

**From:** Gleaves, Bill

**Sent:** Thursday, October 10, 2019 6:26 AM

**To:** Henderson, Ryan Donald <RDHENDER@SOUTHERNCO.COM>

**Cc:** Vogtle PEmails <Vogtle.PEmails@nrc.gov>

**Subject:** Audit Plan for LAR 19-014 "Tornado Missile Protection for Main Steam Vent Stacks and Wall 11

Ryan,

Attached is our CORRECTED final audit plan. With this email, I am also entering it into the ADAMS system as a new record. I am having the previous version removed from the ADAMS records as it wasn't the final version.

Billy

**From:** Henderson, Ryan Donald <[RDHENDER@SOUTHERNCO.COM](mailto:RDHENDER@SOUTHERNCO.COM)>

**Sent:** Wednesday, September 18, 2019 5:09 PM

**To:** Gleaves, Bill <[Bill.Gleaves@nrc.gov](mailto:Bill.Gleaves@nrc.gov)>

**Subject:** [External\_Sender] RE: RE: NRC Acceptance of LAR 19-014 "Tornado Missile Protection for Main Steam Vent Stacks and Wall 11

Billy,

Thank you for the update. By the way, we are willing to do an audit kickoff with the staff to help get them familiar with the calculations if you would like. Just wanted to throw the offer out there.

Thanks,

**Ryan Henderson**

Licensing

Office: 205-992-6426

Cell: 205-613-0342

**U.S. NUCLEAR REGULATORY COMMISSION  
REGULATORY AUDIT OF VOGTLE UNITS 3 AND 4  
LICENSE AMENDMENT REQUEST LAR 19-014  
TORNADO MISSILE PROTECTION FOR MAIN STEAM VENT STACKS AND WALL 11**

Docket Nos. 52-025 and 52-026

**AUDIT PLAN**

**LICENSEE:** Southern Nuclear Operating Company

**LICENSEE CONTACT:** Ryan Henderson

**LOCATION:** U.S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, Maryland 20852

**I. BACKGROUND**

By letter dated August 16, 2019, Southern Nuclear Operating Company (SNC) submitted license amendment request LAR 19-014, "Tornado Missile Protection for Main Steam Vent Stacks and Wall (LAR 19-014)." SNC is the combined license (COL) holder for the Vogtle Electric Generating Plant (VEGP), Units 3 and 4 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19228A240).

In LAR 19-014, SNC requests changes to the evaluation of the auxiliary building main steam safety valve (MSSV) vent stack openings and the auxiliary building Wall 11 openings for protection from tornado-generated missiles. The changes include the evaluation of horizontal missiles targeting the MSSV vent stacks, the evaluation of vertical missiles targeting the MSSV vent stack openings, and the evaluation of missiles targeting the auxiliary building Wall 11 openings. SNC states that the evaluations demonstrate that the tornado missiles will not prevent safe shutdown and will not result in an offsite release exceeding the limits defined in 10 CFR 50.34.

SNC indicates that the requested amendment requires changes to the licensing basis documents in the form of departures from the plant-specific Design Control Document (DCD) Tier 2 information (as incorporated into the Updated Final Safety Analysis Report (UFSAR) and detailed in Section 2). SNC states that no change is made to Tier 1, Tier 2\*, or COL information; however, SNC states this change involves a revision to plant-specific Tier 2 information that meets the criteria for a license amendment under 10 CFR Part 52, Appendix D, Section VIII.B.5.b(8) in that it was determined that the proposed change would result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses, and thus requires NRC approval for the Tier 2 departures.

To facilitate the NRC staff's evaluation of LAR 19-014 and to complete its safety review in a timely manner, the NRC staff is planning an audit that includes:

- Review of applicable documents provided by SNC in its electronic reading room (eRR) in support of the proposed changes described in the LAR. The NRC staff may conduct audit telephone conferences with SNC to discuss the specific documents.
- Determination of the need for any requests for additional information (RAIs) to modify or clarify the information provided in the LAR.

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

The purpose of this audit is for the staff to examine and evaluate non-docketed information supporting the LAR to verify the information and conclusions in the “Request for License Amendment: Tornado Missile Protection for Main Steam Vent Stacks and Wall (LAR 19-014).”

This regulatory audit is based on the following:

- VEGP Unit 3, Current Facility Combined License NPF-91, revised April 30, 2019, License Condition 2.D.(2)(a) (ADAMS Accession No. ML14100A106).
- VEGP Unit 4, Current Facility Combined License NPF-92, revised April 30, 2019, License Condition 2.D.(2)(a) (ADAMS Accession No. ML14100A135).
- VEGP Units 3 and 4 UFSAR Tier 1, Revision 6, June 15, 2018 (ADAMS Accession No. ML18179A250).
- VEGP Units 3 and 4 UFSAR Tier 2, Section 3.9.6, Revision 6, June 15, 2018 (ADAMS Accession No. ML18179A275).
- VEGP Unit 3 and 4 UFSAR Tier 2 Section 3.8, Revision 8, (ADAMS ML1971A096)
- 10 CFR Part 50, Appendix A, GDC 2, “Design Bases for Protection Against Natural Phenomena”
- 10 CFR Part 50, Appendix A, GDC 4, “Environmental and Dynamic Effects Design Bases”
- NRO Office Instruction NRO-REG-108, Rev 0, “Regulatory Audits”

## **III. REGULATORY AUDIT SCOPE**

The audit team will view the documentation that provides technical support for LAR 19-014 with respect to the capability of the MSSVs to continue to perform their safety functions in consideration of tornado missile effects. Also, the team will review new barrier design documents. In addition, the audit team might request to discuss with subject matter expert(s) the content of the supporting documentation.

