



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

July 23, 2021

Steven M. Snider
Site Vice President, Oconee Nuclear Station
Duke Energy Carolinas, LLC
7800 Rochester Highway
Seneca, SC 29672-0752

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 – AGING MANAGEMENT
AUDIT PLAN REGARDING THE SUBSEQUENT LICENSE RENEWAL
APPLICATION REVIEW (EPID NO. L-2021-SLR-0000)

Dear Mr. Snider:

By letter dated June 7, 2021 (Agencywide Documents Access and Management System Package Accession No. ML21158A193), Duke Energy Carolinas, LLC submitted to the U.S. Nuclear Regulatory Commission (NRC or staff) an application to renew the Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55 for Oconee Nuclear Station (ONS), Units 1, 2, and 3.

The NRC plans to conduct an Aging Management Audit from July 26, 2021 – October 8, 2021, in accordance with the enclosed regulatory audit plan. The Aging Management Audit will be conducted at NRC Headquarters and ONS site, as appropriate. If you have any questions, please contact Angela Wu at Angela.Wu@nrc.gov.

Sincerely,

Lauren K. Gibson, Chief
License Renewal Projects Branch
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270 and 50-287

Enclosure:
Aging Management Audit Plan

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 – AGING MANAGEMENT
AUDIT PLAN REGARDING THE SUBSEQUENT LICENSE RENEWAL
APPLICATION REVIEW (EPID NO. L-2021-SLR-0000) DATED JULY 23, 2021

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E-MAIL:

Paul.Guill@duke-energy.com
Reene.Gambrell@duke-energy.com
Arun.Kapur@duke-energy.com

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OFFICE	PM:NLRP:DNRL	LA:NLRP:DNRL	BC:NLRP:DNRL
NAME	AWu	SGreen	LGibson
DATE	07/15/2021	07/15/2021	07/23/2021

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Audit Plan
Oconee Nuclear Station, Units 1, 2, and 3
Subsequent License Renewal Application

Aging Management Regulatory Audit
July 26, 2021 – October 8, 2021

Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Audit Plan
Oconee Nuclear Station, Units 1, 2, and 3
Subsequent License Renewal Application
Aging Management Regulatory Audit

1. Background

By letter dated June 7, 2021 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML21158A193), Duke Energy Carolinas, LLC (Duke Energy or the applicant) submitted to the U.S. Nuclear Regulatory Commission (NRC or staff) an application to renew the Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55 for Oconee Nuclear Station (ONS), Units 1, 2, and 3. The staff is reviewing this application in accordance with the guidance in NUREG-2192, "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants," (SRP-SLR).

In accordance with the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," the NRC will perform an aging management regulatory audit to gain a better understanding of (1) the applicant's methodology to identify the systems, structures, and components (SSCs) to be included within the scope of subsequent license renewal and subject to an aging management review (AMR), and (2) the applicant's aging management programs (AMPs), AMR items, time-limited aging analyses (TLAAs), and associated bases and documentation as applicable.

2. Regulatory Audit Bases

License renewal requirements are specified in 10 CFR Part 54. Guidance is provided in the SRP-SLR and NUREG-2191, Revision 0, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report," dated July 2017.

3. Regulatory Audit Scope of Review

Scoping and Screening Review

The purpose of the scoping and screening review is to evaluate the applicant's scoping and screening methodology used to identify SSCs within the scope of subsequent license renewal and subject to AMR, as well as the results of the implementation of the methodology. The review is performed by evaluating the scoping and screening process and results, as documented in the subsequent license renewal application (SLRA), implementing procedures, reports, and drawings, such that the NRC staff:

- Obtains an understanding of the process used to identify the SSCs within the scope of license renewal and to identify the structures and components subject to an AMR; and

- Has sufficient docketed information to allow the NRC staff to reach a conclusion on the adequacy of the scoping and screening methodology and results, as documented in the SLRA.

AMP, AMR, and TLAA Review

The scope of the AMP, AMR, and TLAA review is to: (a) examine the applicant's AMPs, AMR items, and TLAAAs; (b) verify the applicant's claims of consistency with the corresponding GALL-SLR Report AMPs, and AMR items; and (c) assess the adequacy of the TLAAAs. Enhancements and exceptions will be evaluated on a case-by-case basis with the results documented in the safety evaluation report (SER).

The NRC staff will audit Program Elements 1 – 10 (scope, preventive actions, parameters monitored or inspected, detection of aging effects, monitoring and trending, acceptance criteria, corrective actions, confirmation process, administrative controls, and operating experience (OE)) of the AMPs against the elements of the associated AMP described in the GALL-SLR Report. In addition, the NRC staff will verify that the conditions at the plant are bounded by the conditions for which the GALL-SLR Report program was evaluated.

The NRC staff will also examine the applicant's program bases documents and related references for AMPs, AMR items, and TLAAAs, and interview applicant representatives to obtain additional clarification.

