UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

July 18, 2023

Jamie Coleman
Regulatory Affairs Director
Southern Nuclear Operating Company
7825 River Road, BIN 63031
Waynesboro, GA 30830

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT (VEGP), UNIT 4 – INITIAL TEST PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED INSPECTION REPORT 05200026/2023007

Dear Jamie Coleman:

On June 30, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at VEGP, Unit 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on July 11, 2023, with Mr. Glen Chick, VEGP Units 3 & 4 Executive Vice President, and other members of your staff.

The inspection examined a sample of construction activities conducted under your Combined License (COL) as it relates to safety and compliance with the Commission's rules and regulations and with the conditions of these documents. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, one finding of very low safety significance was identified. This finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or the significance or severity of the violation documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement; and the NRC Resident Inspector at Vogtle Electric Generating Plant (VEGP), Unit 3.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC Resident Inspector at Vogtle Electric Generating Plant (VEGP), Unit 3.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system ADAMS. ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact us.

Sincerely,

Bradley J Davis Signed by Davis, Bradley
on 07/18/23

Bradley J. Davis, Chief
Construction Inspection Branch 2
Division of Construction Oversight

Docket No.: 5200026
License No: NPF-92

Enclosure:
NRC Inspection Report (IR) 05200026/2023007
w/attachment: Supplemental Information

cc w/ encl: Distribution via LISTSERV

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNIT 4 – NRC INITIAL TEST PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED INSPECTION REPORTS 05200026/2023007 Dated July 18, 2023

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**U.S. NUCLEAR REGULATORY COMMISSION**
**Region II**

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|---|---|
| Docket Numbers: | 5200026 |
| License Numbers: | NPF-92 |
| Report Numbers: | 05200026/2023007 |
| Licensee: | Southern Nuclear Operating Company, Inc |
| Facility: | Vogtle Unit 4 Combined License (COL) |
| Location: | Waynesboro, GA |
| Inspection Dates: | April 1, 2023, through June 30, 2023 |
| Inspectors: | J. Eargle, Senior Resident Inspector - Testing, Division of Construction Oversight (DCO)<br>S. Egli, Senior Construction Inspector, DCO<br>J. England, Senior Construction Inspector, DCO<br>C. Even, Senior Construction Inspector, DCO<br>B. Griman, Construction Inspector, DCO<br>L. Jones, Senior Reactor Inspector, Division of Reactor Safety (DRS)<br>B. Kemker, Senior Resident Inspector, DCO<br>R. Mathis, Test Inspector, DCO<br>J. Parent, Resident Inspector, DCO<br>R. Patel, Senior Construction Inspector, DCO<br>R. Patterson, Senior Physical Security Inspector, DRS<br>M. Riley, Senior Project Engineer, Division of Reactor Project (DRP)<br>D. Strickland, Reactor Inspector, DRS<br>J. Bream, Senior Security Risk Analyst, Nuclear Security and Incident Response |
| Approved by: | Bradley J. Davis, Chief<br>Construction Inspection Branch 2<br>Division of Construction Oversight |

## SUMMARY OF FINDINGS

Inspection Report (IR) 05200026/2023007; April 1 – June 30, 2023; Vogtle Unit 4 COL, initial test program and operational programs integrated inspection report.

This report covers a three-month period of announced inspections of Inspections, Tests, Analysis, and Inspection Criteria (ITAAC), preoperational test program, startup test program, and operational program inspections by resident and regional inspectors. Two findings were determined to be of very low safety significance (Green) by the inspectors. The significance of most findings are indicated by their color (Green, White, Yellow, or Red), using Inspection Manual
Chapter (IMC) 2519, "Construction Significance Determination Process." Cross-cutting aspects are determined using IMC 0613, Appendix F, "Construction Cross-Cutting Areas and Aspects." All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy and the temporary enforcement guidance outlined in enforcement guidance memorandum 11-006. The NRC's program for overseeing the safe construction of commercial nuclear power reactors is described in IMC 2506, "Construction Reactor Oversight Process General Guidance and Basis Document."

### A. NRC-Identified and Self Revealed Findings

NRC inspectors identified a non-cited violation (NCV) of 10 CFR 73.55(b)(4) for the licensee's failure to adequately analyze and identify site-specific conditions, including target sets, that may affect the specific measures needed to implement the requirements of Title 10 of the Code of Federal Regulations (10 CFR) 73.55 and account for these conditions in the design of the physical security protection program. Specifically, the licensee failed to analyze target set locations as required by site procedures. The licensee documented the issue in its corrective action program (CAP) as 50177317.

The inspectors determined the performance deficiency was more than minor because it was associated with the Contingency Response attribute of the Safeguards Programs cornerstone and adversely affected the cornerstone objective to provide assurance that the licensee's security programs use a defense-in-depth approach and can protect against the design basis threat of radiological sabotage from internal and external threats. Specifically, the licensee's target sets did not account for a specific action in an alternate location. The inspectors assessed the significance of the finding using IMC 2519 "Construction Oversite Process" Appendix A, Section 4, Step 1, and determined that finding was related to the development and implementation of a security program and should be screened against the appropriate Baseline Security SDP in IMC 0609. Per IMC 0609, Appendix E, Part I, "Baseline Security SDP for Power Reactors" the issue was determined to be Green. The inspectors determined the finding had a cross-cutting aspect of H.7, Documentation, in the area of Human Performance. (2P02)

### B. Licensee-Identified Violations

None

## REPORT DETAILS

### Summary of Plant Construction Status

During this report period for Unit 4, the licensee completed various activities to satisfy aspects of the Vogtle Unit 4 initial test program. The licensee completed hot functional testing activities which included testing the reactor coolant system (RCS), residual heat removal system, passive core cooling system (PXS), passive containment cooling water storage tank, and inspection of reactor internals.

The licensee performed preoperational and component tests of various structures, systems, and components and their control systems, e.g., protection and safety monitoring system (PMS) and PLS. Class 1E direct current and uninterruptible power supply system and electrical distribution system testing was performed to verify the functional capability of those systems to support electrical loads during normal and off-normal conditions. Preoperational testing of safety-related valves was performed for the RCS and PXS, and containment system isolation valves.

### 1. CONSTRUCTION REACTOR SAFETY

**Cornerstones: Design/Engineering, Procurement/Fabrication, Construction/Installation, Inspection/Testing**

IMC 2503, Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) - Related Work Inspections

1A01 (Unit 4) ITAAC Number 2.1.02.08b (30) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.08b (30). The inspectors used the following NRC inspection procedure (IP)/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if the reactor coolant pump coastdown provided reactor coolant system flows greater than or equal to the design requirements. The test was observed to verify if it satisfied the applicable quality and technical requirements of the Updated Final Safety Analysis Report (UFSAR) and the ITAAC.

- 4-RCS-ITPP-506, TPC for Reactor Coolant Pump and Reactor Coolant Flow Precore Hot Functional, Version (Ver.) 2.0

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the reactor coolant pump coastdown provided reactor coolant system flows greater than or equal to the design requirements. The ITAAC technical report and listed references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-RCS-T2C-5063, Vogtle Unit 4 RCS Flow Coastdown Preoperational Testing Results Validation, Revision (Rev.) 0

b. Findings

No findings were identified.

1A02 (Unit 4) ITAAC Number 2.1.02.09a (41) / Family 14D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.09a (41). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if the calculated post-fuel load RCS flow rate is > or = 301,670 gallons per minute. The inspectors observed the test to verify if it met the quality and technical requirements of the UFSAR and ITAAC.

- 4-RCS-ITPP-506, Reactor Coolant Pump and Reactor Coolant Flow Precore Hot Functional, Ver. 2

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the RCS flow rate was greater than or equal to 301,670 gallons per minute with all four reactor coolant pumps running with the RCS at normal operating temperature and pressure. The ITAAC test results reports, and listed references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-RCS-ITR-800041, Unit 4 Recorded Results of RCS Flow Measurement Test: ITAAC 2.1.02.09a, Rev. 0

b. Findings

No findings were identified.

1A03 (Unit 4) ITAAC Number 2.1.02.11a.i (46) / Family 10C

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.11a.i (46). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.C-02.02-Construction Test Observation
- 65001.C-02.03-Construction Test Record Review

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if the automatic depressurization system stage 4 squib valves received a signal at the valve electrical leads that was capable of actuating the valve from the main control room. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Ver. 1.0

The inspectors used the appropriate portions of the IP to review the licensee's test results of the following completion package to verify if the automatic depressurization system stage 4 squib valves received a signal at the valve electrical leads that was capable of actuating the valve from the main control room. The ITAAC test results report and listed references were reviewed to verify that the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 2.1.02.11a.i-U4-CP, ITAAC Completion Package, Rev. 0

b. Findings

No findings were identified.

1A04 (Unit 4) ITAAC Number 2.1.02.11a.ii (47) / Family 10C

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.11a.ii (47). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.03-Test Results Review

The inspectors used the appropriate portions of the IP to review the following licensee's test results to verify if remotely operated valves performed their active safety function after receiving a signal from the PMS and opened within the required stoke times. The test package was reviewed to verify if the test results satisfied the

applicable quality and technical requirements of the UFSAR and the ITAAC.

- 2.1.02.11a.ii-U4-CP, ITAAC Completion Package, Rev. 0

b. Findings

No findings were identified.

1A05 (Unit 4) ITAAC Number 2.1.02.11b.i (48) / Family 10C

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.11b.i (48). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.C-02.02-Construction Test Observation
- 65001.C-02.03-Construction Test Record Review

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if the stage 4 automatic depressurization system squib valves received a signal at the valve electrical leads that was capable of actuating the squib valve. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Ver. 1.0

The inspector used the appropriate portions of the IP to review the following licensee's test results to verify if the stage 4 automatic depressurization system squib valves received a signal at the valve electrical leads that was capable of actuating the squib valve. The ITAAC testing completion package and listed references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 2.1.02.11b.i-U4-CP, ITAAC Completion Package, Rev. 0

b. Findings

No findings were identified.

1A06 (Unit 4) ITAAC Number 2.1.02.12a.iii (55) / Family 07D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.12a.iii (55). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used the appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if the stage 1 and stage 3 automatic depressurization valves changed position under preoperational test conditions. The test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PXS-ITPP-505, ADS Stage 1-3 MOV Dynamic Test, Ver. 1

The inspector used the appropriate portions of the IP to review the licensee's test results to verify if each stage 1-3 automatic depressurization valve changed position under preoperational test conditions. The ITAAC technical report and listed references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-PXS-ITR-800055, Unit 4 Recorded Results of ADS Stages 1-3 MOV Dynamic Test: ITAAC 2.1.02.12a.iii, Rev. 0

b. Findings

No findings were identified.

1A07 (Unit 4) ITAAC Number 2.1.03.07.i (78) / Family 05D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.03.07.i (78). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if the reactor internals withstood the effects of flow induced vibration during hot functional testing. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- WDI-PJF-1324185-EPP-001, Vogtle Unit 4 AP1000, Reactor Vessel Comprehensive Vibration Assessment Examination (CVAP) Program Plan, Rev. 01

b. Findings

No findings were identified.

1A08 (Unit 4) ITAAC Number 2.2.01.09 (110) / Family 10A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.09 (110). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.03-Test Results Review

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the containment isolation valves listed in Table 2.2.1-1 of Appendix C in the Vogtle Unit 4 Combined License could be operated from the main control room to perform their active safety function. The ITAAC technical report and selected references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-CNS-ITR-800110, Unit 4 Inspection Results of: ITAAC 2.2.01.09 (Item 9), Rev. 0
- SV4-CNS-ITR-801110, Unit 4 Inspection Results of: ITAAC 2.2.01.09 (Item 10.a), Rev. 0
- SV4-CNS-ITR-802110, Unit 4 Testing Results of Containment Isolation Valves: ITAAC 2.2.01.09 (Item 10.b), Rev. 0

b. Findings

No findings were identified.

1A09 (Unit 4) ITAAC Number 2.2.01.11a.iii (116) / Family 07D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.11a.iii (116). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.03-Test Results Review

The inspectors used the appropriate portions of the IP to review the following licensee's test results to verify if the containment isolation motor operated valves listed in Table 2.2.1-1 of Appendix C in the Vogtle Unit 4 Combined License changed position under preoperational test conditions. The ITAAC testing completion package and listed references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 2.2.01.11a.iii-U4-CP, Completion Package for Unit 4 ITAAC 2.2.01.11a.iii [Index Number 116], Rev. 0

b. Findings

No findings were identified.

1A10 (Unit 4) ITAAC Number 2.2.01.11a.iv (117) / Family 07D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.11a.iv (117). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Results Review

The inspectors used the appropriate portions of the IP to observe the licensee's performance of the following procedures used to verify if check valves 4-VWS-V062 (containment supply containment isolation check valve) and 4-VFS-V803A (containment vacuum relief containment isolation check valve) performed their safety-related function to change position. The tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-VFS-OTS-17-001, Containment Air Filtration System Vacuum Relief Valve Test and Check Valve Exercise, Ver. 2.0
- 4-VWS-OTS-10-002, Central Chilled Water System Check Valve Exercise, Ver. 1.1

The inspectors used the appropriate portions of the IP to review the licensee's test results that verified that the check valves listed in Table 2.2.1-1 changed position under preoperational test pressure, temperature and fluid flow conditions required to perform their active safety function. The ITAAC test results reports, and listed references were reviewed to verify that the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-CNS-ITR-800117, Unit 4 Recorded Results of SFS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV4-CNS-ITR-801117, Unit 4 Recorded Results of CCS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV4-CNS-ITR-802117, Unit 4 Recorded Results of CAS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV4-CNS-ITR-803117, Unit 4 Recorded Results of DWS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV4-CNS-ITR-804117, Unit 4 Recorded Results of FPS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0

- SV4-CNS-ITR-805117, Unit 4 Recorded Results of VFS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV4-CNS-ITR-806117, Unit 4 Recorded Results of VWS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0

b. Findings

No findings were identified.

1A11 (Unit 4) ITAAC Number 2.2.02.07b.i (138) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.02.07b.i (138). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if when water in the passive containment cooling water storage tank uncovered the standpipes at varying levels, the water delivered by one of the three parallel flow paths to the containment shell provided coverage measured between elevation 266' and the spring line that was equal to or greater than the required coverage for that corresponding water level. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PCS-ITPP-502, Passive Containment Cooling System PCCWST Preoperational Test Procedure, Ver. 1.0

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the water flow rate from the passive containment cooling water storage tank to the containment shell provided coverage measured at any elevation between elevation 266' and the spring line was equal to or greater than the required coverages. The ITAAC test results reports, and listed references were reviewed to verify that the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-PCS-ITR-804138, Unit 4 Passive Containment Cooling System Testing: ITAAC 2.2.02.07b.i, Item 7b.i, Rev. 0

b. Findings

No findings were identified.

1A12 (Unit 4) ITAAC Number 2.2.03.08b.01 (175) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08b.01 (175). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used the appropriate portions of the IP to observe the licensee's performance of the following procedure used to verify if the passive residual heat removal heat exchanger (PRHR HX) heat transfer rate with the design basis number of PRHR HX tubes plugged was = 8.46 x 107 Btu/hr with 250°F hot leg temperature and an initial in-containment refueling water storage tank temperature of 80°F. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PXS-ITPP-504, Passive Core Cooling System Hot Functional Test, Ver. 1

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the passive residual heat removal heat exchanger (PRHR HX) heat transfer rate with the design basis number of PRHR HX tubes plugged was = 8.46 x 107 Btu/hr with 250°F hot leg temperature and an initial in-containment refueling water storage tank temperature of 80°F. The ITAAC test results report and listed references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-PXS-T2R-011, Vogtle Unit 4 PXS Hot Functional Test Results Validation for PRHR Performance Summary Report, Rev. 0

b. Findings

No findings were identified.

