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

February 11, 2022

Mr. Michael Yox
Regulatory Affairs Director
Southern Nuclear Operating Company
7825 River Road, BIN 63031
Waynesboro, GA 30830

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INTEGRATED INSPECTION REPORTS 05200025/2021007, 05200026/2021007

Dear Mr. Yox:

On December 31, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at the Vogtle Electric Generating Plant (VEGP), Units 3 and 4. On January 18, 2022, the NRC inspectors discussed the results of this inspection with Mr. G. Chick, VEGP Units 3 and 4 Executive Vice President, 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 noncited 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, Chief
Construction Inspection Branch 1
Division of Construction Oversight

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

Enclosure:
NRC Inspection Report (IR) 05200025/2021007, 05200026/2021007
w/attachment: Supplemental Information

cc w/ encl: Distribution via LISTSERV

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INTEGRATED INSPECTION REPORTS 05200025/2021007, 05200026/2021007 -dated February 11, 2022

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U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers:	5200025 5200026
License Numbers:	NPF-91 NPF-92
Report Numbers:	05200025/2021007 05200026/2021007
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Vogtle Unit 3 and 4 Combined License
Location:	Waynesboro, GA
Inspection Dates:	October 1, 2021 through December 31, 2021
Inspectors:	A. Artayet, Senior Construction Inspector, Division of Construction Oversight (DCO) G. Crespo, Senior Construction Inspector, DCO T. Fredette, Reactor Operations Engineer, Office of Nuclear Reactor Regulation (NRR) B. Griman, Resident Inspector, DCO B. Kemker, Senior Resident Inspector, DCO J. Kent, Construction Inspector, DCO J. Lizardi-Barreto, Construction Inspector, DCO R. Mathis, Senior Construction Inspector, DCO T. Morrissey, Senior Construction Inspector, DCO J. Parent, Resident Inspector, DCO R. Patel, Senior Construction Inspector, DCO A. Ponko, Senior Construction Inspector, DCO M. Riley, Senior Construction Inspector, DCO W. Schuster, Resident Inspector, DCO J. Vasquez, Construction Inspector, DCO
Approved by:	Nicole Coovert, Chief Construction Inspection Branch 1 Division of Construction Oversight

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2021007, 05200026/2021007; 10/01/2021 through 12/31/2021; Vogtle Units 3 and 4 Combined License, 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 noncited violation (NCV) in the Construction Installation 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) A construction finding of very low safety significance with an associated NCV of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the licensee's failure to identify and correct conditions adverse to quality pertaining to Institute of Electrical and Electronic Engineers 384-1981 cable separation issues inside Class 1E dc and uninterruptible power supply system (IDS) regulating transformer panel SV3-IDSC-DT-1. The licensee failed to maintain the 1-inch separation required for safety and nonsafety-related cables within IDS 'C' regulating transformer panel SV3-IDSC-DT-1 in accordance with electrical installation specification APP-G1-V8-001, Appendix B2, "Separation and Segregation Spacing Requirements." Two conditions were identified. The licensee entered this finding into its corrective action program as condition report 50117479. Corrective actions for this issue included rework to restore compliance with the separation requirements and the initiation of a causal analysis.

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 the safety function associated with IDS unacceptable or indeterminate and required substantive corrective action. The inspectors determined this finding was a performance deficiency of very low safety significance because if left uncorrected it could reasonably be expected to impair the design function of IDS for only one train of a multi-train system. The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect of Work Management, in the area of Human Performance. The licensee failed to implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. Specifically, the licensee failed to have a process in place for quality control to verify all cable separation nonconformances were addressed inside the panel. [H.5] (Section 1P01)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Construction Status

Unit 3: The licensee completed the majority of civil and mechanical construction and was finalizing the as-built design for the nuclear island. The licensee completed repairs to the stainless steel liners for the spent fuel pool and the transfer canal. In the containment and auxiliary buildings, the licensee continued installation and rework of electrical raceways, conduits, and cables.

Unit 4: The licensee finished construction of the passive containment cooling water system storage tank. In the containment building, the licensee continued installation of reactor coolant system (RCS) and passive core cooling system (PXS) small bore piping and continued routing electrical cables, raceways, and terminations. In the auxiliary building, the licensee continued construction of the building and installation of electrical cabinets, raceways, conduits, and cables. The licensee commenced open vessel testing.

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 2.1.02.12a.iv (56) / Family 07E

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.12a.iv (56). The inspectors used the following NRC Inspection Procedures (IPs)/sections to perform this inspection:

- 65001.07-02.01 - General Installation
- 65001.A.02.02 - Installation Records Review
- 65001.E-02.06-Problem Identification and Resolution

The inspectors reviewed the equipment qualification reconciliation report (EQRR) for Unit 3 fourth-stage automatic depressurization system (ADS) squib valve SV3-RCS-PL-V004A to determine whether the as-built configuration, including anchorage and electrical connections, were bounded by the as-tested conditions per Appendix C of the Unit 3 Combined License (COL).

The inspectors reviewed the equipment qualification summary report and equipment qualification data package to determine whether installation requirements were translated to the drawings and work packages (WPs). The inspectors reviewed the licensee's methodology and the applicable work packages, design changes, and non-conformances to confirm work orders, data sheets, and design drawings which reflected the as-installed RCS squib valve were bounded by the design analysis and tested configuration.

The inspectors performed a walkdown of the as-built squib valve to determine whether the valve was installed as tested so the valve would change position as required during a design basis accident. The inspectors examined the as-built squib valve to verify the valve's make/model/serial number, mounting orientation, and location. The inspectors also verified the mechanical and electrical connections were bounded by the analyzed and tested conditions.

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

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

The inspectors reviewed as-built design reports and associated American Society of Mechanical Engineers (ASME) N1 and a sample of the N5 installation data reports for the containment system (CNS), which included the containment vessel and the penetration assemblies, to verify that components were designed, fabricated, constructed, examined, and tested in accordance with design specifications, engineering drawings, and requirements of the ASME Code, Section III, Division 1, 2001 Edition up to and including 2002 Addenda, Subsections NCA for general requirements and NE for Class MC components. The inspectors specifically reviewed documentation associated with the following components:

- containment vessel, CNS-MV-01;
- electrical penetration assemblies consisting of canisters, weldment rings, and extension sleeves for penetrations E01 thru E03, E06 thru E07, and E09 thru E32;
- fuel transfer tube penetration P11;
- normal residual heat removal system (RNS) for RCS to passive residual heat removal penetration P19;
- steam generator system (SGS) main steam penetrations P23 and P24;
- SGS main feedwater penetrations P25 and P26;
- SGS steam generator blowdown penetrations P27 and P28;
- SGS startup feedwater loops 1 and 2 penetrations P44 and P45;
- guard pipes, extension sleeves, flued heads, attachment rings, and/or bellows expansion joints for penetrations P05, P19, P20, P22 thru P28, P44, and P45; and
- instrument penetrations P46 thru P49.

The inspectors reviewed as-built design reports SV3-CNS-S3R-001 and SV3-MV50-S3R-100 to verify certification by a registered professional engineer and contents were in accordance with the requirements of ASME NCA-3260 that include or reference supporting calculations for the design, service, and loading conditions stated in certified

design specifications for ASME Code jurisdictional pressure boundaries. The inspectors also reviewed as-built design reports to verify reconciliation of design output documents for design changes and nonconformance modifications were addressed in accordance with the applicable requirements of ASME NCA-3260 and NCA-3500.

The inspectors reviewed the contents of the ASME N-5 installation data report SV3-CNS-MUR-001 (including SV3-CNS-MJR-001, -MJR-002, and -MJR-003) for the containment system penetration assemblies welded to the pressure boundary to verify data reports were completed and certified with signatures by the certificate holder representative and authorized nuclear inspector (ANI) in accordance with the requirements of ASME NCA-3350 and NCA-8000.

The inspectors reviewed the contents of the quality assurance (QA) record package SV3-MV50-VQQ-003P1P25 for the ASME Section III Class MC containment vessel (equipment tag-No. CNS-MV-01) to verify the N-1 data report was completed and certified with signatures by the certificate holder representative and ANI in accordance with the requirements of ASME NCA-3350 and NCA-8000.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 2.2.02.02a (120) / Family 07F

a. Inspection Scope

The inspectors reviewed the as-built design report and associated ASME N-5 installation data reports for the passive containment cooling system (PCS) to verify the PCS and components were designed, fabricated, constructed, examined, and tested in accordance with design specifications, engineering drawings, and requirements of the 1998 Edition with Addenda up to and including 2000 of the ASME Section III, Division 1, Subsections NCA for general requirements, ND for Class 3 components, and NF for supports. The inspectors specifically reviewed documentation associated with the following components:

- valve within the PV01, twenty PV02, eleven PV03, two PV10, two PV11, and PV13 valve commodities;
- instruments and instrument manifolds within the JE22, JE43, and JZ01 commodities;
- piping, tubing, and valve supports, including Class 3 piping supported by concrete embedments;
- standard piping penetrations (ML05) within the portion of piping system;
- items within jurisdictional boundaries of piping-to-piping (process pipe, inline fittings, flanges) and piping-to-supports (attachments), and
- Class 3 spectacle blind flange (installed during operation) within the PY90 commodity.

The inspectors reviewed certified as-built design report SV3-PCS-S3R-001 to verify it was in accordance with the requirements of ASME NCA-3260 using reference supporting calculations for the design, service, and test loading conditions for jurisdictional pressure boundaries highlighted on piping and instrumentation diagrams

(P&IDs) APP-PCS-M6-001 thru -003. The inspectors verified that reconciliation of design output and input documents for design changes and nonconformances or deviations requiring modifications (including use of Code Cases) were addressed in accordance with the applicable requirements of ASME NCA-3260 and NCA-3500.

The inspectors reviewed the preservice inspection program plan SV3-GW-GEI-100 to verify visual examination, including VT-1 visual testing for discontinuity detection and VT-3 visual testing for general mechanical and structural conditions, were performed on welded anchor attachments and rigid supports of the PCS.

The inspectors reviewed the contents of the ASME N-5 installation data report SV3-PCS-MUR-001 (including SV3-PCS-MJR-003, -004 and -007) for the above components, items, and supports to verify they were completed and certified with signatures by the certificate holder representative and ANI in accordance with the applicable requirements of ASME NCA-3350 and NCA-8000.

b. Findings

No findings were identified.

1A04 (Unit 3) ITAAC Number 2.2.03.01 (158) / Family 14A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.01 (158). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.14-02.01 - General Installation

The inspectors performed an inspection of selected portions of the Unit 3 PXS functional arrangement to verify the as-built system components conform to the system design description of Section 2.2.3 of Appendix C of the Vogtle Unit 3 COL, including Table 2.2.3-5 and Figure 2.2.3-1.

The inspectors performed a walkdown of the passive residual heat removal heat exchanger, core makeup tanks (CMTs), accumulator tanks, pH adjustment baskets, in-containment refueling water storage tank (IRWST), and containment recirculation screens, and selected portions of system piping, valves, and instruments. The walkdowns were performed to assess whether the as-built piping and components were physically arranged consistent with Figure 2.2.3-1 and located as identified in Table 2.2.3-5 of Appendix C of the Vogtle Unit 3 COL, such that the components will support system functions described in the design description of Section 2.2.3 of Appendix C of the Vogtle Unit 3 COL and Section 6.3 of the Vogtle 3 and 4 Updated Final Safety Analysis Report (UFSAR).

