

**Regulatory Audit Summary for
License Amendment Request:
Reconciliation of Environmental Conditions Inputs to
Civil Structural Design Licensing Basis (LAR 19-019)
Southern Nuclear Operating Company
Vogtle Electric Generating Plant, Units 3 and 4
Docket Nos. 52-025 and 52-026**

A. Background

By letter dated December 13, 2019, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19347C046), and supplemented by letter dated March 20, 2020, (ADAMS Accession No. ML20080H345), Southern Nuclear Operating Company (SNC) requested that the U.S. Nuclear Regulatory Commission (NRC) amend Vogtle Electric Generating Plant (VEGP) Units 3 and 4, Combined License (COL) Numbers NPF-91 and NPF-92, respectively. The License Amendment Request (LAR) 19-019 requested to revise the normal thermal loads for the passive containment cooling system (PCS) tank; revise the accident thermal loads for the exterior walls below grade and basemat in the auxiliary building; and update the critical section tables for the auxiliary building basemat, concrete walls, and floors, the shield building roof, and the spent fuel pool west wall. The proposed changes would revise licensing basis documents, including the Updated Final Safety Analyses Report (UFSAR) Subsections 3H.3.3 and 3H.5.1.1, and Tables 3.8.5-3, 3H.5-1 through 3H.5-9, 3H.5-11, 3H.5-12, and 3H.5-15.

An audit plan was issued by the NRC staff by letter dated January 29, 2020 (ADAMS Accession No. ML20014D839). The scope of the audit was primarily focused on the review of calculations associated with the locations in UFSAR Table 3H.5-9 with no margin (ratio between required and provided is 1.0). These are the design limit for the tension ring (sheet 1 of 3), and the design limit for the air inlet (sheet 2b of 3).

B. Regulatory Audit Basis

This regulatory audit is based on the following:

- VEGP Units 3 and 4 UFSAR Tier 2, Chapter 3, Revision 8, June 14, 2019 (ADAMS Accession No. ML19171A073).

C. Audit Location and Dates

The regulatory audit was conducted via internet portal from January 29, 2020 to March 20, 2020.

D. Audit Team Members

The following staff members participated in the audit:

- Pravin Patel, Structural Engineer, Lead
- Bryce Lehman, Structural Engineer
- Donald Habib, Project Manager

E. Licensee Participants

The following personnel from SNC and Westinghouse participated in the audit:

- Yasmeen Arafeh, SNC
- Eddie Grant, SNC
- Mark Humphrey, SNC
- Kelli Roberts, SNC
- Zach Harper, Westinghouse
- Jess Phillips, Westinghouse
- Sergio Rodriguez, Westinghouse
- Oscar Vinals, Westinghouse
- Si Wu, Westinghouse

F. Documents Audited

Westinghouse and SNC made the documents listed in Table 1 available on the portal for NRC staff review. The documents included calculations related to the UFSAR Tables summarizing the design loads and reinforcement in critical structural sections.

Table 1: Documents Available for the Audit

Westinghouse Document No.	Title	Revision No.	Document Date
APP-1278-GEF-084	Design Accident Temperature Changes for Thermal Gradient in the SB Air Inlet and Tension Ring, Engineering & Design Coordination Report	0	7/9/2018
APP-1278-CCC-003	Enhanced Shield Building Roof – Air Inlet and Tension Ring Design	2	8/9/2014
APP-GW-GF-938	WEC Response to SNC RFI ND-VOGTLE34-RFI-1073 Regarding LAR-132, Request for Information	0	2/25/2020
APP-GW-GF-938, Attachment A	WEC Response to SNC RFI ND-VOGTLE34-RFI-1073 Regarding LAR-132, Request for Information, Attachment A	0	2/25/2020
APP-1200-S3C-106	Auxiliary Building Wall 1 Reinforcement Detail Evaluation	1	4/15/2016
APP-1200-S3C-106	Auxiliary Building Wall 1 Reinforcement Detail Evaluation	2	5/10/2018
APP-1278-GEF-084	Design Accident Temperature Changes for Thermal Gradient in the SB Air Inlet and Tension Ring, Engineering & Design Coordination Report	0	7/9/2018
APP-1278-GEF-090	Shield Building Conical Roof Structure. APP-1278-CCC-003 model updates, Engineering & Design Coordination Report	0	2/13/2019

