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

July 12, 2022

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

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INITIAL TEST PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED INSPECTION REPORTS 05200025/2022004, 05200026/2022004

Dear Ms. Coleman:

On June 30, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Vogtle Electric Generating Plant, Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on July 5, 2022, with Mr. Glen Chick, Vogtle 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, two findings of very low safety significance (Green) were identified. Both of these findings involved a violation of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

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,

Signed by Even, Christopher
on 07/12/22

Christopher J. Even, Acting Branch Chief
Construction Inspection Branch 2
Division of Construction Oversight

Docket Nos.: 5200025, 5200026
License Nos: NPF-91, NPF-92

Enclosure: NRC Inspection Report (IR) 05200025/2022004, 05200026/2022004

w/attachment: Supplemental Information

cc w/ encl: Distribution via LISTSERV

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INITIAL TEST PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED INSPECTION REPORTS 05200025/2022004, 05200026/2022004 – DATED JULY 13, 2022

DISTRIBUTION:
N. Doiley, RII
M. Kowal, RII
S. Price, RII
PUBLIC

ADAMS ACCESSION NUMBER: ML22192A175

X SUNSI Review		X Non-Sensitive ☐ Sensitive		X Publicly Available ☐ Non-Publicly Available	
OFFICE	RII/DCO	RII/DCO	RII/DCO		
NAME	J. Parent	J. Eargle	C. Even		
DATE	07/07/2022	07/07/2022	07/13/2022		

U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers:	5200025 5200026
License Numbers:	NPF-91 NPF-92
Report Numbers:	05200025/2022004 05200026/2022004
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Vogtle Unit 3 & 4 Combined License
Location:	Waynesboro, GA
Inspection Dates:	April 1, 2022 through June 30, 2022
Inspectors:	J. Eargle, Senior Resident Inspector - Testing, Division of Construction Oversight (DCO) S. Downey, Materials Engineer, Division of Reactor Safety (DRS) C. Even, Senior Construction Inspector, DCO J. Montgomery, Senior Reactor Inspector, DRS T. Morrissey, Senior Construction Inspector, DCO J. Parent, Resident Inspector, DCO M. Riley, Senior Construction Inspector, DCO A. Nielsen, Senior Health Physicist, DRS T. Scarbrough, Sr. Mechanical Engineer, Nuclear Reactor Regulation
Approved by:	Christopher J. Even, Acting Branch Chief Construction Inspection Branch 2 Division of Construction Oversight

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2022004, 05200026/2022004; April 1- June 30, 2022; Vogtle Units 3 & 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, and operational program inspections by resident and regional 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

(Green) NRC inspectors identified an ITAAC finding of very low safety significance and with an associated non-cited violation (NCV) of Title 10 of the Code of Federal Regulations, Part 50 (10 CFR 50), Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the licensee's failure to accomplish preoperational testing activities in accordance with procedure 3-FPS-OTS-17-001, "FPS Check Valve Exercise Test," Revision 0.1. The licensee entered this issue into the corrective action program (CAP) as CRs 50136335 and 50140727

The performance deficiency was determined to be more than minor because it invalidated the performance of the test described in the ITAAC. The inspectors determined that the issue was an ITAAC finding because it was material to the acceptance criteria of ITAAC 2.2.01.11a.iv. Specifically, the licensee failed to utilize measuring and test equipment that was accurate and within the appropriate range necessary to verify that valve 3-FPS-V052 was closed and the ITAAC acceptance criteria was met when the licensee failed to use a 0-20 gpm calibrated flowmeter or equivalent as specified by the procedure. The finding was determined to be of very low safety significance (Green) due to the licensee demonstrating with reasonable assurance that the design function of the applicable system was not impaired by the deficiency. The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect of challenge the unknown, in the area of human performance. Specifically, the licensee should have questioned signing the test as being performed satisfactorily when the measuring and test equipment was not appropriate. [H.11] (Section 3T03)

(Green) NRC inspectors identified a construction finding of very low safety significance and a NCV of 10 CFR, Appendix B, Criterion III, "Design Control," for the licensee's failure to translate design requirements of the Class 1E DC and UPS system into preoperational testing procedure 3-IDS-ITPP-501, "Class 1E DC and UPS Preoperational Test," Rev. 7. The licensee entered this issue into their corrective action program as CR 50141588.

The performance deficiency was determined to be more than minor and a finding because it affected the procedure quality attribute of the construction reactor safety cornerstone objective (Inspection/Testing). Specifically, the procedure would have allowed the safety-related battery chargers to operate outside of the 0.5% nominal voltage design requirements and exceed the maximum float output voltage of 270 VDC contained in design requirements. The finding was determined to be of very low safety significance (Green) because the finding did not impair a design function. The inspectors determined this finding was indicative of present licensee performance and was associated with the cross-cutting aspect of change management, in the area of human performance. The proximate cause was attributed to the failure to use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority. [H.3] (Section 3T16)

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Construction Status

During this report period for Unit 3, the licensee completed various activities to satisfy aspects of the Vogtle Unit 3 operational programs and initial test program. Post work verification was performed on safety-related and non-safety-related structures, systems, and components following the completion of repair and remediation of electrical systems. Class 1E direct current and uninterruptible power supply system (IDS), 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 reactor coolant system (RCS) and passive core cooling system (PXS) squib valves, and containment system (CNS) check valves. Various aspects of the protection and monitoring system (PMS) were tested, including the reactor trip hand switches and reactor trip switchgear. Additionally, the emergency habitability system (VES) was tested to verify if heat loads, temperatures, pressures, and in-leakage were within appropriate values.

During this report period for Unit 4, the licensee continued with integrated flush activities by flushing portions of safety-related and nonsafety-related fluid systems. The licensee continued with open vessel testing activities which included flowing water from the accumulators, in-containment refueling water storage tank, and containment sump to the reactor vessel in order to verify the measured line resistance values were within calculated design ranges.

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 3) ITAAC Number 3.2.00.01e (744) / Family 16F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.2.00.01e (744). The inspectors used the following NRC inspection procedure (IP)/section to perform this inspection:

- No inspection procedure existed for this inspection. Therefore, the staff conducted the inspection to confirm that the objectives from the NRC approved Implementation Plan (APP-OCS-GEH-520) were met.

Objective 1: Confirm aspects of the OCS/HSI design features that could not be evaluated in other HFE V&V activities.

Section 3.1, "Results of Verification of HF Environmental Conditions" of APP-OCS-GER-520 Rev. 0 and the associated subsections describe the results of various environmental factors that could influence an operating crew such as sound, lighting, temperature, and humidity. The inspectors reviewed the document to verify if the environmental factors in most locations in the plant were assessed and found to be within tolerable specifications. In addition, the inspectors observed a sample of sound, temperature, and humidity measurements taken during testing to verify if the data was collected in accordance with procedures.

Issues that were Deferred from Previous Assessments
The licensee had deferred resolution of a small number of HEDs during previous HFE activities. These items were described in Section 3.2 of APP-OCS-GER-520 Rev.0. The staff reviewed these items to verify if they had been resolved within tolerable specifications.

Maintainability
Section 3.3 of APP-OCS-GER-520 Rev. 0 addressed maintainability of plant equipment. The subsections within Section 3.3 addressed the findings of various components. Each subsection drew a conclusion regarding the acceptability of any deviations from applicable standards.

The staff observed that the majority of systems were determined to be "acceptable." Acceptable issues tended to be representative other industrial facilities and included relatively minor issues, such as trip hazards, sharp edges, or low lighting. The RSR identifies reasonable preventive and mitigative actions that can be used to minimize the effect of these issues, examples include marking hazards with reflective labels, use of temporary lighting, and the use of pre-job briefs to identify potential hazards.

Five areas were identified as having “challenging but acceptable” issues (see sections 3.3.2, 3.3.13, 3.3.14, 3.3.17.10, and 3.3.17.23). These typically included areas where access may be difficult during maintenance operations (such as when equipment is too high for operators to reach without a ladder or scaffolding or when an area is too small to stage equipment). The inspectors reviewed the licensee’s solutions to these “challenging but acceptable” issues to verify if the licensee proposed reasonable preventative and mitigative measures that could be used to support operators. The proposed solutions were commonly used within the nuclear industry.

Objective 2: Confirm that the as-built in the plant HSIs, procedures, and training conform to the design that resulted from the HFE program.

The inspectors observed the licensee's performance of the following procedure used to verify if the background noise level in the main control room (MCR) did not exceed 65 dB(A) at the operator work stations when the VES is aligned to the normal and alternate air supply header, and the MCR air was of breathable quality and that the temperature & humidity in the MCR remained within limits for reliable human performance for the 72 hr. period. The test was observed to determine whether it contained sufficient information to meet the technical requirements of the Updated Final Safety Analysis Report (UFSAR) and ITAAC.

- 3-VES-ITPP-501, Main Control Room Emergency Habitability System Pre-Operational Test Procedure, Rev. 4 – Temporary Procedure Change (TPC) 2
- B-GEN-ENG-025-001, Human Factors Engineering Verification Instruction, Rev. 5.0

Objective 3: Confirm that all HFE-related issues (including HEDs) documented in the Human Factors Tracking System are verified as adequately addressed or resolved.

The inspectors reviewed the Results Summary Report, APP-OCS-GER-520 Rev. 0, Appendix A “Human Engineered Deficiencies (HEDS)”, to verify if all human engineering discrepancies (HEDs) had been appropriately corrected or justified according to the APP-OCS-GEH-420. The inspectors reviewed the report to verify if there were any new Priority 1 HEDs that were identified since the integrated system testing. The inspectors reviewed several priority 2 and 3 HEDs to verify if they had been corrected or justified according to APP-OCS-GEH-420.

In addition, the inspectors independently reviewed a sample of nine reports (B-GEN-ENG-025-011-ATT-13-004; 005; 006; 008; 009; 012; 014; 017; 035) used to justify closure of the HEDS to verify if the resolutions to the HEDs were resolved in accordance with the approved implementation plan.

Objective 4: Confirm the HFE adequacy for risk-important human actions in local plant, including the ability for the tasks to be completed within the time windows according to the Probabilistic Risk Assessment (PRA).

The inspectors reviewed Section 3.6 of APP-OCS-GER-520, Rev. 0 to verify if the two integrated system validation (ISV) scenarios that were not possible to be conducted during the ISV testing in the simulator had been satisfactorily completed. These

scenarios had significant portions that had to be completed in the as-built plant and therefore could not be run with the rest of the ISV.

The NRC staff conducted onsite observations of one of the scenarios as it was run and observed as the data was collected to verify if the appropriate test procedures were followed. Section 3.6 of APP-OCS-GER-520, Rev. 0 describes the results of both tests. Inspectors verified that in both scenarios, plant personnel could successfully complete all tasks within the time frames allowed by the PRA and accident analyses. The inspectors reviewed the results to verify if operators were capable of using the tools, procedures, and human-system interfaces necessary to safely operate the plant in the scenarios tested within the constraints identified in the PRA.

The inspectors observed the hotwash of the test to verify if issues identified from the test were prioritized and dispositioned in accordance with HFE procedures.