The inspectors also reviewed quality records including the principal closure document (PCD), P&IDs, and as-built drawings to verify the RCS functional arrangement.

b. Findings

No findings were identified.

1A05 (Unit 3) ITAAC Number 2.2.03.08c.ix (194) / Family 06A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.ix (194). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.01 - General Installation
- 65001.A- As-Built Attributes for SSCs associated with ITAAC

The inspectors performed an inspection of the insulation installed on the Unit 3 ASME Class 1 piping and components located inside the reactor containment building to verify the type of insulation used is a metal reflective type as specified in Table 2.2.3-4 of Appendix C of the Vogtle Unit 3 COL. In addition, the inspectors performed an inspection of the insulation installed on other piping and components located inside the reactor containment building within the zone of influence (ZOI) and below the maximum flood level of a design basis loss-of-coolant accident (LOCA) to verify the type of insulation used is a metal reflective type as specified in Table 2.2.3-4 of Appendix C of the Vogtle Unit 3 COL.

The inspectors verified the only non-metal reflective insulation within the ZOI and below the maximum LOCA flood level was the neutron shield blocks that form part of the reactor vessel insulation system and the refueling cavity floor. For this installation, the inspectors verified a report exists that concludes the insulation used is a suitable equivalent as described in Section 6.3 of the Vogtle 3 and 4 UFSAR and as required by the acceptance criteria.

The inspectors performed independent walkdowns of the ASME Class 1 portions of the RCS, PXS, chemical and volume control system, and RNS piping and performed an independent assessment to verify the as-built insulation installation was consistent with Section 6.3 of the Vogtle 3 and 4 UFSAR, the mechanical equipment and piping insulation design specification, the pipe line designation tables, and the P&IDs.

The inspectors also performed independent walkdowns of the pressurizer, steam generators, and reactor coolant pumps and performed an independent assessment to verify the as-built insulation installation was consistent with Section 6.3 of the Vogtle 3 and 4 UFSAR, the mechanical equipment and piping insulation design specification, and the P&IDs.

Additionally, the inspectors performed independent walkdowns of other (i.e., non-ASME Class 1) piping and components located inside the reactor containment building located within the ZOI and below the maximum LOCA flood level, and performed an independent assessment to verify the as-built insulation installation was consistent with Section 6.3 of the Vogtle 3 and 4 UFSAR, the mechanical equipment and piping insulation design specification, the pipe line designation tables, and the P&IDs.

b. Findings

No findings were identified.

1A06 (Unit 3) ITAAC Number 2.2.03.12a.i (214) / Family 07E

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.12a.i (214). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.07-02.01 - General Installation
- 65001.07-02.05 - Problem Identification and Resolution
- 65001.E-02.04-Documentation

The inspectors reviewed the EQRRs for Unit 3 containment recirculation and IRWST injection squib valves SV3-PXS-PL-V120A and SV3-PXS-PL-V125B to determine whether the as-built configuration, including anchorage and electrical connections were bounded by the as-tested conditions, per Appendix C of the Unit 3 COL.

The inspectors reviewed the equipment qualification summary reports and equipment qualification data packages to determine whether installation requirements were translated to the drawings and WPs. The inspectors reviewed the licensee's methodology and applicable WPs, design changes, and nonconformances to confirm work orders, data sheets, and design drawings which reflected the as installed PXS squib valves were bounded by the design analysis and tested configuration.

The inspectors performed a walkdown of the as-built squib valves to determine whether the valves were installed as tested so the valves would change position as required during a design basis accident. The inspectors examined the as-built squib valves to verify each valve’s make/model/serial number, mounting orientation and location. The inspectors also verified the mechanical and electrical connections were bounded by the analyzed and tested conditions.

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

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC Number 3.3.00.01 (759) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.01 (759). The inspectors used the following NRC IP/section to perform this inspection:

- 65001.A- As-Built Attributes for SSCs associated with ITAAC

The inspectors performed an inspection of the Unit 3 as-built nuclear island structures, the annex building, the radwaste building, the turbine building, and the diesel generator building to verify the structures conform with the physical arrangement described in the Design Description of Section 3.3 of Appendix C of the Vogtle Unit 3 COL, including Figures 3.3-1 through 3.3-14.

The inspectors performed walkdowns of selected portions of the containment building, auxiliary building, shield building, and annex building to assess whether the as-built structures were physically arranged consistent with Figures 3.3-1 through 3.3-14 of Appendix C of the Vogtle Unit 3 COL. Additionally, the inspectors performed independent walkdowns of other selected portions of the containment building, auxiliary building, shield building, annex building, radwaste building, turbine building, and diesel generator building to assess whether the as-built structures were physically arranged consistent with Figures 3.3-1 through 3.3-14 of Appendix C of the Vogtle Unit 3 COL.

The inspectors also reviewed quality records including the PCD and architectural drawings to verify the as-built structures conformed with the Design Description of Section 3.3 of Appendix C of the Vogtle Unit 3 COL and Figures 3.3-1 through 3.3-14.

b. Findings

No findings were identified.

1A08 (Unit 3) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

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

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

The inspectors reviewed the CA20 module as-built summary report along with those portions of the nuclear island basemat and auxiliary building as-built summary reports applicable to the radiologically controlled area of the auxiliary building to verify if the reports document that the acceptance criteria of ITAAC 3.3.00.02a.i.d were met. Specifically, the inspectors reviewed the reports to verify if the reports reconciled deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concludes that the as-built 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 (SR) functions, and without impacting compliance with the radiation protection licensing basis.

The inspectors verified if the as-built summary reports addressed deviations to the standard plant issued after the effective date of the as-designed summary reports as well as, unit-specific deviations.

The inspectors reviewed Table 3-2 of the CA20 module as-built summary report and Tables 3-2, 3-3, 3-4, and 3-5 of the auxiliary building as-built summary report to verify if margin existed in the structural components and connections after reconciliation of deviations to the standard plant issued after the effective date of the as-designed summary reports and site specific nonconformance and disposition reports (N&Ds) and E&DCRs.

Additionally, the inspectors reviewed Tables 4-1 and 4-2 of the CA20 module and auxiliary building as-built summary reports, respectively, to determine if the as-built construction met the concrete wall thicknesses and radiation shielding requirements of Vogtle 3 and 4 UFSAR Table 3.3-1 and any localized deviations from UFSAR Table 3.3.-1 were evaluated and reconciled to the approved design.

b. Findings

No findings were identified.

1A09 (Unit 3) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

The inspectors performed a review of the licensee's corrective actions associated with noncited violation (NCV) 05200025/2021006-01, "Failure to Follow Procedure BGEN-ITPA-004," documented in Inspection Report 05200025/2021006 (ML21314A277). The review was to determine whether the corrective actions taken by the licensee were complete and sufficient to address the issue and ensure the acceptance criteria for the related ITAAC could be met. Specifically, this violation was associated with the licensee's failure to follow its procedural guidance for troubleshooting external leakage from the Unit 3 spent fuel pool (SFP) and fuel transfer canal (FTC). The performance deficiency resulted in over-pressurization of the leak chases and adjacent floor liner plates within the SFP and FTC, causing damage to the floor liner plates and structural module wall face plates near the leak chases. Corrective actions for this issue included repairs to the SFP and FTC liner, the leak chase, and the surrounding structural modules to return them into conformance with the design. The violation represented an ITAAC finding because it was material to the acceptance criteria of ITAAC 3.3.00.02a.i.d (763) and prevented the licensee from meeting an ITAAC Design Commitment.

The inspectors reviewed N&D SV3-CA20-GNR-001091 and associated corrective actions taken to address this issue to verify that the nonconforming conditions were appropriately evaluated, approved, and dispositioned in accordance with applicable technical and QA requirements. The inspectors observed welding and reviewed

documents for replacing all floor liner plates at the bottom of the SFP to verify welding and inspection activities performed by PCI Energy Services (PCI) were performed in accordance with the requirements of the Westinghouse Electric Corporation (WEC) specification APP-GW-Z0-105 and American Welding Society (AWS) D1.6:1999 Structural Welding Code for Stainless Steel.

The inspectors reviewed certified material test reports (CMTR) of the new duplex stainless steel floor liner plates and weld filler metals to verify chemical analysis and mechanical properties were in accordance with the requirements of AWS D1.6, Clause 1 – General Provisions.

The inspectors reviewed welding procedure specifications (WPSs) for machine and manual gas tungsten arc welding (GTAW) with supporting procedure qualification records (PQR) to verify testing and certifications were performed and maintained in accordance with AWS D1.6, Clause 4 – Qualification.

The inspectors reviewed performance qualification records of welding operators and welders with maintenance logs to verify testing and certifications were performed and maintained in accordance with AWS D1.6, Clause 4 – Qualification.

The inspectors observed partial plasma arc cutting of the original floor weld joint T-shaped backing bars and end-caps that were located inside the leak chases to verify removal of obstructions interfering with the new weld joint rectangular backing bars. On occasions, the inspectors observed vacuum cleaning before installation of the new wider floor liner plates to verify cleanliness was maintained to prevent compromising the effectiveness of the SFP leak chase detection system.

The inspectors reviewed surface base metal repair records and liquid penetrant examinations performed on the north face of the SFP wall to verify the following were in accordance with AWS D1.6, Subclause 5.13 – Base Metal Repairs by Welding for SR systems:

a) Traceability of weld filler metals and manual welders; and
b) Established quality control (QC) inspection hold points were signed-off for:

- initial visual (VT) and liquid penetrant (PT) inspections of excavated areas;
- preheat and cleanliness prior to start of welding;
- VT and PT of completed repair welds; and
- final ultrasonic thickness testing (UTT) measurements.

The inspectors reviewed PCI final PT and UTT inspection reports to verify the north wall surface base metal repair examinations and final thickness measurements were performed with acceptable results in accordance with AWS D1.6, Clause 6 – Inspection

The inspectors reviewed PCI QC inspector records to verify annual visual acuity examinations and Level II certifications for VT, PT, and digital UTT were maintained at the time of examinations in accordance with the guidelines of the American Society of Nondestructive Testing (ASNT) Recommended Practice SNT-TC-1A "Personnel Qualification and Certification in Nondestructive Testing" and AWS D1.6, Clause 6 – Inspection.

The inspectors observed SFP floor-to-wall and floor-to-floor complete joint penetration (CJP) cleanliness, groove weld preparations, fit-up and tacking of backing bars, and in-process machine and manual GTAW performed by PCI to verify welding parameters and techniques were within the ranges specified for the root and fill weld passes in accordance with the PCI WPSs and AWS D1.6, Clause 5 – Fabrication.

The inspectors reviewed the Structural Integrity Associates (SIA) nondestructive examination (NDE) phased-array ultrasonic testing (PAUT) procedure along with annual visual acuity records, Level II certification records, and examination reports for 10% of CJP groove welds to verify data acquisitions and analyses were performed and accepted by the appropriate level of NDE personnel in accordance with SNT-TC-1A, AISC N690:1994, and AWS D1.6, Clause 6 – Inspection.

