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

November 4, 2019

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

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 - NRC INTEGRATED INSPECTION REPORTS 05200025/2019003, 05200026/2019003

Dear Mr. Yox:

On September 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Vogtle Electric Generating Plant, Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on October 16, 2019 with Mr. Mike Meier and other members of your staff.

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

The NRC inspectors did not identify any finding or violation of more than minor significance.

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 C. 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) 05200025/2019003, 05200026/2019003
w/attachment: Supplemental Information

cc:

Resident Manager
Oglethorpe Power Corporation
Alvin W. Vogtle Nuclear Plant
7821 River Road
Waynesboro, GA 30830

Southern Nuclear Operating Company, Inc.
Document Control Coordinator Bin N-226-EC
3535 Colonnade Parkway
Birmingham, AL 35243

Office of the Attorney General
40 Capitol Square, SW
Atlanta, GA 30334

Anne F. Appleby
Olgethorpe Power Corporation
2100 East Exchange Place
Tucker, GA 30084

County Commissioner
Office of the County Commissioner
Burke County Commission
Waynesboro, GA 30830

Mr. Wayne Guilfoyle
Commissioner District 8
Augusta-Richmond County Commission
4940 Windsor Spring Rd
Hephzibah, GA 30815

Gwendolyn Jackson
Burke County Library
130 Highway 24 South
Waynesboro, GA 30830

Mr. Reece McAlister
Executive Secretary
Georgia Public Service Commission
Atlanta, GA 30334

Resident Inspector
Vogtle Plant Units 3 & 4
8805 River Road
Waynesboro, GA 30830

Mr. Barty Simonton
Team Leader
Environmental Radiation Program
Air Protection Branch
Environmental Protection Division
4244 International Parkway, Suite 120
Atlanta, GA 30354-3906

Brian H. Whitley
3535 Colonnade Parkway, Bin N-226-EC
42 Inverness Center Parkway, BIN B237
Birmingham, AL 35243

Mr. Michael Yox
Site Regulatory Affairs Director
Vogtle Units 3 & 4
7825 River Road, Bin 63031
Waynesboro, GA 30830

Email

acchambe@southernco.com (Amy Chamberlian)
agaughtm@southernco.com (Amy Aughtman)
awc@nei.org (Anne W. Cottingham)
becky@georgiawand.org (Becky Rafter)
bhwhitley@southernco.com (Brian Whitley)
Bill.Jacobs@gdsassociates.com (Bill Jacobs)
bjadams@southernco.com (Brad Adams)
bwwaites@southernco.com (Brandon Waites)
castelca@westinghouse.com (Curtis Castell)
comerj@westinghouse.com (James Comer)
crpierce@southernco.com (C.R. Pierce)
dahjones@southernco.com (David Jones)
david.hinds@ge.com (David Hinds)
david.lewis@pillsburylaw.com (David Lewis)
dgbost@southernco.com (Danny Bost)
dlfulton@southernco.com (Dale Fulton)
drculver@southernco.com (Randy Culver)
durhamdc@westinghouse.com (David Durham)
ed.burns@earthlink.net (Ed Burns)
edavis@pegasusgroup.us (Ed David)
erg-xl@cox.net (Eddie R. Grant)
fdhundle@southernco.com (Forrest Hundley)
fhwillis@southernco.com (Fred Willis)
G2NDRMDC@southernco.com (SNC Document Control)
George.Taylor@opc.com (George Taylor)
graysw@westinghouse.com (Scott W. Gray)
jadwilli@southernco.com (J.D. Williams)
james1.beard@ge.com (James Beard)
jantol1dj@westinghouse.com (David Jantosik)
jenmorri@southernco.com (Jennifer Buettner)
JHaswell@southernco.com (Jeremiah Haswell)
jim@ncwarn.org (Jim Warren)
John.Bozga@nrc.gov (John Bozga)
Joseph_Hegner@dom.com (Joseph Hegner)
jpredd@southernco.com (Jason R. Redd)
karen.patterson@ttnus.com (Karen Patterson)
karlg@att.net (Karl Gross)
kmstacy@southernco.com (Kara Stacy)
kroberts@southernco.com (Kelli Roberts)
KSutton@morganlewis.com (Kathryn M. Sutton)
kwaugh@impact-net.org (Kenneth O. Waugh)
markus.popa@hq.doe.gov (Markus Popa)
mdmeier@southernco.com (Mike Meier)
media@nei.org (Scott Peterson)

Melissa.Smith@Hq.Doe.Gov (Melissa Smith)
mike.price@opc.com (M.W. Price)
MKWASHIN@southernco.com (MKWashington)
mlgraves@southernco.com (Michelle Graves)
MSF@nei.org (Marvin Fertel)
myox@southernco.com (Mike Yox)
nirsnet@nirs.org (Michael Mariotte)
Nuclaw@mindspring.com (Robert Temple)
Paul@beyondnuclear.org (Paul Gunter)
pbessette@morganlewis.com (Paul Bessette)
r.joshi15@comcast.net (Ravi Joshi)
Ronald.Jones@scana.com (Ronald Jones)
rwink@ameren.com (Roger Wink)
sabinski@suddenlink.net (Steve A. Bennett)
sara@cleanenergy.org (Sara Barczak)
sblanton@balch.com (Stanford Blanton)
Shiva.Granmayeh@hq.doe.gov (Shiva Granmayeh)
sjackson@meagpower.org (Steven Jackson)
sjones@psc.state.ga.us (Shemetha Jones)
skauffman@mpr.com (Storm Kauffman)
sroetger@psc.state.ga.us (Steve Roetger)
stephen.burdick@morganlewis.com (Stephen Burdick)
tom.miller@hq.doe.gov (Tom Miller)
TomClements329@cs.com (Tom Clements)
Vanessa.quinn@dhs.gov (Vanessa Quinn)
vcsummer2n3@gmail.com (Brian McIntyre)
wasparkm@southernco.com (Wesley A. Sparkman)
wayne.marquino@gmail.com (Wayne Marquino)
weave1dw@westinghouse.com (Doug Weaver)
William.Birge@hq.doe.gov (William Birge)
x2gabeck@southernco.com (Gary Becker)
x2kmseib@southernco.com (Kristin Seibert)

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 - NRC INTEGRATED INSPECTION REPORTS 05200025/2019003, 05200026/2019003 DATED NOVEMBER 4, 2019

Distribution
Ho Nieh, NRR
Michael King, NRR
Victor Hall, NRR
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R2DCO
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OFFICE	DCO	DCO	DCO	DCO	DCO	DRS	DCO	DCO
SIGNATURE	AArtayet	PCarmen	KCarrington	LCastelli	GCrespo	SDowney	JEargle	TFredette
DATE	**10/17/2019**	**Via CIPIMS**	**Via CIPIMS**	**10/17/2019**	**10/17/2019**	**10/17/2019**	**VIA CIPIMS**	**10/22/2019**
OFFICE	DCO	DCO	DCO	DCO	DCO	DCO	DCO	DCO
SIGNATURE	BGriman	DHarmon	PHeher	NKarlovich	BKemker	JKent	ALerch	JLizardi
DATE	**Via CIPIMS**	**10/21/2019**	**10/22/2019**	**10/23/2019**	**Via CIPIMS**	**10/17/2019**	**Via CIPIMS**	**10/22/2019**
OFFICE	DRS	DCO	DFFI	DCO	DCO	DCO	DCO	DCO
SIGNATURE	MMagyar	RMathis	KMcCurry	APonko	SSmith	STemple	JVasquez	NCoovert
DATE	**10/20/2019**	**10/28/2019**	**10/21/2019**	**10/29/2019**	**10/17/2019**	**10/25/2019**	**10/23/2019**	**11/4/2019**

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U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers:	5200025 5200026
License Numbers:	NPF-91 NPF-92
Report Numbers:	05200025/2019003 05200026/2019003
Licensee:	Southern Nuclear Operating Company, Inc.
Facility: Location:	Vogtle Electric Generating Plant, Units 3 and 4
Inspection Dates:	July 1, 2019 through September 30, 2019
Inspectors:	A. Artayet, Senior Construction Inspector, DCO P. Carman, Project Manager, DCO K. Carrington, Resident Inspector, DCO L. Castelli, Senior Construction Inspector, DCO G. Crespo, Senior Construction Inspector, DCO S. Downey, Senior Reactor Inspector, DRS J. Eargle, Senior Project Manager, DCO T. Fredette, Reactor Operations Engineer, NRR/VPO B. Griman, Construction Inspector, DCO D. Harmon, Construction Inspector, DCO P. Heher, Resident Inspector, DCO N. Karlovich, Resident Inspector, DCO B. Kemker, Senior Resident Inspector, DCO J. Kent, Construction Inspector, DCO A. Lerch, Construction Inspector, DCO J. Lizardi-Barreto, Construction Inspector, DCO M. Magyar, Reactor Inspector, DRS R. Mathis, Test Inspector, DCO K. McCurry, Construction Inspector, DFFI A. Ponko, Senior Construction Inspector, DCO S. Smith, Senior Construction Inspector, DCO S. Temple, Resident Inspector, DCO J. Vasquez, Construction Inspector, DCO
Approved by:	Nicole C. Coovert, Chief Construction Inspection Branch 1 Division of Construction Oversight

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2019003, 05200026/2019003; 07/01/2019 through 09/30/2019; Vogtle Unit 3 Combined License, Vogtle Unit 4 Combined License, routine integrated inspection report.

This report covers a three months period of inspection by regional and resident inspectors, and announced Inspections, Tests, Analysis, and Acceptance Criteria (ITAAC) inspections by Regional inspectors. The U.S. Nuclear Regulatory Commission (NRC) program for overseeing the construction of commercial nuclear power reactors is described in Inspection Manual Chapter (IMC) 2506, Construction Reactor Oversight Process General Guidance and Basis Document.

A. NRC-Identified and Self Revealed Findings

None

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Construction Status

Unit 3: The licensee completed installation of the air baffle assemblies and is in the process of welding the tension ring modules for the shield building. In the containment building, the licensee commenced installation of reactor coolant system (RCS) and passive core cooling system (PXS) instrumentation, continued electrical conduit and cable installation (safety and non-safety related (NSR)), and commenced flushing RCS and connecting systems piping. The licensee continued construction of the auxiliary building structure from elevation 117'-6" to the roof, completed staging or setting major electrical equipment, and commenced installation of safety related raceways and cables.

Unit 4: The licensee continued welding of the shield building reinforced concrete/steel composite transition panel at the interface of the auxiliary building roof. In the containment building, the licensee continued construction on the operating deck frame work, completed installation of electrical penetration assemblies and commenced routing of electrical conduits. The licensee continued construction of the auxiliary building structure from elevation 117'-6" to 135'-3" and commenced routing of electrical conduits.

1. CONSTRUCTION REACTOR SAFETY

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

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

1A01 (Unit 3) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

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

- 65001.03-02.03 - Installation and Welding
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls

The inspectors performed an inspection of two field welds SV3-RCS-PLW-03A-1 and SV3-RCS-PLW-03A-2-C that join an 18-inch diameter pipe extension between the automatic depressurization system (ADS) stage 4 inlet piping L136A and reactor coolant system (RCS) hot leg L001A to verify if the branch connection was installed in accordance with the American Society of Mechanical Engineers (ASME) Code Section III, Subsection NB, for Class 1 components. Specifically, the inspectors observed in-

process manual gas tungsten arc welding (GTAW) for both welds to verify if the cleanliness, use of amperage, and each welder's ability to deposit sound weld metal were in accordance with welding procedure WPS1-8.8T01 using previously inspected ER316L welding rods. In addition, the inspectors reviewed the Stone & Webster (S&W) weld data sheet (WDS) entries for both welds to determine if quality control (QC) inspection hold points were signed-off and dated for material identification markings, cleanliness, and joint fit-up in accordance with the ASME Code, Section III, Subsections NCA-4134.10 and NB-4230. The inspectors reviewed nine welding material requisitions (WMRs) against the S&W WDS entries for both welds to determine if traceability of the welding rods and welders were controlled in accordance with Subsections NB-4122 and NB-4300. The inspectors reviewed five welder qualification records to determine if they were tested and certified in accordance with the requirements of the ASME Code, Section IX.

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC Number 2.1.02.05a.i (19) / Family 14A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.05a.i (19). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.E-02.04-Documentation

The inspectors reviewed the equipment qualification reconciliation report (EQRR) to determine whether the licensee assessed work packages, design changes, and nonconformances to confirm the as-built ADS sparger B, tag number SV3-PXS-MW-01B, including anchorage, was seismically bounded by the analyzed conditions in accordance with the applicable data sheet report (SV3-MW01-Z0R-001), design specification (SV3-MW01-Z0-001), and generic design report (APP-MW01-Z0C-001). Specifically, the inspectors reviewed the licensee's methodology and selection of applicable work orders, data sheets, and design drawings to conclude those inspections and analyses demonstrated the installed sparger design characteristics were bounded by the design characteristics that were analyzed in its seismic analysis.

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

The inspectors had previously observed in-process welding of Unit 3 sparger B and its support structure, took independent measurements, and reviewed design, fabrication, and installation records, including nonconformance and disposition (N&D) reports and

the seismic analysis, as documented in inspection reports 2018001 (ML18134A348), 2018002 (ML18226A348), 2018003 (ML18317A395), and 2019002 (ML19220B678).

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 2.1.02.08d.v (36) / Family 07A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.08d.v (36). 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 inspection for the four Unit 3 fourth-stage ADS valves (RCS-PL-V004A, V004B, V004C, and V004D) to verify the minimum elevation of the bottom inside surface of the outlet was greater than plant elevation 110'0" as specified in Table 2.1.2-4 of Appendix C of the Vogtle Unit 3 Combined License (COL). Similarly, the inspectors performed an inspection to verify the discharge of these valves was directed into the steam generator compartments as specified in Table 2.1.2-4 of Appendix C of the Vogtle Unit 3 COL. The inspectors observed the licensee survey the elevation of the centerline of each pipe flange at the inlet to the four ADS valves; reviewed the vendor's as-built reports for each ADS valve; and reviewed the vendor's assembly drawing for the ADS valves and compared the drawing dimensions with the as-built (or as-measured) dimensions from the as-built reports. The inspectors reviewed the survey results; reviewed the licensee's calculations of the minimum elevation of the bottom inside surface of the outlet of each valve; and performed independent calculations to verify the licensee's results. The inspectors also observed the discharges lines for the valves to verify they would discharge directly into the steam generator compartments to satisfy the ITAAC.

b. Findings

No findings were identified.

1A04 (Unit 3) ITAAC Number 2.1.03.03 (72) / Family 05F
(Unit 4) ITAAC Number 2.1.03.03 (72) / Family 05F

a. Inspection Scope

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

- 65001.B-02.02-Welding Procedure Qualification

The inspectors reviewed a sample of welding procedures used by Westinghouse Newington and their sub-vendor American Tank & Fabrication (AT&F) Nuclear to fabricate the core barrel lower reactor vessel internals, and the associated procedure qualification records (PQRs), to determine if the core barrel had been fabricated using procedures that had been written and qualified per the requirements of the ASME Code, Section III, Subsection NG, 1998 edition 2000 addenda.

b. Findings

No findings were identified.

1A05 (Unit 3) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

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

- 65001.03-02.03 - Installation and Welding
- 65001.11-02.03 - Installation and Welding
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls

The inspectors performed an inspection of field weld SV3-CCS-PLW-812-6 for joining 10-inch diameter carbon steel pipes for the component cooling water supply to containment piping L201A located in the annulus between the containment P03 penetration and shield building to verify installation was performed in accordance with the ASME Code, Section III, Subsection NC, for Class 2 components. Specifically, the inspectors observed in-process manual GTAW to verify if the cleanliness, use of amperage, and welders' ability to deposit sound weld metal were in accordance with welding procedure WPS1-1.1C21 using previously inspected ER70S-6 welding rods. In addition, the inspectors reviewed the S&W WDS to determine if QC inspection hold points were signed-off and dated for material identification markings, cleanliness, and joint fit-up in accordance with the ASME Code, Section III, Subsections NCA-4134.10 and NC-4230.

The inspectors also reviewed a sample of WMRs for weld SV3-CCS-PLW-812-6 against the S&W WDS entries to determine if traceability of the welding rods and

welders were controlled in accordance with NC-4122 and NC-4300. The inspectors also reviewed a sample of welder qualification records to determine if the welders were tested and certified in accordance with the requirements of the ASME Code, Section IX.

The inspectors performed an inspection of in-process welding for the Unit 3 spent fuel pool cooling discharge piping. Specifically, the inspectors observed weld SV3-SFS-PLW-520-2, connecting pipe spools SV3-SFS-PLW-520-1 and SV3-SFS-PLW-521-1 on line SFS-PL-L017 (ASME Class 2). The inspectors observed manual GTAW to verify if the piping was welded in accordance with S&W weld procedure specification (WPS) 1-8.8T01 and the ASME Code, Section III, Subsection NC. The inspectors reviewed the WDS, WMR 465897, and material markings on the weld rods and base material in the field to verify if traceability of the ER308L weld rods, base material, and welder identification (ID) were controlled in accordance with the ASME Code, Section III, Subsections NCA and NC. The inspectors also observed the amperage setting on the welding machine to verify if the value was within the range listed in the WPS.

The inspectors reviewed a certified material test report (CMTR) for the weld filler metals being used for weld SV3-SFS-PLW-520-2 to determine if they met the requirements for chemical analysis and mechanical properties in accordance with the ASME Code, Section II-C, SFA-5.9 specification for bare stainless-steel rods. The inspectors also reviewed welder qualification records to determine if the welder was qualified and tested in accordance with the requirements of the ASME Code, Section IX.

b. Findings

No findings were identified.

1A06 (Unit 3) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

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

- 65001.07-02.01 - General Installation
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed an as-built inspection of a containment vessel penetration valve to determine if it conformed to installation requirements in the design specification and construction drawings. Specifically, the inspectors examined valve SV3-CCS-PL-V208 to determine if the valve size, class, type, location, flow direction, elevation, body-to-actuator joint, and bolt size and quantity was in accordance with the design specification, valve data sheet, and construction drawings. The inspectors reviewed a material issue report for the gaskets used to determine if the size and type

was in accordance with the design specification and construction drawing. The inspectors independently measured a sample of dimensions to determine if they conformed to the construction drawing.

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC Number 2.2.01.05.i (98) / Family 11A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.05.i (98). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.E-02.04-Documentation

The inspectors reviewed the EQRR to determine whether the licensee assessed work orders, design changes, and nonconformances to confirm the as-built fuel transfer tube (FTT), tag number SV3-FHS-FT-01, including anchorage, was seismically bounded by the analyzed conditions in accordance with the design specification (SV3-FT01-Z0-001) and equipment design report (SV3-FT01-S3R-001). Specifically, the inspectors reviewed the licensee's methodology and selection of applicable work orders and design drawings to conclude those inspections and analyses demonstrated the installed FTT design characteristics, including the quick opening transfer tube closure (QOTTC), were bounded by the design characteristics analyzed in its seismic analysis. The inspectors also interviewed licensing personnel to determine how inspection and analysis were performed for applicable FTT non-conformances and E&DCR issued during fabrication, handling, installation, and testing to ensure all deviations were bounded by the seismically analyzed conditions.

