

## Vogle PEmails

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**From:** Gleaves, Bill  
**Sent:** Wednesday, April 25, 2018 9:39 AM  
**To:** Vogle PEmails  
**Cc:** Gleaves, Bill  
**Subject:** Vogle LAR-17-043 Final Audit Plan  
**Attachments:** Vogle LAR-17-043 Final Audit Plan .pdf

Attached is the Final Audit Plan for Vogle Units 3 and 4 LAR-17-043, as transmitted to SNC today.

Billy  
William (Billy) Gleaves  
Senior Project Manager  
Licensing Branch 4  
Office OWFN 8H17  
US NRC, Office of New Reactors

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**Created By:** Bill.Gleaves@nrc.gov

**Recipients:**  
"Gleaves, Bill" <Bill.Gleaves@nrc.gov>  
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"Vogtle PEmails" <Vogtle.PEmails@nrc.gov>  
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AUDIT OF REPORTS AND CALCULATIONS  
IN SUPPORT OF REQUEST FOR LICENSE AMENDMENT AND EXEMPTION  
RELATED TO CONTAINMENT PRESSURE ANALYSIS CHANGE (LAR-17-043)

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant, Units 3 and 4  
Docket Nos. 52-025 and 52-026

Location: NRC Headquarters  
Two White Flint North  
11545 Rockville Pike  
Rockville, Maryland 20852-2738

The purpose of the audit is to review the reports and calculations needed by staff to verify the information and conclusions in the "Request for License Amendment and Exemption: Containment Pressure Analysis (LAR 17-043)" submitted by Southern Nuclear Operating Company (SNC) for the Vogtle Electric Generating Plant (Vogtle), Units 3 and 4, in LAR-17-043 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18029A243).

**A. Background:**

In LAR-17-043, SNC proposes to changes to the Updated Final Safety Analysis Report (UFSAR) in the form of an update to "WGOthic Application to the AP600 and AP1000" (WCAP-15846) in addition to departures from the incorporated plant-specific Design Control Document (DCD) Tier 1 and Tier 2 information. These changes serve to reconcile a number of detailed design changes and modeling methodology changes made in analyzing containment pressure.

The requested amendment proposes changes to: the containment analysis evaluation model in WGOthic, the containment heat sink inventory, the mass and energy release values for high energy line breaks inside containment, PCS water flow test criteria, the IOZ coating descriptions in the ITAAC, the calculated LOCA minimum backpressure, and various UFSAR changes for consistency. These changes involve material which is specifically called out in Table 3-1 of Enclosure 1 of the LAR.

**B. Regulatory Audit Basis**

10 CFR 52.98(f) requires NRC approval for any modification to, addition to, or deletion from the terms and conditions of a Combined License (COL). This activity involves a departure from COL Appendix C information and corresponding plant-specific Tier 1 information; therefore, this activity requires an amendment to the COL. Accordingly, NRC approval is required prior to making the plant-specific changes in this license amendment request.

10 CFR 52, Appendix D, Section VIII.B.5.a allows an applicant or licensee who references this appendix to depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2\* information, or the Technical Specifications, or requires a license amendment under paragraphs B.5.b or B.5.c of the section. The proposed change to UFSAR (Tier 2) design information involves changes to plant-specific Tier 1 (and corresponding changes to COL Appendix C) information, and thus requires NRC approval for the Tier 2 and involved Tier 1 departures.

10 CFR Part 52, Appendix D, Section VIII.A.4 and 10 CFR 52.63(b)(1) govern the issuance of exemptions from elements of the certified design information for AP1000 nuclear power plants. 10 CFR 52, Appendix D, VIII.A.4 requires a Tier 1 change shall not result in a significant decrease in the level of safety otherwise provided by the design.

10 CFR Part 50, Appendix A, General Design Criterion (GDC) 16—Containment design, requires in part that containment and associated systems shall be provided to establish an essentially leak-tight barrier to assure that the containment design conditions important to safety are not exceeded.