The inspectors reviewed the MISTRAS vacuum box testing (VBT) procedure along with the annual visual acuity record, NDT Level II certification records, and examination reports to verify solution film VBT was performed with acceptable results in accordance the American Petroleum Institute (API) 650:1984 “Welded Tanks for Oil Storage.”

The resident inspectors observed area cleaning and set up as a foreign material exclusion zone, and the subsequent satisfactory leak testing of the SFP and FTC.

Based on the review described above, the inspectors determined the licensee took the necessary corrective actions to restore compliance of the SFP and FTC to their respective design bases. The violation and the potential impacts to ITAAC 3.3.00.02a.i.d (763) have been addressed such that the finding is no longer material to the acceptance criteria of the ITAAC. NCV 05200025/2021006-01, “Failure to Follow Procedure BGEN-ITPA-004,” is now closed.

1A10 (Unit 3) ITAAC Number 3.3.00.07ab (790) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07ab (790). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.01 - Physical Separation of Cables
- 65001.09-02.03 - Documentation
- 65001.09-02.04 - Problem Identification and Resolution

The inspectors performed a direct inspection of raceways inside the main control room (MCR) and the remote shutdown room (RSR). The inspectors conducted walkdowns of raceways inside the MCR and RSR to verify the raceways and cables were identified by the appropriate color code and that the division cables were routed in their respective raceways. The inspectors reviewed construction specifications, installation procedures, written instructions, drawings, WPs, and quality control inspection reports to verify the SR Class 1E raceways were installed and designed in accordance with installation requirements.

Specifically, the inspectors performed inspections of the following cable trays and conduits:

- SV3-1232-ER-BZB34
- SV3-1232-ER-BZC13
- SV3-1232-ER-BZT02A
- SV3-1232-ER-BXT01AA
- SV3-1232-ER-BXS49
- SV3-1232-ER-BXS50
- SV3-1232-ER-BXS51
- SV3-1232-ER-BXS52
- SV3-1242-ER-AXC05
- SV3-1242-ER-AZT04A
- SV3-1242-ER-BZT01C
- SV3-1242-ER-CZC05
- SV3-1242-ER-CZT03A
- SV3-1242-ER-DXC02
- SV3-1242-ER-DZT01C

b. Findings

No findings were identified.

1A11 (Unit 3) ITAAC Number 3.3.00.07d.i (799) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07d.i (799). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.01 - Physical Separation of Cables
- 65001.09-02.03 - Documentation
- 65001.09-02.04 - Problem Identification and Resolution

The inspectors performed a direct inspection of raceways inside the MCR and the RSR. The inspectors conducted walkdowns of raceways inside the MCR and RSR to verify separation between raceways that route SR Class 1E cables of different divisions, and between raceways that route SR Class 1E cables and raceways that route non-Class 1E cables. The inspectors reviewed construction applicable specifications, installation procedures, written instructions, drawings, WPs, and quality control inspection reports to verify the Class 1E raceways were designed and installed in accordance with installation requirements and Institute of Electrical and Electronic Engineers (IEEE) 384-1981 code requirements. The inspectors also reviewed cable tray installations to verify cable fill design requirements.

Specifically, the inspectors performed inspections of the following cable trays and conduits:

- SV3-1232-ER-BZB34
- SV3-1232-ER-BZC13

- SV3-1232-ER-BZT02A
- SV3-1232-ER-BXT01AA
- SV3-1232-ER-BXS49
- SV3-1232-ER-BXS50
- SV3-1232-ER-BXS51
- SV3-1232-ER-BXS52
- SV3-1242-ER-AXC05
- SV3-1242-ER-AZT04A
- SV3-1242-ER-BZT01C
- SV3-1242-ER-CZC05
- SV3-1242-ER-CZT03A
- SV3-1242-ER-DXC02
- SV3-1242-ER-DZT01C

b. Findings

No findings were identified.

1A12 (Unit 3) ITAAC Number 3.3.00.07d.iv.a (806) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07d.iv.a (806). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.01 - Physical Separation of Cables
- 65001.09-02.03 - Documentation
- 65001.09-02.04 - Problem Identification and Resolution

The inspectors interviewed responsible personnel and reviewed analyses and reports associated with cable separation for areas inside containment of distances less than those required by IEEE 384-1981, which is allowed by code if cables are analyzed and determined that the effects of less than 1-inch separation does not impact the circuits' function. Specifically, the inspectors reviewed the analysis for fiber optic cabling within the protection and safety monitoring system (PMS) and other Class 1E raceways. The analyses demonstrated that the effects of separation less than required by the IEEE standard do not impact the ability of SR Class 1E circuits to perform their SR functions.

b. Findings

No findings were identified.

1A13 (Unit 3) ITAAC Number 3.3.00.07d.iv.b (807) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07d.iv.b (807). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.01 - Physical Separation of Cables
- 65001.09-02.03 - Documentation
- 65001.09-02.04 - Problem Identification and Resolution

The inspectors interviewed responsible personnel and reviewed analyses and reports associated with cable separation for areas inside the non-radiologically controlled area of the auxiliary building of distances less than those required by IEEE 384-1981, which is allowed by code if cables are analyzed and determined that the effects of less than 1-inch separation does not impact the circuits' function. Specifically, the inspectors reviewed the analysis for fiber optic cabling within the PMS and other Class 1E raceways. The analyses demonstrated that the effects of separation less than required by the IEEE standard do not impact the ability of SR Class 1E circuits to perform their SR functions.

b. Findings

No findings were identified.

1A14 (Unit 3) ITAAC Number 3.3.00.07d.iv.c (808) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07d.iv.c (808). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.01 - Physical Separation of Cables
- 65001.09-02.03 - Documentation
- 65001.09-02.04 - Problem Identification and Resolution

The inspectors interviewed responsible personnel and reviewed analyses and reports associated with cable separation for areas inside the radiologically controlled area of the auxiliary building of distances less than those required by IEEE 384-1981, which is allowed by code if cables are analyzed and determined that the effects of less than 1-inch separation does not impact the circuits' function. Specifically, the inspectors reviewed the analysis for fiber optic cabling within the PMS and other Class 1E raceways. The analyses demonstrated that the effects of separation less than required by the IEEE standard do not impact the ability of SR Class 1E circuits to perform their SR functions.

b. Findings

No findings were identified.

1A15 (Unit 3) ITAAC Number 3.3.00.07d.v.a (809) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07d.v.a (809). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.01 - Physical Separation of Cables
- 65001.09-02.03 - Documentation
- 65001.09-02.04 - Problem Identification and Resolution

The inspectors performed walkdown inside containment and reviews of analyses and reports associated with cable separation for areas inside containment of distances less than those required by IEEE 384-1981, which is allowed by code if cables are separated by a barrier or are analyzed and considered as associated circuits and subject to SR Class 1E requirements. The inspection confirmed that non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance, by a barrier, or analyzed is considered as associated circuits and subject to Class 1E requirements. Specifically, the inspectors sampled the circuits in the containment building at the incore instrument thimble assembly for the non-Class 1E signal processing system associated with Class 1E core exit thermocouples.

b. Findings

No findings were identified.

1A16 (Unit 3) ITAAC Number 3.3.00.07d.v.b (810) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07d.v.b (810). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.01 - Physical Separation of Cables
- 65001.09-02.03 - Documentation
- 65001.09-02.04 - Problem Identification and Resolution

The inspectors performed walkdown of the non-radiologically controlled area of the auxiliary building and reviews of analyses and reports associated with cable separation for areas inside the auxiliary building in the MCR and RSR of distances less than those required by IEEE 384-1981, which is allowed by code if cables are separated by a barrier or are analyzed and considered as associated circuits and subject to SR Class 1E requirements. The inspections confirmed that non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance, by a barrier, or analyzed is considered as associated circuits and subject to Class 1E requirements. Specifically, the inspectors sampled the associated circuits inside the MCR and RSR for lighting cables routed from double fuse panels SV3-IDSB-EA-5 and SV3-IDSC-EA-5 to dimmer switches SV3-ELS-EL-SB31 and SV3-ELS-EL-SC31 and all downstream lighting fixtures.

b. Findings

No findings were identified.

1A17 (Unit 3) ITAAC Number 3.3.00.07d.v.c (811) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07d.v.c (811). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.09-02.01 - Physical Separation of Cables
- 65001.09-02.03 - Documentation
- 65001.09-02.04 - Problem Identification and Resolution

The inspectors performed reviews of analyses and reports associated with cable separation for areas inside the radiologically controlled area of the auxiliary building of distances less than those required by IEEE 384-1981, which is allowed by code if cables are separated by a barrier or are analyzed and considered as associated circuits and subject to SR Class 1E requirements. The inspectors noted that the current design and installation did not have associated circuits inside the radiologically controlled area of the auxiliary building.

b. Findings

No findings were identified.

1A18 (Unit 3) ITAAC Number 3.3.00.10.ii (816) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.10.ii (816). 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

The inspectors reviewed the PCS tank measurement acceptance criteria to verify if the criteria developed was based on structural analysis, and was measurable, and sufficient to determine if the structural behavior of the conical roof under normal loads was acceptable, after filling the PCS storage tank.

The inspectors reviewed the PCS storage tank structural behavior inspection report to verify if inspection and measurement of the PCS storage tank and the tension ring structure, before and after filling of the tank, showed structural behavior under normal loads to be acceptable. Specifically, the inspectors verified that the measured deflection of the conical roof structure after filling the tank was within the acceptable range accounting for temperature effects and measurement tolerances.

The inspectors also reviewed the PCS storage tank structural behavior inspection report and verified that the report concluded there was not any visible water leakage from the PCS storage tank through the concrete and/or excessive cracking in the boundaries of the PCS storage tank and shield building roof above the tension ring were observed after filling of the tank.

b. Findings

No findings were identified.

1A19 (Unit 4) 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.C-02.02 - Construction Test Observation
- 65001.C-02.03 - Construction Test Record Review

The inspectors reviewed records associated with three hydrostatic pressure tests of portions of the spent fuel cooling system (SFS) that penetrate the containment from the auxiliary building. The inspectors also observed a hydrostatic test and reviewed test records for portions of the compressed and instrument air systems (CAS) that penetrate containment. The inspectors reviewed work package instructions for piping and components (valves) to verify pressure testing was performed in accordance with ASME Section III, 1998 Edition, including the 2000 Addenda, Subsection NC – "Class 2 Components," Article 6000, "Testing. Specifically, the inspectors reviewed the WPs to determine if the following test attributes were included for the piping systems:

- system boundaries were established for all applicable pressure piping and valves with weld locations and fill/vent end points for filling/draining operations;
- valve lineup positions for pressure test prerequisites and post-test restored conditions were signed off and dated;
- pressure gages calibrated to appropriate range and scale for the test were installed;
- manually operated relief valves were installed with a set pressure;
- demineralized water quality grade "A," was used within a metal temperature range of 40-120 F measured at the metal surface and was above the nil-ductility temperature;
- hydrostatic test pressure of 1.25 times the design pressure was maintained for a minimum of 10 minutes;
- examination of leakage was performed at greater than design pressure;
- hydrostatic test pressures did not exceed the maximum permissible test pressure of any component in the system boundaries; and
- examination for leakage included all uninsulated flanges and weld joints, connections, and regions of high stress.

