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

February 10, 2021

Mr. Michael Yox
Regulatory Affairs Director
Southern Nuclear Operating Company
7825 River Road, Bldg. 302, Vogtle 3&4
Waynesboro, GA 30830

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INTEGRATED INSPECTION REPORTS 05200025/2020004, 05200026/2020004

Dear Mr. Yox:

On December 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Vogtle Electric Generating Plant (VEGP), Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on January 14, 2021, with Mr. Glen Chick, VEGP Units 3 and 4, Executive Vice President, and other licensee and contractor staff members.

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.

NRC inspectors documented two findings of very low safety significance (Green). Both of these findings involved violations 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.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement; and the NRC resident inspector at the VEGP Units 3 and 4.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC resident inspector at the VEGP Units 3 and 4.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at http://www.nrc.gov/reading-rm/adams.html and at the NRC Public Document Room in accordance with 10 CFR 2.390, “Public Inspections, Exemptions, Requests for Withholding.”

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

Sincerely,

/RA/

Nicole Coovert,
Branch Chief
Construction Inspection Branch 1
Division of Construction Oversight

Docket Nos. 05200025 and 05200026
License Nos. NPF-91, NPF-92

Enclosure: NRC Inspection Reports (IR) 05200025/2020004 and 05200026/2020004

w/attachments: Supplemental Information

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SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INTEGRATED INSPECTION REPORTS 05200025/2020004, 05200026/2020004 DATED: February 10, 2021

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DATE	2/9/2021	2/9/2021	2/9/2021	2/10/2021		

U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers:	5200025 5200026
License Numbers:	NPF-91 NPF-92
Report Numbers:	05200025/2020004 05200026/2020004
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Vogtle Unit 3 Combined License Vogtle Unit 4 Combined License
Location:	Waynesboro, GA
Inspection Dates:	October 1, 2020 through December 31, 2020
Inspectors:	A. Artayet, Senior Construction Inspector, Division of Construction Oversight (DCO) K. Carrington, Resident Inspector, DRP, Division of Reactor Projects G. Crespo, Senior Construction Inspector, DCO J. Eargle, Senior Resident Inspector - Testing, DCO B. Griman, Resident Inspector, DRP N. Karlovich, Resident Inspector, DCO B. Kemker, Senior Resident Inspector, DCO G. Khouri, Senior Project Manager, DCO J. Lizardi-Barreto, Construction Inspector, DCO R. Patel, Resident Inspector (Acting), DCO A. Ponko, Senior Construction Inspector, DCO J. Vasquez, Construction Inspector, DCO
Approved by:	Nicole Coovert, Branch Chief Construction Inspection Branch 1

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2020004, 05200026/2020004; 10/01/2020 through 12/31/2020; Vogtle Unit 3 Combined License, Vogtle Unit 4 Combined License, Integrated Inspection Report.

This report covers a three-month period of inspection by regional and resident inspectors. Two findings of very low safety significance (Green), each with an associated non-cited violation (NCV) of NRC requirements, were identified. The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) which is determined 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. 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) The inspectors identified a construction finding of very low safety significance with an associated NCV of Title 10 of the Code of Federal Regulations Part 50 (10 CFR 50), Appendix B, Criterion III, "Design Control" for the licensee's failure to have design control measures for the 18-inch diameter carbon steel guard pipes for containment vessel penetrations P44 and P45. Specifically, the site previously performed a structural analysis that omitted the guard pipe portion of the penetrations and did not consider how the guard pipe exclusion would infringe upon the design margin for ensuring the requirement for American Society of Mechanical Engineers (ASME) Code Section III, Level C service limits were not exceeded, in accordance with the current licensing basis. The Licensee entered this issue into its corrective action program (CAP) as condition report (CR) 50053621 and updated its structural model calculations as part of the corrective action.

The performance deficiency was of more than minor safety significance, and thus a finding, because it represented an adverse condition that rendered the quality of a structure, system, and component (SSC), unacceptable or indeterminate, and required substantive corrective action. This finding was not associated with an inspection, test, analyses, and acceptance criteria (ITAAC); it was not associated with a security program; it was not associated with an IMC 2504 operational/construction program; and it was not associated with a repetitive, NRC-identified omission of a program critical attribute. This finding was of very low safety significance because the licensee was able to demonstrate the design function of the applicable structure or system (containment vessel) would not be impaired by the deficiency by successfully reperforming a structural model calculation. The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect “Documentation,” in the area of Human Performance, in accordance with IMC 0613, Appendix F, “Construction Cross-Cutting Areas and Aspects.” Specifically, the licensee did not ensure its calculations were reflective of the ASME Level C service limit requirements for the P44 and P45 penetration guard pipes. [H.7] (Section 1A08)

(Green) The inspectors identified an ITAAC finding of very low safety significance with an associated NCV of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings.” The licensee failed to construct and perform quality inspections on Unit 3 and Unit 4 Class 1E DC and uninterruptible power supply system (IDS) battery racks for the 250 Vdc 24-hour, 72-hour, and spare batteries in accordance with ITAAC 2.6.03.02.i and the approved design requirements for Vogtle Units 3 and 4. The licensee entered this finding into its CAP as CR 50066999, conducted engineering analysis of the nonconforming conditions, and performed rework on the battery racks to correct the nonconforming conditions.

This performance deficiency was of more than minor safety significance, and thus a finding, because it was material to the acceptance criteria of an ITAAC and invalidated the Inspection, Test, or Analyses described in the ITAAC 2.6.03.02.i. This finding was not associated with a security program; it was not associated with an IMC 2504 operational or construction program; and it was not associated with a repetitive, NRC-identified omission of a program critical attribute. This finding was a licensee performance deficiency of very low safety significance because it was associated with the IDS and there was reasonable assurance the design function of the system would not have been impaired by the deficiency based on engineering analysis of the nonconforming conditions identified. The inspectors determined this finding was indicative of present licensee performance and affected the cross-cutting area of human performance and the cross-cutting aspect of avoiding complacency. The proximate cause of the performance deficiency was primarily attributed to a failure to perform a thorough review of the work instructions and to plan the activity every time without relying on past successes and assumed conditions. [H.12] (Section 1A15)

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Construction Status

Unit 3: The licensee completed shield building construction and was in the process of finalizing the as-built design. In the containment building, the licensee satisfactorily performed the American Society of Mechanical Engineers (ASME) required hydrostatic test on the reactor and reactor coolant systems. In the containment and auxiliary buildings, the licensee continued with installation of safety related instrumentation, electrical conduits and cables (safety and non-safety related), necessary to support hot functional testing. In the turbine building, the licensee established main condenser vacuum and placed the main turbine on the turning gear for the first time. The licensee received the first shipment of nuclear fuel at the site.

Unit 4: The licensee completed the shield building tension ring and set the conical roof. In the containment building, the licensee continued with installation of reactor coolant system (RCS) and passive core cooling system (PXS) small bore piping and was in the process of routing electrical raceways, cables, and terminations. In the auxiliary building, the licensee continued with construction of the building up to elevation 180-feet and continued with installation of electrical cabinets, raceways, conduits and cables (safety and non-safety related).

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 2.1.02.01 (12) / Family 14A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.01 (12). The inspectors used the following NRC inspection procedures (IPs)/sections to perform this inspection:

- 65001.14-02.01 - General Installation
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed an inspection of the Unit 3 RCS functional arrangement to verify the as-built system piping and components conform to the system design description in Section 2.1.2 of Appendix C of the Vogtle Combined License (COL), including Table 2.1.2-5 and Figure 2.1.2-1.

The inspectors performed independent field walkdowns and reviewed quality records including the principal closure document (PCD), piping and instrumentation diagrams, and functional arrangement sketches to verify the RCS piping and components (including steam generators, pressurizer, reactor coolant pumps, fourth-stage automatic depressurization system (ADS) valves, ASME Code relief and ADS stage 1-3 lines, valves, and instruments) were physically arranged consistent with Figure 2.1.2-1 and located as identified in Table 2.1.2-5 of Appendix C of the Vogtle Unit 3 COL, such that the piping and components will support system functions described in the design description of Section 2.1.2 of Appendix C of the COL and Section 5.1.2 of the Vogtle 3 and 4 Updated Final Safety Analysis Report (UFSAR). System installation attributes inspected included proper location, placement (such as relative elevation), quantity, physical orientation, flow direction, and alignment.

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.06 - Nondestructive Examination
- 65001.03-02.07 - Review of Records
- 65001.B-02.05 - Inspection
- 65001.B-02.06 - Records

The inspectors reviewed nine work packages that were used to remove visible surface defects on the following piping systems prior to hydrostatic pressure testing to verify repairs were performed in accordance with the applicable requirements of the ASME Code Section III for Class 1, 2, and 3:

- Chemical and Volume Control System;
- PXS; and
- RCS.

The inspectors verified if unacceptable dents, scratches, arc strikes, and tapered thickness transitions and indications identified during preservice inspections were eliminated by mechanical means (e.g. grinding, buffing) or repaired by welding and blended uniformly into the surrounding surface with subsequent final nondestructive examinations (NDE) in accordance with the applicable requirements of the ASME Code Sections III and V.

The inspectors reviewed weld data sheets (WDSs) to verify quality control (QC) inspection hold points were signed-off and dated for acceptance of final visual examination in accordance with NCA-4134.10. The inspectors also reviewed entries on the WDSs to determine whether the traceability of stainless steel weld filler metals and welders were maintained in accordance with the applicable code provisions of Articles NB/NC/ND-4122 and NB/NC/ND-4300.

The inspectors reviewed ultrasonic thickness survey reports to verify manual ultrasonic metal thickness measurements performed by Level II technicians with the use of calibration blocks were deemed acceptable and the results of the final thickness did not encroach on the minimum design thickness of the components in accordance with the applicable requirements of the ASME Code Section III, Articles NB/NC/ND-3000.

The inspector reviewed liquid penetrant examination reports to verify the removal of surface defects were deemed acceptable by SNT-TC-1A Level II examiners and were performed in accordance with the applicable requirements of the ASME Code Section III (Articles NB/NC/ND-5000) and Section V (Article 6).

The inspectors reviewed a computed radiography examination report to determine whether acceptance by the SNT-TC-1A Level III examiner was performed with no rejectable indication using the proper type of source, image quality indicator designation, exposure time, and geometric unsharpness in accordance with the applicable requirements of the ASME Code Section III (Article ND-5000) and Section V (Article 2).

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.07-02.01 - General Installation

The inspectors reviewed documents associated with work package SV3-RCS-P0W-1057531 for installation of the 14-inch diameter fourth-stage ADS squib valve SV3-RCS-PL-V004D to determine if the bolted joint connections to the valve body and flange at the inlet side of the valve were assembled in accordance with the requirements of the ASME Code Section III, Subsection NB, for Class 1 components.

