



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

November 8, 2022

Ms. Cheryl A. Gayheart  
Regulatory Affairs Director  
Southern Nuclear Operating Co., Inc.  
3535 Colonnade Parkway  
Birmingham, AL 35243

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 – AUDIT AGENDA  
AND TOPICS IN SUPPORT OF REVIEW OF THE APPLICATION TO ALLOW  
USE OF LEAD TEST ASSEMBLIES FOR ACCIDENT-TOLERANT FUEL  
(EPID L-2022-LLA-0097)

Dear Ms. Gayheart:

By letter dated June 30, 2022 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML22181B156), Southern Nuclear Operating Company submitted a license amendment request (LAR) for Vogtle Electric Generating Plant, Units 1 and 2. The proposed license amendment request (LAR) would allow the use of lead test assemblies for accident-tolerant fuel.

On October 7, 2022 (ML22103A253), the U.S. Nuclear Regulatory Commission (NRC) staff issued an audit plan that conveyed intent to conduct a regulatory audit to support its review of the subject LAR. In the audit plan, the NRC staff requested an electronic portal setup and provided a list of documents to be added to the portal.

The NRC staff has performed a review of the licensee's submittal dated June 30, 2022, and developed a list of audit topics. The proposed date for the audit is from Tuesday, December 6, 2022, through Thursday, December 8, 2022. The proposed agenda for the audit is provided as Enclosure 1, and the list of Audit topics is provided as Enclosure 2 to this letter.

C. Gayheart

- 2 -

If you have any questions, please contact me at (301) 415-3100 or by e-mail at [John.Lamb@nrc.gov](mailto:John.Lamb@nrc.gov).

Sincerely,

*/RA/*

John G. Lamb, Senior Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosures:

1. Audit Agenda
2. Audit Topics

cc: Listserv

## AUDIT AGENDA

### Day 1 – Tuesday, December 6, 2022

9:00 a.m. to 12:00 p.m. eastern standard time (EST)

- Entrance Meeting
  - Opening comments by U.S. Nuclear Regulatory Commission (NRC) and Southern Nuclear Operating Company (SNC, the licensee)
  - Introductions and logistics
- Discussion related to Probabilistic Risk Assessment (PRA) - PRA Oversight Branch (APOB)
- Discussion related to plant systems - Containment and Plant Systems (SCPB)

1:00 p.m. to 4:00 p.m. EST

- Discussion related to (1) Cladding Emissivity, (2) ADOPT pellets and AXIOM cladding, (3) Effects of lead test assemblies on co-resident fuel, and (4) Peaking Factors - Nuclear Methods and Fuel Analysis (SFNB)
- Summary of the day<sup>1</sup>

### Day 2 – Wednesday, December 7, 2022

9:00 a.m. to 12:00 p.m. EST

- Summary of previous day and review open items
- Discussion and questions on the Criticality Safety Analyses of the accident-tolerant fuel/increased enriched fuel (SFNB)
  - How does doping the fuel assemblies affect enrichment?
  - Why aren't IFBA used in ADOPT fuel rods?
  - Are the LTAs over or under moderated?
  - How do the LTAs impact the SFP ITC/MTC, if separated and if collocated?
  - Walk through the differences between the NFSR AOR in ELV-00511 (ML20244D557) "Application for amends to Licenses NPF-68 and NPF-81, revising Tech Spec 5.3.1 to change max enrichment to 4.55 weight percent U-235." And the analysis done for the NFSR for the LTA storage in CN-WFE-02-100.
  - Walk through the differences between the SFP AOR in CN-WFE-02-100 and the analysis done for the SFP All-Cell LTA storage in CN-CRIT-VOG-003.

1:00 p.m. to 4:00 p.m. EST

- Discussion related to the supporting analysis to reach the submittal conclusions for the Rod Ejection Accident - Nuclear Systems Performance Branch (SNSB)
- Summary of the day<sup>1</sup>

---

<sup>1</sup> If discussion topics are completed early, additional discussions for the day may be on the next day's agenda items.