Westinghouse Document No.	Title	Revision No.	Document Date
APP-1278-GEF-091	Shield Building Air Inlet / Tension Ring. APP-1278-CCC-003 model updates, Engineering & Design Coordination Report	0	2/16/2019
APP-1278-GEF-092	Shield Building PCS Tank Structure. APP-1278-CCC-007 model updates, Engineering & Design Coordination Report	0	2/13/2019
APP-1278-GEF-393	Design Accident Temperature Changes for Thermal Gradient in the SB Roof and PCS Tank, Engineering & Design Coordination Report	0	5/3/2018
APP-1278-GEF-412	Enhanced Shield Building Roof Design. Radial Beams Shear Verification, Engineering & Design Coordination Report	0	2/28/2020
APP-GW-S2R-013	Evaluation of Auxiliary Building Walls for Updated Thermal Input	1	2/28/2020
SV3-CR01-GNR-001034	Missed vert rebar for 1-line, 2 nd layer, EL. 117'-6" to 135'-3", AP1000 Nonconformance & Disposition Report	0	10/9/2018

G. Description of Audit Activities and Summary of Observations

The NRC staff reviewed the calculations listed in Section F via internet-based portal and prepared two sets of discussion topics related to the LAR and the documents reviewed on the portal. The discussion topics are available at the following ADAMS Accession Nos:

- Discussion Topics dated January 29, 2020 - ML20029F008 (Public) ML20029F007 (Nonpublic)
- Discussion Topics dated March 6, 2020 - ML20073H229 (Public)

SNC submitted additional information in response to these discussion topics (ADAMS Accession Nos. ML20073F819 and ML20073F882). The staff conducted audit teleconferences on January 30, 2020, and March 11, 2020, with SNC to discuss the staff topics and proprietary design information. At these teleconferences, SNC provided acceptable information regarding the staff discussion topics. SNC also made additional information available in a document on the portal for staff review.

Based on the review of the calculations made available in support of the proposed change and provided for the NRC staff review via the internet portal and SNC's supplemental submittal dated March 20, 2020 (ADAMS Accession No. ML20080H345), the NRC staff did not identify any outstanding issues or the need for the licensee to submit any additional information on the docket.

H. Exit Briefing

No outstanding issues remained at the end of the audit and no exit briefing was held.

I. Requests for Additional Information Resulting from Audit

No requests for additional information were issued as a result of this audit.

J. Open Items and Proposed Closure Paths

No open items were identified as a result of this audit.

K. Deviations from The Audit Plan

The duration of the audit was extended in order to allow the staff to ask additional questions.

L. References

1. NRR LIC-111, "Regulatory Audits," December 16, 2008 (ADAMS Accession No. ML082900195).
2. Vogtle Electric Generating Plant Units 3 and 4, Request for License Amendment: Reconciliation of Environmental Conditions Inputs to Civil Structural Design Licensing Basis (LAR-19-019), December 13, 2019 (ADAMS Accession No. ML19347C046).
3. Vogtle Electric Generating Plant, Units 3 and 4, Revised Request for License Amendment: Reconciliation of Environmental Conditions Inputs to Civil Structural Design Licensing Basis (LAR-19-019R1), March 20, 2020 (ADAMS Accession No. ML20080H345).
4. Vogtle Electric Generating Plant Units 3 and 4, Audit Plan for LAR 19-019, January 29, 2020 (ADAMS Accession No. ML20014D839).
5. Vogtle Electric Generating Plant Units 3 and 4, License Amendment Request 19-019, Staff Audit Discussion Topics (Public-Redacted), January 29, 2020 (ADAMS Accession No. ML20029F008).
6. Vogtle Electric Generating Plant Units 3 and 4, License Amendment Request 19-019, Staff Audit Discussion Topics, March 6, 2020 (ADAMS Accession No. ML20073H229).
7. Vogtle Electric Generating Plant Units 3 and 4, License Amendment Request 19-019, Staff Audit Discussion Topics (Nonpublic-Proprietary), January 29, 2020 (ADAMS Accession No. ML20029F007).
8. Email, "RE: Audit Discussion Topics for LAR 19-019 Follow Up," March 13, 2020 (ADAMS Accession No. ML20073F819).
9. Email and Attachments, "Audit Discussion Topics for LAR 19-019 Follow Up," Southern Nuclear Operating Company, March 13, 2020 (ADAMS Accession No. ML20073F882).