The inspectors had previously observed in-process welding and conducted independent reviews of design, fabrication, and installation records, including N&D reports and the seismic analysis, for the Unit 3 FTT, as documented in inspection reports 2018003 (ML18317A395), 2019001 (ML19135A691), and 2019002 (ML19220B678).

b. Findings

No findings were identified.

1A08 (Unit 3) ITAAC Number 2.2.03.08c.iii (182) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.iii (182). 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 inspection to verify both Unit 3 core makeup tank (CMT) inlet lines from the RCS cold legs had no downward sloping sections between the connections to the RCS and the high point of the lines as specified in Table 2.2.3-4 of Appendix C of the Vogtle Unit 3 COL. Similarly, the inspectors performed an inspection to verify the Unit 3 passive residual heat removal (PRHR) heat exchanger (HX) line from the RCS hot leg had no downward sloping sections between the connection to the RCS and the high point of the line as specified in Table 2.2.3-4 of Appendix C of the Vogtle Unit 3 COL. This inspection involved three piping sections consisting of seven pipe segments (i.e., three PRHR HX to RCS hot leg segments and two segments each for CMT A and CMT B from the RCS cold legs). The inspectors performed a walkdown of the three piping sections with the licensee, observed the licensee measure the slope of the lines, and performed independent measurements to verify the as-built piping was consistent with the as-built drawings. In addition, the inspectors reviewed quality records including the principal closure document (PCD), survey results, and as-built elevation drawings to verify the lines had no downward sloping sections between the connection to the RCS and the high point of the lines to satisfy the ITAAC acceptance criteria.

b. Findings

No findings were identified.

1A09 (Unit 3) ITAAC Number 2.2.03.08c.iv.02 (184) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.iv.02 (184). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.04 - Key Dimensions and Volumes
- 65001.01-02.06 - Records
- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors observed the licensee's survey verification, performed independent evaluations, and reviewed records for the PXS containment recirculation lines and the in-containment refueling water storage tank (IRWST). The inspectors reviewed the survey procedures to verify they included instructions for performing ITAAC related surveys and appropriate quantitative acceptance criteria in accordance with 10 CFR 50, Appendix B, Criterion V. The inspectors observed the licensee perform surveying for pipe lines: SV3-PXS-PL-L100, SV3-PXS-PL-L101, SV3-PXS-PL-L106, SV3-PXS-PL-L113A/B, SV3-PXS-PL-L116A/B, SV3-PXS-PL-L117A/B, SV3-PXS-PL-L118A/B, SV3-PXS-PL-L123A/B, SV3-PXS-PL-L124A/B, SV3-PXS-PL-L125A/B, SV3-PXS-PL-L127A/B, SV3-PXS-PL-L131A/B, and SV3-PXS-PL-L132A/B. The inspectors observed surveying of the above pipe lines to determine whether calibrated and verified equipment was used and the surveying was done in accordance with procedures. Additionally, the inspectors observed surveying of the outside of these pipe lines to verify the selection of survey points and pipe diameters would lead to determining the maximum elevations for each line in accordance with the acceptance criteria. The inspectors reviewed the training records for the individuals who performed the surveys to verify the individuals were trained and qualified as required by the survey procedures. The inspectors reviewed the survey results to verify the data was correctly recorded and translated into quality records.

The inspectors reviewed the survey data for the bottom inside surface of the IRWST to verify the surveys were documented in accordance with the survey procedures and the data was correctly translated into quality records. The inspectors independently walked down the IRWST, the above pipe lines, and pipe lines SV3-PXS-PL-L021A/B to verify the maximum elevations of the pipe lines were lower than the bottom inside surface of the IRWST as specified in Table 2.2.3-4 of Appendix C of the Vogtle Unit 3 COL.

The inspectors reviewed the PCD and its included references to verify the data was correctly translated from the survey records. The inspectors reviewed the pipe wall thicknesses listed on the PCD to verify they were the correct wall thicknesses for the pipe size and classification in accordance with the drawings, SV3-PL02-Z0-001, and the ASME Code, Section III, Subsection NCA. The inspectors reviewed the calculated maximum elevation of the top inside surface of each pipe listed in the PCD to verify the maximum elevations of the pipe lines were lower than the bottom inside surface of the IRWST as specified in Table 2.2.3-4 of Appendix C of the Vogtle Unit 3 COL.

b. Findings

No findings were identified.

1A10 (Unit 3) ITAAC Number 2.2.05.07e (880) / Family 19A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.05.07e (880). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.12-02.01 - General Installation
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors observed the main control room emergency habitability system (VES) filter shielding to verify the as-built shielding met the functional requirements and conformed to the system design description of the Updated Final Safety Analysis Report (UFSAR), Section 6.4.2 and the Vogtle Unit 3 COL, Section 2.2.5 and Table 2.2.5-1. The inspectors performed a walk down of the installed shielding to verify shielding existed below the filtration unit and was within its vertical projection as specified in the ITAAC acceptance criteria. The inspectors observed the licensee's inspection of the VES air filter assembly shielding panel, including the dimensions, material, and location within the assembly, prior to installation of the assembly to verify the shielding panel was of the correct dimensions and material as specified in the design drawings. The inspectors observed the rigging and lifting activities to verify they were performed in accordance with the work package and work package hold points were maintained. The inspectors observed the final installed air filter unit assembly to verify the shielding panel was not damaged or altered during installation.

b. Findings

No findings were identified.

1A11 (Unit 3) ITAAC Number 2.6.03.02.i (597) / Family 08A

a. Inspection Scope

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

- 65001.08-02.02 - In-Process Installation
- 65001.F-02.04-General QA Review

The inspectors performed an in-process inspection of installation of the following Unit 3 Class 1E uninterruptible power supply system (IDS) components:

- Division B low voltage fuse panels (SV3-IDSB-EA-4, SV3-IDSB-EA-5, and SV3-IDSB-EA-6), Division B battery monitor fuse panels (SV3-IDSB-EA-7, SV3-IDSB-EA-8) and Division B motor control center (SV3-IDSB-DK-1);
- Division C voltage regulating transformer (SV3-IDSC-DT-1);
- Division D DC voltage distribution panel (SV3-IDSD-DD-1); and
- Division D AC voltage distribution panels (SV3-IDSD-EA-1, SV3-IDSD-EA-2)

The inspectors observed torquing of anchor/mounting bolts for the components to verify the torque wrenches and torque values used were in accordance with the work

packages, vendor documents, and design documents. The inspectors also reviewed the calibration labels on the torque wrenches to verify the torque wrenches had not passed their calibration due date in accordance with the Bechtel project nuclear quality control manual (PQNM). The inspectors also observed torquing of mounting bolts for bus bars in the Division B IDS motor control center battery monitor fuse panels to verify the work was performed in accordance with the work package. For the Division B battery monitor fuse panels, the inspectors also observed the installation activity to verify the strut sizes were as listed on design drawings.

b. Findings

No findings were identified.

1A12 (Unit 3) ITAAC Number 2.7.01.02a (678) / Family 12F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.7.01.02a (678). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.12-02.01 - General Installation
- 65001.12-02.02 - Welding
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection

The inspectors performed a welding inspection on the 28-inch diameter carbon steel ventilation system to the main control room. Specifically, the inspectors observed in-process manual GTAW on field welds SV3-VBS-PLW-030-9, for pipe to straight tee fitting, and SV3-VBS-PLW-030-14, for pipe to weld-neck flange of line VBS-L311, to verify if welding was performed in accordance with ASME Code Section III, Subsection ND, for Class 3 components. The inspectors observed the fit-up and amperage usage for the root pass on the pipe to flange weld to determine if the fit-up tolerances and welding machine readings were within the range described on welding procedure WPS1-1.1C21. The inspectors also observed the internal root pass for the pipe to tee fitting to verify if the fit-up and full joint penetration welding was performed in accordance with the requirements of ASME Code Section III, Article ND-4000, for Class 3 components. In addition, the inspectors reviewed the WDSs to determine if inspection hold points for QC were signed-off for material identification markings, cleanliness, and joint fit-up in accordance with the ASME Code, Section III, Subsections NCA-4134.10 and ND-4230.

The inspectors observed the classification and heat number markings on the 1/8-inch diameter weld rods to determine if the previously inspected ER70S-6 weld rods were used in accordance with the WDSs and WPS. The inspectors reviewed six welder qualification records for three welders to determine if they were qualified and tested in

accordance with the requirements of the ASME Code, Section IX. The inspectors reviewed the WMR against the WDS entries for the pipe to flange weld to determine if traceability of the welder and welding rods were controlled in accordance with the ASME III, ND-4122 and ND-4300. The inspectors reviewed MISTRAS nondestructive evaluation (NDE) magnetic particle testing (MT) report, V-19-MT-301-3625 for weld-no. SV3-VBS-PLW-030-14, to verify whether final magnetic particle examination was performed with acceptable results using an alternating current (AC) yoke with 10 lbs pre/post lift tests and red dry particle in accordance with ASME Sections III, Article ND-5000, and Section V, Article 7, for magnetic particle examination.

b. Findings

No findings were identified.

1A13 (Unit 3) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

- 65001.01-02.06 - Records
- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records
- 65001.F-02.02-Fabrication Records Review
- 65001.F-02.03-Observation of Fabrication Activities

The inspectors observed in-process welding activities and reviewed records associated with welding of the Unit 3 shield building air inlet modules. The inspectors selected the following welds for inspection:

- 16/AI-E horizontal outside (between panels AI1-AI5 and 16A and 16B, between approximately azimuth 3 degrees and azimuth 39 degrees, at elevation 248'-6");
- 16/AI-F horizontal inside (between panels AI6-AI8 and 16B, between approximately azimuth 39 degrees and azimuth 62 degrees, at elevation 248'-6"); and
- AIF/G vertical outside (between panels AI11and AI12, approximately at azimuth 90 degrees, between elevations 248'-6" and 266'-4").

The inspectors performed an independent visual inspection of fit-up and tack welding, intermediate passes, and portions of completed welds to determine whether:

- the quality of the tack welds, weld toes, and cover passes were free from defects such as cracks, lack of fusion, or excessive overlap/undercut/porosity;
- the welds met the type, size, and location requirements of the drawings, SV3-1208-Z0-001, and the WPSs; and
- the welds met the visual inspection acceptance criteria for 181816-000-WS-PR-45056 and American Welding Society (AWS) D1.1-2000.

The inspectors observed in-process flux-cored arc welding (FCAW) and shielded metal arc welding (SMAW) to verify weld passes were performed in accordance with the requirements of AWS D1.1:2000. The inspectors verified the weld joint cleanliness was maintained between weld passes with staggered starts/stops and the welding operator's ability to deposit sound weld metal was performed in accordance with WPS 181816-000-WS-SP- E71T1 and WPS 181816-000-WS-SP-E8018. In addition, the inspectors observed the following attributes during in-process welding to verify welding was performed in accordance with the drawings and 181816-000-WS-SP-45001:

- the weld material being used at the work locations, including AWS electrode classification;
- the weld variables, including voltage, amperage, and travel speed;
- the heat input and interpass temperature;
- the joint configuration and weld position; and
- the environmental conditions, including protection from wind and moisture.

The inspectors reviewed the welding material authorization and release reports for the weld electrodes used to verify the material had been inspected and approved for use in accordance with CMS-720-03-PR-09154. The inspectors reviewed the weld travelers and associated spreadsheets for the weld joint locations to determine if established QC visual inspection hold points were signed-off and dated for cleanliness and fit-up alignment, and traceability of welders were maintained in accordance with GWPS 181816-000-WS-SP-45001.

The inspectors reviewed the weld travelers for the weld joints listed above to determine if established QC inspection hold points and required visual inspections were signed-off in accordance with 181816-000-WS-SP-45001. The inspectors also reviewed the weld travelers to determine if the traceability of weld filler metals and welders were maintained in accordance with 181816-000-WS-SP-45001. The inspectors observed the QC final visual inspection of 16/AI-E and 16/AI-F to verify it was performed in accordance with 181816-000-WS-PR-45056. The inspectors reviewed the ultrasonic test (UT) report for the horizontal welds to verify the UT was performed and documented in accordance with 181816-000-WS-PR-45054 and American National Standards Institute (ANSI) / American Institute of Steel Construction (AISC) N690 and the weld quality met the acceptance criteria of AWS D1.1, Section 6 and Part F.

The inspectors reviewed a sample of N&Ds associated with the concrete placements to verify the nonconformances had supporting technical evaluations and were dispositioned in accordance with APP-GW-GAP-428, "Nonconformance and Disposition Report." The inspectors observed weld build-up activities and reviewed the

weld traveler associated with N&D SV3-1278-GNR-000012 to verify the work was completed in accordance with the disposition of the N&D. Additionally, the inspectors reviewed the required MT report for the weld build-up activities to verify the MT was performed and documented in accordance with 181816-000-WS-PR-45058 and ANSI/AISC N690, and the weld quality met the acceptance criteria of AWS D1.1, Section 6. The inspectors observed installation of additional D2L bars into the modules as a result of horizontal seam weld 16/AI joint mis-match to verify the additional bars were installed and welded in accordance with the drawings and procedures. The inspectors reviewed an E&DCR to verify the design change had a supporting technical evaluation and was dispositioned in accordance with APP-GW-GAP-420, "Engineering and Design Coordination Reports."

b. Findings

No findings were identified.

1A14 (Unit 3) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

- 65001.01-02.06 - Records
- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.02 - Laboratory Testing
- 65001.02-02.03 - Special Considerations
- 65001.02-02.06 - Record Review
- 65001.02-02.07 - Problem Identification and Resolution
- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors observed concrete placement activities, observed testing activities, reviewed quality records, and performed independent inspection of Vogtle Unit 3 shield building air inlet panels between elevations 247'-6 1/2" and 264'-4".

The inspectors independently assessed the placement area prior to concrete placement to determine whether it was secure, leak tight, and free from debris or excess water as required by American Concrete Institute (ACI) 349-01 and SV3-CC01-Z0-031. The inspectors reviewed the concrete placement plan included in the

work package to determine whether pre-placement planning had been completed, including considerations for weather, mass concrete, and unexpected events.

The inspectors observed concrete placement activities to determine whether approved work instructions and specifications were available in the work area and were followed throughout the concrete placement as required by the licensee's quality assurance program (QAP) and Title 10, Code for Federal Regulations Part 50 (10 CFR 50), Appendix B, Criterion 5. The inspectors observed concrete placement activities and reviewed batch plant records to determine whether the following were in accordance with ACI 349-01, SV3-CC01-Z0-026, and SV3-CC01-Z0-031:

- the maximum water/cement ratio was not exceeded;
- concrete was placed in lifts;
- placement drop distances did not exceed requirements and did not result in concrete segregation;
- the time interval between mixing and placing was less than 90 minutes and the concrete trucks had less than 300 revolutions for each batch of concrete; and
- the concrete in the concrete trucks and at the point of placement was uniformly mixed.

The inspectors evaluated a sample of the batch tickets as they were being filled out and signed to verify the following was conducted in accordance with ACI 349-01 and SV3-CC01-Z0-031:

- batch records were generated, controlled, and indicated placement location, mix, volume, date, time, and special instructions;
- each truck was measured, and each trip received proper ticketing and documentation;
- the mix listed, and the weights of each constituent were reviewed prior to placing the concrete;
- each batch ticket was reviewed for transport time and truck rotations; and
- water was adjusted to account for moisture content of aggregates.

The inspectors observed field engineering and QC inspections throughout the concrete placement to verify inspection was performed during placement as required by ACI 349-01, SV3-CC01-Z0-031, and 26139-000-4MP-T81C-N3210. The inspectors reviewed the QC and quality assurance (QA) inspection reports for the concrete placement to verify the inspections were documented and the activities were accepted in accordance with SV3-CC01-Z0-031 and 26139-000-4MP-T81C-N3210.

During the placement, the inspectors observed in-process concrete testing to determine whether:

- concrete temperature, slump, air content, and unit weight were determined at the proper location and frequency as required by ACI 349-01, SV3-CC01-Z0-027, 132175-102-006-04-000052, and the applicable ASTM standards;
- sample collection, testing techniques, and testing equipment conformed to ACI 349-01, SV3-CC01-Z0-027, and the applicable American Society for Testing and Materials (ASTM) standards;

- test results were evaluated against applicable quantitative and qualitative acceptance criteria in accordance with 10 CFR 50, Appendix B, Criterion 5; and
- concrete strength test sample cylinders were made at the required location and frequency and were cured in accordance with ACI 349-01, SV3-CC01-Z0-027, and the applicable ASTM standards.

The inspectors reviewed a sample of batch tickets to verify the records contained the required information in accordance with ACI 349-01, SV3-CC01-Z0-027, and the applicable ASTM standards. The inspectors observed concrete curing activities to determine whether curing was in accordance with ACI 349-01 and SV3-CC01-Z0-031 with regard to the method, materials, duration, and temperature.

The inspectors reviewed corrective action reports 50027521 and 70000284 associated with the concrete placement to verify the evaluations and corrective actions were conducted in accordance with the licensee's corrective action program (CAP); the issues were identified and documented in a timely manner; and the issues were classified and resolved commensurate with their safety significance. The inspectors reviewed the associated N&Ds to verify the nonconformances had supporting technical evaluations and were dispositioned in accordance with APP-GW-GAP-428, "Nonconformance and Disposition Report." The inspectors reviewed the associated E&DCR to verify the design change had a supporting technical evaluation and was dispositioned in accordance with APP-GW-GAP-420, "Engineering and Design Coordination Reports."

b. Findings

No findings were identified.

1A15 (Unit 3) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

- 65001.01 - Inspection of ITAAC-Related Foundations & Buildings
- 65001.01-02.05 - Steel Structures
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.B-02.06-Records

The inspectors observed in-process welding of horizontal and vertical field welds FW05 and FW06, respectively, connecting tension ring modules TR05 and TR06. The inspectors also observed in-process welding of interior horizontal weld TR06-AI-18A

connecting tension ring module TR06 to air inlet module AI18. Specifically, the inspectors observed interpass SMAW on internal vertical and horizontal seams for the shield building upper tension ring panels TR05 and TR06 to verify whether the welders were depositing sound weld metal in clean weld butt joints using staggered starts and stops in accordance with the AWS D1.1:2000 Code. The inspectors also verified if the certified welders were using E8018-C1 electrodes in accordance with the applicable WPS.

The inspectors reviewed the weld travelers associated with the welds listed above to verify that work was conducted in accordance with a document/procedure which sequences all operations, references procedures and instructions, establishes hold points, and provides for production welding and inspection sign-offs. The Inspectors also verified that QC inspection hold points for fit-up and tack of seams were signed-off on in the weld traveler in accordance with the Chicago Bridge and Iron (CB&I) QAP.

The inspectors reviewed general welding procedure specification 181816-000-WS-SP-45001 and WPS 181816-000-SP-E8018 along with supporting PQRs to verify that the WPS used for welding the joints listed above was qualified in accordance with the ASME Boiler and Pressure Vessel (BPV) Code, Section IX. Additionally, the inspectors reviewed the Certificate of Conformance (CoC) and CMTR for the weld filler material being used to determine if it met the requirements of the WPS.

The inspectors reviewed welder performance qualification records for two welders having site identification designations HWL4089 and RTR3688 to determine if the welders were qualified in accordance with ASME BPV Code, Section IX and had maintained their qualifications.

b. Findings

No findings were identified.