The inspectors reviewed Stone and Webster (S&W) valve installation data sheet to verify QC inspector hold points for identification/marking of the PV70 valve with serial number 0920-164451-3-4, material traceability (including studs/bolts/nuts), internal cleanliness, and torque wrench calibration were deemed satisfactory and signed-off in accordance with the requirements of the ASME Code Section III, Article NCA-3000 with final signature by the authorized nuclear inspector (ANI).

The inspectors reviewed the S&W bolted joint data sheet to verify QC inspector hold points for inlet side alignment/fit-up with gasket between the valve body and flange verified fasteners were sequentially torqued in gradual steps to the initial maximum torque value using 12 threaded stud and nut materials in accordance with the requirements of the ASME Code Section III, NB-2128, and Section II, Part D, Subpart 1, Table 4 with final signature by the ANI.

The inspectors reviewed the S&W special operations data sheet to verify hold points for hydraulic tensioning of 12 studs into the inlet side of the valve body and tightening of the nuts to the flange were deemed satisfactory and signed-off by QC inspectors and the ANI in accordance with the requirements of the ASME Code Section III, NB-4700 for mechanical joints and Article NCA-5000 for authorized inspection.

b. Findings

No findings were identified.

1A04 (Unit 3) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C - Inspection of the ITAAC-Related Construction Test Program
- 65001.C-02.01 - Program and Procedure Reviews
- 65001.C-02.02 - Construction Test Observation
- 65001.C-02.03 - Construction Test Record Review
- 65001.C-02.04 - General Quality Assurance Review
- 65001.C-A2 - Appendix 2 - Construction Test Inspection for Piping Systems and Components
- 65001.C-A2.03 - Piping

The inspectors performed a direct inspection of ASME Code Section III hydrostatic testing activities associated with the Unit 3 RCS and connecting systems pressure boundary components and piping identified as ASME Code Section III in Tables 2.1.2-1 and 2.1.2-2 of Appendix C to the Vogtle Unit 3 COL to verify conformance with the requirements of the ASME Code Section III.

The inspectors reviewed the work package for the piping and components associated with ASME Code Section III hydrostatic test procedure 3-RCS-ITPP-503, “Reactor Coolant System Cold Hydrostatic Test - Preoperational Test Procedure.” The inspectors reviewed the work package instructions and the licensee's procedure for construction pressure testing to determine whether the following test attributes were included:

- the system boundary included all pressure vessels, piping, pumps, and valves that were part of the piping system to be tested;
- the system was vented during the filling operation;
- water quality was specified as required by the latest licensee approved specifications for the temperatures to be present during the test;
- temperature requirements were stated to ensure components were maintained above the nil-ductility transition temperature during hydrostatic pressure testing;
- minimum hydrostatic test pressure was as specified in the applicable design and/or fabrication specification; maximum hydrostatic test pressure was less than the limits in the applicable design and/or fabrication specification; and
- hydrostatic test pressure was maintained for a minimum of 10 minutes before initiation of the examination for leakage; and
- examination for leakage included all joints, connections, and regions of high stress, such as openings, attachments, and thickness transition sections at a pressure equal to the design pressure or three-fourths of the test pressure, whichever was greater.

The inspectors conducted walkdowns prior to the test to verify valve positions and system boundaries were set up in accordance with the system boundary maps within the work package. The inspectors also verified the fill points and vent points were set up in accordance with the work package.

The inspectors observed the ASME Code Section III hydrostatic test to determine if the testing was conducted in accordance with the requirements of ASME Section III, Subsection NB-6000, the work package instructions, and the licensee's procedure 3-RCS-ITPP-503 for construction pressure testing. Specifically, the inspectors observed the test to determine if:

- the latest revision of the test procedure was available and used;
- test prerequisites were met;
- joints, including welded joints, were left uninsulated and exposed for examination during the tests;
- valve lineup/system checklists were completed;
- water quality and temperature were as stated in the procedures;
- calibrated pressure gauges of the required range were installed where required;
- calibrated relief valves of the required set point and capacity were installed where required;
- testing was performed as required by the approved procedure;
- crew actions were correct and timely during the performance of the test and coordination existed among crew members to conduct the test;

- temporary modifications such as jumpers, strainers, spool pieces, or blank flanges were installed and tracked per established administrative controls; and
- overall test acceptance criteria were satisfied.

The inspectors also reviewed the results from the 3-RCS-ITPP-503 procedure for ASME Code Section III hydrostatic test to determine if the results conformed to the requirements of ASME Code Section III, Subsection NB-6000. Specifically, the inspectors reviewed the test results to determine if they were identifiable and retrievable evidence of activities affecting quality and were reviewed and verified to be complete per the licensee's procedures.

b. Findings

No findings were identified.

1A05 (Unit 3) ITAAC Number 2.1.02.12a.i (53) / Family 07E

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.12a.i (53). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.07-02.03 - Post Installation Activities
- 65001.E-02.04-Documentation

The inspectors reviewed the equipment qualification reconciliation reports (EQRRs) for ADS motor-operated valves (MOV) RCS-PL-V001B, RCS-PL-V003A, and RCS-PL-V013B to determine whether the licensee assessed work packages, design changes, and nonconformances to verify the as-built configuration, including anchorage, were seismically bounded by the analyzed conditions in accordance with data sheets SV3-PV01-Z0D-131 and SV3-PV01-132 and design specification SV3-PV01-Z0-001.

The inspectors reviewed the licensee's methodology and selection of applicable work orders, data sheets, and design drawings, to determine whether the inspections and analyses demonstrated the as-built installed ADS MOVs were bounded by tests or type tests. The inspectors reviewed the equipment qualification summary reports (EQSRs) and equipment qualification data packages (EQDPs) to determine whether installation restrictions were translated, via the design process, to the drawings and EQRRs. The inspectors performed a review of as-installed electrical connections to determine whether the electrical connections were installed as tested so the valves would function during a design basis accident.

The inspector performed a walkdown of the ADS valve area (room 11603) and verified the as-built configuration of two second-stage ADS A & B MOVs, RCS-PL-V002A and RCS-PL-V002B, matched the analyzed configuration.

The inspectors also interviewed licensing personnel to determine how inspection and analysis were performed for applicable nonconformances and engineering and design coordination reports (E&DCRs) issued during fabrication, handling, installation, and testing to verify all deviations were bounded by the seismically analyzed conditions.

b. Findings

No findings were identified.

1A06 (Unit 3) ITAAC Number 2.1.03.03 (72) / Family 05F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.03.03 (72). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C - Inspection of the ITAAC-Related Construction Test Program
- 65001.C-02.04 - General Quality Assurance Review
- 65001.C-A2 - Appendix 2 - Construction Test Inspection for Piping Systems and Components
- 65001.C-A2.05 - Reactor Pressure Vessel & Internals

The inspectors performed a direct inspection of ASME Code Section III hydrostatic testing activities associated with the Unit 3 reactor system (RXS) pressure boundary components identified as ASME Code Section III in Table 2.1.3-1 of Appendix C to the Vogtle Unit 3 COL (e.g., reactor vessel, control rod drive mechanisms, and in-core instrument QuickLoc assemblies) to verify conformance with the requirements of the ASME Code Section III.

The inspectors reviewed the work package for the RXS components associated with ASME Code Section III hydrostatic test procedure 3-RCS-ITPP-503, “Reactor Coolant System Cold Hydrostatic Test - Preoperational Test Procedure.” The inspectors reviewed the work package instructions and the licensee's procedure for construction pressure testing to determine whether the following test attributes were included:

- the system boundary included the reactor vessel and all system components to be tested;
- the system was vented during the filling operation;
- water quality was specified as required by the latest licensee approved specifications for the temperatures to be present during the test;
- temperature requirements were stated to ensure components were maintained above the nil-ductility transition temperature during hydrostatic pressure testing;
- minimum hydrostatic test pressure was as specified in the applicable design and/or fabrication specification;
- maximum hydrostatic test pressure was less than the limits in the applicable design and/or fabrication specification;

- hydrostatic test pressure was maintained for a minimum of 10 minutes before initiation of the examination for leakage; and
- examination for leakage included all joints, connections, and regions of high stress, such as openings, attachments, and thickness transition sections at a pressure equal to the design pressure or three-fourths of the test pressure, whichever was greater.

The inspectors conducted walkdowns prior to the test to verify valve positions and system boundaries were set up in accordance with the system boundary maps within the work package. The inspectors also verified the fill points and vent points were set up in accordance with the work package.

The inspectors observed the ASME Code Section III hydrostatic test to determine if the testing was conducted in accordance with the requirements of ASME Code Section III, Subsection NB-6000, the work package instructions, and the licensee's procedure 3-RCS-ITPP-503 for construction pressure testing. Specifically, the inspectors observed the test to determine if:

- the latest revision of the test procedure was available and used;
- test prerequisites were met;
- joints, including welded joints, were left uninsulated and exposed for examination during the test;
- valve lineup/system checklists were completed;
- water quality and temperature were as stated in the procedure;
- calibrated pressure gauges of the required range were installed where required;
- calibrated relief valves of the required set point and capacity were installed where required;
- testing was performed as required by the approved procedure;
- crew actions were correct and timely during the performance of the test and coordination existed among crew members to conduct the test;
- temporary modifications such as jumpers, strainers, spool pieces, or blank flanges were installed and tracked per established administrative controls; and
- overall test acceptance criteria were satisfied.

The inspectors also reviewed the results from the 3-RCS-ITPP-503 procedure for ASME Code Section III hydrostatic test to determine if the results conformed to the requirements of ASME Code Section III, Subsection NB-6000. Specifically, the inspectors reviewed the test results to determine if they were identifiable and retrievable evidence of activities affecting quality and were reviewed and verified to be complete per the licensee’s procedures.

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC Number 2.1.03.13 (88) / Family 05F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.03.13 (88). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.05 - Inspection of ITAAC-Related Installation of Reactor Pressure Vessel and Internals
- 65001.05-02.01 - Purchase and Receipt of Components
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.02-Fabrication Records Review

The inspectors performed an inspection to verify a report exists and concludes the fuel assemblies and rod cluster control assemblies (RCCA) intended for the initial core load and listed in Table 2.1.3-1 of Appendix C to the Vogtle Unit 3 COL, had been designed and constructed in accordance with the principal design requirements.

The inspectors reviewed APP-SSAR-F5-001, “AP1000 Safety Analysis Checklist,” Revision 1, which is specific to the Vogtle 3 first core design and additional changes made to the AP1000 fuel assembly, RCCA, and gray rod control assembly designs. The inspectors reviewed the safety analysis checklist to verify if the first core safety analysis performed by Westinghouse for Cycle 1 met the principal design requirements listed in the UFSAR Section 4.1.1, and more broadly the UFSAR Chapter 4 requirements.

