

June 12, 2017

**U.S. NUCLEAR REGULATORY COMMISSION  
REGULATORY AUDIT OF  
LICENSE AMENDMENT REQUESTS LAR 17-010 AND LAR 17-10  
PIPE RUPTURE HAZARD AND FLOODING ANALYSIS**

**DOCKET NOS. 52-025 AND 52-026; 52-027 AND 52-028**

**AUDIT PLAN  
PLANT SYSTEMS BRANCH**

**LICENSEES:** Southern Nuclear Operating Company  
South Carolina Electric & Gas Company

**LICENSEE CONTACT:** Amy Chamberlain

**LOCATIONS:** Westinghouse Electric Company, LLC  
11333 Woodglen Drive, Suite 202  
Rockville Maryland 20852

U.S. Nuclear Regulatory Commission  
Electronic Reading Room  
One White Flint North  
11555 Rockville Pike  
Rockville, Maryland 20852

**I. BACKGROUND**

By letter dated March 31, 2017, Southern Nuclear Operating Company (SNC), submitted a request for a license amendment and exemption (LAR 17-010) to the combined licenses for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17090A570). By letter dated May 1, 2017, South Carolina Electric & Gas Company (SCE&G) the licensee for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 submitted license amendment request (LAR) 17-10. VCSNS LAR 17-10 is identical in technical content to that of the license amendment request submitted to the U.S. Nuclear Regulatory Commission (NRC) by SNC for VEGP Units 3 and 4.

The LAR involves a pipe rupture and flood analyses and is to be reviewed by the NRC. To facilitate the NRC staff's evaluation of the LAR information and to complete its safety review in a timely manner, NRC staff is planning an audit that includes:

- A regulatory audit that will commence on June 13, 2017, and be carried out at the NRC offices in Rockville, Maryland, by accessing an electronic reading room established by the applicant. During this audit the NRC staff will examine the calculations for the pipe rupture hazard and flooding analyses.

- Should the NRC staff need to re-examine documents after the audit to determine if a request for additional information (RAI) is needed, arrangements will be coordinated with the licensee as needed. The NRC staff does not anticipate the need to augment the audit report under these circumstances.

## **II. PURPOSE AND REGULATORY AUDIT BASES**

The purpose of this audit is for the staff to examine and evaluate non-docketed information:

1. To gain a better understanding of the configurations and room layouts at the VEGP and VCSNS AP1000 auxiliary building which may affect the flood level of each room in the building.
2. To verify and obtain clarifications on the information in LARs 17-010 and 17-10 and evaluate its effects on the flood analyses.
3. To identify any information needed on the docket to support the basis of a reasonable assurance finding.

Title 10 of the *Code of Federal Regulation* (10 CFR), Section 52.47(a)(2) requires that a standard design certification applicant provide a description and analysis of the structures, systems, and components of the facility, with emphasis upon performance requirements, the bases, with technical justification therefore, upon which these requirements have been established, and the evaluations required to show that safety functions will be accomplished.

The NRC staff must have sufficient information to ensure that the licensee has adequately considered flood protection for equipment being used for safe shutdown following flooding resulting from pipe breaks and pipe cracks.

## **III. REGULATORY AUDIT SCOPE**

The specific scope of this audit will include the following topics.

- Revised flood analyses in the auxiliary building
- Revised list of safe shutdown equipment in the auxiliary building
- Revised fire protection system and fire hazard analyses
- Bounding breaks in all the rooms and all the piping systems
- Impact assessment on the wall design resulting from the revised flood heights
- Impact assessment on the human factors resulting from the revised flood analyses
- Impact assessment on the plant-specific pipe rupture hazards analysis

#### **IV. DOCUMENTS/INFORMATION NECESSARY FOR THE AUDIT**

The licensee should make available documents pertaining to topic areas listed in Section III of this audit plan. The audit team expects to look at portions of many of the documents pertaining to these topic areas.

#### **V. TEAM ASSIGNMENTS**

Chang-Yang Li (NRO/SPSB, Audit Lead)  
Thinh Dinh (NRO/SPSB Fire Protection Engineer)  
Antonio Dias (NRO/SPSB Branch Chief)  
Yueh-Li (Renee) Li (NRO/MEB Sr. Mechanical Engineer)  
Pravin Patel (NRO/SEB Structure Engineer)  
Maurin Scheetz (NRO/HOIB Reactor Operations Engineer)  
Malcolm Patterson (NRO/SPRA Reliability and Risk Analyst)  
Clinton Ashley (NRO/SCVB Reactor Systems Engineer)  
Edward Stutzcage (NRO/RPAC Health Physicist)  
Ruth C. Reyes (NRO/LB4, Project Manager)

#### **VI. Logistics**

The audit is planned for the week of June 13, 2017, at the Westinghouse Electric Company (Westinghouse) office located in Rockville, Maryland and at the NRC headquarters office (electronic reading room).

#### **VII. SPECIAL REQUESTS**

The NRC staff requests that documents associated with the topic areas listed in Section IV be available to NRC auditors. The NRC staff requests Westinghouse's personnel to provide an overview of the documents prior to the staff's review and support the staff to conduct the audit. The NRC staff will schedule a conference call to discuss the details in these documents and their audit findings following its review.

#### **VIII. AUDIT ACTIVITIES AND DELIVERABLES**

The audit will be executed by viewing the documentation made available in the electronic reading room site established by the licensee. The NRC staff will view the documents from their NRC workstations.

The NRC staff acknowledges the proprietary nature of the information requested and will handle it appropriately throughout the audit. While the NRC staff will take notes, the NRC staff will not remove hard copies or electronic files from the audit site(s).

A non-public entrance meeting will be conducted the first day of the audit, June 13, 2017, and a non-public exit meeting will take place at the end of the audit to present audit results to the

licensee representatives. An audit report will be prepared to document the results of the audit. This report will be made publicly available in ADAMS.

The audit will assist the NRC staff in determining if RAIs will be necessary to complete the licensing review of LAR 17-010 and 17-10, "Pipe Rupture Hazard and Flooding Analyses."

If necessary, any circumstances related to the conductance of the audit will be communicated to the NRC project manager, Ruth C. Reyes at 301-415-3249 or [Ruth.Reyes@nrc.gov](mailto:Ruth.Reyes@nrc.gov).

## **IX. REFERENCES**

1. Southern Nuclear Operating Company, Vogtle Electric Generating Plant Units 3 and 4, Request for License Amendment and Exemption LAR 17-010, "Pipe Rupture Hazard and Flooding Analyses," dated March 31, 2017 (ADAMS Accession No. ML17090A570).
2. South Carolina Electric & Gas Company, Virgil C. Summer Units 2 and 3, Request for License Amendment and Exemption LAR 17-10, "Pipe Rupture Hazard and Flooding Analyses," dated May 1, 2017 (ADAMS Accession No. ML17121A317).
3. NRO-REG-108, "Regulatory Audits," dated April 2, 2009 (ADAMS Accession No. ML081910260).

AUDIT PLAN IN SUPPORT OF THE REVIEW OF LARS 17-010 AND 17-10: PIPE RUPTURE HAZARD AND FLOODING ANALYSES, FOR VOGTLE UNITS 3 AND 4 AND SUMMER UNITS 2 AND 3, RESPECTIVELY DATED June 13, 2017

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**ADAMS Accession No.: ML17156A426**

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