1A16 (Unit 3) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

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

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

The inspectors observed the section of wall along column 1 between column lines I and N from elevation 163’-0” to approximately elevation 180’-0”. For this section of wall, the inspectors reviewed the size, spacing, material designation, grade, and layout

of the main horizontal and vertical reinforcing bars to verify if installation of this reinforcing steel was consistent with the applicable design drawings E&DCRs, construction specification SV3-CC01-Z0-31, and ACI 349-01. The inspectors also reviewed the lap splices between the vertical and horizontal bars, respectively, to verify if they met the lengths specified in the concrete general notes provided on drawing SV3-0000-C9-001 and were installed in accordance with design specification SV3-CC01-Z0-31 and ACI 349-01.

The inspectors reviewed a sample of nine E&DCRs to verify if design changes were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, Design Control. Specifically, the inspectors verified 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. The inspectors also reviewed the E&DCRs to verify if a technical justification was provided for the design change, deviations from applicable quality standards such ACI 349-01 were controlled, and the revised design was correctly translated into the updated design output documents.

The inspectors reviewed a condition report and associated licensing document change request to verify that deviations from the approved design were being identified, documented, and reconciled using the appropriate change process.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.01-02.06 - Records
- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.02 - Laboratory Testing
- 65001.02-02.06 - Record Review
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors observed concrete placement activities, observed testing activities, reviewed quality records, and performed independent inspection of the wall along

column line N between column lines 1 and 4 from elevation 155'-0" to the roof at 180'-9" of the Vogtle Unit 3 auxiliary building.

The inspectors observed concrete placement activities to determine whether approved work instructions and specifications were available in the work area and were followed throughout the concrete placement as required by the licensee's QAP and 10 CFR 50, Appendix B, Criterion 5. The inspectors observed concrete placement activities and reviewed batch plant records to determine whether the following were in accordance with ACI 349-01, SV3-CC01-Z0-026, and SV3-CC01-Z0-031:

- concrete was placed in lifts;
- placement drop distances did not exceed requirements and did not result in concrete segregation;
- the time interval between mixing and placing was less than 90 minutes and the concrete trucks had less than 300 revolutions for each batch of concrete; and
- the concrete in the concrete trucks and at the point of placement was uniformly mixed.

The inspectors evaluated a sample of the placement's batch tickets as they were being filled out and signed to verify the following was conducted in accordance with ACI 349-01 and SV3-CC01-Z0-031:

- batch records were generated, controlled, and indicated placement location, mix, volume, date, time, and special instructions;
- each truck was measured, and each trip received proper ticketing and documentation;
- the mix listed, and the weights of each constituent were reviewed prior to placing the concrete;
- each batch ticket was reviewed for transport time and truck rotations; and
- water was adjusted to account for moisture content of aggregates.

The inspectors observed field engineering and QC inspections throughout the concrete placement to verify inspection was performed during placement as required by ACI 349-01 and SV3-CC01-Z0-031. The inspectors reviewed the QC inspection reports for the concrete placement to verify the inspections were documented and the activities were accepted in accordance with SV3-CC01-Z0-031. The inspectors reviewed a sample qualification records for the QC inspectors for the concrete placement to verify the individuals conducting the inspection were qualified and authorized to conduct the inspection in accordance with SV3-CC01-Z0-031.

During the placement, the inspectors observed in-process concrete testing to determine whether:

- concrete temperature, slump, air content, and unit weight were determined at the proper location and frequency as required by ACI 349-01, SV3-CC01-Z0-027, 26139-000-4MP-T81C-N3210, 132175-102-006-04-000052, and the applicable ASTM standards;
- sample collection, testing techniques, and testing equipment conformed to ACI 349-01, SV3-CC01-Z0-027, and the applicable ASTM standards;

- test results were evaluated against applicable quantitative and qualitative acceptance criteria in accordance with 10 CFR 50, Appendix B, Criterion 5; and
- concrete strength test sample cylinders were made at the required location and frequency and were cured in accordance with ACI 349-01, SV3-CC01-Z0-027, and the applicable ASTM standards.

The inspectors reviewed a sample of batch tickets and test reports, including the concrete cylinder strength testing, to verify the records contained the required information in accordance with ACI 349-01, SV3-CC01-Z0-027, and the applicable ASTM standards. Additionally, the inspectors reviewed the concrete cylinder break test results to verify the concrete tested met the strength requirements for the specified concrete mix in accordance with SV3-CC01-Z0-026.

The inspectors observed concrete curing activities to determine whether curing was in accordance with ACI 349-01 and SV3-CC01-Z0-031 with regard to the method, materials, duration, and temperature. The inspectors performed independent inspection and measurements of the as-built concrete, including finishes and dimensions, to determine whether the as-built configuration was in accordance with ACI 349-01, SV3-CC01-Z0-031, and the work package.

The inspectors reviewed corrective action reports 50021530, 50023851, and 50027085 associated with the concrete placement to verify the evaluations and corrective actions were conducted in accordance with the licensee's CAP; the issues were identified and documented in a timely manner; and the issues were classified and resolved commensurate with their safety significance. The inspectors reviewed the associated N&D to verify the nonconformance had a technical evaluation and was dispositioned in accordance with APP-GW-GAP-428, "Nonconformance and Disposition Report." The inspectors reviewed the associated E&DCRs to verify the design changes had a technical evaluation and were dispositioned in accordance with APP-GW-GAP-420, "Engineering and Design Coordination Reports."

b. Findings

No findings were identified.

1A18 (Unit 3) ITAAC Number 3.3.00.07bb (793) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.07bb (793). 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
- 65001.A.02.01 - Observation of in-Process Installation Activities

- 65001.A.02.02 - Installation Records Review

The inspectors observed the installation of Class 1E electrical and communication cables into raceways in the non-radiological portion of the auxiliary building on elevations 82'-6", 100'-0", and 117'-6" for IDS electrical equipment in rooms 12201,12301, 12205, 12207,12304, 12305, and 12412. Specifically, the inspectors observed the installation of Class 1E cables SV3-IDSA-EW-DK1BXA , SV3-IDSA-EW-DK1DXA, SV3-IDSA-EW-DK1EXA, SV3-IDSA-EW-DD1AXA, SV3-IDSB-EW-DK1CXB, SV3-IDSD-EW-DK1CXD,and SV3-IDSD-EW-DK1EXD into their respective raceways to verify the following attributes performed were in accordance with the design installation specification, work packages, or cable pull ticket:

- cables were routed in the correct location (i.e. respective room and raceway sections);
- cables were marked with the proper color-code designations for their respective divisions;
- cable bend radii were not exceeded during the cable pulls;
- cable mark numbers indicated on the pull tickets matched the labels on the cables;
- cable voltage and temperature ratings, and descriptions specified on the pull ticket were as indicated on the cables;
- cable insulation remained undamaged during the pulls;
- cables were ty-wrapped to the cable tray rungs at the correct frequency; and
- cables did not overlap within the cable trays.

b. Findings

No findings were identified.

1A19 (Unit 3) ITAAC Number 3.3.00.13 (819) / Family 01A

a. Inspection Scope

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

- 65001.01-02.04 - Key Dimensions and Volumes
- 65001.01-02.06 - Records

This inspection was to verify that the minimum horizontal clearance between structural elements of the annex building and nuclear island structures was greater than or equal to three inches. These buildings consist of reinforced concrete walls and slabs, structural steel columns and floor beams. A minimum horizontal clearance of three inches between these structural elements, above floor elevation 100’-0”, permits horizontal motion of the buildings during the safe shutdown earthquake thus, preventing impact between structural elements from those buildings.

The inspectors accompanied licensee staff conducting measurements, using a standard tape, to verify that the separation between the annex building and the nuclear island was at least three inches, as required by Appendix C of the Vogtle Unit 3 COL. Specifically, the inspectors observed licensee staff measuring gaps between structural members at seven pre-selected points in accordance with as-built layout drawing SV3-4030-C0K-819000, "Verification of Seismic Gap Annex Building to Auxiliary Building Elevation 100'-0," Revision 0. The inspectors reviewed approved drawing SV3-4030-C0K-819000 to verify that these measurements were documented and stored in accordance with NCSP 02-24, Revision 3. Qualification records were reviewed to determine if personnel performing surveys or measurements were qualified and knowledgeable for this activity.

b. Findings

No findings were identified.

1A20 (Unit 3) ITAAC Number E.3.9.05.01.07 (855) / Family 18D
(Unit 4) ITAAC Number E.3.9.05.01.07 (855) / Family 18D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number E.3.9.05.01.07 (855). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.18-02.08-Emergency Facilities and Equipment

The inspectors performed an inspection to verify a reliable and backup electrical power supply is available for the technical support center (TSC) as specified in Table E.3.9-5 of Appendix C of the Vogtle Unit 3 & 4 COL. Specifically, the inspectors observed selected portions of the TSC backup electrical power supply battery and inverter functional testing, which demonstrated the capability of the battery to supply required load and the inverter to transfer load between the normal power transformer and the battery. The inspectors observed the test to verify plant operators followed an approved procedure with appropriate quantitative acceptance criteria; test instrumentation was available and used; and test results were recorded and evaluated in accordance with 10 CFR 50, Appendix B, Criteria V and XI. The inspectors also reviewed the completed test package to verify the acceptance criteria for the test were satisfied in accordance with 10 CFR 50, Appendix B, Criterion XI.

b. Findings

No findings were identified.

1A21 (Unit 4) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

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

- 65001.06-02.01 - General Installation
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.B-02.06-Records
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed records associated with the weld that joins the steam generator lower lateral support for steam generator A to module CA-01 to determine if it met the requirements of ASME BPV Code Section III subsection NF, Supports. Specifically, the inspectors reviewed the weld process traveler to determine if work process steps had been planned and accomplished in a controlled manner. The inspectors reviewed associated E&DCRs and tensile test reports to determine if the weld joint met the design requirements of Subsection NF and acceptance criteria to prevent lamellar tearing.

The inspectors also performed an as-built inspection of the steam generator A lower lateral support. The inspectors examined the support to determine if the wall bracket clevis plate, extension bar, link bar, spacers, vertical pins, and keeper plates were installed in the correct orientation and location in accordance with the construction drawings. The inspectors took independent measurements to verify the as-built support dimensions met the specifications of the design drawings.

b. Findings

No findings were identified.

1A22 (Unit 4) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

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

- 65001.03 - Inspection of ITAAC-Related Installation of Piping
- 65001.03-02.03 - Installation and Welding
- 65001.03-02.07 - Review of Records
- 65001.B- Inspection of the ITAAC-Related Welding Program
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls

- 65001.B-02.06-Records

The inspectors performed an inspection of in-process welding for the Unit 4 pressurizer surge line piping. Specifically, the inspectors observed weld SV4-RCS-PLW-043-1, connecting pipe spools SV4-RCS-PLW-042-1 and SV4-RCS-PLW-043-1 on line RCS-PL-L003 (ASME Class 1). The inspectors observed machine GTAW on the root pass to determine if the piping was welded in accordance with PCI Energy Services welding procedure 8 MC-GTAW and the ASME Code, Section III, Subsection NB. The inspectors reviewed the weld process traveler and weld material withdrawal slip to determine if traceability of the ER316L weld wire and weld operator IDs were controlled, and quality assurance hold points were observed, in accordance with the ASME Code, Section III, Subsections NCA and NB. The inspectors observed the amperage and voltage settings of the welding machine, weld speed, and preheat temperature to determine if the values were within the range listed in the WPS.

The inspectors reviewed the receipt inspection report, CMTR, and CoC for the weld filler metal used for weld SV4-RCS-PLW-043-1 to determine if it met the requirements for chemical analysis in accordance with the ASME Code, Section II-C, SFA-5.9. The inspectors reviewed WPS 8 MC-GTAW and associated PQRs to determine if the WPS was qualified in accordance with ASME Code, Section IX. The inspectors reviewed welder performance qualification records and welder maintenance logs to determine if the welder operators were qualified and maintained proficiency for the machine GTAW weld process used for the weld in accordance with ASME Code, Section IX.

The inspectors reviewed the weld traveler to verify NDE was performed on the weld met the requirements of ASME Code, Section III. The inspectors also reviewed the computed radiography report and observed the associated images to determine whether the weld met the acceptance criteria defined in the ASME Code and whether relevant indications were identified, documented, and repaired appropriately.

b. Findings

No findings were identified.

1A23 (Unit 4) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

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

- 65001.03-02.03 - Installation and Welding
- 65001.03-02.07 - Review of Records
- 65001.06-02.01 - General Installation
- 65001.B-02.04-Production Controls
- 65001.F-02.02-Fabrication Records Review

The inspectors performed an inspection of in-process welding and valve installation on the Unit 4 ADS stage 4 system. Specifically, the inspectors observed welding on stainless steel field welds SV4-RCS-PLW-03A-12, joining motor operated valve (MOV) RCS-PL-V014A to pipe spool SV4-RCS-PLW-03A-1 on line RCS-PL-L136A, and SV4-RCS-PLW-03B-8, joining MOV RCS-PL-V014C to pipe spool SV4-RCS-PLW-03B-1 on line RCS-PL-L137A. The inspectors observed machine GTAW on several weld passes (including the root pass) to determine whether both piping to valve joints were welded in accordance with the requirements of ASME Code, Section III, Subsection NB, for Class 1 components. The inspectors also observed the amperage and voltage settings of the welding machine, travel speed, preheat, and interpass temperatures to determine if the values were within the range listed on the previously reviewed welding procedure WPS1-8.8T01. The inspectors observed that the pipe spools and valves were supported and aligned, the gate valve was fully closed into the seat, and the valve orientation was in the direction of fluid flow to verify valve installation was conducted in accordance with the MOV maintenance manual SV0-PV01-VMM-001.

In addition, the inspectors reviewed the WDSs and WMRs to determine if QC inspection hold points were signed-off and dated, and the traceability of the previously inspected ER316L weld filler metals and welding operators were performed in accordance with the ASME Code, Section III, Subsections NCA and NB. The inspectors also reviewed welding operator performance qualification records to determine whether the welding operators were qualified and maintained proficiency for the GTAW process used in accordance with ASME Code, Section IX.

The inspectors reviewed CMTRs to verify that the applicable chemical analysis, mechanical properties, heat treatment, corrosion and hardness testing, pressure testing, and nondestructive examination were performed on the pipe spool pieces and valve bodies in accordance with requirements of ASME Code Sections II-Part A and III-NB. The inspectors reviewed two CB&I Laurens ASME NPP-1 Code data reports to verify the fabrication activities for the piping subassemblies shown on Westinghouse Electric Company (WEC) design drawings, SV4-RCS-PLW-03A and -03B, were signed-off by the ASME NPT certificate holder and an Authorized Nuclear Inspector (ANI) in accordance with the requirements of ASME Code Section III, Article NCA-8000.

b. Findings

No findings were identified.

1A24 (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:

- 65001.11-02.05 - Nondestructive Examination

- 65001.11-02.07 - Offsite Fabrication of Assemblies
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed welding fabrication records for the Unit 4 FTT assembly that connects the refueling cavity in the containment building with the fuel transfer canal in the spent fuel building. The inspectors reviewed weld maps to determine whether base and weld materials, examinations, and testing for pressure boundary welds were in accordance with the requirements of the UFSAR chapter 3 for FTT Tag-No. FHS-FT-01 and 2001 Edition including 2002 Addenda of the ASME Code, Section III, Subsection NE.

Specifically, the inspectors reviewed stainless steel base material test records to verify if the transfer tube, flange, test angle, and hatch for mechanical properties, chemical analysis, heat treatment, hardness, and corrosion resistance were in accordance with the applicable ASME Code provisions of Section III-NE and WEC design specification APP-FT01-Z0-001 for the FTT. The inspectors reviewed stainless steel weld filler metal CMTRs to verify if the mechanical properties, chemical analysis, and ferrite numbers were as required by ASME Sections III-NE and II-Part C.

In addition, the inspectors reviewed NDE reports (including personnel certifications and visual acuity) to determine if welds were inspected by the appropriate level of NDE inspectors and found to be acceptable in accordance with ASME Section III-NE. The inspectors reviewed test reports for pneumatic, hydrostatic, vacuum box bubble leak, and functional clearance testing to verify if record entries met the requirements of the WEC fabrication specification APP-FT01-Z0-200 for the FTT. The inspectors also reviewed the WEC ASME Form N-2 code data report to determine if it was completed and signed by the ANI for a hydrostatic test pressure of 72.4 psi in accordance with ASME Sections III, NCA-8000 and NE-6000.

b. Findings

No findings were identified.

1A25 (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:

- 65001.11-02.03 - Installation and Welding

- 65001.11-02.05 - Nondestructive Examination
- 65001.11-02.07 - Offsite Fabrication of Assemblies
- 65001.F-02.02-Fabrication Records Review

The inspectors conducted an inspection of electrical penetration assemblies (EPAs) to determine if they were fabricated in accordance with the requirements of ASME BPV Code Section III, 2001 Edition 2002 Addenda, Subsection NE, WEC design specification and the UFSAR chapters 3 and 6. The inspectors reviewed fabrication and procurement records for the following EPAs:

- Electrical Penetration P09 (ECS-EY-P09W, S/N 9093);
- Electrical Penetration P26 (ECS-EY-P26W, S/N 9096); and
- Electrical Penetration P31 (IDSB-EY-P31Y, S/N 9111).

The inspectors reviewed ASME N-2 code data reports and CoC from the vendor to determine if the materials specified and pressure tests performed met the requirements of the ASME code and the design specification. In addition, the inspectors reviewed the data reports to verify if they were signed by an authorized representative of the N-stamp holder and an ANI.

The inspectors reviewed fabrication records to determine if the base and weld materials were fabricated in accordance with the requirements of the ASME Code, Section III, Section II, and the WEC design specifications. For the weld filler metals, the inspectors reviewed CMTRs to determine if the filler metal met the following requirements:

- chemical composition;
- tensile strength;
- yield strength;
- elongation; and
- impact testing.

For the base metal, the inspectors reviewed the fabrication plan to determine if the plan outlined the requirements of the ASME Code, Section III for material fabrication and testing. The inspectors reviewed CMTRs to determine if the base metal met the following requirements:

- chemical composition;
- tensile strength;
- yield strength;
- hardness testing;
- impact testing; and
- heat treatment.

The inspectors reviewed fabrication control plans for the welds above to verify that fabrication activities were performed in accordance with the ASME Code and the EPA design specification requirements. The inspectors reviewed the fabrication control plans to verify that weld preparation and welding were performed in accordance with the welding procedure and that NDE was performed in accordance with the vendor

procedures. Additionally, the inspectors reviewed the tabulation of materials to determine if the records provided traceability to all aspects of the fabrication activities, including traceability to materials, weld records, NDE reports, and nonconformance reports, as applicable.

The inspectors reviewed NDE records of the welds to determine if the NDE followed the methods and met the acceptance criteria described in the ASME Code, Section III and Section V. Specifically, the inspectors reviewed the vendor procedure QCI 9-23 to determine if it met the requirements of the ASME Code, Section V. In addition, the inspectors reviewed liquid penetrant testing (PT) reports to determine if required examinations were performed in accordance with the ASME Code, Section III, Subsection NE-5000 and Section V, Article 6, the design specification, and the vendor procedure QCI 9-23. In addition, the inspectors reviewed pneumatic testing records to determine if the pneumatic testing was performed in accordance with, and met the acceptance criteria of the ASME Code, Section III, NE-6300 and the vendor procedure IPS-2412.