The inspectors also reviewed the Unit 3 Cycle 1 Core Operating Limits Report (COLR), which is specific to the Vogtle 3 Cycle 1 core design and provides the applicable core operating limits of the safety analysis (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, PXS limits, nuclear limits such as shutdown margin, transient analysis limits, and accident analysis limits). The inspectors reviewed the COLR to verify if the core operating limit results were consistent with those in the Safety Analysis Checklist and the UFSAR Chapter 4 requirements.

The inspectors reviewed selected quality records including the Unit 3 Cycle 1 Core Loading Plan and the letter documenting the verification and certification of the fuel assemblies and RCCA from the vendor to verify the components conformed with the design requirements.

b. Findings

No findings were identified.

1A08 (Unit 3) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.02a (91). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.11-02.11 - Problem Identification and Resolution

The inspectors reviewed the licensee's corrective actions to address unresolved item (URI) 05200025/2020003-02, "ASME Section III Level C service Limits May Not Be Met for Containment Penetrations P44 and P45," which were captured in the corrective action program (CAP) as condition report (CR) 50063621 and Westinghouse Electric Company (WEC) CAP as issue report (IR) 2020-10571. The inspectors also reviewed E&DCR APP-ML10-GEF-046 (with attached APP-ML10-S3C-001 calculations) and finite element analysis (FEA) model files for containment penetration P44 and P45 guard pipes referenced in the E&DCR to verify loadings associated with the Vogtle Unit 3 containment design pressure and temperatures in combinations with a safe shutdown earthquake can be extracted from the model. The inspectors reviewed the results from the FEA model files against the Level C service limits of the ASME Code, Section III, Paragraph NE-3221.

The inspectors also reviewed proposed changes to the licensee's calculation APP-ML10-S3C-001, "AP1000 Containment Piping Penetrations with Flued Heads Analysis and Verification," to determine if the contents of the analysis included the penetration guard pipes and demonstrated the acceptance criteria of ITAAC 2.2.01.02a for Unit 3 was not impacted.

Based on the inspectors' review, URI 05200025/2020003-02 is closed and NCV 05200025/2020004-01 is opened and closed in this report.

b. Findings

Introduction

The inspectors identified a construction finding of very low safety significance (Green) with an non-cited violation (NCV) of Title 10 of the Code of Federal Regulations Part 50 (10 CFR 50), Appendix B, Criterion III, "Design Control," for the licensee's failure to have design control measures for the 18-inch diameter carbon steel guard pipes for containment vessel penetrations P44 and P45. Specifically, the site previously performed a structural analysis that omitted the guard pipe portion of the penetrations and did not consider how the guard pipe exclusion would infringe upon the design margin for ensuring the requirement for ASME Section III, Level C service limits were not exceeded, in accordance with the current licensing basis.

Description

In NRC inspection report 05200025/2020003, the inspectors opened URI 05200025/2020003-02, “ASME Section III Level C service Limits May Not Be Met for Containment Penetrations P44 and P45" because the licensee had not performed an analysis for the guard pipes for penetrations P44 and P45, as required by the UFSAR, Revision 9.0, Subsection 3.6.2.1.1.4. The licensee entered this issue into its CAP as 50053621. The issue remained unresolved pending further analysis by the licensee and Westinghouse.

The Vogtle Unit 3 containment penetration P44 and P45 guard pipes are in the break exclusion area in the annulus region between the containment vessel and shield building (SB). The guard pipes internally contain the 6-inch diameter startup feedwater pipes that are routed from the turbine building through the auxiliary building to the corresponding steam generators. Subsection 3.6.2.1.1.4 of the Vogtle 3 and 4 UFSAR, “High Energy Piping in Containment Penetration Areas,” states, in part, that “breaks are not postulated in the portions of ASME Code, Section III piping, defined as break exclusion piping, provided it meets the provision(s) that Level C service limits of ASME Code, Section III, Paragraph NE-3221 are not exceeded by the loadings associated with containment design pressure and temperature in combinations with a safe shutdown earthquake.” However, the licensee’s structural and thermal analysis model omitted the guard pipe portion of the penetrations and did not consider how this exclusion might infringe upon the design margin for ensuring the requirement for ASME Section III, Level C service limits were not exceeded. The licensee documented this issue in its CAP as CR 50063621 and WEC CAP IR-2020-10571.

The inspectors reviewed the changes to the calculation addressed in E&DCR APP-ML10-GEF-046, “Update for Penetrations 44 and 45,” that included calculation APP-ML10-S3C-001, “AP1000 Containment Piping Penetrations with Flued Heads Analysis and Verification,” to determine if the contents of the analysis showed that UFSAR Subsection 3.6.2.1.1.4 criteria were met and the acceptance criteria of ITAAC 2.2.01.02a was not impacted. Specifically, the inspectors reviewed the structural model calculation to verify contents were in accordance with ASME Code Section III, Subsection NE design criteria described in Article NE-3000 for Class MC metal containment components. The inspectors reviewed the penetration design analysis against the requirements in ASME Section III requirements of subparagraphs NE-3221.1, “General Primary Membrane Stress Intensity” and NE-3221.4, “Primary Plus Secondary Stress Intensity.”

The inspectors evaluated the primary stress loading analysis results for the guard pipes associated with the containment design pressure and temperature in combination with a safe shutdown earthquake to verify the results did not exceed the Level C service limits of the ASME Code Section III, Paragraph NE-3221. Based on their review, the inspectors determined the information provided in the E&DCR provided reasonable assurance that containment penetrations P44 and P45 met the licensing requirement of the Vogtle UFSAR, Revision 9.0, Subsection 3.6.2.1.1.4.

Analysis

The inspectors determined the licensee's failure to have design control measures for the 18-inch diameter carbon steel guard pipes for containment vessel penetrations P44 and P45 was a performance deficiency. The inspectors determined that the failure to ensure Level C service limits were not exceeded by the design loading conditions with a safe shutdown earthquake, as required in the licensing basis was contrary to the requirements of 10 CFR 50, Appendix B, Criterion III, "Design Control," and resulted in a performance deficiency that required substantive corrective action. Per the guidance in IMC 0613, "Power Reactor Construction Inspection Reports," Appendix B, "Issue Screening," dated November 4, 2020, the inspectors determined traditional enforcement or enforcement discretion would not apply to this performance deficiency. Per IMC 0613, Appendix E, "Examples of Minor Construction Issues," dated November 4, 2020, the inspectors determined this performance deficiency was of more-than-minor safety significance, and thus a finding, because it represented an adverse condition that rendered the quality of an SSC unacceptable or indeterminate, and required substantive corrective action.

The inspectors determined this finding was related to the Design/Engineering cornerstone of the Construction Reactor Safety strategic performance area. This was a construction finding and it was not associated with an inspection, test, analyses, and acceptance criteria. This finding was not associated with a security program; it was not associated with an IMC 2504 operational/construction program; and it was not associated with a repetitive, NRC-identified omission of a program critical attribute. The inspectors assessed the finding using IMC 2519, Appendix A, "AP1000 Significance Determination Process," dated October 26, 2020, and determined the finding was a performance deficiency of very low safety significance (Green) because it was associated with the containment system (CNS), a structure assigned to the intermediate risk column of the "AP1000 Construction Significance Determination Matrix." The inspectors determined this finding was a finding of very low safety significance because the licensee was able to demonstrate the design function of the applicable structure or system (containment vessel) would not be impaired by the deficiency by successfully reperforming a structural model calculation.

The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect of "Documentation" in the area of Human Performance, in accordance with IMC 0613, Appendix F, "Construction Cross-Cutting Areas and Aspects," dated November 4, 2020. The licensee did not ensure its calculations were reflective of the ASME Level C service limit requirements for the P44 and P45 penetration guard pipes. [H.7].

Enforcement

10 CFR 50, Appendix B, Criterion III, “Design Control,” requires, in part, that “design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews to items such as stress, thermal, and accident analyses.” UFSAR Section 3.6.2.1.1.4, “High Energy Piping in Containment Penetration Areas,” states, in part, that “breaks are not postulated in the portions of ASME Code, Section III, Class 2 or Class 3 piping, as break exclusion piping, provided the subject piping that meets the provisions to support the UFSAR for Level C service limits of ASME Code, Section III, Paragraph NE-3221 are not exceeded by the loadings associated with containment design pressure and temperature in combinations with a safe shutdown earthquake.” The licensee’s postulation was based on ASME Section III Level C service limits not being exceeded.

Contrary to the above, on and before September 23, 2020, the licensee did not have design control measures for verifying or checking the adequacy of design of the 18-inch diameter carbon steel guard pipes for containment vessel penetrations P44 and P45. Specifically, the licensee previously performed a structural analysis that omitted the guard pipe portion of the penetrations and did not consider how the guard pipe exclusion would infringe upon the design margin for ensuring the requirement for ASME Section III, Level C service limits were not exceeded, in accordance with the current licensing basis. The licensee entered this issue into its CAP as CR 50063621 and updated the structural model calculations as part of the corrective action. Because this violation was not repetitive or willful, was of very low safety significance (Green), and was entered into the licensee’s CAP, it is being treated as an NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200025/2020004-01, Failure to verify ASME Code Section III Level C Service Limits in Accordance with License Basis and ASME Code Section III).

1A09 (Unit 3) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.02a (91). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.11-02.03 – Installation and Welding
- 65001.B-02.03-Welder Qualification
- 65001.F-02.02-Fabrication Records Review
- 65001.F-02.03-Observation of Fabrication Activities
- 65001.F-02.04-General Quality Assurance (QA) Review

The inspectors performed a direct inspection of pressure retaining rings installed on the Unit 3 containment building electrical penetration assemblies (EPA). The epoxy coating to the containment vessel penetration sleeve weld joint was removed and two new halves of pressure retaining rings were welded to the outside of the EPA extension sleeve and containment vessel penetration sleeve. Specifically, the inspectors observed welding of pressure retaining rings on EPA 019 and EPA 022, and observed pre-heating of EPA 021 and EPA 024.

The inspectors reviewed welder performance qualification records to verify if the welders' qualification records were current and met the requirements of the ASME Code, Section III Subsection NE, and Section IX. The inspectors reviewed records of heat treat contractor's personnel to verify personnel were qualified and current. The inspectors reviewed calibration records of the weld machine and k-wire thermocouples to verify the equipment were calibrated within their full range, identified, and traceable to national standards. In addition, the inspectors reviewed material test reports of the weld rods used to verify the chemical and physical test records met the requirements of the ASME Code, Section II and Section III.

b. Findings

No findings were identified.