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC Number 3.3.00.07c.ii.a (797) / Family 15A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07c.ii.a (797). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.15 - Inspection of ITAAC-Related Installation of Fire Protection Equipment

The inspectors used appropriate portions of the IP to walkdown fire areas in the auxiliary building to verify if fire barriers existed between fire areas. The inspectors walked down the fire barriers in the plant to verify if the fire barriers satisfied the quality and technical requirements of the UFSAR and the ITAAC.

The inspectors used appropriate portions of the IP to review fire barrier installations in the auxiliary building to verify if the barriers existed between fire areas. The inspectors also reviewed records of fire barrier installations to verify if the barriers satisfied the quality and technical requirements of the UFSAR and the ITAAC.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 3.3.00.07c.ii.b (798) / Family 15A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07c.ii.b (798). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.15 - Inspection of ITAAC-Related Installation of Fire Protection Equipment

The inspectors used appropriate portions of the IP to walkdown fire areas in the radiologically controlled area of the auxiliary building to verify if fire barriers existed between fire areas. The inspectors walked down the fire barriers in the plant to verify if the fire barriers satisfied the technical requirements of the UFSAR and the ITAAC.

The inspectors used appropriate portions of the IP to review fire barrier installation records in the radiologically controlled area of the auxiliary building to verify if fire barriers existed between fire areas. The inspectors reviewed the fire barrier installation records to verify if they satisfied the technical requirements of the UFSAR and ITAAC.

b. Findings

No findings were identified.

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

1P01 ITAAC Management

- 40600-02.04 - ITAAC Maintenance Controls

a. Inspection Scope

The inspectors used portions of the IP to review three samples of ITAAC maintenance activities to verify if those activities were performed in accordance with 10 CFR 52.99(c)(2).

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 of the following work packages for calibration and operation of safety-related instrumentation, controls, actuation signals and interlocks associated with the reactor coolant system. The inspectors reviewed the calibration and testing results to verify if they satisfied the applicable quality and technical requirements of UFSAR Section 14.2.9.1.1(g).

- SV3-RCS-T0W-1054718, Perform Component Test on SV3-RCS-JE-FT101A/102A
- SV3-RCS-T0W-1054745, Perform Component Test on RCS WR Pressure Transmitters SV3-RCS-JE-PT140B, -140D
- SV3-PXST0W-1190238, Perform PMS CIM Component Test using 3-PXS-OTS-10-001 (PXS-PL-V117A)
- SV3-PXS-T0W-1237849, Perform ITAAC PMS CIM Component Test PXS-PL-V123A-I1 Arm &Fire
- SV3-VFS-T0W-1109875, Perform ITAAC PMS CIM Component Test VFS-V003 & VFS-V010 &VFS-800A
- SV3-RCS-T0W-1054740, Perform ITAAC PMS CIM Component Test on Pressurizer Level Transmitter SV3-RCS-JE-LT195A & SV3-RCS-JE-LT195C
- SV3-PXS-T0W-1109899, Perform ITAAC PMS CIM Component Test Using 3-GEN-OTS-10-003 (SV3-PXS-PL-V014B)
- SV3-RCS-T0W-1054924, Perform Component Test on SV3-RCS-JE-TE213A
- SV3-ECS-T0W-1109892, PMS CIM Component Test for ECS Components (SV3-ECS-ES-31)
- SV3-CCS-T0W-1109854, Perform ITAAC PMS CIM Component Test CCS-PL-V200, -V207, & -V208
- SV3-RCS-T0W-1186953, Perform Component Testing for RCP 1A Speed Instrumentation RCS-ST281
- SV RCS-T0W-1254782, (ITAAC) PMS SV3-RCS-PL-V150D CIM Component Test
- SV RCS-TOW-1243383, Perform Component Testing on HL 1 Level Transmitter SV3-RCS-JE-LT160A and SV3-RCS-JE-LT160B

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 results of the following work package that was used during hot functional testing to determine whether the core makeup tank cold leg balance line piping water temperature at various locations was sufficiently heated to initiate recirculation flow through the core makeup tanks. The inspectors reviewed the test results to verify if they satisfied the applicable quality and technical requirements of the UFSAR Section 14.2.9.1.3(j).

- SV3-PXS-T0W-1071719, Perform Preop Test 3-PSX-ITPP-504

b. Findings

No findings were identified.

1P04 Pre-operational Testing

- 70702-02.05 - Test Results Review

a. Inspection Scope

The inspectors used appropriate portions of the IP to review the licensee's results of the following work packages for calibration and operation of safety-related instrumentation, controls, actuation signals and interlocks associated with the passive core cooling system. The inspectors reviewed the calibration and testing activities to verify if they satisfied the applicable quality and technical requirements of the UFSAR Section 14.2.9.1.3(b).

- SV3-PXS-T0W-1041006, Performing Component Testing for PRHR HX Flow Transmitters SV3-PXS-JE-FT049A/B
- SV3-PXS-T0W-1041303, Perform Component Testing on 3-PXS-LT011B & LT011D
- SV3-PXS-T0W-1041576, Perform Component Testing on 3-PXS-LT014B & LT014D
- SV3-RNS-T0W-1109884 PMS Component Testing Using 3-GEN-OTS-10-002 (SV3-RNS-PL-V023)
- SV3-PXS-T0W-1041609, Perform Component Testing on 3-PXS-LT047
- SV3-SFS-T0W-1109872, PMS CIM Component Test Using 3-GEN-OTS-10-001, SV3-SFSS-PL-V035, -V038
- SV3-PXS-T0W-1243359, Perform Component Testing on Containment Floodup Level Transmitter SV3-PXS-JE-LT052
- SV3-PXS-T0W-1237842, Perform ITAAC PMS CIM Component Test PXS-PL-120B-I1

b. Findings

No findings were identified.

3. OPERATIONAL READINESS

Cornerstones: Inspection/Testing, Operational Programs

3T01 (Unit 3) 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/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 squib valves 3-RCS-V004A and 3-RCS-V004C received an electrical signal at the valve that was capable of actuating the valve via controls in the main control room. Specifically, the test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Rev. 2

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if controls in the main control room operated to cause a signal at the fourth-stage automatic depressurization system (ADS) squib valves electrical leads that was capable of actuating the valve. The test package was reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV3-RCS-ITR-800046, U3 Testing Results of RCS Squib Valve MCR Controls: ITAAC 2.1.02.11a.i, Rev. 1

b. Findings

No findings were identified.

3T02 (Unit 3) 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/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 squib valves 3-RCS-V004A and 3-RCS-V004C received an electrical signal at the valve that was capable of actuating the valve after a signal was input into the protection and monitoring system (PMS). The test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Rev. 2

The inspectors used the appropriate portions of the IP to review the licensee's test results used to determine if the fourth-stage ADS squib valves received an electrical signal at the valve electrical leads that was capable of actuating the valve. The test package was reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV3-RCS-ITR-800048, U3 Testing Results of RCS Squib Valves: ITAAC 2.1.02.11b.i, Rev. 1

b. Findings

No findings were identified.

3T03 (Unit 3) 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/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 check valve VWS-PL-V062 performed its safety-related function to change position. Specifically, the test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-VWS-ITPP-501, Central Chilled Water System Preoperational Test, Rev. 5

The inspectors used the appropriate portions of the IP to review the licensee's test results of check valves CCS-PL-V201, FPS-PL-V052, CAS-PL-V015, CAS-PL-V205, DWS-PL-V245, VFS-PL-V803A, VFS-PL-V803B, VWS-PL-V062, and SFS-PL-V037 to verify if they performed their safety function to change position. The test packages were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV3-CNS-ITR-800117, Unit 3 Recorded Results of SFS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV3-CNS-ITR-801117, Unit 3 Recorded Results of CCS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV3-CNS-ITR-802117, Unit 3 Recorded Results of CAS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV3-CNS-ITR-803117, Unit 3 Recorded Results of DWS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV3-CNS-ITR-805117, Unit 3 Recorded Results of VFS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV3-CNS-ITR-806117, Unit 3 Recorded Results of VWS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV3-CNS-ITR-804117, Unit 3 Recorded Results of FPS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 0
- SV3-CNS-ITR-804117, Unit 3 Recorded Results of FPS Check Valves Position: ITAAC 2.2.01.11a.iv, Rev. 1

b. Findings

Introduction

An NRC-identified ITAAC finding of very low safety significance (Green) with an associated NCV of 10 CFR, Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was identified for the licensee’s failure to accomplish preoperational testing activities in accordance with procedure 3-FPS-OTS-17-001, “FPS Check Valve Exercise Test,” Revision 0.1. Specifically, the licensee failed to utilize measuring and test equipment (M&TE) that was accurate and within the appropriate range necessary to verify that valve 3-FPS-V052 was closed and the ITAAC acceptance criteria was met when it failed to use a 0-20 gallons per minute (gpm) calibrated flowmeter or equivalent as specified by the procedure.

Description

On December 1, 2021, the licensee performed procedure 3-FPS-ITPP-501, “Fire Protection Preoperational Test,” Section 4.2, “Testing On 3-FPS-V052 (CTMT Supply CIV Check),” to satisfy ITAAC 2.2.01.11a.iv, Item 11.a. 3-FPS-ITPP-501 directed the licensee to perform procedure 3-FPS-OTS-17-001, “FPS Check Valve Exercise Test,” Section 4.3. 3-FPS-OTS-17-001, Section 2.0, Step 6, “Special Tools and Equipment” specifies a water hose with 0 – 20 gpm calibrated flowmeter or equivalent for this test. Additionally, 3-FPS-OTS-17-001, specified an acceptance criteria of less than 1.0 gpm for the close test of valve 3-FPS-V052 in order to meet the ITAAC acceptance criteria.

During review of ITAAC Closure Notification (ICN) ITAAC 2.2.01.11a.iv [Index Number 117], the inspectors noted that the temporary flowmeter utilized for the closure test of valve 3-FPS-V052 had a specified accurate measurement range of 2-20 gpm. The inspectors determined that this was insufficient to accurately determine whether the acceptance criteria of less than 1 gpm was met since its specified accurate measurement range was outside of the acceptance criteria. Additionally, the inspectors noted that procedure B-GEN-ITPA-004, “Conduct Of Test,” required that M&TE shall be verified to meet the type, range, and accuracy requirements for the test.

Subsequent to the inspectors questions, the licensee submitted letter ND-22-0314, Southern Nuclear Operating Company, Vogtle Electric Generating Plant Unit 3, Request for Withdrawal of ITAAC Closure Notification ITAAC 2.2.01.11a.iv [Index Number 117], dated: April 26, 2022, to the NRC and entered this issue into the corrective action program (CAP) as CRs 50136335 and 50140727. The licensee successfully reperformed the test using appropriate M&TE and determined that the leakage from valve 3-FPS-V052 was less than the test acceptance criteria of 1 gpm.

Analysis

The inspectors determined that the failure to accomplish preoperational testing activities in accordance with procedure 3-FPS-OTS-17-001 was a performance deficiency. The performance deficiency was determined to be more than minor because it invalidated the performance of the test described in the ITAAC. The inspectors determined that the issue was an ITAAC finding because it was material to the acceptance criteria of ITAAC 2.2.01.11a.iv. Specifically, the licensee failed to utilize M&TE that was accurate and within the appropriate range necessary to verify that valve 3-FPS-V052 was closed and the ITAAC acceptance criteria was met when the licensee failed to use a 0-20 gpm calibrated flowmeter or equivalent as specified by the procedure.