The inspectors reviewed welding records and NDE records to determine if welding was performed in accordance with the ASME Code, Section III, and Section IX. The inspectors reviewed the PQRs used to qualify the welding procedures to determine if the PQRs defined the required variables specified in the ASME Code, Section IX. In addition, the inspectors reviewed material testing performed on the welding samples to determine if the type and number of qualification tests required received acceptable results in accordance with the ASME Code requirements. Additionally, the inspectors reviewed the WPSs used to verify if they were written in accordance with the ASME Code, Section IX requirements and were bounded by the PQR.

The inspectors reviewed nameplates for the EPAs to verify if the name plates were labeled with part numbers, serial numbers, tag numbers and the ASME N stamp and the name plates were visible. The inspectors reviewed corrective actions, including a condition report (CR) and material disposition report that were respectively related to a missing CMTR and a change in pneumatic test procedure to determine if the corrective actions were in accordance with the licensee's CAP.

b. Findings

No findings were identified.

1A26 (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.F-02.02-Fabrication Records Review
- 65001.F-02.04-General QA Review

The inspectors reviewed fabrication records and design documents for a sample of containment isolation valves to determine if the valves were fabricated in accordance with ASME BPV Code, Section III, Class 2, 1998 Edition 2000 Addenda and WEC design specifications. The inspectors sampled the following containment isolation valves:

- SV3-CCS-PL-V208, CCS containment isolation MOV - outlet line ORC, serial number 4-55022-L; and
- SV3-SFS-PL-V037, SFS discharge line, serial number 11899.

The inspectors reviewed fabrication records to determine if fabrication requirements of the valves and valve parts, such as material type and tests, were captured in the final as-built condition of the valves in accordance with the ASME Code, WEC design specifications, and design drawings.

The inspectors reviewed ASME NPV-1 Code data reports to determine if the materials specified and hydrostatic tests performed met the requirements of the ASME Code and the WEC design specifications. In addition, the inspectors reviewed the data reports to determine if they were signed by an authorized representative of the N-stamp holder and an ANI.

The inspectors reviewed material records associated with the following safety related and pressure retaining valve parts:

- SV3-CCS-PL-V208 (body, disc, cover plate, hex cap screw, and drive shaft); and
- SV3-SFS-PL-V037 (body and disc).

For the valve parts above, the inspectors reviewed the CoC and CMTRs to determine if the valve part materials were fabricated in accordance with the requirements of ASME Section III, Section II, and the WEC design specifications. The inspectors reviewed these records to determine if the materials met the following requirements, as applicable:

- chemical composition;
- mechanical testing (tensile strength, yield strength, hardness); and
- heat treatment.

The inspectors reviewed NDE records (radiographic, ultrasonic, and liquid penetrant) for the valves and valve parts sampled to determine if required examinations were performed in accordance with ASME Code and the WEC design specifications, and if the results conformed to the requirements of ASME Code and the WEC design specifications.

The inspectors reviewed test reports to determine if required tests (hydrostatic shell test, valve closure and seat leakage test, packing leakage test, pneumatic seat test, and minimum wall thickness) were performed in accordance with ASME Code and the WEC design specifications, and if the results conformed to the requirements of ASME Code and the WEC design specifications.

b. Findings

No findings were identified.

1A27 (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:

- 65001.11-02.03 - Installation and Welding
- 65001.B-02.04-Production Controls

The inspectors observed machine GTAW and reviewed documents for the P23 main steam penetration assembly for line A to the containment vessel sleeve. Specifically, the inspectors verified that welding of the partial joint penetration (PJP) groove weld and QC inspections were performed in accordance with the requirements of ASME Code Section III, Subsection NE, for Class MC containment. In addition, the inspectors reviewed S&W WDS for SV4-SGS-PY-C01A-1 to verify if the entries for QC inspection hold points were signed-off and dated for material identification markings, cleanliness, and joint fit-up, and the traceability for weld filler metals; and to verify that WDS were maintained in accordance with the requirements of ASME III, Subsections NCA-4134.10 and NE-4230. The inspectors also reviewed a WMR against the WDS entries to determine if traceability of the welding wire and welders were controlled in accordance with the requirements of ASME Section III, Subsections NE-4122 and NE-4320.

b. Findings

No findings were identified.

1A28 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

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

- 65001.03-02.03 - Installation and Welding
- 65001.03-02.06 - Nondestructive Examination
- 65001.03-02.08 - Problem Identification and Resolution
- 65001.B-02.03-Welder Qualification

- 65001.B-02.04-Production Controls

The inspectors observed welding for three stainless steel field welds located at the 8-inch diameter discharge nozzle of the CMT B to verify that the piping for line L015B was installed in accordance with the requirements of ASME Code Section III, Subsection NB, for Class 1 components. Specifically, the inspectors observed in-process manual GTAW for welds SV4-PXS-PLW-021-7, -10, and -11 to verify if the cleanliness, fit-up and tack, internal root pass, use of amperage, and abilities of three welders to deposit sound weld metal were in accordance with welding procedure WPS1-8.8T01 using previously inspected ER316L welding rods. In addition, the inspectors reviewed the S&W WDS entries for each of these three welds to determine if QC and applicable ANI inspection hold points were signed-off and dated for material identification markings, bevel-end preparations, joint fit-up, and internal argon purge in accordance with ASME III, Subsections NCA-4134.10 and NB-4230. The inspectors also reviewed WMRs against the entries of WDSs for these three welds to determine if the traceability of the welding rods and welders were controlled in accordance with NB-4122 and NB-4300. In addition, the inspectors reviewed two welder qualification records for JCW3983 and KDW0949 to verify they were tested and certified in accordance with ASME Section IX.

The inspectors reviewed the WDS to verify the final NDE was performed and traceable to each of the three welds in accordance with the requirements of NCA-3853.5. Specifically, the inspectors reviewed the final MISTRAS liquid penetrant and computed radiography examination reports and observed the associated radiographic images to determine whether the NDE methods and acceptance criteria of the welds were in accordance with Article NB-5000.

The inspectors reviewed N&D SV4-PXS-GNR-000063 to verify that the engineering justification and disposition for cutting and repositioning pipe spool PXS-PLW-021-3 was processed, reviewed, and approved in accordance with procedure APP-GW-GAP-428, "Nonconformance and Disposition Report (N&D)." The inspectors also observed the as-built configuration in the field to verify it matched the changes described in the N&D and the revised dimensions in the applicable drawing.

b. Findings

No findings were identified.

1A29 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

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

- 65001.04-02.01 - General Installation
- 65001.04-02.02 - Pipe Support and Restraint Welding

- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection

The inspectors reviewed the licensee's completed rigging plan for the Unit 4 PRHR HX to determine if the activities were performed in accordance with ASME Code requirements and the technical manual. The inspectors reviewed the design specification to determine if it contained instructions for handling and installation in accordance with ASME Section III, Subsection NCA-3250 and the UFSAR Section 5.2.1.1. The inspectors reviewed the technical manual, APP-ME02-Z0M-101, to determine if it included installation requirements and restrictions in accordance with the design specification. The inspectors reviewed the wind speed, ambient temperature, and total load in the completed rigging plan to determine if any stresses on the lifting lugs were exceeded. The inspectors also reviewed the completed rigging plan to determine if all steps were met and signed off by appropriate, qualified personnel.

The inspectors performed a direct welding inspection of the fillet welded connection that joins the lower CA02 structural module wall penetration to the PRHR HX, SV4-PXS-ME-01, using a circumferential mounting ring. Specifically, the inspectors observed manual GTAW and reviewed documents for both continuous fillet welds SV4-PXS-ME-01-3 using ER 309L weld rods for the dissimilar metal weld and SV4-PXS-ME-01-4 using ER308L to verify that the connections were installed in accordance with ASME Section III, Subsection NF, for supports. The inspectors reviewed both S&W WDS to verify entries for QC inspection hold points were signed-off for inaccessible surface cleanliness and fit-up (including remark to increase fillet weld size by 1/8" to make up for gap between mating surfaces). The inspectors also verified that the traceability of materials and welders were maintained in accordance with ASME III, Article NF-4000.

b. Findings

No findings were identified.

1A30 (Unit 4) ITAAC Number 2.2.03.08c.iv.02 (184) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.iv.02 (184). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.04 - Key Dimensions and Volumes
- 65001.02-02.06 - Record Review
- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors observed licensee's survey verification, performed independent evaluations, and reviewed records for the PXS containment recirculation lines and the IRWST. The inspectors reviewed the survey procedures to verify they included instructions for performing ITAAC related surveys and appropriate quantitative acceptance criteria in accordance with 10 CFR 50, Appendix B, Criterion V. The inspectors independently walked down the IRWST and pipe lines SV4-PXS-PL-L113A/B, SV4-PXS-PL-L131A/B, and SV4-PXS-PL-L132A/B during in-process installation to verify the maximum elevations of the pipe lines were lower than the bottom inside surface of the IRWST as specified in Table 2.2.3-4 of Appendix C of the Vogtle Unit 4 COL.

The inspectors observed the survey verification of the bottom inside surface of the IRWST to determine whether verified equipment was used, and the surveying was done in accordance with procedures. Additionally, the inspectors observed surveying of the bottom inside surface of the IRWST to verify the selection of survey points included the minimum elevations for the tank in accordance with the ITAAC acceptance criteria. The inspectors reviewed the survey results to verify the data was correctly recorded and translated into quality records.

b. Findings

No findings were identified.

1A31 (Unit 4) ITAAC Number 2.6.03.02.i (597) / Family 08A

a. Inspection Scope

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

- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors conducted an inspection of the Unit 4 battery racks mounting configuration to verify they were constructed in accordance with design. Specifically, for battery racks in rooms 12101, 12102, 12104, and 12105 at elevation 66’-0”, the inspectors verified the battery racks were welded to the embed plates in the same manner as was used for the seismic qualification testing as documented in APP-DB01-VBR-100 seismic qualification report and in accordance with drawing APP-1211-CE-001.

b. Findings

No findings were identified.

1A32 (Unit 4) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

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

- 65001.01 - Inspection of ITAAC-Related Foundations & Buildings
- 65001.01-02.05 - Steel Structures
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records

The inspectors performed inspections of structural steel connections inside the Unit 4 containment building at elevation 107'-2" for the steel columns that support the operating floor at elevation 135'-3". The inspectors observed installation of bolted and welded connections, and reviewed drawings, welding records, and personnel qualification records.

The inspectors reviewed weld records and observed in-process welding of complete joint penetration welds FW-2 and FW-6, and fillet welds FW-8, and FW-10 associated with structure SPL 18, Sequence I. The inspectors reviewed weld maps, design specifications, and WDS to determine if weld position, amperes, volts, and filler metal requirements specified on WPS No. P1-A-Lh were in conformance with procedure No. NCSP 03-40, and Clause 3 of AWS D1.1 2000. The inspectors also sampled four welder qualification records to verify whether they were qualified to perform the welds described on design drawings in accordance with Clause 4, Part C, of AWS D1.1 2000.

The inspectors observed storage conditions of fastener components (nuts, bolts, and washers) associated with the connections above. The inspectors evaluated the storage conditions to determine whether fastener components were stored in closed containers, free of dirt and rust, and only the necessary components were removed from protected storage prior to installation in accordance with section 2.2 of the Research Council on Structural Connections (RCSC).

The inspectors observed the installation of the following bolted connections for the SPL 18, Sequence I structure: 1057, 1057A, 1058, 1059, 1059A, 1060, 1061, and 1062to verify if the installation process was completed using the turn-of-the-nut method. Specifically, the inspectors observed torqueing of A490 bolts to verify whether the rotation amount used was specific to the bolt size as described in table 8.2 of the RCSC.

The inspectors reviewed qualification records for personnel installing the connections using the turn-of-the-nut method and observed QC personnel verifying the bolts were match-marked before the final torque was applied in accordance with section 6.7.7 of procedure NCSP 03-40.

The inspectors sampled two CRs associated with the structure to verify the evaluations and corrective actions were conducted in accordance with the licensee's CAP; the issues were Identified and documented in a timely manner; and the resolutions were prioritized commensurate with their safety significance. The inspectors followed up on the corrective actions associated with the CRs by reviewing the disposition of a nonconformance report associated with the SPL 18/51 structure to verify if a technical evaluation was provided and was dispositioned in accordance with APP-GW-GAP-428.

b. Findings

No findings were identified.

1A33 (Unit 4) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

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

- 65001.01-02.06 - Records
- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.02 - Laboratory Testing
- 65001.02-02.03 - Special Considerations
- 65001.02-02.06 - Record Review
- 65001.02-02.07 - Problem Identification and Resolution
- 65001.02-02.08 - Construction Interface Concerns
- 65001.02-02.09 - Concrete Quality Process Problems
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors observed concrete placement activities, observed testing activities, reviewed quality records, and performed independent inspection of the Unit 4 containment building internal structure operating deck at elevation 135'-3".

The inspectors observed concrete placement activities to determine whether approved work instructions and specifications were available in the work area and were followed throughout the concrete placement as required by the licensee's QAP and 10 CFR 50,

Appendix B, Criterion 5. The inspectors independently assessed the placement area prior to concrete placement to determine whether it was secure, leak tight, and free from debris or excess water as required by ACI 349-01 and SV4-CC01-Z0-031. The inspectors observed concrete placement activities and reviewed batch plant records to determine whether the following were in accordance with ACI 349-01, SV4-CC01-Z0-026, and SV4-CC01-Z0-031:

- the maximum water/cement ratio was not exceeded;
- concrete was placed in lifts;
- placement drop distances did not exceed requirements and did not result in concrete segregation;
- the time intervals between mixing and placing were less than 90 minutes and the concrete trucks had less than 300 revolutions for each batch of concrete; and
- the concrete in the concrete trucks and at the point of placement was uniformly mixed.

The inspectors evaluated a sample of the concrete batch tickets as they were being filled out and signed to verify the following were conducted in accordance with ACI 349-01 and SV4-CC01-Z0-031:

- batch records were generated, controlled, and indicated placement location, mix, volume, date, time, and special instructions;
- each truck was measured, and each trip received proper ticketing and documentation;
- the mix listed, and the weights of each constituent were reviewed prior to placing the concrete;
- each batch ticket was reviewed for transport time and truck rotations; and
- water was adjusted to account for moisture content of aggregates.

The inspectors observed adjacent, simultaneous concrete placement activities to verify coordination of structural concrete activities was completed in accordance with SV4-CC01-Z0-026. The inspectors observed field engineering and QC inspections throughout the concrete placement to verify inspection was performed during placement as required by ACI 349-01, SV4-CC01-Z0-031, and 26139-000-4MP-T81C-N3210. The inspectors reviewed the QC inspection reports for the concrete placement to verify the inspections were documented and the activities were accepted in accordance with SV4-CC01-Z0-031 and 26139-000-4MP-T81C-N3210.
During the placement, the inspectors observed in-process concrete testing to determine whether:

- concrete temperature, slump, j-ring, air content, and unit weight were determined at the proper location and frequency as required by ACI 349-01, SV4-CC01-Z0-027, 132175-102-006-04-000052, and the applicable ASTM standards;
- sample collection, testing techniques, and testing equipment conformed to ACI 349-01, SV4-CC01-Z0-027, and the applicable ASTM standards;
- test results were evaluated against applicable quantitative and qualitative acceptance criteria in accordance with 10 CFR 50, Appendix B, Criterion 5; and

- concrete strength test sample cylinders were made at the required location and frequency and were cured in accordance with ACI 349-01, SV4-CC01-Z0-027, and the applicable ASTM standards.

The inspectors reviewed a sample of batch tickets and test reports, including the concrete cylinder strength testing, to verify the records contained the required information in accordance with ACI 349-01, SV4-CC01-Z0-027, and the applicable ASTM standards. The inspectors reviewed the concrete cylinder break test results to verify the concrete tested met the strength requirements for the specified concrete mix in accordance with specification SV4-CC01-Z0-026. Additionally, the inspectors observed concrete curing activities and reviewed curing records to determine whether curing was in accordance with ACI 349-01 and SV4-CC01-Z0-031 with regard to the method, materials, duration, and temperature.

The inspectors reviewed CR 50015426 associated with the concrete placements to verify the evaluations and corrective actions were conducted in accordance with the licensee's CAP; the issues were identified and documented in a timely manner; and the issues were classified and resolved commensurate with their safety significance.

b. Findings

No findings were identified.

1A34 (Unit 4) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

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

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

The inspectors observed the section of operating floor at elevation 135’-3” located over the IRWST between the west wall of the refueling cavity, the south wall of the west steam generator compartment and the containment vessel. This section of floor was constructed using structural floor module CA55. For this section of floor, the inspectors reviewed the size, spacing, material designation, grade, and layout of the main reinforcing bars to verify if installation of this reinforcing steel was consistent with the applicable design drawings, E&DCRs, construction specification SV4-CC01-Z0-31, and ACI 349-01. The inspectors also reviewed the lap splices between the reinforcing bars to verify if they met the lengths specified in the concrete general notes provided on drawing SV4-0000-C9-001 and were installed in accordance with design specification SV4-CC01-Z0-31 and ACI 349-01.

The inspectors reviewed structural calculations and design drawings to verify that the design basis was correctly translated in design output documents as required by 10 CFR 50 Appendix B, Criterion III, Design Control. Specifically, the inspectors verified if the required reinforcing steel determined by structural analysis were correctly translated into the design drawings used for construction of the floor.

The inspectors reviewed a sample of nine E&DCRs to verify if design changes were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, Design Control. Specifically, the inspectors verified 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. The inspectors also reviewed the E&DCRs to verify if a technical justification was provided for the design change, deviations from applicable quality standards such ACI 349-01 were controlled, and the revised design was correctly translated into the updated design output documents.

b. Findings

No findings were identified.

1A35 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.B-02.01-Program and Procedures Review

The inspectors observed construction activities associated with the shield building reinforced concrete/steel composite (RC/SC) horizontal transition modules located on the east side of the shield building (azimuth 67), at elevation 146'-10". The inspectors observed on-going welding activities, and reviewed drawings, welding documentation, welder's qualification records, and nonconformance reports.

The inspectors observed welding activities associated with the inside vertical seam between module 01B and the north jamb of the upper equipment hatch. The inspectors reviewed welder's qualification records to verify their qualifications were up to date and the welders were qualified to produce sound welds in accordance with Clause 4 of AWS D1.1-2000. The inspectors also reviewed WPS P1-A-Lh(A10) (CVN-70 F) to determine whether welding position, joint configuration, amperes, volts, and filler metal requirements were in conformance with weld drawings, specification APP-1208-Z0-001, and Section IX of ASME 1998.

The inspectors reviewed UT reports to verify at least a 10% spot volumetric inspection was performed in accordance with Clause 6, Inspection, of AWS D1.1-2000. The inspectors also reviewed nonconformance and disposition reports to verify whether repair activities were performed in accordance with Clause 5 of AWS D1 .1-2000.

b. Findings

No findings were identified.