Day 3 – Thursday, December 8, 2022

9:00 a.m. to 12:00 p.m. EST

- Summary of previous day and review open items
- Discussion of topics related to radiation and dose – Radiation Protection and Consequence Branch (ARCB)
- Discussion of proposed technical specification changes – Technical Specifications Branch (STSB)

1:00 p.m. to 4:00 p.m. EST

- Follow up on any remaining or new open action items
- Technical summary meeting with SNC's audit team

## AUDIT TOPICS

By letter dated June 30, 2022 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML22181B156), Southern Nuclear Operating Company (SNC, the licensee) submitted a license amendment request (LAR) for Vogtle Electric Generating Plant, Units 1 and 2. The proposed LAR would allow the use of lead test assemblies (LTAs) for accident-tolerant fuel (ATF).

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the LAR and provided the following topics to discuss during the audit.

1. Explain the supporting analysis to reach the submittal conclusions for the Rod Ejection Accident.
2. Explain the supporting analysis/technical reasoning to reach the submittal conclusion that there is no impact on unfavorable exposure time in the anticipated transient without scram (ATWS) PRA model and that there is no change in time to core damage for other significant accident sequences.
3. Criticality Safety Analyses of the ATF/Increased Enriched Fuel
  - a. How does doping the fuel assemblies affect enrichment?
  - b. Why aren't IFBA used in ADOPT fuel rods?
  - c. Are the LTAs over or under moderated?
  - d. How do the LTAs impact the SFP ITC/MTC, if separated and if collocated?
  - e. Walk through the differences between the NFSR AOR in ELV-00511 (ML20244D557) "Application for amends to Licenses NPF-68 and NPF-81, revising Tech Spec 5.3.1 to change max enrichment to 4.55 weight percent U-235." And the analysis done for the NFSR for the LTA storage in CN-WFE-02-100.
  - f. Walk through the differences between the SFP AOR in CN-WFE-02-100 and the analysis done for the SFP All-Cell LTA storage in CN-CRIT-VOG-003.
4. Cladding Emissivity
5. ADOPT pellets and AXIOM cladding
6. Effects of LTAs on co-resident fuel
7. Peaking Factors
8. Plant Systems
9. Radiation and Dose
10. Technical Specifications

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 – AUDIT AGENDA AND TOPICS IN SUPPORT OF REVIEW OF THE APPLICATION TO ALLOW USE OF LEAD TEST ASSEMBLIES FOR ACCIDENT-TOLERANT FUEL (EPID L-2022-LLA-0097) DATED NOVEMBER 8, 2022

**DISTRIBUTION:**

PUBLIC	KBucholtz, NRR
PM File Copy	HWagage, NRR
RidsACRS_MailCTR Resource	NKaripineni, NRR
RidsNrrDssSfnb Resource	JWhitman, NRR
RidsNrrDssSnsb Resource	KWood, NRR
RidsNrrDssStsb Resource	CPeabody, NRR
RidsNrrDraApob Resource	JWilson, NRR
RidsNrrDraArcb Resource	DGarmon, NRR
RidsNrrDssScpb Resource	PSaverot, NMSS
RidsNrrDorlLpl2-1 Resource	DPalmrose, NMSS
RidsNrrLAKGoldstein Resource	RTammara, NMSS
RidsNrrPMVogtle Resource	BGlowacki, NMSS
RidsRgn2MailCenter Resource	TMorrissey, RII
	ABlamey, RII
	DParent, RII

**ADAMS Accession No. ML22279B053**

OFFICE	NRR/DORL/LPL2-1/PM	NRR/DORL/LPL2-1/LA	NRR/DSS/SFNB/BC	NRR/DSS/SNSB/BC (A)
NAME	JLamb	KGoldstein (KEntz for)	SKrepel	DWoodyatt
DATE	10/6/2022	10/31/2022	10/24/2022	10/24/2022
OFFICE	NRR/DSS/SCP/BC	NRR/DSS/STSB/BC	NRR/DRA/APOB/BC	NRR/DRA/ARCB/BC
NAME	BWittick	VCusumano	AZoulis	KHsueh
DATE	10/24/2022	10/24/2022	10/24/2022	10/28/2022
OFFICE	NRR/DORL/LPL2-1/BC	NRR/DORL/LPL2-1/PM		
NAME	MMarkley	JLamb		
DATE	11/7/2022	11/8/2022		

**OFFICIAL RECORD COPY**