The inspectors concluded the finding was associated with the Inspection/Testing Cornerstone and assessed the finding in accordance with Inspection Manual Chapter (IMC) 2519, "Construction Significance Determination Process," Appendix A, "AP 1000 Construction Significance Determination Process," Section 4.

The inspectors determined the finding to be of very low safety significance (Green) due to the licensee demonstrating with reasonable assurance that the design function of the applicable system was not impaired by the deficiency. The licensee successfully reperformed the close test of valve 3-FPS-V052 with appropriate M&TE.

In accordance with IMC 0613 Appendix F, Construction Cross-Cutting Areas and Aspects," the inspectors determined the finding had a cross-cutting aspect of H.11, Challenge the Unknown, in the area of Human Performance. Specifically, the licensee should have questioned signing the test as being performed satisfactorily when the M&TE was not appropriate.

Enforcement

Title 10 CFR 50, Appendix B, Criterion V, states in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Contrary to the above, on December 1, 2021, the licensee failed to accomplish preoperational testing activities in accordance with procedure 3-FPS-OTS-17-001. Specifically, the licensee failed to utilize M&TE that was accurate and within the appropriate range necessary to verify that valve 3-FPS-V052 was closed and the ITAAC acceptance criteria was met when it failed to use a 0-20 gpm calibrated flowmeter or equivalent as specified by the procedure.

The licensee entered this issue into the CAP as CR 50136335 and 50140727 and successfully reperformed the test using appropriate M&TE. The licensee completed the corrective actions by reperforming the test using appropriate M&TE. This issue does not present an immediate safety concern because there was no fuel in the reactor vessel. Because this violation was not repetitive or willful, was of very low safety significance, 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 05200025/2022004-01, Failure to Use Appropriate M&TE).

3T04 (Unit 3) 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/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 of the passive containment cooling system to verify if the passive containment cooling water storage tank provided wetted coverage measured at the spring line that was equal to or greater than 90%, 72.9%, and 59.6% when water was delivered by one of the three flow paths to the containment shell. Specifically, the test package was reviewed as part of the ITAAC Technical Report to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and ITAAC.

- SV3-PCS-ITR-801138, Unit 3 Passive Containment Cooling System (PCS) Inspection Coatings: ITAAC 2.2.02.07b.i Item 7.b.ii and iii), NRC Number: 138, Rev. 0
- SV3-PCS-ITR-804138, Unit 3 Passive Containment Cooling System Testing: ITAAC 2.2.02.07b.i, Item 7b.i, NRC Index Number: 138, Rev. 0

b. Findings

No findings were identified.

3T05 (Unit 3) 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

b. Findings

No findings were identified.

3T06 (Unit 3) 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-02.03-Test Results Review

The inspectors used appropriate portions of the IP to review the licensee's test results to verify if the MCR VES was able to pressurize the MCR pressure boundary to greater than or equal to 1/8-in. water gauge with respect to the surrounding area with air leakage into the MCR of less than or equal to 10 cubic feet per min (cfm). The test package was reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV3-VES-ITR-802265, Unit 3 Main Control Room Emergency Habitability System (VES) Pressure, Flow and Noise: ITAAC 2.2.05.07a.i, Items 7.a, 7.b, 7.d and 12, Rev. 0

b. Findings

No findings were identified.

3T07 (Unit 3) 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 appropriate portions of the IP to observe the licensee's performance of the following procedure used to verify if the MCR 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 MCR was less than or equal to 10 cfm. The test was observed to verify if it satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-VES-ITPP-501, Main Control Room Emergency Habitability System Pre-Operational Test Procedure, Rev. 4

b. Findings

No findings were identified.

3T08 (Unit 3) 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/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 temperature and humidity in the main control room remained within limits for reliable human performance for the 72-hr period, and heat loads within the Division A, B, and C I&C rooms, and Division A and C Class 1E DC equipment rooms remained below 120 degrees Fahrenheit. The test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-VES-ITPP-501, Main Control Room Emergency Habitability System Pre-Operational Test Procedure, Rev. 4

The inspectors used the appropriate portions of the IP to review the licensee's report that concluded that: The temperature and humidity in the MCR remained within limits for reliable human performance for a 72-hour period; and the maximum temperature for both the I&C rooms and the Class 1E dc equipment rooms remained within limits for the same 72-hour period. The test packages were reviewed as part of the ITAAC Technical Report to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and ITAAC.

- SV3-VES-TR2-001, Vogtle Unit 3 Six Hour Main Control Room Heatup Summary Report, Rev. 0
- ND-22-0350, ITAAC Closure Notification on Completion of ITAAC 2.2.05.07c, [Index number 270]

b. Findings

No findings were identified.

3T09 (Unit 3) 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 main control room load shed panels performed their active safety function to de-energize main control room loads after receiving a signal from the PMS. Specifically, the test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-PMS-OTS-18-001, Engineered Safeguards Actuation System 24-Month Actuation Device Test, Rev. 0.2

The inspectors used the appropriate portions of the IP to review the licensee's test results of the MCR load shed panels to verify if the panels performed their active safety function to de-energize MCR loads after receiving a signal from the PMS. Specifically, the test packages were reviewed as part of the ITAAC technical report to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and ITAAC.

- SV3-VES-ITR-800877, Unit 3 Recorded Results of Main Control Room Load Shed: ITAAC 2.2.05.09c, NRC Index Number 877, Rev. 0
- ND-22-0276, ITAAC Closure Notice on Completion of ITAAC 2.2.05.09c [Index Number 877], 05/06/2022

b. Findings

No findings were identified.

3T10 (Unit 3) 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 the appropriate portions of the IP to observe the licensee's performance of the following preoperational test procedure used to verify if the reactor trip switchgear opened after the PMS initiated an automatic reactor trip. The automatic reactor trip was initiated by manually opening 3-PXS-PL-V108A (passive residual heat removal system (PRHR) heat exchanger outlet flow control valve) which caused a PRHR actuation reactor trip. The test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-PMS-ITPP-504, PMS Reactor Trip Breakers, Rev. 3.0

The inspectors used the appropriate portions of the IP to review the licensee's test results to verify if the reactor trip switchgear opened when a PRHR heat exchanger outlet flow control valve was opened. The test packages were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 2.5.02.06a.i-U3-CP, ITAAC Completion Package, Rev. 0
- SV3-PMS-ITR-800529, Unit 3 Test Results of PMS Automatic Reactor Trip Testing: ITAAC 2.5.02.06a.i, Rev. 0
- ND-22-0302, ITAAC Closure Notice on Completion of ITAAC Item 2.5.02.06a.i [Index Number 529], 04/20/2022

b. Findings

No findings were identified.

3T11 (Unit 3) 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/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 and reviewed the results of the following preoperational test procedure used to verify if actuation signals were generated for a manual reactor trip. The test was observed and results were reviewed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-PMS-ITPP-504, PMS Reactor Trip Breakers, Rev. 3.0

The inspectors used appropriate portions of the IP to review the following factory acceptance test packages that verify if the PMS initiated an automatic reactor trip and engineered safety feature actuation when plant signals reach specified limits. The test procedures and results associated with containment isolation, ADS stages 1-3, passive containment cooling, in-containment refueling water storage tank injection, normal residual heat removal isolation, and containment vacuum relief were reviewed to determine whether they contained sufficient information to meet the requirements of the UFSAR and ITAAC acceptance criteria.

- SV0-PMS-T2R-407, Vogtle AP1000 Protection and Safety Monitoring System System-Level Reactor Trip Channel Integration Test Report, Rev. 0
- SV0-PMS-T2R-408, Vogtle AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Report, Rev. 0

The inspectors used appropriate portions of the IP to review the PMS cabinet energization and diagnostics to verify if the PMS output signals to the reactor trip switchgear were generated after the test signal reached the specified limit. The inspectors reviewed the test results to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and ITAAC.

- SV3-PMS Cabinet Diagnostic Testing-001, Unit 3 PMS Cabinet Diagnostic Testing for ITAAC 2.5.02.06a.ii [NRC Index No. 530], Rev. 0
- WO1224799, PMS Cabinet Energization with IDS Power, Rev. 2

The inspectors also used appropriate portions of the IP to review the licensee's test results used to verify if:

(1) PMS output signals were generated for reactor trip and selected engineered safety features after the manual initiation controls are actuated
(2) PMS provided manual initiation of reactor trip and engineered safety features
(3) PMS provided for the minimum inventory of displays, visual alerts, and fixed position controls in the main control room
(4) Displays of the open/closed status of the reactor trip breakers could be retrieved in the MCR
(5) PMS blocks were automatically removed when the test signal reaches the specified limit
(6) PMS two-out-of-four initiation logic reverted to a two-out-of-three coincidence logic if one of the four channels was bypassed, and all bypassed channels were alarmed in the MCR.

The test results were reviewed to determine whether they contained sufficient information to meet the applicable quality and technical requirements of the UFSAR and ITAAC.

- B-GEN-ITPCI-006, Main Control Room and Remote Shutdown Room, Rev. 3
- 3-PMS-ITPP-504, PMS Reactor Trip Breakers, Rev. 3
- 3-PMS-ITPP-521, Protection and Safety Monitoring System Logic Test Preoperational Test Procedure, Rev. 3
- SV3-PMS-ITR-802530, U3 Recorded Results of Protection and Safety Monitoring System (PMS) Auto Block Removal Test: ITAAC 2.5.02.06a.ii Item 9.a, Rev. 0

b. Findings

No findings were identified.

3T12 (Unit 3) 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 the appropriate portions of the IP to observe the licensee's performance of the following preoperational test procedures used to verify if the reactor trip switchgear opened after manual reactor trip controls were actuated utilizing reactor trip switches 3-PMS-HS025, 3-PMS-HS026, and 3-DDS-HS325 located in the main control room and remote shutdown room. The test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-PMS-ITPP-504, PMS Reactor Trip Breakers, Ver. 3.0
- 3-DDS-ITPP-520, Data Display and Processing System Remote Shutdown Room Preoperational Test Procedure, Ver. 3.0

The inspectors used the appropriate portions of the IP to review the licensee's test results of the PMS to verify if hand switches 3-PMS-HS025 and 3-PMS-HS026 opened reactor trip switchgear after manual actuation. The test packages were reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- SV3-PMS-ITR-800532, U3 PMS Provides Manual Initiation of Reactor Trip ITAAC 2.5.02.06c.i NRC Index Number:532, Rev. 0
- ND-22-0290, ITAAC Closure Notification on Completion of ITAAC 2.5.02.06c.i [Index Number 532], 05/07/22

b. Findings

No findings were identified.

3T13 (Unit 3) 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/section to perform this inspection:

- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to review the following factory acceptance test package that was used to verify if the PMS provided the minimum inventory of displays, visual alerts, and fixed position controls in the main control room. The test procedures and results associated with startup rate, neutron flux, containment water level, containment area high-range radiation level, reactor coolant system pressure, and reactor coolant system wide-range cold leg temperature were reviewed to determine whether they contained sufficient technical information to meet the requirements of the UFSAR and ITAAC.