1A36 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

- 65001.01 - Inspection of ITAAC-Related Foundations & Buildings
- 65001.01-02.05 - Steel Structures
- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.B-02.01-Program and Procedures Review
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.06-Records
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements

The inspectors performed document reviews and field inspections associated with the air-inlet (AI) modules located at elevation 248'-6" on the shield building. The inspectors reviewed documentation associated with the fabrication of the modules, reviewed design specifications, and performed field measurements.

The inspectors reviewed a sample of fabrication and receipt inspection documentation for AI modules AI-04 and AI-15. The inspectors reviewed CMTRs for steel plates, Nelson studs, and deformed bar anchor reinforcement tie-bars, to determine whether the materials used for assembly were in conformance with the requirements specified in table 3.8.6-4 of the UFSAR and section 10.0 of specification APP-1208-Z0-001. The inspectors sampled a total of five WPS to verify welding processes were performed in accordance with clause 4 of AWS D1.1 2000. The inspectors also sampled design changes and nonconformance reports to determine if they were dispositioned within the requirements of ACI 349-01 and AISC N690.

The inspectors performed a walkdown of modules AI-04 and AI-15. Specifically, the inspectors performed independent measurements to determine if the as-built configuration of the modules was in conformance with approved design changes, design drawings, and the requirements of section 3.H.2.2 of the UFSAR. The inspectors also measured spacing of tie-bars, nelson studs, and the inside diameter of the air pipes to verify they were within the design tolerances specified in the general notes of drawing APP-1278-SC-150.

b. Findings

No findings were identified.

1A37 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

- 65001.01-02.05 - Steel Structures
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.B- Inspection of the ITAAC-Related Welding Program
- 65001.B-02.01-Program and Procedures Review
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records

The inspectors observed in-process welding activities and reviewed records associated with the assembly of the steel composite (SC) panels for the Unit 4 cylindrical shield building. Specifically, the inspectors observed in-process FCAW activities for vertical seam weld 07A/B Vert I/O from elevation 149'-6" to 159'-6". Additionally, the inspectors observed in-process submerged arc welding (SAW) activities with the following sections on the internal side of the horizontal circumferential weld seam between courses 7 and 8 at elevation 159'-6":

- 07D/08DE Horiz I;
- 07E/08EF Horiz I;
- 07F/08FG Horiz I; and
- 07G/08GF Horiz I.

The inspectors performed an independent visual inspection of fit-up and tack welding, intermediate passes, and portions of completed weld 07A/B Vert I/O to determine whether:

- the quality of the tack welds, weld toes, and cover passes were free from defects such as cracks, lack of fusion, or excessive overlap/undercut/porosity;
- the welds met the type, size, and location requirements of SV4-1208-Z0-001 and the WPSs; and
- the welds met the visual inspection acceptance criteria for 181816-000-WS-PR-45056 and AWS D1.1-2000.

The inspectors observed in-process FCAW for the vertical weld to verify intermediate weld passes were performed in accordance with the requirements of AWS D1.1:2000. The inspectors verified the weld joint cleanliness was maintained between weld passes with staggered starts/stops and the welding operator's ability to deposit sound weld metal was performed in accordance with WPS 181816-000-WS-SP- E71T1. In addition, the inspectors observed the following attributes during in-process welding to verify welding was performed in accordance with 181816-000-WS-SP-45001:

- welding voltage, amperage, and travel speed;
- the heat input and interpass temperature;
- the joint configuration and weld position; and
- protection from wind and moisture.

The inspectors observed in-process SAW for the horizontal seam welds to verify intermediate weld passes were performed in accordance with the requirements of AWS D1.1:2000. The inspectors verified the weld joint cleanliness was maintained between weld passes with staggered starts/stops and the welding operator's ability to deposit sound weld metal was performed in accordance with WPS 181816-000-SP-ENi5S/842H. In addition, the inspectors observed the following attributes during in-process welding to verify welding was performed in accordance with 181816-000-WS-SP-45001:

- use of ENi5 classification electrode with wire spool at the work location;
- welding voltage, amperage, and travel speed resulting in cross-sectional sequenced weld bead patterns;
- SAW electrode nozzle positioning for the different locations of weld passes within the joint design to ensure complete joint penetration; and
- protection from wind and moisture.

The inspectors reviewed WPS 181816-000-SP-ENi5S/842H along with the supporting PQR to verify the WPS used for the weld joint was qualified in accordance with the requirements of the ASME Code, Section IX, including for fracture toughness. The inspectors reviewed the SAW performance qualification record for welding operator ID-No. 63171683 to verify the individual was qualified and certified in accordance with the essential variables of ASME Section IX, Article III, for welding performance qualifications. The inspectors also reviewed the weld travelers and associated spreadsheets for the weld joint locations to determine if established QC visual inspection hold points were signed-off and dated for cleanliness and fit-up alignment, and traceability of welding operators were maintained in accordance with GWPS 181816-000-WS-SP-45001.

The inspectors reviewed the UT reports for weld 07A/B Vert I/O to verify the UT was performed and documented in accordance with 181816-000-WS-PR-45054 and ANSI/AISC N690 and the weld quality met the acceptance criteria of AWS D1.1, Section 6 and Part F.

b. Findings

No findings were identified.

1A38 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

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

The inspectors observed construction activities associated with the shield building RC/SC horizontal transition modules located on the east side of the shield building at elevation 146'-10". The inspectors observed interpass semi-automatic FCAW activities associated with the outside and inside vertical seams joining modules 01E/01F to verify welding was performed in accordance with AWS Code D1.1:2000. The inspectors observed in-process FCAW for both welds to verify if the cleanliness, distortion control, use of amperage, and welder's ability to deposit sound weld metal were in accordance with previously reviewed WPS 181816-000-WS-SP-E71T1 using E71T-1M weld filler metal. In addition, the inspectors reviewed the CB&I weld traveler TRV-01039 entries for both welds to determine if QC inspection hold points were signed-off and dated for cleanliness and joint fit-up in accordance with the CB&I general welding procedure specification. The inspectors reviewed three welder qualification records to verify if their FCAW qualifications were current, and each were qualified and certified to produce sound welds in accordance with Clause 4 of AWS D1.1-2000.

b. Findings

No findings were identified.

1A39 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

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

The inspectors observed the section of wall along column 11 between column lines L and Q from elevation 117-6 to approximately elevation 135'-3". For this section of wall, the inspectors reviewed the size, spacing, material designation, grade, and layout of the main horizontal, vertical, and transverse reinforcing bars to verify if installation of this reinforcing steel was consistent with the applicable design drawings, E&DCRs, construction specification SV4-CC01-Z0-31, and the applicable provisions of ACI 349-01, Chapters 1, 2, 3, 6, 7, 10, 11, 12, 14, 18, and 21. The inspectors also reviewed the lap splices between the vertical and horizontal bars, respectively, to verify if they met the lengths specified in the concrete general notes provided on drawing SV4-0000-C9-001 and were installed in accordance with design specification SV4-CC01-Z0-31 and AC349-01.

The inspectors reviewed a sample of eight E&DCRs to verify if design changes were performed in accordance with 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. The inspectors also reviewed the E&DCRs to verify if a technical justification was provided for the design change, deviations from applicable quality standards such ACI 349-01 were controlled, and the revised design was correctly translated into the updated design output documents.

b. Findings

No findings were identified.

1A40 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.01-Design Document Review
- 65001.F-02.02-Fabrication Records Review

The inspectors observed the section of the main control room floor between column lines 9.2, 11, I and K at elevation 117'-6". For this section of floor, the inspectors reviewed the size, spacing, material designation, grade, and layout of the top and bottom reinforcing bars to verify if installation of this reinforcing steel was consistent with the applicable design drawings, E&DCRs, construction specification SV4-CC01-Z0-31, and the applicable provisions of ACI 349-01, Chapters 1, 2, 3, 6, 7, 10, 11, 12, 14, 18, and 21. The inspectors also reviewed the lap splices between the top and

bottom reinforcing bars, respectively, to verify if they met the lengths specified in the concrete general notes provided on drawing SV4-0000-C9-001 and were installed in accordance with design specification SV4-CC01-Z0-31 and AC349-01.

The inspectors reviewed a sample of two E&DCRs to verify if design changes were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, Design Control. Specifically, the inspectors verified 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. The inspectors also reviewed the E&DCRs to verify if a technical justification was provided for the design change, deviations from applicable quality standards such ACI 349-01 were controlled, and the revised design was correctly translated into the updated design output documents.

The inspectors reviewed two N&Ds reports to verify if the nonconforming conditions had been documented in the corrective action program. The inspectors reviewed the disposition of the nonconforming conditions to verify if they were consistent with the requirements of ACI 349-01 and complied with the final design.

b. Findings

No findings were identified.

1A41 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.01 - Observation of in-Process Installation Activities

The inspectors observed construction activities associated with the combined concrete placement of the main control room floor located on Area 2 of the auxiliary building at elevation 117'-6", and connecting wall segments at the northeast corner of the auxiliary building (i.e. wall 11 between column lines I and L and wall I between column lines 7.3 to column line 11 at elevations 117-6 up to 133-3). The inspectors reviewed quality records and observed concrete placement and testing activities. The inspectors observed concrete placement activities to determine whether placement drop distances met the requirements specified in Section 4.2.4 of specification SV4-CC01-Z0-031. The inspectors also observed the use of concrete vibrators to verify they were handled and operated to ensure consolidation of the mix was in accordance with Section 4.2.9 of SV4-CC01-Z0-031, and Section 7.5 of Concrete Placement Plan, U4 RG Combo Concrete Placement WP124, WP126, and SP-34, Revision 0.

During the concrete placement, the inspectors evaluated a sample of batch tickets as they were being filled out and signed by the concrete truck drivers, field engineers, and QC inspectors to determine whether each batch ticket was reviewed for the following, in accordance with specification SV4-CC01-Z0-026, Basic Requirements 5 of NQA-1 1994, and ACI code 349-01:

- verification of proper concrete mix;
- transport time and truck rotations;
- placement location;
- amount of temper water being added at the truck delivery point;
- temperature of the concrete mix; and
- ambient conditions.

The inspectors evaluated a sample of batch tickets and associated truck inspection reports after the concrete placement to verify if quality records were retrievable, verified by QC, and were identical to the ones generated during the concrete placement in accordance with Basic Requirement 18 of NQA-1 1994. The inspectors reviewed concrete pour card number 5037 and batch tickets 54424, 54439, 54441, 54443 and 54460 to determine whether concrete mix design requirements were translated from specification SV4-CC01-Z0-026 as required by NQA-1 1994, Basic Requirements 3 and 5.

The inspectors observed concrete testing activities to determine whether the processes for testing self-consolidated concrete (SCC) met the requirements of specification SV4-CC01-Z0-027. The inspectors also observed testing of fresh SCC to verify mix characteristics such as slump range, air content, mix temperature, and target wet density met the requirements of specification SV4-CC01-Z0-027. During in-process concrete testing, the inspectors observed the making and initial curing of concrete strength test sample cylinders to determine whether they were made at the required location and frequency and were cured in accordance with SV4-CC01-Z0-027. In addition, the inspectors observed the sampling of concrete strength test cylinders to verify if sample collection and testing techniques were performed in accordance with specification ASTM-C172.

b. Findings

No findings were identified.

1A42 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

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

The inspectors observed the section of wall along column 7.3 between column lines I to the shield building from elevation 117'-6' to approximately elevation 135'-3'. For this section of wall, the inspectors reviewed the size, spacing, material designation, grade, and layout of the main horizontal and vertical reinforcing bars to verify if installation of this reinforcing steel was consistent with the applicable design drawings, E&DCRs, construction specification SV4-CC01-Z0-31, and the applicable provisions of ACI 349-01, Chapters 1, 2, 3, 6, 7, 10, 11, 12, 14, 18, and 21. The inspectors also reviewed the lap splices between the vertical and horizontal bars, respectively, to verify if they met the lengths specified in the concrete general notes provided on drawing SV4-0000-C9-001 and were installed in accordance with design specification SV4-CC01-Z0-31 and AC 349-01.

The inspectors reviewed an E&DCR to verify if design changes were performed in accordance with 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. The inspectors also reviewed the E&DCR to verify if a technical justification was provided for the design change; deviations from applicable quality standards such ACI 349-01 were controlled; and the revised design was correctly translated into the updated design output documents.

The inspectors reviewed a Licensing Amendment Request (LAR) associated with nonconforming horizontal reinforcing bars in walls 7.3 and 11 from elevations 117'-6" to 135'-3" to verify if deviations from the approved design where being identified, documented, and reconciled using the appropriate change process.

b. Findings

No findings were identified.

1A43 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors observed concrete placement in wall 11 between column lines M and Q from elevation 117'-6" to 135'-3". The inspectors attended the licensees

preplacement planning meeting and reviewed the placement plan to verify if preplacement planning had been completed to assure quality construction and contingency plans had been made to address unexpected events.

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

The inspectors reviewed placement activities to verify that drop distances did not exceed specification requirements, vibrators were used in accordance with concrete placement guidance, and licensee attention was given to areas of high reinforcing density to minimize the potential for voids or honeycombing.

b. Findings

No findings were identified.

1A44 (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:

- 65001.01-02.06 - Records
- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.02 - Laboratory Testing
- 65001.02-02.03 - Special Considerations
- 65001.02-02.06 - Record Review
- 65001.02-02.07 - Problem Identification and Resolution
- 65001.02-02.09 - Concrete Quality Process Problems
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors observed concrete placement activities, observed testing activities, reviewed quality records, and performed independent inspection of the following Unit 4 radiologically controlled auxiliary building wall sections:

- column line 1 from column lines I to N from elevations 125'-0" to 135'-3"
- column line 2 from column lines I to J-1 from elevations 117'-6" to 135'-3"
- column line I from column lines 1 to 4 from elevations 117'-6" to 135'-3"

The inspectors reviewed the concrete placement plans included in the work packages to determine whether pre-placement planning had been completed, including considerations for weather, mass concrete, and unexpected events. The inspectors observed concrete placement activities to determine whether approved work instructions and specifications were available in the work area and were followed throughout the concrete placement as required by the licensee's QAP and 10 CFR 50, Appendix B, Criterion 5. The inspectors observed concrete placement activities and reviewed batch tickets to determine whether the following were in accordance with ACI 349-01, SV4-CC01-Z0-026, and SV4-CC01-Z0-031:

- the maximum water/cement ratio was not exceeded;
- concrete was placed in lifts;
- placement drop distances did not exceed requirements and did not result in concrete segregation;
- the time intervals between mixing and placing were less than 90 minutes and the concrete trucks had less than 300 revolutions for each batch of concrete; and
- the concrete in the concrete trucks and at the point of placement was uniformly mixed.

The inspectors reviewed batch plant calibration records to verify the scales used during the concrete placements were calibrated and verified prior to use in accordance with SV4-CC01-Z0-026. The inspectors evaluated a sample of the batch tickets as they were being filled out and signed to verify the following were conducted in accordance with ACI 349-01 and SV4-CC01-Z0-031:

- batch records were generated, controlled, and indicated placement location, mix, volume, date, time, and special instructions;
- each truck was measured, and each trip received proper ticketing and documentation;
- the mix listed, and the weights of each constituent were reviewed prior to placing the concrete;
- each batch ticket was reviewed for transport time and truck rotations; and
- water was adjusted to account for moisture content of aggregates.

The inspectors observed field engineering and QC inspections throughout the concrete placement to verify inspections were performed during placement as required by ACI 349-01, SV4-CC01-Z0-031, and 26139-000-4MP-T81C-N3210. The inspectors reviewed the QC inspection reports for the concrete placements to verify the inspections were documented and the activities were accepted in accordance with SV4-CC01-Z0-031 and 26139-000-4MP-T81C-N3210. During the placements, the inspectors observed in-process concrete testing to determine whether:

- concrete temperature, slump, j-ring, air content, and unit weight were determined at the proper location and frequency as required by ACI 349-01,

SV4-CC01-Z0-027, 132175-102-006-04-000052, and the applicable ASTM standards;
- sample collection, testing techniques, and testing equipment conformed to ACI 349-01, SV4-CC01-Z0-027, and the applicable ASTM standards;
- test results were evaluated against applicable quantitative and qualitative acceptance criteria in accordance with 10 CFR 50, Appendix B, Criterion 5; and
- concrete strength test sample cylinders were made at the required location and frequency and were cured in accordance with ACI 349-01, SV4-CC01-Z0-027, and the applicable ASTM standards.

The inspectors reviewed a sample of batch tickets and test reports, including the concrete cylinder strength testing, to verify the records were contained the required information in accordance with ACI 349-01, SV4-CC01-Z0-027, and the applicable ASTM standards. Additionally, the inspectors reviewed the concrete cylinder break test results to verify the concrete tested met the strength requirements for the specified concrete mix in accordance with SV4-CC01-Z0-026.

The inspectors reviewed a sample of corrective action documents associated with the concrete placements to verify the evaluations and corrective actions were conducted in accordance with the licensee's CAP, the issues were identified and documented in a timely manner, and the issues were classified and resolved commensurate with their safety significance. The inspectors reviewed a sample of N&Ds associated with the concrete placements to verify the nonconformances had supporting technical evaluations and were dispositioned in accordance with APP-GW-GAP-428, "Nonconformance and Disposition Report." The inspectors reviewed an E&DCR to verify the design change had a supporting technical evaluation and was dispositioned in accordance with APP-GW-GAP-420, "Engineering and Design Coordination Reports."

b. Findings

No findings were identified.

1A45 (Unit 4) ITAAC Number 3.3.00.02a.ii.c (766) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.ii.c (766). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.A.02.02 - Installation Records Review

The inspectors reviewed concrete thickness verification reports associated with the following areas identified below to verify if the as-built concrete thicknesses were in accordance with UFSAR Table 3.3.-1:

- column line Q wall from shield building wall to column line 11 between elevations 100'-0" and 117'-6"; and
- floor at elevation 100'-0" from column lines k to l and shield building wall to column line 10.

b. Findings

No findings were identified.

1A46 (Unit 4) ITAAC Number 3.3.00.02a.ii.d (767) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.ii.d (767). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.A.02.02 - Installation Records Review

The inspectors reviewed concrete thickness verification reports associated with the following areas identified below to verify if the as-built concrete thicknesses were in accordance with UFSAR Table 3.3.-1:

- column line l wall from 1 to 4 between elevations 100'-0" and 117'-6";
- column line l wall from 4 to 5 between elevations 107'-2" and 117'-6";
- column line N wall from 1 to 12'-9" north of 1 between elevations 100'-0" and 125'-0";
- column line N wall from 12'-9" north of 1 to 2 between elevations 100'-0" to 118'-2 1/2"; and
- floor at elevation 105'-0" from column line l to shield building wall and from intersecting vertical wall before column line 5 to column line 5.

b. Findings

No findings were identified.

1A47 (Unit 4) 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:

- 65001.09-02.02 - Attributes of Electrical Cable installation
- 65001.09-02.04 - Problem Identification and Resolution

- 65001.A.02.01 - Observation of in-Process Installation Activities

The inspectors performed an inspection to verify Class 1E electrical raceways that route cables associated with only one division in the non-radiologically controlled area of the Unit 3 auxiliary building were identified by the appropriate color code as specified in Table 2.6.3-3 of Appendix C of the Vogtle Unit 3 COL. Specifically, the inspectors performed inspection of in-process labeling of cables and raceways in rooms 12104 (Division B 24-hour battery room) and 12105 (Division D 24-hour battery room) to verify:

- labels were pressure-sensitive and, adhesive markers installed less than 15 feet apart in accordance with UFSAR Section 8.3.2.3 and Westinghouse Design Specification APP-G1-V8-001, "AP1000 Electrical Installation Specification;"
- labels were in accordance with the division color schemes specified in UFSAR Section 8.3.2.3 and APP-G1-V8-001; and
- label identification numbering of Class 1E electrical raceways were in accordance with approved design drawings.

