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

November 10, 2020

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 05200025/2020003, 05200026/2020003

Dear Mr. Yox:

On, September 30, 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 October 23, 2020, with you and other members of your staff.

The inspection examined a sample of construction activities conducted under your Combined License 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.

The NRC inspectors documented one construction finding of very low safety significance (Green). The finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of the NCV, 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

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

Enclosure: NRC Inspection Report (IR) 05200025/2020003, 05200026/2020003

w/attachment: Supplemental Information

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SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INTEGRATED INSPECTION REPORTS 05200025/2020003, 05200026/2020003 DATED: November 10, 2020

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DATE	11/9/2020	11/9/2020	11/9/2020	11/9/2020	11/10/2020

U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	5200025 5200026
License Numbers:	NPF-91 NPF-92
Report Numbers:	05200025/2020003 05200026/2020003
Licensee:	Southern Nuclear Operating Company, Inc. Southern Nuclear Operating Company, Inc
Facility:	Vogtle Unit 3 Combined License Vogtle Unit 4 Combined License
Location:	Waynesboro, GA
Inspection Dates:	July 1, 2020 through September 30, 2020
Inspectors:	A. Artayet, Senior Construction Inspector, DCO K. Carrington, Resident Inspector, DCO G. Crespo, Senior Construction Inspector, DCO J. Eargle, Senior Resident Inspector - Testing, DCO B. Griman, Resident Inspector Development Program, DRP P. Heher, Resident Inspector, DCO N. Karlovich, Resident Inspector, DCO B. Kemker, Senior Resident Inspector, DCO G. Khouri, Senior Construction Inspector, DCO J. Lizardi-Barreto, Construction Inspector, DCO R. Patel, Resident Inspector (Acting), DCO A. Ponko, Senior Construction Inspector, DCO S. Smith, Senior Construction Inspector, DCO S. Temple, Resident Inspector, DCO J. Vasquez, Construction Inspector, DCO
Approved by:	Nicole Coovert, Branch Chief Construction Inspection Branch 1

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2020003, 05200026/2020003; 07/01/2020 through 09/30/2020; Vogtle Electric Generating Plant (VEGP) Units 3 and 4, Integrated Inspection Report.

This report covers a three-month period of inspection by regional and resident inspectors. One construction finding of very low safety significance (Green) with an associated non-cited violation (NCV) in the Inspection/Testing Cornerstone was 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 (Green) with an associated NCV of Title 10 of the Code of Federal Regulations (10 CFR 50), Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to perform leakage examinations of two American Society of Mechanical Engineers (ASME) Class 2, pressure-retaining, weld joints for containment penetrations P27 and P28 to satisfy the requirements of ASME Section III.

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 unacceptable or indeterminate, and required substantive corrective action. The inspectors determined this finding was not associated with an 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. The inspectors determined this finding was of very low safety significance because the licensee was able to demonstrate the design function of the applicable structure (containment vessel) would not be impaired by successfully reperforming a pneumatic test of the affected welds. The licensee entered this issue into its corrective action program as condition report (CR) 50056351. The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect Avoid Complacency, in the area of Human Performance. Specifically, the licensee failed to ensure the contract individuals recognized and planned for the possibility of mistakes, latent problems, or inherent risk, even while expecting successful outcomes. The licensee did not ensure the contractor understood the location of the welds, ensure obstructions were not present, and ensure supporting procedures or drawings were referenced to satisfactorily perform targeted ASME Section III weld examinations during the pneumatic test. [H.12] (Section 1A07)

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Construction Status

Unit 3: The licensee completed concrete placement over the shield building conical roof and was completing the shield building construction. In the containment building, the licensee completed installation of reactor coolant system (RCS) and passive core cooling system (PXS) piping and instrumentation, electrical conduits and cables (safety and non-safety related), necessary to support the American Society of Mechanical Engineers (ASME) required hydrostatic testing on the reactor and reactor coolant systems. The licensee completed the containment vessel ASME required pneumatic pressure test and integrated leak rate test. The licensee completed the construction of the auxiliary building structure.

Unit 4: The licensee continued with shield building construction. In the containment building, the licensee completed installation of RCS and PXS large bore piping and was in the process of routing raceways, cables, and terminations. The licensee continued construction of the auxiliary building structure from elevation 117'- 6" to 160' and routing of electrical raceways.

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 2.1.02.02a (13) / Family 06F
(Unit 4) 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:

- 65001.06-02.03 - Post Installation Activities

The inspectors reviewed surveillance records for selected safety related components to determine if adequate preventative maintenance was being established and performed in accordance with the vendor technical manual and licensee procedures. Specifically, the inspectors reviewed Equipment Preservation Check Records (EPCR) to determine if the recommended maintenance activities specified in the technical manual were being established in accordance with the licensee procedure for the following components:

Motor operated valves (MOVs):

- Automatic depressurization system (ADS) stage 4 isolation: RCS-PLV-0014A/B/C/D
- ADS stages 1, 2, & 3: RCS-PLV-001A/B, 2A/B, 3A/B

Squib valves:

- ADS stage 4: RCS-PLV-004A/B/C/D

Also, the inspectors reviewed these records to verify if the maintenance activities were being performed at their prescribed frequencies specified by the technical manual. The inspectors reviewed the licensee procedure to determine if provisions were made to establish requirements for establishing periodic maintenance. The inspectors also conducted a walkdown of the accessible components to verify cleanliness, environmental controls, coverings, and preservatives were being maintained per site procedures.

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:

- 65001.03-02.07 - Review of Records
- 65001.04-02.04 - Documentation Packages
- 65001.B-02.06 - Records

The inspectors reviewed a selection of PCI Energy Services (PCI) quality assurance data packages (QADPs) containing lifetime records pertinent to field installation of Class 1 components, piping, and supports for the RCS in accordance with the requirements of the 1998 Edition including 2000 Addenda of the ASME Code Section III, Division 1, to verify compliance of entries in the following RCS ASME N-5 data reports for the following pressure boundary segments:

- reactor coolant loop (RCL) piping with twelve field welds joining two hot legs and four cold legs to the inlet and outlet nozzles of the reactor vessel, steam generators, and four reactor coolant pumps for the A and B sides of the RCS described in data packages SV3-RCS-MJR-001 and SV3-RCS-MJR-002, respectively;
- pressurizer surge line with five pipe spools consisting of six welds and assembly of four pipe supports with end points from the hot leg nozzle to the pressurizer bottom inlet nozzle described in data package SV3-RCS-MJR-005; and
- passive residual heat removal (PRHR) return line with five pipe spool pieces and assembly of three pipe supports from steam generator-1 (SG-A) back to the CA05 structural module wall penetration inside the pressurizer and steam generator compartments described in data package SV3-RCS-MJR-009.

The inspectors also reviewed a selection of QADPs that contain lifetime records pertinent to welding, machining, and final nondestructive examination (NDE) activities completed during field installation of supports for the reactor vessel, steam generators, and pressurizer in accordance with the 1998 Edition including 2000 Addenda of the ASME Code Section III, Subsection NF, to verify compliance for completion of the RCS ASME N-5 data reports for the following:

- reactor vessel with four supports joined to the CA04 structural module embedment plates and reactor vessel (RV) support thermal and bottom wear plates with limited tack welding of shims to bumpers described in data package SV3-RCS-MJR-MV01;
- steam generator-1 and -2 (SG-A and -B) that included vertical column support assemblies, lower-intermediate-upper lateral supports with prior completion of NF-4441 inlay and overlay weldments to the CA01 structural module wall, and assembly of the upper lateral supports that was performed by others described in data packages SV3-RCS-MJR-MB01A and SV3-RCS-MJR-MB01B; and
- pressurizer with four support columns connected to the adjoining building structure with anchor bolts, eight lower rigid sway struts with weld-on-brackets to the CA01 structural module wall, and eight upper rigid sway struts connected with lugs to the CA01 wall boxes described in data package SV3-RCS-MJR-MV2.

The installation N-5 data reports were also reviewed to verify they were completed and certified with signatures by the NA certificate holder representative and authorized nuclear inspector in accordance with the general requirements of the ASME Code Section III, Subsection NCA, with physical stamping of the ASME code symbol on "NA Class 1" nameplates.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 2.1.02.05a.i (19) / Family 14A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.05a.i (19). 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.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed an independent as-built inspection for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.1.02.05a.i to determine whether the as-built critical attributes conformed to the final design and met the ITAAC-related requirements. This ITAAC is associated with the RCS and specifies that the seismic Category I equipment identified in Table 2.1.2-1 can withstand seismic

design basis loads without loss of safety function. This inspection focused on the independent observation and measurement of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC. The following raceway supports along with their associated raceway sections were walked down by the inspectors:

- SV3-1231-SH-E1620
- SV3-1231-SH-E1627
- SV3-1231-SH-E1857
- SV3-1231-SH-E1931
- SV3-1231-SH-E1967
- SV3-1231-SH-E1968
- SV3-1231-SH-E1039
- SV3-1231-SH-E1042
- SV3-1231-SH-E1062
- SV3-1231-SH-E1065

The inspectors conducted walk-downs of the raceway sections and supports to verify if the as-built characteristics were as specified on the design documents and work procedures for these raceway sections and supports. These characteristics included raceway and supports identification labels, location, dimensions, size, material, and raceway and support type. During the walkdowns, the inspectors also verified if any damage had occurred prior to its installation and if the as-built condition conforms to their associated construction records, including work packages and drawings.

The inspectors reviewed the following information to determine if the as-built configuration was in accordance with the final design and that any differences between the as-built and as-designed condition were reconciled in accordance with approved modification or change processes:

- work packages, applicable specifications, drawings, and approved procedures to determine if the licensee verified installed raceway and supports met applicable codes, standards, regulations, and quality requirements;
- quality control (QC) inspection reports were reviewed and discussed to verify that acceptance of several raceway sections and supports was in accordance with required installation attributes and that QC inspection was accurate and complete;
- construction documents to verify torque wrenches used were qualified in accordance with quality procedures; and
- the latest approved-for-construction drawings, manufacturer's instructions, and procedures to determine these were used and maintained for the installation of these raceway and supports.

The inspectors also interviewed personnel and reviewed a sample of design procedures and documents to verify if the licensee established an effective method for tracking, evaluating and dispositioning changes or modifications for anchors and interfacial connections (i.e. bolting and raceway clamps) for raceways and supports.

b. Findings

No findings were identified.

1A04 (Unit 3) ITAAC Number 2.1.02.05a.i (19) / Family 14A
(Unit 4) ITAAC Number 2.1.02.05a.i (19) / Family 14A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.05a.i (19). 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.F-02.02-Fabrication Records Review

The inspectors performed an inspection associated with fabrication activities and materials for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.1.02.05a.i. This ITAAC is associated with the RCS and specifies that the seismic Category I equipment identified in Table 2.1.2-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on construction and procurement records produced during the fabrication of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC.

The inspectors reviewed the following information to verify if the fabrication activities were conducted in accordance with ITAAC-related attributes and regulatory commitments:

- a sample of purchase orders to verify that they specify quality, technical, and 10 CFR Part 21 and Part 50.55(e) requirements;
- procurement records produced for conduits, cable tray, steel sections and hardware to verify compliance with technical requirements and to determine if materials and components were manufactured by vendors on the approved vendor's list (ASL);
- work packages, applicable specifications, drawings, and approved procedures to verify that fabrication activities were completed in compliance with applicable codes, standards, regulations, and quality requirements;
- work packages and quality control inspection reports to verify that acceptance of several conduit and cable tray supports was in accordance with required fabrication attributes, and dimensions and tolerances from design drawings and specifications;
- material requisition reports for several items, including Unistrut, bolting, and steel sections, to verify material technical requirements and traceability were in accordance with quality and mechanical testing requirements; and
- a sample of welding procedure specifications and welder qualifications to verify if welding activities were performed by qualified individuals and approved procedures per the site's quality program requirements.

The inspectors also interviewed personnel and reviewed a sample of audit reports and surveillances to verify that audits documented the placement or retention of the contractor on the ASL, were done by qualified auditors, and audit findings were properly documented and dispositioned.

b. Findings

No findings were identified.

1A05 (Unit 3) ITAAC Number 2.1.03.06.i (75) / Family 05A
(Unit 4) ITAAC Number 2.1.03.06.i (75) / Family 05A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.03.06.i (75). 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.F-02.02-Fabrication Records Review

The inspectors performed an inspection associated with fabrication activities and materials for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.1.03.06.i. This ITAAC is associated with the reactor system (RXS) and specifies that the seismic Category I equipment identified in Table 2.1.3-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on construction and procurement records produced during the fabrication of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC.