The inspectors reviewed Stone & Webster (S&W) pressure test data sheets for SV4-SFS-TH-H9001A, SV4-SFS-TH-H9002A, SV4-SFS-TH-H9003A and SV4-CAS-THW-1090506 with supporting documents to verify the digital thermometer and two digital pressure gages used during each test were calibrated and the pressure test gages were within test tolerance range. The inspectors verified all pressure tests were independently witnessed by the ANI and QC inspector with the results reviewed and approved by the test engineer and test director in accordance with the ASME BPV Code Section III, Subarticles NC-6100, "General Requirements," NC-6200, "Hydrostatic Tests," and Subsection NCA-5280, "Final Tests." Further, the inspectors reviewed calibration records of the test pressure gages to determine if the calibrations were performed in accordance with Section NC-6413, "Calibration of Pressure Test Gages."

b. Findings

No findings were identified.

1A20 (Unit 4) ITAAC Number 2.2.03.08c.xii (197) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.xii (197). The inspectors used the following NRC IPs/sections to perform this inspection:

- 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 as-built inspection of the Unit 4 CMT upper level sensing lines for both CMTs associated with level sensors PXS-11A/B/D/C, 12A/B/C/D, 13A/B/C/D, and 14A/B/C/D to verify the ITAAC. The inspectors performed a walkdown of the CMT level sensing lines, and observed the licensee performing measurements or surveys of the level sensing lines. The inspectors also performed an independent assessment to verify the as-built piping was consistent with the approved design requirements. In addition, the inspectors reviewed quality records including the PCD, design drawings, and survey results to determine whether the upper level sensing lines for the CMTs had a minimum downward slope of 2.4 degrees from the centerline of the connection to the CMT to the centerline of the connection to the standpipe as specified in Table 2.2.3-4 of Appendix C of the Vogtle Unit 4 COL.

b. Findings

No findings were identified.

1A21 (Unit 4) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.F-02.01-Design Document Review

The inspectors observed the main top and bottom reinforcing bars installed in Area 6 of the auxiliary building roof slab at approximate elevation 180 feet -0 inches between column lines K-2, N, 1 and 4 to verify if the sizes, spacing, material designation, grade, lap splices, and layout of the bars were consistent with the applicable design drawings, E&DCRs, construction specification SV4-CC01-Z0-31, and ACI 349-01.

The inspectors reviewed E&DCR APP-1260-GEF-850026 to verify that design changes made to the roof slab reinforcing steel were performed in accordance with Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control." Specifically, that 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.

b. Findings

No findings were identified.

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

1P01 Construction QA Criterion 16

- 35007-A16 - Appendix 16. Inspection of Criterion XVI – Corrective Action

a. Inspection Scope

The inspectors reviewed corrective actions taken in response to condition reports (CRs) 50088883, 50090119, and 50099082 pertaining to the lack of cable separation inside of SR panels. The inspectors performed a walkdown of the corrective actions taken inside of the Class 1E dc and uninterruptible power supply system (IDS) 'C' regulating transformer panel SV3-IDSC-DT-1.

b. Findings

Introduction

NRC inspectors identified a construction finding of very low safety significance (Green) and an associated NCV of 10 CFR, Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to identify and correct conditions adverse to quality pertaining to IEEE 384 cable separation issues inside IDS regulating transformer panel SV3-IDSC-DT-1.

Description

During an NRC panel cable separation inspection on October 20, 2021, the inspectors identified that IDS 'C' regulating transformer panel SV3-IDSC-DT-1 did not maintain the 1-inch separation required for SR and nonsafety-related (NSR) cables as stated in electrical installation specification APP-G1-V8-001, Appendix B2, "Separation and Segregation Spacing Requirements." The following two conditions were identified:

1. NSR cable DT1CXN utilizes a vendor supplied wireway which contained SR cables. CR 50111736 states that this condition was detected during the original extent of condition inspection for the panel in CR 50104589 but was inadvertently left out of the CR.
2. Separation was not maintained between NSR vendor jumpers that are permanently installed and field installed SR wiring SV3-IDSC-EW-EA2CXC. This condition was identified in CR 50104589 but not adequately corrected since the corrective actions taken resulted in a similar violation with the same vendor jumpers and another conductor of SV3-IDSC-EWEA2CXC.

The licensee entered these issues into their corrective action program (CAP) as CR 50117479.

Analysis

The inspectors determined the failure to identify and correct conditions adverse to quality pertaining to IEEE 384-1981 cable separation issues inside IDS regulating transformer panel SV3-IDSC-DT-1 was a performance deficiency (PD). The PD was determined to be more than minor because if left uncorrected, the PD represented an adverse condition that rendered the quality of the safety function associated with IDS unacceptable or indeterminate and required substantive corrective action. Specifically, the failure to maintain physical separation between SR and NSR cables inside IDS 'C' regulating transformer panel SV3-IDSC-DT-1 rendered the capability of the regulating transformer to provide electrical isolation between the NSR main AC power system and SR Class 1E 250 VDC circuits and the SR Class 1E uninterruptible power supply circuits indeterminate in the event of a single failure on the NSR cable. This violation was determined to be a construction finding.

The inspectors determined the finding was associated with the Construction/Installation cornerstone of the Construction Reactor Safety strategic performance area. The inspectors assessed the finding using IMC 2519, Appendix A, "AP1000 Significance Determination Process," dated October 26, 2020, and determined this finding was not associated with a security program; it was not associated with an IMC 2504 operational/construction program; and it was not associated with a repetitive, NRC-identified omission of a program critical attribute. The finding was of very low safety significance (Green) because the finding was associated with the IDS system and if left uncorrected it could reasonably be expected to impair the design function of only one train of a multi-train system.

In accordance with IMC 0613, Appendix F, Construction Cross-Cutting Areas and Aspects," the inspectors determined the finding had a cross-cutting aspect of Work Management, in the area of Human Performance, because the licensee failed to implement a process of planning, controlling, and executing work activities such that

nuclear safety was the overriding priority. Specifically, the licensee failed to have a process in place for QC to verify all cable separation nonconformances were addressed inside the panel. [H.5]

Enforcement

10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” requires in part, that measures be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to above, on October 20, 2021, the licensee did not identify and correct conditions adverse to quality pertaining to IEEE 384 cable separation issues inside IDS regulating transformer panels SV3-IDSC-DT-1. Specifically, NSR cable DT1CXN was routed in a vendor supplied wireway which contained SR cables. This condition was not identified in CR 50104589, which was initiated to capture nonconformances during the performance of IEEE 384 separation extent of condition. Additionally, separation was not maintained between permanently installed NSR vendor jumpers and field installed SR wiring SV3-IDSC-EW-EA2CXC. This condition was identified in CR 50104589 but not adequately corrected since the corrective actions taken resulted in the same vendor jumpers not being adequately separated from another conductor of SV3-IDSC-EWEA2CXC. This finding did not present an immediate safety concern because the plant was not operating, and the reactor vessel did not have fuel in it. The licensee entered this issue into its CAP as CR 50117479. Because this violation was not repetitive or willful, was of very low safety significance, and was entered into the licensee’s CAP, this violation is being treated as an NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200025/2021007-01, Failure to Correct Cable Separation issues in panel SV3-IDSC-DT-1).

1P02 Construction QA Criterion 16

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

a. Inspection Scope

The inspectors reviewed issues entered into the licensee's CAP daily to assess issues that might warrant additional follow-up inspection, to assess repetitive or long-term issues, to assess adverse performance trends, and to verify the CAP appropriately included regulatory required NSR structure, system, and component (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 Part 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.

1P03 Construction QA Criterion 16

- 35007-A16 - Appendix 16. Inspection of Criterion XVI – Corrective Action - 0 samples

a. Inspection Scope

Inspectors performed walkdowns of IDS panels in Divisions B and D to determine if internal field wiring was installed per requirements of IEEE 384-1981, “Standard Criteria for Independence of SR Class 1E Equipment and Circuits”. Specifically, inspectors traced SR wiring to determine if at least 1-inch of separation from NSR wiring was maintained within the panels. General installation of cabling and wiring was assessed to verify compliance with the requirements of design drawings and specifications. The inspectors performed visual inspections of 15 panels that included the following types:

- 120AC distribution panels;
- fuse panels;
- 250VDC switchboard;
- AC inverters;
- battery chargers; and
- 250VDC motor control center

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA3 Follow-up of Licensee Reports, URIs, NCVs, and VIOs

.1 35007-A12 - Appendix 12. Inspection of Criterion XII – Control of Measuring and Test Equipment
IP 40600 – Licensee Program For Managing ITAAC Closure – Section 02.03 ITAAC Maintenance Controls

a. Inspection Scope

The inspectors performed an inspection of the licensee's measuring and test equipment (M&TE) program at Vogtle Units 3 and 4 to verify the adequacy and effectiveness of the licensee's corrective actions to address a significant QA breakdown in the M&TE program, as reported to the NRC on June 25, 2021, by the licensee as a 10 CFR 50.55(e) notification. The inspectors reviewed the licensee's and its contractor's QA program procedures that govern implementation of the M&TE program to verify compliance with the requirements of 10 CFR Part 50, Appendix B, Criterion XII, "Control of Measuring and Test Equipment."

The inspectors reviewed CAP procedures and records to determine if the procedures were implemented in accordance with QA program description requirements commitments for the identification, evaluation, and resolution of conditions adverse to quality affecting the control and use of M&TE. The inspectors reviewed CRs, corrective action reports, technical evaluations, level of effort cause determination summary, and extent of condition documents associated with the licensee's identified condition where out of calibration reports (OCR) were not timely initiated and processed. The inspectors reviewed these documents and procedures to assess the corrective actions for completeness, appropriate priority level, applicable preventive measures, and adequacy in addressing the causes and extent of condition, including generic implications, common cause, and previous occurrences.

The inspectors performed walkdowns of the onsite M&TE calibration facility to verify M&TE had been calibrated, identified, handled, stored, and maintained at prescribed calibration intervals prior to use. The inspectors observed handling and storage of calibrated M&TE standards to verify they were handled with care and stored in their original cases to maintain accuracy. The inspectors observed calibration of M&TE to verify they were calibrated before their due dates, in a controlled environment, using calibrated traceable standards and an approved procedure by a qualified M&TE quality control engineer (QCE). The inspectors reviewed sample calibration records to verify they included the as-found and as-left conditions, accuracy requirements, tolerances, calibration results, calibration dates, calibration procedure, and calibration standard used. In addition, the inspectors observed storage of M&TE to verify the M&TE QCE segregated, documented, and evaluated when M&TE was found out of calibration, out of tolerance, lost, or out of service.

