



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

May 2, 2018

Mr. Steven D. Capps  
Senior Vice President  
Nuclear Corporate  
Duke Energy Corporation  
526 South Church Street, EC-07H  
Charlotte, NC 28202

SUBJECT: DUKE ENERGY CAROLINAS, LLC – CATAWBA NUCLEAR STATION, UNITS 1 AND 2, AND MCGUIRE NUCLEAR STATION, UNITS 1 AND 2, REGULATORY AUDIT TO SUPPORT COMMISSION APPROVAL OF PROPOSED AMENDMENTS FOR CHANGES TO TECHNICAL SPECIFICATIONS 3.8.1, “AC SOURCES – OPERATING” AND 3.7.8, “NUCLEAR SERVICE WATER SYSTEM” (CAC NOS. MF9667, MF9668, MF9671, MF9672, MG0245, AND MG0246; EPIDS L-2017-LLA-0256, L-2017-LLA-0257, AND L-2017-LLA-0297)

Dear Mr. Capps:

The U.S. Nuclear Regulatory Commission (NRC) staff and its contractors from the Pacific Northwest National Laboratories will conduct a regulatory audit at Duke Energy’s engineering offices in Charlotte, North Carolina, to support the review of two risk-informed license amendment requests (LARs) for McGuire Nuclear Station, Units 1 and 2 (McGuire), and Catawba Nuclear Station, Units 1 and 2 (Catawba). The audit will focus on two LARs, the first being a McGuire and Catawba LAR proposing changes to Technical Specification (TS) 3.8.1, “AC [alternating current] Sources Operating,” submitted on May 2, 2017, (Agency-wide Documents Access and Management System (ADAMS) Accession No. ML17122A116) as supplemented by letters dated July 20, 2017 (ADAMS Accession No ML17201Q132), and November 21, 2017 (ADAMS Accession No. ML17325A588), and the second being a Catawba-specific LAR to revise TS 3.7.8, “Nuclear Service Water System [NSWS],” submitted on September 14, 2017, (ADAMS Accession No ML17261B255).

The enclosure to this memorandum provides the audit plan and includes the details to meet the audit objectives. NRC staff from the Office of Reactor Regulation, Division of Risk Assessment, Probabilistic Risk Assessment Licensing Branch A will conduct the audit from May 8-10, 2018, at the Duke Energy’s Corporate Office in Charlotte, NC. The main focus of the audit will involve review of the proposed risk-informed LARs for McGuire and Cawtawba requesting modifications to the licensing bases and changes to certain technical specifications (TS).

The audit team plans to focus on the McGuire and Catawba LAR to change TS 3.8.1 on May 8-9, 2018 and the Catawba LAR to change TS 3.7.8 on May 10, 2018. The logistics and scope of the audit were discussed with your staff on April 24, 2018. The audit plan is enclosed.

If you have any questions, please contact me by telephone at 301-415-3867 or by e-mail at [Michael.Mahoney@nrc.gov](mailto:Michael.Mahoney@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Mahoney", written in a cursive style.

Michael Mahoney, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-369, 50-370, 50-413, and 50-414

Enclosure:

1. Audit Plan

cc: Listserv

REGULATORY AUDIT IN SUPPORT OF THE COMMISSION APPROVAL OF LICENSE

AMENDMENT REQUESTS FOR PROPOSING CHANGES TO

TECHNICAL SPECIFICATION (TS) 3.8.1, "AC SOURCES - OPERATING" AND

TS 3.7.8, "NUCLEAR SERVICE WATER SYSTEM"

DUKE ENERGY CAROLINAS, LLC

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 AND 50-414

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-369 AND 50-370

**1.0 BACKGROUND**

Duke Energy Carolinas, LLC, the licensee for McGuire Nuclear Station Units 1 and 2 (McGuire) and Catawba Nuclear Station Units 1 and 2 (Catawba) has submitted two license amendment requests (LARs) where the Nuclear Regulatory Commission (NRC) staff has determined that audits are needed to complete its reviews. The first LAR is for McGuire and Catawba for proposed changes to Technical Specification (TS) 3.8.1, "AC [alternating current] Sources – Operating", submitted on May 2, 2017, (Agency-wide Documents Access and Management System (ADAMS) Accession No. ML17122A116) as supplemented by letters dated July 20, 2017 (ADAMS Accession No ML17201Q132), and November 21, 2017 (ADAMS Accession No ML17325A588). The second LAR is Catawba-specific for proposed changes to TS 3.7.8, "Nuclear Service Water System [NSWS]," to add a new condition to allow single pond return header operation of the nuclear service water system with a 30-day completion time, submitted by letter dated September 14, 2017, (ADAMS Accession No ML17261B255).

