



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

June 4, 2019

MEMORANDUM TO: Jennifer L. Dixon-Herrity, Chief  
Licensing Branch 2  
Division of Licensing, Siting,  
and Environmental Analysis  
Office of New Reactors

FROM: Paul Kallan, Senior Project Manager **/RA/**  
Licensing Branch 2  
Division of Licensing, Siting,  
and Environmental Analysis  
Office of New Reactors

SUBJECT: AUDIT PLAN FOR VOGTLE ELECTRIC GENERATING PLANT  
UNITS 3 AND 4, REQUEST FOR LICENSE AMENDMENT:  
PROTECTION AND SAFETY MONITORING SYSTEM  
SURVEILLANCE REQUIREMENT REDUCTION TECHNICAL  
SPECIFICATION REVISION (LAR 19-001)

By letter dated March 25, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML19084A308), Southern Nuclear Operating Company (the licensee) requested an amendment to Combined License (COL) Numbers NPF-91 and NPF-92, for Vogtle Electric Generating Plant (VEGP) Units 3 and 4.

The requested amendment proposes to change the Technical Specifications (TS) (COL Appendix A), as well as plant-specific Tier 2 information. Specifically, the requested amendment proposes to change TS Sections 1.0, 3.1, 3.2, 3.3, 3.9, and 5.5. The Surveillance Requirements (SRs) requirement manual Channel Checks, Channel Operational Tests (COTs), Actuation Logic Tests (ALTs) and Actuation Logic Output Tests (ALOTs) to be performed on protection and safety monitoring system (PMS) components are proposed to be removed from the TSs. The approach for satisfying the reactor trip and engineered safety feature actuation system response time test SRs for the PMS racks is proposed to be changed.

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The Instrumentation and Controls Branch A (NRR/EICA), the Technical Specifications Branch (NRR/STSB), the Reactor Assessment and Human Factors Branch (NRR/IRAB), the Quality Assurance Vendor Inspection Branch (NRR/QVIB), and PRA and Severe Accident Branch (NRO/SPRA) staff plan to conduct an audit to gain a better understanding of the proposed changes and to review related documentation and non-docketed information in order to evaluate conformance with the Standard Review Plan or technical guidance.

Docket Nos.: 52-025 and 52-026

Enclosure:  
Regulatory Audit Plan

cc: See next page

U.S. NUCLEAR REGULATORY COMMISSION AUDIT PLAN FOR VOGTLE ELECTRIC  
GENERATING PLANT UNITS 3 AND 4 REQUEST FOR LICENSE AMENDMENT:  
PROTECTION AND SAFETY MONITORING SYSTEM SURVEILLANCE REQUIREMENT  
REDUCTION TECHNICAL SPECIFICATION REVISION (LAR 19-001)

DATED: JUNE 4, 2019

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**ADAMS Accession No.: ML19154A557**

**NRO-008**

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DATE	6/4/19	6/4/19	6/4/19

**OFFICIAL RECORD COPY**

Vogtle Units 3 & 4 Mailing List  
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(Revised 05/08/2019)

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**AUDIT OF NON-DOCKETED DOCUMENTS IN SUPPORT OF A REQUEST FOR A LICENSE  
AMENDMENT RELATED TO PROTECTION AND SAFETY MONITORING SYSTEM  
SURVEILLANCE REQUIREMENT REDUCTION TECHNICAL SPECIFICATION REVISION**

**SOUTHERN NUCLEAR OPERATING COMPANY  
VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4  
DOCKET NOS. 52-025 AND 52-026**

The purpose of the audit is to review the non-docketed documents needed by staff to verify the information and conclusions in the "Request for License Amendment: Protection and Safety Monitoring System Surveillance Requirement Reduction Technical Specification Revision" (LAR) 19-001 submitted by Southern Nuclear Operating Company (SNC) for the Vogtle Electric Generating Plant (VEGP), Units 3 and 4 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19084A308).

**A. Background:**

In LAR 19-001, SNC requires changes to the Technical Specifications (TS) (Combined License Appendix A), as well as plant-specific Tier 2 information. Specifically, the requested amendment proposes to change TS Sections 1.0, 3.1, 3.2, 3.3, 3.9, and 5.5. The Surveillance Requirements (SRs) requirement manual Channel Checks, Channel Operational Tests (COTs), Actuation Logic Tests (ALTs) and Actuation Logic Output Tests (ALOTs) to be performed on protection and safety monitoring system (PMS) components are proposed to be removed from the TS. The approach for satisfying the reactor trip and engineered safety feature actuation system response time test SRs for the PMS racks is proposed to be changed.

**B. Regulatory Audit Basis**

This regulatory audit is based on the following:

- VEGP Unit 3, Current Facility Combined License NPF-91, Revised September 11, 2018, License Condition 2.D.(2)(a) (ADAMS Accession No. ML14100A106).
- VEGP Unit 4, Current Facility Combined License NPF-92, Revised September 11, 2018, License Condition 2.D.(2)(a) (ADAMS Accession No. ML14100A135).
- VEGP Units 3 and 4, Updated Final Safety Analysis Report, Revision 6 and Tier 1, Revision 5, August 11, 2017 (ADAMS Accession No. ML17172A218).

**C. Regulatory Audit Scope and Methodology**

The audit team will view the non-docketed documents that provide the technical support for the evaluation of LAR-19-001. In addition, the audit team may potentially request to meet with subject matter expert(s) to discuss (1) the capabilities of the PMS self-diagnostic testing features, (2) quality assurance of the development process of the PMS self-diagnostic testing features, and (3) verification and validation of the PMS self-diagnostic testing features.