1A10 (Unit 3) ITAAC Number 2.2.01.08 (109) / Family 08F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.08 (109). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.08-02.04 - Inspection of Containment Electrical Penetration Assemblies (EPAs) Yes
- 65001.08-02.05 - Inspection of Station Grounding and Surge Protection Yes
- 65001.F-02.02-Fabrication Records Review Yes
- 65001.F-02.04-General QA Review

The inspectors reviewed documentation and conducted walkdowns of protection devices for the EPAs to verify the as-built containment EPAs were protected against currents which are greater than their continuous ratings as required by Appendix C to the Vogtle Unit 3 COL.

Specifically, for cables that originated from medium voltage switchgears, low voltage distribution panels and motor control centers feeding motors inside containment, the inspectors verified that overcurrent protection was provided for the cables. The inspectors reviewed reports and calculations to verify the design addressed protection from currents which were greater than the continuous ratings of the EPA cables.

For medium voltage cables, the inspectors reviewed engineering studies that specified the overcurrent protection relay settings using time-current curves of the Schweitzer Engineering Laboratories 710 relays. As shown in the curves, these relays, as programmed, provided adequate level of protection for the cables running through the EPA. For low voltage cables, the inspectors conducted a walkdown of distribution panels and motor control centers to verify the size of fuses used to protect feeders and wiring routed through the EPAs were in accordance with the design.

b. Findings

No findings were identified.

1A11 (Unit 3) ITAAC Number 2.2.01.11a.i (114) / Family 07E

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.11a.i (114). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.02 – Attributes of Electrical Cable installation
- 65001.09-02.03 – Documentation
- 65001.10-02.02.c – As Built Verification
- 65001.E-02.04-Documentation
- 65001.E-02.06-Problem Identification and Resolution

The inspectors reviewed the EQRR for component cooling water system (CCS) containment isolation MOVs CCS-PL-V207 and CCS-PL-V208, to determine whether the licensee assessed work packages, design changes, and nonconformances to verify the as-built configuration, including anchorage, were seismically bounded by the analyzed conditions in accordance with data sheets SV3-PV11-Z0D-122 and SV3-PV11-124 and design specification SV3-PV11-Z0-001.

The inspectors reviewed the licensee's methodology and selection of applicable work orders, data sheets, and design drawings, to determine whether the inspections and analyses demonstrated the as-built installed MOVs were bounded by tests or type tests.

The inspectors reviewed the EQSRs and EQDPs to determine whether installation restrictions were translated to the drawings and EQRRs. The inspectors performed a review of as-installed electrical connections to determine whether the electrical connections were installed as tested so the valves would function during a design basis accident.

The inspectors conducted a walkdown of the CNS to verify the satisfactory installation of the MOVs. The inspectors verified each valve's make/model/serial number, mounting orientation and location. The inspectors also verified the mechanical and electrical connections were bounded by the tested conditions.

The inspectors also interviewed licensing personnel to determine how inspection and analysis were performed for applicable nonconformances and E&DCRs issued during fabrication, handling, installation, and testing to verify all deviations were bounded by the seismically analyzed conditions.

b. Findings

No findings were identified.

1A12 (Unit 3) ITAAC Number 2.2.02.02a (120) / Family 07F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.02.02a (120). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.03 – Installation and Welding
- 65001.03-02.06 – Nondestructive Examination
- 65001.07-02.02 – Component Welding
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection

The inspectors reviewed welding and NDE records associated with eight field welds on the inlet and outlet sides of four passive containment cooling system (PCS) gate valves: PCS-PL-V001C, -V002A, -V002B, and -V002C to four connecting line numbers: PCS-PL-L002 and -L005, and PCS-PL-L003A and -L003B to determine if the 6-inch diameter stainless steel motor operated valves were installed in accordance with the ASME Code Section III, Subsection ND, for Class 3 components.

The inspectors reviewed eight WDSs for three work packages to verify QC inspection hold points were signed-off and dated for acceptance of internal cleanliness, fit-up with alignment tack welds, and final visual examination in accordance with NCA-4134.10 and ND-4230.

The inspectors also reviewed the entries on the WDSs to determine whether the traceability of previously reviewed stainless steel weld filler metals and welders were maintained in accordance with ND-4122 and ND-4300. In addition, the inspectors reviewed certified material test reports (CMTRs) for 1/16-inch (heat-no. 1030L) and 1/8-inch (heat-no. 1408D) diameter ER308/308L solid rods to verify the chemical analysis and mechanical properties were in accordance with the ASME Code Section III (NB-2400) and ASME Code Section II, Part C, SFA-5.9 specification for stainless steel welding rods.

The inspectors reviewed performance qualification records of welders to verify the welders were tested and certified for welding on this portion of the PCS piping in accordance with the requirements of the ASME Code Section IX, Article III for welding performance qualifications.

The inspectors reviewed six liquid penetration examination reports to determine whether acceptance by SNT-TC-1A Level II examiners were performed with no rejectable indications in accordance with the requirements of the ASME Code Section III (Article ND-5000) and Section V (Article 6) for liquid penetration examination.

b. Findings

No findings were identified.

1A13 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.07-02.01 – General Installation

The inspectors observed and reviewed documents associated with work package SV3-PXS-P0W-1057547 for installation of the 8-inch diameter isolation MOV, SV3-PXS-PL-V125B for the in-containment refueling water storage tank injection B squib valve to determine if the mechanical joint connections at the inlet and outlet sides to the valve body and flanges were assembled in accordance with the requirements of the ASME Code Section III, Subsection NB, for Class 1 components.

The inspectors reviewed the Valve Installation Data Sheet to verify QC inspector hold points for identification/marking of the PV70 valve with serial number 0920-164451-1-3, material traceability for studs and nuts, internal cleanliness, and torque wrench calibration were deemed satisfactory and signed-off in accordance with the requirements of the ASME Code Section III, Article NCA-3000 with final signature by the ANI.

The inspectors reviewed Bolted Joint Data Sheets to verify QC inspector hold points for the inlet and outlet side alignment/fit-up with gaskets between the valve body and flanges were sequentially torqued in gradual steps to the initial maximum torque value using 12 threaded stud and nut materials on each side in accordance with the requirements of the ASME Code Section III, NB-2128, and Section II, Part D, Subpart 1, Table 4 with final signature by the ANI.

The inspectors reviewed Special Operations Data Sheets to verify hold points for hydraulic tensioning of 12 studs into the inlet and outlet sides of the valve body and tightening of the nuts to the flanges were deemed satisfactory and signed-off by QC inspectors and the ANI in accordance with the requirements of the ASME Code Section III, NB-4700 for mechanical joints and Article NCA-5000 for authorized inspection.

b. Findings

No findings were identified.

1A14 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02a (159). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.01 – General Installation
- 65001.06-02.03 – Post Installation Activities
- 65001.F-02.01-Design Document Review
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed the isometric construction drawings for the Vogtle Unit 3 PXS pipe supports located in the containment building to verify they were in accordance with the WEC fabrication and installation specification. The inspectors performed a walkdown in the containment building room 11206 to verify the pipe supports installed were of correct type, were in the correct location, restrained to the pipe and the anchorage point, and were aligned in accordance with the pipe support installation construction drawings and met the requirements of the WEC fabrication and installation specification. The inspectors examined the pipe supports to verify there was no structural damage, there was no oil leakage from the snubber, and the weld reinforcement to the pipe was in accordance with the QA program requirements and WEC fabrication and installation specification.

b. Findings

No findings were identified.

1A15 (Unit 3) ITAAC Number 2.6.03.02.i (597) / Family 08A
(Unit 4) ITAAC Number 2.6.03.02.i (597) / Family 08A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.6.03.02.i (597). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.03 – Documentation
- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 – Installation Records Review
- 65001.A.02.03 – Independent Assessment/Measurement Inspection
- 65001.A.02.04 – Review As-built Deviations/Nonconformance

The inspectors reviewed the design and construction of battery racks for the Unit 3 Class 1E DC and uninterruptible power supply system (IDS) for the 24-hour, 72-hour, and spare batteries to determine whether the installation was in accordance with the ITAAC requirements. Specifically, the inspectors reviewed quality records, including the design specification, work packages, inspection records, engineering service requests (ESRs), CRs, procedures, vendor manuals, and drawings to verify:

- the design was implemented in accordance with regulatory requirements, including applicable sections of the UFSAR and the Institute of Electrical and Electronic Engineers standards;
- differences between the as-built configuration and the design were reconciled in the design report;
- the design drawings were revised to reflect the as-built configuration by qualified personnel;
- issues identified during the inspection were entered into the CAP in accordance with the CAP requirements;
- design changes were evaluated and implemented in accordance with established site procedures; and
- design deviations or nonconforming conditions were identified, documented, and dispositioned in accordance with site procedures.

The inspectors conducted a walkdown to determine whether the critical attributes of the as-built IDS battery racks conformed to the approved design. During the walkdown, the inspectors reviewed licensee actions to address similar or related problems that were previously identified, in order to check the extent of condition and verify the effectiveness of the licensee's corrective measures.

b. Findings

Introduction

The inspectors identified an ITAAC finding of very low safety significance (Green) with an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to construct and perform quality inspections on Unit 3 and Unit 4 IDS battery racks for the 250 Vdc 24-hour, 72-hour, and spare batteries in accordance with ITAAC 2.6.03.02.i and the approved design requirements for Vogtle Units 3 and 4.

Description

ESR 50053212 was written to evaluate “misaligned channel nuts,” also known as “misaligned spring nuts,” on IDS battery racks in Unit 3 room 12102. The term “misaligned spring nuts” refers to spring or channel nuts that may not be seated on the Unistrut rail channel sections. Thus, the slots within the spring nuts may not be fully engaged with the rail’s folded edges in accordance with Section 7.3, “Install Support Rails & Side Rails to Frame,” of Vendor Manual APP-DB01-V8M-001. The licensee had captured this issue in its CAP on June 16, 2020 (ESR 50053212) and closed the issue without completing an evaluation. The Unit 3 IDS battery racks were fully assembled, hardware was torqued, and spring nuts had been QC inspected and accepted during the installation of the battery racks. The IDS batteries were also installed in the racks with cables already terminated.

The inspectors noted step 3010 of work packages SV3-IDS-DBW-860173 and SV3-DS-DBW-860174 required rack installation per vendor manual SV3-DB01-V8M-001. The vendor manual required spring nuts to be seated in accordance with Figure 7.3 d, steps 1 through 4. After a review of the work packages, specifically Section 3.3, the inspectors noted the QC inspection staff had concluded, by initial on the electrical equipment installation inspection records, the equipment and hardware (e.g. spring bolts and nuts) were mounted correctly.

On July 28, and August 5, 2020, responding to the NRC’s follow-up questions on the condition of “misaligned spring nuts,” the licensee initiated CR 50057411 and CR 50058215 respectively, that identified multiple instances where the grooves in the vendor supplied spring nuts were not seated in the Unistrut channel sections of several IDS battery racks (i.e., SV3-IDSC-DB-1A, SV3-IDSC-DB-1B and SV3-IDSS-DB-1A) in rooms 12102 and 12103. The spring nuts were already QC inspected and accepted during the installation of the battery racks. In addition, ESR 50057274 was also initiated to determine if this as-built condition was adequate, as originally intended by ESR 50053212.

