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

July 2, 2018

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

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 AND SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 – AUDIT PLAN RE: APPLICATION TO ADOPT 10 CFR 50.69, "RISK-INFORMED CATEGORIZATION AND TREATMENT OF STRUCTURES, SYSTEMS, AND COMPONENTS FOR NUCLEAR POWER REACTORS" (EPID L-2018-LLA-0008 AND L-2018-LLA-0034)

Dear Mr. Capps:

By letters dated January 10 and February 1, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML18010A344 and ML18033B768, respectively), Duke Energy Progress, LLC (Duke Energy) submitted license amendment requests for Brunswick Steam Electric Plant, Units 1 and 2, and Shearon Harris Nuclear Power Plant, Unit 1. The proposed amendments would modify the licensing basis to allow for the implementation of the provisions of Section 50.69, "Risk-informed categorization and treatment of structures, systems, and components for nuclear power plants," of Title 10 of the *Code of Federal Regulations* (10 CFR).

The U.S. Nuclear Regulatory Commission (NRC) staff will conduct a regulatory audit to support its review of the proposed license amendments. The audit will be conducted at Duke Energy's corporate office in Charlotte, North Carolina, on July 17-19, 2018. The NRC staff's audit plan is enclosed. The audit plan may be supplemented with audit questions at a later time.

If you have any questions, please contact me at 301-415-2760 or Martha.Barillas@nrc.gov.

Sincerely,

Martha Barillas, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-325, 50-324, and 50-400

Enclosure:
Regulatory Audit Plan

cc: Mr. William R. Gideon
Vice President
Brunswick Steam Electric Plant
Duke Energy Progress, LLC
8470 River Road, SE (M/C BNP001)
Southport, NC 28461

Ms. Tanya Hamilton
Site Vice President
Shearon Harris Nuclear Power Plant, Unit 1
5413 Shearon Harris Road, M/C HNP01
New Hill, NC 27562-0165

Listserv

REGULATORY AUDIT PLAN BY THE OFFICE OF NUCLEAR REACTOR REGULATION TO SUPPORT THE REVIEW OF LICENSE AMENDMENT REQUESTS FOR BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 AND SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 TO ADOPT 10 CFR 50.69, "RISK-INFORMED CATEGORIZATION AND TREATMENT OF STRUCTURES, SYSTEMS AND COMPONENTS FOR NUCLEAR POWER REACTORS DOCKET NOS. 50-325, 50-324, AND 50-400

1.0 BACKGROUND

By letters dated January 10 and February 1, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML18010A344 and ML18033B768, respectively), Duke Energy Progress, LLC (Duke Energy) submitted license amendment requests (LARs) for Brunswick Steam Electric Plant, Units 1 and 2 (BSEP), and Shearon Harris Nuclear Power Plant, Unit 1 (HNP). The proposed amendments would modify the licensing basis to allow for the implementation of 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 plants," and provide the ability to use probabilistic risk assessment (PRA) models, the internal events PRA (IEPRA), internal flooding PRA (IFPRA), and internal fire PRA (FPRA) for the proposed 10 CFR 50.69 categorization process.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed Duke Energy's submittals and determined that a regulatory audit of the BSEP and HNP IEPRA, IFPRA, and FPRA models and overall 10 CFR 50.69 categorization process would assist in the timely completion of the subject LAR review process. An audit is determined to be the most efficient approach to ensure a timely resolution of issues associated with this LAR review. This audit should 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.

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. 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 a licensing or regulatory decision. Performing a regulatory audit of the licensee's information is expected to assist the 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 determination must be submitted on the docket. However, the NRC staff may review supporting information retained as records under 10 CFR 50.71 and 10 CFR 54.37, which although not required to be submitted as part of the licensing action, would help the staff better understand the licensee's submitted information.

3.0 REGULATORY AUDIT SCOPE OR METHOD

The audit will be performed consistent with the NRC's Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-111, "Regulatory Audits," dated December 16, 2008 (ADAMS Accession No. ML082900195). The purpose of this audit is to gain a more detailed understanding of Duke Energy's 10 CFR 50.69 categorization process by verifying conformance of categorization process with NRC-endorsed guidance and Duke Energy's implementation of the endorsed categorization process.

To accomplish these objectives, the NRC audit team will be:

- validating PRA quality is adequate for use in the BSEP and HNP applications;
- confirming that non-PRA methods used for evaluating the risk from external hazards are consistent with those allowed in Nuclear Energy Institute (NEI) 00-04, "10 CFR 50.69 SSC Categorization Guideline," July 2005 (ADAMS Accession No. ML052900163), and consider the current as-built, as-operated plants under review;
- identifying new information that is needed in order for staff to reach a licensing or regulatory decision; and
- discussing audit questions with Duke Energy.

Upon completion of the audit, the NRC audit team will determine its need for any RAIs to ensure any information needed to make its regulatory determination is available on BSEP's and HNP's dockets. Audit questions will likely be sent prior to the audit.

4.0 INFORMATION AND OTHER MATERIAL NECESSARY FOR THE AUDIT

The NRC audit team will require access to personnel knowledgeable in all aspects of Duke Energy's 10 CFR 50.69 applications for BSEP and HNP. At a minimum, a hard copy and electronic copy of the following documentation should be available to the audit team on the first day of the audit. In addition, presentations and specific discussion topics provided below may be requested.