1A13 (Unit 4) ITAAC Number 2.2.03.10 (206) / Family 10A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.10 (206). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.03-Test Results Review

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the remotely operated valves (other than squib valves) identified in Table 2.2.3-1 in Appendix C of the Vogtle Unit 4 Combined License performed the

active function identified in the table after a signal was input from the PMS, that the PXS isolation valves PXS-V014A/B, V015A/B, V108A/B opened within 20 seconds, and that the valves identified in Table 2.2.3-1 assumed the indicated loss of motive power position after a loss of motive power. The ITAAC test results reports, and listed references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-PXS-ITR-802206, Unit 4 Inspection Results of: ITAAC 2.2.03.10 (Item 11.b) NRC Index Number:206, Rev. 0
- SV4-PXS-ITR-802206, Unit 4 Recorded Results of Remotely Operated PXS Valves Response to Loss of Motive Power; ITAAC 2.2.03.10 (Item 12.b), Rev. 0

b. Findings

No findings were identified.

1A14 (Unit 4) ITAAC Number 2.2.03.11b.i (209) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.11b.i (209). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if each squib valve received a signal at the valve electrical leads that was capable of actuating the squib valve after a signal was input to the PMS. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Ver. 1.0

The inspectors used the appropriate portions of the IP to review the following licensee's test results to verify if the containment recirculation and in-containment refueling water storage tank injection squib valves received a signal at the valve electrical leads that was capable of actuating the squib valve after a signal was input to the PMS. The ITAAC testing results report and listed references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 2.2.03.11b.i-U4-CP, ITAAC Completion Package, Rev. 0

b. Findings

No findings were identified.

1A15 (Unit 4) ITAAC Number 2.2.05.07a.i (265) / Family 12D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.05.07a.i (265). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used the appropriate portions of the IP to observe the licensee's performance of the following procedure used to verify if the main control room pressure boundary was pressurized to greater than or equal to 1/8-in. water gauge with respect to the surrounding area, and that air leakage into the main control room was less than or equal to 10 cubic feet per minute. The test was observed to verify if the it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-VES-ITPP-501, Main Control Room Emergency Habitability System PreOperational Test Procedure, Ver. 1

b. Findings

No findings were identified.

1A16 (Unit 4) ITAAC Number 2.2.05.07c (270) / Family 12F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.05.07c (270). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee’s performance of the following procedure that collected data needed to verify if the main control room temperature and humidity would remain within limits for reliable human

b. Findings

No findings were identified.

1A17 (Unit 4) ITAAC Number 2.2.05.09c (877) / Family 08C

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.05.09c (877). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used the appropriate portions of the IP to observe the licensee's performance of the following procedure used to verify if the main control room load shed panels performed their active safety function after receiving a signal from the PMS. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PMS-OTS-18-001, Engineered Safeguards Actuation System 25-Month Actuation Device Test, 03/13/2023

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the main control room load shed panels performed their active safety function after receiving a signal from the PMS. The ITAAC technical report and listed references were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-VES-ITR-800877, Unit 4 Recorded Results of Main Control Room Load Shed: ITAAC 2.2.05.09c, NRC Index Number: 877, Rev. 0

b. Findings

No findings were identified.

1A18 (Unit 4) ITAAC Number 2.5.02.06a.i (529) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.06a.i (529). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to observe the licensee’s performance of the following procedure to verify if the reactor trip switchgear opened

after the test signal reached the specified limit. The tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR.

- 4-PMS-ITPP-504, PMS Reactor Trip Breakers, Ver. 1.1

The inspector used the appropriate portions of the IP to review the licensee's test results to verify if the reactor trip switchgear opened after the test signal reached the specified limit. The ITAAC completion package and listed references were reviewed to verify that the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 2.5.02.06a.i-U4-CP, ITAAC Completion Package, Rev. 0

b. Findings

No findings were identified.

1A19 (Unit 4) ITAAC Number 2.5.02.06a.ii (530) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.06a.ii (530). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if PMS output signals to the reactor trip switchgear are generated after the test signal reaches the specified limit for each automatic reactor trip functions. The tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR.

- 4-PMS-ITPP-504, PMS Reactor Trip Breakers, Ver. 1.1

The inspectors used the appropriate portions of the IP to observe the licensee's performance of the following component test procedures used to verify if appropriate PMS output signals were generated as the interlock conditions were changed. The tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCI-001, PMS Cabinets, Ver. 4.0
- B-GEN-ITPCI-001-011, PMS Cabinets - Cabinet Diagnostics, Ver. 2.1
- B-GEN-ITPCI-001-012, PMS Cabinets – Division Diagnostics, Ver. 1.0

b. Findings

No findings were identified.

1A20 (Unit 4) ITAAC Number 2.5.02.06c.i (532) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.06c.i (532). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures to verify if the reactor trip switchgear opened after manual reactor trip controls were actuated. The tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PMS-ITPP-504, PMS Reactor trip Breakers, Ver. 1.1
- 4-DDS-ITPP-520, Data Display and Processing System Remote Shutdown Room Preoperational Test Procedure, Ver. 1.0

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the reactor trip switchgear opened after manual reactor trip controls were actuated. The ITAAC test results report and listed references were reviewed to verify that the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-PMS-ITR-800532, Unit 4 PMS Provides Manual Initiation of Reactor Trip, ITAAC 2.5.02.06c.i, NRC Index Number: 532

b. Findings

No findings were identified.

1A21 (Unit 4) ITAAC Number 2.5.02.08a.ii (540) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.08a.ii (540). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.C-02.02-Construction Test Observation
- 65001.C-02.03-Construction Test Record Review

The inspectors used the appropriate portions of the IP to observe the licensee's performance of the following component test procedures used to verify if plant

parameters listed in Table 2.5.2-5 with a "Yes" in the "Alert" column were used to generate visual alerts that identify challenges to critical safety functions, and that the visual alerts actuated in accordance with their correct logic and values. The tests were observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCI-001, PMS Cabinets, Ver. 4.0
- B-GEN-ITPCI-001-011, PMS Cabinets - Cabinet Diagnostics, Ver. 2.1
- B-GEN-ITPCI-001-012, PMS Cabinets – Division Diagnostics, Ver. 1.0
- B-GEN-ITPCI-006, Main Control Room & Remote Shutdown Room, Ver. 4.0

The inspectors used appropriate portions of the IP to review the licensee's test results to verify if the plant parameters listed in Table 2.5.2-5 with a "Yes" in the "Alert" column were used to generate visual alerts that identify challenges to critical safety functions, and that the visual alerts actuated in accordance with their correct logic and values. The test results were reviewed to determine whether they satisfied the technical requirements of the UFSAR and ITAAC acceptance criteria.

- ITAAC 2.5.02.08a.ii-U4-CP, ITAAC Completion Package, Rev. 0

b. Findings

No findings were identified.

1A22 (Unit 4) ITAAC Number 2.5.02.08b.ii (543) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.08b.ii (543). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used the appropriate portions of the IP to observe the licensee’s performance of the following component test procedures used to verify if actuation of each transfer switch resulted in an alarm in the main control room and the remote shutdown workstation, the activation of operator control capability from the remote shutdown workstation, and the deactivation of operator control capability from the main control room for the associated safety-related division and non-safety related control capability. The tests were observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCI-001, PMS Cabinets, Version 4.0
- B-GEN-ITPCI-001-011, PMS Cabinets - Cabinet Diagnostics, Version 2.1

- B-GEN-ITPCI-001-012, PMS Cabinets – Division Diagnostics, Version 1.0
- B-GEN-ITPCI-006, Main Control Room & Remote Shutdown Room, Version 4.0

The inspectors used appropriate portions of the IP to review the licensee's test results to verify if the actuation of each transfer switch resulted in an alarm in the main control room and the remote shutdown workstation, the activation of operator control capability from the remote shutdown workstation, and the deactivation of operator control capability from the main control room for the associated safety-related division and non-safety related control capability. The test results were reviewed to determine whether they satisfied the technical requirements of the UFSAR and ITAAC acceptance criteria.

- SV4-PMS-ITR-800543, Unit 4 PMS Transfer of Control Capability from the MCR to the RSW: ITAAC 2.5.02.08b.ii [NRC Index Number: 543], Rev. 0

b. Findings

No findings were identified.

1A23 (Unit 4) ITAAC Number 2.5.02.09d (548) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.5.02.09d (548). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.C-02.02-Construction Test Observation
- 65001.C-02.03-Construction Test Record Review

The inspectors used the appropriate portions of the IP to observe the licensee's performance of the following component test procedures used to verify if appropriate PMS output signals were generated as the interlock conditions were changed. The tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCI-001, PMS Cabinets, Ver. 4.0
- B-GEN-ITPCI-001-011, PMS Cabinets - Cabinet Diagnostics, Ver. 2.1
- B-GEN-ITPCI-001-012, PMS Cabinets – Division Diagnostics, Ver. 1.0

The inspectors used appropriate portions of the IP to review the licensee's test results to verify if appropriate PMS output signals were generated as the interlock conditions were changed. The test results were reviewed to determine whether they satisfied the technical requirements of the UFSAR and ITAAC acceptance criteria.

- ITAAC 2.5.02.09d-U4-CP, ITAAC Completion Package, Rev. 0

b. Findings

No findings were identified.

1A24 (Unit 4) ITAAC Number 2.6.03.04c (603) / Family 08D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.6.03.04c (603). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used the appropriate portions of the IP to observe the Class 1E direct current and uninterruptable power supply system preoperational tests to verify if the:

1) Division B & C 72-hour battery terminal voltage was greater than or equal to 210 V after a period of no less than 72 hours with an equivalent load that equaled or exceeded the battery bank design duty cycle capacity,
2) Division B 72-hour battery charger provided an output current of at least 150 A with an output voltage in the range of 210 to 280 V, and
3) Division B & C 72-hour inverter supplied a line-to-line output voltage of 208 ± 2% V at a frequency of 60 ± 0.5% Hz.

The inspectors observed the test to verify if it met the technical and quality requirements of the UFSAR and ITAAC.

- 4-IDS-ITPP-506, IDSB Class 1E DC and UPS Preoperational Test, Ver. 1.0
- 4-IDS-ITPP-507, IDSC Class 1E DC and UPS Preoperational Test, Ver. 1.0
- B-GEN-ITPCE-009, Battery Charger Load Test, Ver. 3
- 4-GEN-ITPCE-011, Class 1E DC Inverter Capacity Test, Static Transfer Switch Test, And Regulating Transformer Capacity Test, Ver. 1

b. Findings

No findings were identified.

1A25 (Unit 4) ITAAC Number 2.6.03.04i (609) / Family 08D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.6.03.04i (609). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Results Revie

The inspectors used the appropriate portions of the IP to observe testing to verify if IDS batteries with the battery terminal voltage at 210Vdc could provide a voltage greater than or equal to each motor operated valves' minimum designed voltage while the valves were being stroked. The inspectors observed the test to verify if it met the technical and quality requirements of the UFSAR and the ITAAC.

- 4-IDS-ITPP-503, Class 1E DC and UPS System MOV Voltage Test, Ver. 1.0

The inspectors used the appropriate portions of the IP to review test results to verify if the IDS batteries with the battery terminal voltage at 210Vdc could provide a voltage greater than or equal to each motor operated valves' minimum designed voltage while the valves were being stroked. The inspectors reviewed the test results to verify if they met the technical and quality requirements of the UFSAR and ITAAC.

- ND-23-0447, Vogtle Electric Generating Plant (VEGP) Unit 4 Completion of ITAAC 2.6.03.04i [Index Number 609], 06/17/2023

b. Findings

No findings were identified.

1A26 (Unit 4) ITAAC Number 2.6.09.05a (644) / Family 17D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.6.09.05a (644). The inspectors used the following NRC IP to perform this inspection:

- IP 65001.17-Inspection of ITAAC-related structures, systems, and components

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures used to test if (a) security alarm annunciation and video assessment information is displayed concurrently in the central alarm station and secondary alarm station, and the video image recording with real time playback capability provides assessment of activities before and after alarm annunciation within the perimeter barrier, and (b) the intrusion detection system concurrently provides visual displays and audible annunciation of alarms in both the central and secondary alarm stations. Specifically, the tests were observed and test acceptance documents reviewed to verify if the tests met the technical and quality requirements of the Vogtle 4 security plan, and the ITAAC.

- 4-SES-ITAAC 644-FEP05- Intrusion Detection/Video Assessment FEP05- Revision 1.1
- 4-SES-ITAAC 644-FEP06- Intrusion Detection/Video Assessment FEP06- Revision 1.0
- 4-SES-ITAAC 644-FEP07- Intrusion Detection/Video Assessment FEP07- Revision 1.1

- 4-SES-ITAAC 644-FEP08- Intrusion Detection/Video Assessment FEP08-Revision 1.1
- 4-SES-ITAAC 644-FEP09- Intrusion Detection/Video Assessment FEP09-Revision 1.1
- 4-SES-ITAAC 644-FEP10- Intrusion Detection/Video Assessment FEP10-Revision 1.1
- 4-SES-ITAAC 644-FEP11- Intrusion Detection/Video Assessment FEP11-Revision 1.1

b. Findings

No findings were identified.

1A27 (Unit 4) ITAAC Number 2.6.09.06 (647) / Family 17A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.6.09.06 (647). The inspectors used the following NRC IP to perform this inspection:

- IP 65001.17-Inspection of ITAAC-related structures, systems, and components

The inspectors used appropriate portions of the IP to verify if the vehicle barrier system will protect against the design basis threat (DBT) vehicle bombs based upon the stand-off distance of the system. Specifically, the test procedures, acceptance testing documents, vehicle barrier system analysis, blast analysis and observations of the vehicle barrier system were reviewed to verify if they satisfied the applicable quality and technical requirements of the manufacturer's specifications, Vogtle 4 security plan, and the ITAAC.

b. Findings

No findings were identified.

1A28 (Unit 4) ITAAC Number 2.6.09.08 (650) / Family 17C

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.6.09.08 (650). The inspectors used the following NRC IP to perform this inspection:

- IP 65001.17-Inspection of ITAAC-related structures, systems, and components

The inspectors used appropriate portions of the IP to determine if the illumination in isolation zones and exterior areas within the protected area was .02-foot candles measured horizontally at ground level or, alternatively, sufficient to permit observation. Specifically, the inspectors reviewed acceptance testing documents and conducted walkdowns during testing of the Vogtle 4 lighting to verify if the tests satisfied the technical and quality requirements of the manufacturer's specifications, Vogtle 4 security plan, and the ITAAC.

b. Findings

No findings were identified.

1A29 (Unit 4) ITAAC Number 2.6.09.15a (655) / Family 17D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.6.09.15a (655). The inspectors used the following NRC IP to perform this inspection:

- 65001.17-Inspection of ITAAC-related structures, systems, and components

The inspectors reviewed appropriate portions of the IP to determine if (a) a report existed and concluded that security alarm devices, including transmission lines to annunciators, were tamper indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs, or when the system is on standby power) and that alarm annunciation indicated the type of alarm (e.g., intrusion alarms and emergency exit alarms) and location, and (b) a report existed and concluded that equipment was capable of recording each onsite security alarm annunciation, including the location of the alarm, false alarm, alarm check, and tamper indication; and the type of alarm, location, alarm circuit, date, and time. Specifically, the inspectors reviewed acceptance testing documents and conducted intrusion detection system testing to verify if the tests met the quality and technical requirements of the Vogtle 4 security plan, and the ITAAC.

- 4-SES-ITAAC 655-FEP-U4 FEP Alarm & Circuit Supervision Test- Revision 1
- 4-SES-ITAAC 655-4SCP02, 4SCP02 Alarm & Circuit Supervision Test-Revision 1
- 4-SES-ITAAC 655-4SCP03, 4SCP03 Alarm & Circuit Supervision Test-Revision 1
- 4-SES-ITAAC 655-4SCP04, 4SCP04 Alarm & Circuit Supervision Test-Revision 1
- 4-SES-ITAAC 655-4SCP05, 4SCP05 Alarm & Circuit Supervision Test-Revision 1
- 4-SES-ITAAC 655-4SCP06, 4SCP06 Alarm & Circuit Supervision Test-Revision 1

b. Findings

No findings were identified.