- APP-PMS-T2R-010, AP1000 Protection and Safety Monitoring System Qualified Data Processing System Channel Integration Test Report, Rev. 0

The inspectors used appropriate portions of the IP to review the PMS cabinet energization, cabinet diagnostics, and divisional diagnostics test results to verify if the PMS provided the plant parameters used to generate visual alerts that identified challenges to critical safety functions. Specifically, the test results were reviewed to determine whether they contained sufficient technical information to meet the requirements of the UFSAR and ITAAC.

- SV3-PMS Cabinet Diagnostic Testing-001, Unit 3 PMS Cabinet Diagnostic Testing for ITAAC 2.5.02.08a.ii [NRC Index No. 540], Rev. 0
- WO1224799, PMS Cabinet Energization with IDS Power, Rev. 2

b. Findings

No findings were identified.

3T14 (Unit 3) 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/section to perform this inspection:

- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to review the following factory acceptance test package to verify if the actuation of each transfer switch from the MCR to the remote shutdown room (RSR) resulted in an alarm in the MCR and remote shutdown workstation (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. The test procedure and results were reviewed to determine whether they contained sufficient information to meet the technical requirements of the UFSAR and ITAAC acceptance criteria.

- VS3-PMS-T2R-034, V.C. Summer Unit 3 AP 1000 Protection and Safety Monitoring System Maintenance and Test Panel Miscellaneous Test Report, Rev. 0
- 2.5.02.08b.ii-U0-PRF, ITAAC 543 PCD, Rev. 0

The inspectors used appropriate portions of the IP to review test results to verify if the actuation of each transfer switch from the MCR to the RSR resulted 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. The test results were reviewed to determine whether they contained sufficient information to meet the technical requirements of the UFSAR and ITAAC acceptance criteria.

- SV3-PMS Cabinet Diagnostic Testing-001, Unit 3 PMS Cabinet Diagnostic Testing for ITAAC 2.5.02.08b.ii [NRC Index No. 543], Rev. 0
- SV3-PMS-ITR-800543, Unit 3 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.

3T15 (Unit 3) ITAAC Number 2.5.02.09d (548) / Family 10D

a. Inspection Scope

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

- 65001.D-02.03-Test Results Review

The inspectors also used appropriate portions of the IP to review the factory acceptance test packages to verify if PMS output signals were generated as the interlock conditions were changed for normal residual heat removal suction valves, passive residual heat removal heat exchanger inlet isolation valve, core makeup tank cold leg balance isolation valves, and containment vacuum relief isolation valves. Specifically, the test results were reviewed to determine whether they contained sufficient information to meet the requirements of the UFSAR and ITAAC acceptance criteria.

- SV3-PMS-T2R-008, Vogtle Unit 3 AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Report, Rev. 0
- SV3-PMS-T2R-009, AP1000 Protection and Safety Monitoring System Integrated Logic Processor Component Logic Channel Integration Test Report, Rev. 0

The inspectors also used appropriate portions of the IP to review the PMS cabinet diagnostic test results to verify if PMS output signals were generated as the interlock conditions were changed for normal residual heat removal suction valves, passive residual heat removal heat exchanger inlet isolation valve, core makeup tank cold leg balance isolation valves, and containment vacuum relief isolation valves. Specifically, the test results were reviewed to determine whether they contained sufficient information to meet the requirements of the UFSAR and ITAAC acceptance criteria.

- B-GEN-ITPCI-001-011, PMS Cabinets - Diagnostics, Rev. 1.2

b. Findings

No findings were identified.

3T16 (Unit 3) 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/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 test procedure used to verify if the Division B 24-hour inverter, 3-IDSB-DU-1, supplied a line-to-line output voltage of 208 ± 2% V at a frequency of 60 ± 0.5% Hz. The test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-IDS-ITPP-501, Class 1E DC and UPS Preoperational Test, Rev. 8.0

The inspectors used the appropriate portions of the IP to review the Class 1E direct current and uninterruptable power supply system test results to verify if the:

1) batteries could supply power to the DC switchboard loads at the required voltage for the required design duty cycle;
2) battery chargers supplied required output current and voltage to the DC switchboard bus loads while maintaining the corresponding battery charged;
3) battery chargers provided the PMS with two loss of voltage input signals;
4) inverters could supply their AC loads with the required voltage and frequency;
5) regulating transformers could supply AC loads at the required voltage when powered from their 480V motor control centers; and
6) safety displays could be retrieved in the main control room.

The test packages were reviewed as part of the ITAAC Technical Report to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and ITAAC.

- ND-22-0327, ITAAC Closure Notification on Completion of ITAAC Item 2.6.03.04c [Index Number 603], Rev. 0
- 3-IDS-ITR-803603, Unit 3 Recorded Results of Battery Charger Testing: ITAAC 2.6.03.04c Item 5.a and 5.b, Rev. 0
- 3-IDS-ITR-802603, Unit 3 Recorded Results of Regulatory Transformer Testing: ITAAC 2.6.03.04c Item 5.c, Rev. 0
- 3-IDS-ITR-805603, Unit 3 Inspection Results of: ITAAC 2.6.03.04c (Item 4.h), Rev. 0
- 3-IDS-ITR-804603, Unit 3 Inspection Results of Safety and Non-safety Displays: ITAAC 2.6.03.04c Items 6 and 11, Rev. 0
- 3-IDS-ITR-801603, Unit 3 Recorded Results of Inverter Testing: ITAAC 2.6.03.04c Items 4.f and 4.g, Rev. 1
- 3-IDS-ITR-800603, Unit 3 Recorded Results of Battery Bank Testing: ITAAC 2.6.03.04c Items 4.c, 4.d, 4.e, Rev. 1

b. Findings

Introduction

The NRC inspectors identified a construction finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to translate design requirements of the Class 1E DC and UPS system (IDS) into preoperational testing procedure 3-IDS-ITPP-501, “Class 1E DC and UPS Preoperational Test,” Rev. 7. Specifically, the licensee failed to translate the allowed voltage deviation in National Electrical Manufacturers Association (NEMA) PE 5-1985, “Utility Type Battery Chargers,” into the maximum adjustable output float voltage in the preoperational test procedure.

Description

In NRC inspection report 0500025/2021002, 0500026/2021002 – Vogtle Electric Generating Plant, Units 3 and 4 NRC Initial Test Program and Operation Programs Integrated Inspection Reports (ADAMS Accession Number ML21133A105), the NRC identified that the licensee’s preoperational test procedure, 3-IDS-ITPP-501, “Class 1E DC and UPS Preoperational Test,” Revision 2.1, allowed a float tolerance greater than the design of the IDS system without specifying the circumstances for which the exceedance was allowed. The licensee’s design specification, APP-IDS-E8-001, “Class 1E DC and UPS Specification Document,” Rev. 5, specified that the maximum adjustable output float voltage was 270VDC. However, step 4.1.1.3 of procedure 3-IDS-ITPP-501 allowed a maximum float voltage of 272VDC without identifying the circumstances for which this was allowed. Design Specification for Class 1E 250 VDC Battery Chargers for the IDS System, APP-DC01-Z0-001, Rev.11, sections 4.1.1.3.2 and 4.1.1.3.3 specified, in part, that the battery charger output voltage shall be regulated at no more than +0.5% of the nominal float voltage (270V), equaling 271.35

VDC. The design standard for the battery charger, NEMA PE-5, Section 3.7, “Voltage deviation (regulation)” also specified the allowed voltage deviation shall not exceed 0.5% of the charger setpoint. The licensee entered the issue into their corrective action program as CR 50080097 to implement corrective actions to revise the procedure to align with the design specifications.

On June 1, 2022, the inspectors reviewed the updated preoperational test procedure 3-IDS-ITPP-501 to verify corrective actions associated with the battery charger setpoint. Upon reviewing the corrective actions, the inspectors identified that the licensee implemented corrective actions in revision 4 of the procedure to ensure the procedure aligned with the IDS design specifications; however, the procedure was later changed back to the original deficient condition in revision 7. The procedure stated the basis for the change back to the original condition was to align the procedure with section 8.3.2.5.1 of the UFSAR which stated, “Each battery is connected to a charger maintained at 270 VDC + 2V for a period of at least 24 hours prior to the test to assure the battery is fully charged.” The inspectors also determined that specifying an upper limit of 272V in the procedure would allow the safety-related battery chargers to exceed their design requirements contained in NEMA PE-5 and APP-DC01-Z0-001. The licensee entered this issue into their corrective action program as CR 50141588.

Analysis

The inspectors determined that the failure to translate the design requirements of the Class 1E DC and UPS system into preoperational testing procedure 3-IDS-ITPP-501 was contrary to 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” and a performance deficiency. The performance deficiency was determined to be more than minor and a finding because it affected the procedure quality attribute of the construction reactor safety cornerstone objective (Inspection/Testing). Specifically, the procedure would have allowed the safety-related battery chargers to operate outside of the 0.5% nominal voltage design requirements and exceed the maximum float output voltage of 270 VDC contained in design requirements. The performance deficiency did not impact an ITAAC, and therefore was determined to be a construction finding.

The inspectors determined the finding was associated with the Inspection/Testing Cornerstone and assessed the finding in accordance with IMC 2519, “Construction Significance Determination Process,” Appendix A, “AP1000 Construction Significance Determination Process,” Section 4. The inspectors determined this finding was of very low safety significance (Green) because the finding did not impair a design function.

The inspectors determined this finding was indicative of current licensee performance and was associated with the cross-cutting aspect of change management, in the area of human performance in accordance with IMC 0613, Appendix F, “Construction Cross-Cutting Areas and Aspects.” The proximate cause was attributed to the failure to use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority. [H.3]

Enforcement

10 CFR Part 50, Appendix B, Criterion III, “Design Control,” requires, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, since 2021, the licensee failed to translate design requirements of the IDS into preoperational testing procedure 3-IDS-ITPP-501. Specifically, the licensee failed to translate the allowed voltage deviation in NEMA PE 5-1985, “Utility Type Battery Chargers,” into the maximum adjustable output float voltage in the preoperational test procedure.

The licensee entered this issue into its CAP as CR 50141588. This finding did not present an immediate safety concern because the plant was not operating, and the reactor vessel was not loaded with fuel. Because this violation was not repetitive or willful, was of very low safety significance, and was entered into the licensee’s CAP, this violation is being treated as an NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200025/2022004-02, Failure to Translate Design Requirements into Procedure 3-IDS-ITPP-501).

3T17 (Unit 3) 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/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 IDS could provide a voltage greater than or equal to each valve's minimum design voltage when power was supplied under design conditions from IDS batteries with battery terminal voltage at 210 Vdc. The test package was reviewed to verify if the test results satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- APP-IDS-E0C-018, MOV Acceptance Voltage During Safety Related DC MOV Field Testing, Rev. 1
- APP-IDS-E0C-004, IDS Power Cable Sizing and Voltage Drop Analysis, Rev. 6
- SV3-IDS-E0R-005, Vogtle Unit 3 IDS System ITAAC 2.6.03.04i MOV Voltage Test Analyses Report, Rev. 0

b. Findings

No findings were identified.