Additionally, the inspectors reviewed procurement documents for the labels to determine whether the licensee incorporated requirements from the electrical installation specification into the procurement documents. The inspectors also reviewed material requisition documents for the labels to determine whether the material installed met the requirements of the electrical installation specification.

b. Findings

No findings were identified.

1A48 (Unit 4) ITAAC Number C.2.6.12.05 (675) / Family 08F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.12.05 (675). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.16-02.04 - Design Analysis
- 65001.16-02.05 - Design Verification

The inspectors performed a review of design documents, test reports and engineering analyses associated with this ITAAC. The inspectors reviewed the PCD to verify if the onsite equipment was rated to withstand and interrupt offsite fault currents. The inspectors reviewed the ratings of the onsite interface equipment and compared these to the offsite fault current analyses. The interface components reviewed during this inspection included:

- the isolated phase bus duct and its associated equipment;
- main generator circuit breaker;
- main step-up transformer;
- unit auxiliary transformers; and
- reserve auxiliary transformers.

The inspectors reviewed the PCD of the short circuit analysis to verify if the licensee's analyses using Electrocons computer aided protection engineering (CAPE) program, version 14, followed industry accepted standards for calculating and documenting the anticipated grid available fault currents.

The inspectors reviewed qualification test reports to verify if interface components were tested in accordance with the design specifications. In addition, the inspectors reviewed drawings to verify if the interface component ratings were in accordance with the design specifications. The inspectors compared the offsite fault currents to the onsite interface component withstand and interrupting ratings to verify whether they were compatible at the interface points. The inspectors also reviewed the PCD to determine whether documents identified the author, verifier, and approver with associated signatures and dates, in accordance with the ITAAC closure procedure.

b. Findings

No findings were identified.

1A49 (Unit 4) ITAAC Number C.2.6.12.06 (676) / Family 08F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.12.06 (676). The inspectors used the following NRC IPs/sections to perform this inspection:

The inspectors reviewed the PCD for this ITAAC to verify if the licensee's analysis, using Siemens software PSSE Version 33, satisfied the acceptance criteria. The inspectors reviewed drawings to determine if the analysis appropriately covered components associated with the power feed to the reactor coolant pumps (RCPs). The inspectors reviewed results from two scenarios to verify the RCPs would continue to receive power for a minimum of three seconds at greater than 85% voltage, in accordance with UFSAR chapter 8.2.2. The two scenarios reviewed the power being provided by the grid upon loss of the main generator (1) through the unit auxiliary transformer, and (2) through the reserve auxiliary transformer.

The inspectors reviewed PCD drawings and graphs to determine if results appropriately considered for normal operations, anticipated operational configurations, and postulated accident conditions. Also, the inspectors reviewed drawings and specifications to determine if the PCD contained the author, verifier, and approver with signatures and dates.

b. Findings

No findings were identified.

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

1P01 Construction QA Criterion 16

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

a. Inspection Scope

Quarterly Resident Inspector Corrective Action Program (CAP) Routine Review
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 non-safety related structures, systems, and components (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 appropriately classified in accordance with the licensee's QAP and CAP implementing procedures. The inspectors reviewed corrective actions associated with conditions entered into the CAP to determine whether actions to correct the issues were identified and implemented effectively, including immediate or short-term corrective actions, in accordance with the applicable QAP requirements and 10 CFR 50, Appendix B, Criterion XVI. Additionally, the inspectors reviewed the corrective actions taken to determine whether they were commensurate with the significance of the associated conditions in accordance with the licensee's CAP implementing procedures. The inspectors completed reviews of CAP entry logs to verify issues from different 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.

1P02 Construction QA Criterion 16

- 35007-A16.04.02 - Inspection of QA Program Implementation

a. Inspection Scope

Resident Inspector Follow-Up of Selected Issues

The inspectors selected an issue that was entered into the licensee's CAP for additional follow-up inspection. The inspectors reviewed SNC CRs 50013812, 50016164, and 50019624 regarding potential 10 CFR Part 21 reportable deficiencies for welds on the Vogtle Unit 3 & 4 shield buildings. The inspectors reviewed the licensee's evaluations and corrective actions to verify the following attributes were performed in accordance with the licensee's CAP implementing procedures:

- identification of the cause of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- consideration of the extent of condition, generic implications, common cause, and previous occurrences; and
- classification and prioritization of the resolution of the problem commensurate with its safety significance.

The inspectors reviewed the associated evaluations, N&D reports, Part 21 evaluations, and communications with the vendor to verify the hardware nonconformances had acceptable technical evaluations and were dispositioned in accordance with approved procedures and specifications. The inspectors reviewed the weld qualification records and revised weld procedures to verify the as-built welds were requalified in accordance with procedures and AWS D1.1-2000.

b. Findings

No findings were identified.

1P03 Construction QA Criterion 16

- 35007-A16.04.01 - Inspection of QA Implementing Documents

a. Inspection Scope

The inspectors selected one issue that was entered into the licensee's CAP for additional follow-up inspection. Two CRs were written for Unit 3 IDS battery division A cell terminal posts that were damaged from an electrical arc created while installing jumper cables when a cable shorted between positive and negative terminals. The inspectors reviewed the CRs to verify the licensee identified the conditions adverse to quality and the causes of the problem in accordance with ND-AD-002-025, "Issue Identification, Screening, and Dispatching." The inspectors reviewed the licensee's CR evaluations and corrective actions to verify corrective actions were appropriate to address the causes of the problem commensurate with their safety significance in accordance with ND-AD-002-025. Additionally, the inspectors reviewed the licensee's evaluations and corrective actions to verify consideration of the extent of condition, generic implications, common cause, and previous occurrences was in accordance with ND-AD-002-025. The inspectors also reviewed the trending codes applied to each item to verify they were identified, tracked, and trended in accordance with ND-

AD-002-025. The inspectors reviewed the CRs to verify they were closed in accordance with ND-AD-002-026, "Corrective Action Program Processing", and ND-AD-002-027, "Nonconforming Items." The inspectors reviewed the associated N&D report to verify the hardware nonconformances were evaluated in accordance with APP-GW-GAP-428, "Nonconformance and Disposition Report" and performed a field walkdown of the batteries to verify the actions in the N&D had been completed.

b. Findings

No findings were identified.

b. Findings

No findings were identified.

1P04 Pre-operational Testing Program

- 70367 - Part 52, Inspection of Preoperational Test Program
- 70367-02.01 - Test Program
- 70367-02.02 - Test Organization
- 70367-02.03 - Test Program Administration
- 70367-02.04 - Document Control
- 70367-02.05 - Design Changes and Modifications
- 70367-02.06 - Plant Maintenance/Preventive Maintenance During Preoperational Testing
- 70367-02.07 - Equipment Protection and Cleanliness
- 70367-02.08 - Test and Measurement Equipment

a. Inspection Scope

The inspectors interviewed responsible personnel, reviewed applicable documents, and observed licensee activities to confirm that the licensee's administrative controls over preoperational testing were developed in accordance with UFSAR commitments and regulatory requirements.

Test Program
The inspectors reviewed the B-GEN-ITPA series of procedures to determine if the licensee's preoperational testing program was specified by a formally reviewed and approved initial test program (ITP) administrative manual, containing administrative controls for the conduct of preoperational testing, consistent with the description in the UFSAR section 14.2. Additionally, the inspectors reviewed these procedures o determine if UFSAR section 14.2.1.2 was translated into the Vogtle ITP Administrative Control Manual.

The inspectors reviewed a sample of the licensee's preoperational test schedule to determine if the tests were identified and sequenced so that the safety of the plant was not dependent on untested systems, components, or features as described in UFSAR

section 14.2.8. Additionally, the inspectors reviewed procedures 3-RCS-ITPP-503 and 3-PXS-ITPP-502 against the licensee's procedure writing guide and the preoperational test procedure description in UFSAR section 14.2.3 to verify that the following information was identified:

- objectives for performing the test;
- prerequisites that must be completed before the test could be performed;
- initial conditions under which the test was started;
- special precautions required for the safety of personnel or equipment;
- instructions delineating how the test was to be performed;
- identification of the required data to be obtained and the methods for documentation;
- data reduction analysis methods as appropriate; and
- test acceptance criteria.

The inspectors reviewed B-GEN-ITPA-011 and NMP-AP-002 to determine if the preoperational test program specified the format and content of preoperational test procedures in accordance with UFSAR section 14.2.3. Additionally, the inspectors sampled preoperational test procedure 3-RCS-ITPP-503 to determine if content and format specifications were in accordance with B-GEN-ITPA-011 and NMP-AP-002.

Test Organization

The inspectors reviewed B-GEN-ITPA-001 to determine if the ITP administrative program met the following requirements for organizational responsibilities in accordance UFSAR Section 14.2.2:

- responsibility for staffing the ITP organization; and
- lines of authority and responsibilities for test personnel.

The inspectors interviewed personnel and reviewed 26139-000-4MP-T81C-N1601 and B-GEN-ITPA-007 to verify that measures for the administrative process, responsibilities and organizational interfaces for the management of SSCs from the construction organization to the ITP organization were established in accordance with UFSAR 14.2.3.1.3 and UFSAR 14.2.2.1.2. The inspectors reviewed the following attributes of the program and process:

- specification of organizational responsibilities for managing turnover;
- identification of boundaries;
- identification and review of design engineering open items; and
- documenting results of construction testing.

The inspectors reviewed B-GEN-ITPA-003 to verify that administrative requirements were identified to ensure the independence of personnel conducting test activities and personnel responsible for performance of the design features in accordance UFSAR Section 14.2.2.2.

The inspector reviewed B-GEN-ITPA-003 to determine if requirements were established for training and qualification of the ITP organization in accordance with the current ITP organizational chart and UFSAR Section 14.2.2.2. The inspectors

reviewed B-GEN-ITPA-003 to verify that administrative requirements for the personnel who will manage and perform the preoperational tests were identified. Specifically, the inspectors reviewed B-GEN-ITPA-003 to determine if qualification requirements were identified for the following positions: Balance of Plant (BOP) Manager, Nuclear Instrumentation (NI) Manager, Startup Test Manger, Digital Test Manager, Test Support Supervisor, and Electrical Test Manager.

The inspectors reviewed B-GEN-ITPA-003, B-GEN-ITPA-004, and B-GEN-ITPA-011 to determine if the responsibilities, qualifications, and training of ITP test engineers were specified in writing in accordance with UFSAR 14.2.2.2 and UFSAR 14.2.2.1.4. The inspectors reviewed these procedures to determine if the responsibilities of the ITP test engineers were identified for the development, performance, review and approval of the ITP test procedures.

The inspectors reviewed the ITP administrative manual procedure B-GEN-ITPA-002 to determine if the responsibilities for safety related preoperational test procedure approval and test results review were identified for the joint test working group (JTWG) in accordance with the UFSAR 14.2.2.3 and 14.2.3.2.1.

Test Program Administration

The inspectors interviewed personnel and reviewed the administrative process, responsibilities and organizational interfaces for the management of SSCs from the construction organization to the ITP organization. Specifically, the inspectors reviewed 26139-000-4MP-T81C-N1601 and B-GEN-ITPA-007 to verify if the following attributes were incorporated in accordance with UFSAR 14.2.3.1.3 and UFSAR 14.2.2.1.2:

- specification of organizational responsibilities for managing turnover;
- identification of boundaries;
- identification and review of design engineering open items; and
- documenting results of construction testing.

The inspectors reviewed B-GEN-ITPA-004 to verify if administrative measures were established for controls of system status before and during testing. Specifically, the inspectors reviewed B-GEN-ITPA-004-F11 to verify the following attributes were addressed in accordance with UFSAR 14.2.3.1:

- pre-test walkdown;
- review of open items;
- review of system boundary, lockout/tagout;
- review of software configuration; and
- review of temporary modifications.

In addition, the inspectors reviewed B-GEN-ITPA-004 to verify administrative measures were established for jurisdictional control subsequent to ITP testing to support modifications or repairs by the construction organization in accordance with UFSAR 14.2.3.1.

The inspectors reviewed B-GEN-ITPA-001 to verify that formal administrative measures were established governing the conduct of testing in accordance with UFSAR 14.2.3.

The inspectors reviewed B-GEN-ITPA-004 to determine if a method was established for verifying a test procedure was current before its use and ensure marked-up drawings showing current modification status were provided in accordance with B-GEN-ITPA-001. Specifically, the inspectors reviewed the requirement for the test engineer to obtain the latest revision of the test procedure and establish it as the official copy.

The inspectors reviewed B-ADM-MNT-006, B-ADM-WCO-001, and NMP-DP-001 to verify that the effect of testing on other nuclear facilities at the same site were considered in accordance with UFSAR 14.2.3. Specifically, the inspectors reviewed these procedures to verify that the planners were directed to do a risk assessment during work package preparation and activities impacting operating units were coordinated with work managers.

The inspectors reviewed B-GEN-ITPA-004 to verify that measures were established to conduct pre-job briefs in accordance with UFSAR 14.2.3.1. The inspectors reviewed NMP-GM-005-002 to verify that pre-job briefs included safety hazards and mitigating actions, operating experience, and contingency actions in accordance with B-GEN-ITPA-004.

The inspectors reviewed B-GEN-ITPA-004 to verify that a method was established to ensure personnel involved in the conduct of the test were knowledgeable of the test procedure in accordance with B-GEN-ITPA-001. The inspectors reviewed NMP-GM-005-002 to verify that pre-job briefs included responsible personnel to review the test procedure and tasks to be performed prior to the commencement of testing in accordance with B-GEN-ITPA-004.

The inspector reviewed NMP-AP-003 to verify requirements for procedure use were established in accordance with B-GEN-ITPA-004. Specifically, the inspectors reviewed the requirements for sign-offs, performance of steps, and place-keeping when performing a test procedure.

The inspectors reviewed B-GEN-ITPA-004 to verify that measures were established to change a test procedure during the conduct of testing in accordance with UFSAR 14.2.3. The inspectors reviewed NMP-AP-001-003 and B-GEN-ITPA-011 to verify that changes to test procedures during testing were appropriately initiated, documented, approved, and incorporated in accordance with B-GEN-ITPA-004.

The inspectors reviewed B-GEN-ITPA-004 and B-GEN-ITPA-011 to verify that criteria for termination or interruption of a test and continuation of an interrupted test were required to be specified in accordance with UFSAR 14.2.3.

The inspectors reviewed B-GEN-ITPA-001 and B-ADM-WCO-001 to verify that methods were established to control scheduling of test activities in accordance with UFSAR 14.2.8. Specifically, the inspectors reviewed the requirements for test schedule controls including development, duration, sequencing, overlap, and coordination with exiting operating unit work.

The inspectors reviewed B-GEN-ITPA-004 and B-GEN-ITPA-002 to verify that a formal program for evaluation of test results had been established in accordance with

UFSAR 14.2.3. Additionally, the inspectors reviewed B-GEN-ITPA-011 and B-GEN-ITPA-013 associated with the evaluation of test results. Specifically, the inspectors reviewed these procedures to determine that the program included the following:

- test data was verified and compared to test results in a qualitative, quantitative, meaningful and understandable form;
- test results were checked against design and compared with previously determined performance standards, limits or acceptance criteria;
- deficiencies were clearly identified, documented, and appropriate corrective action were proposed, reviewed, and completed;
- after corrective actions or modifications were completed, tests or portions of a test were rerun as necessary to ensure that tests on the as-built system were adequate and meet standards, limits or acceptance criteria; and
- test result evaluations were reviewed and formally approved by appropriate licensee personnel and/or contractor personnel, including the person(s) responsible for approving the original test procedures.

Document Control

The inspectors reviewed B-GEN-ITPA-011 and B-GEN-ITPA-002 to verify that administrative measures were established which control the test procedure processes for review, approval, and issuance in accordance with UFSAR 14.2.3.1. Additionally, the inspectors reviewed NMP-AP-001-003 to verify that the review process required reviewers to be qualified individuals in accordance with B-GEN-ITPA-011. The inspectors also reviewed NMP-AP-001-003 to determine if the procedures were reviewed against defined quality attributes, required a manager's approval, and issuance of the procedure was completed by individuals with appropriate access authority in accordance with B-GEN-ITPA-011.

The inspectors reviewed B-GEN-ITPA-004 to verify that administrative measures were established which control revision of approved procedures in accordance with UFSAR 14.2.3.1. Specifically, the inspectors reviewed B-GEN-ITPA-011 and NMP-AP-001-003 to verify that the revision of approved procedures included the following controls in accordance with B-GEN-ITPA-004:

- review by same persons and/or groups as the original procedure;
- approval by same persons and/or groups as the original procedure;
- issuance of revisions and control of obsolete procedures; and
- screen changes to test procedures to determine if a change to UFSAR is needed.

The inspectors reviewed B-GEN-ITPA-011 and B-GEN-ITPA-015 to verify that operating procedures to be used during preoperational testing have administrative controls to ensure that they receive the same reviews and approvals required for preoperational test procedures in accordance with UFSAR 14.2.6.

The inspectors reviewed B-GEN-ITPA-011 and B-GEN-ITPA-015 to verify that responsibilities were assigned in writing to verify that procedure controls will be implemented in accordance with UFSAR 14.2.3.1. Specifically, the inspectors reviewed these procedures to determine if the responsibilities to review, approve, and issue procedures were included for ITP personnel.

The inspectors reviewed 26139-000-4MP-T81CN1601 to verify that administrative controls were adequately established to provide current approved drawings and vendor technical manuals to the plant site in a timely manner in accordance with UFSAR 14.2.2.3.

The inspectors reviewed ND-DC-001 and NMP-AD-025 to verify that a master index was available for drawings and manuals which indicate their current revision numbers in accordance with UFSAR 14.2.3.1.3. Additionally, the inspectors observed licensee personnel use the document management system to retrieve drawings and manuals with indication of current revision numbers.

Design Changes and Modifications

The inspectors reviewed B-GEN-ITPA-001 and B-GEN-ITPA-004 to verify that appropriate measures were in place to govern and control modifications or design changes to SSCs within the ITP scope in accordance with UFSAR 14.2.3.1 and 10 CFR 52.98. The inspectors reviewed the interfaces that existed between the test organization and design authority (WEC) to track and disposition equipment test issues through test deficiency reports and engineering service requests as inputs to a formal design changes process.

The inspectors also reviewed a sample of engineering service requests (ESRs) related to reserve auxiliary transformer switchyard breaker testing to determine that coordination existed between the test organization and WEC to resolve test performance issues through the WEC formal engineering evaluation process in accordance with B-GEN-ITPA-001 and B-GEN-ITPA-004.