Enclosure

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

Besides the documents already made available in the electronic reading room, the following additional documents should be made available to the staff either during the audit or in the electronic reading room:

- ABB Documents for AC160 diagnostic requirements, design, test procedure/analysis, and test record as used in Document "Attachment A-Documents Tracing Table for AC160 Diagnostics"
- APP-PMS-J0M-003, Revision 1, "AP1000 Protection and Safety Monitoring System – Technical Manual," Westinghouse Electric Company, LLC
- APP-PMS-GJP-806, Revision A, "ESF Safety Feature Actuation Channel Check," Westinghouse Electric Company, LLC
- APP-PMS-GJP-819, Revision 2, "Post Accident Monitoring Instrumentation Channel Check," Westinghouse Electric Company, LLC
- APP-PMS-GJP-873, Revision 1, "Division A Automatic ESF Signals – Reactor Trip Logic Test," Westinghouse Electric Company, LLC
- APP-PMS-AR-001, Revision 4, "AP1000 Protection and Safety Monitoring System Reliability Analysis," Westinghouse Electric Company, LLC
- RD10027, Revision 0, "Solid State Protection System Response Time Failure Analysis," Westinghouse Electric Company, LLC.
- IC-12-054, Revision 0, "NIS Time Response During EQ Testing," Westinghouse Electric Company, LLC
- GBRA095801, Revision E, "AC160 Product Specification for AP1000 PMS," Westinghouse Electric Germany, GmbH
- WNA-TR-03135-GEN, Revision 0, "Analysis of DO630 Relay Time Response Testing," Westinghouse Electric Company, LLC
- 3BDS 005 740R501, "S600 I/O Hardware Advant Controller 160 for Westinghouse Version 1.3 Reference Manual," ABB Process Automation Corporation
- SV3-PMS-T2R-012, Revision 1, "Vogtle Unit 3 AP1000 Protection and Safety Monitoring System"
- System Interfaces and Response Time - System Integration Test Report, Westinghouse Electric Company, LLC.
- WNA-CN-00162-WAPP, Revision 12, "AP1000 Protection and Safety Monitoring System Time Response Calculations," Westinghouse Electric Company
- APP-PMS-GJP-810, Revision 0, "Protection and Safety Monitoring System Division B 92 Day RT COT and ESF COT," Westinghouse Electric Company, LLC
- 3BSE009799D0060, Revision 0, "Description of Function HW CI627," ABB Process Automation Corporation
- 3BSC140054D0060, Revision 0, "Description of Function HW - BIM2-2 ASIC," ABB Process Automation Corporation
- APP-PMS-GHY-008, Revision 17, "AP1000 Protection and Safety Monitoring System Software Design Description for the Maintenance and Test Panel," Westinghouse Electric Company, LLC
- APP-DDS-J4-011, Revision 4, "AP1000 Data Display and Processing System Datalink Interface Specification," Westinghouse Electric Company, LLC
- MOD 97-7771, Revision 6, "Final Quality Assessment and Justification Report," Westinghouse Electric Company, LLC



- 3BSE052209D0002, Revision C, "AI687M Analog Input 16Ch. (Main-board)," ABB Process Automation Corporation
- 3BSE052212D0002, Revision D, "AI688M Analog Input 16Ch. (Main-board)," ABB Process Automation Corporation
- MOD 97-3184, "Qualification of Category A I&C Self supervision and test functions FMEA," Westinghouse Electric Company, LLC
- LTR-NIS-19-001, Revision 0, "AP1000 Plant NIS Response Time Evaluation," Westinghouse Electric Company, LLC
- GIC-SSP-FSD-19-003, Revision 0, "PMS Channel Check Category 2 (Calculated Value) Error Analysis," Westinghouse Electric Company, LLC
- SV0-IVV-JQR-021, Revision 4, "Vogtle AP1000 Protection and Safety Monitoring System Independent Verification and Validation Summary Report," Westinghouse Electric Company LLC

Other documents may be requested based on the staff's review of the above documents.

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:

Jennivine Rankin, Project Manager (NRC), Lead  
 Jack Zhao, Senior Electronics Engineer (NRC), Technical Reviewer  
 Dinesh Taneja, Senior Electronics Engineer (NRC), Technical Reviewer  
 William Roggenbrodt, Electronics Engineer (NRC), Technical Reviewer  
 Craig Harbuck, Senior Reactor Systems Engineer (NRC), Technical Reviewer  
 Greg Galletti, Senior Reactor Operations Engineer (NRC), Technical Reviewer  
 Molly Keefe-Forsyth, Human Factors Specialist (NRC), Technical Reviewer  
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 Malcolm Patterson, Reliability and Risk Analyst (NRC), Technical Reviewer

The following are the licensee contacts:

Stephanie Agee (SNC)  
 Amy Chamberlain (SNC)

## **F. Logistics**

Date: June 17, 2018 – June 25, 2019

Location: Westinghouse Electric Company, LLC  
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 11333 Woodglen Drive, Suite 203  
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Additionally, the review of documents supporting LAR-19-001, and identified in Section D of this audit plan, can be conducted at NRC Headquarters via the licensee's electronic reading room.

Location: NRC Headquarters  
Two White Flint North  
11545 Rockville Pike  
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#### **G. Special Requests**

If necessary, the staff requests that subject matter expert(s) be made available to discuss the (1) the capabilities of the PMS self-diagnostic testing features, (2) quality assurance of the development process of the PMS self-diagnostic testing features, and (3) verification and validation of the PMS self-diagnostic testing features.

Jennivine Rankin (NRC) is the lead for this audit. She can be reached at 301-415-1530 or [Jennivine.Rankin@nrc.gov](mailto:Jennivine.Rankin@nrc.gov).

#### **H. Deliverables**

At the completion of the audit, the 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 staff in the issuance of requests for additional information (if necessary) in completing its review of LAR-19-001.