The inspectors reviewed the following information to verify that fabrication activities were conducted in accordance with ITAAC-related attributes and regulatory commitments:

- a sample of purchase orders to verify that they specify quality, technical, and 10 CFR Part 21 and Part 50.55(e) requirements;
- procurement records produced for conduits, cable tray, steel sections and hardware to verify compliance with technical requirements and to determine if materials and components were manufactured by vendors on the ASL;
- work packages, applicable specifications, drawings, and approved procedures to verify that fabrication activities were completed in compliance with applicable codes, standards, regulations, and quality requirements;
- work packages and quality control inspection reports to verify that acceptance of several conduit and cable tray supports was in accordance with required fabrication attributes, and dimensions and tolerances from design drawings and specifications;
- material requisition reports for several items, including Unistrut, bolting, and steel sections, to verify material technical requirements and traceability were in accordance with quality and mechanical testing requirements; and
- a sample of welding procedure specifications and welder qualifications to verify if welding activities were performed by qualified individuals and approved procedures per the site’s quality program requirements.

The inspectors also interviewed personnel and reviewed a sample of audit reports and surveillances to verify that audits documented the placement or retention of the contractor on the ASL, were done by qualified auditors, and audit findings were properly documented and dispositioned.

b. Findings

No findings were identified.

1A06 (Unit 3) ITAAC Number 2.1.03.06.i (75) / Family 05A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.03.06.i (75). 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

The inspectors performed an independent as-built inspection for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.1.03.06.i to determine whether the as-built critical attributes conformed to the final design and met the ITAAC-related requirements. This ITAAC is associated with the RXS and specifies that the seismic Category I equipment identified in Table 2.1.3-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on the independent observation and measurement of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC. The following raceway supports along with their associated raceway sections were walked down by the inspectors:

- SV3-1231-SH-E1620
- SV3-1231-SH-E1627
- SV3-1231-SH-E1857
- SV3-1231-SH-E1931
- SV3-1231-SH-E1967
- SV3-1231-SH-E1968

The inspectors conducted walk-downs of the raceway sections and supports to verify if the as-built characteristics were as specified on the design documents and work procedures for these raceway sections and supports. These characteristics included raceway and supports identification labels, location, dimensions, size, material, and raceway and support type. During the walkdowns, the inspectors also verified if any damage had occurred prior to its installation and if the as-built condition conforms to their associated construction records, including work packages and drawings.

The inspectors reviewed the following information to determine if the as-built configuration was in accordance with the final design and that any differences between the as-built and as-designed condition were reconciled in accordance with approved modification or change processes:

- work packages, applicable specifications, drawings, and approved procedures to determine if the licensee verified installed raceway and supports met applicable codes, standards, regulations, and quality requirements;

- QC inspection reports were reviewed and discussed to verify that acceptance of several raceway sections and supports was in accordance with required installation attributes and that QC inspection was accurate and complete;
- construction documents to verify torque wrenches used were qualified in accordance with quality procedures; and
- the latest approved-for-construction drawings, manufacturer's instructions, and procedures to determine these were used and maintained for the installation of these raceway and supports.

The inspectors also interviewed personnel and reviewed a sample of design procedures and documents to verify if the licensee established an effective method for tracking, evaluating and dispositioning changes or modifications for anchors and interfacial connections (i.e. bolting and raceway clamps) for raceways and supports.

b. Findings

No findings were identified.

1A07 (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 - Construction Inspection Program Inspection of ITAAC-Related Containment Integrity and Containment Penetrations
- 65001.11-02.11 - Problem Identification and Resolution
- 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

From July 5 to July 7, 2020, a pneumatic structural integrity test (SIT) of the Vogtle Unit 3 containment vessel (CV) was performed to demonstrate the ability of the containment to withstand specified internal pressure loads and act as a leak-tight barrier during a design basis accident. The SIT was conducted by Chicago Bridge and Iron Services (CBIS) in the accompaniment of Westinghouse, ILRT Inc., and SNC. The inspectors reviewed procedures and records, conducted walkdowns, performed test observations, and interviewed personnel to assess performance and compliance with rules and regulations, license conditions, site procedures, and ASME code standards.

The inspectors performed a pre-test walkdown and general inspection of accessible portions of the containment interior and exterior surfaces; attended pre-job, safety, and infrequent test evolution briefings; observed test equipment setup and performance; and interviewed test personnel regarding procedural limitations, examination techniques, and ASME requirements. The inspectors reviewed pneumatic test procedure and related drawings, SIT chart recorder data, calibration records and test prerequisites, and personnel qualifications and certifications.

The inspectors reviewed the following information to determine if the inspection attributes were met:

- procedures and work instructions were approved by authorized personnel;
- current procedure revision was available and in use at the test location by test personnel;
- records existed for those welds/joints that were vacuum box tested prior to the SIT due to being inaccessible;
- following test completion, the test data were evaluated by the licensee and its contractors (ILRT Inc.);
- test data was accurate and precisely recorded;
- deficiencies and test interruptions or continuations were handled in accordance with approved procedures and documented in the test narrative log;
- preliminary test results, records, data, and analyses were as expected and any discrepancies were logged;
- test anomalies, problems, interruptions, and/or deficiencies recorded in the logs were documented and evaluated in accordance with procedures; and
- the disposition of any deviations and corrective measures, if any, were documented and evaluated, and required retests or leakage examinations were performed, as necessary.

The inspectors verified through observation the following activities to determine if the inspection attributes were met:

- administrative test controls were properly followed;
- a qualified (licensed) nuclear inspector was present during the SIT and at the time of the leakage examinations;
- containment was pressurized to 1.1 times its design pressure and the maximum permissible test pressure was not exceeded;
- test pressure was retained for a minimum of 10 minutes then reduced to a specified fraction of the pressure for leakage examinations of joints, penetrations, connections, and high stress regions;
- after achieving 50% of the final test pressure, the rate of containment pressurization was increased in increments of approximately 1/10 of the test pressure up to 1.10 times the design pressure;
- maximum rate of containment pressurization and depressurization were specified by procedure and adhered to throughout the SIT;
- verified hold times for pressure stabilization and depressurization were specified and adhered to during the test;
- depressurization rate of the containment and unloading increments paralleled the loading cycle;
- maximum permissible test pressure was maintained for a minimum of 10 minutes then reduced to the greater of either the design pressure or the specified fraction of the test pressure for the leakage examinations;
- adverse weather or environmental conditions which could impact test results were appropriately monitored and taken into consideration during the test;
- logging of test parameters, leakage rates, observations was performed at a pre-determined periodicity; and
- observed leakage examinations (solution/bubble film test technique) of various welds, reviewed sketches, and verified examinations of applicable joints, penetrations, and connections and regions of high stress (such as

seam welds, welds in the shell and dome, nozzle welds, welds of penetration sleeves) were performed in accordance with ASME Subsection NE.

The inspectors also performed the following activities to determine if the inspection attributes were met:

- verified by observation, interviews, and walkdowns that the containment structure was pressurized using a medium that was reasonably clear, dry, nonflammable, and free of contaminants;
- verified by observation and data review that containment displacement was appropriately monitored during the test and did not exceed design parameters;
- verified through interviews that testing was adequately coordinated, including appropriate “abort” criteria established; and
- verified through interview and preliminary data review that no structural damage resulted from the test.

Last, the inspectors verified through walkdowns, interviews, and observation that the type, sensor location, range, accuracy, and calibration of instrumentation met requirements and standards, were specified, and indicating as expected. Specifically, the inspectors verified if:

- displacement instrumentation used to measure overall deformation and deflection of the CV were installed at several points and elevations on the vessel;
- humidity and temperature sensors were located at several locations and elevations throughout the containment and trending as expected; and
- pressure gauges, recorders, displays, and other required test equipment were within the range and accuracy specified, calibrations were current, and instruments were in service prior to test.

b. Findings

Introduction

A construction finding of very low safety significance (Green) with an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors on July 17, 2020, for the licensee's failure to perform leakage examinations of two ASME Class 2, pressure-retaining, mechanical weld joints for containment penetrations P27 and P28. During the pneumatic SIT of the Unit 3 containment vessel, leakage examinations of welds SV3-SGS-PY-C03A-3 and SV3-SGS-PY-C03B-3 were not performed, as required by procedure 165766-830-05-PR-000010, "Pneumatic Testing of Unit 3 Containment Vessel” to satisfy the requirements of ASME Section III.

Description

Between July 5 and 7, 2020, the licensee performed a SIT of the Vogtle Unit 3 CV to satisfy the requirements of ASME Section III, Article NE-6000, “Testing.” Article NE-6000 required the vessel be pressurized to 1.1 times its design pressure for a minimum of 10 minutes prior to being depressurized to a lower value to allow for leakage examination of joints/welds, connections, and regions of high stress in accordance with paragraph NE- 6324. The scope of welds/joints required to be

examined were specified in procedure 165766-830-05-PR-000010, and included inspections of the Class 2, pressure-retaining, flued head to guard pipe welds for containment penetrations P27 and P28 or welds SV3-SGS-PY-C03A-3 and SV3-SGS-PY-C03B-3. Specifically, step 5.5.2 of the procedure required, in part, CBIS solution film test (leakage examination) the exterior pressure boundary welds as required and as specified by drawings 165766-830-05-SK-46101 through 165766-830-05-SK-46103 (Accessible Welds). Additionally, these welds were a part of the mechanical penetrations required to be inspected under paragraph NE-6712 of ASME Section III.

Prior to a July 17, 2020 NRC interview with the licensee's weld examiners, it was discovered that mechanical weld joints SV3-SGS-PY-C03A-3 and SV3-SGS-PY-C03B-3 were not inspected as required by procedure 165766-830-05-PR-000010 and as specified in drawing 165766-830-05-SK-46102. The licensee captured this issue in the corrective action program as Condition Report (CR) 50056351. A preliminary investigation into the cause identified the examiners' field of view was obstructed by scaffolding in place at the time of the pneumatic test and the obstruction prevented the examiners from seeing and locating the missed welds.

Analysis

The inspectors determined that the failure to perform ASME Section III examinations in accordance with SIT Procedure 165766-830-05-PR-000010, as required by 10 CFR Part 50, Appendix B, Criterion V, was a performance deficiency.

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 the guidance in IMC 0613, "Power Reactor Construction Inspection Reports," Appendix E, "Examples of Minor Construction Issues, " the inspectors determined the performance deficiency was of more than minor significance because it was associated with the Procedure Quality attribute of the Construction Reactor Safety - Inspection/ Testing Cornerstone and adversely affected the cornerstone objective to ensure programs and processes are adequately developed and implemented to inspect and test structures, systems, and components. The inspectors also reviewed the appendix E examples of minor issues and found one similar example of a "not minor if" performance deficiency. Example 22 was similar, in that the procedural step was required by Appendix B Criterion V as well as the ASME Code.

The inspectors determined this finding was not associated with an 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. In accordance with IMC 2519, "Construction Significance Determination Process," appendix A, "AP 1000 Construction Significance Determination Process," dated October 26, 2020, the inspectors determined the finding was associated with, the containment, a structure assigned to the intermediate risk column of the AP1000 Construction Significance Determination Matrix, and reasonable assurance could not be provided that the finding would not impair a portion of the containment design function (row 2 of the matrix). Specifically, because the licensee failed to perform examinations of SV3-SGS-PY-C03A-3 and SV3-SGS-PY-C03B-3, reasonable assurance could not be provided that the respective containment penetrations (P27 and P28) could support

the design function of CNS as a leak-tight barrier. The inspectors determined this finding was a performance deficiency of very low safety significance (Green) based on its placement in intermediate risk column and row 2 of the matrix.
The licensee subsequently performed a leakage examination using the vacuum box test method for these two welds and verified there was zero leakage in accordance with ASME Section III requirements.

In accordance with IMC 0613, Appendix F, “Construction Cross-Cutting Areas and Aspects,” the finding was determined to be indicative of present licensee performance and was associated with the cross-cutting aspect Avoid Complacency, in the area of Human Performance, because the licensee failed to ensure the contract individuals recognized and planned for the possibility of mistakes, latent problems, or inherent risk, even while expecting successful outcomes. The licensee did not ensure the contractor understood the location of the welds, ensure obstructions were not present, and ensure supporting procedures or drawings were referenced to satisfactorily perform targeted ASME Section III weld examinations during the pneumatic test [H.12].