The inspectors performed a walkdown of the Units 3 and 4 M&TE satellite distribution facilities to verify the M&TE check-in/check-out process was controlled by authorized personnel who utilized the M&TE tracking database. The inspectors reviewed M&TE issue receipts to verify the M&TE issued was within the calibration due date and the tolerance range for use. The inspectors reviewed M&TE return receipts to verify the M&TE returned were the ones issued and were returned in a timely manner in accordance with the requirements of 26139-000-4MP-T81C-N7102, "Control of Measuring and Test Equipment," procedure. The inspectors reviewed M&TE issued to WPs that were not returned by their M&TE calibration due dates to verify CRs were initiated and dispositioned in a timely manner under the licensee's CAP. In addition, the inspectors interviewed the M&TE QCE lead responsible for notifying construction supervisors for return of M&TE within their calibration due date. The inspectors reviewed the notifications and verified they contained lists of M&TE with associated calibration due dates sent to construction supervisors.

The inspectors reviewed and evaluated the licensee's M&TE tracking database to verify it was maintained by authorized personnel and controlled the issuance of M&TE in accordance with 26139-000-4MP-T81C-N7102 procedure. The inspectors reviewed M&TE released to a WP to verify the tracking database and calibration records indicated the M&TE had been calibrated at prescribed intervals and, if the interval was adjusted a technical justification was provided for a change in calibration frequency. The inspectors reviewed the calibration records to verify the M&TE were calibrated using known industry standards to verify they had the accuracy, stability, range, and resolution required for the items being calibrated. The inspectors also selected M&TE whose accuracy was found to be suspect or out of tolerance to verify OCRs were initiated and appropriate corrective action was recommended for repair, replacement, or re-calibration to bring the M&TE to within their specified accuracy and tolerance range of use. The inspectors reviewed calibration records for M&TE that were consistently found out of calibration during re-calibration to verify repairs or replacement of the M&TE was performed in accordance with quality control instruction 26139-2QI-Q07C-N7102, "Control of Measuring and Test Equipment." The inspectors interviewed calibration personnel to verify their role was understood and met procedure requirements for maintaining the tracking database. In addition, the inspectors reviewed qualification and training records to verify QCEs were trained to conduct the calibrations and interviewed on-site calibration lab supervisors to verify they understood the potential impact of M&TE to the ITAAC acceptance criteria.

The inspectors selected M&TE from the tracking database that was recently taken out of service because of a nonconforming condition, including being out of calibration, lost, or damaged. The inspectors reviewed OCRs for M&TE that were out of calibration, lost, broken, or out of tolerance to verify reports had been processed and evaluated in a timely manner to minimize a backlog. The inspectors verified in each instance a CR was initiated and evaluated in a timely manner to evaluate previous use of the M&TE. The inspectors verified the licensee either documented an evaluation or was planning on performing an evaluation to address the validity of previous inspections, tests, and status determinations performed since the last calibration in conjunction with the corrective actions. The inspectors reviewed CRs to verify short term corrective actions were effective and the QA process was being followed for processing nonconforming M&TE. The inspectors verified M&TE discrepancies documented in the CAP were appropriately addressed with respect to ITAAC completion. The inspectors verified CRs that could impact ITAAC acceptance criteria were assigned an ITAAC event code so the CRs could be appropriately tracked, and corrective actions implemented.

The inspectors verified a process was in place for evaluating OCRs and their impact to ITAAC. Specifically, the inspectors reviewed OCRs from the backlog M&TE database associated with ITAACs to verify the licensee evaluated whether M&TE discrepancies impacted completion of the ITAAC. This review included OCRs for those ITAACs where the licensee determined M&TE did not impact completion of the ITAAC and those ITAACs where this determination had not yet been made. The inspectors' review included whether the licensee appropriately determined if use of the M&TE was associated with an ITAAC. The inspectors reviewed completed ITAAC closure notifications (ICNs) where the ITAAC acceptance criteria depended on the use of calibrated M&TE. The review included the verification that any M&TE used was calibrated. In addition, the inspectors interviewed ITAAC project manager, ITAAC engineers, field closure engineers, Bechtel supervisors and M&TE QCE to verify nonconforming M&TE were appropriately evaluated in the OCRs for any impact to ITAACs.

On June 25, 2021, the licensee made a 10 CFR 50.55(e) notification to the NRC's Headquarters Operations Center (Event Notification 55328) regarding electrical construction and M&TE control at Vogtle Units 3 and 4. The NRC was also notified in a letter, ND-21-0603, "Southern Nuclear Operating Company Vogtle Electric Generating Plant Units 3 and 4 Submittal of 10 CFR 50.55(e) Report Regarding Electrical Construction and Measuring & Test Equipment Control" (ADAMS Accession No. ML21176A200). The licensee determined that the nonconformances related to IEEE 384-1981 cable separation and seismic/structural provisions for the SR cable raceway systems, including M&TE nonconformances, met the criteria of a significant breakdown in the QA program.

In accordance with IMC 0613, "Power Reactor Construction Inspection Reports," dated November 4, 2020, Construction Deficiency Report (CDR) 05200025 and 05200026/ND-21-0603, was opened by the NRC, to track closure of Southern Nuclear Operating Company's (SNC's) 10 CFR 50.55(e) notification ND-21-0063 "Electrical Construction and Measuring & Test Equipment Control." The cable separation issues were inspected, and results were documented in inspection reports 05200025/2021010, 05200026/2021010 (ML 21236A057) and inspection report 05200025/2021011 (ML21312A412).

This report documents the inspection of the M&TE issue of the CDR. The inspectors found one PD during review of the OCRs, where the inspectors identified a failure to assess a lost multimeter used in two work orders. The PD resulted in a minor violation of NRC regulatory requirements.

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

Contrary to the above, on December 17, 2021, SNC failed to perform activities that affected quality in accordance with Section 6.6, "On-Site-Calibration," of 26139-000-4MP-T81C-N7102, "Control of Measuring and Test Equipment," Revision 5, when performing evaluation of an out-of-calibration condition of a M&TE. Specifically, the licensee evaluated the impact of the M&TE against an incorrect work order and failed to assess the impact of the lost M&TE in two work orders for which the M&TE was used. When this was identified, the licensee assessed the impact of the lost multimeter on the two work orders and determined there was no impact to the work performed. Because this PD is non-repetitive, had no safety significance nor any consequence, in that, it did not leave any quality process or construction activity indeterminate or unacceptable the PD was identified as a minor violation. The minor violation was not associated with ITAAC. This issue has been captured in the CAP as CR 50118356.

As a result of the inspection results, CDR 05200025 and 05200026/ND- 21-0603 is closed.

b. Findings

No findings were identified.

.2 (Closed) NCV 05200025/2021005-03, Failure to Demonstrate Qualification of Valve Nonmetallic Parts

The inspectors performed a document review of the licensee's corrective actions for NCV 05200025/2021005-03, "Failure to Demonstrate Qualification of Valve Nonmetallic Parts," which was documented in NRC Inspection Report 05200025/2021005, 05200026/2021005 (ML21314A277). The review was to determine whether the corrective actions taken by the licensee were sufficient to address the issue and to verify the acceptance criteria for the related ITAAC could be met. The violation was associated with the licensee's failure to demonstrate that certain valves would be able to perform their design basis function for their qualified life duration.

The violation represented an ITAAC finding because it was material to the acceptance criteria of ITAAC 2.2.04.05a.i (226) and 2.1.02.05a.i (19), in that, if left uncorrected, the licensee may not have been able to demonstrate the acceptance criteria of the ITAAC was met. The acceptance criteria of this ITAAC requires that the components listed in Tables 2.2.4-1 and 2.1.2-1 can withstand the environmental conditions that would exist before, during, and after a design basis accident without loss of safety function for the time required to perform the safety function.

The inspectors reviewed E&DCR SV0-PV00-GEF-014 to verify environmental qualification program changes to define and document the qualified life analysis for nonmetallic valve parts, specifically for Viton seals used in the PV64, PV67, and PV70 valve assemblies. The qualified life analysis concluded the Viton seals used in the PV64 and PV67 valve assemblies can perform the safety function until they are replaced with the valve actuator. The qualified life analysis concluded the Viton seals used in the PV70 valve assemblies will need to be replaced on a shorter timeframe than the actuator to ensure the safety function can be performed. As a result, the preventative maintenance program for the Viton seals used in the PV70 valve assemblies will be revised to ensure replacement occurs on the shorter timeframe. The E&DCR approved adding the qualified life analysis of the Viton seals to the following environmental qualification program documents:

- APP-PV64-VBR-011, Revision 0
- APP-PV64-VBR-012, Revision 0
- APP-PV67-VBR-011, Revision 0
- APP-PV67-VBR-012, Revision 0
- APP-PV70-VBR-002, Revision 1
- APP-PV70-VBR-003, Revision 1
- APP-PV70-VBR-004, Revision 1
- APP-PV70-VBR-005, Revision 1

Based on the review described above, the inspectors determined the licensee took corrective actions to address the violation and the potential impacts to the ITAAC have been appropriately addressed such that the acceptance criteria of ITAAC 2.2.04.05a.i (226) and 2.1.02.05a.i (19) can be met. NCV 05200025/2021005-03 is closed.

.3 (Closed) NCV 05200025/2021005-04, Failure to Demonstrate Qualification of Containment High Radiation Monitor Door Gasket

The inspectors performed a document review of the licensee's corrective actions for NCV 05200025/2021005-04, "Failure to Demonstrate Qualification of Containment High Radiation Monitor Door Gasket," which was documented in NRC Inspection Report 05200025/2021005, 05200026/2021005 (ML21314A277). The review was to determine whether the corrective actions taken by the licensee were sufficient to address the issue and to verify the acceptance criteria for the related ITAAC could be met. The violation was associated with the licensee's failure to consider the known potential failure modes (aging) of the containment high range radiation monitor (CHRM) door gasket to determine its qualified life, which can have an effect on its functional capability.

The violation represented an ITAAC finding because it was material to the acceptance criteria of ITAAC 3.5.00.01.i (823), in that, if left uncorrected, the licensee may not have been able to demonstrate the acceptance criteria of the ITAAC was met. The acceptance criteria of this ITAAC requires, in part, that a report exists and concludes that SR Class 1E components listed in Tables 3.5-1 as being in a harsh environment can withstand the environmental conditions that would exist before, during, and after a design basis accident without loss of safety function for the time required to perform the safety function.

The inspectors reviewed E&DCR APP-RMS-GEF-026 to verify environmental qualification program changes to define and document the qualified life analysis for the CHRM door gaskets would satisfy the above ITAAC acceptance criteria. The licensee determined the door gasket was present throughout the CHRM harsh environment testing and a qualified life could be established through analysis. The qualified life analysis concluded the door gasket was qualified for the full sixty-year life of the CHRM. The E&DCR approved adding the justification for the qualification to the following environmental qualification program documents:

- APP-RMS-VBR-001, Revision 0
- APP-RMS-VBR-002, Revision 0

Based on the review described above, the inspectors determined the licensee took adequate corrective actions to address the violation and the potential impacts to the ITAAC have been appropriately addressed such that the acceptance criteria of ITAAC 3.5.00.01.i (823) can be met. NCV 05200025/2021005-04 is closed.