The NRC staff will use risk insights to inform the prioritization of its review of documentation associated with AMPs, AMR items, and TLAAAs and to focus the breadth and depth of its review of plant specific operating procedures and OE. However, the NRC staff's review is not limited to risk-significant systems and components because 10 CFR Part 54 is a deterministic rule and the NRC staff must conclude that there is reasonable assurance that activities will continue to be conducted in accordance with the current licensing basis and the effects of aging will be managed during the subsequent period of extended operation for all structures and components within the scope of 10 CFR Part 54.

The NRC staff has reviewed the list of risk-significant systems and components provided by the applicant to inform the establishment of priorities for the performance of the scoping and screening review.

4. Audit Activities

The Aging Management Audit will consist of three parts, to be scheduled by the License Renewal Projects Branch (NLRP) safety project manager in coordination with the applicant. Following completion of the Aging Management Audit, an Aging Management Audit report will be issued.

The three Aging Management Audit parts include:

- Part #1 – In-Office Technical Review Audit

During the In-Office Technical Review Audit, technical staff will review the SLRA, documentation on the applicant's electronic portal (ePortal), and conduct an OE review. The staff will have the opportunity to have discipline-specific discussions with the applicant to gain context on the SLRA to support the staff's review.

- Part #2 – On-Site Audit

The On-Site Audit is performed, in part, by an integrated review team, to conduct observations of areas, equipment conditions, and configurations, and an OE review, as needed. For additional information on whether activities will be performed on-site, see “On-Site Audit (Aging Management Audit Part #2),” below.

- Part #3 – In-Office Breakout Sessions

The In-Office Breakout Sessions will provide the opportunity for the technical staff to ask questions and have detailed technical discussions to identify and obtain information to complete the safety review.

Each of the three parts of the Aging Management Audit will provide the staff the opportunity to have technical discussions with the applicant to gain clarity and information regarding the SLRA. The audit is coordinated to support the development of the reviewers’ reasonable assurance for the safety finding to be documented in the SER. The staff may require additional information from the applicant for some technical areas, while finding that information on the ePortal is sufficient for other technical areas. Accordingly, some technical areas may not require inclusion in Part #2, the On-Site Audit.

The NLRP safety project manager will coordinate all communications with the applicant. Staff requests for communication with the applicant will require approval of their respective technical branch chief and the NLRP branch chief.

In-Office Technical Review Audit (Aging Management Audit Part #1)

The purpose of the In-Office Technical Review Audit is for the staff to review the information contained in the SLRA and the applicant’s ePortal, including the license renewal drawings.

Using telecommunications, the in-office technical review portion of the Aging Management Audit also allows the applicant to provide context on the ePortal’s contents and configuration, the methods used to develop the SLRA, the corresponding results, and any areas unique to the ONS SLRA.

The staff will have the opportunity to have discipline-specific discussions with the applicant to discuss the approaches used for evaluation and development of AMPs, TLAAs, AMR items, with the consideration of OE. In addition, the staff may identify specific technical areas where the staff would benefit from a presentation or discussion to provide additional context to support the staff’s review.

The staff is to review the information needed to perform the safety review and use the information, to the extent possible, to begin developing draft input for the SER (resulting in an “SER with holes”).

The staff will audit areas related to OE:

- (1) Applicant’s Process to Identify OE Used in Development of AMPs. The staff requests that the applicant provide a presentation on the process used to identify and evaluate the

pertinent OE that was used to inform the development of the AMPs as discussed in the SLRA and basis documentation.

(2) Use of OE Contained in AMP Report-Out Documents. The staff requests that the applicant discuss how the OE contained in the AMP report-out documents (e.g., reports of inspections, assessments, AMP effectiveness reviews) is in alignment with information contained in the corrective action program (CAP) database and how the process described in (1) along with the use of the report-out information would include any pertinent OE otherwise contained in the CAP database. The applicant should demonstrate that OE identified by the process or included in the report-out documents is bounding of OE that should be considered for developing the SLRA. Additionally, the applicant should provide examples of the report-out documents and corresponding corrective action reports.

(3) Staff's Review of Age-Related OE Contained in the CAP Database. Following the applicant's presentations on the process to identify and evaluate OE as well as the information included in the report-out documents, the staff should determine if there are any specific areas of OE that have not been sufficiently addressed or if there is a need to sample the information discussed by the applicant to verify the applicant's results. If the staff identifies such a need, the staff will have an opportunity to perform an independent review of age-related OE contained in the CAP database, as necessary, to provide reasonable assurance that the applicant has adequately identified and evaluated pertinent OE in the development of the SLRA in Part #2 of the Aging Management Audit.

At the conclusion of the In-Office Technical Review Audit, the staff must identify any areas requiring inclusion in the On-Site Audit, Part #2 of the Aging Management Audit. The identified areas may include OE that should be further considered and the need for observation of areas, equipment conditions, or configurations.

On-Site Audit (Aging Management Audit Part #2)

The purpose of the On-Site Audit is to perform make visual observations of areas, equipment conditions, and configurations, and conduct an OE review, as needed. Due to ongoing health guidelines related to travel and gatherings, the ONS On-Site Audit may be conducted using telecommunications when appropriate.

The staff will perform necessary visual observations of areas, equipment conditions, and configurations, as previously approved by the technical branch chief as having an adequate basis for the need to perform such observations. The NLRP safety project manager shall provide the applicant the information on the areas, equipment conditions, and configurations prior to the On-Site Audit to ensure access and verify that licensee support is available.