Enforcement

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that “activities affecting quality be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and accomplished in accordance with these instructions, procedures, or drawings.” Contrary to the above, on July 7, 2020, the licensee failed to accomplished activities affecting quality in accordance with these instructions, procedures, or drawings. Specifically, step 5.5.2 of procedure 165766-830-05-PR-000010, "Pneumatic Testing of Unit 3 Containment Vessel," required in part that CBIS solution film test (leakage examination) the exterior pressure boundary welds as required and as specified by drawings 165766-830-05-SK-46101 through 165766-830-05-SK-46103 (Accessible Welds). Welds SV3-SGS-PY-C03A-3 and SV3-SGS-PY-C03B-3 were identified on CBIS drawing 165766-830-05-SK-46102, Revision 2, as welds requiring solution film testing (leakage examination), however the licensee failed to perform leakage examinations of welds SV3-SGS-PY-C03A-3 and SV3-SGS-PY-C03B-3 for penetrations P27 and P28 in accordance with Step 5.5.2 of CBIS procedure 165766-830-05-PR-000010 to meet ASME Code Section III.

The licensee entered this issue into its corrective action program as CR-50056351 and has performed successful pneumatic tests on the welds in question as corrective actions. Because this violation was not repetitive or willful, was of very low safety significance (Green), and was entered into the licensee’s corrective action program, it is being treated as an NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200025/2020003-01, Failure to Perform ASME Section III Leakage Examinations in Accordance with Procedure).

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.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.01-Design Document Review
- 65001.F-02.04-General QA Review

For the CV, the inspectors reviewed design documents, implementing procedures and interface policies that govern the design control program associated with the design of the CV, to verify compliance with the regulatory requirements of Criterion III, “Design Control,” of Appendix B, to 10 CFR Part 50, with the Vogtle 3&4 Updated Final Safety Analysis Report (UFSAR), and with the applicable requirements of Division 1, Subsection NC, “Class 2 Components,” and Subsection NE, “Class MC Component,” of the ASME Boiler and Pressure Vessel (B&PV) Code, Section III, “Rules of Construction of Nuclear Facility Components.”

The inspectors reviewed the CV design specification and the design report to verify the results, for the various load combination, including seismic, were within the allowable limits of ASME Section III to verify if the CV would meet its design safety function as described in the UFSAR. Specifically, the inspectors reviewed:

- the functional requirements as defined by the Westinghouse Electric Company (WEC) design specification (i. e., component classification, design requirements, environmental conditions and transients, loading and seismic requirements, load combinations, permissible stresses) were consistent with the UFSAR;
- CBIS design calculations to determine if the requirements of the design specifications were appropriately translated into the calculations, including seismic loads, and any issues were appropriately resolved;
- design calculations, including material properties, conformed to the requirements of ASME Section III, Division 1, Subsections NC and NE;
- drawings and dimensions used in design calculation to verify that as-built configuration was reflected in the analysis;
- design attributes associated with component classification and ASME service level were in accordance with applicable requirements of ASME B&PV Code, ASME Section III Division 1 – Subsection NC, 1998 Edition with 2000 Addenda, and ASME B&PV Code Section III, Division 1 – Subsection NE, 2001 Edition including 2002 Addenda; and
- selected deviations and nonconformance were dispositioned and reconciled to maintain compliance with the Code.

The inspectors reviewed software and personnel qualifications for ASME related design work for the following:

- ANSYS Version 19.2, to perform finite element analysis to perform stress analysis and fatigue evaluation of CV components per ASME B&PV Code, Section III;
- ANSYS Version 11.0, used by Ishikawajima Harima Heavy Industries Corporation (IHI) to perform finite element modelling of CV Personnel Airlock; and
- verification of implementation of UFSAR Section 3.9.1.2, “Computer Programs Used in Analysis.”

The inspectors also verified that: (1) quality standards were specified and included in design documents; (2) independent verifications and checks were integrated into the process and were being performed; (3) design interface between client and contractor were documented; and (3) design changes were being effectively controlled and approved by original design organization. The inspectors also discussed the Design Control program with CBIS and Westinghouse management and technical staff.

The inspectors reviewed a sample of personnel qualification records for engineers who performed design activities, specifically for design calculations for CV and its components. This review was to verify that the design documents were created and verified by qualified engineers, and that personnel involved in the development of design documents met CBIS, WEC and their contractors' procedure requirements for approvers, reviewers, and verifiers and also met the independent verification requirements of ASME B&PV Code, Section III and ASME NQA-1-1994 Edition, "Quality Assurance Requirements for Nuclear Facility Applications." The NRC inspection team reviewed sample qualification records of registered professional engineering personnel from CBIS, WEC and IHI that were involved in certifying CV design documents and conformed that the qualification records were current and met the requirements of ASME B&PV Code, Section III, Mandatory Appendix XXIII, "Qualifications and Duties of Certifying Engineers Performing Certification Activities."

For software control, the inspectors reviewed CBIS's software validation and verification process for the ANSYS Finite Analysis software used for design analysis and calculations of CV and its components and confirmed that the software was commercially procured, verified and validated prior to its use and installation. The NRC inspection team verified that each new version of the ANSYS, including latest version 19.2, was subject to verification through regression testing to previous software versions known to be acceptable, and that the calculations supported the conclusions. The NRC inspection team also confirmed that CBIS had evaluated all incoming ANSYS software error reports for their impact on previous design analysis and calculations. Further, the NRC inspection team reviewed CBIS audit of IHI software quality assurance program and confirmed that CBIS have verified IHI's verification and validation of ANSYS software program for use in CV airlock design analysis.

For procurement document control, the inspectors reviewed purchase order issued by the licensee and WEC to CBIS to verify that the requirements identified in the procedures were imposed in the applicable purchasing documents. The inspectors verified that the licensee and WEC purchase orders (POs) defined contract deliverables, instructions for the disposition of nonconformances, access rights, and provisions for the extension of contractual requirements to CBIS. Further, the NRC inspection team verified if the safety-related POs reviewed included clauses invoking the provisions of 10 CFR Part 21, 'Reporting of Defects and Noncompliance," and requiring CBIS to conduct safety-related work under its approved quality assurance (QA) program. In addition, the NRC inspection team reviewed CBIS PO to IHI for procurement of CV personnel airlock design and verified if CBIS had invoked all applicable technical, quality and regulatory requirement for procurement of safety-related SSCs.

The inspectors reviewed issues entered by the licensee, CBIS and WEC corrective action program (CAP) to assess issues that might warrant additional follow-up inspection, to assess repetitive or long-term issues, to assess adverse performance

trends, and to verify if the CAP appropriately included regulatory required non-safety related SSCs. The NRC inspection team reviewed conditions entered the CBIS and WEC CAP to determine whether the issues were appropriately classified in accordance with the licensee, CBIS quality assurance program and CAP implementing procedures. The NRC inspection team 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 quality assurance program requirements and 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action". Additionally, the NRC inspection team 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 NRC inspection team completed reviews of CAP to verify issues from all aspects of the project, including equipment, human performance, and program issues, were being identified by the licensee and its contractors at an appropriate threshold and entered into the CAP as required by the licensee and its contractor's CAP implementing procedures.

The inspectors reviewed a sample of audits to verify implementation of the licensee, CBIS and WEC audit programs. The NRC inspection team verified that CBIS prepared and approved plans that identify the audit scope, focus, and applicable checklist criteria before the initiation of the audit activity. The inspectors determined if the audit reports contained a review of the relevant QA criteria VII, "Control of Purchased Material, Equipment and Services," of Appendix B to 10 CFR Part 50 for the activities that individual contractor performed, as well as documentation of pertinent contractor guidance associated with each criterion. For audits that resulted in findings, the inspectors verified that the contractor had established a plan for corrective action and that WEC and CBIS had reviewed and approved the corrective action and verified its satisfactory completion and proper documentation in a timely manner.

The inspectors also verified if CBIS performed external audits commensurate with the required frequencies specified in the CBIS quality assurance manual (QAM), associated procedures, and the applicable section(s) of the ASME B&PV Code, and that audit results were adequately reviewed by responsible management.
In the case of third-party audits, the NRC inspection team verified that CBIS reviewed and accepted the supplied third-party audit documentation before taking credit for the audit results.

b. Findings

No findings were identified.

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

The inspectors reviewed a PCI Energy Services QADP, SV3-CNS-MJR-002, for the containment system (CNS) that contained lifetime records pertinent to welding, final NDE, and vacuum box testing activities for ten welds during field installation of the fuel transfer tube assembly that included the transfer tube, annular ring, spent fuel pool (SFP) flange, vessel bellows plate ring, SFP shim plate, vessel side bellows, and SFP side bellows. The inspectors verified if these activities were performed in accordance with the requirements of the 2001 Edition including 2002 Addenda of the ASME Code Section III, Division 1, Subsection NE, Class MC for metal containment components. The installation N-5 data report was also reviewed to verify it was completed and certified with signatures by the NA certificate holder representative and authorized nuclear inspector in accordance with the general requirements of the ASME Code Section III, Subsection NCA, with physical stamping of the ASME code symbol on a "NA Class MC" nameplate.

b. Findings

No findings were identified.

1A10 (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 - Construction Inspection Program Inspection of ITAAC-Related Containment Integrity and Containment Penetrations

The inspectors reviewed Stone and Webster (S&W) and CBIS records associated with welding two 18-inch diameter carbon steel guard pipes to the CV external side penetration sleeves for field welds C05A-2 (penetration P44) and C05B-2 (penetration P45) to verify welding, radiography, and solution film vacuum box testing of the welds (guard pipes open-ended to atmosphere) were performed in accordance with the ASME Code Section III, Subsection NE.

The inspectors reviewed weld data sheets (WDSs) SV3-SGS-PY-C05A-2 and SV3-SGS-PY-C05B-2 to verify QC and applicable Authorized Nuclear Inspector (ANI) 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 NE-4230. The inspectors also reviewed the entries on the WDSs to determine whether the traceability of four different weld filler metals and eight welders were maintained in accordance with NE-4122 and NE-4300.

The inspectors reviewed welding procedure specification (WPS) 1-1.1GT(M)SM-NE-2 to verify the latest revision changes were performed within the limits of essential variables for the previously reviewed supporting procedure qualification records PQ607A and PQ607B in accordance with ASME Code Section IX, Article II.

The inspectors reviewed performance qualification records for eight welders to verify these welders were tested and certified in accordance with the requirements of the

ASME Code Section IX, Article III for butt welds C05A-2 and C05B-2 located in annulus between the CV and shield building.

The inspectors reviewed certified material test reports (CMTRs) for both guard pipes and 3/32-inch diameter E7018 electrodes to verify they were compatible and met the requirements for chemical analysis and mechanical properties in accordance with the applicable ASME Code Section II, Parts A and C, for carbon steel material specifications. The inspectors also reviewed the hydrostatic test report of the guard pipes to verify pressure testing was performed in accordance with ASME Code Section III, Subsection NE.

The inspectors reviewed MISTRAS computed radiography examination reports V-20-RT-301-0540 (C05A-2) and V-18-RT-301-0488 (C05B-2) to determine whether acceptance by SNT-TC-1A Level II and III examiners were performed with no rejectable indications using the proper type of source, image quality indicator (IQI) size, exposure time, and geometric unsharpness in accordance with the requirements of the ASME Code Section III (Article NB-5000) and Section V (Article 2).

The inspectors also reviewed CBIS Traveler U3-CNS welds-NI-SFT-2 to verify acceptance of solution film vacuum box testing of the guard pipe to penetration sleeve butt welds, witnessed by the ANI and CBIS QC inspector NDE Level II, were performed in accordance with previously reviewed CBIS procedure CMS-830-15-PR-45164, “Solution Film Testing Vacuum Box Technique ASME Section III, Division 1, Subsection NE."

b. Findings

Introduction

The inspectors identified an unresolved item (URI) associated with the licensee’s structural model analysis of containment penetrations 44 and 45 (P44/P45). Specifically, 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, provided subject piping meets the following provisions: Level C service limits of the 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 Code Section III, Level C Service limits not being exceeded. At the time of the inspection, the licensee identified it had not performed structural model calculations for P44/P45 to verify they were meeting their current license bases (CLB). The licensee entered this issue into its corrective action program as CR 50063621 and WEC CAP IR 2020-10571.

Description

The inspectors determined a performance deficiency existed associated with 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to have design control measures for verifying or checking the adequacy of the design of containment penetrations 44 and 45. Specifically, the licensee failed to perform a structural model calculation for P44 and P45 to verify the adequacy of the penetrations’ design in accordance with its CLB.

Per IMC 0613, “Power Reactor Construction Inspection Reports,” this issue will remain unresolved pending further analysis by SNC and Westinghouse, which will be used by the inspectors to determine if the performance deficiency is material to the acceptance criteria of an ITAAC (URI 05200025/2020003-02, ASME Section III Level C Service Limits May Not Be Met for Containment Penetrations 44 and 45).

