



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

May 26, 2020

MEMORANDUM TO: Victor Hall, Chief  
Vogtle Project Office  
Office of Nuclear Reactor Regulation

FROM: Cayetano Santos Jr., Project Manager /RA/  
Vogtle Project Office  
Office of Nuclear Reactor Regulation

SUBJECT: AUDIT REPORT FOR VOGTLE ELECTRIC GENERATING  
PLANT UNIT 3, REQUEST FOR LICENSE AMENDMENT AND  
EXEMPTION: UNIT 3 AUXILIARY BUILDING WALL 11  
SEISMIC GAP REQUIREMENTS (LAR 20-001)

By letter dated February 7, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML20038A939), Southern Nuclear Operating Company (the licensee) requested an amendment to Combined License (COL) Number NPF-91, for Vogtle Electric Generating Plant (VEGP) Unit 3.

The requested amendment proposes changes to COL Appendix C (and plant-specific Tier 1) and corresponding Tier 2\* and Tier 2 information in the Updated Final Safety Analyses Report (UFSAR). Specifically, the request proposes to modify the north-south minimum seismic gap requirements above grade between the nuclear island and the annex building west of Column Line I from elevation 141 feet through 154 feet to accommodate as-built localized nonconformances.

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The staff from the Structural, Civil, Geotech, Engineering Branch (ESEA) conducted an audit from March 10 to April 30, 2020, via the Westinghouse Electric Company electric reading room. The purpose of the audit was to gain a better understanding of the proposed changes and to review related documentation and non-docketed information in order to evaluate the acceptability of the proposed changes to the license.

Docket Nos.: 52-025

Enclosure:  
Regulatory Audit Report

cc: See next page

AUDIT REPORT FOR VOGTLE ELECTRIC GENERATING PLANT UNIT 3, REQUEST FOR  
LICENSE AMENDMENT AND EXEMPTION: UNIT 3 AUXILIARY BUILDING WALL 11  
SEISMIC GAP REQUIREMENTS (LAR 20-001) DATED: May 26, 2020

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**ADAMS Accession No.: ML20141L698**

**\*via email**

**NRR-106**

OFFICE	NRR/VPO/PM	NRR/VPO/LA	NRR/DEX/ESEA/BC	NRR/VPO/BC
NAME	CSantos	RButler	JColaccino*	VHall*
DATE	5/21/2020	5/21/2020	5/21/2020	5/ 21 /2020

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**Regulatory Audit Summary for  
License Amendment Request:  
Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements  
(LAR-20-001)  
Southern Nuclear Operating Company  
Vogtle Electric Generating Plant (VEGP) Unit 3  
Docket No. 52-025**

**A. Background**

By letter dated February 7, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20038A939), Southern Nuclear Operating Company (SNC or licensee) requested that the U.S. Nuclear Regulatory Commission (NRC) amend Vogtle Electric generating Plant (VEGP) Unit 3 Combined License (COL) Number NPF-91). The License Amendment Request (LAR) 20-001 requested to revise the north-south minimum seismic gap requirements above grade between the Nuclear Island and the Annex Building west of Column Line I from elevation 141 feet through elevation 154 feet in the licensing basis to accommodate construction of as-built localized nonconformances at VEGP Unit 3. The proposed changes would revise VEGP Unit 3 COL Appendix C (and VEGP Unit 3 plant-specific Tier 1) Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC), and corresponding Updated Final Safety Analysis (UFSAR) Tier 2\* and Tier 2 information applicable only to VEGP Unit 3.

The NRC issued an audit plan by letter dated March 20, 2020 (ADAMS Accession No. ML20063H206). The scope of the audit was primarily focused on the review of the documentation and calculations that provide the technical support for LAR 20-001.

**B. Regulatory Audit Basis**

This regulatory audit is based on the following:

- VEGP Units 3 and 4 UFSAR Tier 1, Revision 7, June 14, 2019 (ADAMS Accession No. ML19171A045).
- VEGP Units 3 and 4 UFSAR Tier 2, Revision 8, June 14, 2019 (ADAMS Accession No. ML19171A096).

**C. Audit Location and Dates**

The regulatory audit was conducted remotely using the Westinghouse Electric Company (Westinghouse) electronic reading room from March 10, 2020 to April 30, 2020.