1A30 (Unit 4) ITAAC Number 3.3.00.10.i (815) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.10.i (815). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing
- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if the total water flow from the PCCWST leak chase collection system did not exceed 10 gal/hr. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PCS-ITPP-502, Passive Containment Cooling System PCCWST Preoperational Test Procedure, Ver. 1.0

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the total water flow from the PCCWST leak chase collection system did not exceed 10 gal/hr. The ITAAC test results report and listed references were reviewed to verify that the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV4-PCS-ITR-800815, Unit 4 Test Results for PCCWST Leakage into the Leak Chase Collection System: ITACC 3.3.00.10.i, Rev. 0

b. Findings

No findings were identified.

1A31 (Unit 4) ITAAC Number C.2.6.09.02 (659) / Family 17A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.02 (659). The inspectors used the following NRC IP to perform this inspection:

- 65001.17-Inspection of ITAAC-related structures, systems, and components

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following walkdown used to test if the physical barriers at the perimeter of the protected area are separated from any other barriers designated as a vital area barrier. Specifically, the walkdowns were observed and acceptance documents were reviewed to verify if the physical barriers at the perimeter of the protected area were separated from any other barriers designated as a vital area barrier and if they satisfied the manufacture's requirements, Vogtle 4 security plan, and the ITAAC.

- SV4-SES-ITR-800659 – Unit 4 659 Walkdown Inspection- ITAAC C.2.6.09.04-Revision 0

b. Findings

No findings were identified.

1A32 (Unit 4) ITAAC Number C.2.6.09.03a (660) / Family 17A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.03a (660). The inspectors used the following NRC IP to perform this inspection:

- 65001.17-Inspection of ITAAC-related structures, systems, and components

The inspectors used appropriate portions of the IP to review acceptance testing documents and determine if the isolation zones existed in outdoor areas adjacent to the physical barrier at the perimeter of the protected area that allowed 20 feet of observation and assessment of the activities of people on either side of the barrier. Specifically, walkdowns were performed and test acceptance documents were reviewed to verify if they satisfied the applicable quality and technical requirements of the manufacture's requirements, Vogtle 4 security plan, and the ITAAC.

- SV4-SES-ITR-800660, Unit 4 ITAAC 660 Walkdown Inspection: ITAAC C.2.6.09.03a, Rev 0

b. Findings

No findings were identified.

1A33 (Unit 4) ITAAC Number C.2.6.09.03b (661) / Family 17A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.03b (661). The inspectors used the following NRC IP to perform this inspection:

- 65001.17-Inspection of ITAAC-related structures, systems, and components

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures used to test if the isolation zones were equipped with intrusion detection equipment that provided the capability to detect and assess unauthorized persons. That the intrusion detection and assessment equipment at the protected area perimeter (a) detected penetration or attempted penetration of the protected area barrier and concurrently alarmed in the central alarm station and secondary alarm station and (b) remained operable from an uninterruptable power supply in the event of the loss of normal power. The tests were observed and the acceptance documents were reviewed to verify if the tests me the quality and technical requirements of the Vogtle 4 security plan, and the ITAAC.

- 4-SES-ITAAC 644-FEP05-Intrusion Detection/Video Assessment-FEP05-Revision 1.1
- 4-SES-ITAAC 644-FEP06-Intrusion Detection/Video Assessment-FEP06-Revision 1
- 4-SES-ITAAC 644-FEP07-Intrusion Detection/Video Assessment-FEP07-Revision 1.1
- 4-SES-ITAAC 644-FEP08-Intrusion Detection/Video Assessment-FEP08-Revision 1.1
- 4-SES-ITAAC 644-FEP09-Intrusion Detection/Video Assessment-FEP09-Revision 1.1
- 4-SES-ITAAC 644-FEP10-Intrusion Detection/Video Assessment-FEP10-Revision 1.1
- 4-SES-ITAAC 644-FEP11-Intrusion Detection/Video Assessment-FEP11-Revision 1.1

b. Findings

No findings were identified.

1A34 (Unit 4) ITAAC Number C.2.6.09.05a (664) / Family 17A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.05a (664). The inspectors used the following NRC IP to perform this inspection:

- 65001.17-Inspection of ITAAC-related structures, systems, and component

The inspectors used appropriate portions of the IP to determine if the access control points for the protected area: a) were configured to control personnel and vehicle access and b) included detection equipment that is capable of detecting firearms, incendiary devices, and explosives at the protected area personnel access point. The primary personnel access portal is common to both Unit 3 and 4 and was inspected with Unit 3, the results were documented in SV3-SES-ITR-800664. Specifically, the walkdowns were observed and test acceptance documents were reviewed to verify if they satisfied the applicable quality and technical requirements of the manufacture's requirements, Vogtle 4 security plan, and the ITAAC.

b. Findings

No findings were identified.

1A35 (Unit 4) ITAAC Number C.2.6.09.06 (666) / Family 17D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.06 (666). The inspectors used the following NRC IP to perform this inspection:

- 65001.17-Inspection of ITAAC-related structures, systems, and components

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures used to test if an access control system with numbered picture badges was installed for use by individuals who were authorized access to protected areas and vital areas without escort and that the access control system required a numbered picture badge with the right access level to enter the protected and vital areas. The tests were observed, and test acceptance documents were reviewed to verify if the tests met the technical and quality requirements of the Vogtle 4 security plan, and the ITAAC.

- SV4-SES-ITR-800666 – Unit 4 ITAAC 666 Access Authorization Test: ITAAC C.2.6.09.06 Rev 0
- SVB-SES-ITR-800666- Unit 3 ITAAC 666 ITAAC 666 Access Authorization Test C.6.09.06 Rev 0
- 4-SES-ITAAC 666, WO: SNC 1476070 Access Control System Test Version 1.0

b. Findings

No findings were identified.

1A36 (Unit 4) ITAAC Number C.2.6.09.09 (670) / Family 17D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.09 (670). The inspectors used the following NRC IP to perform this inspection:

- 65001.17-Inspection of ITAAC-related structures, systems, and components

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures used to test if emergency exits through the protected area perimeter were alarmed and secured by locking devices that allow prompt egress during an emergency and the emergency exits through the vital were locked, alarmed, and equipped with a crash bar to allow for emergency egress. Specifically, the tests were observed, and test acceptance documents were reviewed to verify if the tests met the quality and technical requirements of the Vogtle 4 security plan, and the ITAAC.

- SV4-SES-ITR-800670 – Unit 4 670 Access Authorization Test- ITAAC C.2.6.09.09.
- SV4-SES ITR-800670- Protected Area Perimeter and Vital Area Boundary Emergency Exit Test, Rev 0 (SRI)
- 4 SES-ITAAC-670-VA-INTRO 1, WO SNC 1476419 VA Emergency Exit Alarm Test. Version 1.0

b. Findings

No findings were identified.

IMC 2504, Construction Inspection Program – Inspection of Construction and Operational Programs

1P01 Pre-operational Testing

- 70702-02.04 - Test Witnessing

a. Inspection Scope

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures for performing data collection and measurements to monitor thermal expansion, dynamic effects, and vibration of piping and components during hot functional testing. The tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR.

- 4-GEN-ITPP-507, Thermal Expansion, Sections 4.1-4.3, Ver. 1

- 4-GEN-ITPP-509, Reactor Coolant System Dynamic Effects and Vibration Testing, Ver. 1
- 4-GEN-ITPP-511, Passive Core Cooling System Dynamic Effects and Vibration, Ver. 1
- 4-GEN-ITPP-512, Chemical and Volume Control System Dynamic Effects and Vibration Testing Ver. 1
- 4-GEN-ITPP-515, Steam Generator System Dynamic Effects and Vibration Testing Ver. 1

b. Findings

No findings were identified.

1P02 Pre-operational Testing

- 70702-02.05 - Test Results Review

a. Inspection Scope

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if proper calibration and operation of the following safety-related instrumentation, controls, actuation signals and interlocks was performed. The test packages were reviewed to verify if the test results satisfied the applicable technical and quality requirements of the UFSAR.

- SV4-RCS-T0W-1192329, Perform Component Test on SV4-RCS-JE-FT101B and FT102B, Rev. 0
- SV4-RCS-T0W-1192347, Perform Component Test on SV4-RCS-JE-LT160A & LT160B, Rev. 0
- SV4-RCS-T0W-1192358, Perform Component Testing on RCS WR Pressure Transmitters SV4-RCS-JE-PT140A per B-GENITPCI-019-363, Rev. 0
- SV4-RCS-T0W-1192380, Perform Component Testing on SV4-RCS-JE-ST284, Rev. 1
- SV4-RCS-T0W-1245189, Perform ITAAC PMS CIM SV4-RCS-PL-V150B Component Test, Rev. 0
- SV4-RCS-T0W-1261883, Perform component testing (sensor input to PMS), IA W B-GEN-ITPCI-019-407 for SV 4-RCS-JE-TE211B, Rev. 0
- SV4-RCS-T0W-1261769, Perform Component Testing on Pressurizer Pressure Transmitter SV4-RCS-JE-PT191D, Rev. 0
- SV 4-RCS-T0W-1261760, Perform sensor calibration for SV4-RCS-JE-LT195D using B-GEN-ITPCI-019-362, Rev. 0

b. Findings

No findings were identified.

1P03 Pre-operational Testing

- 70702-02.05 - Test Results Review

a. Inspection Scope

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if proper calibration and operation of the safety-related instrumentation, controls, actuation signals and interlocks was performed. The test packages were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR.

- SV4-PXS-T0W-1191422, Perform Component Testing on CMT A Upper NR Level Transmitters SV4-PXS-JE-LT011A and SV4- PXS-JE-LT011C, Rev. 0
- SV4-PXS-T0W-1191429, Perform Component testing on CMT B Lower NR Level transmitters 4-PXS-JE-LT014B and 4-PXS-JELT014D, Rev. 0
- SV4-PXS-T0W-1191434, Perform Component Testing on 4-PXS-LT047, Rev. 0

b. Findings

No findings were identified.

1P04 Pre-operational Testing

- 70702-02.04 - Test Witnessing
- 70702-02.05 - Test Results Review

a. Inspection Scope

The inspectors used appropriate portions of the IP to observe the licensee’s performance of the following procedure for demonstrating proper PCS system flow rates by draining the passive containment cooling system water storage tank for 72 hours. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR.

- 4-PCS-ITPP-502, Passive Containment Cooling System PCCWST Preoperational Test Procedure, Ver. 1.0

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if PCS system flow rates were consistent with the design basis analyses by draining the passive containment cooling system water storage tank for 72 hours. The test packages were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR.

- SV4-PCS-T0W-1199655, (ITAAC) 4-PCS-ITPP-502 PCCWST Preoperational Test, Rev. 0

b. Findings

No findings were identified.

1P05 Pre-operational Testing

- 70702-02.04 - Test Witnessing

a. Inspection Scope

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if the core makeup tank (CMT) cold leg balance line piping water temperature at various locations was recorded to verify if the water in the line was sufficiently heated to initiate recirculation flow through the CMTs. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR.

- 4-PXS-ITPP-504, Passive Core Cooling System Hot Functional Test, Sections 4.3, Ver. 1.0

b. Findings

No findings were identified.

## 2. SAFEGUARDS PROGRAMS

**Cornerstones: Security Programs for Construction Inspection and Operations**

IMC 2504, Construction Inspection Program – Inspection of Construction and Operational Programs

2P01 Security (operational)

a. Inspection Scope

The inspectors reviewed aspects of the security plan to verify if the licensee had developed and was prepared to implement security's access control program. The inspectors performed four samples of access control walkdowns to verify if the licensee had established measures to observe all vehicle search functions (OCA and PA) in a manner that enabled the initiation of a response, OCA vehicle access control points were equipped with video surveillance equipment that was monitored by an individual capable of initiating a response, the licensee had established access control portals (personnel, material, and vehicle) outside of, or concurrent with, the physical barrier system (OCA, PA, and VA) through which it controls access, and the licensee had established access control portals with locking devices, intrusion detection equipment, and surveillance equipment consistent with the intended function in accordance with the security plan.

The inspectors reviewed the licensee's security procedures, internal and perimeter intrusion detection systems, alarm stations and communications systems, vehicle and physical barriers, weapons maintenance program, and the evaluation program to determine whether the licensee had developed and was prepared to implement all aspects of security's equipment performance, testing, and maintenance program.

b. Findings

No findings were identified.

2P02 Security (operational)

a. Inspection Scope

The inspectors completed 7 samples through interviews and plant walkdowns to verify the licensee had developed and was prepared to implement all aspects of the security target set development and maintenance program.

b. Findings

Introduction

NRC inspectors identified a non-cited violation (NCV) of 10 CFR 73.55(b)(4) for the licensee's failure to adequately analyze and identify site-specific conditions, including target sets, that may affect the specific measures needed to implement the requirements of Title 10 of the Code of Federal Regulations (10 CFR) 73.55 and account for these conditions in the design of the physical security protection program. Specifically, the licensee failed to analyze target set locations as required by site procedures.

Description

Licensee procedures established the requirements, responsibilities, and administrative process for identification, analysis, revision, and maintenance of their target set program to meet the requirements in 10 CFR 73.55(b)(4) and 10 CFR 73.55(f).

In review of site procedures and calculations the inspectors identified an alternate location where a target set element could be compromised. The licensee concurred that the identified vulnerability existed.

The licensee documented the issue in its corrective action program (CAP) as 50177317.

Analysis

The inspectors determined the performance deficiency was more than minor because it was associated with the Contingency Response attribute of the Safeguards Programs cornerstone and adversely affected the cornerstone objective to provide assurance that the licensee's security programs use a defense-in-depth approach and can protect against the design basis threat of radiological sabotage from internal and external threats. Specifically, the licensee's target sets did not account for a specific action in an alternate location.

The inspectors assessed the significance of the finding using IMC 2519 "Construction Oversite Process" Appendix A, Section 4, Step 1, and determined that finding was related to the development and implementation of a security program and should be screened against the appropriate Baseline Security SDP in IMC 0609. Per IMC 0609, Appendix E, Part I, "Baseline Security SDP for Power Reactors" the issue was determined to be Green.

The inspectors determined the finding had a cross-cutting aspect of H.7, Documentation, in the area of Human Performance. (2P02)

Enforcement

10 CFR 73.55(b)(4) states that the licensee shall analyze and identify site-specific conditions, including target sets, that may affect the specific measures needed to implement the requirements of this section and shall account for these conditions in the design of the physical protection program.

Contrary to the above, the licensee failed to adequately implement the requirements of 10 CFR 73.55(b)(4). Specifically, on June 15, 2023, the licensee failed to analyze the effects of adversary actions in an alternate location effecting target sets.

The licensee entered this issue into the CAP as CR 50177317. Because this violation was not repetitive or willful, was of very low safety significance (Green), and was entered into the licensee's CAP, this violation is being treated as a NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200026/2023007-01, Failure to Analyze Target Set Locations).

## 3. OPERATIONAL READINESS

### Cornerstones: Operational Programs

IMC 2504, Construction Inspection Program – Inspection of Construction and Operational Programs

3P01 Motor-Operated Valves

a. Inspection Scope

The inspectors met with the Southern Nuclear Company program owner to verify that no changes were made to the Unit 4 program since the Unit 3 program inspection.

b. Findings

No findings were identified.

3P02 Preservice Testing

a. Inspection Scope

The inspectors met with the Southern Nuclear Company program owner to verify that no changes were made to the Unit 4 program since the Unit 3 program inspection.

b. Findings

No findings were identified.