10 CFR Part 50, Appendix A, GDC 38—Containment heat removal, requires that a system to remove heat from the reactor containment shall be provided. The system safety function shall be to reduce rapidly, consistent with the functioning of other associated systems, the containment pressure and temperature following any loss-of-coolant accident and maintain them at acceptably low levels.

10 CFR Part 50, Appendix A, GDC 50—Containment design basis, requires in part that the containment, and the containment heat removal system shall be designed so that the containment structure and its internal compartments can accommodate, without exceeding the design leakage rate and with sufficient margin, the calculated pressure and temperature conditions resulting from any loss-of-coolant accident.

The NRC staff will follow NRO Office Instruction NRO-REG-108 (Revision 0), "Regulatory Audits," (ADAMS Accession No. ML081910260) in performing the audit of the reports and calculations cited below.

### **C. Regulatory Audit Scope**

The primary scope of this audit is the review of safety analyses referenced in LAR-17-043 and the associated WCAP-15846 to support the proposed changes to the UFSAR Tier 2 and COL Appendix C (and plant-specific Tier 1) in regards to the following items corresponding to the proposed changes in the LAR:

#### Section 3.1.1, Updates to WGOTHIC Evaluation Model (EM)

- (a) Passive Containment Heat Sinks
- (b) Control Volumes
- (c) Flow paths

#### Section 3.1.2, Updates to Mass and Energy (M&E) Releases

- (a) LOCA M&E Releases
- (b) MSLB M&E Releases

#### Section 3.1.3, Updates to WGOTHIC Methodology

#### Section 3.1.4, Updates to Containment Integrity Analyses

- (a) LOCA Peak Pressure
- (b) MSLB Peak Pressure

#### Section 3.1.5, Criterion Allowing for Analysis Showing that As-Tested Performance of the PCS is Greater than that Assumed in the Peak Pressure Analysis

Section 3.1.7, Updates to LOCA Minimum Containment Backpressure

**D. Information and Other Material Necessary for the Regulatory Audit**

The following documents are to be made available to the NRC staff either at a local office or in the electronic reading room:

1. APP-GW-GLR-096
2. Documents related to implementation of WGOthic film coverage model
3. Documents supporting the LOCA re-baseline evaluations for peak clad temperature

Other documents will be requested based on the progress of the staff's review.

Appropriate handling and protection of proprietary information shall be acknowledged and observed throughout the audit.

**E. Audit Team**

The following are the NRC audit team members:

Billy Gleaves, Senior Project Manager (NRC)  
Boyce Travis, Reactor Systems Engineer (NRC), Technical Reviewer  
Ryan Nolan, Reactor Systems Engineer (NRC), Technical Reviewer

The following are the licensee contacts:

Julie Keys, Licensing contact for Southern Company

**F. Logistics**

The NRC staff will address in the audit report the technical areas identified in the Regulatory Audit Scope of this audit plan along with presenting the audit outcomes.

The audit will be conducted in support of the schedule for completion of the LAR-17-043 review with entrance and exit dates to be determined.

Depending on the availability of the licensee's documentation, the audit is planned to be conducted beginning on April 30, 2018. The audit is intended to be conducted from the NRC Headquarters via the licensee's electronic reading room and via teleconference; however, the audit may be performed at a local office of the licensee, if the technical information is only retained in hard copy or there would be apparent benefit from face-to-face interactions between technical staff.

The NRC staff acknowledges the proprietary nature of the information requested. It will be handled appropriately throughout the audit. While the NRC staff will take notes that will be marked as proprietary and will not remove hard copies or copy electronic files.

**G. Special Requests**

If necessary, any circumstances related to the performance of the audit will be communicated to the licensee.

## **H. Deliverables**

At the completion of the audit, the NRC staff will prepare an audit report within 45 days that will be declared and entered as an official agency record in ADAMS. The audit outcome may be used to identify any additional information to be submitted for making regulatory decisions, and will assist the NRC staff in the issuance of RAIs (if necessary) in completing its review of LAR-17-043. With the anticipated exit teleconference in mid-August 2018, the audit report is expected to be completed by early September 2018.