3T18 (Unit 4) ITAAC Number 2.2.03.08c.i.03 (179) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.i.03 (179). 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 to verify if the injection lines flow resistance between the in-containment refueling water storage tank and the reactor vessel was within the analyzed values. 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-507, IRWST Flow Tests, Ver. 1.0, TPC 1.0

b. Findings

No findings were identified.

3T19 (Unit 4) ITAAC Number 2.2.03.08c.i.04 (180) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.i.04 (180). 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 injection line flow resistance for the containment recirculation line between the containment and the reactor vessel was within the analyzed values. 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-507, IRWST Flow Tests, Rev. 1, TPC 1

b. Findings

No findings were identified.

3T20 (Unit 4) ITAAC Number 2.2.03.09a.i (201) / Family 03D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.09a.i (201). 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 to verify if the injection lines flow resistance between the IRWST drain line and the reactor vessel was within the analyzed values. 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-507, IRWST Flow Tests, Ver. 1.0, TPC 1.0

b. Findings

No findings were identified.

3T21 (Unit 4) ITAAC Number 2.2.03.12a.iv (216) / Family 07D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.12a.iv (216). 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 to verify if check valves 4-PXS-PL-V119A/B, 4-PXS-V122A/B and 4-PXS-V124A/B transferred open and closed as required. 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-507, IRWST Flow Tests, Ver. 1.0, TPC 1.0

b. Findings

No findings were identified.

Cornerstones: Operational Programs

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

3P01 Inservice Testing

- 73758-App C - Appendix C. Implementation of PST/IST Program for Pumps, Valves, and Dynamic Restraints

a. Inspection Scope

The inspectors performed the following activities related to the development of the Vogtle Units 3 & 4 Inservice Test programs for pumps, valves, and dynamic restraints that will perform safety-related functions at Vogtle Units 3 & 4:

As discussed in the report for the previous inspection quarter (ADAMS Accession No: ML22091A316), the licensee determined that time sampling using a non-safety system can cause an error in the proper measurement of valve stroke time. The licensee reported that the initial test program was assessing and retesting specific valves to verify proper stroke time. The licensee was also updating several plant procedures to correct this error. The licensee was tracking these activities by corrective action documents, including CR 8005635 and TE 60036478. In addition, SNC provided CAR 80005635, TE 60025640, TE 60026056, TE 60029454, and TE 60032815 describing resolution of the stroke time issue. During this quarter, the inspectors reviewed the completion of the corrective actions for the valve stroke time condition reports.

b. Findings

No findings were identified.

3P02 Preservice Testing

- 73758-App A - Appendix A. Review of Functional Design, Qualification, and PST/IST Programs for Pumps, Valves, and Dynamic Restraints
- 73758-App C - Appendix C. Implementation of PST/IST Program for Pumps, Valves, and Dynamic Restraints

a. Inspection Scope

The inspectors performed the following activities related to the development of the Vogtle Units 3 & 4 Inservice Test programs for pumps, valves, and dynamic restraints that will perform safety-related functions:

- The inspectors reviewed the AP1000 squib valve actuator lot acceptance testing report and squib valve preservice charge testing verification for the sampled 8” LP squib valve cartridges, 8” HP squib valve cartridges, and 14” ADS squib valve cartridges for Vogtle Units 3 & 4. The inspectors also reviewed the establishment of the final lot acceptance test requirements prepared by the vendor for the 8” LP, 8” HP, and 14” ADS squib valve cartridges.
- The inspectors reviewed the PST results for the Passive Containment Cooling System Water Storage Tank (PCCWST) Outlet Motor Operated Isolation Valve, PCS-PL-V001C, and the resulting corrective action documents based on those PST results. The inspectors reviewed follow-up information provided by the licensee regarding the corrective action activities and extent of condition review.

b. Findings

No findings were identified.

3P03 Quality Assurance (Operations)

- 71303-02.04 - Meet the Programmatic Requirements in TS Section 5

a. Inspection Scope

The inspectors used appropriate portions of the IP to review the licensee's setpoint control program to verify if the methodology was established and plant procedures were in place to implement the program in accordance with Technical Specifications, Section 5.5.14. The inspectors reviewed B-GEN-ENG-20, Setpoint Control, to verify if the program was consistent with the requirements of Technical Specifications, Section 5.5.14. The inspectors reviewed several setpoint calculations, and associated scaling calculations, calibration procedures, as-left tolerance and as-found tolerance values, and tap and sensor elevation drawings for pressurizer pressure, pressurizer water level, steam generator narrow range water level, main steam line pressure, reactor coolant system wide range pressure, startup feedwater flow, and steam generator wide range water level to verify if the setpoints for these processes were in accordance with the setpoint control program.

b. Findings

No findings were identified.

3P04 Process and Effluent Monitoring

- 84527 – Part 52, Solid Waste Management Program

a. Inspection Scope

Minimum Inspection Requirement A: Operational Procedures

The inspectors evaluated the incorporation of the current Vogtle Electric Generating Plant Units 1 and 2 procedures for solid waste management, radioactive waste characterization and radioactive material/waste shipping into the program for Vogtle Units 3 and 4. Procedures that were unique to Units 3 and 4 were reviewed to verify compliance with the requirements of 10 CFR 20, Appendix G to 10 CFR Part 20, 10 CFR 61, 10 CFR 71, and use of the guidance in Regulatory Guide (RG) 1.143, "Design Guidance for Radioactive Waste Management Systems Structures, and Components Installed in light-Water-Cooled Nuclear Power Plants." The following procedures were reviewed.

- NMP-HP-405, Shipment of Radioactive Waste and Radioactive Material, Version 4.0
- NMP-HP-406, Performing Surveys for Shipments of Radioactive Containers, Version 2.2
- NMP-HP-407, Radioactive Materials - Additional Transportation Controls for Category 1 and 2 Quantities of Radioactive Materials, Version 3.2
- NMP-HP-408, Solid Radioactive Waste Scaling Factor Determination and Implementation and Waste Classification, Version 2.0
- NMP-HP-415, Storage of Radwaste in Outdoor Process Shields, Version 2.1
- Process Control Program for Southern Nuclear Operating Company Vogtle Units 3 & 4, Revision 1.0

Minimum Inspection Requirement E: Radioactive Material Storage and Security

The procedures listed in Minimum Inspection Requirement A were also reviewed to ensure that the control and labelling of radioactive material in storage will minimize the potential for unauthorized removal. In addition, through discussions with licensee personnel, a review of the procedures listed below, and walkdowns of planned storage areas, the inspectors evaluated programmatic and physical controls to verify incorporation of fleet-wide security requirements into the Vogtle 3 & 4 program and overall compliance with 10 CFR 37.

- NMP-SE-018, Physical Protection of Category 1 and 2 Quantities of Radioactive Material, Version 6.0
- NMP-SE-018-003, Physical Protection of Category 1 and 2 Quantities of Radioactive Material – Vogtle Electric Generating Plant Instruction, Version 5.0

Minimum Inspection Requirement A: Operational Procedures

The inspectors evaluated the incorporation of the current Vogtle Electric Generating Plant Units 1 and 2 procedures for solid waste management, radioactive waste characterization and radioactive material/waste shipping into the program for Vogtle Units 3 and 4. Procedures that were unique to Units 3 and 4 were reviewed to verify compliance with the requirements of 10 CFR 20, Appendix G to 10 CFR Part 20, 10 CFR 61, 10 CFR 71, and use of the guidance in Regulatory Guide (RG) 1.143, "Design Guidance for Radioactive Waste Management Systems Structures, and Components Installed in light-Water-Cooled Nuclear Power Plants." The following procedures were reviewed.

- NMP-HP-405, Shipment of Radioactive Waste and Radioactive Material, Version 4.0
- NMP-HP-406, Performing Surveys for Shipments of Radioactive Containers, Version 2.2
- NMP-HP-407, Radioactive Materials - Additional Transportation Controls for Category 1 and 2 Quantities of Radioactive Materials, Version 3.2
- NMP-HP-408, Solid Radioactive Waste Scaling Factor Determination and Implementation and Waste Classification, Version 2.0
- NMP-HP-415, Storage of Radwaste in Outdoor Process Shields, Version 2.1
- Process Control Program for Southern Nuclear Operating Company Vogtle Units 3 & 4, Revision 1.0

Minimum Inspection Requirement E: Radioactive Material Storage and Security

The procedures listed in Minimum Inspection Requirement A were also reviewed to ensure that the control and labelling of radioactive material in storage will minimize the potential for unauthorized removal. In addition, through discussions with licensee personnel, a review of the procedures listed below, and walkdowns of planned storage areas, the inspectors evaluated programmatic and physical controls to verify incorporation of fleet-wide security requirements into the Vogtle 3 & 4 program and overall compliance with 10 CFR 37.

- NMP-SE-018, Physical Protection of Category 1 and 2 Quantities of Radioactive Material, Version 6.0
- NMP-SE-018-003, Physical Protection of Category 1 and 2 Quantities of Radioactive Material – Vogtle Electric Generating Plant Instruction, Version 5.0

b. Findings

No findings were identified.

3P05 Process and Effluent Monitoring

- 84528 – Part 52, Liquid Waste Management Program

a. Inspection Scope

Minimum Inspection Requirement A: Operational Procedures

The inspectors reviewed the licensee's program for liquid waste management to verify that established procedures provided adequate instructions for sampling the radwaste liquid system (WLS) to ensure compliance with the limits set forth in 10 CFR 20, the Offsite Dose Calculation Manual (ODCM), the Technical Requirements Manual (TRM), UFSAR Section 11, and Technical Specifications (TS) Section 5.5. The inspectors evaluated the licensee's identification of sampling points for potential radiological effluents and the method available for sampling at each location, including general instructions for sampling, labeling, storing, and shipping of both radioactive and non-radioactive samples. The following procedures were reviewed.

- B-WLS-CSP-001, Sampling of Liquid Radwaste System, Version 1.0
- B-ADM-CHM-004, Sampling Points for Potential Radiological Effluents, Version 1.0
- NMP-CH-020-001, Chemistry Sampling, Storage, and Shipping, Version 3.2

Minimum Inspection Requirement C: Post-accident Sampling

The inspectors reviewed the licensee's post-accident sampling program to verify that established procedures provide instructions for sampling the WLS after an event involving a large release of fission products into the reactor coolant system. The following procedure was reviewed to verify compliance with the limits set forth in 10 CFR Part 20, the ODCM, the TRM, UFSAR section 11, and TS section 5.5.

- B-WLS-CSP-002, Monitoring of the Radioactive Liquid Waste Management System During Recovery Operations Following An Accident, Ver. 1.0

Minimum Inspection Requirement D: Pre-operational Testing

Selected pre-operational testing results were reviewed to verify operational readiness of important system components. The following pre-operational tests were reviewed.

- Work Order No.:1050501. Liquid Radwaste Effluent Flow Meter (SV3WLS-JEFT232 Component Test)
- ITAAC Technical Report No.:SV3-WLS-ITR-801444, Rev. 0 (ITAAC 2.3.10.07a.ii, Item 7b; NRC Index No.:444) (RE-229 automatic isolation valve)

Minimum Inspection Requirement E: Liquid Discharge Monitor

The inspectors reviewed the primary calibration, calibration source certificates, and site acceptance testing records for the liquid radwaste discharge monitor (WLS-JE-RE229) to verify accurate detector alignment, calibration source traceability, and to verify compliance with 10 CFR Part 20, the ODCM, the TRM, UFSAR Section 11, and TS 5.5. The inspectors determined that the licensee is yet to develop a procedure for routine in-situ calibration of WLS-JE-RE229, however, discussions with licensee personnel revealed that final calibration procedures will be very similar to the site acceptance testing methods that were reviewed.

