-4B-TMPF, "ANO-2 Tornado Missile Penalty Factor Calculations for RICT Application," Revision 0. • Entergy, 96-R-1006002, "Individual Plant Examination for External Events (IPEEE) for Seismic Margins Assessment (SMA) at ANO-01," Revision 0, May 1996 and any additional documentation for ANO-2.
9	Any draft or final RICT program procedures (e.g., for risk management actions, PRA functionality determination, and recording limiting conditions for operation).
10	Plant and PRA configuration control procedures.

Attachment

11	Documentation supporting the development of the real-time risk tool and benchmarking it against the PRA.
12	Relevant design documentation (e.g., single line diagrams of the electrical power distribution systems and piping and instrumentation diagrams).
13	Design details of systems shared or cross-tied between Arkansas Nuclear One, Units 1 and 2, including electrical and mechanical systems.
14	Documentation of how shared or cross-tied systems are modeled in the PRA.
15	All primary fire PRA notebooks.
16	Load list for each safety-related bus.
17	Plant procedures related to the risk management action for the electrical power systems, if available.
18	Other documentation that the licensee determines to be responsive to the U.S. Nuclear Regulatory Commission staff’s information requests.

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OFFICE	NRR/DORL/LPL4/PM*	NRR/DORL/LPL4/LA*	NRR/DRA/APLA/BC*
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DATE	08/04/2023	07/31/2023	08/09/2023
OFFICE	NRR/DORL/LPL4/BC*	NRR/DORL/LPL4/PM*	
NAME	JDixon-Herrity	TWengert	
DATE	08/09/2023	08/09/2023	

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