3P03 Reactor Vessel Material Surveillance

- IP 50054 - Reactor Vessel Material Surveillance Program

a. Inspection Scope

The inspectors used appropriate portions of the IP to observe the license's performance of the following procedure to verify if the capsule brackets and vessel material were installed in accordance with design drawings. The inspectors observed these activities to verify if they met the technical and quality requirements of the reactor vessel material surveillance program.

- 4-RXS-ITPP-501, Pre- and Post-Hot Functional Test Inspection of Reactor Vessel Internals, Ver. 1.0

b. Findings

No findings were identified.

## 4. OTHER INSPECTION RESULTS

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On July 11, 2023, the inspectors presented the inspection results to Mr. G. Chick, Vogtle 3&4 Executive Vice President, and other licensee and contractor staff members. Proprietary information was reviewed during the inspection period but was not included in the inspection report.

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

Licensees and Contractor Personnel

S. Briggs, Testing and Turnover Director
A. Nix, ITP Director
E. Loehlein, Operations Director
J. Coleman, Regulatory Affairs Director
R. Nicoletto, NI Manager
S. Leighty, Regulatory Affairs Manager
W. Garrett, Licensing Manager
T. Takats, Electrical Manager
K. Roberts, ITAAC Manager
J. Olsen, NI Supervisor
D. Johnson, Maintenance Supervisor
G. Bauer, Electrical Supervisor

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

| Item Number | Type | Status | Description |
|---|---|---|---|
| 05200026/2023007-01 | NCV | Open/Closed | Failure to Analyze Target Set Locations |

### LIST OF DOCUMENTS REVIEWED

**Section 1**

**Section** 1A01

2.1.02.08b-U4-CP, ITAAC Completion Package, Rev. 0
SV4-RCS-T0W-1192131, Perform Pre-Op Test 4-RCS-ITPP-506, Rev. 0
4-RCS-ITPP-506, Reactor Coolant Pump and Reactor Coolant Flow Precore Hot Functional, Ver. 2.0-01
SV4-RCS-ITR-800030, Unit 4 Recorded Results of RCS Flow Coastdown Measurement Test: ITAAC 2.1.02.08b, Rev. 0
SV4-RCS-T2C-5063, Vogtle Unit 4 RCS Flow Coastdown Preoperational Testing Results Validation, Rev. 0
WO# 1192131

**Section** 1A02

4-GEN-ITPP-517, Pre-Core Hot Functional Testing (HFT) Sequence Procedure, Ver. 1.0
2.1.02.09a-U4-CP, ITAAC Completion Package, Rev. 0
4-RCS-ITPP-506, Reactor Coolant Pump and Reactor Coolant Flow Precore Hot Functional, Ver. 2.0-01
SV4-RCS-T0W-1192134, Perform RCP Cold and Hot Precore Hot Functional Test per procedure 4-RCS-ITPP-506, Rev. 0

SV4-RCS-T2R-5061, Vogtle Unit 4 Hot Functional Testing – Reactor Coolant System Flow Summary Report, Rev. 0
SV4-RCS-T2C-5061, Component, Hot Leg Elbow, and Cold Leg Bend Differential Pressure Flow Calculations from Vogtle Unit 4 Hot Functional Testing, Rev. 0
Technical Evaluation 60048951
WO# 1192134

**Section** 1A03

4-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Ver. 1.0
SV4-RCS-ITR-800046, ITAAC Technical Report, Unit 4 Testing Results of RCS Squib Valve MCR Controls: ITAAC 2.1.02.11a.i, NRC Index Number: 46, Rev. 0
SV4-PMS-T0W-1199997, (ITAAC) Perform preop testing per 4-PMSITPP- 522, Squib Valve Controller Test, Rev. 0
SV4-RCS-T0W-1192630, RCS-PL-V004A-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244663, RCS-PL-V004A-I2-A Component Test 2 & 2-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244674, RCS-PL-V004B-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244678, RCS-PL-V004B-I2-A Component Test 2 & 2-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244730, RCS-PL-V004C-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244738, RCS-PL-V004C-I2-A Component Test 2 & 2-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244767, RCS-PL-V004D-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244771, RCS-PL-V004D-I2-A Component Test 2 & 2-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
WO # 1199997, 1192630, 1244663, 1244674, 1244678, 1244730, 1244738, 1244767 & 1244771
CR 50173418

**Section** 1A04

2.1.02.11a.ii[Item 11.aii]-U0-PRF, APP/SV3/SV4-PMST2R-009, Rev. 0
SV4-RCS-ITR-800047, Unit 4 Recorded Results of Remotely Operated RCS Valves Controlled by PMS Listed in Table 2.1.2-1 Perform Active Safety Function: ITAAC 2.1.02.11a.ii Item 11.a) and 11.b) NRC Index Number: 47, Rev. 0
SV4-RCS-ITR-801047, Unit 4 Recorded Results of Remotely Operated RCS Valves Response to Loss of Motive Power: ITAAC 2.1.02.11a.ii Item 12.b) NRC Index Number: 47, Rev. 0
V4-RCS-ITR-802047, Unit 4 Reactor Coolant System Safety-Related Displays Verification: ITAAC 2.1.02.11a.ii Item 10 NRC Index Number: 47, Rev. 0

WO's:

1244621, Perform ITAAC PMS CIM SV4-RCS-PLV001A Component Test, Rev. 0
1244633, Perform ITAAC PMS CIM SV4-RCS-PLV001B Component Test, Rev. 0
1244640, Perform ITAAC PMS CIM SV4-RCS-PLV002A Component Test, Rev. 0
1244647, Perform ITAAC PMS CIM SV4-RCS-PLV002B Component Test, Rev. 0
1244648, Perform ITAAC PMS CIM SV4-RCS-PLV003A Component Test, Rev. 0

1244651, Perform ITAAC PMS CIM SV4-RCS-PLV003B Component Test, Rev. 0
1245023, Perform ITAAC PMS CIM SV4-RCS-PLV011A Component Test, Rev. 0
1245027, Perform ITAAC PMS CIM SV4-RCS-PLV011B Component Test, Rev. 0
1254028, Perform ITAAC PMS CIM SV4-RCS-PLV012A Component Test, Rev. 0
1245029, Perform ITAAC PMS CIM SV4-RCS-PLV012B Component Test, Rev. 0
1245033, Perform ITAAC PMS CIM SV4-RCS-PLV013A Component Test, Rev. 0
1245043, Perform ITAAC PMS CIM SV4-RCS-PLV013B Component Test, Rev. 0
1245120, Perform Plant PMS / PLS Interface Test for SV4-RCS-PL-V150A, Rev. 0
1245189, Perform ITAAC PMS CIM SV4-RCS-PLV150B Component Test, Rev. 0
1245204, Perform ITAAC PMS CIM SV4-RCS-PLV150C Component Test, Rev. 0
1245210, Perform ITAAC PMS CIM SV4-RCS-PLV150D Component Test, Rev. 0

**Section** 1A05

4-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Ver. 1.0
SV4-RCS-ITR-800048, Unit 4 Testing Results of RCS Squib Valve: ITAAC 2.1.02.11b.i, NRC Index Number: 48, Rev. 1
SV4-PMS-T0W-1199997, (ITAAC) Perform preop testing per 4-PMSITPP- 522, Squib Valve Controller Test, Rev. 0
SV4-RCS-T0W-1192630, RCS-PL-V004A-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244663, RCS-PL-V004A-I2-A Component Test 2 & 2-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244674, RCS-PL-V004B-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244678, RCS-PL-V004B-I2-A Component Test 2 & 2-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244730, RCS-PL-V004C-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244738, RCS-PL-V004C-I2-A Component Test 2 & 2-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244767, RCS-PL-V004D-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-RCS-T0W-1244771, RCS-PL-V004D-I2-A Component Test 2 & 2-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-PV98-Z0-001, Pyrotechnic Actuator for ASME Boiler and Pressure Vessel Code, Section III Class 1 Squib Valves (PV70), Rev. 3
SV4-PV98-GNR-000001, AP1000 Nonconformance & Disposition Report, Rev. 0
WO# 800048, 1192630, 1199997, 1244663, 1244674,1244678, 1244730, 1244738, 1244767, 124477
CR# 50174684
CR# 50173418

**Section** 1A06

ND-23-0325, ITAAC Closure Notification on Completion of 2.1.02.12a.iii [Index Number 55], 05/11/2023
WO 1191262

**Section** 1A07

Documents:

SV4-CVAP-T2R-100, Vogtle Unit 4 Pre-Hot Functional Test Visual Report of AP1000 Reactor Vessel Internals, Rev. 0
WDI-SSP-1339, Visual Examination of Reactor Vessel and Internals for Vogtle Units 3 & 4 AP1000 (CVAP), Rev. 1
Procedures:
4-RXS-ITPP-501, Pre- and Post-Hot Functional Test Inspection of Reactor Vessel Internals, Version 1.0

**Section** 1A08

SV4-CAS-T0W-1189903, Perform Plant PMS / PLS Interface Test for SV4-CAS-PL-V014, Rev. 0
SV4-CCS-T0W-1190298, Perform Plant PMS / PLS Interface Test for SV4-CCS-PL-V200, Rev. 0
SV4-CCS-T0W-1242824, Perform Plant PMS / PLS Interface Test for SV4-CCS-PL-V207, Rev. 0
SV4-CCS-T0W-1242827, Perform Plant PMS / PLS Interface Test for SV4-CCS-PL-V208, Rev. 0
SV4-SFS-T0W-1191775, Perform Plant PMS / PLS Interface Test for SV4-SFS-PL-V034, Rev. 0
SV4-SFS-T0W-1191780, Perform Plant PMS / PLS Interface Test for SV4-SFS-PL-V035, Rev. 0
SV4-SFS-T0W-1288906, RE-PERFORM Plant PMS / PLS Interface Test for SV4-SFS-PL-V038, Rev. 0
SV4-VFS-T0W-1247640, Perform ITAAC PMS / PLS Interface Test for SV4-VFS-PL-V003, Rev. 0
SV4-VFS-T0W-1247641, Perform (ITAAC) PMS / PLS Interface Test for SV4-VFS-PL-V004-S1, Rev. 0
SV4-VFS-T0W-1291587, Perform Plant PMS / PLS Interface Test for SV4-VFS-PL-V009-S1, Rev. 0
SV4-VFS-T0W-1247664, Perform (ITAAC) Plant PMS / PLS Interface Test for SV4-VFS-PL-V010-S1 Component Test, Rev. 0
SV4-VFS-T0W-1203251, Perform Plant PMS / PLS Interface Test for SV4-VFS-PL-V800A, Rev. 0
SV4-VFS-T0W-1291585, Perform Plant PMS / PLS Interface Test for SV4-VFS-PL-V800B, Rev. 0
SV4-VWS-T0W-1203858, Perform Plant PMS / PLS Interface Test for SV4-VWS-PL-V058, Rev. 0
SV4-VWS-T0W-1247670, Perform ITAAC PMS CIM SV4-VWSPL-V082 Component Test, Rev. 0
SV4-VWS-T0W-1247671, Perform ITAAC PMS/PLS testing SV4- VWS-PL-V086, Rev. 0
SV4-WLS-T0W-1247672, Perform Plant PMS / PLS Interface Test for SV4-WLS-PL-V055, Rev. 0
SV4-WLS-T0W-1247673, Perform Plant PMS / PLS Interface Test for SV4-WLS-PL-V057, Rev. 0
SV4-WLS-T0W-1206405, Perform ITAAC PMS CIM SV4-WLSPL- V067 Component Test and Interface Test, Rev. 0
SV4-WLS-T0W-1206411, Perform PLS / PMS Component Interface Test for SV4-WLS-PL-V068, Rev. 0
WORK ORDERS: 1189903, 1190298, 1242824, 1242827, 1191775, 1191780, 1288906, 1247640, 1247641, 1291587, 1247664, 1203251, 1291585, 1203858, 1247670, 1247671, 1247672, 1247673, 1206405, and 1206411

**Section** 1A09
4-CCS-ITPP-501, Component Cooling Water System Preoperational Test Procedure, Ver. 1.0
4-VFS-ITPP-501, “Containment Air Filtration System Preoperational Test Procedure, Ver. 1.0
4-SFS-ITPP-502, TPC for Spent Fuel Pool Cooling System 1.1 Flow Path Preoperational Test Procedure, Ver. 1.1
SV4-SFS-T0W-1191985, (ITAAC) Perform Preop Test 4-SFS- ITPP-502, Rev. 0
SV4-CNS-ITR-800116, Unit 4 Recorded Results of SFS Motor-Operated Valves Change Position as Indicated in Table 2.2.1-1: ITAAC 2.2.01.11a.iii NRC Index Number: 116, Rev. 0
SV4-CCS-T0W-1190017, (ITAAC) Perform Pre-Op Test on CCS System per 4-CCS-ITPP-501, Rev. 0
SV4-CNS-ITR-801116, Unit 4 Recorded Results of CCS Motor-Operated Valves Change Position as Indicated in Table 2.2.1-1: ITAAC 2.2.01.11a.iii NRC Index Number: 116, Rev. 0
SV4-VFS-T0W-1202924, (ITAAC) Perform VFS System Pre-Op Test 4-VFS-ITPP-501, Rev. 0
SV4-CNS-ITR-802116, Rev. 0, Unit 4 Recorded Results of VFS Motor-Operated Valves Change Position as Indicated in Table 2.2.1-1: ITAAC 2.2.01.11a.iii NRC Index Number: 116, Rev. 0
WO# 1191985, 1190017, & 1202924

**Section** 1A10
Procedures:
4-VFS-OTS-17-001, Containment Air Filtration System Vacuum Relief Valve Test and Check Valve Exercise, Version 2.0
4-VFS-ITPP-501, Containment Air Filtration System Preoperational Test Procedure, Version 1.0
4-VWS-OTS-10-002, Central Chilled Water System Check Valve Exercise, Version 1.1
4-VWS-ITPP-501, Central Chilled Water System Preoperational Test, Version 2.0

Work Orders:
1203429
1495142

**Section** 1A11
2.2.02.07b.i-U4-CP, ITAAC Completion Package, Rev. 0
4-PCS-ITPP-502, Passive Containment Cooling System PCCWST Preoperational Test Procedure, Ver. 1.0
SV4-PCS-T2R-001, Vogtle Unit 4 Passive Containment Cooling Water Storage Tank Draindown Test Results Report, Rev. 0
SV4-PCS-T2C-001, Vogtle Unit 4 Passive Containment Cooling Water Storage Tank Draindown Test Results Evaluation, Rev. 0
Temporary Procedure Change (TPC) 4-PCS-ITPP-502-V1.0-0.3
WO# 1199655
CR# 50177372, 50177279, 50177053, 50175476, 50175116, & 5017511

**Section** 1A12
2.2.03.08b.i-U4-CP, ITAAC Completion Package, Rev. 0
4-PXS-ITPP-504, Passive Core Cooling System Hot Functional Test, Ver. 1.0

SV4-PXS-T0W-1191261, (ITAAC) Perform Preop Test 4-PXSITPP-504, Rev. 0
SV4-PXS-T2R-011, Vogtle Unit 4 PXS Hot Functional Test Results Validation for PRHR Performance Summary Report, Rev. 0
SV4-PXS-ITR-800175, Unit 4 Recorded Results of PRHR Heat Exchanger Heat Transfer Rate Test: ITAAC 2.2.03.08b.01, Rev. 0
WO # 1191261