In addition, the licensee conducted a QA surveillance from August 5 through November 16, 2020, where additional nonconformances were identified for the batteries, specifically with the as-built condition of the battery racks after QC inspections were previously completed. Specifically, Quality Surveillance 26193-000-GQA-QSSS-20160 of the Unit 3 battery racks as-built configuration was performed to verify compliance with vendor instructions and project specifications. This quality surveillance identified several cross bracings were not installed per the manufacturer’s instructions in rooms 12102 and 12202, and CR 50062315 was initiated to address this issue.

As a result of the extent of condition performed, the licensee initiated CR 50062981 that identified the battery racks’ vendor was not consulted to determine whether material hardware substitution (i.e., bolts, washers and nuts) met the quality requirements under its commercial dedication program. Specifically, nonconformance and disposition (N&D) SV3-IDSB-GNR-000002 allowed use of a substitute material for rail nuts and related hardware on IDS battery racks for 3-IDSB-DB-2B. The N&D accepted the form, fit, and function of the alternate material as meeting APP-DB01-Z0-001, “Design Specification for Class 1E 250 VDC Batteries and Racks for System IDS,” Revision 7.

However, the vendor was not consulted, and the NRC inspectors noted that material weight differences were not documented as part of the original evaluation for this material substitution.

The licensee's extent of condition inspection identified additional safety related spring nuts not seated, as required in vendor manual's Figure 7.3d, steps 1 through 4. This nonconforming condition was found in all the IDS battery racks from both Unit 3 and Unit 4, thus potentially affecting the safety function of all the 250 Vdc 24-hour, 72-hour, and spare batteries. Further, the spring nuts in Unit 3 rooms 12101, 12102, 12103, 12104, 12105, 12202 and 12204 had already been QC inspected and accepted during the installation of the battery racks. These issues were captured in the CAP as CRs 50057411, 50058215, and 50054000.

Due to the cumulative effects of multiple nonconforming issues, it was indeterminate if the applicable Category 1 equipment could withstand seismic design basis loads without a loss of safety function and if the as-built equipment, including anchorage, was seismically bounded by the tested or analyzed conditions. The licensee entered all these issues into its CAP as CR 50066999. Investigation and resolution of several of these issues were addressed under the scope of ESR 50057274. The licensee completed evaluations SVP-SV0-006012, "Battery Rack Nonconformance Structural Safety Evaluation" and SVP-SV0-006099, "Battery Rack Nonconformance Structural Safety Evaluation – Updated Based on Completed Extent of Condition Work," that demonstrated there was reasonable assurance that the design function of the system would not have been impaired by the deficiency based on engineering analysis of the nonconforming conditions identified. The licensee also restored the Unit 3 and 4's as-built configuration of the IDS battery racks to match the seismically qualified condition as specified by the design.

Analysis

The inspectors determined the licensee's failure to construct and perform quality inspections on battery racks for the Unit 3 and Unit 4 IDS 24-hour, 72-hour, and spare batteries in accordance with ITAAC 2.6.03.02.i and the approved design requirements for Vogtle Units 3 and 4 was a performance deficiency. The inspectors determined that the failure to meet the requirements in SV3-DB01-V8M-001 and APP-DB01-Z0-001 was contrary to the requirements of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," and resulted in a performance deficiency that required substantive corrective action. Per the guidance in IMC 0613, "Power Reactor Construction Inspection Reports," Appendix B, "Issue Screening," dated November 4, 2020, the inspectors determined traditional enforcement or enforcement discretion would not apply to this performance deficiency.

Per further guidance in IMC 0613, Appendix E, "Examples of Minor Construction Issues," dated November 4, 2020, the inspectors determined this performance deficiency was of more than minor safety significance, and thus a finding, because it was material to the acceptance criteria of an ITAAC and invalidated the Inspection, Test, or Analysis described in the ITAAC. Specifically, the design commitment for ITAAC 2.6.03.02.i (Sequence 597) is "the seismic Category I equipment identified in Table 2.6.3-1 can withstand seismic design basis loads without loss of safety function." Table 2.6.3-1 lists IDS 250 Vdc 24-hour, 72-hour, and spare batteries as applicable seismic Category I equipment.

The acceptance criteria for this ITAAC states in part that "a report exists and concludes that the as-built equipment including the anchorage is seismically bounded by the tested or analyzed conditions." The inspectors determined that the performance deficiency was material to ITAAC 2.6.03.02.i because the cumulative effects for the multiple non-conformances with the as-built seismic Category I IDS equipment, after QC inspections were completed and deemed acceptable, it was indeterminate if the applicable Category 1 equipment could withstand seismic design basis loads without a loss of safety function and if the as-built equipment, including anchorage, was seismically bounded by the tested or analyzed conditions.

The inspectors determined this finding was related to the Construction/Installation cornerstone of the Construction Reactor Safety strategic performance area. The inspectors determined this finding was not associated with a security program; it was not associated with an IMC 2504 operational/construction program; and it was not associated with a repetitive, NRC-identified omission of a program critical attribute. In accordance with IMC 2519, "Construction Significance Determination Process," Appendix A, "AP 1000 Construction Significance Determination Process," dated October 26, 2020, the inspectors determined this finding was a performance deficiency of very low safety significance (Green) because the licensee was able to demonstrate with reasonable assurance the design function of the structure or system would not be impaired by the deficiency, and the nonconforming conditions were corrected such that the installation was seismically bounded by the tested or analyzed conditions. Under the "AP 1000 Construction Significance Determination Matrix" in Attachment A of IMC 2519, the IDS is classified as a High Safety System under the System/Structure Risk Column and the finding concerned the same design and safety functions of multiple trains or the entire IDS battery system as listed in "AP 1000 System Design Function Definitions" and the COL. Based upon the NRC review of the licensee's evaluations SVP-SV0-006012 and SVP-SV0-006099 that demonstrated there was reasonable assurance the design function of the system would not have been impaired by the deficiency, the inspectors determined the performance deficiency would not impair the design function of the IDS, therefore the finding screened for Row 1 under Table "Construction Significance Determination Process Matrix Quality of Construction Y – Axis Flow Diagram."

The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect of "Avoiding Complacency" in the area of Human Performance, in accordance with IMC 0613, Appendix F, Construction "Cross-Cutting Areas and Aspects," dated November 4, 2020. The proximate cause of the performance deficiency was attributed to a failure to use human error reduction techniques, namely a failure to perform a thorough review of the work instructions and to plan the activity every time without relying on past successes and assumed conditions. [H.12]

Enforcement

10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, 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 and before August 5, 2020, the licensee failed to install battery racks for the Unit 3 and Unit 4 250 Vdc 24-hour, 72-hour, and spare IDS batteries in accordance with ITAAC 2.6.03.02.i and the approved design requirements specified in SV3-DB01-V8M-001 and APP-DB01-Z0-001. The licensee entered this finding into its CAP for evaluation and identification of appropriate corrective actions (CR 50066999). Corrective actions were completed for this issue, which included rework on the battery racks to correct the nonconforming conditions in both units. Because this violation was not repetitive or willful; was of very low safety significance; and was entered into the licensee's CAP, it is being treated as an NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200025/2020004-02 and 05200026/2020004-02, Failure to Construct and Perform Quality Inspections on the Battery Racks for the Class 1E DC and Uninterruptible Power Supply System).

1A16 (Unit 3) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.a (760). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01 – Inspection of ITAAC-Related Foundations & Buildings
- 65001.01-02.07 – Identification and Resolution of Problem
- 65001.02-02.07 – Problem Identification and Resolution
- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.04 – Review As-built Deviations/Nonconformance

The inspectors reviewed the as-built summary report for the containment internal structures to verify the report reconciled deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concluded the as-built containment internal structures, including the critical sections, conform to the approved design and would withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis. Specifically, the inspectors verified if the as-built summary report addressed deviations that were reconciled after the effective date of the as-designed summary report.

The inspectors reviewed Table 3-2.1 and Table 3-2.2 of the as-built summary report to verify margin existed in the structural components and connections after reconciliation of the site specific nonconformance and disposition reports (N&Ds) and E&DCRs. The inspectors also reviewed the design summary of critical sections provided in the as-built summary report to verify they were consistent with VEGP Units 3 and 4 UFSAR Tables 3.3.8-4, 3.3.8-5, and 3.3.8-6.

Additionally, the inspectors reviewed Table 4-2 of the as-built summary report to determine if the as-built construction met the concrete wall thicknesses and radiation shielding requirements of VEGP Units 3 and 4 UFSAR Table 3.3-1.

b. Findings

No findings were identified.

1A17 (Unit 3) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.d (763). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 – Inspection of Concrete Placement
- 65001.02-02.06 – Record Review
- 65001.02-02.07 – Problem Identification and Resolution
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.01-Design Document Review

The inspectors reviewed pre-placement inspection records to verify the quality and technical requirements were met. Specifically, the inspectors reviewed concrete pre-placement, reinforcing bar, and mechanical splicing inspection records to verify the bars met material requirements, inspection was performed to determine if the bars were installed in accordance with the construction documents, and records were completed in accordance with Bechtel Project Procedures, 26139-000-4MP-T81C-N3210-CPM1F2 and 26139-000-4MP-T81C-N3223. The inspectors also reviewed mechanical splicer qualification records to verify the installers were qualified to perform the work in accordance with SV3-CR01-Z0-010.

The inspectors reviewed five E&DCRs to verify design changes made to the roof structure were performed in accordance with 10 CFR 50 Appendix B, Criterion III, “Design Control.” Specifically, the inspectors determined if the design changes were subject to control measures commensurate with those applied to the original design and were approved by the organization that performed the original design or the designated responsible organization. The inspectors also reviewed the E&DCRs to verify a technical justification was provided for the design change, deviations from applicable quality standards such as American Concrete Institute (ACI) 349-01 were controlled, and the revised design was correctly translated into the updated design output documents.

The inspectors also reviewed two N&Ds to verify nonconforming conditions were documented in the CAP. Additionally, the inspectors reviewed the N&Ds to determine if nonconforming items dispositioned “use-as-is” or “repair” were reviewed and approved by the design authority and evaluated for impacts to the licensing basis.

b. Findings

No findings were identified.

1A18 (Unit 3) ITAAC Number 3.3.00.02b (770) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02b (770). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.01 – Procedures
- 65001.01-02.06 – Records
- 65001.A.02.01 – Observation of in-Process Installation Activities
- 65001.A.02.02 – Installation Records Review
- 65001.A.02.04 – Review As-built Deviations/Nonconformance

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02b (770) to verify the as-built configuration demonstrated the site-grade is consistent with the design plant grade and is within the dimensions defined in Table 3.3-5 of Appendix C of the COL.