Documents:

- Internal events and fire PRA documentation should be available on a computer with licensee support
- Internal events and fire PRA peer review reports and findings and observations (F&O) closure reports
- Documentation of changes to the PRA models with justification of upgrades/updates
- Brunswick and HNP 10 CFR 50.69 LARs, as supplemented
- 10 CFR 50.69 draft procedures
- Documentation of preliminary categorization results, if available

Presentations:

- 50.69 process presentation
- Walk-through categorization results

Discussions:

- Discussions of audit questions related to:

  a. F&Os
  b. PRA updates/upgrades, focused-scope peer reviews and F&O closure

5.0 TEAM ASSIGNMENTS

The audit will be conducted by NRC staff from NRR's Division of Risk Assessment, PRA Licensing, and NRC contractors from the Pacific Northwest National Laboratories (PNNL) in support of the technical audit team members. Staff knowledgeable in 10 CFR 50.69 and risk-informed licensing reviews will comprise the audit team. Observers at the audit may include NRR technical reviewers and project managers (PMs).

The NRC Audit Team Leader will be Leslie Fields (PM) with Michael Levine as the NRC BSEP Technical Lead, and Brandon Hartle as the NRC HNP Technical Lead. 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 (1) the audit milestones and schedule, and (2) the planned audit team composition and their assigned areas for review during the audit.

Regulatory Audit Plan Review Areas and Assignments			
		BSEP/HNP Lead	**Support**
1	Categorization Process	Team	NRC QA/Contractor
2	PRA Technical Adequacy	M. Levine/B. Hartle	S. Dinsmore/ PNNL
2.a	Peer Reviews	M. Levine/B. Hartle	S. Dinsmore/ PNNL
2.b	Facts and Observations	M. Levine/B. Hartle	S. Dinsmore/ PNNL
2.c	PRA updates/upgrades	M. Levine/B. Hartle	S. Dinsmore/ PNNL
3	External Hazards	M. Reisi-Fard/S Vasavada	S. Dinsmore/ PNNL
4	Integrated Decision-making Panel	M. Levine/B. Hartle	S. Dinsmore/ PNNL
5	Documentation, Configuration Control, Quality	L. Fields	Team

Audit Team Roster	
NRC Staff	**Title**
Leslie Fields	NRC Team Leader
Michael Levine	NRC Brunswick Technical Lead
Brandon Hartle	NRC Harris Technical Lead
Stephen Dinsmore	NRC QA
Mark Wilk	PNNL
Garill Coles	PNNL

6.0 LOGISTICS

The regulatory audit will begin the morning of July 17, 2018, and will last approximately 3 days, concluding on the afternoon of July 19th. The NRC staff will schedule a conference call prior to the audit to discuss the details of the generic audit plan. The dates in the milestone chart below are subject to change based on mutual agreement between the licensee and the NRC. An entrance meeting for this audit will be held on the first day at 9:00 a.m. and an exit meeting will be held the final day at 4:00 p.m. (earlier/later) based on a mutually agreed-upon time. The NRC audit team leader will provide daily progress briefings to licensee personnel on the first and second day of the audit.

The audit will take place at a location agreed upon by the licensee and NRC audit team leader where (1) the necessary reference material and (2) appropriate Duke Energy staff should be available to support the review. Visitor access will be requested for the entire audit team for the duration of the audit. We recommend that security paperwork and processing be handled prior to the first day of the audit, if possible.

Audit Milestones and Schedule		
Activity	**Time Frame**	**Comments**
Logistics/Clarification Call	July 12, 2018	Teleconference from NRC Headquarters to discuss logistics and any Duke Energy questions.
Onsite Audit Kick-Off Meeting	July 17, 2018	NRC staff will present a brief team introduction and discuss the scope of the audit. The licensee should introduce team members and give logistics for the week.
End of Day Summary Briefings	July 17-18, 2018	Meet with licensee to provide a summary of any significant findings and requests for additional assistance.
Provide Rooms for Focused Topic Discussions	July 17-18, 2018	Facilitate discussions between site and staff technical areas. Provide 1-2 breakout areas, if possible, for smaller discussions.
Onsite Audit Exit Meeting	July 19, 2018	NRC staff will hold a brief exit meeting, with licensee staff to conclude audit activities.
Audit Summary (see Section 8.0 below)	90 days after exit	To document the audit.

7.0 SPECIAL REQUESTS

The regulatory audit team will require the following 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 should be made available. The main NRC conference room should be set up for 6 to 8 NRC staff and contractors.

- Access to licensee personnel knowledgeable in the categorization process, plant design, operation and the plant PRA. In addition, Duke Energy staff who participated in preparing the LAR submittal should be available for discussion.

8.0 DELIVERABLES

A regulatory audit summary will be issued within 90 days of the completion of the audit. If information evaluated during the audit is needed to support a regulatory decision, the NRC staff will identify it in an RAI. The NRC staff will provide the RAI in separate docketed correspondence.

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MBarillas, NRR

ADAMS Accession No.: ML18180A418 ***via email**

OFFICE	NRR/DORL/LPL2-2/PM	NRR/DORL/LPL2-2/LA	NRR/DRA/APLA/BC*
NAME	MBarillas	BClayton (JBurkhardt for)	SRosenberg
DATE	07/02/18	06/29/18	06/22/18
OFFICE	NRR/DORL/LPL2-2/BC	NRR/DORL/LPL2-2/PM	
NAME	BVenkataraman	MBarillas	
DATE	07/02/18	07/02/18	

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