**Section** 1A13
2.2.03.10-U4-CP, ITAAC Completion Package, Rev. 0
SV4-PXS-T0W-1191835, Perform PLS Plant Interface testing of CMT A Outlet AOV SV4-PXS-PL-V014A, Rev. 0
B-GEN-ITPCI-039-F317, PXS-PL-V014A-S1 Component Test, Ver. 1.0
SV4-PXS-T0W-1293823, Retest ITAAC PMS CIM Component Test SV4-PXS-PL-V014B, Rev. 0
B-GEN-ITPCI-039-F318, PXS-PL-V014B-S1 Component Test, Ver. 1.0
SV4-PXS-T0W-1191768, Perform ITAAC PMS CIM Component Test SV4-PXS-PL-V015A-S1, Rev. 0
B-GEN-ITPCI-039-F319, PXS-PL-V015A-S1 Component Test, Ver. 1.0
SV4-PXS-T0W-1191776, Perform ITAAC PMS CIM Component Test SV4-PXS-PL-V015B-S1, Rev. 0
B-GEN-ITPCI-039-F320, PXS-PL-V015B-S1 Component Test, Ver. 1.0
SV4-PXS-T0W-1243347, Perform Plant PMS / PLS Interface Test for SV4-PXS-PL-V042, Rev. 0
B-GEN-ITPCI-039-F321, PXS-PL-V042 Component Test, Ver. 1.0
SV4-PXS-T0W-1243371, Perform ITAAC PMS CIM Component Test SV4-PXS-PL-V108A-S1, Rev. 0
B-GEN-ITPCI-039-F323, PXS-PL-V108A-S1 Component Test, Ver. 1.0
SV4-PXS-T0W-1243372, Perform ITAAC PMS CIM Component Test SV4-PXS-PL-V108B-S1, Rev. 0
B-GEN-ITPCI-039-F324, PXS-PL-V108B-S1 Component Test, Ver. 1.0
SV4-PXS-T0W-1243375, Perform ITAAC PMS CIM Component Test SV4-PXS-PL-V130A-S1, Rev. 0
B-GEN-ITPCI-039-F359, PXS-PL-V130A-S1 Component Test, Ver. 1.0
SV4-PXS-T0W-1243349, Perform ITAAC PMS CIM Component Test SV4-PXS-PL-V130B-S1, Rev. 0
B-GEN-ITPCI-039-F360, PXS-PL-V130B-S1 Component Test, Ver. 1.0
SV4-PXS-T0W-1191720, Perform PMS/PLS Plant Interface test for SV4-PXS-PL-V002A, Rev. 1
SV4-PXS-T0W-1243304, Perform Plant PMS / PLS Interface Test for SV4-PXS-PL-V002B, Rev. 1
SV4-PXS-T0W-1191738, Perform Initial Setup and Testing on AOV SV4-PXS-PL-V014A, Rev. 0
SV4-PXS-T0W-1191747, Perform Initial Setup and Testing on AOV SV4-PXS-PL-V014B, Rev. 0
SV4-PXS-T0W-1191757, Perform Initial Setup and Testing on AOV SV4-PXS-PL-V015A, Rev. 0
SV4-PXS-T0W-1191769, Perform Initial Setup and Testing on AOV SV4-PXS-PL-V015B, Rev. 0
SV4-PXS-T0W-1287982, PLANT INTERFACE RETESTING OF MODULE SV4-PLS-JD-DPU011 REFERENCE VALVE SV4-PXS-PL-V027A, Rev. 0

SV4-PXS-T0W-1287984, PLANT INTERFACE RETESTING OF MODULE SV4-PLS-JD-DPU012 REFERENCE VALVE SV4-PXS-PL-V027B, Rev. 0
SV4-PXS-T0W-1191832, Perform Initial Setup and Testing on AOV SV4-PXS-PL-V042, Rev. 0
SV4-PXS-T0W-1243370, Perform ITAAC PMS CIM Component Test SV4-PXS-PL-V101, Rev. 0
SV4-PXS-T0W-1191855, Perform Initial Setup and Testing on AOV SV4-PXS-PL-V108A, Rev. 0
SV4-PXS-T0W-1191858, Perform Initial Setup and Testing on AOV SV4-PXS-PL-V108B, Rev. 0
SV4-PXS-T0W-1243373, Perform Plant PMS / PLS Interface Test for SV4-PXS-PL-V117A, Rev. 0
SV4-PXS-T0W-1243374, Perform Plant PMS / PLS Interface Test for SV4-PXS-PL-V117B, Rev. 0
SV4-PXS-T0W-1192066, (ITAAC) PERFORM INITIAL SETUP AND TESTING ON AOV SV4-PXS-PL-V130A, Rev. 0
SV4-PXS-T0W-1192070, PERFORM INITIAL SETUP AND TESTING ON AOV SV4-PXS-PL-V130B, Rev. 0
B-GEN-ITPCM-017, Air Operated Valve Test, Ver. 8.0
WOs 1191835, 1293823, 1191768, 1191776, 1243347, 1243371, 1243372, 1243375, 1243349, 1191720, 1243304, 1191738, 1191747, 1191757, 1191769, 1287982, 1287984, 1191832, 1243370, 1191855, 1191858, 1243373, 1243374, 1192066, and 1192070

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SV4-PXS-ITR-800209, Unit 4 Testing Results of PXS Squib Valves: ITAAC 2.2.03.11b.i, Rev. 0
SV4-PXS-T0W-1191996, PXS-PL-V118A-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-PXS-T0W-1244543, PXS-PL-V118B-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-PXS-T0W-1244546, PXS-PL-V120A-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-PXS-T0W-1244551, PXS-PL-V120B-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-PXS-T0W-1244558, PXS-PL-V123A-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-PXS-T0W-1244572, PXS-PL-V123B-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-PXS-T0W-1244608, PXS-PL-V125A-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-PXS-T0W-1244616, PXS-PL-V125B-I1-A Component Test 2 & 1-F Component Test 2 (ITAAC) PMS CIM Squib, Rev. 0
SV4-PMS-T0W-1199997, (ITAAC) Perform preop testing per 4-PMS-ITPP-522, Squib Valve Controller Test, Rev. 0
4-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Ver. 1.0
CR# 50173418
WO# 1191996,1244543, 1244546, 1244551, 1244558, 1244572, 1244608, & 1244616

**Section** 1A15
4-VES-ITPP-501, Main Control Room Emergency Habitability System PreOperational Test Procedure, Ver. 1

**Section** 1A16
4-VES-ITPP-501, Main Control Room Emergency Habitability System PreOperational Test Procedure, Ver. 1

**Section** 1A17
ND-23-0392, ITAAC Closure Notification on Completion of ITAAC 2.2.05.09c [Index Number 877], 05/12/2023

**Section** 1A18
4-PMS-ITPP-504, PMS Reactor Trip Breakers, Ver. 1.1
SV4-PMS-ITR-800529, Unit 4 Test Results of PMS Automatic Reactor Trip Testing: ITAAC 2.5.02.06a.i, Rev. 0
SV4-PMS-T0W-1200000, (ITAAC) Perform Pre-op Test per 4-PMS-ITPP-504 on Rx Trip Breakers, Rev. 0

**Section** 1A19
4-PMS-ITPP-504, PMS Reactor Trip Breakers, Ver. 1.1

**Section** 1A20
4-PMS-ITPP-504, PMS Reactor trip Breakers, Ver. 1.1
2.5.02.06c.i-U4-CP, ITAAC Completion Package, Rev. 0
SV4-PMS-T0W-1200000, (ITAAC) Perform Pre-op Test per 4- PMS-ITPP-504 on Rx Trip Breakers, Rev. 0
SV4-DDS-T0W-1171960, (ITAAC) Perform Preop testing per 4- DDS-ITPP-520 for 4-DDS-JD-MISX01 and DDS-JD-MISX0, Rev. 0
4-DDS-ITPP-520, Data Display and Processing System Remote Shutdown Room Preoperational Test Procedure, Ver. 1.0
WO# 1200000, 1171960
CR# 50137322, 50175095, 50175093

**Section** 1A21
Miscellaneous
ND-23-0301, “Southern Nuclear Operating Company Vogtle Electric Generating Plant Unit 4 ITAAC Closure Notification on Completion of ITAAC 2.5.02.08a.ii [Index Number 540],” April 13, 2023
SV4-PMS Cabinet Diagnostic Testing-001, “ITAAC Technical Report Unit 4 PMS Cabinet Diagnostic Testing for Multiple ITAACs: ITAAC 2.1.02.11a.ii [NRC Index No. 47], ITAAC 2.5.02.06a.ii [NRC Index No. 530], ITAAC 2.5.02.08a.ii [NRC Index No. 540], ITAAC 2.5.02.08b.ii [NRC Index No. 543], ITAAC 2.5.02.09d [NRC Index No. 548], ITAAC 2.5.04.02.i [NRC Index No. 557], Revision 0
SV4-PMS Cabinet Software Loading-001, “ITAAC Technical Report Unit 4 Software Loading for PMS Cabinets for Multiple ITAACs: ITAAC 2.1.02.11a.ii [NRC Index No. 47], ITAAC 2.5.02.06a.ii [NRC Index No. 530], ITAAC 2.5.02.08a.ii [NRC Index No. 540], ITAAC 2.5.02.08b.ii [NRC Index No. 543], ITAAC 2.5.02.09d [NRC Index No. 548], ITAAC 2.5.04.02.i [NRC Index No. 557], Revision 0

APP-PMS-T2R-010, AP1000 Protection and Safety Monitoring System Qualified Data Processing System Channel Integration Test Report, Dated October 2017
APP-PMS-T5-001, AP1000 Protection and Safety Monitoring System Test Plan, Rev. 5

Procedures

APP-PMS-T1P-010, AP1000 Protection and Safety Monitoring System Qualified Data Processing System Channel Integration Test Procedure, Rev. 4

Drawings

APP-PMS-J3-400, AP1000 Detailed Functional Diagram Intermediate Range Neutron Flux and SUR Monitoring, Rev. 6
APP-PMS-J3-413, AP1000 Detailed Functional Diagram Subcriticality CSF Calculation, Rev. 5
APP-PMS-J3-415, AP1000 Detailed Functional Diagram Passive Containment Cooling Water Flow and Visual Alert Enable Monitoring, Rev. 8
APP-PMS-J3-417, AP1000 Detailed Functional Diagram PRHR HX Outlet Temperature and Flow Monitoring, Rev. 8
APP-PMS-J3-423, AP1000 Detailed Functional Diagram Containment CSF Calculation, Rev. 8
APP-PMS-J3-424, AP1000 Detailed Functional Diagram PRHR Flow Path Valve Monitoring, Rev. 6

**Section** 1A22
Procedures:
B-GEN-ITPCI-001, PMS Cabinets, Version 4.0
B-GEN-ITPCI-001-011, PMS Cabinets - Cabinet Diagnostics, Version 2.1
B-GEN-ITPCI-001-012, PMS Cabinets – Division Diagnostics, Version 1.0
B-GEN-ITPCI-006, Main Control Room & Remote Shutdown Room, Version 4.0

Documents:
ND-23-0378, Southern Nuclear Operating Company, Vogtle Electric Generating Plant Unit 4, ITAAC Closure Notification on Completion of ITAAC 2.5.02.08b.ii [Index Number 543], Dated: May 8, 2023
Principal Closure Document Summary
SV4-PMS Cabinet Diagnostic Testing-001, Unit 4 PMS Cabinet Diagnostic Testing for Multiple ITAACs: ITAAC 2.1.02.011a.ii [NRC Index No. 47], ITAAC 2.5.02.06a.ii [NRC Index No. 530], ITAAC 2.5.02.08a.ii [NRC Index No. 540], ITAAC 2.5.02.08b.ii [NRC Index No. 543], ITAAC 2.5.02.09d [NRC Index No. 548], ITAAC 2.5.04.02.i [NRC Index No. 557], Rev. 0
SV4-PMS-ITR-800543, Unit 4 PMS Transfer of Control Capability from the MCR to the RSW: ITAAC 2.5.02.08b.ii [NRC Index Number: 543], Rev. 0

WOs:
1168612
1200056
1236104
1236124
1236136

**Section** 1A23
WCAP-16096 “Software Program Manual for Common Q Systems” Revision 4A
APP-PMS-T5-001 “AP1000 Protection and Safety Monitoring System Test Plan”
Vogtle U3 and U4 UFSAR Rev 11.2 Chapter 7
SV4-PMS-T1P-008 “AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Procedure”

SV4-PMS-T1P-009 “AP1000 Protection and Safety Monitoring System Integrated Logic Processor Component Logic Channel Integration Test Procedure”
SV4-PMS-T2R-008, Rev. 0, “Vogtle Unit 4 AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Report”
SV4-PMS-T2R-009, Rev. 0, “AP1000 Protection and Safety Monitoring System Integrated Logic Processor Component Logic Channel Integration Test Report”
SV4-PMS Cabinet Software Loading-001, Rev 0, “Unit 4 Software Loading for PMS Cabinets for Multiple ITAACs: ITAAC 2.1.02.11a.ii [NRC Index No. 47], ITAAC 2.5.02.06a.ii [NRC Index No. 530], ITAAC 2.5.02.08a.ii [NRC Index No. 540], ITAAC 2.5.02.08b.ii [NRC Index No. 543], ITAAC 2.5.02.09d [NRC Index No. 548], ITAAC 2.5.04.02.i [NRC Index No. 557]”
SV4-GW-GCW-740, “AP1000 Vogtle 4 PMS Software Installation - Software Release 9.0.0.1”
SV4-GW-GCW-848, “AP1000 Vogtle 4 PMS Software Installation - Software Release 9.0.0.4”
B-GEN-ITPCI-001-011, “PMS CABINETS - Cabinet Diagnostics,” Rev 2.1
SV4-PMS Cabinet Diagnostic Testing-001, “Unit 4 PMS Cabinet Diagnostic Testing for Multiple ITAACs: ITAAC 2.1.02.11a.ii [NRC Index No. 47], ITAAC 2.5.02.06a.ii [NRC Index No. 530], ITAAC 2.5.02.08a.ii [NRC Index No. 540], ITAAC 2.5.02.08b.ii [NRC Index No. 543], ITAAC 2.5.02.09d [NRC Index No. 548], ITAAC 2.5.04.02.i [NRC Index No. 557], Rev 0
SV4-PMS-T2R-050, “Vogtle AP1000 Protection and Safety Monitoring System Fuel Load Regression Test Report,” Rev 0
B-GEN-ITPCI-001, “PMS CABINETS,” Rev. 4
NEI 08-01, “Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52”
ITAAC 2.5.02.09d-U4-CP-Rev0, ITAAC Completion Package

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4-IDS-ITPP-507, IDSB Class 1E DC and UPS Preoperational Test, Ver. 1.0
4-IDS-ITPP-507, IDSC Class 1E DC and UPS Preoperational Test, Ver. 1.0
WO 1301119

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SV4-IDS-E0R-007, Vogtle Unit 4 IDS System ITAAC 2.6.03.04i MOV Voltage Test Analyses Report, Rev. 0
APP-IDS-E0C-004, IDS Power Cable Sizing and Voltage Drop Analysis, Rev. 6
APP-IDS-E0C-018, MOV Acceptance Voltage During Safety Related DC MOV Field Testing, Rev. 1

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SV4-SES-ITR-800644- Unit 4 Intrusion Detection/Video Assessment Testing: ITAAC 2.6.09.05a- Revision 0
WO:1473502
WO:1473528
WO:1474482
WO:1474487
WO:1474492
WO:1474498
WO:1474500
VEGP Physical Security Plan-R-18-VEGP-2

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SV4-SES-ITR-800647- Unit 4 ITAAC 647 Vehicle Barrier System Inspection: ITAAC 2.6.09.06 Revision 0

APP-XV01-ZOC-001- AP 1000 VBS Standoff Distances for a Range of Blast Scenarios Revision 0

SVO-SES-ZOC-8000000- Vogtle Site Security Vehicle Barrier System Analysis, Revision 1

ABS-Consulting Calculation ID 4212670-C-103- VBID Blast Effects Assessment of Security Assets, Revision 0

Thornton Tomasetti Calculation ID-SCAL-001-Kontek MBRE Blast Analysis, Revision 1