The inspectors observed that plant operators in the Vogtle Unit 3 MCR were able to access the plant control system and obtain indications from the radiation monitoring system for installed plant radiation monitors that were operational.

The following calibration related records were reviewed.

- SV3-RMS-T2R-003, Appendix L, AP1000 Radiation Monitoring System Primary Calibration reports, 04648113-Primary Calibration RD-64-62 with the RM-2020/DIU Monitor (Type A), dated 09/02/2014 (Work Order No.:20021810)
- Work Order No.:1112732, RE229 Acceptance Testing
- Calibration Certificates for Sources No.:1640-39-1, 1640-39-6, 1636-3-6, and 1640-19-1

b. Findings

No findings were identified.

3P06 Process and Effluent Monitoring

- 83746 - Part 52, Offsite Dose Calculation Manual (ODCM)

a. Inspection Scope

Minimum Inspection Requirement A: Procedures for Controlling Effluent Releases

The inspectors reviewed the following procedures for gaseous and liquid effluent release permit generation and administration of the ODCM program. Procedures unique to Vogtle units 3 and 4 were evaluated for compatibility with the ODCM and the requirements of UFSAR sections 2 and 11 and TS 5.5. Fleet procedures were reviewed to verify incorporation into the Vogtle 3 and 4 program.

- B-GEN-CEF-006, Radioactive Liquid Effluent Release Permit Guidelines, version 1.0
- B-GEN-CEF-007, Radioactive Liquid Effluent Permit Generation and Data Control – Manual Method, version 1.0
- B-GEN-CEF-008, Radioactive Gaseous Effluent Permit Generation and Data Control – Manual Method, version 1.0
- B-GEN-CEF-009, Radioactive Liquid Effluent Release Permit Generation and Data Control – Computer (OPENEMS) Method, version 1.0
- B-GEN-CEF-010, Radioactive Gaseous Effluent Release Permit Generation and Data Control – Computer (OPENEMS) Method, version 1.0
- NMP-EN-001, Management of the Radioactive Effluent Release Reports and the Offsite Dose Calculation Manuals, version 8.1

The inspectors also reviewed the following procedures for gaseous effluent sampling and analysis. The procedures were evaluated against the requirements of ODCM Attachment 4 and the guidance in RG 1.97, “Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident”, Rev. 3.

- 3-GEN-CSP-001, Obtaining Gaseous Sample for Radioactivity Analysis, version 1.0
- B-GEN-CSP-004, Obtaining Ventilation Systems Samples for Radioactivity Analysis Under Post Accident Conditions, version 1.0

Procedures for liquid effluent sampling were reviewed as part of inspection procedure 84528 – Part 52, Liquid Waste Management Program.

Minimum Inspection Requirement D: ODCM Calculational Models

The inspectors evaluated site-specific equations, models, and parameters contained in the ODCM and used to calculate and control liquid and gaseous radiological effluent concentrations and offsite doses. The following ODCM items were included in the inspection.

- Programmatic limits for effluent concentration and offsite dose (ODCM sections 6.2 and 6.3)
- Effluent monitor requirements for operability, surveillances, and compensatory actions (ODCM attachments 1, 2, 6, and 7)
- Effluent sampling requirements (ODCM attachments 3 and 4)
- Equations for calculating liquid and gaseous monitor alarm setpoints (ODCM sections 6.2 and 6.3)
- Equations for calculating offsite doses due to liquid and gaseous effluents (ODCM attachment 13)
- Annual reporting requirements (ODCM section 6.7)

The ODCM equations, models, and parameters were evaluated against the requirements of 10 CFR 20, 10 CFR 50 Appendix I, 40 CFR 190, TS 5.5, UFSAR Sections 2 and 11, and the regulatory and industry guidance contained in the following documents:

- RG 1.21, Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Reactors, revision 1
- RG 4.15, Quality Assurance for Radiological Monitoring Programs (Inception through Normal Operations to License Termination) – Effluent Streams and the Environment, revision 1
- RG 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I, revision 1
- NUREG-0133, Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants, 1978
- NUREG-1301, Offsite Dose Calculation Manual Guidance: Standard Radiological Effluent Controls for Pressurized Water Reactors, 1991
- Nuclear Energy Institute (NEI) Generic FSAR Template Guidance for Offsite Dose Calculation Manual (ODCM) Program Description, NEI 07-09A, revision 0

b. Findings

No findings were identified.

3P07 Radiation Protection

- 83535 – Part 52, Control of Radioactive Materials and Contamination, Surveys, and Monitoring

a. Inspection Scope

Minimum Inspection Requirement B: Area Monitor and Airborne Monitor Readiness

The inspectors reviewed primary calibration documentation for the following instruments installed in Vogtle Unit 3.

- Containment High Range Radiation Monitors (RE160, RE161, RE162, and RE163) and Primary Sample Room Area Radiation Monitor (RE008)
- Liquid Radiation Monitors (Steam Generator Blowdown, RE010; Liquid Radwaste Discharge, RE229; and Waste Water Discharge, RE021)

The inspectors reviewed site acceptance test documentation for the following instruments installed in Vogtle Unit 3.

- Primary Sample Room ARM (3-RMS-JS-08), 04644301-SAT, 05/25/2022
- Work Order # 1112732, Perform Component Testing on Liquid Radwaste Effluent Radiation Monitoring Pkg SV3-WLS-JS-229, 02/23/2022
- Work Order # 1075649, Perform Component Testing on Containment High Range Radiation Monitor SV3-PXS-JS-161, 02/09/2022
- Work Order # 1075650, Perform Component Testing on Containment High Range Radiation Monitor SV3-PXS-JS-162, 02/22/2022

The inspectors reviewed Calibration Source Transfer documentation [transfer from primary calibration to field calibration sources] for the following instruments installed in Vogtle Unit 3.

- RE160, RE161, RE162, and RE163, Containment High Range Radiation Monitors, and RE008, Primary Sample Room Area Radiation Monitor (RT-11 field calibration source Serial # 51)
- RE229, Liquid Radwaste Discharge Radiation Monitor (multiple Cs-137 and Ba-133 solid sources)

Minimum Inspection Requirement C: Portable Instrument Readiness

The inspectors verified that selected instruments intended for use during emergency operations were operable, calibrated, available for use, and that procedures are in place for periodic checks and inventory of the instruments. The following procedures were reviewed.

- NMP-EP-306, Inventories and Surveillances, Version 2.0
- NMP-EP-306-001, Facilities Inventories and Equipment Tests, Version 2.0
- NMP-EP-306-001-F01, Operations Support Center Inventory of Radiation Protection Equipment, Version 2.0
- NMP-EP-306-001-F02, Technical Support Center Inventory of Radiation Protection Equipment, Version 2.0

b. Findings

No findings were identified.

3P08 Environmental Qualification

- 51080 – Part 52, Environmental Qualification (EQ) Program for Electrical and Mechanical Equipment

a. Inspection Scope

The inspectors reviewed applicable work orders, data sheets, and design drawings to determine if the following installed components were bounded by the tested and analyzed design characteristics. The inspectors reviewed the equipment qualification summary reports and equipment qualification data packages to determine whether installation restrictions from testing were translated to the drawings and environmental qualification reconciliation reports and that any differences between as-built and as-designed conditions were reconciled in accordance with approved modification or change processes. The inspectors performed a walkdown of the selected installed components to verify if the components were installed in accordance with design drawings. The inspectors observed the surrounding area to verify if the operational conditions calculated would be consistent during operations. The inspectors reviewed the components in the surrounding area to verify if their failure would not impair the EQ component from performing its safety function.

- IDS fused transfer switch box IDSA-DF-1
- containment recirculation squib valve SV3-PXS-PL-V120A
- core makeup tank B level sensor SV3-PXS-012B

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On July 5, 2022, 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

A. Nix, NI Manager
K. Roberts, ITAAC Manager
M. Hickox, Test Support Manager
C. Alexander, Milestone Manager
S. Boyle, Milestone Manager
D. Pagan-Diaz, ITP Turnover. Manager
J. Olsen, NI Supervisor
N. Kellenberger, SNC Licensing Supervisor
C. Castell, SNC Licensing Engineer
N. Patel, SNC Licensing Engineer
N. Chapman, SNC Licensing Engineer
J. Weathersby, SNC Licensing Engineer
C. Main, ITAAC Project Manager
D. Wade, ITAAC Project Manager
B. Macioce, Principle Engineer Digital Testing
R. McKay, ITP Test Engineer
S. Turner, ITP Test Engineer
G. Weaver, ITP Test Engineer
R. Nicoletto, ITP Test Engineer
W. Pipkins, ITP Test Engineer
D. Melton, ITP Test Engineer
R. Espara, ITP Test Engineer
J. Clark, ITP Test Engineer
K. Morgan, ITP Test Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Type	Status	Description
05200025/2022004-01	NCV	Open/Closed	Failure to Use Appropriate M&TE
05200025/2022004-02	NCV	Open/Closed	Failure to Translate Design Requirements into Procedure 3-IDS-ITPP-501

LIST OF DOCUMENTS REVIEWED

Section 1A01
ITAAC Closure Package
SV3-1200-ITR-800798, “Fire Barrier Inspection Report, Unit 3: ITAAC 3.3.00.07c.ii.b”, Rev. 0

Work Packages
SV3-MD03-VQR-850029, Quality Verification Documentation-PP 315 Non Safety Related Fire Smoke Dampers, 7/27/2018
Contractor Modification/Surveillance Reports VUL-D01, VUL-D02, VUL-D03, VUL-D04, VUL D05, VUL-D06, VUL-D07 for installation of Vulcan doors
SV3-AB01-A7G-801253, QC Form for penetration SV3-12202-ML-E08-S002, 2/4/21
SV3-AB01-A7G-803694, QC Form for penetration SV3-12201-ML-E08-S001, 5/21/21
SV3-AB01-A7G-802467, QC Form for penetration SV3-12203-ML-E03, 3/12/21
SV3-AB01-A7G-800666, QC Form for penetration SV3-12305-ML-E13-S001, 1/13/21
SV3-AB01-A7G-800667, QC Form for penetration SV3-12305-ML-E13-S002, 1/13/21
SV3-AB01-A7G-800716, QC Form for penetration SV3-12321-ML-E06, 1/15/21
SV3-AB01-A7G-800509, QC Form for penetration SV3-12411-ML-E07-S001, 11/11/21
SV3-AB01-A7G-800510, QC Form for penetration SV3-12411-ML-E07-S002, 11/11/21

Drawings
SV0-AB01-A7Y-800164, Typical Installation ICS/Conduit Thru 3-Hour Fire Rated Barrier, Pressure, Rev. 2
SV0-AB01-A7Y-800150, Cable Tray Thru 3-Hour Fire Rated Barrier, Pressure Barrier, Rev. 3
SV0-AB01-A7Y-800160, Typical Installation Metallic Pipe or Conduit Thru 3-Hour Fire Rated Barrier, Pressure Barrier, Rev. 1