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

SNC should make available documents pertaining to the review areas listed in Section III of this audit plan. The staff requests that the following documents be made available to the staff in the electronic reading room (eRR):

1. Evaluations and other supporting documentation that demonstrate the qualification of the MSSVs to be in accordance with ASME Standard QME-1-2007, “Qualification of Active Mechanical Equipment Used in Nuclear Power Plants,” as accepted in NRC Regulatory Guide 1.100 (Revision 3), “Seismic Qualification of Electrical and Active Mechanical

Equipment and Functional Qualification of Active Mechanical Equipment for Nuclear Power Plants,” and being capable of performing their safety functions in consideration of the potential effects of tornado missiles. One example would be the evaluation regarding whether any adjustments to the valve functional qualification of the MSSVs specified in ASME Standard QME-1-2007 are necessary based potential damage caused by tornado missiles.

2. Evaluation of the potential effect on setpoints (such as lift) and capacity from increased backpressure caused by damage from tornado missiles.
3. APP-1241-S3C-004, “Tornado Missile Impact Analysis of MSSV Vent Arm.”
4. Evaluations and other supporting documentation that demonstrate the following—
  - a. If all the main steam vents became crimped (damaged) such that the flow path through the vents were obstructed or blocked, an alternate steam discharge path with sufficient capacity to assure overpressure protection is maintained.
  - b. The use of the alternate steam discharge path will not result in unacceptable radiation discharge to the plant or environment.
  - c. Any system, structures, and components (SSCs) used to monitor and control the reactor are qualified for the environmental conditions that occur as a result of the steam released to the Main Steam Isolation Valve (MSIV) compartments via the alternate steam discharge path.
5. LTR-CRA-15-188, “Effect of MSSV Steam Release to MSIV Room Due to Tornado Missile for AP1000 plant.”
6. APP-FSAR-GEF-069, “Class 1 Changes to Tornado and Hurricane Missile Line-of-Sight Evaluation, Barrier Designs and Missile Criteria.
7. APP-2100-GEF-012, “Update to the Tornado Missile Line-of-Sight Evaluation Through the Turbine Building & Turbine Building 1st Bay.”

For the structural review, the staff will review, in the eRR, the following design of the structural shields and barriers to determine whether these can withstand the effect of environmental and natural phenomena:

8. APP-2100-CDC-001, “Turbine Building First Bay & Auxiliary Building Wall 11 Tornado Missile Barrier Conceptual Design Evaluation”
9. APP-2100-GEF-011, “Addition of Steel Tornado Missile Barrier in the Turbine Building 1st Bay, EL. 100’-0” “
10. APP-2131-SS-001, “Turbine Building First Bay Structural Steel Tornado Missile Barrier EL 100’-0” Section and Details”

Other documents may be requested during the staff’s review. The staff acknowledges and will observe appropriate handling and protection of proprietary information made available for the audit. The staff understands that the document APP-2100-CDC-001 titled as “conceptual design” is a final document that supports the licensing basis.

## **V. AUDIT TEAM**

The following are the NRC audit team members:

- Thomas Scarbrough, Senior Mechanical Engineer

- Billy Gleaves, Senior Project Manager
- Pravin Patel, Senior Structural Engineer
- Angelo Stubbs, Senior Reactor Systems Engineer
- Malcolm Patterson, Reliability and Risk Analyst

## **VI. AUDIT SCHEDULE**

Date: October 9, 2019 – November 15, 2019

Location: Westinghouse Electric Company, LLC  
 Washington Operations  
 11333 Woodglen Drive, Suite 203  
 Rockville, Maryland 20852 Telephone: 301-881-7040/7042

Additionally, the review of documents supporting LAR 19-014, and identified in Section IV of this audit plan, can be conducted at NRC Headquarters via the applicant's eRR.

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

## **VII. SPECIAL REQUESTS**

If necessary, the staff requests that subject matter expert(s) be made available to discuss the reviewed documentation.

Billy Gleaves, NRC Senior Project Manager, can be reached at 301-415-5848 or bill.gleaves@nrc.gov.

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

The NRC staff will perform the audit by reviewing the documentation made available in the eRR by SNC. The staff will review the documents from their NRC workstations. If necessary, the staff will conduct meetings or telephone conferences with SNC to discuss issues or questions regarding the documents.

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 eRR.

The NRC staff will conduct a non-public entrance telephone conference on the first day of the audit, on or around October 9, 2019, and a non-public telephone conference on November 15, 2019, at the end of the audit to present audit results.

The staff will prepare an audit report 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 additional RAIs will be necessary to complete the review of the LAR.

If necessary, any circumstances related to the conductance of the audit will be communicated to the NRC Senior Project Manager, Billy Gleaves, 301-415-5848.