SVO-XV01-CC-800002, West Vehicle Barrier Ditch Plan and Profile- Revision 3

SVO-XV01-CC-800003, North Vehicle Barrier Ditch Plan and Profile Sheet 1 of 2- Revision 3

KONTEK, 8x12 50-AP MBRE Finish-Electrical-HVAC, Dwg. No. K17005, Revision A

KONTEK, 10'-0" X 10'-0" X 8'-0" B.B.R.E. (BRES #6 & #27), Document No.: AX1AQ06-20353, Version 2.0

Weidlinger Associates, Inc., Kontek BRE Modular Building Blast Analysis, Calculation Number: 2118-2006-SCAL-001, Revision 4

Thornton Tomasetti, Inc., Kontek MBRE Blast Analyses, Calculation Number: SCAL-001, Revision 1

Thornton Tomasetti, Inc., Vogtle BBRE Kontek Tower 40' Tower Design, Document: K18004_Exhibit_E, Issue: A

Thornton Tomasetti, Inc., BBRE Kontek Vogtle BBRE 40' Tower Structural Calculations, Document: K18004_Exhibit_F, Revision A

Thornton Tomasetti, Inc., Kontek BBRE and Tower- Blast Response, Document: Document: K18004_Exhibit_G, Revision 0

Westinghouse, BBRE Foundation Location Plan & Schedule, Dwg. No. SVO-SES-CC-800003, Revision 0

Westinghouse, Vogtle Site Security Vehicle Barrier System Analysis, Doc. No.SV0-SES-ZOR-800000, Revision 1

ABS Consulting Inc., VBIED Blast Effects Assessments of Security Assets Units 3 and 4, Calculation ID: 4212670-C-103, Revision 0

ABS Consulting Inc., Locations of Security Observation Posts, Security Rooms, CAS, SAS and BBREs, Dwg. No. 4212670-SK-103, Revision 0

WECTEC, Vehicle Barrier Main Ditch Plan and Profile, Dwg. No. SV0-869-XV-800001, Revision 4

WECTEC, North Vehicle Barrier Ditch Plan and Profile Sheet 1 of 2, Dwg. No. SV0-XV01-CC-800003, Revision 3

WECTEC, North Vehicle Barrier Ditch Plan and Profile Sheet 2 of 2, Dwg. No. SV0-XV01-CC-800004, Revision 4

WECTEC, West and North Vehicle Barrier Ditch Concrete Sections and Details, Dwg. No. SV0-XV01-CC-800005, Revision 2A

WECTEC, West and North Vehicle Barrier Ditch Retaining Wall Elevations, Sections and Details, Dwg. No. SV0-XV01-CC-800006, Revision 2

WECTEC, West and North Vehicle Barrier Ditch Bundled Pipe Array Drainage Structures, Dwg. No. SV0-XV01-CC-800007, Revision 2

WECTEC, West and North Vehicle Barrier Ditch Cross Sections, Sections and Details, Dwg. No. SV0-XV01-CC-800008, Revision 3

WECTEC, North Vehicle Barrier Ditch Plan, Sections and Detail, Dwg. No. SV0-XV01-CC-800009, Revision 1

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SV4-SES-ITR-800650- SES Isolation Zone and Protected Area Illumination: ITAAC 2.6.09.08 Revision 0
V-SSO-2021-04- ITAAC Test for Protected Area Lighting System- Revision 1
VEGP Physical Security Plan-R-18-VEGP-2

**Section** 1A29
SV4-SES-ITR-800655- Unit 4 Alarm & Circuit Supervision Testing: ITAAC 2.6.09.15a – Revision 1
SV4-SES-ITR-800644- Intrusion Detection/Video Assessment Testing: ITAAC 2.6.09.05a- Revision 0
SV4-SES-ITR-800670- Protected Area Perimeter and Vital Area Boundary Emergency Exit Testing- Revision 0
SV0-SES-JOX-800000-Vogtle Plant Security System Database – Revision 9
4-SES-ITAAC-655 FEP-WO: 147915- U4 FEP Alarm & Circuit Supervision Test- Version 1.0
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3.3.00.10.i-U4-CP, ITAAC Completion Package, Rev. 0
4-PCS-ITPP-502, Passive Containment Cooling System PCCWST Preoperational Test Procedure, Ver. 1.0
SV4-PCS-T0W-1199655, (ITAAC) 4-PCS-ITPP-502 PCCAWST Preoperational Test, Rev. 0
B-GEN-ITPA-011-F02, Component and Preoperational Temporary Procedure Change Prior to 103G, Ver 1.1 (For Section 4.9.2 of 4-PCS-ITPP-502)
WO# 1199655

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SVO-0000-X2-80012- Vogtle Electric Generating Plant Units 3&4 Permanent Buildings within Protected Area General Arrangement- Revision 6
SVO-0000-X2-80013- Vogtle Electric Generating Plant Units 3&4 Power block General Arrangement- Revision 9
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4-SES-ITAAC-660-Zone-WO: SNC 1476959-Isolation zone Coverage-Version 1.0
VEGP Physical Security Plan-R-18-VEGP-2

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SV4-SES-ITR-800661- Unit 4 ITAAC 661 Walkdown Inspection: ITAAC C.2.6.09.03b- Revision 0
SVO-SES-XF-800018 Vogtle Electric Generating Plant, Plant Security System (SES) Fence Cover Sheet- Revision 4
SVO-SES-E2T[Grid location], Vogtle Electric Generating Plant, Security System Site Grid Equipment Location Plan
SV4-SES-ITR-801661- Intrusion Detection/Video Assessment Testing: ITAAC C.2.6.09.03b- Revision 0
SV4-SES-ITR-802661-Uninterruptable Power Supply Testing- ITAAC C.2.6.09.03b- Revision 0
4-SES-ITAAC 661- UPS01-PA IDS/Assessment-UPS01- Version 1
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SV4-SES-ITR-800664 – Unit 4 ITAAC 664 Walkdown Inspection- ITAAC C.2.6.09.05a - Revision 0
SVO-SES-E2-K1004 - Security System Site Grid Equipment Location Plan- Rev 2
SVO-SES-E2-K1103 – Vogtle Electric Generating Plant Security System Site Grid Equipment Location Plan- Rev 5
SV3-SES-ITR-800664 - Unit 3 ITAAC 664 Walkdown Inspection ITAAC C.2.6.09.05a – Rev 1
SVO-SES-ZO-800012- Sliding and Wedge Gates at Vehicle Access Portals – Rev 1
SV4-SES-ITR-801664- Unit 4 Secondary Vehicle Access Portal Vehicle Barrier System Testing: ITAAC C.2.6.09.05a Rev 0
4-SES-FTI-703 WO: 1478927, SVAP Operational Test Version 1.0
VEGP Physical Security Plan-R-18-VEGP-2

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**Section** 1A36
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[2504 Documents]

**Section** 1P01
4-GEN-ITPP-507, Thermal Expansion, Ver. 1
4-GEN-ITPP-517, Pre-Core Hot Functional Testing (HFT) Sequence Procedure, Ver. 2
4-GEN-ITPP-509, Reactor Coolant System Dynamic Effects and Vibration Testing, Ver. 1
4-GEN-ITPP-515, Steam Generator System Dynamic Effects and Vibration Testing Ver. 1
4-GEN-ITPP-512, Chemical and Volume Control System Dynamic Effects and Vibration Testing Ver. 1
4-GEN-ITPP-511, Passive Core Cooling System Dynamic Effects and Vibration, Ver. 1

**Section** 1P02
B-GEN-ITPCI-350, PMS Channel Calibration Test for 4-RCS-FT101B, Ver. 1.1
B-GEN-ITPCI-019-357, PMS Channel Calibration Test for 4-RCS-L T160A, Ver. 2.0
B-GEN-ITPCI-019-358, PMS Channel Calibration Test for 4-RCS-L T160B, Ver. 2.0
B-GEN-ITPCI-019-363, PMS Channel Calibration Test for 4-RCS-PT140A, Ver. 1.0
B-GEN-ITPCI-019-374, PMS Channel Calibration Test For 4-RCS-ST284, Ver. 2.0
B-GEN-ITPCI-039-F410, RCS-PL-V150B Component Test, Ver. 1.0
B-GEN-ITPCI-019-407, PMS-Channel Calibration Test for 4-RCS-TE211B, Ver. 2.0
B-GEN-ITPCI-019-370, PMS Channel Calibration Test for 4-RCS-PT191D, Ver. 1.0
B-GEN-ITPCI-019-362, PMS Channel Calibration Test for 4-RCS-LT195D, Ver. 1.0
WO# 1192329, 1192347, 1192358, 1192380, 1245189, 261883, 1261769, & 1261760

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B-GEN-ITPCI-019-327, PMS Channel Calibration Test for 4-PXS-LT011A and 4-PXS-L T011C, Ver. 1.0
B-GEN-ITPCI-019-334, PMS Channel Calibration Test for 4-PXS-LT0148 and 4-PXS-LT014D, Ver. 1.0
B-GEN-ITPCI-019-336, PMS Channel Calibration Test for 4-PXS-LT047, Ver. 1.0
WO#: 1191422, 1191429, 1191434

**Section** 1P04
4-PCS-ITPP-502, Passive Containment Cooling System PCCWST Preoperational Test Procedure, Ver. 1.0
SV4-PCS-ITR-800138, Unit 4 Passive Containment Cooling System Testing: ITAAC 2.2.02. 07b.i Items 7a.i, 7a.ii, 7d, & 7e.ii, NRC Index Number: 138, Rev. 0
SV4-PCS-T2R-001, Vogtle Unit 4 Passive Containment Cooling Water Storage Tank Draindown Test Results Report, Rev. 0
SV4-PCS-T2C-001, Vogtle Unit 4 Passive Containment Cooling Water Storage Tank Draindown Test Results Evaluation, Rev. 0
WO 1199655
CRs 50177372, 50177279, 50177053, 50175476, 50175116, & 5017511

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4-PXS-ITPP-504, Passive Core Cooling System Hot Functional Test, Version 1.0
4-GEN-ITPP-517, Pre-Core Hot Functional Testing (HFT) Sequence Procedure, Version 2.0
WO 1191261

**SAFEGUARDS PROGRAMS**
[2504 Documents]

**Section** 2P01
Vogtle Unit 4 Security Plan

**3. OPERATIONAL READINESS**
[2504 Documents]

**Section** 3P01
Documents:
SV0-RXS-TI-501, Reactor System Preoperational Test Specification, Rev. 1

Drawings:
APP-MI01-V3-123, AP1000 Reactor Internals Upper Core Plate Insert and Head and Vessel Alignment Pin Fit Up, Rev. 4

Procedure:
4-RXS-ITPP-501, Pre- and Post-Hot Functional Test Inspection of Reactor Vessel Internals, Version 1.0

Work Orders:
1192570

## LIST OF ACRONYMS

| | |
|---|---|
| 10 CFR | Title 10 of the Code of Federal Regulations |
| CAP | corrective action program |
| COL | Combined License |
| DCO | Division of Construction Oversight |
| DRS | Division of Reactor Safety |
| IMC | inspection manual chapter |
| IP | inspection procedure |
| IR | inspection report |
| ITAAC | inspections, tests, analyses, and acceptance criteria |
| NCV | noncited violation |
| NRC | Nuclear Regulatory Commission |
| PMS | protection and safety monitoring system |
| PRHR HX | passive residual heat removal heat exchanger |
| PXS | passive core cooling system |
| RCS | reactor coolant system |
| Rev. | revision |
| UFSAR | Updated Final Safety Analysis Report |
| VEGP | Vogtle Electric Generating Plant |
| Ver. | version |

**ITAAC INSPECTED**

| No. | ITAAC No. | Design Commitment | Inspections, Tests, Analysis | Acceptance Criteria |
|---|---|---|---|---|
| 30 | 2.1.02.08b | 8.b) The RCPs have a rotating inertia to provide RCS flow coastdown on loss of power to the pumps. | A test will be performed to determine the pump flow coastdown curve. | The pump flow coastdown will provide RCS flows greater than or equal to the flow shown in Figure 2.1.2-2, "Flow Transient for Four Cold Legs in Operation, Four Pumps Coasting Down." |
| 41 | 2.1.02.09a | 9.a) The RCS provides circulation of coolant to remove heat from the core. | Testing and analysis to measure RCS flow with four reactor coolant pumps operating at no-load RCS pressure and temperature conditions will be performed. Analyses will be performed to convert the measured pre-fuel load flow to post-fuel load flow with 10-percent steam generator tube plugging. | The calculated post-fuel load RCS flow rate is > 301,670 gpm. |
| 46 | 2.1.02.11a.i | 11.a) Controls exist in the MCR to cause the remotely operated valves identified in Table 2.1.2-1 to perform active functions. | i) Testing will be performed on the squib valves identified in Table 2.1.2-1 using controls in the MCR without stroking the valve. | i) Controls in the MCR operate to cause a signal at the squib valve electrical leads which is capable of actuating the squib valve. |

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|---|---|---|---|---|
| 47 | 2.1.02.11a.ii | 10. Safety-related displays identified in Table 2.1.2-1 can be retrieved in the MCR. 11.a) Controls exist in the MCR to cause the remotely operated valves identified in Table 2.1.2-1 to perform active functions. 11.b) The valves identified in Table 2.1.2-1 as having PMS control perform an active safety function after receiving a signal from the PMS. 12.b) After loss of motive power, the remotely operated valves identified in Table 2.1.2-1 assume the indicated loss of motive power position. | Inspection will be performed for retrievability of the safety-related displays in the MCR. ii) Stroke testing will be performed on the other remotely operated valves listed in Table 2.1.2-1 using controls in the MCR. ii) Testing will be performed on the other remotely operated valves identified in Table 2.1.2-1 using real or simulated signals into the PMS. iii) Testing will be performed to demonstrate that remotely operated RCS valves RCS-V001A/B, V002A/B, V003A/B, V011A/B, V012A/B, V013A/B open within the required response times. Testing of the remotely operated valves will be performed under the conditions of loss of motive power. | Safety-related displays identified in Table 2.1.2-1 can be retrieved in the MCR. ii) Controls in the MCR operate to cause the remotely operated valves (other than squib valves) to perform active functions. ii) The other remotely operated valves identified in Table 2.1.2-1 as having PMS control perform the active function identified in the table after receiving a signal from PMS. iii) These valves open within the following times after receipt of an actuation signal: V001A/B < 40 sec V002A/B, V003A/B < 100 sec V011A/B < 30 sec V012A/B, V013A/B < 60 sec Upon loss of motive power, each remotely operated valve identified in Table 2.1.2-1 assumes the indicated loss of motive power position. |
| 48 | 2.1.02.11b.i | 11.b) The valves identified in Table 2.1.2-1 as having PMS control perform an active safety function after receiving a signal from the PMS. | i) Testing will be performed on the squib valves identified in Table 2.1.2-1 using real or simulated signals into the PMS without stroking the valve. | i) The squib valves receive a signal at the valve electrical leads that is capable of actuating the squib valve. |