The inspectors interviewed ITP personnel and reviewed B-GEN-ITPA-001, B-GEN-ITPA-010, and B-GEN-ITPA-015 to verify that formal processes were developed and implemented to control SSC status with respect to temporary system configurations and modifications in accordance with UFSAR 14.2.3.1. The inspectors interviewed ITP test managers and test engineers to determine that they were cognizant of processes related to temporary configuration changes and modifications. The inspectors interviewed selected electrical test engineers to verify their awareness of the temporary modification procedure, configuration control requirements, and the need to perform pre-test walkdowns in accordance with B-GEN-ITPA-004 and B-GEN-ITPA-004-F08.

The inspectors examined a sample of temporary modification documents and test narrative logs to determine if appropriate detail regarding temporary modification installation and restoration was included in the narrative and that engineering evaluations were included in accordance with UFSAR 14.2.3.1. Specifically, the inspectors reviewed active temporary modification and temporary operating plan documentation to verify that documentation was being maintained in the ITP work control center. The inspectors reviewed selected active temporary modifications associated with electrical testing to verify that they included instructions for engineering evaluation, control of electrical jumpers, and control of lifted leads.

Plant Maintenance and Preventative Maintenance

The inspectors reviewed B-GEN-ITPA-001, B-GEN-ITPA-004, NMP-MA-012, and B-ADM-MNT-006 to verify that controls for the conduct of maintenance for SSCs were in

place and coordinated during initial test activities in accordance with UFSAR 14.2.3.1.5. The inspectors reviewed interfaces between the test groups and maintenance support to determine if test deficiencies were resolved through troubleshooting and corrective maintenance. The inspectors reviewed a sample of test deficiency reports related to main AC power system (ECS) system testing to verify that maintenance support was active in retesting of components.

The inspectors reviewed NMP-ES-006 to verify that a preventive maintenance (PM) strategy was in place for SSCs throughout the scope of the initial test program in accordance with UFSAR 14.2.3.1.5. Specifically, the inspectors reviewed the controls in effect to ensure periodic maintenance/surveillance activities would be performed for all SSCs, including those in a test environment. The inspectors reviewed specific PM support requirements to verify that SSCs in test environments were delegated to Maintenance Support and implemented through plant equipment preservation.

The inspectors reviewed B-ADM-WCO-001 to verify that the designated Work Controls Manager and Test Coordinator also functioned to coordinate, schedule, and review PM activities in accordance with B-GEN-ITPA-001. The inspectors reviewed Bechtel procedure 26139-000-4MP-T81C-N1601 and ND-AD-VNP-029 to verify that the maintenance support group and test engineers were given direction for coordination of PM activities as part of turnover from construction-to-testing-to-operations in accordance with B-ADM-WCO-001.

The inspectors reviewed NMP-AD-025 to verify that a process was developed and implemented for control, archiving, storage and retrieval of QA and non-QA maintenance and work package documents (records) for SSCs as they are turned over from construction to testing in accordance with UFSAR 14.2.3.1.3. The inspectors observed the process for work package closure and transmittal of work order documentation to the document management system to determine that maintenance work order documents were being adequately controlled in accordance with B-ADM-MNT-005.

Equipment Protection and Cleanliness

The inspectors reviewed NMP-MA-054, B-GEN-PLMC-076, B-ADM-PLMM-002, "B-GEN-ITPA-004, B-GEN-ITPA-007, and 26139-000-4MP-T81C-N2102 to verify that a formal program for housekeeping activities during preoperational testing has been established in accordance with NQA-1-1994 Subpart 2.1 Section 8, Subpart 2.2 Section 2, and Subpart 2.3. The inspectors also reviewed the housekeeping program to verify that responsibilities were assigned in writing for program implementation in accordance with NQA-1-1994 Subpart 2 Sections 3 and 4. Specifically, the inspectors reviewed the housekeeping program to determine if provisions had been included for the following control methods:

- protection of equipment and control of personnel access to prevent damage from adjacent construction activities;
- implementation of cleanliness zones, keyed to the progress of construction and testing;
- control of facilities and equipment including cleanliness, environment, and fire protection/prevention; and
- periodic inspection to ensure the adequacy of housekeeping.

The inspectors reviewed B-GEN-PLMC-076, B-GEN-ITPA-004, B-GEN-ITPA-014, NMP-MA-009-001, and APP-GW-GEM-200 to verify that a program for maintaining the appropriate degree of cleanliness of nuclear plant components and piping during preoperational testing was established in accordance NQA-1-1994, Subpart 2.1 Section 8.

The inspectors reviewed B-GEN-ITPA-011, B-GEN-ITPA-014, APP-GW-GEM-200, "AP1000 Chemistry Manual," and B-GEN-PLMC-076 to verify that water chemistry controls were established for fluid system undergoing preoperational testing in accordance with UFSAR Section 5.2.3.2.1 and NQA-1-1994 Subpart 2.1 Section 8. Specifically, the inspectors reviewed the water chemistry controls to determine if the following controls were established:

- water quality requirements;
- layup of systems and components;
- sampling requirements; and
- procedures to be followed for "out-of-specification" conditions.

Test and Measurement Equipment

The inspectors reviewed B-GEN-ITPA-004, B-GEN-ITPA-011, NMP-MA-053, and 26139-000-4MP-T81C-N7102 to verify that controls were established for special test equipment and all instrumentation used to provide data in accordance with NQA-1-1994, Basic Requirement 12 and NQA-1-1994, 12S-1. Specifically, the inspectors reviewed administrative controls for special test equipment and instrumentation to determine if acceptance criteria had been met or significant limitations were not exceeded that included:

- a listing of controlled test equipment, the calibration requirements, and the calibration history;
- controls for storage and issuance to preclude use of test equipment which had not been calibrated within the specified interval;
- requirements for recording test equipment identity and calibration date in test procedures to permit retest if equipment was subsequently found out of calibration;
- controls for ensuring that installed instrumentation had been calibrated before being used to provide data to show an acceptance criterion had been met; and
- requirements for actions to be taken when M&TE or reference standards was found out of calibration, lost, or stolen, including a documented evaluation of the validity of previous tests.

b. Findings

No findings were identified.

3. OPERATIONAL READINESS

Cornerstones: Operational Programs

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

3P01 License and Non-Licensed Plant Staff Training Program

- 41501-02.03 - Accreditation

a. Inspection Scope

The inspectors reviewed the renewed accreditation letters from INPO's National Academy for Nuclear Training to the licensee and confirmed accreditation had been renewed for the following Vogtle Electric Generating Plant Units 3 & 4 training programs: non-licensed operator, reactor operator, senior reactor operator, shift manager, continuing training for licensed personnel, shift technical advisor, instrument and control technician, electrical maintenance personnel, mechanical maintenance personnel, radiological protection technician, chemistry technician, and engineering support personnel.

b. Findings

No findings were identified.

3P02 Preservice Inspection

- 73054-02.01 - Program Approval
- 73054-02.02 - Program Organization
- 73054-02.03 - Program Scope
- 73054-02.05 - Code Repair/Replacement Program Review

a. Inspection Scope

The inspectors conducted an onsite review of the implementation of the licensee's preservice inspection (PSI) program for Unit 3. The PSI program is designed to provide the baseline examination data for which future inservice inspection (ISI) results can be compared to monitor degradation of pressure retaining components in vital system boundaries. The scope of this program included components within the reactor coolant system boundary, risk-significant piping boundaries, and containment system boundaries.

The inspectors reviewed the PSI program plan to verify that any proposed alternatives to the ASME Code Section XI requirements were approved by the NRC prior to use in accordance with 10 CFR 50.55a(z). In addition, the inspectors reviewed the licensee's

process for demonstrating alternative examination methods to the Authorized Nuclear Inservice Inspector (ANII) to verify if their process was in accordance with ASME Code Section XI, IWA-2240.

The inspectors reviewed the following repair/replacement activities to verify if they were performed in accordance with ASME Code Section III requirements and evaluated for any 10 CFR 50.59 impact:

- N&D: SV3-RCS-GNR-000046; and
- N&D: SV3-MV01-GNR-000013.

The inspectors obtained drawings of all ASME Code Class 1 piping systems and components. The inspectors reviewed the drawings to verify if the ASME Code Class boundaries were identified in accordance with 10 CFR 50.55a. The inspectors reviewed 15% of the ASME Code Class 1 components listed in the licensees PSI database to verify if appropriate examination category, item number, and examination method were listed in accordance with ASME Section XI, IWB-2500 requirements. The inspectors also reviewed the licensee's PSI database to verify that all items (welds, bolted connections, integral attachments, interior surfaces, etc.) associated with the selected components subject to inspection per ASME Section XI, IWB-2500 were identified. In addition, the inspectors performed this database review to very if the appropriate number of items subject to inspection were selected for preservice examination in accordance with ASME Section XI, IWB-2200. The sample included the following components:

- reactor vessel (MV-01);
- steam generator 01 (MB-01);
- passive residual heat removal heat exchanger (ME-01);
- pressurizer (MV-02);
- core makeup tank (MT-02a);
- RCS piping system;
- welds associated with valves (RCS-PL-V004A, RCS-PL-V012B);
- welds associated with piping lines (RCS-L137A, RCS-L213)
- PXS Piping System;
- welds associated with valves (PXS-PL-V122A, PXS-PL-V016A, PXS-PL-V122B, PXS-PL-V014A);
- welds associated with piping lines (PXS-L021A, PXS-L102, PXS-L015A, PXS-L125A);
- chemical and volume control system (CVS) Piping System;
- welds associated with piping lines (CVS-L038);
- normal residual heat removal system (RNS) Piping System; and
- welds associated with valves (RNS-PL-V002B).

The inspectors obtained drawings for a sample of ASME Code Class 2 piping systems and components. The inspectors reviewed the drawings to verify that the ASME Code Class boundaries were identified in accordance with 10 CFR 50.55a. The inspectors reviewed a sample of components associated with three ASME Code Class 2 systems listed in the licensees PSI database to verify that appropriate examination category, item number, and examination method were listed and in accordance with ASME

Section XI, IWC-2500 requirements. The inspectors also reviewed the licensee PSI database to verify if all bolted connections, welds, and welded attachments associated with the selected components subject to inspection per ASME Section XI, IWC-2500 were identified. The sample included the following components and piping systems:

- RCS;
- RNS; and
- steam generator system (SGS).

The inspectors obtained drawings for all ASME Code Class 3 components, piping, and welded attachments. The inspectors reviewed the drawings to verify if the ASME Code Class boundaries were identified in accordance with 10 CFR 50.55a. The inspectors reviewed the ASME Code Class 3 components listed in the licensee's PSI database to verify if appropriate examination category, item number, and examination method were listed in accordance with ASME Section XI, IWD-2500 requirements. The inspectors reviewed the licensee's PSI database to verify if the welded attachments associated with the components subject to inspection per ASME Section XI, IWC-2500 were identified and the appropriate number were selected for preservice examination as required by ASME Section XI, IWD-2200. In addition, the inspectors walked down components present on site to verify if the accuracy of welded attachment details shown in the drawings was the same as that implemented on the component. The review included the following components/piping:

- accumulators (MT-01A/B);
- 10" pipe from the IRWST to direct vessel injection (DVI)-B (PXS-L112B);
- 16" ADS pipe to sparger B (PXS-L130B); and
- 6" pipe from fuel transfer canal (FTC) to spent fuel cooling system (SFS) pumps (SFS-PL-L047).

The inspectors obtained a total of 30 piping isometric drawings from ASME Code Class 1, 2, and 3 systems that indicated pipe support designation and location. Using the drawings, the inspectors identified all supports subject to inspection per ASME Section XI, IWF-2500 to verify if they were listed in the licensees PSI database and assigned the appropriate examination category, item number, and examination method. The inspectors also reviewed the licensee's PSI database to verify if the appropriate number of supports were selected for preservice examination as required by ASME Section XI, IWF-2200. The sample included the following systems:

- RCS;
- RNS;
- PXS; and
- SGS.

The inspectors reviewed the following augmented inspections to verify if they were included in the PSI program plan as required by the UFSAR and other licensee commitments:

- inspection of high energy fluid system piping between containment isolation valves (break exclusion zone);
- inspection of piping systems qualified for Leak-before-Break;

- visual and volumetric preservice examination requirements of Code Case N-729-4; and
- inspection of weld buildups, including reactor vessel head quickloc nozzles, CVS nozzles, and core make-up tank (CMT) inlet and outlet nozzles.

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA5 Other Activities

Review of National Academy for Nuclear Training Maintenance and Technical Training Assessment Report

The inspectors reviewed the National Academy for Nuclear Training Maintenance and Technical Training Assessment Report of Vogtle 3&4 maintenance and technical training programs dated July 17, 2019. During this review, the inspectors did not identify any new significant training issues.

4OA6 Meetings, Including Exit

On October 16, 2019, the inspectors presented the inspection results to Mr. M. Meier, SNC Vice President of Regulatory Affairs, and other licensee and contractor staff members. Proprietary information was reviewed during the inspection period but was not included in the inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensees and Contractor Personnel

R. Beilke, ITAAC Project Manager
B. Bennett, Security Supervisor
C. Castell, SNC Licensing Engineer
S. Gambill, SNC Electrical Test Engineer
B. Hirmanpour, SNC I&C Manager
J. Hurst, WEC ASME
S. Leighty, SNC Licensing Supervisor
D. Martrano, WEC Test Coordinator
E. Odem, SNC Supervisor, Maintenance Preservation
L. Pritchett, SNC Licensing Engineer
K. Roberts, SNC, Licensing Manager
G. Scott, SNC Licensing Engineer
N. Wetherell, SNC Electrical Test Manager
M. Wilson, SNC Electrical Test Engineer
M. Yox, SNC Regulatory Affairs Director

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Type	Status	Description
None			

LIST OF DOCUMENTS REVIEWED

Section 1

Section 1A01
WEC APP-RCS-M6-001, "Piping and Instrumentation Diagram Reactor Coolant System" (F-6), Revision 17
WEC APP-RCS-PLW-03A, Reactor Coolant System Containment Building Room 11301 ADS Stage 4 Piping West Compartment, Revision 5
S&W Weld Data Sheet (WDS) SV3-RCS-PLW-03A-1 (Work Package SV3-RCS-P0W-800021), 2/4/2019 (3 pages)
S&W Welding Material Requisition (WMR) 443090, 464899, 464904, 465018, 465580, and 469366

S&W Weld Data Sheet (WDS) SV3-RCS-PLW-03A-2-C (Work Package SV3-RCS-P0W-800021), 6/13/2019
S&W Welding Material Requisition (WMR) 465495, 465497, and 465632
S&W Record of Welder Performance Qualification Test - ASME Section IX Groove Weld for DPW6171, EBF8327, JRS0561, KWS2254, and RTM4678

Section 1A02
2.1.02.05a.i-U3-EQRR-PCD002, "EQ Reconciliation Report (EQRR)," ADS Sparger B (PXS-MW-01B), Revision 0

Section 1A03
APP-PV70-V2-003, "14" Squib Valve Assembly Drawing Sheet 1 of 3," Revision 3
SV3-PV7C-V6-002, "14" Inch Squib Valve Class 2500 Weld Neck Flange," Revision 1
SV3-PV70-VQQ-002, "Quality Release & Certificate of Conformance for PV70 Squib Valves," Revision 3
SV3-RCS-P0K-800036, "ADS Stage 4 Valves Elevation of Bottom Inside Surface of Outlet and Direction of Discharge," Revision 0
Survey Report 1122334, 8/29/19
Condition Report 50028484, "14-Inch Squib Valve Documentation Discrepancy"

Section 1A04
Westinghouse Newington
WPSs: I-20-8.8-30 Revision 3; I-30-8.8-20 Revision 2; VI-20-8.8-24 Revision 1; VI-20-8.8-28 Revision 0; VI-25-8.8-8 Revision 1; VI-35-8.8-21 Revision 0; VI-35-8.8-22 Revision 4
PQRs: GMA-8.8-1G-12 Revision 3; GMA-8.8-1G-9 Revision 0; SMA-8.8-1G-4 Revision 1; SA-8.8-1G-10 Revision 0; SA-8.8-1G-6 Revision 2; SMA-8.8-1G-4 Revision 1; SMA-8.8-1G-3 Revision 2; GTA-8.8-1G-10 Revision 2; GTA-8.8-1G-6 Revision 1; GTA-SMA-8.8-2G-3 Revision 4

AT&F Nuclear
WPS WPSN-030 Revision 2
PQR PQRN-012 Revision 1

Section 1A05
Weld SV3-CCS-PLW-812-6
WEC APP-CCS-M6-002, "Piping and Instrumentation Diagram Component Cooling Water System" (H-2), Revision 11
S&W Weld Data Sheet (WDS) SV3-CCS-PLW-812-6 (Work Package SV3-CCS-P0W-1004882), 2/7/2019
S&W Welding Material Requisitions (WMR) 465584 and 465587
S&W Record of Welder Performance Qualification Test - ASME Section IX Groove Weld for BS0668 and RLB4485

Weld SV3-SFS-PLW-520-2
WPS1-8.8T01, Manual and Machine GTAW of P-No. 8 to P-No. 8, ASME III All Subsections & Non-ASME III," Revision 10
SV3-SFS-PLW-521, Spent Fuel Pool Cooling System Auxiliary Building Room 12454 Supply from SFS Pumps, Revision 3
SV3-SFS-PLW-520, Spent Fuel Pool Cooling System Auxiliary Building Room 12454 Supply from SFS Pumps, Revision 1

Stone & Webster, Inc. Welding Material Requisition (WMR) 465897, 7/19/2019
Stone & Webster, Inc. Weld Data Sheet, Weld No. SV3-SFS-PLW-520-2, 8/16/2018
S&W Record of Welder Performance Qualification Test - ASME Section IX Groove Weld for DKC1089
Lincoln Electric Company CMTR 7341106 ES-RAXM, Q3 Lot 1243R, 1/8" X 18" ER308/308L Rods of SFA-5.9, 9/18/2015

Section 1A06

SV3-CCS-PLW-820, Component Cooling Water System Auxiliary Building Room 12405 Return Conn. from CCS IRC Loads, Revision 2
SV3-PV11-Z0-001, Design Specification for Butterfly Valves, ASME Boiler and Pressure Vessel Code III Class 2 and 3, Revision 7
SV3-PV11-Z0D-122, PV11 Data Sheet 122, Revision 2
Material Issue Report 26139-19-MIR-35285, 7/8/2019

Section 1A07

2.2.01.05.i-U3-EQRR-PCD002, "EQ Reconciliation Report (EQRR)," Fuel Transfer Tube (FHS-FT-01), Revision 0

Section 1A08

SV3-PXSW-ITR-800182, "Unit 3: ITAAC 182 Walkdown 2.2.03.08c.iii NRC Index Number 182," Revision 0
SV3-PXS-M6K-800182, "RCS Cold Leg to the High Point of the CMT "A" Inlet Line," Revision 1
SV3-PXS-M6K-801182, "RCS Cold Leg to the High Point of the CMT "B" Inlet Line," Revision 1
SV3-PXS-M6K-802182, "RCS Hot Leg to the High Point of the PRHR HX Inlet Line," Revision 1