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On January 18, 2022, the NRC inspectors discussed the results of this inspection with Mr. G. Chick, VEGP Units 3 and 4 Executive Vice President, and other members of your staff. 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, SNC ITAAC Project Manager
C. Castell, WEC Licensing Engineer
J. Coleman, SNC ITAAC Project Manager
K. Drudy, SNC ITAAC Project Manager
V. Floyd, SNC Project Director
N. Kasner, SNC Organizational Effectiveness Director
N. Kellenberger, SNC Licensing Supervisor
S. Leighty, SNC Licensing Manager
C. Martin, Bechtel QC Supervisor
N. Patel, SNC Licensing Engineer
L. Pritchett, SNC Licensing Engineer
K. Roberts, SNC ITAAC Manager
G. Scott, SNC Licensing Engineer
V. Smith, SNC QC Technical Support
J. Weathersby, SNC Licensing Engineer
M. Yox, SNC Regulatory Affairs Director

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Type	Status	Description
05200025/2021007-01	NCV	Open/Closed	Failure to Correct Cable Separation issues in panel SV3-IDSC-DT-1 (Section 1P01)
05200025/2021006-01	NCV	Closed	Failure to Follow Procedure BGEN-ITPA-004 (Section 1A09)
05200025/2021005-03	NCV	Closed	Failure to Demonstrate Qualification of Valve Nonmetallic Parts (Section 4OA3.2)
05200025/2021005-04	NCV	Closed	Failure to Demonstrate Qualification of Containment High Radiation Monitor Door Gasket (Section 4OA3.3)
05200025 & 05200026/ND-21-0603	CDR	Closed	Electrical Construction and Measuring & Test Equipment Control (Section 4OA3.1)

LIST OF DOCUMENTS REVIEWED

Section 1A01
2.1.02.12.a.iv-U3-EQRR-PCD001, "RCS EQ Reconciliation Report (EQRR)," Revision 0
APP-PV70-V2-001, "Squib Valve connector Assembly," Revision 4
APP-PV70-V2-005, "14" Squib Valve Assembly Drawing Sheet 3 of 3," Revision 3
APP-PV70-VBR-004, "Equipment Qualification Summary Report for 14" Squib Valves for Use in the AP1000 Plant," Revision 1
APP-PV70-VBR-005, "Equipment Qualification Data Package for 14" Squib Valves for Use in the AP1000 Plant," Revision 1
APP-PV70-VMM-001, "PV70 Squib (Pyrotechnic Actuated) Valves Maintenance Manual," Revision 2
APP-PV7O-Z0-001, "Squib (Pyrotechnic Actuated) Valves, ASME Boiler and Pressure Vessel Code, Section III Class 1," Revision 6
APP-PV70-Z0R-001, "PV70 Squib (Pyrotechnic Actuated) Valves, ASME Section III Class 1, Data Sheet Report," Revision 8
SV3-RCS-ITR-001, "Inspection Report Confirming RCS Seismic Category I Equipment is Located on the Nuclear Island, ITAAC 2.1.02.05a.i," Revision 1
APP-RCS-PLW-03A, "RCS Containment Building Room 11301 ADS Stage 4 Piping West Compartment," Revision 5

Section 1A02
Westinghouse Electric Company (WEC) SV3-CNS-S3R-001 “Vogtle Unit 3 Containment System Penetration Assemblies (CNS) ASME Section III As-Built Design Report,” (107 pages), Revision 0
WEC SV3-MV50-S3R-100 “Vogtle Unit 3 Containment Vessel ASME Section III As-Built Design Report,” (5233 pages), Revision 0
WEC "Form N-5 Certificate Holder's Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for the Containment System (CNS) Penetration Assemblies Certificate Holder's Serial No. SV3-CNS-MUR-001 installed for the Southern Nuclear Operating Company, (14 pages), 01/22/2021
Stone & Webster (S&W) "Form N-5 Certificate Holder's Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for the Containment System (CNS) Certificate Holder's Serial No. SV3-CNS-MJR-001 installed for WEC, (26 pages), 09/14/2020
PCI Energy Services "Form N-5 Certificate Holder's Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for the (CNS) Fuel Transfer Tube Assembly Penetration 11 Installation Certificate Holder's Serial No. SV3-CNS-MJR-002 installed for WEC, (444 pages), 08/15/2019
S&W "Form N-5 Certificate Holder's Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for the Containment Electrical Penetration Assemblies Certificate Holder's Serial No. SV3-CNS-MJR-003 installed for WEC, (10 pages), 01/13/2021
WEC SV3-MV50-VQQ-003P1P25 “Chicago Bridge and Iron Services Quality Assurance Record Package for the AP1000 Containment Vessel,” Equipment Tag-No. CNS-MV-01, (310 pages), Revision 1

Chicago Bridge & Iron Services “Form N-1 Certificate Holder’s Data Report for Nuclear Vessels, As Required by the Provisions of the ASME Code, Section III, Division 1," for the Vogtle Unit 3 Advanced Passive Light Water Reactor Containment Vessel (AP1000) Equipment Tag-No. CNS-MV-01 for WEC, (6 pages), 10/26/2020

Section 1A03
Westinghouse Electric Company (WEC) SV3-PCS-S3R-001 “Vogtle Unit 3 Passive Containment Cooling System ASME Section III As-Built Piping System Design Report”, (138 pages), Revision 0
WEC SV3-GW-GEI-100, AP1000 Preservice Inspection Program Plan for Vogtle Unit 3, (1546 pages), Revision 2
WEC P&ID APP-PCS-M6-001, Class 3, Revision 12
WEC P&ID APP-PCS-M6-002, Class 3, Revision 11
WEC "Form N-5 Certificate Holder's Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Passive Containment Cooling System by Certificate Holder's Serial No. SV3-PCS-MUR-001 installed for the Southern Nuclear Operating Company, (6 pages), 12/03/2021
Stone & Webster (S&W) "Form N-5 Certificate Holder's Data Report for Installation or Shop Assembly of Nuclear Power Plant Components, Parts, Supports, and Appurtenances, As Required by the Provisions of the ASME Code, Section III, Division 1," for Passive Containment Cooling System by Certificate Holder's Serial No. SV3-PCS-MJR-003 installed for WEC, (9 pages), 06/14/2021

Section 1A04
SV3-PXS-ITR-800158, "Unit 3 PXS Functional Arrangement Inspection: ITAAC 2.2.03.01 NRC Index Number 158," Revision 4
SV3-PXS-M6-001, "Piping and Instrumentation Diagram Passive Core Cooling System," Revision 15
SV3-PXS-M6-002, "Piping and Instrumentation Diagram Passive Core Cooling System," Revision 20
SV3-PXS-M6K-FA001, "SV3-PXS-M6-001 PXS ITAAC Functional Arrangement Sketch," Revision 3
SV3-PXS-M6K-FA002, "SV3-PXS-M6-002 PXS ITAAC Functional Arrangement Sketch," Revision 3
AP1000 Tier 1 Document, Section 2.2.3, "Passive Core Cooling System," Revision 19
VEGP 3&4 UFSAR, Section 6.3, "Passive Core Cooling System," Revision 10

Section 1A05
APP-MN02-Z0-001, "Mechanical Equipment and Piping Insulation Design Specification," Revision 5
APP-RCS-M6X-004, "RCS Pipe Line Designation Table," Revision 2
APP-RNS-M6X-004, "RNS Pipe Line Designation Table," Revision 2
APP-CVS-M6X-004, "CVS Pipe Line Designation Table," Revision 2
APP-PXS-M6X-004, "PXS Pipe Line Designation Table," Revision 1
AP1000 Design Control Document, Tier 2 Material, Chapter 6, "Engineered Safety Features," Section 6.3, "Passive Core Cooling System," Revision 19
SV3-PXS-ITR-800194, "Unit 3 PXS Insulation: ITAAC 2.2.03.0Bc.ix NRC Index Number 194," Revision 0

SVP-SV0-006178, "Submittal of Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Summary of Metal Reflective Insulation (MRI) and Alternate Insulation for Unit 3 ITAAC 2.2.03.08c.ix [COL Index Number 194] (PXS Insulation)," 2/3/2021

Section 1A06
2.2.03.12a.i-U3-EQRR-PCD001, “Passive Core Cooling System (PXS) EQ Reconciliation Report,” Revision 0
SV3-PV70-VBR-002, “Equipment Qualification Summary Report for 8” Squib Valves for Use in the AP1000 Plant,” Revision 1
SV3-PV70-VBR-003, “Equipment Qualification Data Package for 14” Squib Valves for Use in the AP1000 Plant,” Revision 1
SV3-PV70-VBR-004, “Equipment Qualification Summary Report for 14” Squib Valves for Use in the AP1000 Plant,” Revision 1
SV3-PV70-VBR-005, “Equipment Qualification Data Package for 14” Squib Valves for Use in the AP1000 Plant,” Revision 1
SV3-GW-VBR-001, “Equipment Qualification Summary Report for TopWorx C7 GO Switches for Use in the AP1000 Plant,” Revision 1
SV3-PV70-Z0-001, “Design Specification for Squib Valves, ASME Section III Class 1,” Revision 6
SV3-PV70-Z0R-001, “PV70 Squib Valves, ASME Section III Class 1, Data Sheet Report,” Revision 8
SV3-PXS-PLW-470, “Passive Core Cooling System Containment BLDG. Room 11206 Containment Recirculation Valves,” Revision 1
SV3-PXS-PLW-02U, “Passive Core Cooling System Containment BLDG. Room 11207 IRWST & Containment Recirculation to DVI-B,” Revision 1
E&DCR APP-GW-GEF-1929, “Revision to Appendix B of this Design Specification for Safety-Related Valves,” Revision 0
N&DCR SV3-PXS-GNR-000281, “Mechanical Indications on SV3-PXS-PLW-470 ESR 50061708,” Revision 0
N&DCR SV3-PXS-GNR-000269, “Piping Flange Face Damage on PXS Train A Squib Valve Piping (ESR 50056266),” Revision 0
SV3-PXS-P0W-1056775, “Work Package – ASME III- Assembly/Install PXS Squib Valve SV3-PXS-PL-V120A and Support SV3-PXS-PH-11R0509 on ISO SV3-PXS-PLW-470 and Cut/Reweld SV3-11202-ML-P04-1,” Revision 0
SV3-PXS-P0W-1057547, “Work Package – ASME III- Assembly/Install PXS Squib Valve SV3-PXS-PL-V125B Per ISO SV3-PXS-PLW-02U,” Revision 0
APP-GW-GEF-850299, “Increase Conduit length greater than as-tested length (ESR 50059232),” Revision 0

Section 1A07
SV3-APP-ITR-800759, "Unit 3 Inspections for Physical Arrangement: ITAAC 3.3.00.01 NRC Index Number 759," Revision 1
APP-1000-AR-901, “NI Room Numbering Section A-A,” Revision 3
APP-1000-AR-902, “NI Room Numbering Section B-B,” Revision 3
APP-1000-AR-903, “NI Room Numbering Sections C-C & H-H,” Revision 3
APP-1000-AR-904, “NI Room Numbering Section G-G,” Revision 3
APP-1000-AR-905, “NI Room Numbering Section J-J,” Revision 3
APP-1000-AR-906, “NI Room Numbering Section K-K,” Revision 4
APP-1000-AR-907, “NI Room Numbering Sections I-I & R-R,” Revision 3
APP-1000-AR-908, “NI Room Numbering Sections P-P & S-S,” Revision 3
APP-1000-AR-909, “NI Room Numbering Sections X-X, Y-Y, & Z-Z,” Revision 3