The inspectors performed an inspection of the as-built site grade elevation of Unit 3 relative to the floor elevation of 100-feet to determine whether the as-built site grade is consistent with design plant grade, including a tolerance of ±3 feet 6-inches, as specified in Table 3.3-5 of Appendix C of the COL.

The inspectors verified the contractor's construction survey procedure included quantitative and qualitative acceptance criteria for determining that the site survey inspection was accomplished in accordance with site procedures. The inspectors reviewed the calibration records of site survey instruments to verify the instruments were maintained, calibrated, and traceable to a known standard. The inspectors reviewed the contractor's survey personnel qualification records and verified the survey personnel were qualified to perform site survey work. The inspectors conducted a walkdown of the site excavation and verified the re-installation of storm drains DI-NI-24 through DI-NI-27. The inspectors observed the surveying of storm drain covers using calibrated survey equipment in accordance with the Power Block Grading Plan. The inspectors also reviewed the power block grading plan to verify revisions reflected the design change documented in E&DCR SV3-0000-GEF-000243. The inspectors reviewed a CR describing a damaged storm drain lid and the corrective action taken. Furthermore, the inspectors reviewed the associated PCD to determine whether the ITAAC requirements were satisfied.

b. Findings

No findings were identified.

1A19 (Unit 3) ITAAC Number 3.3.00.02h (776) / Family 11A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02h (776). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.06 – Records
- 65001.A.02.02 – Installation Records Review

The inspectors performed an inspection to verify a report exists and concludes the flood up volume of PXS valve/equipment room B (room 11207) is less than 71,960 ft^3 to an elevation of 107.68-feet to satisfy the ITAAC requirement.

The inspectors performed a walkdown with the licensee of the as-built containment structures and equipment in room 11207 to verify the as-built structures and components in the room matched the design such that the inputs into the licensee's calculation for flood elevation (volume) were valid.

The inspectors reviewed the licensee's methodology, assumptions and selection of applicable design drawings, calculations, QA data packages, and the PCD to verify the inspections and calculations demonstrated the as-built installed containment flood up volume met the ITAAC acceptance criteria. The inspectors reviewed inspection results from the component as-built dimensional and elevational data, and volumetric and construction survey data incorporated in the volumetric calculations and documented in WEC calculation report SV3-PXS-M3C-033, to determine if the calculated volumes met the ITAAC acceptance criteria. The inspectors reviewed the calibration reports of the survey instruments used to conduct surveys to verify they had been calibrated and were within their tolerance range.

b. Findings

No findings were identified.

1A20 (Unit 3) ITAAC Number 3.3.00.07e (812) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07e (812). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.01 – Physical Separation of Cables
- 65001.09-02.03 – Documentation

The inspectors reviewed the routing and separation of the Class 1E communication cables for the protection and safety monitoring system (PMS) to verify the as-built configuration met the acceptance criteria specified in the UFSAR Section 8.3.2.4 and the ITAAC.

Specifically, the inspectors reviewed cable pull tickets to determine routing methods used in the installation of interdivisional cable for the PMS voting logic. The inspectors reviewed cable termination inspection reports to determine if possible damage occurred during installation. The inspectors reviewed the separation between fiber optic cables to verify if distance and fire zone separation requirements, from the different divisions, were met to maintain the integrity of the PMS voting logic for these Class 1E communication cables.

The inspectors reviewed the PCD associated with this ITAAC to verify the analysis documented the effects of fire damage or damage to any single raceway carrying PMS interconnection cables potentially defeating the PMS voting logic.

b. Findings

No findings were identified.

1A21 (Unit 3) ITAAC Number 3.3.00.13 (819) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.13 (819). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.06 – Records
- 65001.01-02.07 – Identification and Resolution of Problem
- 65001.A.02.02 – Installation Records Review

The inspectors reviewed the licensee's PCD for this ITAAC, including the survey results, to determine if the results and methods used met the ITAAC acceptance criteria. Specifically, the inspectors reviewed PCDs and the survey results to determine if separation was provided between the structural elements of the turbine and annex buildings and the nuclear island structure. The separation permits horizontal motion of the buildings in the safe shutdown earthquake without impact between structural elements of the buildings.

The inspectors verified whether a minimum horizontal clearance above floor elevation 100'-0" between the structural elements of the annex building and the nuclear island, and between turbine building and the nuclear island was 3-inches; except that the minimum north-south horizontal clearance between elevations 141'-0" and 154'-0" and between structural elements of the annex building and the nuclear island west of column line I was 2-1/16 inches in accordance with the acceptance criteria of ITAAC 3.3.00.13 of Appendix C to the Vogtle Unit 3 COL.

b. Findings

No findings were identified.

1A22 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.b (761). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 – Inspection of Concrete Placement

The inspectors observed concrete placement in the tension ring of the SB, specifically module TR10 located on the west side. The inspectors reviewed the generic placement plan developed for the TR06 module to verify preplacement planning had been completed to assure good quality construction and contingency plans had been made to address unexpected events.

The inspectors reviewed two concrete batch plant delivery tickets to verify the batched mixes conformed to the placement plan and were discharged in accordance with the construction specification.

Additionally, the inspectors observed in-process record testing to verify concrete temperature, flow, air content, and unit weight conformed to requirements and in-process testing was completed at the proper location and frequency as required by the construction specification.

The inspectors also observed placement activities to verify placement locations and sequences were consistent with the placement plan and concrete was observed escaping from the air evacuation ports prior to concluding the placement.

b. Findings

No findings were identified.

1A23 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.b (761). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.05 – Steel Structures
- 65001.01-02.06 – Records
- 65001.A.02.02 – Installation Records Review
- 65001.B-02.04-Production Controls

- 65001.B-02.06-Records
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed the following sample of Chicago Bridge and Iron Services (CBIS) travelers for welded and bolted connections associated with the Unit 4 SB conical roof module:

- G4-R01 thru G4-R16 to G4-C01 thru G4-C03 for welds of the conical roof block to compressing ring assemblies;
- G4-R17E, F and G thru G4-R32E, F and G for the weld studded panel assemblies; and
- Roof-CompRing-Bolting-M06/M23 sliding joint at the G4-M23 bolt-up location of the compression ring assemblies.

The inspectors reviewed welding documents of weld joints near the completion stages of the conical roof module to verify the applicable weld preparations for weld joint alignment and fit-up, tack weld and root opening, preheat during welding, initial and interpass weld cleanliness, and final visual and NDE were performed and signed-off in accordance with the requirements of the CBIS general welding procedure and American Welding Society (AWS) Code D1.1:2000, “Structural Welding Code Steel”.

The inspectors reviewed two weld travelers used for joint assemblies of the SB roof to determine if established QC inspection hold points were signed-off, and the traceability of weld filler metals and welders were maintained in accordance with the CBIS general welding procedure. The inspectors reviewed spreadsheets for these weld travelers to determine if QC inspection hold points were established and signed-off for visual inspection, magnetic particle testing, and ultrasonic testing in accordance with the CBIS general welding procedure.

The inspectors performed an independent visual inspection of completed welds after flat toping of the surfaces and final ultrasonic testing to determine whether the quality of the weld toes were visually free from defects such as cracks, lack of fusion, or excessive undercut in accordance with the visual inspection acceptance criteria of AWS Code D1.1:2000, “Structural Welding Code Steel”.

The inspectors reviewed a traveler for bolting of the M06-M23 sliding joint at the G4-M23 bolt-up location of the compression ring assemblies to determine if established QC inspection hold points were signed-off, and the traceability of bolts and washers were maintained along with the position numbers of bolts and tightening sequence using 1/3 turn-of-nut permanent bolting.

The inspectors reviewed a sample of five design changes associated with the conical roof module to verify design changes were conducted in accordance with the requirements of APP-GW-GAP-420. Additionally, the inspectors reviewed the dispositions of the design changes to verify the changes from the original design did not make substantial changes that would require a revision to the design calculations.

b. Findings

No findings were identified.

1A24 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.b (761). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.05 – Steel Structures
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls

The inspectors observed in-process assembly of Unit 4 tension ring modules in the nuclear island. Specifically, the inspectors observed in-process welding of the following joints:

- external complete joint penetration (CJP) horizontal weld connecting tension ring module TR09 to the air inlet modules along the western edge of the SB at approximate azimuth 270 degrees;
- interior CJP vertical weld with weld designation CJP4 connecting closure plate in access opening between tension ring modules TR06 and TR07;
- external CJP vertical weld with weld designation CJP2 connecting tension ring modules TR08 and TR09; and
- internal CJP horizontal weld with weld designation CJP1 connecting bottom flanges of tension ring modules TR09 and TR10.

For the welds listed above, the inspectors reviewed training records for the welders to verify they were appropriately qualified to perform the work. The inspectors also reviewed the weld travelers to verify work was being conducted in accordance with a document that coordinates and sequences all operations, references procedures, drawings, and instructions, establishes hold points, and provides for production welding and inspection signoffs. The inspectors reviewed the travelers to verify if the hold points for fit-up had been appropriately signed off prior to proceeding to the next work step.

Additionally, the inspectors verified if the variables for voltage and amperage being used for completing the horizontal seam weld connecting tension ring module TR09 to the air inlet modules were consistent with welding procedure specification (WPS) 181816-000-WS-WP-E8018. The inspectors reviewed the filler metal certificate of conformance to verify the material being used for completing the weld connecting the bottom flanges of tension ring modules TR09 and TR10 was consistent with WPS 181816-000-WS-WP-E8018.

b. Findings

No findings were identified.

1A25 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.c (762). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 – Inspection of Concrete Placement
- 65001.02-02.06 – Record Review

The inspectors observed concrete placement in walls 11 and Q approximately between wall P and the SB from elevation 135'-3" to 153'-0". The inspectors reviewed the pre-placement concrete inspection record and the concrete placement/order pour card to verify the required approvals were received prior to the final release for placement and records were completed in accordance with Bechtel Project Procedure 26139-000-4MP-T81C-N3210-CPM1F2.

The inspectors reviewed two concrete batch plant delivery tickets to verify the batched mixes conformed to the placement plan and were discharged in accordance with the construction specification. Additionally, the inspectors observed in-process record testing to verify concrete temperature, flow, air content, and unit weight conformed to requirements and in-process testing was completed at the proper location and frequency as required by the construction specification.

The inspectors also observed placement activities to verify drop distances did not exceed specification requirements, placement rates were consistent with the placement plan, and appropriate attention was given to areas of obstruction within the modules to minimize the potential for voids or honeycombing.

b. Findings

No findings were identified.