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|---|---|---|---|---|
| 55 | 2.1.02.12a.iii | 12.a) The automatic depressurization valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table. | iii) Tests of the motor-operated valves will be performed under pre-operational flow, differential pressure and temperature conditions. | iii) Each motor-operated valve changes position as indicated in Table 2.1.2-1 under pre-operational test conditions. |
| 78 | 2.1.03.07.i | 7. The reactor internals will withstand the effects of flow induced vibration. 10. The reactor lower internals assembly is equipped with holders for at least eight capsules for storing material surveillance specimens. | i) Not used per Amendment No. 150. ii) A pre-test inspection, a flow test and a post-test inspection will be conducted on the as-built reactor internals. Inspection of the reactor lower internals assembly for the presence of capsules will be performed. | i) Not used per Amendment No. 150. ii) The as-built reactor internals have no observable damage or loose parts. At least eight capsules are in the reactor lower internals assembly. |
| 110 | 2.2.01.09 | 9. Safety-related displays identified in Table 2.2.1-1 can be retrieved in the MCR. 10.a) Controls exist in the MCR to cause those remotely operated valves identified in Table 2.2.1-1 to perform active functions. 10.b) The valves identified in Table 2.2.1-1 as having PMS control perform an active safety function after receiving a signal from the PMS. | Inspection will be performed for retrievability of the safety-related displays in the MCR. Stroke testing will be performed on remotely operated valves identified in Table 2.2.1-1 using the controls in the MCR. Testing will be performed on remotely operated valves listed in Table 2.2.1-1 using real or simulated signals into the PMS. | Safety-related displays identified in Table 2.2.1-1 can be retrieved in the MCR. Controls in the MCR operate to cause remotely operated valves identified in Table 2.2.1-1 to perform active safety functions. The remotely operated valves identified in Table 2.2.1-1 as having PMS control perform the active function identified in the table after receiving a signal from PMS. |

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| 116 | 2.2.01.11a.iii | 11.a) The motor-operated and check valves identified in Table 2.2.1-1 perform an active safety-related function to change position as indicated in the table. | iii) Tests of the motor-operated valves will be performed under preoperational flow, differential pressure, and temperature conditions. | iii) Each motor-operated valve changes position as indicated in Table 2.2.1-1 under pre-operational test conditions. |
| 117 | 2.2.01.11a.iv | 11.a) The motor-operated and check valves identified in Table 2.2.1-1 perform an active safety-related function to change position as indicated in the table. | iv) Exercise testing of the check valves with active safety functions identified in Table 2.2.1-1 will be performed under preoperational test pressure, temperature and fluid flow conditions. | iv) Each check valve changes position as indicated in Table 2.2.1-1. |
| 138 | 2.2.02.07b.i | 7.a) The PCS delivers water from the PCCWST to the outside, top of the containment vessel. 7.b) The PCS wets the outside surface of the containment vessel. The inside and the outside of the containment vessel above the operating deck are coated with an inorganic zinc material. 7.c) The PCS provides air flow over the outside of the containment vessel by a natural circulation air flow path from the air inlets to the air discharge structure. 7.d) The PCS drains the excess water from the outside of | i) Testing will be performed to measure the PCCWST delivery rate from each one of the three parallel flow paths. ii) Testing and or analysis will be performed to demonstrate the PCCWST inventory provides 72 hours of adequate water flow. i) Testing will be performed to measure the outside wetted surface of the containment vessel with one of the three parallel flow paths delivering water to the top of the containment vessel. ii) Inspection of the containment vessel exterior coating will be conducted. iii) Inspection of the containment vessel interior coating will be | i) When tested, each one of the three flow paths delivers water at greater than or equal to: – 469.1 gpm at a PCCWST water level of 27.4 ft + 0.2, - 0.0 ft above the tank floor – 226.6 gpm when the PCCWST water level uncovers the first (i.e. tallest) standpipe – 176.3 gpm when the PCCWST water level uncovers the second tallest standpipe – 144.2 gpm when the PCCWST water level uncovers the third tallest standpipe – or a report exists and concludes that the as-measured flow rates delivered by the PCCWST to the containment vessel |

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| | | the containment vessel through the two upper annulus drains. 7.e) The PCS provides a flow path for long-term water makeup to the PCCWST. 9. Safety-related displays identified in Table 2.2.2-1 can be retrieved in the MCR. 10.a) Controls exist in the MCR to cause the remotely operated valves identified in Table 2.2.2-1 to perform active functions. 10.b) The valves identified in Table 2.2.2-1 as having PMS control perform an active safety function after receiving a signal from the PMS. 11.a) The motor-operated valves identified in Table 2.2.2-1 perform an active safety-related function to change position as indicated in the table. 11.b) After loss of motive power, the remotely operated valves identified in Table 2.2.2-1 assume the indicated loss of motive power position. | conducted. Inspections of the air flow path segments will be performed. Testing will be performed to verify the upper annulus drain flow performance. ii) Testing will be performed to measure the delivery rate from the long-term makeup connection to the PCCWST. Inspection will be performed for retrievability of the safety-related displays in the MCR. Stroke testing will be performed on the remotely operated valves identified in Table 2.2.2-1 using the controls in the MCR. Testing will be performed on the remotely operated valves in Table 2.2.2-1 using real or simulated signals into the PMS. iii) Tests of the motor-operated valves will be performed under preoperational flow, differential pressure, and temperature conditions. Testing of the remotely operated valves will be performed under the conditions of loss of motive power. | provides sufficient heat removal capability such that the limiting containment pressure and temperature values are not affected and the PCS is able to perform its safety function to remove heat from containment to maintain plant safety. ii) When tested and/or analyzed with all flow paths delivering and an initial water level at 27.4 + 0.2, - 0.00 ft, the PCCWST water inventory provides greater than or equal to 72 hours of flow, and the flow rate at 72 hours is greater than or equal to 100.7 gpm or a report exists and concludes that the as-measured flow rates delivered by the PCCWST to the containment vessel provides sufficient heat removal capability such that the limiting containment pressure and temperature values are not affected and the PCS is able to perform its safety function to remove heat from containment to maintain plant safety. i) A report exists and concludes that when the water in the PCCWST uncovers |

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| | | | | the standpipes at the following levels, the water delivered by one of the three parallel flow paths to the containment shell provides coverage measured at the spring line that is equal to or greater than the stated coverages. - 24.1 ± 0.2 ft above the tank floor; at least 90% of the perimeter is wetted. - 20.3 ± 0.2 ft above the tank floor; at least 72.9% of the perimeter is wetted. - 16.8 ± 0.2 ft above the tank floor; at least 59.6% of the perimeter is wetted. ii) A report exists and concludes that the containment vessel exterior surface is coated with an inorganic zinc coating above elevation 135'-3". iii) A report exists and concludes that the containment vessel interior surface is coated with an inorganic zinc coating above the operating deck. Flow paths exist at each of the following locations: – Air inlets – Base of the outer annulus – Base of the inner annulus – Discharge structure With a water level within the upper annulus 10" + 1" above the annulus drain inlet, the flow rate through each |

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| | | | | drain is greater than or |
| | | | | equal to 525 gpm. ii) With a water supply connected to the PCS long-term makeup connection, each PCS recirculation pump delivers greater than or equal to 100 gpm when tested separately. Safety-related displays identified in Table 2.2.2-1 can be retrieved in the MCR. Controls in the MCR operate to cause remotely operated valves identified in Table 2.2.2-1 to perform active functions. The remotely operated valves identified in Table 2.2.2-1 as having PMS control perform the active function identified in the table after receiving a signal from the PMS. iii) Each motor-operated valve changes position as indicated in Table 2.2.2-1 under preoperational test conditions. After loss of motive power, each remotely operated valve identified in Table 2.2.2-1 assumes the indicated loss of motive power position. |

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| 175 | 2.2.03.08b.01 | 8.b) The PXS provides core decay heat removal during design basis events. | 1. A heat removal performance test and analysis of the PRHR HX will be performed to determine the heat transfer from the HX. For the test, the reactor coolant hot leg temperature will be initially at ≥ 350°F with the reactor coolant pumps running. The IRWST water level for the test will be above the top of the HX. The test will continue until the hot leg temperature is ≤ 250°F. | 1. A report exists and concludes that the PRHR HX heat transfer rate with the design basis number of PRHR HX tubes plugged is: ≥ 8.46 x 107 Btu/hr with 250°F HL Temp and an initial IRWST temperature of 80°F. The heat transfer rate measured in the test should be adjusted to account for differences in the HL and IRWST temperatures and the number of tubes plugged. |

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| 206 | 2.2.03.10 | 10. Safety-related displays of the parameters identified in Table 2.2.3-1 can be retrieved in the MCR. 11.a) Controls exist in the MCR to cause the remotely operated valves identified in Table 2.2.3-1 to perform their active function(s). 11.b) The valves identified in Table 2.2.3-1 as having PMS control perform their active function after receiving a signal from the PMS. 12.b) After loss of motive power, the remotely operated valves identified in Table 2.2.3-1 assume the indicated loss of motive power position. 13. Displays of the parameters identified in Table 2.2.3-3 can be retrieved in the MCR. | Inspection will be performed for the retrievability of the safety-related displays in the MCR. ii) Stroke testing will be performed on remotely operated valves other than squib valves identified in Table 2.2.3-1 using the controls in the MCR. ii) Testing will be performed on the remotely operated valves other than squib valves identified in Table 2.2.3-1 using real or simulated signals into the PMS. iii) Testing will be performed to demonstrate that remotely operated PXS isolation valves PXS-V014A/B, V015A/B, V108A/B open within the required response times. Testing of the remotely operated valves will be performed under the conditions of loss of motive power. Inspection will be performed for retrievability of the displays identified in Table 2.2.3-3 in the MCR. | Safety-related displays identified in Table 2.2.3-1 can be retrieved in the MCR. ii) Controls in the MCR operate to cause remotely operated valves other than squib valves to perform their active functions. ii) Remotely operated valves other than squib valves perform the active function identified in the table after a signal is input to the PMS. iii) These valves open within 20 seconds after receipt of an actuation signal. After loss of motive power, each remotely operated valve identified in Table 2.2.3-1 assumes the indicated loss of motive power position. Displays identified in Table 2.2.3-3 can be retrieved in the MCR. |
| 209 | 2.2.03.11b.i | 11.b) The valves identified in Table 2.2.3-1 as having PMS control perform their active function after receiving a signal from the PMS. | i) Testing will be performed on the squib valves identified in Table 2.2.3-1 using real or simulated signals into the PMS without stroking the valve. | i) Squib valves receive an electrical signal at the valve electrical leads that is capable of actuating the valve after a signal is input to the PMS. |

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| 265 | 2.2.05.07a.i | 7.a) The VES provides a 72-hour supply of breathable quality air for the occupants of the MCR. 7.b) The VES maintains the MCR pressure boundary at a positive pressure with respect to the surrounding areas. 7.d) The system provides a passive recirculation flow of MCR air to maintain main control room dose rates below an acceptable level during VES operation. 8. Safety-related displays identified in Table 2.2.5-1 can be retrieved in the MCR. 9.a) Controls exist in the MCR to cause remotely operated valves identified in Table 2.2.5-1 to perform their active functions. 9.b) The valves identified in Table 2.2.5-1 as having PMS control perform their active safety function after receiving a signal from the PMS. 10. After loss of motive power, the remotely operated valves identified in Table 2.2.5-1 assume the indicated loss of motive power position. 11. Displays of the parameters identified in Table 2.2.5-3 can be retrieved in the MCR. 12. The background noise level in the MCR does not exceed 65 dB(A) | i) Testing will be performed to confirm that the required amount of air flow is delivered to the MCR. iii) MCR air samples will be taken during VES testing and analyzed for quality. i) Testing will be performed with VES flow rate between 60 and 70 scfm to confirm that the MCR is capable of maintaining the required pressurization of the pressure boundary. ii) Air leakage into the MCR will be measured during VES testing using a tracer gas. Testing will be performed to confirm that the required amount of air flow circulates through the MCR passive filtration system. Inspection will be performed for retrievability of the safety-related displays in the MCR. Stroke testing will be performed on remotely operated valves identified in Table 2.2.5-1 using the controls in the MCR. Testing will be performed on remotely operated valves listed in Table 2.2.5-1 using real or simulated signals into the PMS. Testing of the remotely operated valves will be performed under the conditions of loss of motive power. Inspection will be | i) The air flow rate from the VES is at least 60 scfm and not more than 70 scfm. iii) The MCR air is of breathable quality. i) The MCR pressure boundary is pressurized to greater than or equal to 1/8-in. water gauge with respect to the surrounding area. ii) Air leakage into the MCR is less than or equal to 10 cfm. The air flow rate at the outlet of the MCR passive filtration system is at least 600 cfm greater than the flow measured by VES-003A/B. Safety-related displays identified in Table 2.2.5-1 can be retrieved in the MCR. Controls in the MCR operate to cause remotely operated valves identified in Table 2.2.5-1 to perform their active safety functions. The remotely operated valves identified in Table 2.2.5-1 as having PMS control perform the active safety function identified in the table after receiving a signal from the PMS. After loss of motive power, each remotely operated valve identified in Table 2.2.5-1 assumes the indicated loss of motive power position. The displays identified |

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| | | at the operator workstations when VES is operating. | performed for retrievability of the parameters in the MCR. The as-built VES will be operated, and background noise levels in the MCR will be measured at the operator work stations with the plant not operating. | in Table 2.2.5-3 can be retrieved in the MCR. The background noise level in the MCR does not exceed 65 dB(A) at the operator work stations when the VES is operating. |
| 270 | 2.2.05.07c | 7.c) The heat loads within the MCR, the I&C equipment rooms, and the Class 1E dc equipment rooms are within design basis assumptions to limit the heatup of the rooms identified in Table 2.2.5-4. | An analysis will be performed to determine that the heat loads from as-built equipment within the rooms identified in Table 2.2.5-4 are less than or equal to the design basis assumptions. | A report exists and concludes that: the heat loads within rooms identified in Table 2.2.5-4 are less than or equal to the specified values or that an analysis report exists that concludes: – The temperature and humidity in the MCR remain within limits for reliable human performance for the 72-hour period. – The maximum temperature for the 72-hour period for the I&C rooms is less than or equal to 120°F. – The maximum temperature for the 72-hour period for the Class 1E dc equipment rooms is less than or equal to 120°F. |
| 529 | 2.5.02.06a.i | 6.a) The PMS initiates an automatic reactor trip, as identified in Table 2.5.2-2, when plant process signals reach specified limits. | An operational test of the as-built PMS will be performed using real or simulated test signals. | i) The reactor trip switchgear opens after the test signal reaches the specified limit. This only needs to be verified for one automatic reactor trip function. |

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| 530 | 2.5.02.06a.<br>ii | 6.a) The PMS initiates an automatic reactor trip, as identified in Table 2.5.2-2, when plant process signals reach specified limits. 6.b) The PMS initiates automatic actuation of engineered safety features, as identified in Table 2.5.2-3, when plant process signals reach specified limits. 6.c) The PMS provides manual initiation of reactor trip and selected engineered safety features as identified in Table 2.5.2-4. 8.a) The PMS provides for the minimum inventory of displays, visual alerts, and fixed position controls, as identified in Table 2.5.2-5. The plant parameters listed with a "Yes" in the "Display" column and visual alerts listed with a "Yes" in the "Alert" column can be retrieved in the MCR. The fixed position controls listed with a "Yes" in the "Control" column are provided in the MCR. 8.c) Displays of the open/closed status of the reactor trip breakers can be retrieved in the MCR. 9.a) The PMS automatically removes blocks of reactor trip and engineered safety features actuation | An operational test of the as-built PMS will be performed using real or simulated test signals. An operational test of the as-built PMS will be performed using real or simulated test signals. An operational test of the as-built PMS will be performed using the PMS manual actuation controls. i) An inspection will be performed for retrievability of plant parameters in the MCR. iii) An operational test of the as-built system will be performed using each MCR fixed position control. Inspection will be performed for retrievability of displays of the open/closed status of the reactor trip breakers in the MCR. An operational test of the as-built PMS will be performed using real or simulated test signals. An operational test of the as-built PMS will be performed. An operational test of the as-built PMS will be performed. With one channel in bypass, an attempt will be made to place a redundant channel in bypass. | ii) PMS output signals to the reactor trip switchgear are generated after the test signal reaches the specified limit. This needs to be verified for each automatic reactor trip function. Appropriate PMS output signals are generated after the test signal reaches the specified limit. These output signals remain following removal of the test signal. Tests from the actuation signal to the actuated device(s) are performed as part of the system-related inspection, test, analysis, and acceptance criteria. ii) PMS output signals are generated for reactor trip and selected engineered safety features as identified in Table 2.5.2-4 after the manual initiation controls are actuated. i) The plant parameters listed in Table 2.5.2-5 with a "Yes" in the "Display" column, can be retrieved in the MCR. iii) For each test of an as-built fixed position control listed in Table 2.5.2-5 with a "Yes" in the "Control" column, an actuation signal is generated. Tests from the actuation signal to the actuated device(s) are performed as part of the system-related |