1A11 (Unit 3) ITAAC Number 2.2.01.05.i (98) / Family 11A
(Unit 4) ITAAC Number 2.2.01.05.i (98) / Family 11A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.05.i (98). 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.F-02.02-Fabrication Records Review

The inspectors performed an inspection associated with fabrication activities and materials for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.2.01.05.i. This ITAAC is associated with the CNS and specifies that the seismic Category I equipment identified in Table 2.2.1-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on construction and procurement records produced during the fabrication of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC.

Specifically, the inspectors performed the following to verify that fabrication activities were conducted in accordance with ITAAC-related attributes and regulatory commitments:

- a sample of purchase orders to verify that they specify quality, technical, and 10 CFR Part 21 and Part 50.55(e) requirements;
- procurement records produced for conduits, cable tray, steel sections and hardware to verify compliance with technical requirements and to determine if materials and components were manufactured by vendors on the ASL;
- work packages, applicable specifications, drawings, and approved procedures to verify that fabrication activities were completed in compliance with applicable codes, standards, regulations, and quality requirements;
- work packages and quality control inspection reports to verify that acceptance of several conduit and cable tray supports was in accordance with required fabrication attributes, and dimensions and tolerances from design drawings and specifications;
- material requisition reports for several items, including Unistrut, bolting, and steel sections, to verify material technical requirements and traceability were in accordance with quality and mechanical testing requirements; and
- a sample of welding procedure specifications and welder qualifications to verify if welding activities were performed by qualified individuals and approved procedures per the site’s quality program requirements.

The inspectors also interviewed personnel and reviewed a sample of audit reports and surveillances to verify that audits documented the placement or retention of the

contractor on the ASL, were done by qualified auditors, and audit findings were properly documented and dispositioned.

b. Findings

No findings were identified.

1A12 (Unit 3) ITAAC Number 2.2.01.05.i (98) / Family 11A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.05.i (98). 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.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed an independent as-built inspection for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.2.01.05.i to determine whether the as-built critical attributes conformed to the final design and met the ITAAC-related requirements. This ITAAC is associated with the CNS and specifies that the seismic Category I equipment identified in Table 2.2.1-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on the independent observation and measurement of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC. The following raceway supports along with their associated raceway sections were walked down by the inspectors:

- SV3-1222-SH-E736
- SV3-1222-SH-E738
- SV3-1222-SH-E873

The inspectors conducted walk-downs of the raceway sections and supports to verify if the as-built characteristics were as specified on the design documents and work procedures for these raceway sections and supports. These characteristics included raceway and supports identification labels, location, dimensions, size, material, and raceway and support type. During the walkdowns, the inspectors also verified if any damage had occurred prior to its installation and if the as-built condition conforms to their associated construction records, including work packages and drawings.

The inspectors reviewed the following information to determine if the as-built configuration was in accordance with the final design and that any differences between the as-built and as-designed condition were reconciled in accordance with approved modification or change processes:

- work packages, applicable specifications, drawings, and approved procedures to determine if the licensee verified installed raceway and supports met applicable codes, standards, regulations, and quality requirements;

- QC inspection reports were reviewed and discussed to verify that acceptance of several raceway sections and supports was in accordance with required installation attributes and that QC inspection was accurate and complete;
- construction documents to verify torque wrenches used were qualified in accordance with quality procedures; and
- the latest approved-for-construction drawings, manufacturer's instructions, and procedures to determine these were used and maintained for the installation of these raceway and supports.

The inspectors also interviewed personnel and reviewed a sample of design procedures and documents to verify if the licensee established an effective method for tracking, evaluating and dispositioning changes or modifications for anchors and interfacial connections (i.e. bolting and raceway clamps) for raceways and supports.

b. Findings

No findings were identified.

1A13 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06F
(Unit 4) 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:

- 65001.06-02.03 - Post Installation Activities

The inspectors reviewed surveillance records for selected safety related components to determine if adequate preventative maintenance was being established and performed in accordance with the vendor technical manual and licensee procedures. Specifically, the inspectors reviewed EPCRs to determine if the recommended maintenance activities specified in the technical manual were being established in accordance with the licensee procedure for the following components:

Air Operated Valves (AOVs):
- Accumulator discharge valves: PXS-PLV-14A/B, 15A/B
- Passive residual heat removal heat exchanger (PRHR HX) outlet: PXS-PLV-108A/B

Squib valves:
- In containment refueling water storage tank (IRWST): PXS-PLV-123A/B, 125A/B
- Containment recirculation: PXS-PLV-118A/B, 120A/B

Also, the inspectors reviewed these records to verify if the maintenance activities were being performed at their prescribed frequencies specified by the technical manual. The inspectors reviewed the licensee procedure to determine if provisions were made to establish requirements for establishing periodic maintenance. The inspectors conducted a walkdown of the accessible components to verify cleanliness, environmental controls, coverings, and preservatives were being maintained per site procedures.

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:

- 65001.03-02.07 - Review of Records

The inspectors reviewed a selection of S&W ASME N-5 data reports pertinent to field installation of Class 1, 2, and 3 components, piping, valves, and supports for the PXS in accordance with the requirements of the 1998 Edition including 2000 Addenda of the ASME Code Section III, Division 1, to verify compliance of entries in the following PXS ASME N-5 data reports of pressure boundary segments:

- core makeup tank alpha (CMT-A) and its supports including six thermowells SV3-JE-TW015A through -TW020A shown in N-5 serial-no. SV3-PXS-MJR-MT01A for Class 1;
- 8-inch diameter line L007A at top of CMT-A with cold leg inlet isolation motor operated valve V002A and 1-inch diameter branch lines L068A and L069A to flanges of limit switches LS031 and LS033, respectively, ending at the flatolet on top of the pipe cap shown in N-5 serial-no. SV3-PXS-MJR-001 for Class 1;
- eight 1-inch diameter lines each with connections to the shell of CMT-B, bellows globe valves, and low level pressure transmitters shown in N-5 serial-no. SV3-PXS-MJR-004 for Class 2;
- 1-inch diameter line L042 of outside containment nitrogen (N2) supply with isolation globe valve V042 (includes seal welds of containment penetration P18) to check valve V043 inside containment with 1-inch branch pipe for containment penetration test globe valve V052 shown in N-5 serial-no. SV3-PXS-MJR-015 for Class 2;
- PRHR HX and supports located inside the IRWST shown in N-5 serial-no. SV3-PXS-MJR-ME02 for Class 1;
- PRHR HX 14-inch diameter outlet line L103 with branch lines L104A and B for control discharge globe valves V108A and B into common line L105 with manual gate valve V109 shown in N-5 serial-no. SV3-PXS-MJR-019 for Class 1;
- 1-inch, 4-inch, and 6-inch diameter vertical and sloped lines interconnected from eight containment recirculating downspout screens 1A-D and 2A-D to the IRWST gutter and PXS collection boxes A & B (eventually routing to IRWST drain lines and containment sumps - not bound by data report) shown in N-5 serial-no. SV3-PXS-MJR-025 for Class 3;
- 8-inch diameter line L015A (with 1-inch drain line for globe valve V012A) from the bottom outlet of CMT-A to branch lines L016A and L017A for discharge isolation globe valves V014A and V015A into common line L020A (with 1-inch drain line for globe valve V252A) for check valves V016A and V017A (each with 1-inch vent lines for globe valves V250A and V251A) shown in N-5 serial-no. SV3-PXS-MJR-026 for Class 1;

- 1-inch diameter accumulator leak test globe valve V202A of branch line L057A into 8-inch diameter line L027A from accumulator discharge isolation gate valve V027A and flow limiting orifice R02A shown in N-5 serial-no. SV3-PXS-MJR-027 for Class 3; and
- 8-inch diameter IRWST screen B gravity injection check valves V122B and V124B (each with 2-inch branch lines L122B and L126B for check test globe valves V128B and V129B) to isolation gate valves V123B and V125B, respectively, (eventually routing to RCS DVI-B line - not bound by data report) shown in N-5 serial-no. SV3-PXS-MJR-031 for Class 1.

The installation N-5 data reports were also reviewed to verify they were completed and certified with signatures by the NA certificate holder representative and authorized nuclear inspector in accordance with the general requirements of the ASME Code Section III, Subsection NCA.

b. Findings

No findings were identified.

1A15 (Unit 3) ITAAC Number 2.2.03.05a.i (165) / Family 14A
(Unit 4) ITAAC Number 2.2.03.05a.i (165) / Family 14A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.05a.i (165). 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.F-02.02-Fabrication Records Review

The inspectors performed an inspection associated with fabrication activities and materials for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.2.03.05a.i. This ITAAC is associated with the PXS and specifies that the seismic Category I equipment identified in Table 2.2.3-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on construction and procurement records produced during the fabrication of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC.

The inspectors reviewed the following information to verify if the fabrication activities were conducted in accordance with ITAAC-related attributes and regulatory commitments:

- a sample of purchase orders to verify that they specify quality, technical, and 10 CFR Part 21 and Part 50.55(e) requirements;
- procurement records produced for conduits, cable tray, steel sections and hardware to verify compliance with technical requirements and to determine if materials and components were manufactured by vendors on the ASL;
- work packages, applicable specifications, drawings, and approved procedures to verify that fabrication activities were completed in compliance with applicable codes, standards, regulations, and quality requirements;

- work packages and quality control inspection reports to verify that acceptance of several conduit and cable tray supports was in accordance with required fabrication attributes, and dimensions and tolerances from design drawings and specifications;
- material requisition reports for several items, including Unistrut, bolting, and steel sections, to verify material technical requirements and traceability were in accordance with quality and mechanical testing requirements; and
- a sample of welding procedure specifications and welder qualifications to verify if welding activities were performed by qualified individuals and approved procedures per the site's quality program requirements.

The inspectors also interviewed personnel and reviewed a sample of audit reports and surveillances to verify that audits documented the placement or retention of the contractor on the ASL, were done by qualified auditors, and audit findings were properly documented and dispositioned.

b. Findings

No findings were identified.

1A16 (Unit 3) ITAAC Number 2.2.03.05a.i (165) / Family 14A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.05a.i (165). 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.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed an independent as-built inspection for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.2.03.05a.i to determine whether the as-built critical attributes conformed to the final design and met the ITAAC-related requirements. This ITAAC is associated with the PXS and specifies that the seismic Category I equipment identified in Table 2.2.3-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on the independent observation and measurement of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC. The following raceway supports along with their associated raceway sections were walked down by the inspectors:

- SV3-1231-SH-E1039
- SV3-1231-SH-E1042
- SV3-1231-SH-E1062
- SV3-1231-SH-E1065
- SV3-1132-SH-E117
- SV3-1132-SH-E211
- SV3-1132-SH-E276

The inspectors conducted walk-downs of the raceway sections and supports to verify if the as-built characteristics were as specified on the design documents and work procedures for these raceway sections and supports. These characteristics included raceway and supports identification labels, location, dimensions, size, material, and raceway and support type. During the walkdowns, the inspectors also verified if any damage had occurred prior to its installation and if the as-built condition conforms to their associated construction records, including work packages and drawings.

The inspectors reviewed the following information to determine if the as-built configuration was in accordance with the final design and that any differences between the as-built and as-designed condition were reconciled in accordance with approved modification or change processes:

- work packages, applicable specifications, drawings, and approved procedures to determine if the licensee verified installed raceway and supports met applicable codes, standards, regulations, and quality requirements;
- QC inspection reports were reviewed and discussed to verify that acceptance of several raceway sections and supports was in accordance with required installation attributes and that QC inspection was accurate and complete;
- construction documents to verify torque wrenches used were qualified in accordance with quality procedures; and
- the latest approved-for-construction drawings, manufacturer's instructions, and procedures to determine these were used and maintained for the installation of these raceway and supports.

The inspectors also interviewed personnel and reviewed a sample of design procedures and documents to verify if the licensee established an effective method for tracking, evaluating and dispositioning changes or modifications for anchors and interfacial connections (i.e. bolting and raceway clamps) for raceways and supports.

b. Findings

No findings were identified.

1A17 (Unit 3) ITAAC Number 2.5.02.02.i (522) / Family 10A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.02.i (522). 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.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed an independent as-built inspection for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.5.02.02i to determine whether the as-built critical attributes conformed to the final design and met the ITAAC-related requirements. This ITAAC is associated with the Protection and Safety Monitoring System (PMS) and specifies that the seismic Category I equipment

identified in Table 2.5.2-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on the independent observation and measurement of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC. The following raceway supports along with their associated raceway sections were walked down by the inspectors:

- SV3-1231-SH-E1709
- SV3-1231-SH-E1710
- SV3-1231-SH-E1738
- SV3-1231-SH-E1747

The inspectors conducted walk-downs of the raceway sections and supports to verify if the as-built characteristics were as specified on the design documents and work procedures for these raceway sections and supports. These characteristics included raceway and supports identification labels, location, dimensions, size, material, and raceway and support type. During the walkdowns, the inspectors also verified if any damage had occurred prior to its installation and if the as-built condition conforms to their associated construction records, including work packages and drawings.