APP-1010-AR-001, “NI Room Numbering Plan at EL. 66’-6”,” Revision 4
APP-1020-AR-001, “NI Room Numbering Plan at EL. 82’-6”,” Revision 4
APP-1020-AR-002, “NI Room Numbering Plan at EL. 92’-6”,” Revision 4
APP-1030-AR-001, “NI Room Numbering Plan at EL. 100’-0” & 107’-2”,” Revision 5
APP-1040-AR-001, “NI Room Numbering Plan at EL. 117’-6”,” Revision 4
APP-1050-AR-001, “NI Room Numbering Operating Deck EL. 135’-3”,” Revision 4
APP-1050-AR-002, “NI Room Numbering Plan at EL. 145’-9” & 153’-0”, Revision 4
APP-1060-AR-001, “NI Room Numbering Roof Plan EL. 153’-0” & 160’-6”,” Revision 4
APP-1070-AR-001, “NI Room Numbering Plan at EL. 284’-10” and Roof Elevations,” Revision 2
APP-4030-AR-001, “Annex Building Room Numbering El. 100’-0” & EL. 107’-2”,” Revision 6
APP-4040-AR-001, “Annex Building Room Numbering El. 117’-6” & EL. 126’-3”,” Revision 3
APP-4050-AR-001, “Annex Building Room Numbering El. 135’-3”, El. 158’-0”, El. 170’-0” & EL. 182’-6”,” Revision 3
APP-5000-AR-001, “Radwaste Building Room Numbering El. 100’-0” and Section View,” Revision 3
APP-2000-AR-901, “Turbine Building Room Numbering Section A-A,” Revision 1
APP-2000-AR-902, “Turbine Building Room Numbering Section B-B,” Revision 1
APP-2000-AR-903, “Turbine Building Room Numbering Section C-C,” Revision 0
APP-2000-AR-905, “Turbine Building Room Numbering Section E-E,” Revision 0
APP-2000-AR-906, “Turbine Building Room Numbering Section F-F,” Revision 0
APP-2040-AR-001, “Turbine Building Room Numbering Intermediate Level El. 117’-6”,” Revision 1
APP-2050-AR-001, “Turbine Building Room Numbering Intermediate Level El. 135’-3”,” Revision 0
APP-2050-AR-002, “Turbine Building Room Numbering El. 147’-6” & 149’-0”,” Revision 0
APP-2060-AR-001, “Turbine Building Room Numbering Plan at El. 161’-0”,” Revision 1
APP-2060-AR-002, “Turbine Building Room Numbering Plan at El. 187’-3”,” Revision 0
APP-2070-AR-001, “Turbine Building Room Numbering Roof Plan - El. 245’-0” & 226’-0”,” Revision 1
APP-6030-AR-001, “Diesel Generator Building El. 100’-0” & El. 128’-0” Room Numbering Plan,” Revision 2
APP-6030-AR-002, “Diesel Generator Building El. 123’-4” Room Numbering Plan,” Revision 2

Section 1A08
SV3-1010-GCR-001, “Vogtle Unit #3 As-Built Summary Report: Nuclear Island Basemat,” Revision 2
SV3-1200-GCR-001, “Vogtle Unit #3 As-Built Summary Report: Nuclear Island Auxiliary Building,” Revision 2
SV3-CA20-GCR-001, “Vogtle Unit #3 As-Built Summary Report: CA20 Module,” Revision 2

Section 1A09
N&D SV3-CA20-GNR-001091, “CA20 SFP and FTC Leakage,” Revision 0
AISC-690:1994, “American National Standard Specification for the Design, Fabrication, and Erection of Steel Safety-Related Structures for Nuclear Facilities”
WEC APP-GW-Z0-105, “AP1000 Specification: Supplemental Requirements for Manufacture of Wrought and Cast Duplex and Super-Austenitic Stainless Steels and Their Fabrication,” Revision 0
Outokumpu Certification-No. 3016047-R01 for ASTM A240-12, UNS S32101, 12.7 mm thick floor liner plate, Heat-No. 423309 and Lot-No. 249160, 7/23/13
Outokumpu Certification-No. 3033597-R01 for ASTM A240-12, UNS S32101, 12.7 mm thick floor liner plate, Heat-No. 423543 and Lot-No. 249606, 7/23/13

Lincoln Electric Company CMTR for 0.035” dia. ER2209, SFA-5.9 spooled solid wire, Heat-No. 1257Y, 9/21/15
Lincoln Electric Company CMTRs for 3/32” dia. X 18” long, SFA-5.9 ER2209 solid bare rod, Heat-Nos. 1243A and 1256A, both 9/25/15
Lincoln Electric Company CMTRs for 1/8” dia. X 18” long, SFA-5.9 ER2209 solid bare rod, Heat-Nos. 1243B and 1256B, both 11/12/15
PCI Energy Services AWS D1.6, WPS-Nos. AWS 10H MC-GTAW D1.6 and 10H MN-GTAW D1.6 both Revisions 0 with supporting CB&I Power PQR-No. SP394 Revision 1 on 5/20/15 and PQ871 Revision 0 on 3/30/16
PCI Energy Services ASME Section IX, WPS-Nos. 10H MC-GTAW and 10H MN-GTAW both with Weld Procedure Supplement, Revisions 0 on 8/13/21 and supporting CB&I Power PQR-No. SP526 Revision 1 on 7/21/17
PCI Energy Services ASME Section IX, Welder Performance Qualification (WPQ) records for both machine and manual GTAW, and Maintenance Logs (WML) with expiration dates of February 2022 for Stamp-Nos. M318, M1523, M1713, M1856, M2074, M2091, M2126, M2154, M2171, M2342, M2543, M2544, and M2545
PCI Base Metal Repair Procedure – Weld North Wall - Indications - R4, R5, R6, R7, R9, R10, R11, R12, R13, R14, R16, and R17 for 918704-004 (Revision 0), 8/20/21
PCI Base Metal Repair Procedure – Weld North Wall - Indications - R13 and R17 for 918704-004 (Revision 1), 8/23/21
PCI Certification of Inspection, Examination and Testing Personnel with Vision Examination Reports, and NDE-VT and PT Level II Personnel Certificates for SAP-No. 103105 with expiration date of 12/6/22, SAP-No. 119185 exp. 12/15/23, and SAP-No. 134480 exp. 2/20/23
PCI Certification of Inspection, Examination and Testing Personnel with Vision Examination Reports, and NDE-VT Level II Personnel Certificate for SAP-No. 131289 and 31851 with expiration 7/15/22
PCI Certification of Inspection, Examination and Testing Personnel with Vision Examination Reports, and NDE-UT Level II Personnel Certificate for SAP-No. 131137 and 98853 with expiration 8/19/22
PCI Report of Nondestructive Examination for Visible, Solvent Removable Liquid Penetrant Examination No. PT-918704-1 thru 29 for the north wall BMR with inspections dates from 8/23/21 thru 9/29/21
PCI Ultrasound Calibration/Technique Record using UTT scanning of areas for minimum wall thickness with NDE Logs and Report-Nos. UT-918704-01 thru -03 of from 8/23/21 thru 8/25/21, and Inspection Report for visual inspection acceptance of weld bevel groove preparation areas on 9/9/21
SAI SI-UT-224, “Linear Phase Array Ultrasonic Examination of Welds in Accordance with AWS D1.1 and D1.6”, Revision 0, 8/13/21
SAI Qualification Packages for PAUT Inspectors CF-2978 Level III and HTR-7650 Level II, annual Visual Acuity Examination Records, and Certificate of Personnel Qualification with respective individual expiration dates of 7/24/24 and 1/11/23
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80005780, “Bechtel Stop Work, Notice of Final Work Package Closure Review Activities,” dated 6/9/21
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50094922	50095659	50097825	50098543
50099849	50090224	50093027	50094922
50095659	50099556	50100148	50100368
50100493	50105787	50105162	50105720
50107019	50109665	50109917	50113900
50117587	50116471	50118147	50118356
70001151			

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V-OT-20-0160	V-OT-21-0105	V-0T-21-0163
V-OT-21-0189	V-OT-21-0249	V-OT-20-0253
V-OT-21-0263	V-OT-21-0282	V-OT-21-0301
V-OT-21-0312	V-OT-21-0325	V-OT-21-0331
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60028605	60028606	60028607
60033153	60026917	60033153
60033156	60033199	60031195

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Calibration checklist No. V-ADD-0117-9, Pressure gage
Calibration checklist No. V-STD-0169-3, Water dead weight tester
Calibration checklist No. V-U-0200-7, Temperature/Humidity recorder
Calibration checklist No. V-AE-0107-2, Oxygen Analyzer
Calibration report No. V-4G-0105-2, Crimp tool handheld
Bechtel Calibration report No. V-STD-0188-1, Torque Analyzer
Bechtel Calibration report No. V-4G-0283-1, Handheld crimp tool
Bechtel Calibration report No. V-N-0540-1, Torque wrench
Calibration checklist No. 34VP3202, Leak Rate Monitor, 9623-EV (0-20 SLPM)
Calibration checklist No. V-N-0357-3, T-handle Torque Driver 5/16” 60 In/Lbf
Calibration checklist No. V-2Z-0091-1, Multimeter
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Post-verification record for V-N-0575, Torque wrench, dated 12/15/21
Post-verification record for V-AP-0206, digital thermometer, dated 12/15/21
M&TE usage log of V-AD-0096, Pressure gage, scrapped on 10/26/21
M&TE usage log of V-AE-0188, Oxygen analyzer, scrapped on 11/19/21
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M&TE check-in/usage log of V-AD-0122, Pressure gage, date 12/13/21
M&TE check-in/usage log of V-N-0566, Torque screwdriver, dated 12/6/21
M&TE check-in/usage log of V-AP-0118, Fluke digital thermometer, dated 12/8/21
M&TE check-out/usage log of V-N-0464, Torque wrench adjustable, dated 11/14/21
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M&TE check-out/usage log of V-N-0683, Torque wrench adjustable, dated 12/13/21
M&TE check-out/usage log of V-N-0686, Torque wrench adjustable, dated 12/11/21

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MIR for V-4G-0165, Crimp tool hydraulic, issued to work package (WP) SV3-1241-ERW-1014305, dated 12/15/21
MIR for V-4G-0179, hydraulic crimper, issued to WP SV4-CMS-EWW-1120523, dated 12/14/21

MIR for V-4G-0325, Crimper hydraulic, issued to WP SV3-EY20-EWW-1146825, dated 12/15/21
MIR for V-N-0775, Adjustable torque wrench, issued to WP SV4-1255-ERW-1106908, dated 12/14/21
M&TE Return Receipts
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MRR for V-4G-0165, Crimp tool hydraulic, dated 12/15/21
MRR for V-4G-0198, Crimp tool die set dated 12/15/21
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LIST OF ACRONYMS