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| | | when the plant approaches conditions for which the associated function is designed to provide protection. These blocks are identified in Table 2.5.2-6. 9.b) The PMS two-out-of-four initiation logic reverts to a two-out-of-three coincidence logic if one of the four channels is bypassed. All bypassed channels are alarmed in the MCR. 9.c) The PMS does not allow simultaneous bypass of two redundant channels. | | inspection, test, analysis and acceptance criteria. Displays of the open/closed status of the reactor trip breakers can be retrieved in the MCR. The PMS blocks are automatically removed when the test signal reaches the specified limit. The PMS two-out-of-four initiation logic reverts to a two-out-of-three coincidence logic if one of the four channels is bypassed. All bypassed channels are alarmed in the MCR. The redundant channel cannot be placed in bypass. |
| 532 | 2.5.02.06c. i | 6.c) The PMS provides manual initiation of reactor trip and selected engineered safety features as identified in Table 2.5.2-4. | An operational test of the as-built PMS will be performed using the PMS manual actuation controls. | i) The reactor trip switchgear opens after manual reactor trip controls are actuated. |
| 540 | 2.5.02.08a. ii | 8.a) The PMS provides for the minimum inventory of displays, visual alerts, and fixed position controls, as identified in Table 2.5.2-5. The plant parameters listed with a "Yes" in the "Display" column and visual alerts listed with a "Yes" in | ii) An inspection and test will be performed to verify that the plant parameters are used to generate visual alerts that identify challenges to critical safety functions. | ii) The plant parameters listed in Table 2.5.2-5 with a "Yes" in the "Alert" column are used to generate visual alerts that identify challenges to critical safety functions. The visual alerts actuate in accordance with their correct logic and values. |

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| | | the "Alert" column can be retrieved in the MCR. The fixed position controls listed with a "Yes" in the "Control" column are provided in the MCR. | | |
| 543 | 2.5.02.08b. ii | 8.b) The PMS provides for the transfer of control capability from the MCR to the RSW using multiple transfer switches. Each individual transfer switch is associated with only a single safety-related group or with nonsafety-related control capability. | ii) An operational test of the as-built system will be performed to demonstrate the transfer of control capability from the MCR to the RSW. | ii) Actuation of each transfer switch results in an alarm in the MCR and RSW, the activation of operator control capability from the RSW, and the deactivation of operator control capability from the MCR for the associated safety-related division and nonsafety-related control capability. |
| 548 | 2.5.02.09d | 9.d) The PMS provides the interlock functions identified in Table 2.5.2-7. | An operational test of the as-built PMS will be performed using real or simulated test signals. | Appropriate PMS output signals are generated as the interlock conditions are changed. |
| 603 | 2.6.03.04c | 4.c) Each IDS 24-hour battery bank supplies a dc switchboard bus load for a period of 24 hours without recharging. 4.d) Each IDS 72-hour battery bank supplies a dc switchboard bus load for a period of 72 hours without recharging. 4.e) The IDS spare battery bank supplies a dc load equal to or greater than the most severe switchboard bus load for the required period | Testing of each 24-hour as-built battery bank will be performed by applying a simulated or real load, or a combination of simulated or real loads which envelope the battery bank design duty cycle. The test will be conducted on a battery bank that has been fully charged and has been connected to a battery charger maintained at 270±2 V for a period of no less than 24 hours prior to the test. Testing of each 72-hour as-built battery bank will be | The battery terminal voltage is greater than or equal to 210 V after a period of no less than 24 hours with an equivalent load that equals or exceeds the battery bank design duty cycle capacity. The battery terminal voltage is greater than or equal to 210 V after a period of no less than 72 hours with an equivalent load that equals or exceeds the battery bank design duty cycle capacity. The battery terminal |

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| | | without recharging. 4.f) Each IDS 24-hour inverter supplies its ac load. 4.g) Each IDS 72-hour inverter supplies its ac load. 4.h) Each IDS 24-hour battery charger provides the PMS with two loss-of-ac input voltage signals. 5.a) Each IDS 24-hour battery charger supplies a dc switchboard bus load while maintaining the corresponding battery charged. 5.b) Each IDS 72-hour battery charger supplies a dc switchboard bus load while maintaining the corresponding battery charged. 5.c) Each IDS regulating transformer supplies an ac load when powered from the 480 V MCC. 6. Safety-related displays identified in Table 2.6.3-1 can be retrieved in the MCR. 11. Displays of the parameters identified in Table 2.6.3-2 can be retrieved in the MCR. | performed by applying a simulated or real load, or a combination of simulated or real loads which envelope the battery bank design duty cycle. The test will be conducted on a battery bank that has been fully charged and has been connected to a battery charger maintained at 270±2 V for a period of no less than 24 hours prior to the test. Testing of the as-built spare battery bank will be performed by applying a simulated or real load, or a combination of simulated or real loads which envelope the most severe of the division batteries design duty cycle. The test will be conducted on a battery bank that has been fully charged and has been connected to a battery charger maintained at 270±2 V for a period of no less than 24 hours prior to the test. Testing of each 24-hour as-built inverter will be performed by applying a simulated or real load, or a combination of simulated or real loads, equivalent to a resistive load greater than 12 kW. The inverter input voltage will be no more than | voltage is greater than or equal to 210 V after a period with a load and duration that equals or exceeds the most severe battery bank design duty cycle capacity. Each 24-hour inverter supplies a line-to-line output voltage of 208 ± 2% V at a frequency of 60 ± 0.5% Hz. Each 72-hour inverter supplies a line-to-line output voltage of 208 ± 2% V at a frequency of 60 ± 0.5% Hz. Two PMS input signals exist from each 24-hour battery charger indicating loss of ac input voltage when the loss-of-input voltage condition is simulated. Each 24-hour battery charger provides an output current of at least 150 A with an output voltage in the range 210 to 280 V. Each 72-hour battery charger provides an output current of at least 125 A with an output voltage in the range 210 to 280 V. Each regulating transformer supplies a line-to-line output voltage of 208 ± 2% V. Safety-related displays identified in Table 2.6.3-1 can be retrieved in the MCR. Displays identified in Table 2.6.3-2 can be retrieved in the MCR. |

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| | | | 210 Vdc during the test. Testing of each 72-hour as-built inverter will be performed by applying a simulated or real load, or a combination of simulated or real loads, equivalent to a resistive load greater than 7 kW. The inverter input voltage will be no more than 210 Vdc during the test. Testing will be performed by simulating a loss of input voltage to each 24-hour battery charger. Testing of each as-built 24-hour battery charger will be performed by applying a simulated or real load, or a combination of simulated or real loads. Testing of each 72-hour as-built battery charger will be performed by applying a simulated or real load, or a combination of simulated or real loads. Testing of each as-built regulating transformer will be performed by applying a simulated or real load, or a combination of simulated or real loads, equivalent to a resistive load greater than 30 kW when powered from the 480 V MCC. Inspection will be performed for retrievability of the safety-related displays | |

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| | | | in the MCR. Inspection will be performed for retrievability of the displays identified in Table 2.6.3-2 in the MCR. | |
| 609 | 2.6.03.04i | 4.i) The IDS supplies an operating voltage at the terminals of the Class 1E motor operated valves identified in subsections 2.1.2, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.3.2, 2.3.6, and 2.7.1 that is greater than or equal to the minimum design voltage. | Testing will be performed by measuring the voltage during motor starting at both the IDS battery and motor-operated valve motor terminals while each motor-operated valve is stroked. Analyses will be performed to verify that the voltage at the motor-operated valve motor terminals is greater than or equal to the minimum design voltage of each motor-operated valve with an IDS battery terminal voltage of 210 Vdc. | A report exists and concludes that IDS can provide a voltage greater than or equal to each valve's minimum design voltage to the motor terminals of each motor-operated valve when power is supplied under design conditions from IDS batteries with battery terminal voltage at 210 Vdc while each motor-operated valve is stroked. |

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| 644 | 2.6.09.05a | 5.a) Security alarm annunciation and video assessment information is displayed concurrently in the central alarm station and the secondary alarm station, and the video image recording with real time playback capability can provide assessment of activities before and after each alarm annunciation within the perimeter area barrier. 15.b) Intrusion detection and assessment systems concurrently provide visual displays and audible annunciation of alarms in the central and secondary alarm stations. | Test, inspection, or a combination of test and inspections of the installed systems will be performed. Tests will be performed on intrusion detection and assessment equipment. | Security alarm annunciation and video assessment information is displayed concurrently in the central alarm station and the secondary alarm station, and the video image recording with real time playback capability provides assessment of activities before and after alarm annunciation within the perimeter barrier. The intrusion detection system concurrently provides visual displays and audible annunciations of alarms in both the central and secondary alarm stations. |
| 647 | 2.6.09.06 | 6. The vehicle barrier system is installed and located at the necessary stand-off distance to protect against the DBT vehicle bombs. | Inspections and analysis will be performed for the vehicle barrier system. | The vehicle barrier system will protect against the DBT vehicle bombs based upon the stand-off distance of the system. |
| 650 | 2.6.09.08 | 8. Isolation zones and exterior areas within the protected area are provided with illumination to permit observation of abnormal presence or activity of persons or vehicles. | Inspection of the illumination in the isolation zones and external areas of the protected area will be performed. | The illumination in isolation zones and exterior areas within the protected area is 0.2 foot candles measured horizontally at ground level or, alternatively, sufficient to permit observation. |

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| 655 | 2.6.09.15a | 15.a) Security alarm devices, including transmission lines to annunciators, are tamper indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs, or when on standby power). Alarm annunciation shall indicate the type of alarm (e.g., intrusion alarms and emergency exit alarm) and location.<br>16. Equipment exists to record onsite security alarm annunciation, including the location of the alarm, false alarm, alarm check, and tamper indication; and the type of alarm, location, alarm circuit, date, and time. | A test will be performed to verify that security alarms, including transmission lines to annunciators, are tamper indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs, or when on standby power) and that alarm annunciation indicates the type of alarm (e.g., intrusion alarms and emergency exit alarms) and location.<br>Test, analysis, or a combination of test and analysis will be performed to ensure that equipment is capable of recording each onsite security alarm annunciation, including the location of the alarm, false alarm, alarm check, and tamper indication; and the type of alarm, location, alarm circuit, date, and time. | A report exists and concludes that security alarm devices, including transmission lines to annunciators, are tamper indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs, or when the system is on standby power) and that alarm annunciation indicates the type of alarm (e.g., intrusion alarms and emergency exit alarms) and location.<br>A report exists and concludes that equipment is capable of recording each onsite security alarm annunciation, including the location of the alarm, false alarm, alarm check, and tamper indication; and the type of alarm, location, alarm circuit, date, and time. |
| 659 | C.2.6.09.02 | 2. Physical barriers for the protected area perimeter are not part of vital area barriers. | An inspection of the protected area perimeter barrier will be performed. | Physical barriers at the perimeter of the protected area are separated from any other barrier designated as a vital area barrier. |

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| 660 | C.2.6.09.03a | 3.a) Isolation zones exist in outdoor areas adjacent to the physical barrier at the perimeter of the protected area that allows 20 feet of observation on either side of the barrier. Where permanent buildings do not allow a 20-foot observation distance on the inside of the protected area, the building walls are immediately adjacent to, or an integral part of, the protected area barrier. | Inspections will be performed of the isolation zones in outdoor areas adjacent to the physical barrier at the perimeter of the protected area. | Isolation zones exist in outdoor areas adjacent to the physical barrier at the perimeter of the protected area and allow 20 feet of observation and assessment of the activities of people on either side of the barrier. Where permanent buildings do not allow a 20-foot observation and assessment distance on the inside of the protected area, the building walls are immediately adjacent to, or an integral part of, the protected area barrier and the 20-foot observation and assessment distance does not apply. |

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| 661 | C.2.6.09.03b | 3.b) The isolation zones are monitored with intrusion detection equipment that provides the capability to detect and assess unauthorized persons. 4. The intrusion detection and assessment equipment at the protected area perimeter: a) detects penetration or attempted penetration of the protected area barrier and concurrently alarms in both the Central Alarm Station and Secondary Alarm Station; b) remains operable from an uninterruptible power supply in the event of the loss of normal power. | Inspections will be performed of the intrusion detection equipment within the isolation zones. Tests, inspections or a combination of tests and inspections of the intrusion detection and assessment equipment at the protected area perimeter and its uninterruptible power supply will be performed. Tests, inspections or a combination of tests and inspections of the intrusion detection and assessment equipment at the protected area perimeter and its uninterruptible power supply will be performed. | The isolation zones areThe isolation zones are equipped with intrusion detection equipment that provides the capability to detect and assess unauthorized persons. The intrusion detection and assessment equipment at the protected area perimeter: a) detects penetration or attempted penetration of the protected area barrier and concurrently alarms in the Central Alarm Station and Secondary Alarm Station; b) remains operable from an uninterruptible power supply in the event of the loss of normal power. equipped with intrusion detection equipment that provides the capability to detect and assess unauthorized persons. |
| 664 | C.2.6.09.05a | 5. Access control points are established to: a) control personnel and vehicle access into the protected area. b) detect firearms, explosives, and incendiary devices at the protected area personnel access points. | Tests, inspections, or combination of tests and inspections of installed systems and equipment at the access control points to the protected area will be performed. Tests, inspections, or combination of tests and inspections of installed systems and equipment at the access control points to the protected area will be performed. | The access control points for the protected area: a) are configured to control personnel and vehicle access. b) include detection equipment that is capable of detecting firearms, incendiary devices, and explosives at the protected area personnel access points. |

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| 666 | C.2.6.09.06 | 6. An access control system with numbered picture badges is installed for use by individuals who are authorized access to protected areas and vital areas without escort. | A test of the access control system with numbered picture badges will be performed. | The access authorization system with numbered picture badges can identify and authorize protected area and vital area access only to those personnel with unescorted access authorization. |
| 670 | C.2.6.09.09 | 9. Emergency exits through the protected area perimeter are alarmed and secured with locking devices to allow for emergency egress.<br>9. Emergency exits through the vital area boundaries are locked, alarmed, and equipped with a crash bar to allow for emergency egress. | Tests, inspections, or a combination of tests and inspections of emergency exits through the protected area perimeter will be performed. Test, inspection, or a combination of tests and inspections of the emergency exits through the vital area boundaries will be performed. | Emergency exits through the protected area perimeter are alarmed and secured by locking devices that allow prompt egress during an emergency. The emergency exits through the vital area boundaries are locked, alarmed, and equipped with a crash bar to allow for emergency egress. |
| 815 | 3.3.00.10.i | 10. The shield building roof and PCS storage tank support and retain the PCS water sources. The PCS storage tank has a stainless steel liner which provides a barrier on the inside surfaces of the tank. Leak chase channels are provided on the tank boundary liner welds. | i) A test will be performed to measure the leakage from the PCS storage tank based on measuring the water flow out of the leak chase collection system. | i) A report exists and concludes that total water flow from the leak chase collection system does not exceed 10 gal/hr. |
| 877 | 2.2.05.09c | 9.c) The MCR Load Shed Panels identified in Table 2.2.5-1 perform their active safety function after receiving a signal from the PMS. | Testing will be performed on the MCR Load Shed Panels listed in Table 2.2.5-1 using real or simulated signals into the PMS. | The MCR Load Shed Panels identified in Table 2.2.5-1 perform their active safety function identified in the table after receiving a signal from the PMS. |