The NRC staff's review of the proposed LARs is being conducted in accordance with the Office of Nuclear Reactor Regulation's (NRR) Office Instruction LIC-101, "License Amendment Review Procedures." The NRC staff has determined that a regulatory audit should be conducted in accordance with LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195), for the staff to gain a better understanding of the risk-informed licensee's proposed changes.

A regulatory audit is a planned, license or regulation-related activity that includes the examination and evaluation of primarily non-docketed information. A regulatory audit is conducted with the intent to gain understanding, to verify information, and/or to identify information that will require docketing to support the basis of the licensing or regulatory decision. Performing a regulatory audit of licensee information is expected to assist the NRC staff in efficiently conducting its review or gain insights on the licensee's processes or procedures. Information that the NRC staff relies upon to make the safety evaluation must be submitted on the docket. However, there may be supporting information retained as records

under 10 CFR 50.71 and/or 10 CFR 54.37 that, although not required to be submitted as part of the licensing action, would help the staff better understand the licensee's submitted information.

The objectives of this regulatory audit involve determining the technical adequacy of the licensee's probabilistic risk assessment (PRA) by:

- Gaining a better understanding of the process employed to independently assess the McGuire and Catawba findings and observations (F&Os) for closure; and,
- Identifying whether further information may be necessary for the licensee to submit on the docket for the staff to reach a licensing or regulatory decision, which may result in requests for additional information (RAIs).

## **2.0 REGULATORY AUDIT BASIS**

The basis of this audit is the licensee's LARs (as previously referenced), their respective supplements, and 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," (ADAMS Accession No. ML071700658). In a letter dated May 3, 2017, from Joseph Giitter and Mary-Jane Ross-Lee to Greg Krueger, Nuclear Energy Institute (NEI), (ADAMS Accession no. ML17079A427), the NRC indicated that it intends to periodically conduct audits of a licensee's implementation of the Appendix X Finding and Observation (F&O) closure process (ADAMS Accession No. ML17086A431), as well as review a sampling of the final independent assessment team reports.

## **3.0 REGULATORY AUDIT SCOPE OR METHOD**

The staff will review the licensee's F&O closure reports for consistency with the guidance, as accepted by NRC staff, and the technical quality and adequacy of the PRA to support the proposed changes to TS 3.8.1 and 3.7.8. Specifically, the scope of the audit will include a review of the F&O closure reports and documents supporting the risk evaluations associated with the LARs. Documentation, presentations requested, and breakout sessions to gain a better understanding of the program are identified below.

## **4.0 INFORMATION AND OTHER MATERIAL NECESSARY FOR THE AUDIT**

### **McGuire and Catawba LAR to Change TS 3.8.1**

#### **Presentations:**

1. Presentation of sample calculations on incremental conditional core damage probability (ICCDP)/incremental conditional large early release probability (ICLERP) and delta ( $\Delta$ ) core damage frequency (CDF) / $\Delta$  large early release frequency (LERF) values.
2. Presentation on the status of the design and implementation of the emergency supplemental power source (ESPS).
3. PRA model configuration control.

**Documents:**

At a minimum, an electronic copy of the following documentation should be available to the NRC audit team (one hardcopy of the shorter documents should also be available):

1. F&O closure reports for both CNS and MNS.
2. The ICCDP/ICLERP and  $\Delta$ CDF/ $\Delta$ LERF calculation report for the LAR.
3. The PRA data notebooks for the different PRAs.
4. Any draft ESPS procedures that exist.
5. The draft PRA system notebook for the ESPS.
6. Sensitivity study that shows the impact on risk (ICCDP/ICLERP,  $\Delta$ CDF/ $\Delta$ LERF) of not crediting ESPS.

**CNS LAR to Change TS 3.7.8**

**Documents:**

At a minimum, an electronic copy of the following documentation should be available to the audit team (one hardcopy of the shorter documents should also be available):

1. F&O closure report for CNS.
2. The ICCDP/ICLERP and  $\Delta$ CDF/ $\Delta$ LERF calculation report for the LAR.
3. Human Reliability Analysis (HRA) calculation report for fire recovery actions.
4. APC 17-13, "NRC Acceptance of Industry Guidance on Closure of PRA Peer Review Findings," dated May 8, 2017.
5. PRA notebook associated with resolution of F&O 22-7.
6. Sensitivity study that shows the impact on risk (ICCDP/ICLERP,  $\Delta$ CDF/ $\Delta$ LERF) of not crediting the recovery actions credited in LAR Section 3.2.3.2 (8<sup>th</sup> bullet).