Analyses
SV0-AB01-T7R-800133, 3-Hour Fire Endurance Testing of Conduit End Seals and Cable Sleeves to ASTM E814-13A, 10/13/2020
SV0-AB01-T7R-800086, Bisco Fire Test of Various Pipe/Conduit Configurations, 11/27/1985
TS-TP-0084, Penetration “A” Fire & Hose Stream Test for 6” of #TS-MS-0045-B Silicone Elastomer, 4/14/1982
TS-TP-0084, Penetration “C” Fire & Hose Stream Test for 10” of #TS-MS-0045-B Silicone Elastomer (Bus Duct Seal), 4/14/1982

CRs Generated
50141919, NRC Identified: Errors in U3 ITAAC #797 Aux Bldg Non-Rad Fire Barrier Pen Seal Principal Closure Document

Section 1A02
Work Order
1191264

Procedure
B-GEN-ITPA-011-F02, Component and Preoperational Temporary Procedure Change Prior To 103G, Ver 1.0

Section 1A03
Work Order
1191264

Procedure
B-GEN-ITPA-011-F02, Component and Preoperational Temporary Procedure Change Prior To 103G, Ver 1.0

Section 1P01
CR 50115591
TE 60032629
CR 50117007
TE 60033185
CR 50123808
TE 60036489
TE 60036492
CR 50126143
TE 60037322
TE 60037323

3. OPERATIONAL READINESS

Section 3T01
Procedure
3-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Rev. 2

Work Order
1060415

ITAA Closure Notice
ND-20-0747, ITAAC Closure Notification on Completion of ITAAC 2.1.02.11a.i [Index Number 46], 05/31/2022

Section 3T02
3-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Rev. 2
ND-20-0750, ITAAC Closure Notification on Completion of ITAAC 2.1.02.11b.i [Index Number 48], 05/31/2022

Section 3T03
Miscellaneous
ND-22-0173, CP Number 2.2.01.11a.iv-U3-CP-Rev0, CNS Check Valves Positions
ND-22-0314, Request for Withdrawal of ITAAC Closure Notification ITAAC 2.2.01.11a.iv [Index Number 117], April 26, 2022
NMP-MA-053, SNC Maintenance Department Measuring and Test Equipment Program (M&TE) Version 2.4; Document Number / Instrument ID: 34VP1627

Procedures
3-FPS-OTS-17-001, FPS Check Valve Exercise Test, Version 1
3-VWS-ITPP-501, Central Chilled Water System Preoperational Test, Rev. 5
3-FPS-ITPP-501, Fire Protection Preoperational Test, Rev. 1

Work Orders
1047978
1048157
1058692

Condition Reports
CR 50136335
CR 50140727
CR 50136335

Section 3T04
Condition Reports
CR 50128843
CR 50128844
CR 50128849

Documents
3-PCS-ITPP-502, Passive Containment Cooling System PCCWST Preoperational Test Procedure, Version 1.0
ND-22-0177, Southern Nuclear Operating Company, Vogtle Electric Generating Plant Unit 3, ITAAC Closure Notification on Completion of Item 2.2.02.07b.i [Index Number 138], dated: April 5, 2022
ND-RA-0177, ND-RA-001-006 ICN/PCN Process Review Checklist - for ND-22-0177
Principal Closure Document Summary / Completion Package Documents
SV3-PCS-T2C-002, Vogtle Unit 3 Passive Containment Cooling Water Storage Tank Draindown Test Results Evaluation Report, Rev. A
SV3-PCS-T2R-001, Vogtle Unit 3 Passive Containment Cooling Water Storage Tank (PCCWST) Draindown Testing Summary Report, Rev. 0
SV3-PCS-T2R-004, Vogtle Unit 3 PCS 72 Hour Draindown Performance Summary Report, Rev. 1
SV3-PCS-T2R-005, Vogtle Unit 3 PCS Single Flowpath Testing Performance Summary Report, Rev. 0

Engineering Service Request
50128846

Work Order
1056002

Section 3T05
3-PMS-ITPP-522, PMS Squib Valve Controller Performance Preoperational Test, Rev. 2 - TPC 01
ND-22-0399, ITAAC Closure Notice on Completion of ITAAC Item 2.2.03.11b.i [Index Number 265], 06/01/2022

Section 3T06
ND-22-0186, ITAAC Closure Notice on Completion of ITAAC Item 2.2.05.07a.i [Index Number 265], 06/01/2022

Section 3T07
3-VES-ITPP-501, Main Control Room Emergency Habitability System Pre-Operational Test Procedure, Rev. 4
WO 1255321
CR 50133114
CR 50135369

Section 3T08
WO 1064894
SV3-VES-T2C-600, Six Hour Control Room Heatup Acceptance Criterion for Vogtle Unit 3,Rev. 1
ND-22-0350, ITAAC Closure Notification on Completion of ITAAC 2.2.05.07c, m[Index number 270]
ITAAC Closure Package 2.2.05.07c-U3-CP-Rev0, VES Heat Loads
SV3-VES-TR2-001, Vogtle Unit 3 Six Hour Main Control Room Heatup Summary Report, Rev. 0
SV3-VES-T1-501, Main Control Room Emergency Habitability System Preoperational Test Specification, Rev. 4

Section 3T09
3-PMS-OTS-18-001, Engineered Safeguards Actuation System 24-Month Actuation Device Test, Rev. 0.2
WO 1221957
SV3-VES-ITR-800877, Unit 3 Recorded Results of Main Control Room Load Shed: ITAAC 2.2.05.09c, NRC Index Number 877, Rev. 0
ND-22-0276, ITAAC Closure Notice on Completion of ITAAC 2.2.05.09c [Index Number 877], 05/06/2022

Section 3T11
3-PMS-ITPP-504, PMS Reactor Trip Breakers, Version 3.0
SV0-PMS-T2R-407, Vogtle AP1000 Protection and Safety Monitoring System System-Level Reactor Trip Channel Integration Test Report, Rev. 0
SV0-PMS-T2R-408, Vogtle AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Report, Rev. 0
ND-20-0707, ITAAC Closure Notification on Completion of ITAAC 2.5.02.06a.ii [Index Number 530], 6/23/22
ITAAC 2.5.02.06a.ii [Index Number 530] Principal Closure Document Summary

Section 3T12
CR 50143561

Section 3T13
ND-22-0205, ITAAC Closure Notification on Completion of ITAAC 2.5.02.08b.ii [NRC Index 543], dated 06/15/2022

Work Orders
1235569
1123193
1239075
1235569
1224799

Section 3T14
VS3-PMS-T2R-008, V.C. Summer Unit 3 AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Report, Rev.0
SV3-PMS-T2R-009, AP1000 Protection and Safety Monitoring System Integrated Logic Processor Component Logic Channel Integration Test Report, Rev.0
B-GEN-ITPCI-001-011, PMS Cabinets - Diagnostics, Rev. 1.2
SV3-PMS-ITR-800548, Unit 3 PMS Cabinet Diagnostic Testing: ITAAC 2..5.02.09d NRC Index Number: 548; Rev. 1
CR 50134748

Section 3T15
Work Orders
1124405
1216848
1124409
1124411
1216851
1216853
1124488

Procedures
3-IDS-ITPP-501, Class 1E DC and UPS Preoperational Test, Rev. 4
3-IDS-ITPP-501, Class 1E DC and UPS Preoperational Test, Rev. 7
APP-IDS-E8-001, Class 1E DC and UPS Specification Document, Rev. 5
APP-DC01-Z0-001, Design Specification for Class 1E 250 VDC Battery Chargers for System B-GEN-ITPA-011-F01, ITP Procedure Approval Form, Rev. 7

Corrective Action Documents
CR 50080097
CR 50141588
CAR 80005395

Section 3T16
ND-22-0255, ITAAC Closure Notification on Completion of ITAAC 2.6.03.04i [Index Number 609]

Design Change
APP-IDS-GEF-507, MOV Acceptance Voltage During Safety Related DC MOV Field Testing, Rev. 0
APP-IDS-GEF-505, IDS Calculation Updates for Closure of ITAAC 609 (ESR 50133164), Rev. 0

Section 3T17
ITAAC Closure Packages
SV3-1200-ITR-800797, “Fire Barrier Inspection Report, Unit 3: ITAAC 3.3.00.07c.ii.a”, Rev. 1

Work Packages
SV3-MD03-VQR-850029, Quality Verification Documentation-PP 315 Non Safety Related Fire Smoke Dampers, 7/27/2018
Contractor Modification/Surveillance Reports VUL-D01, VUL-D02, VUL-D03, VUL-D04, VUL-D05, VUL-D06, VUL-D07 for installation of Vulcan doors
SV3-AW20-AWT-800025, Work Plan WPS-636-57811-SV3-12201D Doors at Elevation 82'-6" Room 12201 for the Durawall System for Unit 3 of the AP1000 site Units 3 & 4, 12/11/2021
SV3-AW20-AWT-800026, Work Plan WPS-636-57811-SV3-12203D Doors at Elevation 82'-6" Room 12203 for the Durawall System for Unit 3 of the AP1000 site Units 3 & 4, 12/11/2021
SV3-AW20-AWT-800037, Work Plan WPS-636-57811-SV3-12305D Doors at Elevation 100' Room 12205 for the Durawall System for Unit 3 of the AP1000 site Units 3 & 4, 12/11/2021
SV3-AW20-AWT-800036, Work Plan WPS-636-57811-SV3-12304D Doors at Elevation 100' Room 12304 for the Durawall System for Unit 3 of the AP1000 site Units 3 & 4, 12/11/2021
SV3-AW20-AWT-800035, Work Plan WPS-636-57811-SV3-12303D Doors at Elevation 100' Room 12303 for the Durawall System for Unit 3 of the AP1000 site Units 3 & 4, 12/11/2021
SV3-AB01-A7G-801253, QC Form for penetration SV3-12202-ML-E08-S002, 2/4/21
SV3-AB01-A7G-803694, QC Form for penetration SV3-12201-ML-E08-S001, 5/21/21
SV3-AB01-A7G-802467, QC Form for penetration SV3-12203-ML-E03, 3/12/21
SV3-AB01-A7G-800666, QC Form for penetration SV3-12305-ML-E13-S001, 1/13/21
SV3-AB01-A7G-800667, QC Form for penetration SV3-12305-ML-E13-S002, 1/13/21
SV3-AB01-A7G-800716, QC Form for penetration SV3-12321-ML-E06, 1/15/21
SV3-AB01-A7G-800509, QC Form for penetration SV3-12411-ML-E07-S001, 11/11/21
SV3-AB01-A7G-800510, QC Form for penetration SV3-12411-ML-E07-S002, 11/11/21

Drawings
SV0-AB01-A7Y-800164, Typical Installation ICS/Conduit Thru 3-Hour Fire Rated Barrier, Pressure Barrier, Rev. 2
SV0-AB01-A7Y-800150, Cable Tray Thru 3-Hour Fire Rated Barrier, Pressure Barrier, Rev. 3
SV0-AB01-A7Y-800160, Typical Installation Metallic Pipe or Conduit Thru 3-Hour Fire Rated Barrier, Pressure Barrier, Rev. 1