On an as needed basis, the staff should perform an independent review of age-related OE contained in the CAP database to provide reasonable assurance that the applicant has adequately identified and evaluated pertinent OE in the development of the SLRA.

In-Office Breakout Sessions (Aging Management Audit Part #3)

During the In-Office Breakout Sessions, the NRC staff will have the opportunity to discuss various basis documents, references, condition/corrective action reports, and to obtain additional clarification related to the SLRA safety review with applicant.

The In-Office Breakout Sessions will be performed using telecommunications. A schedule will be developed by the NLRP safety project manager along with applicant input in order to allow for staff and applicant availability.

The technical staff will inform the technical branch chief of the need for an In-Office Breakout Session. After development of the questions for the In-Office Breakout Sessions, the technical staff will request approval of the questions prior to submission to the NLRP branch chief and NLRP safety project manager. In-Office Breakout Session topics and participants will be grouped by discipline, to the greatest and most efficient extent possible.

The NRC project manager will share the technical questions with the applicant, prior to a breakout session between Duke Energy and the NRC staff for technical discussions on the questions shared.

The In-Office Breakout Sessions topics will be sequenced, to the greatest extent possible, to address more complex areas early in the In-Office Breakout Sessions schedule. The sequencing is intended to allow for sufficient time to hold any additional discussions within the timeframe of the audit.

5. Information and Other Material Necessary for the Regulatory Audit

Throughout the Aging Management Audit, the staff will review the SLRA, as supplemented and revised, the AMP basis documents and other applicant supporting documents as appropriate and requested, which have been uploaded to the ePortal.

The staff may request additional applicant documents to be added to the ePortal over the course of the audit. The staff requests for ePortal additions shall be made, as needed, to the NLRP safety project manager, who will provide the requests to the applicant.

6. Team Assignments

Team Member	Branch/Division
Naeem Iqbal	PRA Licensing B (APLB)/Division of Risk Assessment
Thinh Dinh	APLB/DRA
Duc Nguyen	Long Term Operations & Modernization Branch (ELTB)/Division of Engineering and External Hazards (DEX)
Matthew McConnell	ELTB/DEX
Jorge Cintron	ELTB/DEX
Gurcharan (Singh) Matharu	ELTB/DEX
Hari Kodali	ELTB/DEX
Andrew Prinaris	Structural, Civil, Geotech Engineering (ESEB)/DEX
Bryce Lehman	ESEB/DEX
George Thomas	ESEB/DEX
George Wang	ESEB/DEX
Juan Lopez	ESEB/DEX
Ata Istar	ESEB/DEX

Zuhan Xi	ESEB/DEX
Andrew Johnson	Corrosion and Steam Generator (NCSG)/New and Renewed Licenses (DNRL)
Brian Allik	NCSG/DNRL
Gregory Makar	NCSG/DNRL
James Gavula	NCSG/DNRL
Leslie Terry	NCSG/DNRL
Lydiana Alvarado	NCSG/DNRL
Matthew Yoder	NCSG/DNRL
Paul Klein	NCSG/DNRL
Tony Gardner	NCSG/DNRL
David Pratt	NCSG/DNRL
Ali Rezaei	Piping and Head Penetrations (NPHP)/DNRL
Bart Fu	NPHP/DNRL
Eric Reichelt	NPHP/DNRL
Jay Collins	NPHP/DNRL
John Honcharik	NPHP/DNRL
Roger Kalikian	NPHP/DNRL
Seung Min	NPHP/DNRL
Carolyn Fairbanks	Vessels and Internals (NVIB)/DNRL
Isaac Anchondo-Lopez	NVIB/DNRL
David Dijamco	NVIB/DNRL
Jim Medoff	NVIB/DNRL
Joel Jenkins	NVIB/DNRL
On Yee	NVIB/DNRL
Gordon Curran	Containment and Plant Systems (SCPB)/Division of Safety Systems (DSS)
Brian Lee	SCPB/DSS
Nageswara Karipineni	SCPB/DSS
Chang Li	SCPB/DSS
Steve Jones	SCPB/DSS
Angelo Stubbs	SCPB/DSS
Christopher Jackson	Nuclear Systems Performance (SNSB)/DSS
Ben Parks	Nuclear Methods and Fuels (SFNB)/DSS
Joey Messina	SFNB/DSS
Angela Wu	License Renewal Projects Branch (NLRP)/DNRL
Marieliz Johnson	NLRP/DNRL
Bill Rogers	NLRP/DNRL

7. Logistics

The Aging Management Audit will be conducted primarily using telecommunications from July 26, 2021 to October 8, 2021, with potentially a portion of the On-Site Audit (Aging Management Audit Part #2), as determined appropriate, conducted at the applicant's facility. Entrance and exit briefings will be held at the beginning and end of the audit via telecommunications.

8. Special Requests

The NRC staff requests the applicant to make available the SLRA program basis documentation and drawings, and other documents as requested.

9. Deliverables

An audit report should be issued to the applicant within 90 days from the end of the Aging Management Audit.