1A26 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.c (762). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 – Inspection of Concrete Placement
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.01-Design Document Review

The inspectors observed in progress construction of the roof over Area 2 of the auxiliary building approximately between the SB cylindrical wall and the walls along column lines 7.3, 11, I and L. Specifically, the inspectors observed the installation of the main top and bottom reinforcing bars in the concrete roof slab to verify the sizes, spacing, material designation, grade, lap splices, and layout of the bars were consistent with the applicable design drawings, E&DCRs, construction specification SV4-CC01-Z0-31, and ACI 349-01.

The inspectors reviewed two E&DCRs to verify design changes made to the roof slab were performed in accordance with 10 CFR 50 Appendix B, Criterion III, "Design Control." Specifically, the design changes were subject to control measures commensurate with those applied to the original design and were approved by the organization that performed the original design or the designated responsible organization. The inspectors also reviewed the E&DCRs to verify a technical justification was provided for the design change, deviations from applicable quality standards such as ACI 349-01 were controlled, and the revised design was correctly translated into the updated design output documents.

b. Findings

No findings were identified.

1A27 (Unit 4) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.d (763). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 – Inspection of Concrete Placement
- 65001.02-02.06 – Record Review

The inspectors observed concrete placement in wall N between wall 1 and the SB from approximately elevation 155'-0" to 180'-0". The inspectors reviewed the pre-placement concrete inspection record and the concrete placement/order pour card to verify the required approvals were received prior to the final release for placement and records were completed in accordance with Bechtel project procedure 26139-000-4MP-T81C-N3210-CPM1F2.

The inspectors reviewed two concrete batch plant delivery tickets to verify the batched mixes conformed to the placement plan and were discharged in accordance with the construction specification. Additionally, the inspectors observed in-process record testing to verify concrete temperature, flow, air content, and unit weight conformed to requirements and in-process testing was completed at the proper location and frequency as required by the construction specification.

The inspectors also observed placement activities to verify drop distances did not exceed specification requirements, placement rates were consistent with the placement plan, and appropriate attention was given to areas of obstruction within the modules to minimize the potential for voids or honeycombing.

b. Findings

No findings were identified.

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

1P01 Construction QA Criterion 16

- 35007-A16.04 – Inspection Requirements and Guidance
- 35007-A16.04.01 – Inspection of QA Implementing Documents
- 35007-A16.04.02 – Inspection of QA Program Implementation

a. Inspection Scope

The inspectors reviewed issues entered into the licensee's CAP daily to assess issues that might warrant additional follow-up inspection, to assess repetitive or long term issues, to assess adverse performance trends, and to ensure the CAP appropriately included regulatory required non-safety related SSCs. The inspectors periodically attended the licensee's CAP review meetings, held discussions with licensee and contractor personnel, and performed reviews of CAP activities during the conduct of other baseline inspection procedures. The inspectors reviewed conditions entered into the licensee's CAP to determine whether the issues were classified in accordance with the licensee's QA program and CAP implementing procedures. The inspectors reviewed corrective actions associated with conditions entered into the CAP to determine whether appropriate actions to correct the issues were identified and implemented effectively, including immediate or short-term corrective actions, in accordance with the applicable QA program requirements and 10 CFR 50, Appendix B, Criterion XVI. Additionally, the inspectors reviewed the corrective actions taken to determine whether they were commensurate with the significance of the associated conditions in accordance with the licensee's CAP implementing procedures. The inspectors completed reviews of CAP entry logs to verify issues from all aspects of the project, including equipment, human performance, and program issues, were being identified by the licensee and associated contractors at an appropriate threshold and entered into the CAP as required by licensee's CAP implementing procedures.

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA5 Other Activities

.1 Review of World Association of Nuclear Operators (WANO) Pre-Startup Review (PSUR) Report for Vogtle Unit 3.

The inspectors reviewed the WANO PSUR Report of Vogtle Unit 3 conducted in August 2020. During this review, the inspectors did not identify any new significant safety issues.

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On January 14, 2021, the inspectors presented the inspection results to Mr. Glen Chick, Vogtle Units 3 and 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

R. Beilke, ITAAC Project Manager
C. Castell, SNC Licensing Engineer
N. Kellenberger, SNC Licensing Supervisor
S. Leighty, SNC Licensing Supervisor
T. Petrak, SNC ITAAC Manager
L. Pritchett, SNC Licensing Engineer
K. Roberts, SNC, Licensing Manager
G. Scott, SNC Licensing Engineer
M. Yox, SNC Regulatory Affairs Director

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Type	Status	Description
05200025/2020003-02	URI	Closed	ASME Code Section III Level C Service Limits May Not Be Met for Containment Penetrations 44 and 45 (Section 1A08)
05200025/2020004-01	NCV	Open/Closed	ASME Code Section III Level C Service Limits May Not Be Met for Containment Penetrations 44 and 45 (Section 1A08)
05200025/2020004-02 05200026/2020004-02	NCV	Open/Closed	Failure to Construct and Perform Quality Inspections on the Battery Racks for the Class 1E DC and Uninterruptible Power Supply System (Section 1A15)

LIST OF DOCUMENTS REVIEWED

Section 1

[2503 Documents]

Section 1A01

VEGP 3&4 UFSAR, Section 5.1.2, “Reactor Coolant System and Connected Systems – Design Description,” Revision 7
SV3-RCS-ITR-800012, “Unit 3 Functional Arrangement Inspection: ITAAC 2.1.02.01 NRC Index Number 12,” Revision 2
SV3-RCS-M6-001, “Piping and Instrumentation Diagram Reactor Coolant System,” Revision 6
SV3-RCS-M6-002, “Piping and Instrumentation Diagram Reactor Coolant System,” Revision 8
SV3-RCS-M6-003, “Piping and Instrumentation Diagram Reactor Coolant System,” Revision 4
SV3-PXS-M6-002, “Piping and Instrumentation Diagram Passive Core Coolant System,” Revision 8
S6V3-CVS-M6-001, “Piping and Instrumentation Diagram Chemical and Volume Control System,” Revision 6
SV3-RNS-M6-001, “Piping and Instrumentation Diagram Normal Residual Heat Removal System,” Revision 4
SV3-RCS-M9K-FA001, “SV3-Reactor Coolant System (RCS) ITAAC Functional Arrangement Guideline Sketch,” Revision 1
SV3-RCS-M6K-FA001, “SV3-RCS-M6-001 RCS ITAAC Functional Arrangement Sketch,” Revision 1
SV3-RCS-M6K-FA002, “SV3-RCS-M6-002 RCS ITAAC Functional Arrangement Sketch,” Revision 1
SV3-RCS-M6K-FA003, “SV3-RCS-M6-003 RCS ITAAC Functional Arrangement Sketch,” Revision 0
SV3-PXS-M6K-FA102, “SV3-PXS-M6-002 RCS ITAAC Functional Arrangement Sketch,” Revision 1
SV3-CVS-M6K-FA201, “SV3-CVS-M6-001 RCS ITAAC Functional Arrangement Sketch,” Revision 0
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SV3-ECS-E9-101, “Conduit Notes and Support Details”, Revision 1

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SV3-DB01-VBR-001 “Equipment Qualification Summary Report for Class 1E 250 VDC Batteries for Use in the AP1000 Plant”, Revision 2
APP-DB01-VBR-002 “Equipment Qualification Data Package for Class 1E 250 VDC Batteries for Use in the AP1000 Plant”, Revision 0
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Engineering Service Requests (ESRs)
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ESR 50057274

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CR 50054000
CR 50049527
CR 50054000
CR 50057411
CR 50058215
CR 50062315
CR 50062981
CR 50064326

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SVP-SV0-006099, "Battery Rack Nonconformance Structural Safety Evaluation – Updated Based on Completed Extent of Condition Work

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APP-1208-GEF-850124, “Shield Building Panel 09E and Roof Connection Access,” Revision 0

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SV0-CR01-GEF-001259, “NI3 Wall 4 connection to Area 6 roof slab @ the (Wedge) area El. 180’-0” (ESR 50039460),” Revision 0

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Bechtel Project Procedure, 26139-000-4MP-T81C-N3210-CPM1F2, “Concrete Operations,” Revision 1

Bechtel Project Procedure, 26139-000-4MP-T81C-N3223, “Reinforcing Bar Mechanical Splicing,” Revision 4

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26139-SV3-QS-20-0499-000, Mechanical Splicer Qualification Record, SS4539

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WP: SV3-1260-CRW-1017574, IR: 26139-SV3-IR-C0-01063, Attachment B, “Concrete Pre-Placement Inspection Record”

WP: SV3-1260-CCW-1017578, IR: 26139-SV3-IR-C0-01227, Attachment G, “Concrete Placement/ Order Pour Card”

WP: SV3-1260-CRW-1017574, IR: 26139-SV3-IR-FF-00321, Attachment L, “Reinforcing Steel Bar Fabrication Inspection Record”

WP: SV3-1260-CRW-1017574, IR: 26139-SV3-IR-FF-C0-00321, Attachment K, Inspection Record for Reinforcing Steel Bar Fabrication Request”

WP: SV3-1260-CRW-1017574, IR: 26139-SV3-IR-C0-01064, Attachment E, “Tapered, Threaded Bar Inspection Record”

WP: SV3-1260-CRW-1017574, IR: 26139-SV3-IR-C0-01064, Attachment E1, “Continuation Sheet, Tapered, Threaded Bar Inspection Record”

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3.3.00.07e–U3-CAR-PCD, “Cable Analysis Report for Vogtle Unit 3 ITAAC 3.3.00.07e (COL# 812), dated: 12/12/2020

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SV3-PMS-EWW-1054911, “Fiber Optics Terminations Inspection Record, dated: 11/13/2020
SV3-PMS-EWW-1061477, “Fiber Optics Terminations Inspection Record, dated: 9/24/2020

SV3-PMS-EWW-1061534, “Fiber Optics Terminations Inspection Record, dated: 10/23/2020

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SV4-1278-GEF-000002, "Conical Roof Potential Interferences with the Tension Ring (ESR 50057397)," Revision 0

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WP: SV4-1251-C0W-1015504, IR: 26139-SV4-IR-C0-01228, Attachment B, “Concrete Pre-Placement Inspection Record”
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ND-AD-002-027, “Nonconforming Items,” Revision 8.0