Analyses
SV0-AB01-T7R-800133, 3-Hour Fire Endurance Testing of Conduit End Seals and Cable Sleeves to ASTM E814-13A, 10/13/2020
SV0-AB01-T7R-800086, Bisco Fire Test of Various Pipe/Conduit Configurations, 11/27/1985
TS-TP-0084, Penetration "A" Fire & Hose Stream Test for 6" of #TS-MS-0045-B Silicone Elastomer, 4/14/1982
TS-TP-0084, Penetration "C" Fire & Hose Stream Test for 10" of #TS-MS-0045-B Silicone Elastomer (Bus Duct Seal), 4/14/1982

CRs Generated
50141919, NRC Identified: Errors in U3 ITAAC #797 Aux Bldg Non-Rad Fire Barrier Pen Seal Principal Closure Document

Section 3T18
Work Order
1191264

Procedure
B-GEN-ITPA-011-F02, Component and Preoperational Temporary Procedure Change Prior To 103G, Ver 1.0

Section 3T19
Work Order
1191264

Procedure
B-GEN-ITPA-011-F02, Component and Preoperational Temporary Procedure Change Prior To 103G, Ver 1.0

Section 3P01
Corrective Action Documents
Corrective Actions Quality Record 80005635, Use of DDS MTS atomic clock instead of M&TE for testing, 5-13-2021
Condition Report Quality Record 50123007, SV3-PCS-PL-V001C torque closed limit switch not received when closing valve, 1-25-2022
Engineering & Design Coordination Report APP-PLS-GEF-265, MOV Torque Switch Re-closure – Acceptance and Alarm, Rev. 0
Engineering & Design Coordination Report APP-PV00-GEF-002, Torque Switch Re-closure Warning for Motor Operated Valve, Rev. 0
Technical Evaluations Quality Record 60025640, Review Operational test procedures for use of DDS atomic clock, Plant Historian, or trend screens for test duration measurements, 8-19-2021
Technical Evaluations Quality Record 60026056, Review Maintenance Procedures for use of DDS MTS atomic clock, 9-14-2021
Technical Evaluations Quality Record 60029454, Document signal latency delay impacts on Inservice Testing (IST), 1-26-2022
Technical Evaluations Quality Record 60032815, Identify Maintenance-owned procedures which rely on Ovation trend screens to measure time, 12-1-2021

Section 3P02
Test Reports
B-GEN-ENG-039, Squib Valve Preservice Charge Testing Verification, Rev. 1
SPX_C6QD_1894 (7-26-2012) forwarding: Goodrich 17399(01)TR, Establishment of Final Lot Acceptance Test Requirements for SPX/Westinghouse Cartridges, 7-25-2012
SPX_C6QD_3222 forwarding: UTC Aerospace 17399(01)TR, Establishment of Final Lot Acceptance Test Requirements for SPX/Westinghouse Cartridges, Rev. C
SV0-PV98-VTR-001, AP1000 Squib Valve Actuator Lot Acceptance Testing Report Vogtle Unit 3 and 4, Rev. 0

Work Orders
Work Package # SV3-PCS-T0W-1055980, Perform Initial Setup of PCCWST Outlet MOV SV3-PCS-PL-V001C in accordance with procedure B-GEN-ITPCM-001, 2-15-2022
Work Package # SV3-PCS-T0W-1068207, Static Diagnostic Testing of MOV SV3-PCS-PL-V001C, 2-8-2022

Condition Report
CR 50123007, SV3-PCS-PL-V001C torque closed limit switch not received when closing valve, 1-25-2022

Section 3P03
Technical Specification Setpoint Report – Units 3 & 4
B-GEN-ENG-020, Setpoint Control, Rev. 0
APP-PMS-M3C-100, Rev. 1
APP-PMS- M3C-111, Rev. 1
APP-PMS- M3C-113, Rev. 1
APP-PMS-M3C-101, Rev. 2
APP-PMS-M3C-102, Rev. 3
APP-PMS-M3C-109, Rev. 2

Section 3P04
CR 50141343 - NRC inspection observations on Process Control Program

Section 3P07
3-GOP-301, Mode Change Checklists, Version J=0.9
Area Monitor and Airborne Monitor Readiness related Corrective Action documents generated during the inspection: 50141359, 50139985, 50140186,
B-RMS-ADM-001, Surveillance of the Radiation Monitoring System, Version 1.0
Radiation Monitoring System Primary Calibration Reports Appendix L, Document # 04648113, Primary Calibration Report RD-64-62 with the RM-2020/DIU monitor (Type A), Revision B
Radiation Monitoring System Primary Calibration Reports Appendix J, Document # 04648101, Primary Calibration Report, Ion Chamber Area Monitor (RD-2A and RD-23), Revision A
SV3-RMS-VQQ-022, Revision 0, (Test Report Doc# 270: KMB: 15-034 Rev 1)

Section 3P08
SV3-PV70-VBR-002, Equipment Qualification Summary Report for 8” Squib Valves for Use in the AP1000 Plant, Rev. 0
SV3-PXS-P0W-1057547, ASME III- INSTALL SQUIB VALVE SV3-PXS-PL-V125B PER ISO SV3-PXS-PLW-02U, Rev. 0
2.2.03.05a.i-U3-EQRR-PCD004, Passive Core Cooling System EQ Reconciliation Report, Rev. 0
SV3-JE61-VQQ-002, Quality Assurance Data Package for Core Makeup Tank Level Transmitters, Rev. 1
SV3-JE61-V1Y-100, AP1000 Class 1E Core Makeup Tank Narrow Range Level Transmitters Design Configuration Drawing, Rev. 3
SV3-DF01-Z0-001, Design Specification for Class 1E Fused Transfer Switchboxes, Rev. 4
2.6.03.02.i-U3-EQRR-PCD003, Class 1E DC and Uninterruptable Power Supply System (IDS) EQ Reconciliation Report (EQRR), Rev. 0
V3-DF01-VBR-002, Equipment Qualification Data Package for Fused Transfer Switchbox for Use in the AP1000 Plant, Rev. 2
WP SV3-1222-DFW-1005233, U3-AUX Install IDSA Fused Transfer Switch Box AUX. Bldg. Elev. 82’-6”, Room 12201, Area 2, Rev. 0

LIST OF ACRONYMS

10 CFR	Title 10 of the Code of Federal Regulations
ADS	automatic depressurization system
CAP	corrective action program
cfm	cubic feet per minute
CNS	containment system
gpm	gallons per minute
IDS	Class 1E DC and UPS system
IP	inspection procedure
ITAAC	inspections, tests, analyses, and acceptance criteria
M&TE	measuring and test equipment
MCR	main control room
NCV	noncited violation
NEMA	National Electrical Manufacturers Association
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PMS	protection and monitoring system
PRHR	passive residual heat removal system
PXS	passive core cooling system
RCS	reactor coolant system
Rev	revision
RG	regulatory guide
RSR	remote shutdown room
RSW	remote shutdown workstation
TPC	temporary procedure change
TRM	Technical Requirements Manual
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
VES	emergency habitability system
WLS	radwaste liquid system

ITAAC INSPECTED

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
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.
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.
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	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	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 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

138	2.2.02.07b.i	7.d) The PCS drains the excess water from the outside of 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.	ii) Inspection of the containment vessel exterior coating will be conducted. iii) Inspection of the containment vessel interior coating will be 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.	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 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 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.
179	2.2.03.08c.i.03	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	i) A low-pressure injection test and analysis for each CMT, each accumulator, each IRWST injection line, and each containment recirculation line will be conducted. Each test is initiated by opening isolation valve(s) in the line being tested. Test fixtures may be used to simulate squib valves. 3. IRWST Injection: The IRWST will be partially filled with water. All valves in these lines will be open during the test. Sufficient flow will be provided to open the check valves.	i) The injection line flow resistance from each source is as follows: 3. IRWST Injection: The calculated flow resistance for each IRWST injection line between the IRWST and the reactor vessel is: Line A: ≥ 5.35 x 10-6 ft/gpm2 and ≤ 9.09 x 10-6 ft/gpm2 and Line B: ≥ 6.15 x 10-6 ft/gpm2 and ≤ 1.05 x 10-5 ft/gpm2.
180	2.2.03.08c.i.04	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	i) A low-pressure injection test and analysis for each CMT, each accumulator, each IRWST injection line, and each containment recirculation line will be conducted. Each test is initiated by opening isolation valve(s) in the line being tested. Test fixtures may be used to simulate squib valves. 4. Containment Recirculation: A temporary water supply will be connected to the recirculation lines. All valves in these lines will be open during the test. Sufficient flow will be provided to open the check valves.	i) The injection line flow resistance from each source is as follows: 4. Containment Recirculation: The calculated flow resistance for each containment recirculation line between the containment and the reactor vessel is: Line A: ≤ 1.33 x 10-5 ft/gpm2 and Line B: ≤ 1.21 x 10-5 ft/gpm2.

201	2.2.03.09a.i	9.a) The PXS provides a function to cool the outside of the reactor vessel during a severe accident.	i) A flow test and analysis for each IRWST drain line to the containment will be conducted. The test is initiated by opening isolation valves in each line. Test fixtures may be used to simulate squib valves.	i) The calculated flow resistance for each IRWST drain line between the IRWST and the containment is ≤ 4.44x 10-6 ft/gpm2.
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.
216	2.2.03.12a.iv	12.a) The squib valves and check valves identified in Table 2.2.3-1 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 2.2.3-1 will be performed under preoperational test pressure, temperature, and fluid flow conditions.	iv) Each check valve changes position as indicated in Table 2.2.3-1

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) at the operator workstations when VES is operating.	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 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.	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 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.

530	2.5.02.06a.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 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.	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 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.

		9.c) The PMS does not allow simultaneous bypass of two redundant channels.		
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 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.	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.
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 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.	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 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	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 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.

			loads, equivalent to a resistive load greater than 12 kW. The inverter input voltage will be no more than 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 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.
744	3.2.00.01e	1. The HFE verification and validation program is performed in accordance with the HFE verification and validation implementation plan and includes the following activities: e) Plant HFE/HSI (as designed at the time of plant startup) verification	e) An evaluation of the implementation of the plant HFE/HSI (as designed at the time of plant startup) verification will be performed.	e) A report exists and concludes that: The plant HFE/HSI, as designed at the time of plant startup, is consistent with the HFE/HSI verified in 1.a) through 1.d).
797	3.3.00.07c.ii.a	7.c) Separation is maintained between Class 1E divisions in accordance with the fire areas as identified in Table 3.3-3.	ii) Inspections of the as-built fire barriers between the fire areas identified in Table 3.3-3 will be conducted.	ii.a) Results of the inspection will confirm that fire barriers exist between fire areas identified in Table 3.3-3 inside the non-radiologically controlled area of the auxiliary building.
798	3.3.00.07c.ii.b	7.c) Separation is maintained between Class 1E divisions in accordance with the fire areas as identified in Table 3.3-3.	ii) Inspections of the as-built fire barriers between the fire areas identified in Table 3.3-3 will be conducted.	ii.b) Results of the inspection will confirm that fire barriers exist between fire areas identified in Table 3.3-3 inside the radiologically controlled area of the auxiliary building.
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.