ADS	Automatic Depressurization System
ANI	Authorized Nuclear Inspector
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASNT	American Society of Nondestructive Testing
AWS	American Welding Society
CAP	Corrective Action Program
CAS	Compressed and Instrument Air System
CDR	Construction Deficiency Report
CFR	Code of Federal Regulations
CJP	Complete Joint Penetration
CMT	Core Makeup Tank
CMTR	Certified Material Test Reports
CNS	Containment System
COL	Combined License
CR	Condition Report
E&DCR	Engineering & Design Coordination Report
EQRR	Equipment Qualification Reconciliation Report
FTC	Fuel Transfer Canal
GTAW	Gas Tungsten Arc Welding
ICN	ITAAC Closure Notice
IDS	Class 1E dc and UPS System
IEEE	Institute of Electrical and Electronic Engineers
IMC	Inspection Manual Chapter
IP	Inspection Procedures
IR	Inspection Report
IRWST	In-Containment Refueling Water Storage Tank
ITAAC	Inspections, Tests, Analysis, and Inspection Criteria
LOCA	Loss-Of-Coolant Accident
MCR	Main Control Room
MIR	M&TE Issue Receipt
M&TE	Measuring and Test Equipment Control
NCV	Noncited Violation
N&D	Nonconformance and Disposition Reports
NDE	Nondestructive Examination
NRC	Nuclear Regulatory Commission
NSR	Nonsafety-Related
OCR	Out Of Calibration Reports
PAUT	Phased-Array Ultrasonic Testing
P&ID	Piping and Instrumentation Diagram

PCI	PCI Energy Services
PCD	Principal Closure Document
PCS	Passive Containment Cooling System
PMS	Protection and Safety Monitoring System
PQR	Procedure Qualification Records
PT	Liquid Penetrant Examination
PXS	Passive Core Cooling System
QA	Quality Assurance
QC	Quality Control
QCE	Quality Control Engineer
RCS	Reactor Coolant System
RNS	Normal Residual Heat Removal System
RSR	Remote Shutdown Room
S&W	Stone & Webster
SFP	Spent Fuel Pool
SFS	Spent Fuel Cooling System
SGS	Steam Generator System
SIA	Structural Integrity Associates
SNC	Southern Nuclear Company
SR	Safety-Related
SSC	Structure, System, and Component
UFSAR	Updated Final Safety Analysis Report
UPS	Uninterruptible Power Supply
UTT	Ultrasonic Thickness Testing
VBT	Vacuum Box Testing
VEGP	Vogtle Electric Generating Plant
VT	Visual Examination
WEC	Westinghouse Electric Company
WP	Work Package
WPS	Welding Procedure Specifications
ZOI	Zone of Influence

ITAAC INSPECTED

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

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

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
				tests, analyses, or a combination of type tests and analyses.
56	2.1.02.12a.iv	12.a) The automatic depressurization valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table.	iv) Tests or type tests of squib valves will be performed that demonstrate the capability of the valve to operate under its design conditions. v) Inspection will be performed for the existence of a report verifying that the as-built squib valves are bounded by the tests or type tests.	iv) A test report exists and concludes that each squib valve changes position as indicated in Table 2.1.2-1 under design conditions. v) A report exists and concludes that the as-built squib valves are bounded by the tests or type tests.

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

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

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
		is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability.		
158	2.2.03.01	1. The functional arrangement of the PXS is as described in the Design Description of this Section 2.2.3.	Inspection of the as-built system will be performed.	The as-built PXS conforms with the functional arrangement as described in the Design Description of this Section 2.2.3.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
194	2.2.03.08c.ix	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	ix) Inspections will be conducted of the insulation used inside the containment on the ASME Class 1 lines, reactor vessel, reactor coolant pumps, pressurizer and steam generators. Inspections will be conducted of other insulation used inside the containment within the zone of influence (ZOI). Inspection will be conducted of other insulation below the maximum flood level of a design basis loss-of-coolant accident (LOCA).	ix) The type of insulation used on these lines and equipment is a metal reflective type or a suitable equivalent. If an insulation other than metal reflective insulation is used, a report must exist and conclude that the insulation is a suitable equivalent. The type of insulation used on these lines and equipment is a metal reflective type or a suitable equivalent. If an insulation other than metal reflective insulation is used, a report must exist and conclude that the insulation is a suitable equivalent. The type of insulation used on these lines is metal reflective insulation, jacketed fiberglass, or a suitable equivalent. If an insulation other than metal reflective or jacketed fiberglass insulation is used, a report must exist and conclude that the insulation is a suitable equivalent.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
197	2.2.03.08c.xii	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	xii) Inspections will be conducted of the CMT level sensors (PXS-11A/B/D/C, -12A/B/C/D, -13A/B/C/D, -14A/B/C/D) upper level tap lines.	xii) Each upper level tap line has a downward slope of ≥ 2.4 degrees from the centerline of the connection to the CMT to the centerline of the connection to the standpipe.
214	2.2.03.12a.i	12.a) The squib valves and check valves identified in Table 2.2.3-1 perform an active safety-related function to change position as indicated in the table.	i) Tests or type tests of squib valves will be performed that demonstrate the capability of the valve to operate under its design condition. ii) Inspection will be performed for the existence of a report verifying that the as-built squib valves are bounded by the tests or type tests.	i) A test report exists and concludes that each squib valve changes position as indicated in Table 2.2.3-1 under design conditions ii) A report exists and concludes that the as-built squib valves are bounded by the tests or type tests.
759	3.3.00.01	1. The physical arrangement of the nuclear island structures and the annex building is as described in the Design Description of this Section 3.3 and Figures 3.3-1 through 3.3-14. The physical arrangement of the radwaste building, the turbine building, and the diesel generator building is as described in the Design Description of this Section 3.3.	An inspection of the nuclear island structures, the annex building, the radwaste building, the turbine building, and the diesel generator building will be performed.	The as-built nuclear island structures, the annex building, the radwaste building, the turbine building, and the diesel generator building conform with the physical arrangement as described in the Design Description of this Section 3.3 and Figures 3.3-1 through 3.3-14.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
763	3.3.00.02a.i.d	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions. 3.) Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations, provide shielding during normal operations.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads, and for radiation shielding.	i.d) A report exists which reconciles deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concludes that the as-built structures in the radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.
790	3.3.00.07ab	7.a) Class 1E electrical cables, communication cables associated with only one division, and raceways that route the Class 1E electrical cables and the communication cables are identified according to applicable color-coded Class 1E divisions.	Inspections of the as-built Class 1E cables and the as-built raceways that route the Class 1E cables will be conducted.	b) Class 1E electrical cables, and communication cables associated with only one division, and the raceways that route these cables in the non-radiologically controlled area of the auxiliary building are identified by the appropriate color code.

799	3.3.00.07d.i	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built raceways that route Class 1E cables will be performed to confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: i) Within the main control room and remote shutdown room (non-hazard areas), the minimum separation for low-voltage power cables and below is defined by one of the following: 1) For configurations involving open configurations to enclosed configurations with low-voltage power cables, the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 2) For configurations involving an enclosed raceway and an open raceway with low-voltage power cables, the minimum vertical separation is 1 inch if the enclosed raceway is below the open raceway. 3) For configurations involving enclosed raceways, the minimum separation is 1 inch in both	Results of the inspection will confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: i) Within the main control room and remote shutdown room (non-hazard areas) the minimum separation for low-voltage power cables and below meets one of the following: 1) For configurations involving open configurations to enclosed configurations with low-voltage power cables, the vertical separation is 3 inches or more and the horizontal separation is 1 inch or more. 2) For configurations that involve an enclosed raceway and an open raceway with low-voltage power cables, the minimum vertical separation may be reduced to 1 inch if the enclosed raceway is below the open raceway. 3) For configurations that involve enclosed raceways, the minimum separation

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
			horizontal and vertical directions. 4) For configurations involving open configurations, and an enclosed raceway and an open raceway, with instrumentation and control cables, the minimum separation is 1 inch in both horizontal and vertical directions.	is 1 inch in both horizontal and vertical directions. 4) For configurations that involve open configurations, and an enclosed raceway and an open raceway, with instrumentation and control cables, the minimum separation is 1 inch in both horizontal and vertical directions.
806	3.3.00.07d.iv.a	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built raceways that route Class 1E cables will be performed to confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: iv) Separation distances less than those specified above and not run in enclosed raceways or provided with barriers are based on analysis	Results of the inspection will confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: iv.a) For areas inside containment, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
807	3.3.00.07d.iv.b	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built raceways that route Class 1E cables will be performed to confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: iv) Separation distances less than those specified above and not run in enclosed raceways or provided with barriers are based on analysis	Results of the inspection will confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: iv.b) For areas inside the non-radiologically controlled area of the auxiliary building, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
808	3.3.00.07d.iv.c	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built raceways that route Class 1E cables will be performed to confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: iv) Separation distances less than those specified above and not run in enclosed raceways or provided with barriers are based on analysis	Results of the inspection will confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: iv.c) For areas inside the radiologically controlled area of the auxiliary building, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
809	3.3.00.07d.v.a	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built raceways that route Class 1E cables will be performed to confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: v) Non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is considered as associated circuits and subject to Class 1E requirements.	Results of the inspection will confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: v.a) For areas inside containment, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
810	3.3.00.07d.v.b	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built raceways that route Class 1E cables will be performed to confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: v) Non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is considered as associated circuits and subject to Class 1E requirements.	Results of the inspection will confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: v.b) For areas inside the non-radiologically controlled area of the auxiliary building, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
811	3.3.00.07d.v.c	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built raceways that route Class 1E cables will be performed to confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: v) Non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is considered as associated circuits and subject to Class 1E requirements.	Results of the inspection will confirm that the separation between raceways that route Class 1E cables of different divisions, and between raceways that route Class 1E cables and raceways that route non-Class 1E cables is consistent with the following: v.c) For areas inside the radiologically controlled area of the auxiliary building, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
816	3.3.00.10.ii	10. The shield building roof and PCS storage tank support and retain the PCS water sources. The PCS storage tank has a stainless steel liner which provides a barrier on the inside surfaces of the tank. Leak chase channels are provided on the tank boundary liner welds.	ii) An inspection of the PCS storage tank exterior tank boundary and shield building tension ring will be performed before and after filling of the PCS storage tank to the overflow level. The vertical elevation of the shield building roof will be measured at a location at the outer radius of the roof (tension ring) and at a location on the same azimuth at the outer radius of the PCS storage tank before and after filling the PCS storage tank. iii) An inspection of the PCS storage tank exterior tank boundary and shield building tension ring will be performed before and after filling of the PCS storage tank to the overflow level. The boundaries of the PCS storage tank and the shield building roof above the tension ring will be inspected visually for excessive concrete cracking.	ii) A report exists and concludes that inspection and measurement of the PCS storage tank and the tension ring structure, before and after filling of the tank, shows structural behavior under normal loads to be acceptable. iii) A report exists and concludes that there is no visible water leakage from the PCS storage tank through the concrete and that there is no visible excessive cracking in the boundaries of the PCS storage tank and the shield building roof above the tension ring.

823	3.5.00.01.i	1. The seismic Category I equipment identified in Table 3.5-1 can withstand seismic design basis loads without loss of safety function. 2. The Class 1E equipment identified in Table 3.5-1 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 3.5-1 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, 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 3.5-1 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 Class 1E equipment identified in Table 3.5-1 as being located in 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 3.5-1 as being qualified for a harsh environment are bounded by type

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
				tests, analyses, or a combination of type tests and analyses.