**D. Audit Team members**

The following NRC staff members participated in the audit:

- Pravin Patel, Structural Engineer, Lead
- Amitava Ghosh, Geotechnical Engineer
- Cayetano Santos Jr., Project manager

E. Licensee Participants

The licensee contact is Yasmeen Arafeh.

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

- Yasmeen Arafeh, SNC
- Mark Humphrey, SNC
- Amy Chamberlain, SNC
- Amjid Qureshi, SNC
- Samuel Boakye, Westinghouse
- Anthony Schoedel, Westinghouse

F. Documents Audited

SNC and Westinghouse made the documents listed in Table 1 available on the portal for NRC staff to audit. The documents included the predicted and measured settlements at different locations of the Nuclear Island and the Annex Building including construction sequence with time lag of construction between these buildings, trend analysis of the total and differential settlement with time, and predicted Annex Building displacement during a safe-shutdown earthquake (SSE).

**Table 1 – Documents Available for the Audit**

<b>Number</b>	<b>Westinghouse Document No.</b>	<b>Title</b>	<b>Revision No.</b>	<b>Document Date</b>
1	SV3-1200-GNR-000014	Auxiliary Building Wall 11 Seismic Gap violation near Col Line J above Elev. 135'-3" (ESR 50019720)	0	06/12/2019
2	SV0-0500-XCR-800031	Interim Report No. 30. Settlement Monitoring of Power Block Structures for the Period from August 1, 2017 through December 31, 2018	0	04/29/2019
3	APP-1000-GEF-250	Appendix F: Vogtle Specific Soil Settlement	0	11/04/2019
4	APP-G9-XCR-002	Settlement Re-analysis of the AP1000 Buildings with Consideration to Construction Sequence Vogtle Units 3 and 4	5	04/07/2014
5	APP-G9-XCR-004	Settlement Analysis of the AP1000 Buildings with Consideration to Construction Sequence for Vogtle Unit 4	0	03/10/2015
6	NA	Settlement Monitoring Figures	NA	NA

#### G. Description of Audit Activities and Summary of Observations

The NRC staff reviewed the documents listed in Section F to verify the information and conclusions in LAR 20-001. In particular the staff focused its audit review on the first two documents in Table 1 for periodic settlement measurements conducted at selected points of the Nuclear Island and the Annex Building.

The staff conducted audit clarification teleconferences on April 6, April 8, and April 28, 2020 with the SNC and Westinghouse staff to better understand the reports, calculations, and data provided in the portal. The discussion topics included how the following factors support the specific gap identified in LAR 20-001:

- applied loads during various phases of construction
- the settlement monitoring data
- the predicted settlement values
- the stiffness of the turbine and annex buildings

At these teleconferences, SNC and Westinghouse provided clarification regarding the staff discussion topics. As a result of these discussions, SNC also made additional information available on the portal for staff review (i.e., item number 6 in Table 1). This additional information consisted of figures based on specific data extracted from the other documents. These figures were created to more clearly illustrate the information provided because some of the figures in the original documents were difficult to read and interpret.

Based on the review of the information made available in support of LAR 20-001 provided to the NRC staff to review via the internet portal, 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. Request for Additional Information Resulting from Audit

No request for additional information was issued resulting from the audit.

#### J. Open Items and Proposed Closure Paths

No open items were identified resulting from the audit.

#### K. Deviations from the Audit Plan

The audit was extended from March 27, 2020 to April 30, 2020 to allow staff additional time to examine the documents.

L. References

1. U. S. Nuclear Regulatory Commission. NRR Office Instruction LIC-111, Revision 1, "Regulatory Audits," October 31, 2019 (ADAMS Accession No. ML19226A274).
2. Southern Nuclear Operating Company. Request for License Amendment and Exemption: Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements (LAR-20-001), February 7, 2020 (ADAMS Accession No. ML20038A939).
3. U.S. Nuclear Regulatory Commission. Audit Plan for Vogtle Electric Generating Plant Unit 3, Request for License Amendment and Exemption: Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements (LAR 20-001), March 20, 2020 (ADAMS Accession No. ML20063H206).