The inspectors reviewed the following information to determine if the as-built configuration was in accordance with the final design and that any differences between the as-built and as-designed condition were reconciled in accordance with approved modification or change processes:

- work packages, applicable specifications, drawings, and approved procedures to determine if the licensee verified installed raceway and supports met applicable codes, standards, regulations, and quality requirements;
- QC inspection reports were reviewed and discussed to verify that acceptance of several raceway sections and supports was in accordance with required installation attributes and that QC inspection was accurate and complete;
- construction documents to verify torque wrenches used were qualified in accordance with quality procedures; and
- the latest approved-for-construction drawings, manufacturer's instructions, and procedures to determine these were used and maintained for the installation of these raceway and supports.

The inspectors also interviewed personnel and reviewed a sample of design procedures and documents to verify if the licensee established an effective method for tracking, evaluating and dispositioning changes or modifications for anchors and interfacial connections (i.e. bolting and raceway clamps) for raceways and supports.

b. Findings

No findings were identified.

1A18 (Unit 3) ITAAC Number 2.5.02.02.i (522) / Family 10A
(Unit 4) ITAAC Number 2.5.02.02.i (522) / Family 10A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.02.i (522). 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.F-02.02-Fabrication Records Review

The inspectors performed an inspection associated with fabrication activities and materials for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.5.02.02i. This ITAAC is associated with the PMS and specifies that the seismic Category I equipment identified in Table 2.5.2-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on construction and procurement records produced during the fabrication of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC.

The inspectors reviewed the following information to verify if the fabrication activities were conducted in accordance with ITAAC-related attributes and regulatory commitments:

- a sample of purchase orders to verify that they specify quality, technical, and 10 CFR Part 21 and Part 50.55(e) requirements;
- procurement records produced for conduits, cable tray, steel sections and hardware to verify compliance with technical requirements and to determine if materials and components were manufactured by vendors on the ASL;
- work packages, applicable specifications, drawings, and approved procedures to verify that fabrication activities were completed in compliance with applicable codes, standards, regulations, and quality requirements;
- work packages and quality control inspection reports to verify that acceptance of several conduit and cable tray supports was in accordance with required fabrication attributes, and dimensions and tolerances from design drawings and specifications;
- material requisition reports for several items, including Unistrut, bolting, and steel sections, to verify material technical requirements and traceability were in accordance with quality and mechanical testing requirements; and
- a sample of welding procedure specifications and welder qualifications to verify if welding activities were performed by qualified individuals and approved procedures per the site's quality program requirements.

The inspectors also interviewed personnel and reviewed a sample of audit reports and surveillances to verify that audits documented the placement or retention of the contractor on the ASL, were done by qualified auditors, and audit findings were properly documented and dispositioned.

b. Findings

No findings were identified.

1A19 (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:

- 65001.09-02.02 - Attributes of Electrical Cable installation
- 65001.09-02.03 - Documentation
- 65001.F-02.02-Fabrication Records Review

The inspectors performed an inspection associated with fabrication activities and materials for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.6.03.02.i. This ITAAC is associated with the class 1E DC and uninterruptible power supply system (IDS) and specifies that the seismic Category I equipment identified in Table 2.6.3-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on construction and procurement records produced during the fabrication of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC.

The inspectors reviewed the following information to verify if the fabrication activities were conducted in accordance with ITAAC-related attributes and regulatory commitments:

- a sample of purchase orders to verify that they specify quality, technical, and 10 CFR Part 21 and Part 50.55(e) requirements;
- procurement records produced for conduits, cable tray, steel sections and hardware to verify compliance with technical requirements and to determine if materials and components were manufactured by vendors on the ASL;
- work packages, applicable specifications, drawings, and approved procedures to verify that fabrication activities were completed in compliance with applicable codes, standards, regulations, and quality requirements;
- work packages and quality control inspection reports to verify that acceptance of several conduit and cable tray supports was in accordance with required fabrication attributes, and dimensions and tolerances from design drawings and specifications;
- material requisition reports for several items, including Unistrut, bolting, and steel sections, to verify material technical requirements and traceability were in accordance with quality and mechanical testing requirements; and
- a sample of welding procedure specifications and welder qualifications to verify if welding activities were performed by qualified individuals and approved procedures per the site's quality program requirements.

The inspectors also interviewed personnel and reviewed a sample of audit reports and surveillances to verify that audits documented the placement or retention of the contractor on the ASL, were done by qualified auditors, and audit findings were properly documented and dispositioned.

b. Findings

No findings were identified.

1A20 (Unit 3) 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:

- 65001.09-02.02 - Attributes of Electrical Cable installation
- 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

The inspectors performed an independent as-built inspection for raceway (i.e. cable trays and conduits) and supports associated with ITAAC 2.6.03.02.i to determine whether the as-built critical attributes conformed to the final design and met the ITAAC-related requirements. This ITAAC is associated with the IDS and specifies that the seismic Category I equipment identified in Table 2.6.3-1 can withstand seismic design basis loads without loss of safety function. This inspection focused on the independent observation and measurement of several raceways and supports that route safety-related cables used for supporting the safety function of the equipment concerned by this ITAAC. The following raceway supports along with their associated raceway sections were walked down by the inspectors:

- SV3-1231-SH-E1731
- SV3-1231-SH-E1830
- SV3-1231-SH-E1794 (IDS)

The inspectors conducted walk-downs of the raceway sections and supports to verify if the as-built characteristics were as specified on the design documents and work procedures for these raceway sections and supports. These characteristics included raceway and supports identification labels, location, dimensions, size, material, and raceway and support type. During the walkdowns, the inspectors also verified if any damage had occurred prior to its installation and if the as-built condition conforms to their associated construction records, including work packages and drawings.

The inspectors reviewed the following information to determine if the as-built configuration was in accordance with the final design and that any differences between the as-built and as-designed condition were reconciled in accordance with approved modification or change processes:

- work packages, applicable specifications, drawings, and approved procedures to determine if the licensee verified installed raceway and supports met applicable codes, standards, regulations, and quality requirements;
- QC inspection reports were reviewed and discussed to verify that acceptance of several raceway sections and supports was in accordance with required installation attributes and that QC inspection was accurate and complete;
- construction documents to verify torque wrenches used were qualified in accordance with quality procedures; and
- the latest approved-for-construction drawings, manufacturer’s instructions, and procedures to determine these were used and maintained for the installation of these raceway and supports.

The inspectors also interviewed personnel and reviewed a sample of design procedures and documents to verify if the licensee established an effective method for tracking, evaluating and dispositioning changes or modifications for anchors and interfacial connections (i.e. bolting and raceway clamps) for raceways and supports.

b. Findings

No findings were identified.

1A21 (Unit 3) ITAAC Number 2.6.03.07 (616) / Family 08F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.6.03.07 (616). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.08-02.03 - Completed Work
- 65001.F-02.01-Design Document Review

The inspectors performed an inspection of Unit 3 Class 1E dc and UPS System (IDS) equipment that had been replaced after being wetted by water that migrated inside the Unit 3 electrical cabinets SV3-IDSC-DC-1 and -DT-1 (24 hour Battery Charger and Voltage Regulating Transformer). As a result of this event, a condition report was generated to document the need to transfer components from Unit 4 (SV4-IDSC-DC-1 and -DT-1) to Unit 3.

The inspectors reviewed non-conformance and disposition report (N&D) SV3-IDSC-GNR-000011, Revision 0, "Unit 3 IDSC Cabinets Damaged by Water (ESR 50036899)." This N&D described the condition that caused the water intrusion and the decision to replace SV3-IDSC-DC-1 and SV3-IDSC-DT-1 cabinets. The inspectors reviewed the work package to remove these Unit 3 cabinets and their replacement with Unit 4 cabinets SV4-IDSC-DC-1 and SV4-IDSC-DT-1. The inspectors reviewed the work package to verify:

- reassembly of the equipment cabinets at shipping splits;
- reconnecting, torquing, and insulation of bus bars;
- other miscellaneous internal connections as specified in the vendor manual;
- vendor manual for any shipping split connections including control and power wiring were completed as required;
- instructions to perform cable testing and terminations
- the nameplate information to verify if this was a like for like replacement of IDS cabinets; and
- all equipment, conduits, and cables were installed in accordance with design drawings and specifications.

b. Findings

No findings were identified.

1A22 (Unit 3) 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:

- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.07 - Problem Identification and Resolution
- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.01-Design Document Review

The inspectors observed the vertical, horizontal, and transverse reinforcing bars installed in the lower 10'-0" section of the outer passive containment cooling system (PCS) tank wall approximately between azimuths 0 and 90 degrees to verify if the sizes, spacing, material designation, grade, lap splices, and layout of the bars were consistent with the applicable design drawings, engineering & design coordination report (E&DCRs), construction specification SV3-CC01-Z0-31, and American Concrete Institute (ACI) 349-01.

The inspectors also observed installation of the bottom radial and circumferential reinforcing in the PCS tank roof slab. Specifically, the inspectors verified if the sizes, spacing, material designation, lap splices, and layout of the bars were consistent with the applicable design drawings, E&DCRs, construction specification SV3-CC01-Z0-31, and ACI 349-01.

The inspectors reviewed four E&DCRs to verify that design changes made to the PCS tank wall and roof reinforcing steel were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, "Design Control." Specifically, the inspectors verified 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 if the revisions to the PCS tank outer wall reinforcing steel were consistent with those approved in LAR 16-031R.

The inspectors reviewed a sample of CRs associated with the steel reinforcement and concrete of the shield building to verify the evaluations and corrective actions were conducted in accordance with the licensee's CAP; the issues were accurately identified and documented in a timely manner; and the issues were classified and resolved commensurate with their safety significance.
The inspectors reviewed the trending codes applied to each CR to verify they were correctly identified, tracked, and trended in accordance with ND-AD-002-025, "Issue Identification, Screening, and Dispatching." The inspectors reviewed a sample of nonconformances associated with the steel reinforcement and concrete to verify the nonconformances had adequate technical evaluations and were dispositioned in accordance with APP-GW-GAP-428, "Nonconformance and Disposition Report."

b. Findings

No findings were identified.

1A23 (Unit 3) 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:

- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.07 - Problem Identification and Resolution
- 65001.F-02.04-General QA Review

The inspectors reviewed a sample of CRs associated with the structural steel and embedments for the non-radiologically controlled portion of the auxiliary building to verify the evaluations and corrective actions were conducted in accordance with the licensee's CAP; the issues were accurately identified and documented in a timely manner; and the issues were classified and resolved commensurate with their safety significance. The inspectors reviewed the trending codes applied to each CR to verify they were correctly identified, tracked, and trended in accordance with ND-AD-002-025, "Issue Identification, Screening, and Dispatching." The inspectors reviewed a sample of nonconformances associated with the structural steel and embedments to verify the nonconformances had adequate technical evaluations and were dispositioned in accordance with APP-GW-GAP-428, "Nonconformance and Disposition Report."

b. Findings

No findings were identified.

1A24 (Unit 4) 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:

- 65001.03-02.03 - Installation and Welding
- 65001.03-02.06 - Nondestructive Examination (NDE)
- 65001.03-02.07 - Review of Records
- 65001.06-02.01 - General Installation
- 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 field welds (FW) 34 and 35 located on the inlet and outlet sides, respectively, of gate valve PXS-PL-V101 with connecting line RCS-PL-L134 for the RCS and PXS-PL-L102 for the PXS supply, respectively, to the PRHR HX to determine if the 14-inch diameter stainless steel motor operated valve was installed in accordance with the ASME Code Section III, Subsection NB, for Class 1 components.

The inspectors reviewed WDSs SV4-RCS-PLW-034-1 and SV4-PXS-PLW-035-1 for work packages P0W-800072 and P0W-1013959, respectively, 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 NB-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 NB-4122 and NB-4300. In addition, the inspectors reviewed performance qualification records of welders for FW 35 to verify if these welders were tested and certified for welding on the PXS side of valve V101 in accordance with the requirements of the ASME Code Section IX, Article III.

