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Subject: Shearon Harris - Audit Plan for Harris TSTF-505 LAR Review EPID: L-2019-LLA-0218
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Attachments: [Shearon Harris TSTF 505 - Audit Plan.pdf](#)

The U.S. Nuclear Regulatory Commission (NRC) staff has started our review of the license amendment request (LAR) to revise technical specification requirements to permit the use of risk-informed completion times for actions to be taken when limiting conditions for operation are not met. The NRC staff has determined that a regulatory audit of the technical acceptability of the probabilistic risk assessments (PRAs) used to develop insights to support the licensee's proposed approach would assist in the timely completion of the LAR review. 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 LAR and identify information that will require docketing to support the NRC staff's regulatory finding. The NRC staff will conduct a regulatory audit to support its review of the LAR in accordance with the following audit plan.

I. BACKGROUND

By application dated October 7, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19280C844), Duke Energy Progress, LLC (the licensee) submitted a LAR for Shearon Harris Nuclear Power Plant Unit 1 (Harris). The proposed LAR would revise technical specification 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 Traveler 505, Revision 2, "Provide Risk Informed Extended Completion Times – RITSTF Initiative 4b," dated July 2, 2018 (ADAMS Accession No. ML18183A493). The NRC issued a final model safety evaluation (SE) approving TSTF-505, Revision 2, on November 21, 2018 (ADAMS Accession No. ML18269A041).

II. REGULATORY AUDIT BASES

The basis of this remote audit is the licensee's LAR for Harris and the Standard Review Plan Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance" (ADAMS Accession No. ML071700658). The remote audit will be performed consistent with NRC Office of Nuclear Reactor Regulation Office Instruction LIC-111, Revision 1, "Regulatory Audits," dated October 31, 2019 (ADAMS Accession No. ML19226A274). An audit was determined to be the most efficient approach toward a timely resolution of issues associated with this LAR review, since the NRC staff will have an opportunity to minimize the potential for multiple rounds of requests for additional information (RAIs) and ensure no unnecessary burden will be imposed by requiring the licensee to address issues that are no longer necessary to make a safety determination.

III. PURPOSE AND SCOPE

The purpose of the remote audit is to gain a more detailed understanding of licensee's Risk-Informed Completion Time (RICT) program and its application to the technical specifications (TS) completion times as proposed in the LAR. The NRC staff will review the

internal events, internal flooding, fire PRAs, and the risk-informed approach for establishing extended completion times. The areas of focus for the regulatory audit are the information contained in the licensee's submittal, the enclosed audit information needs, and all associated and relevant supporting documentations (e.g., methodology, process information, calculations). The relevant supporting documents are identified below.

IV. INFORMATION AND OTHER MATERIAL NECESSARY FOR THE REGULATORY REMOTE AUDIT

The NRC audit team will require access to licensee's personnel knowledgeable of the technical aspects of the LAR and the relevant PRA models (i.e., fire, internal events, internal flood) documentation and procedures used to support the LAR. The following should be available to the audit team:

Documents

1. Most recent PRA peer review reports (full-scope and focused-scope); facts and observations closure reports
2. Draft or final RICT program procedures (e.g., Risk Management Actions, PRA Functionality Determination, Recording Limiting Conditions for Operation)
3. Documentation of changes to the PRA models, with justification of upgrades/PRA maintenance, since 2017 that are not associated with the resolutions of closed facts and observations.
4. Uncertainty notebooks for the Harris internal events, internal flooding, and fire PRAs related to PRA model assumptions and sources of uncertainty
5. Documentation of review of PRA model assumptions and sources of uncertainty and identification of key assumptions and sources of uncertainty for the application identified in the LAR.
6. PRA notebooks for the modeling of FLEX equipment and FLEX human error probabilities, if credited in the PRA
7. Plant and PRA configuration control procedures
8. Documentation supporting the development and benchmarking against the PRA of the real-time risk tool
9. Documentation supporting the example RICT calculations presented in Table E1-2 of Enclosure 1 of the LAR
10. OMM-001, "Operations Administrative Requirements"
11. Single line diagrams of electrical power distribution systems
12. Load list with load rating for each bus
13. Reactor trip system automatic trip and interlock logic description and schematics
14. ESFAS automatic actuation logic and actuation relays description and schematics
15. Example fault trees for reactor trip and ESFAS instrumentation and controls functions
16. Lists of manual actuation operation handbooks or procedures

Demonstrations and Discussions

1. Real-Time Risk tool
2. Example of RICT calculation
3. Example of Risk management action determination
4. Example of PRA functional definition, development, and use

5. Describe modeling of the instrumentation and controls limiting conditions for operation in the PRA
6. PRA modeling of the electrical TS conditions in the LAR with associated equipment and support structures, systems, or components
7. Risk management actions examples for electrical TS conditions
8. Modes of operation applicable to RICT program for certain electrical TS conditions as identified in the audit questions
9. Estimated RICT values for electrical TS conditions
10. Audit questions (Attachment 2)

V. AUDIT TEAM

The following are members of the NRC audit team:

- Tanya Hood, Project Manager, (Tanya.Hood@nrc.gov)
- Tony Nakanishi, Team Leader, Reliability and Risk Analyst, (Tony.Nakanishi@nrc.gov)
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- Khoi Nguyen, Electrical Engineer, (Khoi.Nguyen@nrc.gov)
- Andrea Russell, Safety and Plant Systems Engineer, (Andrea.Russell@nrc.gov)
- Wesley Wu, Reliability and Risk Analyst, (De.Wu@nrc.gov)
- Mohamad A Azarm, Contractor, Energy Research, Inc. (mazarm@iesscorp.com)
- Steve Short, Contractor, Pacific Northwest National Laboratory (Steve.Short@pnnl.gov)

VI. SPECIAL REQUESTS

The NRC staff would like access to the documents listed above in Section IV through an online portal that allows the NRC staff and contractors to access documents remotely via the internet at least 1 week prior to the start of the audit. NRC staff and contractors' access to the online portal should be terminated upon issuance of the audit summary discussed in Section VII of this audit plan.

The following conditions associated with the online portal must be maintained throughout the duration that the NRC staff and contractors have 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 participating in the audit.
- The online portal will be sufficiently secure to prevent the NRC staff and contractors from printing, saving, downloading, or collecting any information on the online portal.
- Conditions of use of the online portal will be displayed on the login screen and will require acknowledgement by each user.

User name and password information should be provided directly to the NRC staff and contractors. The NRC project manager will provide the licensee the names and contact information of the NRC staff and contractors who will be participating in the audit. All other communications should be coordinated with the NRC project manager.

VII. LOGISTICS

The remote audit will be held from June 22, 2020 through June 26, 2020. If requested, the audit team will conduct a telephone conference with the licensee for the purposes of introducing the team, discussing the scope of the audit, and describing the information to be made available on the online portal. The NRC staff acknowledges the potential for the proprietary nature of some of the information requested. It will be handled appropriately throughout the audit. The NRC staff will take notes that will be marked as proprietary and will not remove hard copies or copy electronic files. NRC project manager will coordinate any changes to the audit schedule and location with the licensee. A proposed agenda and the questions for the audit are attached to this audit plan.

VIII. DELIVERABLES

An audit summary, which may be public, will be prepared within 90 days of the completion of the audit. If the NRC staff identifies information during the audit that is needed to support its regulatory decision, the staff will issue RAIs to the licensee.

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