**5.0 TEAM ASSIGNMENTS**

The audit will be conducted by NRC staff from the Office of Nuclear Reactor Regulation (NRR), Division of Risk Assessment (DRA), Probabilistic Risk Assessment Licensing Branch A (APLA), and NRC contractors from the Pacific Northwest National Laboratories (PNNL). Observers at the audit may include NRC staff from other Offices/Regions.

The NRC Audit Team Leader will be Leslie Fields (also Technical Risk Analyst) and the NRC Technical Lead will be Todd Hilsmeier. The audit team leader will conduct daily briefings on the status of the review and coordinate audit activities while on site. The tables below show the audit milestones and schedule and the planned audit team composition and their assigned areas for review.

<b>Audit Milestones and Schedule</b>		
<b>Activity</b>	<b>Time Frame</b>	<b>Comments</b>
Clarification Call	5/1 or later	Teleconference from NRC HQ to provide clarification of audit questions
Onsite Audit Kick-Off Meeting	5/8/2018	Brief team introduction and discussion of the scope of the audit. The licensee should introduce team members and give logistics for the week.

<b>Audit Milestones and Schedule</b>		
<b>Activity</b>	<b>Time Frame</b>	<b>Comments</b>
End of Day Summary Briefings	5/8/2018-5/10/2018	Meet with licensee to provide a summary of any significant findings and requests for additional assistance.
Provide Rooms for Focused Topic Discussions	5/8/2018 – 5/10/2018	Facilitate discussions between site and staff technical areas. Provide 1-2 breakout areas, if possible, for smaller discussions.
Onsite Audit Exit Meeting	5/10/2018	NRC staff will hold a brief exit meeting, with licensee staff to conclude audit activities.
Audit Summary (see 8.0)	90 days after exit	To document the audit. (90 business days)

## **6.0 LOGISTICS**

This regulatory audit will begin on May 8, 2018, and will last approximately 3 days. A conference call with the licensee will be scheduled for one to two weeks prior to the audit to discuss the details of the audit. The dates in the milestone chart are subject to change based on mutual agreement between the licensee and the NRC. An entrance meeting will be held on the first day at 9:00 AM and an exit meeting will be held the final day at 3:00 PM (or earlier depending on a mutually agreed upon time). The NRC audit team leader will provide daily progress briefings to licensee personnel on the first and second days of the audit.

The audit will take place at a location agreed upon by the licensee and NRC audit team leader where the necessary reference material and appropriate licensee staff will be available to support the review. Visitor access will be requested for the entire audit team for the duration of the audit. Any needed security paperwork and processing should be handled prior to the first day of the audit.

## **7.0 SPECIAL REQUESTS**

The NRC audit team is requesting that the following be available to support the regulatory audit:

- Two computers with internet access and printing capability in the NRC room, access to the site portal, and wired or wireless guest internet access for all team members.
- 1 main conference room with 1 additional private area for conference calling capability if possible. The main NRC conference room should be able to accommodate 6 to 8 people.
- Access to licensee personnel knowledgeable of the proposed TS changes, plant design and operation, and the plant PRAs. In addition, licensee staff who participated in the recent F&O closure process and prepared the LAR submittals should be available for discussion.

## **8.0 DELIVERABLES**

A regulatory audit summary will be issued within approximately 90 business days after the completion of the audit. The summary will use the guidance of NRR Office Instruction LIC-111 for content. Audit questions will likely be sent prior to the audit. After the audit, formal RAIs will be sent to the licensee from NRR's Division of Operator Licensing (DORL). The audit summary will be placed in ADAMS after publication.

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PM Reading File

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LFields, NRR

THilsmeier, NRR

**ADAMS Accession No.: ML18117A187**

**\*By Memo**

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/LA	NRR/DRA/APLB/BC*	NRR/LPL2-1/BC	NRR/LPL2-1/PM
NAME	MMahoney	KGoldstein	SRosenberg (JRobinson for)	MMarkley	MMahoney
DATE	4/30/18	4/30/18	4/26/18	5/1/18	5/2/18

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