The inspectors reviewed MISTRAS computed radiography examination report V-20-RT-302-0797 for FW 34 on the RCS inlet side and V-20-RT-302-0796 for FW 35 on the PXS outlet side of valve V101 to determine whether acceptance by a SNT-TC-1A Level III examiner was performed with no rejectable indications using the proper type of source, IQI size, exposure time, and geometric unsharpness in accordance with the requirements of the ASME Code Section III (Article NB-5000) and Section V (Article 2).

b. Findings

No findings were identified.

1A25 (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:

- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.04 - Expansion Anchor Installation
- 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 observed concrete placement in the air inlet structure of the shield building cylindrical wall. The inspectors reviewed the placement plan to verify if preplacement planning had been completed to assure quality construction and contingency plans had been made to address unexpected events.

The inspectors reviewed two concrete batch plant delivery tickets to verify if 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 if 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 reviewed placement activities to verify that 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.

The inspectors reviewed a sample of CRs associated with the steel panels and concrete to verify the evaluations and corrective actions were conducted in accordance with the licensee's CAP; the issues were accurately identified and documented in a timely manner; and the issues were classified and resolved commensurate with their safety significance. The inspectors reviewed the trending codes applied to each CR to verify they were correctly identified, tracked, and trended in accordance with ND-AD-002-025, "Issue Identification, Screening, and Dispatching." The inspectors reviewed a sample of nonconformances associated with the steel panels and concrete to verify the nonconformances had adequate technical evaluations and were dispositioned in accordance with APP-GW-GAP-428, "Nonconformance and Disposition Report."

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 the reinforcing steel within room 12505, the upper nuclear island nonradioactive ventilation system (VBS) B&D equipment room, at elevation 135’-3”. This room is located between walls M and P and the shield building cylindrical wall and wall 11. Specifically, the inspectors verified if the material designation, grade, sizes, spacing, lap splices, and general layout of the top and bottom reinforcing bars within the concrete slab on metal deck 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 if design changes made to the slab reinforcement were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, “Design Control.” Specifically, the inspectors verified 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&DCR to verify if an adequate 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.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:

- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 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
- 65001.F-02.04-General QA Review

The inspectors observed the reinforcing steel in wall P between elevations 135'-3" and approximately 146'-10". This wall forms the west wall of the upper VBS B&D Equipment Room (Room 12505). Specifically, the inspectors verified if the material designation, grade, sizes, spacing, lap splices, and general layout of the vertical, horizontal, and transverse reinforcing bars within the wall were consistent with the applicable design drawings, E&DCRs, construction specification SV4-CC01-Z0-31, and ACI 349-01.

The inspectors reviewed four E&DCRs to verify if design changes impacting the construction of wall P were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, "Design Control." Specifically, the inspectors verified 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&DCR to verify if an adequate 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.

The inspectors reviewed a sample of CRs associated with the steel reinforcement and embedments to verify the evaluations and corrective actions were conducted in accordance with the licensee's CAP; the issues were accurately identified and documented in a timely manner; and the issues were classified and resolved commensurate with their safety significance. The inspectors reviewed the trending codes applied to each CR to verify they were correctly identified, tracked, and trended in accordance with ND-AD-002-025, "Issue Identification, Screening, and Dispatching." The inspectors reviewed a sample of nonconformances associated with the steel reinforcement and embedments to verify the nonconformances had adequate technical evaluations and were dispositioned in accordance with APP-GW-GAP-428, "Nonconformance and Disposition Report." Additionally, the inspectors observed repairs and rework resulting from the nonconformances to verify if they were conducted in accordance with the dispositions.

b. Findings

No findings were identified.

1P01 Construction QA Criterion 16

- 35007-A16.04 - Inspection Requirements and Guidance - 0 samples
- 35007-A16.04.01 - Inspection of QA Implementing Documents - 0 samples
- 35007-A16.04.02 - Inspection of QA Program Implementation - 0 samples

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 verify if 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 quality assurance 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 quality assurance 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 its 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

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On October 23, 2020, the inspectors presented the inspection results to Mr. M. Yox, Vogtle 3&4 Director of Regulatory Affairs, 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
05200025/2020003-01	NCV	Open/Closed	Failure to Perform ASME Section III Leakage Examinations (Section 1A07)
05200025/2020003-02	URI	Open	ASME Section III Level C Service Limits May Not Be Met for Containment Penetrations 44 and 45 (Section 1A10)

LIST OF DOCUMENTS REVIEWED

[2503 Documents]

Section 1A01
Unit 3 & 4 EPCRs for the following valves through 7/30/2020
RCS-PLV-001 A/B
RCS-PLV-002 A/B
RCS-PLV-003 A/B
RCS-PLV-0014 A/B/C/D
RCS-PLV-0004 A/B/C/D
Condition Reports
CR 50057519, "NRC Criterion XIII inspection observation", dated 7/29/2020
CR 50057525, "NRC Criterion XIII inspection observation", dated 7/29/2020
CR 50057585, "Work orders cancelled without proper justification", dated 7/30/2020
Procedures
26139-000-4MP-T81C-N6201, "Field Material Storage Control", Revision 9
B-GEN-MNT-002, "Work Process And Requirements For Plant Equipment Preservation And Preventive Maintenance", Version 2.0
APP-PV14-VMM-001, "Instruction, Operation and Maintenance Manual for PV14 Air Operated Globe Valves, ASME Section III, Class 1, 2 & 3", Revision 3
APP-PV20-VMM-001, "Installation, Operation & Maintenance Manual for AP1000 PV20 Piston Operated Rotary Ball Valves", Revision 2.0
SV0-PV01-VMM-001, "MAINTENANCE MANUAL for AP1000 PV01 Size 3 or Larger Motor Operated Gate Valves, Section III, Class 1, 2 & 3", Revision 0

SV0-PV01-VMM-002, "Instruction Manual for AP1000 PV01 Size 3” and Larger Motor Operated Globe Valves, Section III, Class 1, 2 & 3", Revision 1
APP-PV70-VMM-001, "PV70 Squib (Pyrotechnic Actuated) Valves Maintenance Manual", Revision 2
APP-PV98-VMM-001, "PV98 Pyrotechnic Actuator Instruction Manual (for PV70 Squib Valves)", Revision 1

Section 1A02
N-3173, PCI Energy Services, "ASME NA Certificate of Authorization (Corporate), Construction of Class 1, 2, 3, CS & MC field Installation at various locations certified by ASME," Expires September 2, 2020

N-3173-3, PCI Energy Services, "ASME NA Certificate of Authorization, Class 1, 2, 3, CS & MC field installation at the Vogtle NPS, Units 3 and 4, 7824 River Road, Waynesboro, Georgia 30830," Expires August 19, 2019

S&W 132175-2554-055-088-00007, SV0-RCS-VQQ-800006, "PCI 910962-001, Quality Assurance Data Package for Vogtle Unit 3 AP1000 RCS Reactor Coolant Loop (Alpha) Piping Field Installation," Document No. SV3-RCS-MJR-001, includes "Section 7.0: PCI Quality Assurance Travelers with Field Change Requests and Weld Map" and "Section 8.0: PCI Final Nondestructive Examination Reports, with Mistras Radiography Reader Sheets with CR Film Document Locator Numbers and TEAM UT Reports," (866 pages), 12/19/2019

PCI "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for RCS Reactor Coolant Loop Piping (Alpha) for Certificate Holder's Serial No. SV3-RCS-MJR-001 installed for Stone & Webster, Inc., (4 pages), 04/03/2019

PCI Checklist-001, "Final Documentation Checklist - Vogtle Unit 3 AP1000 Reactor Coolant Loop (RCL) Piping (ALPHA) Field Installation," (8 pages), Revision 1

PCI 910962-FR-001, "PCI Final Report - Vogtle Unit 3 AP1000 RCS Reactor Coolant Loop (RCL) Piping (Alpha) Field Installation," Revision 0

PCI Photo of ASME Code Symbol Stamping on "NA Class 1" Nameplate by PCI Energy Services for Serial Number SV3-RCS-MJR-001, page 498

S&W 132175-2554-055-088-00006, SV0-RCS-VQQ-800005, "PCI 910962-002, Quality Assurance Data Package for Vogtle Unit 3 AP1000 RCS Reactor Coolant Loop (Bravo) Piping Field Installation," Document No. SV3-RCS-MJR-002, includes "Section 7.0: PCI Quality Assurance Travelers with Field Change Requests and Weld Map" and "Section 8.0: PCI Final Nondestructive Examination Reports, with Mistras Radiography Reader Sheets with CR Film Document Locator Numbers and TEAM UT Reports," (829 pages), 02/04/2020

PCI "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for RCS Reactor Coolant Loop Piping (Bravo) Certificate Holder's Serial No. SV3-RCS-MJR-002 installed for Stone & Webster, Inc., (4 pages), 03/21/2019

PCI Checklist-002, "Final Documentation Checklist - Vogtle Unit 3 AP1000 Reactor Coolant Loop (RCL) Piping (Bravo) Field Installation," (8 pages), Revision 1

PCI 910962-FR-002, "PCI Final Report - Vogtle Unit 3 AP1000 RCS Reactor Coolant Loop (RCL) Piping (Bravo) Field Installation," Revision 0

PCI Photo of ASME Code Symbol Stamping on "NA Class 1" Nameplate by PCI Energy Services for Serial Number SV3-RCS-MJR-002, page 496

S&W 132175-2554-055-088-00003, SV0-RCS-VQQ-800002, "PCI 912941-001, Quality Assurance Data Package for Vogtle Unit 3 AP1000 RCS Surge Line Pipe and Pipe Supports Field Installation," Document No. SV3-RCS-MJR-005, includes "Section 7.0: PCI Quality Assurance Travelers with Field Change Requests and Weld Map (Pipe and Pipe Supports)" and "Section 8.0: PCI Final Nondestructive Examination Reports, with Mistras Radiography Reader Sheets and TEAM UT Reports," (653 pages), 08/02/2019

PCI "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for RCS Surge Line Pipe and Pipe Supports for Certificate Holder's Serial No. SV3-RCS-MJR-005 installed for Stone & Webster, Inc., (4 pages), 06/10/2019

PCI Checklist-002, "Final Documentation Checklist - Vogtle Unit 3 AP1000 RCS Surge Line Pipe and Surge Line Pipe Supports Field Installation," (8 pages), Revision 1

PCI 912941-FR-001, "PCI Final Report - Vogtle Unit 3 AP1000 RCS Surge Line Pipe and Pipe Supports Field Installation," Revision 0

PCI Photo of ASME Code Symbol Stamping on "NA Class 1" Nameplate by PCI Energy Services for Serial Number SV3-RCS-MJR-005, page 479

S&W 1321752004-2554, "PCI 912941-002, Quality Assurance Data Package for Vogtle Unit 3 AP1000 PRHR Return Pipe and Pipe Supports Field Installation," Document No. SV3-RCS-MJR-009, includes "Section 7.0: PCI Quality Assurance Travelers with Field Change Requests and Weld Map (Pipe and Pipe Supports)" and "Section 8.0: PCI Final Nondestructive Examination Reports, with Mistras Radiography Reader Sheets and TEAM UT Reports," (868 pages), 03/21/2019

PCI "Form N-5 (Partial) Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for PRHR Return Pipe and Pipe Supports for Certificate Holder's Serial No. SV3-RCS-MJR-009 installed for Stone & Webster, Inc., (4 pages), 08/19/2019

PCI Checklist-002, "Final Documentation Checklist - Vogtle Unit 3 AP1000 PRHR Return Line Pipe and PRHR Return Line Pipe Supports Field Installation," (7 pages), Revision 0

PCI 912941-FR-002, "PCI Final Report - Vogtle Unit 3 AP1000 RCS PRHR Return Pipe and Pipe Supports Field Installation," Revision 0

PCI Photo of ASME Code Symbol Stamping on "NA Class 1" Nameplate by PCI Energy Services for Serial Number SV3-RCS-MJR-009, page 467

S&W 132175-2376-055-088-0001, SV0-RCS-VQQ-800017, "PCI Final Quality Assurance Data Package for Vogtle Unit 3 AP1000 Reactor Vessel and RV Support Field Installation," Document No. SV3-RCS-MJR-MV01, includes "Section 9.0: PCI Quality Assurance Travelers (Corporate and Site) with Field Change Requests" and "Section 10.0: PCI Final Nondestructive Examination Reports," (337 pages), 08/09/2019

PCI "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Reactor Vessel and RV Support for Certificate Holder's Serial No. SV3-RCS-MJR-MV01 installed for Stone & Webster, Inc., (3 pages), 07/06/2018

PCI Checklist-002, "Final Documentation Checklist - Vogtle Unit 3 AP1000 Reactor Vessel and RV Support Field Installation," (4 pages), Revision 1

PCI 909964/909965-FR-001, "PCI Final Report - Vogtle Unit 3 AP1000 Reactor Vessel and RV Support Field Installation," Revision 1