LIST OF ACRONYMS

ACI	American Concrete Institute
ADS	Automatic Depressurization System
ANI	Authorized Nuclear Inspector
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CBIS	Chicago Bridge and Iron Services
CFR	Code of Federal Regulations
CLB	Current Licensing Basis
CMTR	Certified Material Test Report
CNS	containment system
COL	Combined License
COLR	Core Operating Limits Report
CR	Condition Report
E&DCR	Engineering & Design Coordination Report
EPA	Electrical Penetration Assemblies
EQDP	Equipment Qualification Data Package
EQRR	Equipment Qualification Reconciliation Report
EQSR	Equipment Qualification Summary Report
ESR	Engineering Service Request
FW	Field Weld
IDS	Class 1E DC and Uninterruptible Power Supply System
IMC	Inspection Manual Chapter
IP	Inspection Procedure
ITAAC	Inspections, Tests, Analyses, and Inspection Criteria
MOV	Motor Operated Valve
N&D	Nonconformance and Disposition Report
NCV	Non-Cited Violation
NDE	Nondestructive Examination
NRC	Nuclear Regulatory Commission
PCD	Principal Closure Document
PCI	PCI Energy Services
PCS	Passive Containment Cooling System
PMS	Protection and Safety Monitoring System
PRHR HX	Passive Residual Heat Removal Heat Exchanger
PT	Liquid Penetrant Examination
PXS	Passive Core Cooling System
QA	Quality Assurance
QC	Quality Control
RCCA	Rod Cluster Control Assembly
RCS	Reactor Coolant System
RT	Radiographic Examination
RXS	Reactor System
SB	Shield Building
SEL	Schweitzer Engineering Laboratories
SSC	Structures, Systems, and Component
S&W	Stone and Webster
UFSAR	Updated Final Safety Analysis Report

URI	Unresolved Item
VEGP	Vogtle Electric Generating Plant
WDS	Weld Data Sheet
WEC	Westinghouse Electric Company

ITAAC INSPECTED

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
12	2.1.02.01	1. The functional arrangement of the RCS is as described in the Design Description of this Section 2.1.2.	Inspection of the as-built system will be performed.	The as-built RCS conforms with the functional arrangement described in the Design Description of this Section 2.1.2.

13	2.1.02.02a	2.a) The components identified in Table 2.1.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.1.2-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.1.2□1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.1.2-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.1.2-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure. 5.b) Each of the lines identified in Table 2.1.2-2 for which functional capability is required is designed to withstand combined	Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested. Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability. Inspection will be performed for the existence of an LBB evaluation report or an evaluation report on the protection from dynamic effects of a pipe break. Section 3.3, Nuclear Island Buildings, contains the design descriptions and inspections, tests, analyses, and acceptance criteria for protection from the dynamic effects of pipe rupture.	The ASME Code Section III design reports exist for the as-built components and piping identified in Tables 2.1.2□1 and 2.1.2□2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Table 2.1.2□1 and Table 2.1.2□2 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that each of the as-built lines identified in Table 2.1.2-2 for which functional capability is required meets the requirements for functional capability. An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the as-built RCS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects of

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
		normal and seismic design basis loads without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.1.2-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.		a line break is provided.
53	2.1.02.12a.i	12.a) The automatic depressurization valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table.	i) Tests or type tests of motor-operated valves will be performed that demonstrate the capability of the valve to operate under its design conditions. ii) Inspection will be performed for the existence of a report verifying that the as-built motor-operated valves are bounded by the tests or type tests.	i) A test report exists and concludes that each motor-operated valve changes position as indicated in Table 2.1.2-1 under design conditions. ii) A report exists and concludes that the as-built motor-operated valves are bounded by the tests or type tests.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
72	2.1.03.03	3. The components identified in Table 2.1.3-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 4. Pressure boundary welds in components identified in Table 2.1.3-1 as ASME Code Section III meet ASME Code Section III requirements. 5. The pressure boundary components (RV, CRDMs, and incore instrument QuickLoc assemblies) identified in Table 2.1.3-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.	Inspection will be conducted of the as-built components as documented in the ASME design reports. Inspection of as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components of the RXS required by the ASME Code Section III to be hydrostatically tested.	The ASME Code Section III design reports exist for the as-built components identified in Table 2.1.3-1 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the pressure boundary components (RV, CRDMs, and incore instrument QuickLoc assemblies) conform with the requirements of the ASME Code Section III.
88	2.1.03.13	13. The fuel assemblies and rod cluster control assemblies intended for initial core load and listed in Table 2.1.3-1 have been designed and constructed in accordance with the established design requirements.	An analysis is performed of the reactor core design.	A report exists and concludes that the fuel assemblies and rod cluster control assemblies intended for the initial core load and listed in Table 2.1.3-1 have been designed and constructed in accordance with the principal design requirements.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
91	2.2.01.02a	2.a) The components identified in Table 2.2.1-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.2.1-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.2.1-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.2.1-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.2.1-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.2.1-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.	Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. i) A hydrostatic or pressure test will be performed on the components required by the ASME Code Section III to be tested. A hydrostatic or pressure test will be performed on the piping required by the ASME Code Section III to be pressure tested.	The ASME Code Section III design reports exist for the as-built components and piping identified in Table 2.2.1-1 and 2.2.1-2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non□destructive examination of pressure boundary welds. i) A report exists and concludes that the results of the pressure test of the components identified in Table 2.2.1-1 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that the results of the pressure test of the piping identified in Table 2.2.1-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
109	2.2.01.08	8. Containment electrical penetration assemblies are protected against currents that are greater than the continuous ratings.	An analysis for the as-built containment electrical penetration assemblies will be performed to demonstrate (1) that the maximum current of the circuits does not exceed the continuous rating of the containment electrical penetration assembly, or (2) that the circuits have redundant protection devices in series and that the redundant current protection devices are coordinated with the containment electrical penetration assembly's rated short circuit thermal capacity data and prevent current from exceeding the continuous current rating of the containment electrical penetration assembly.	Analysis exists for the as-built containment electrical penetration assemblies and concludes that the penetrations are protected against currents which are greater than their continuous ratings.
114	2.2.01.11a.i	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.	i) Tests or type tests of motor-operated valves will be performed to demonstrate the capability of each valve to operate under design conditions. ii) Inspection will be performed for the existence of a report verifying that the asbuilt motor-operated valves are bounded by the tests or type tests.	i) A test report exists and concludes that each motor-operated valve changes position as indicated in Table 2.2.1-1 under design conditions. ii) A report exists and concludes that the as-built motor-operated valves are bounded by the tests or type tests.

120	2.2.02.02a	2.a) The components identified in Table 2.2.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The pipelines identified in Table 2.2.2-2 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.2.2-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in the pipelines identified in Table 2.2.2-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.2.2-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The pipelines identified in Table 2.2.2-2 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 5.b) Each of the pipelines identified in Table 2.2.2-2 for which functional capability is required	Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested. Inspection will be performed for the existence of a report concluding that the as-built pipelines meet the requirements for functional capability.	The ASME Code Section III design reports exist for the as-built components and piping identified in Table 2.2.2-1 and 2.2.2-2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Table 2.2.2-1 and 2.2.2-2 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that each of the as-built pipelines identified in Table 2.2.2-2 for which functional capability is required meets the requirements for functional capability.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
		is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability.		

159	2.2.03.02a	2.a) The components identified in Table 2.2.3-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.2.3-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.2.3-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.2.3-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.2.3-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.2.3-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure. 5.b) Each of the lines identified in Table 2.2.3-2 for which functional capability is required is designed to withstand combined	Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested. Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability. Inspection will be performed for the existence of an LBB evaluation report or an evaluation report on the protection from dynamic effects of a pipe break. Section 3.3, Nuclear Island Buildings, contains the design descriptions and inspections, tests, analyses, and acceptance criteria for protection from the dynamic effects of pipe rupture.	The ASME Code Section III design reports exist for the as□built components and piping identified in Table 2.2.3□1 and 2.2.3-2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Table 2.2.3□1 and 2.2.3-2 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that each of the as-built lines identified in Table 2.2.3-2 for which functional capability is required meets the requirements for functional capability. An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the as-built RCS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects of

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
		normal and seismic design basis loads without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.2.3-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.		a line break is provided.
597	2.6.03.02.i	2. The seismic Category I equipment identified in Table 2.6.3□1 can withstand seismic design basis loads without loss of safety function.	i) Inspection will be performed to verify that the seismic Category I equipment identified in Table 2.6.3□1 is located on the Nuclear Island. ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed. iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.	i) The seismic Category I equipment identified in Table 2.6.3□1 is located on the Nuclear Island. ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function. iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
760	3.3.00.02a.i.a	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions. 3.) Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations, provide shielding during normal operations.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads, and for radiation shielding.	i.a) A report exists which reconciles deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concludes that the as-built containment internal structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
761	3.3.00.02a.i.b	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions. 3.) Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations, provide shielding during normal operations.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads, and for radiation shielding.	i.b) A report exists which reconciles deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concludes that the as-built shield building structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
762	3.3.00.02a.i.c	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions. 3.) Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations, provide shielding during normal operations.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads, and for radiation shielding.	i.c) A report exists which reconciles deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concludes that the as-built structures in the non-radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
763	3.3.00.02a.i.d	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions. 3.) Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations, provide shielding during normal operations.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads, and for radiation shielding.	i.d) A report exists which reconciles deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concludes that the as-built structures in the radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.
770	3.3.00.02b	2.b) Site grade level is located relative to floor elevation 100'-0" per Table 3.3-5.	Inspection of the as-built site grade will be conducted.	Site grade is consistent with design plant grade within the dimension defined on Table 3.3-5.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
776	3.3.00.02h	2.h) The free volume in the containment allows for floodup to support long-term core cooling for postulated loss of coolant accidents.	An inspection will be performed of the as-built containment structures and equipment. The portions of the containment included in this inspection are the volumes that flood with a loss of coolant accident in passive core cooling system valve/equipment room B (11207). The in-containment refueling water storage tank volume is excluded from this inspection.	A report exists and concludes that the floodup volume of this portion of the containment is less than 71,960 ft3 to an elevation of 107.68'.
812	3.3.00.07e	7.e) Class 1E communication cables which interconnect two divisions are routed and separated such that the Protection and Safety Monitoring System voting logic is not defeated by the loss of any single raceway or fire area.	Inspections of the as-built Class 1E communication cables will be conducted.	Class 1E communication cables which interconnect two divisions are routed and separated such that the Protection and Safety Monitoring System voting logic is not defeated by the loss of any single raceway or fire area.
819	3.3.00.13	13. Separation is provided between the structural elements of the turbine and annex buildings and the nuclear island structure. This separation permits horizontal motion of the buildings in the safe shutdown earthquake without impact between structural elements of the buildings.	An inspection of the separation of the nuclear island from the annex and turbine building structures will be performed. The inspection will verify the specified horizontal clearance between structural elements of the adjacent buildings, consisting of the reinforced concrete walls and slabs, structural steel columns and floor beams.	The minimum horizontal clearance above floor elevation 100′-0″ between the structural elements of the annex building and the nuclear island is 3 inches. The minimum horizontal clearance above floor elevation 100′-0″ between the structural elements of the turbine building and the nuclear island is 3 inches.