PCI Photo of ASME Code Symbol Stamping on "NA Class 1" Nameplate by PCI Energy Services for Serial Number SV3-RCS-MJR-MV01, page 24

S&W 132175-2554-055-088-0017, SV0-RCS-VQQ-800016, "PCI Quality Assurance Data Package for Vogtle Unit 3 AP1000 RCS Steam Generator 1 (Alpha) and Primary Equipment Supports Field Installation," Document No. SV3-RCS-MJR-MB01A, includes "Section 7.0: PCI Quality Assurance Travelers (Corporate and Site) with Field Change Requests, and Weld Maps (Overlays/Inlays, Brackets, and Supports" and "Section 8.0: PCI Final Nondestructive Examination Reports, with TEAM UT Reports," (1367 pages), 10/11/2019

PCI "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Steam Generator 1 (Alpha) with Supplemental Sheets for Certificate Holder's Serial No. SV3-RCS-MJR-MB01A installed for Stone & Webster, Inc., (3 pages), 11/15/2019

PCI Checklist-002, "Final Documentation Checklist - Vogtle Unit 3 AP1000 Steam Generator 1 (Alpha), Wall Brackets and Supports Installation," (14 pages), Revision 0

PCI 911082/912881-FR-001, "PCI Final Report - Vogtle Unit 3 AP1000 RCS Steam Generator 1-Alpha (SV3-RCS-MB01), Wall Brackets and Supports Installation," Revision 0

PCI Photo of ASME Code Symbol Stamping on "NA Class 1" Nameplate by PCI Energy Services for Serial Number SV3-RCS-MJR-MB01A, page 988

S&W 911082/912881, "PCI Quality Assurance Data Package for Vogtle Unit 3 AP1000 RCS Steam Generator 2 (Bravo) (SV3-RCS-MB02), Wall Brackets and Supports Installation," Document No. SV3-RCS-MJR-MB01B, includes "Section 7.0: PCI Quality Assurance Travelers (Corporate and Site) with Field Change Requests, and Weld Maps (Overlays/Inlays, Brackets, and Supports" and "Section 8.0: PCI Final Nondestructive Examination Reports, with TEAM UT Reports," (1669 pages), 08/28/2019

PCI "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Steam Generator 2 (Bravo) with Supplemental Sheets for Certificate Holder's Serial No. SV3-RCS-MJR-MB01B installed for Stone & Webster, Inc., (4 pages), 11/15/2019

PCI Checklist-002, "Final Documentation Checklist - Vogtle Unit 3 AP1000 Steam Generator 2 (Bravo), Wall Brackets and Supports Installation," (16 pages), Revision 1

PCI 911082/912881-FR-001, "PCI Final Report - Vogtle Unit 3 AP1000 RCS Steam Generator 2-Bravo (SV3-RCS-MB02), Wall Brackets and Supports Installation," Revision 0

PCI Photo of ASME Code Symbol Stamping on "NA Class 1" Nameplate by PCI Energy Services for Serial Number SV3-RCS-MJR-MB01B, page 1121

S&W 132175-2554-055-088-0010, SV0-RCS-VQQ-800009, "PCI Quality Assurance Data Package for Vogtle Unit 3 AP1000 Pressurizer, Vertical Columns, and Upper and Lower Rigid Supports Field Installation," Document No. SV3-RCS-MJR-MV20, includes "Section 7.0: PCI Quality Assurance Travelers with Field Change Requests, and Weld Maps (Upper/Lower Weld-on Brackets/Lugs" and "Section 8.0: PCI Final Nondestructive Examination Reports, with TEAM UT Reports," (777 pages), 08/29/2019

PCI "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Pressurizer with Supplemental Sheets for Certificate Holder's Serial No. SV3-RCS-MJR-MV20 installed for Stone & Webster, Inc., (5 pages), 08/19/2019

PCI Checklist-002, "Final Documentation Checklist - Vogtle Unit 3 AP1000 Pressurizer Install," (8 pages), Revision 0

PCI 910962-FR-003, "PCI Final Report - Vogtle Unit 3 AP1000 RCS Pressurizer, Vertical Columns, and Upper/Lower Struts Field Installation," Revision 0

PCI Photo of ASME Code Symbol Stamping on "NA Class 1" Nameplate by PCI Energy Services for Serial Number SV3-RCS-MJR-MV20, page 627

Section 1A03
Work Packages:
SV3-1231-SHW-800033
SV3-1231-SHW-800050

Procedures:
APP-GW-GAP-420, Engineering and Design Coordination Report, Rev. 20
APP-GW-GAP-428, Nonconformance and Disposition Report (N&D), Rev. 18
ND-AD-002-027, Nonconforming Items, Rev. 7
26139-000-G27-GZC-00001, Advanced Authorization Process Requirements During the Construction and Testing Phases at Vogtle Units 3 & 4 Southern Nuclear Corp., Rev. 0

Engineering Change Documents:
SV3-1231-GEF-000010, Field routed conduit use engineered supports (ESR50045032), Rev. 0

SV3-12304-GEF-000002, Changeover to flex / Abandon support (ESR50031692), Rev. 0

Drawings:
APP-1231-ER-621, Auxiliary Building Area 1 El. 100'-0" Conduit Supports Details (Sheet 11), Rev. 3
APP-1231-ER-634, Auxiliary Building Area 1 El. 100'-0" Conduit Supports Details (Sheet 24), Rev. 1
APP-ECS-E9-030, Conduits Notes and Details, Rev. 16
APP-ECS-E9-062, Cable Tray Notes and Details Sheet 1, Rev. 2
APP-ECS-E9-100, Conduits Notes and Support Details General Notes, Rev. 3
APP-ECS-E9-101, Conduits Notes and Support Details Conduit Cables, Rev. 1
APP-SH25-VF-016, Fabrication Requirements Tray Supports Seismic Cat 1 Trapeze Vertical Riser Up to 2.5gh & 2.5gv (1 Cable Tray) - No Brace, Rev. 3
SV3-1130-ER-909, Conduit Support Fabrication Drawing, Rev. 0
SV3-CA02-S5-02001, Containment Building Area 2 Module CA02 - Submodule CA02_02 Isometric Views, Rev. 2
SV3-CA02-S5B-02001, Containment Building Area 2 Module CA02 - Submodule CA02_02 Bill of Materials, Rev. 3
SV3-1231-ER-605, Auxiliary Building Area 1 EL 100'-0" Conduit Supports Plan View (Sheet 5), Rev. 3
SV3-1231-ER-615, Auxiliary Building Area 1 EL 100'-0" Conduit Supports Details (Sheet 5), Rev. 3
SV3-1231-ER-625, Auxiliary Building Area 1 EL 100'-0" Conduit Supports Details (Sheet 15), Rev. 2
SV3-1231-SH-224, Auxiliary Building Area 1 EL 100'-0" Raceway Supports Details (Sheet 15), Rev. 3
SV3-1231-CEX-993, Auxiliary Building Area 1 Small Walls Embedments Index EL 100'-0" Conduit Supports Details (Sheet 1), Rev. 5
SV3-1231-ER-640, Auxiliary Building Area 1 EL 100'-0" Conduit Supports Details (Sheet 15), Rev. 2
SV3-CE01-CE-001, Standard Embedment Plates Headed Anchor (HA) Type (Sheet 1), Rev. 8
SV3-1231-ER-607, Auxiliary Building Area 1 EL 100'-0" Conduit Supports Plan View (Sheet 7), Rev. 3
SV3-1231-ER-645, Auxiliary Building Area 1 EL 100'-0" Conduit Supports Details (Sheet 35), Rev. 0
SV3-1231-ER-624, Auxiliary Building Area 1 EL 100'-0" Conduit Supports Details (Sheet 14), Rev. 4
SV3-1231-SH-221, Auxiliary Building Area 1 EL 100'-0" Raceway Supports Details (Sheet 12), Rev. 3

Condition Reports (CRs):
CR 50063697
CR 50048617

Specifications:
APP-G1-V8-001, AP1000 Electrical Installation Specification, Rev. 7

Miscellaneous:
PLV002ABXD[PT] Rev: 3

Quality Control Inspection Reports:
26139-SV4-IR-ER-00081, Raceway and Accessories Inspection Record, dated 3-5-2019
SV3-1231-1002631, Raceway and Accessories Inspection Record, dated 6/20/2020

SV3-1231-ERW-1006383, Raceway and Accessories Inspection Record, dated 7-11-2020

Section 1A04
Specification
APP-G1-V8-001, AP1000 Electrical Installation Specification, Revision 7

Work Packages
SV3-1231-SHW-800050, U3, Install Conduit Supports, Aux, Elevation 100'-0", Area 1, Room 12305

Drawings
APP-ECS-E9-012, Cable Tray notes and Details Sheet 3, Revision 12
APP-ECS-E9-013, Cable Tray Notes and Details Sheet 4, Revision 7
APP-ECS-E9-014, Cable Tray Notes and Details Sheet 5, Revision 5
APP-ECS-E9-030, Conduit Notes and Details, Revision 16
APP-ECS-E9-062, Cable Tray Notes and Details Sheet 1, Revision 2
APP-ECS-E9-063, Cable Tray Notes and Details Sheet 12, Revision 2
APP-1231-ER-604, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Plan View (Sheet 4), Revision 4
APP-1231-ER-605, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Plan View (Sheet 5), Revision 3
APP-1231-ER-606, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Details (Sheet 6), Revision 2
APP-1231-ER-607, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Details (Sheet 7), Revision 3
APP-1231-SH-224, Auxiliary Building Area 1 EL. 100'-0" Raceway Supports Details Sheet (Sheet 5), Revision 3
APP-1231-ER-616, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Plan View (Sheet 6), Revision 2
WM-E-3-12-318590, Weld Map for the Auxiliary Building Installation of Conduit Support SV3-1231-SH-E1620
APP-1231-ER-625, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Details (Sheet 15), Revision 2
WM-E-3-12-318592, Weld Map for the Auxiliary Building Installation of Conduit Support SV3-1231-SH-E1626
APP-1231-ER-618, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Details (Sheet 8), Revision 3
WM-E-3-12-318595, Weld Map for the Auxiliary Building Installation of Conduit Support SV3-1231-SH-E1801
APP-1231-ER-612, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Details (Sheet 2), Revision 4
WM-E-3-12-318600, Weld Map for the Auxiliary Building Installation of Conduit Support SV3-1231-SH-E1806
APP-1231-ER-630, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Details (Sheet 20), Revision 1
WM-E-3-12-318609, Weld Map for the Auxiliary Building Installation of Conduit Support SV3-1231-SH-E1931
APP-1231-ER-645, Auxiliary Building Area 1 EL. 100'-0" Conduit Supports Details (Sheet 35), Revision 0
WM-E-3-12-318611, Weld Map for the Auxiliary Building Installation of Conduit Support SV3-1231-SH-E1967

Purchase Orders

SNV1004125
SNV1000934
SNV1002720

Material Receiving Report
J132175-MRR-18-02477
J132175-MRR-17-06035
J132176-MRR-15-01079
J132176-MRR-15-01446
26139-MRR-19-03080

Procedures
26139-000-4MP-T81C-N7101, Construction Quality Verification Program, Revision 3
26139-000-4MP-T81C-N6204, Field Material Control and Traceability, Revision 4
26139-000-4MP-T81C-N3701, Welding Program, Revision 0
26139-000-4MP-T81C-N6105, Material Withdrawal, Revision 8
26139-000-4MP-T81C-N3302, Raceways and Accessories, Revision 9

Supplier Audit/Survey
CNOS-19-293, Dubose National Energy Services, Date 11-7-2019
CNOS-18-254, Nova Machine Products, Date 4-26-2018
CNOS-18-004, Dubose National Energy Services, Date 1-10-2011

Welding Procedure Specifications
P1-A-Lh (Structural), For Vogtle only, Revision 0
WPS1-1.1C02, SMAW and FCAW Welding of P-No. 1 materials E7018 and E71T-12M filler, without PWHT, without impacts, Revision 2

Section 1A05
Specifications
APP-G1-V8-001, AP1000 Electrical Installation Specification, Revision 7

Work Packages
SV3-1231-SHW-800050, U3, Install Conduit Supports, Aux, Elevation 100’-0”, Area 1, Room 12305

Drawings
APP-ECS-E9-012, Cable Tray notes and Details Sheet 3, Revision 12
APP-ECS-E9-013, Cable Tray Notes and Details Sheet 4, Revision 7
APP-ECS-E9-014, Cable Tray Notes and Details Sheet 5, Revision 5
APP-ECS-E9-030, Conduit Notes and Details, Revision 16
APP-ECS-E9-062, Cable Tray Notes and Details Sheet 1, Revision 2
APP-ECS-E9-063, Cable Tray Notes and Details Sheet 12, Revision 2
APP-1231-ER-604, Auxiliary Building Area 1 EL. 100’-0” Conduit Supports Plan View (Sheet 4), Revision 4
APP-1231-ER-605, Auxiliary Building Area 1 EL. 100’-0” Conduit Supports Plan View (Sheet 5), Revision 3
APP-1231-ER-606, Auxiliary Building Area 1 EL. 100’-0” Conduit Supports Details (Sheet 6), Revision 2
APP-1231-ER-607, Auxiliary Building Area 1 EL. 100’-0” Conduit Supports Details (Sheet 7), Revision 3

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SEO KOATSU KOGYO Co. Ltd. CMTR G20818-042CM for SA-350 Gr. LF2 Class 1, P45 penetration sleeve, Test Mark AF480, Heat-No. JOL4527, Lot/Piece-No. AF48001, Revision 3, 10/18/2011
Atlas Industrial MFG, SV3-ML10-VQQ-004 (QADP 13429-2-QAR, pg. 473 of 616), P45 CMTRs 13429-2-P01-R1 (pages 586-607), SA-333 Gr. 6, Heat-No. 11321, S/N 12802, Revision 3 (52 pages)
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ESAB CMTR 2-59547-00-0-NUC, E7018 H4R, 3/32" X 14", Lot # 2A822E02, Heat # 80161C, Tradename Atom Arc E7018SR, Control # PPP014, 7/26/2018
S&W Weld Data Sheet SV3-SGS-PY-C05B-2, 06/18/2020
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S&W Record of Welder Performance Qualification Test – ASME Section IX Groove Weld, Test-No. 1CS-03, Welder JRS, Test Date 02/08/2018
S&W Record of Welder Performance Qualification Test – ASME Section IX Groove Weld, Test-No. 1CS-03, Welder LVH, Test Date 03/01/2018
S&W Record of Welder Performance Qualification Test – ASME Section IX Groove Weld, Test-No. 1CS-03, Welder TLC, Test Date 06/21/2018
S&W Record of Welder Performance Qualification Test – ASME Section IX Groove Weld, Test-No. 1CS-03, Welder WLO, Test Date 06/21/2018
MISTRAS V-18-RT-301-0488, Computed Radiography Examination Report, Weld-No. SV3-SGS-PY-C05B-2, 09/09/2018
CBIS Traveler U3-CNSwelds-NI-SFT-2, Unit 3 CNS system, SFT Welds at Nuclear Island with Traveler Document Reference Summary Sheet, 3 pages, 7/22/2020
CBIS List of 33 Level I & II Personnel Qualified for SFT in accordance with CBIS NQAM CMS-720-03-PL-00010, and CBIS Level II NDE Certification of Qualification ASME Section III for Solution Film Testing (SFT) method for RB ID# 2878491, signed 7/19/2018, Effective Period 6/28/2018 to 6/2021

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S&W "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Certificate Holder's Serial No. SV3-PXS-MJR-001 installed for WEC, (12 pages), 04/06/2020

S&W "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Certificate Holder's Serial No. SV3-PXS-MJR-004 installed for WEC, (13 pages), 06/10/2020

S&W "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Certificate Holder's Serial No. SV3-PXS-MJR-015 installed for WEC, (12 pages), 05/06/2020

S&W "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Certificate Holder's Serial No. SV3-PXS-MJR-ME02 installed for WEC, (8 pages), 04/19/2020

S&W "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Certificate Holder's Serial No. SV3-PXS-MJR-019 installed for WEC, (12 pages), 04/20/2020

S&W "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Certificate Holder's Serial No. SV3-PXS-MJR-025 installed for WEC, (18 pages), 06/04/2020

S&W "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Certificate Holder's Serial No. SV3-PXS-MJR-026 installed for WEC, (16 pages), 06/25/2020

S&W "Form N-5 Certificate Holder's Data Report for Installation of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Certificate Holder's Serial No. SV3-PXS-MJR-027 installed for WEC, (14 pages), 02/26/2020

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Quality Control Inspection Reports:
26139-SV4-IR-ER-00081, Raceway and Accessories Inspection Record, dated 3-5-2019
SV3-1231-1002631, Raceway and Accessories Inspection Record, dated 6/20/2020
SV3-1231-ERW-1006383, Raceway and Accessories Inspection Record, dated 7-11-2020

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CR 50063697
CR 50048617

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SV3-1231-1002631, Raceway and Accessories Inspection Record, dated 6/20/2020
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26139-MRR-19-03080

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LIST OF ACRONYMS

ACI	American Concrete Institute
ADS	Automatic Depressurization System
ANI	Authorized Nuclear Inspector
AOV	Air Operated Valve
ASL	Approved Vendor's List
ASME	American Society of Mechanical Engineers
CBIS	Chicago Bridge and Iron Services
CMT	Core Makeup Tank
CMTR	Certified Material Test Report
CNS	containment system
CR	Condition Report
CV	Containment Vessel
E&DCR	Engineering & Design Coordination Report
EPCR	Equipment Preservation Check Records
FW	Field Weld
IDS	Class 1E DC and Uninterruptible Power Supply System
IMC	Inspection Manual Chapter
IQI	Image Quality Indicator
IRWST	In Containment Refueling Water Storage Tank
ITAAC	Inspections, Tests, Analysis, and Inspection Criteria
MOV	Motor Operated Valve
N&D	Nonconformance and Disposition Reports
NCV	Non-Cited Violation
NDE	Nondestructive Examination
NRC	Nuclear Regulatory Commission
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
RCS	Reactor Coolant System
RT	Radiographic Examination
RXS	Reactor System
SFP	Spent Fuel Pool
SIT	Structural Integrity Test
SSC	Structures, Systems, and Components
S&W	Stone and Webster

UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
VBS	Nuclear Island Nonradioactive Ventilation System
VEGP	Vogtle Electric Generating Plant
WDS	Weld Data Sheet
WEC	Westinghouse Electric Company
WPS	Welding Procedure Specification

ITAAC INSPECTED

ITAAC INSPECTED

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

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 normal and seismic	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
		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.

19	2.1.02.05a.i	5.a) The seismic Category I equipment identified in Table 2.1.2-1 can withstand seismic design basis loads without loss of safety function. 7.a) The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	i) Inspection will be performed to verify that the seismic Category I equipment and valves identified in Table 2.1.2-1 are 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) Type tests, analyses, or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment. ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	i) The seismic Category I equipment identified in Table 2.1.2-1 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. i) A report exists and concludes that the Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.1.2-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

75	2.1.03.06.i	6. The seismic Category I equipment identified in Table 2.1.3-1 can withstand seismic design basis loads without loss of safety function. 9.a) The Class 1E equipment identified in Table 2.1.3-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	i) Inspection will be performed to verify that the seismic Category I equipment identified in Table 2.1.3-1 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) Type tests, analysis, or a combination of type tests and analysis will be performed on Class 1E equipment located in a harsh environment. ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	i) The seismic Category I equipment identified in Table 2.1.3-1 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. i) A report exists and concludes that the Class 1E equipment identified in Table 2.1.3-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.1.3-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

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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.

98	2.2.01.05.i	5. The seismic Category I equipment identified in Table 2.2.1-1 can withstand seismic design basis loads without loss of structural integrity and safety function. 6.a) The Class 1E equipment identified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. 6.d) The non-Class 1E electrical penetrations identified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of containment pressure boundary integrity.	i) Inspection will be performed to verify that the seismic Category I equipment and valves identified in Table 2.2.1-1 are 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) Type tests, analyses, or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment. ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment. i) Type tests, analyses, or a combination of type tests and analyses will be performed on non-Class 1E electrical penetrations located in a harsh	i) The seismic Category I equipment identified in Table 2.2.1-1 is located on the Nuclear Island. ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis dynamic loads without loss of structural integrity and safety function. iii) The as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions. i) A report exists and concludes that the Class 1E equipment identified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.2.1-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses. i) A report exists and

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
			environment. ii) Inspection will be performed of the as-built non-Class 1E electrical penetrations located in a harsh environment.	concludes that the non-Class 1E electrical penetrations identified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of containment pressure boundary integrity. ii) A report exists and concludes that the as-built non-Class 1E electrical penetrations identified in Table 2.2.1-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

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 normal and seismic	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
		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.

165	2.2.03.05a.i	5.a) The seismic Category I equipment identified in Table 2.2.3-1 can withstand seismic design basis loads without loss of safety function. 7.a) The Class 1E equipment identified in Table 2.2.3-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	i) Inspection will be performed to verify that the seismic Category I equipment and valves identified in Table 2.2.3-1 are 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) Type tests, analyses, or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment. ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	i) The seismic Category I equipment identified in Table 2.2.3-1 is located on the Nuclear Island. ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis dynamic loads without loss of safety function. For the PXS containment recirculation and IRWST screens, a report exists and concludes that the screens can withstand seismic dynamic loads and also post-accident operating loads, including head loss and debris weights. iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions. For the PXS containment recirculation and IRWST screens, a report exists and concludes that the as-built screens including their anchorage are bounded by the seismic loads and also post-accident operating loads, including head loss and debris weights. i) A report exists and concludes that the Class 1E equipment identified in Table 2.2.3-1 as being qualified for a harsh

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
				environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.2.3-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

522	2.5.02.02.i	2. The seismic Category I equipment, identified in Table 2.5.2-1, can withstand seismic design basis loads without loss of safety function. 3. The Class 1E equipment, identified in Table 2.5.2-1, has electrical surge withstand capability (SWC), and can withstand the electromagnetic interference (EMI), radio frequency interference (RFI), and electrostatic discharge (ESD) conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. 4. The Class 1E equipment, identified in Table 2.5.2-1, can withstand the room ambient temperature, humidity, pressure, and mechanical vibration conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	i) Inspection will be performed to verify that the seismic Category I equipment identified in Table 2.5.2-1 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. Type tests, analyses, or a combination of type tests and analyses will be performed on the equipment. Type tests, analyses, or a combination of type tests and analyses will be performed on the Class 1E equipment identified in Table 2.5.2-1.	i) The seismic Category I equipment identified in Table 2.5.2-1 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. A report exists and concludes that the Class 1E equipment identified in Table 2.5.2-1 can withstand the SWC, EMI, RFI, and ESD conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. A report exists and concludes that the Class 1E equipment identified in Table 2.5.2-1 can withstand the room ambient temperature, humidity, pressure, and mechanical vibration conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required

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				to perform the safety function.
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.

616	2.6.03.07	7. The IDS dc battery fuses and battery charger circuit breakers, and dc distribution panels, MCCs, and their circuit breakers and fuses, are sized to supply their load requirements. 8. Circuit breakers and fuses in IDS battery, battery charger, dc distribution panel, and MCC circuits are rated to interrupt fault currents. 9. The IDS batteries, battery chargers, dc distribution panels, and MCCs are rated to withstand fault currents for the time required to clear the fault from its power source. 10. The IDS electrical distribution system cables are rated to withstand fault currents for the time required to clear the fault from its power source.	Analyses for the as-built IDS dc electrical distribution system to determine the capacities of the battery fuses and battery charger circuit breakers, and dc distribution panels, MCCs, and their circuit breakers and fuses, will be performed. Analyses for the as-built IDS dc electrical distribution system to determine fault currents will be performed. Analyses for the as-built IDS dc electrical distribution system to determine fault currents will be performed. Analyses for the as-built IDS dc electrical distribution system to determine fault currents will be performed.	Analyses for the as-built IDS dc electrical distribution system exist and conclude that the capacities of as-built IDS battery fuses and battery charger circuit breakers, and dc distribution panels, MCCs, and their circuit breakers and fuses, as determined by their nameplate ratings, exceed their analyzed load requirements. Analyses for the as-built IDS dc electrical distribution system exist and conclude that the analyzed fault currents do not exceed the interrupt capacity of circuit breakers and fuses in the battery, battery charger, dc distribution panel, and MCC circuits, as determined by their nameplate ratings. Analyses for the as-built IDS dc electrical distribution system exist and conclude that the IDS dc electrical distribution system cables will withstand the analyzed fault currents, as determined by manufacturer’s ratings, for the time required to clear the fault from its power source as determined by the circuit interrupting device coordination analyses.

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				Analyses for the as-built IDS dc electrical distribution system exist and conclude that the IDS dc electrical distribution system cables will withstand the analyzed fault currents, as determined by manufacturer's ratings, for the time required to clear the fault from its power source as determined by the circuit interrupting device coordination analyses.
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.