Section 1A09

Drawings:
SV3-PXS-M6-001, "Piping and Instrumentation Diagram Passive Core Cooling System," Revision 5
SV3-PXS-M6-002, "Piping and Instrumentation Diagram Passive Core Cooling System," Revision 8
SV3-PXS-MTK-891586, "IRWST Bottom Inside Tank Surface Comparison to DVI Nozzle Centerline Elevation," Revision 0
SV3-PXS-PLW-01A, "Passive Core Cooling System Containment Bldg. Room 11206 from Containment Recirc. to DVI-A," Revision 0
SV3-PXS-PLW-01B, "Passive Core Cooling System Containment Bldg. Room 11206 Containment Recirc. Valves," Revision 2
SV3-PXS-PLW-01C, "Passive Core Cooling System Containment Bldg. Room 11206 Containment Recirc. to DVI-A," Revision 1
SV3-PXS-PLW-01D, "Passive Core Cooling System Containment Bldg. Room 11206 Containment Recirc. to DVI-A," Revision 1
SV3-PXS-PLW-01H, "Passive Core Cooling System Containment Building Room 11206 Containment Recirc. to DVI-A," Revision 1
SV3-PXS-PLW-01Z, "Passive Core Cooling System Containment Building Room 11206 Containment Recirc. to DVI-A," Revision 2
SV3-PXS-PLW-02A, "Passive Core Cooling System Containment Building Room 11207 Containment Recirculation to DVI-B," Revision 0
SV3-PXS-PLW-02B, "Passive Core Cooling System Containment Bldg. Room 11202, 11207 from Containment Recirculation to DVI-B," Revision 1

SV3-PXS-PLW-02C, "Passive Core Cooling System Containment Bldg. Room 11202, 11207 Containment Recirculation to DVI-B," Revision 1
SV3-PXS-PLW-02E, "Passive Core Cooling System Containment Building Room 11207 IRWST to DVI-B & RNS Pump Suction," Revision 1
SV3-PXS-PLW-02Z, "Passive Core Cooling System Containment Building Room 11207 Containment Recirculation to DVI-B," Revision 0
SV3-PXS-PLW-090, "Passive Core Cooling System Containment Bldg. Room 11204 Containment Recirculation to DVI-B," Revision 1
SV3-PXS-PLW-470, "Passive Core Cooling System Containment Bldg. Room 11206 from Containment Recirc. Valves," Revision 1

Miscellaneous:
Certificate of Calibration for the Trimble S9 Total Station, T14, 38320012, 3/15/19
Principle Closure Document SV3-PXS-FSK-800183, "As-Built IRWST Injection Lines Top Inside Surface Elevation Comparison to IRWST Bottom Inside Surface," Revision 1
Principle Closure Document SV3-PXS-FSK-800184, "As-Built IRWST Injection/ Recirculation Lines Top Inside Surface Elevation Comparison to IRWST Bottom Inside Surface," Revision 0
Principle Closure Document SV3-PXS-FSK-800185, "CMT Disch Line EL vs CMT Inside Bottom EL, Vogtle Unit 3 PCD Review," Revision 0
Survey Data Obtained from SWR Number 1048162
Survey Data Obtained from SWR Number 1110243
Procedures:
26139-000-4MP-T81C-N3201, "Construction Survey," Revision 5
26139-000-4MP-T81C-N7102, "Control of Measuring and Test Equipment," Revision 2
NCSP 02-24, "ITAAC Support Activities (AP1000)," Revision 02.00
SV3-PL02-Z0-001, "Piping Class Sheets and Standard Details," Revision 7

Section 1A10
Drawing SV3-MS59-V2-001, "AP1000 Vendor Drawing Air Filter Unit Assembly Sheet 1 of 2," Revision 0
Drawing SV3-MS59-V2-002, "AP1000 Vendor Drawing Air Filter Unit Assembly Sheet 2 of 2," Revision 0
Work Package SV3-VES-MYW-1024242, "U3 Auxiliary Install VES HVAC Inline Equipment for ISOs: SV3-VES-MD-420 & SV3-VES-MD-429," Revision 0

Section 1A11
WO SV3-1222-DTW-800000, "U3 IDSC Regulating Transformer Aux Building 82'6" RM 12203, Area 2," Revision 0
APP-1220-GEF-369, "Auxiliary Building Anchor Bolt Drawings Require Corrections to Tag Numbers," Revision 0
APP-DT01-Z0-010, "Design Specification for Class 1E Regulating Transformers," Revision 8
SV3-1222-CE-003, "Auxiliary Building Area 2 Division C Electrical Cabinet Anchor Bolt Locations Room 12203, Plan EL 82'6"," Revision 1
ESR50028839, "Use EDCR APP-DC01-GEF-850000 to Address Other Equipment," 9/11/19
APP-DC01-GEF-850000, "Mounting Detail for DC01 Battery Chargers," Revision 0
WO SV3-IDSD-EAW-1021443, "U3-Aux Install and Label Electrical Equipment SV3-IDSD-EA-1 and SV3-IDSD-EA-2-ELEV. 100'0" Area 1 Room 12305," Revision 0
SV3-IDSD-DDW-1021447, "U3- Aux Install and Label Electrical Equipment SV3-IDSD-DDD-1, Elevation 100'-" Area 1, Room 12305," Revision 0

SV3-DD01-Z01-010, "Design Specification for Class 1E 250 VDC Distribution Panels for System IDS," Revision 5
APP-EA01-GEF-850002, "Mounting Details for Class 1E AC Distribution Panels," Revision 0
APP-EA01-V0M-001, "AP1000 EA01 Class 1E AC Distribution Panels-Technical Manual," Revision 1
APP-DD01-J0M-001, "AP1000 DD01 Class 1E Distribution Panels, Multipurpose Manual: Technical Manual," Revision 1
SV3-IDSB-DKW-1023085, "U3- AUX -Install and Label Electrical Equipment (IDSB-DK-1), Room 12304- Elev. 100'0" Area 1", Revision 0
APP-DK01-GEF-850007, "Alternate Detail to facilitate mounting IDSB-DK-1 cabinets with four corner bolts per enclosure," Revision 0
APP-DK01-GEF-850009, "DK01 Cabinet Mounting Shims," Revision 0
ESR50024886, "Alternate Mounting Detail," 7/22/19
WO SV3-IDSB-EAW-1032132, "U3 Aux Install & label 1E Fuse Panels (IDSB-EA-4, 5 & 6) Elev. 100'0"- Room 12304- Area 1," Revision 0
SV3-EA03-V0M-850000, "EA03 Class 1E Fuse Panels Technical Manual," Revision 0
WO SV3-IDSB-EAW-1003048, "U3 Aux Install and Label Battery Monitor Fuse Panels (SV3-IDSB-EA-7, 8) Elev. 82-'6"- Room 12207- Area 2," Revision 0
SV3-EA03-Z0-001, "Design Specification for Class 1E Fuse Panels for IDS System," Revision 9
ESR50029150, "U3 Class 1E IDS Fuse Panels Mounting Hardware, EL 82'," 9/14/19
SV3-1222-CE-004, "Auxiliary Building Area 2 Division C Electrical Cabinet anchor bolt locations Room 12207- Plan El 82'6"," Revision 1
SV3-1220-CE-997, "Auxiliary Building Areas 1&2 Anchor Bolt Details Plan at el 83'-6"," Revision 0

Section 1A12
WEC Isometric Drawing No. APP-VBS-PLW-030, "Nonradioactive Ventilation System Auxiliary Bldg Room 12401 Ventilation to MCR," Revision 4
WPS1-1.1C21, Manual GTAW and SMAW with supporting PQRs, Revision 4
S&W Weld Data Sheet (WDS) SV3-VBS-PLW-030-9 for work package SV3-VBS-P0W-1008052, 5/9/19
Record of Welder Performance Qualification Test 1CS-02 for Richmond County Constructors, Welder ID JEA4497, 09/16/2019
Record of Welder Performance Qualification Test 1CS-03 for Richmond County Constructors, Welder ID JEA4497, 09/16/2019
Record of Welder Performance Qualification Test 1CS-02 for Richmond County Constructors, Welder ID SLH6930, 05/20/2019
Record of Welder Performance Qualification Test 1CS-03 for Richmond County Constructors, Welder ID SLH6930, 05/20/2019
S&W Weld Data Sheet (WDS) SV3-VBS-PLW-030-14 for work package SV3-VBS-P0W-1008052, 5/9/19
S&W Welding Material Requisition (WMR) 478944, 9/5/19
Record of Welder Performance Qualification Test 1CS-02 for Richmond County Constructors, Welder ID STR1536, 05/02/2019
Record of Welder Performance Qualification Test 1CS-03 for Richmond County Constructors, Welder ID STR1536, 05/06/2019
MISTRAS V-19-MT-301-3625, Nondestructive Examination Report Magnetic Particle Examination, Weld # SV3-VBS-PLW-030-14, 09/17/2019

Section 1A13

Drawings:

231124-000-SP-01-000201 Drawing 2, Sheet 1, "Field Weld Joint Details AP1000, Air Inlet & Tension Ring WECTEC Global Project Services Inc. Southern Company (Plant Vogtle) Unit 3 & 4 - Waynesboro, GA," Revision 3
231124-000-SP-01-000202 Drawing 2, Sheet 2, "Field Weld Joint Details AP1000, Air Inlet & Tension Ring WECTEC Global Project Services Inc. Southern Company (Plant Vogtle) Unit 3 & 4 - Waynesboro, GA," Revision 0
SV3-1208-SC-101, "Shield Building Steel Wall Panels El. 100'-0" to El. 248'6 1/2" Location and Identification Rollout View," Revision 4
SV3-1208-SC-107, "Shield Building Steel Wall Panels El. 100'-0" to El. 274'-0 1/8" Construction & Erection General Notes," Revision 0
SV3-1278-SC-150, "Shield Building Air Inlet & Tension Ring Structure Steel Panels General Notes," Revision 0
SV3-1278-SC-151, "Shield Building Air Inlet and Tension Ring Structure Steel Panels Location and Identification Rollout View," Revision 1
SV3-1278-SC-171, "Shield Building Air Inlet and Tension Ring Structure Steel Panels Inside Face Attachments Rollout View (Sheet 1)," Revision 0
SV3-1278-SC-172, "Shield Building Air Inlet and Tension Ring Structure Steel Panels Inside Face Attachments Rollout View (Sheet 2)," Revision 0
SV3-1278-SC-173, "Shield Building Air Inlet and Tension Ring Structure Steel Panels Inside Face Attachments Rollout View (Sheet 3)," Revision 0
SV3-1278-SC-174, "Shield Building Air Inlet and Tension Ring Structure Steel Panels Inside Face Attachments Rollout View (Sheet 4)," Revision 0
SV3-1278-SC-901, "Shield Building Air Inlet and Tension Ring Structure Steel Panels General Details (Sheet 1)," Revision 1

Miscellaneous:

APP-1278-GNR-850200, "HII Mechanical NCR 3778A-Delivered SV4-1278-SC-AI27: Wrong Stud Welding WPS used on Module," Revision 0
APP-1278-GNR-850201, "HII Mechanical NCR 3777A-DELIVERED SV3 MODULES - Wrong Stud Welding WPS Used," Revision 0
APP-HA04-GEF-850016, "SB-AI/TR Weld Joint Alternatives," Revision 0
SV3-1278-GNR-000007, "Unit 3 AI Vert 41/42 Peaking Inside (ESR#50017337)," Revision 0
SV3-1278-GNR-000012, "AI Panel excessive root gap to SB Course 16 (ESR#50022740)," Revision 0
Welding Material Authorization and Release Report-Nuclear WMARR SB-46, Lincoln Electric Co. E8018-C1 Lot 1399Y, 5/16/19
Welding Material Authorization and Release Report-Nuclear WMARR SB-42, Lincoln Electric Co. E71T-1 Lot 1400C, 5/1/19
Welding Material Authorization and Release Report-Nuclear WMARR SB-49, Lincoln Electric Co. E8018-C1 Lot 1400D, 6/3/19

Nondestructive Examination Reports:

Magnetic Particle Examination Report 231124-003-IN-RP-M0181, "MT of Wide Gap 16/AI G, 6/30/19
Magnetic Particle Examination Report 231124-003-IN-RP-M0182, "MT of Wide Gap 16/AI G, 7/6/19
Magnetic Particle Examination Report 231124-003-IN-RP-M0183, "MT of Wide Gap 16/AI F, 7/9/19

Magnetic Particle Examination Report 231124-003-IN-RP-M0186, "MT of Wide Gap 16/AI E, 7/10/19
Magnetic Particle Examination Report 231124-003-IN-RP-M0187, "MT of Wide Gap Build Up on AI-E Assembly," 7/11/19
Ultrasonic Testing Report 231124-003-IN-RP-U0073, Weld Identification AI F-G, 6/30/19
Ultrasonic Testing Report 231124-003-IN-RP-U0097, Weld Identification AI F/G Vert OS, 6/30/19
Ultrasonic Testing Report 231124-003-IN-RP-U0679, Weld Identification 1516 AI 16-17, 7/15/19

Procedures and Specifications:
181816-000-WS-PR-45054, "Ultrasonic Examination Statically Loaded Nontubular Connection AWS D1.1 Shield Wall Work," Revision 3
181816-000-WS-PR-45056, "Visual Inspection Procedure AWS D1.1 Shield Wall Work," Revision 1
181816-000-WS-PR-45058, "Magnetic Particle Examination Yoke/Prod, Dry Visible Particles AWS D1.1 Shield Wall Work," Revision 2
181816-000-WS-SP-45001, "General Welding Procedure Specification for AWS D1.1, AWS D1.4, AWS D1.6, and ASME Section IX Qualified WPS's," Revision 1
APP-GW-GAP-420, "Engineering and Design Coordination Reports," Revision 18
APP-GW-GAP-428, "Nonconformance and Disposition Report," Revision 16
CMS-720-03-PR-09154, "Site Welding Material Distribution for ANSI/AISC N690 Projects," Revision 0
SV3-1208-Z0-001, "Specification for the Fabrication and Field Erection of the SC Panels and the Conical Roof Steel Structure for the AP1000 Shield Building," Revision 0
WPS 181816-000-WS-SP- E71T1, "Welding Procedure Specification E71T1," Revision 1
WPS 181816-000-WS-SP-E8018, "Welding Procedure Specification E8018," Revision 2

Weld Travelers:
231124-003-QA-TRV-AI069, "U3-AI-Assy. F/G Vert I/O," 6/14/19
231124-003-QA-TRV-AI072, "U3-AI-16/AI Horiz I/O," 6/28/19
231124-003-QA-TRV-AI073, " U3-AI-16/SI Horiz Wide Gap," 6/28/19
231124-003-QA-TRV-AI072, "U3-AI-1516B/AI-F Horiz I/O," 6/28/19
231124-003-QA-TRV-AI072, "U3-AI-1516AB/AI-E Horiz I/O," 6/28/19
231124-003-QA-TRV-AI076, "U3-AI-D2L-Mismatch-Install," 8/7/19

Section 1A14
Concrete Records:
Concrete/Grout Delivery Ticket #54365, Pour #5178, 8/12/19
Concrete/Grout Delivery Ticket #54367, Pour #5178, 8/12/19
Concrete/Grout Delivery Ticket #54373, Pour #5178, 8/12/19
Concrete/Grout Delivery Ticket #54379, Pour #5178, 8/12/19
Concrete/Grout Delivery Ticket #54409, Pour #5178, 8/12/19
Concrete/Grout Delivery Ticket #54419, Pour #5178, 8/12/19
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CR 70000284, Unit 3 Air Inlet Concrete Placement Test, 8/14/19
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QA Surveillance 26139-000-GQA-QSSS-19143, "Unit 3 Air Inlet Concrete Placement," Revision 0
QC Inspection Report 26139-SV3-IR-C0-00895, "Unit 3 Shield Building Wall Air Inlet Concrete Placement El. 247'-6 " to 264'-4"," 9/18/19
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SV3-CR01-GEF-000377, Hold on Formwork Installation for East Portion of Wall 1 Between EL 135'-3" and EL 163'-0", Revision 1
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Energy & Process Corporation, CMTR for PO 4500679159 CN1, 5" THK X 39" OD X 29.5" ID, Forged Ring MN: FT01-V2-531-01-2S, SA182 F304L, Heat: CD25201, Mfg.: Patriot Forge Item: 2, 1/13/16
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Cambridge Material Testing Limited-Ontario, product Chemical Analysis Test Report Lab-No. 715868-15 (Item 2) of 11/10/2015;
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WEC Fuel Transfer Tube Functional Testing Test Report WEC Ident. No. Assy. C1, signed by Level II Inspector 45, 10/16/18

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IPS 2323, Welding Procedure Specification for ASME Boiler and Pressure Vessel Code GTAW and FCAW of Carbon Steel to Stainless Steel Materials, Revision 0
IPS 2323 (PQR), Procedure Qualification Record for IPS 2323, dated 5/20/13
IPS 2406, Production Test Procedure for Electrical Penetration Assemblies for Westinghouse, Revision 0
IPS 2412, Production Test Procedure for Electrical Penetration Assemblies for Westinghouse, Revision 0
QCI 9-23, Quality Control Instruction Solvent Removable Visible Dye Penetrant Test, Revision U

<u>Weld rods (All penetrations)</u>
CMTR 2-55764-00-0-A from ESAB for weld rods, lot 10029760, dated 9/8/14
CMTR 7436648 from Lincoln Electric for weld rods, SFA 5.22, lot 1264Z, dated 6/14/16
CMTR 8305020 from Lincoln Electric for weld rods, SFA 5.22, lot 1310Z, dated 1/18/17
CMTR from Weldstar for weld rods, SFA 5.9, heat 10064, dated 6/8/88

Letter RE: Material Certification for Reconciliation of ASME Material for PO 4500430408, dated 7/20/18
Material Disposition Report N-002042, Canister Tube S/A for P31, dated 8/9/18
Material Disposition Report N-002039, Canister Tube S/A for P09 and P26, dated 8/9/18
CR 50025875, QA Data Package SV4-EY01-VQQ-003 missing a CMTR, dated 8/2/19
IR-2019-11856, EY01 Missing CMTR, dated 7/31/19

P31
CMTR SSC001-13-10-36607-2 from Laboratory Testing Inc., for P31 outside header, heat 285203, dated 10/15/13
CMTR TPS001-13-05-19226-2 from Laboratory Testing Inc., for P31 canister tube, heat T45241, dated 6/6/13
CMTR SSC001-13-10-36607-1 from Laboratory Testing Inc., for P31 inside header, heat 284588, dated 10/15/13
CMTR SSC001-13-10-36608-2 from Laboratory Testing Inc., for P31 weldment, heat 852672, dated 10/15/13
PT report for part 7ZR1-30002-01, dated 11/8/16
PT report for part 7ZR1-20022-03, dated 4/7/17
PT report for part 7ZR1-30003-01, dated 11/9/16
PT report for part 7ZR1-30012-01, dated 2/14/17
PT report for part 7ZR1-20022-03 (post weld), dated 5/31/17
Pneumatic pressure test for Subassembly P31 (SN 9111), dated 8/10/18

P09
CMTR SSC001-13-09-33904-5 from Laboratory Testing Inc., for P09 outside and inside header, heat SC17578, dated 11/5/13
CMTR TPS001-13-06-21374-1 from Laboratory Testing Inc., for P09 canister tube, heat T32197, dated 6/24/13
CMTR SSC001-13-10-36608-2 from Laboratory Testing Inc., for P09 weldment, heat 852672, dated 10/15/13
PT report for part 7ZR1-30000-01 Header Plate I/C and Header Plate O/C, dated 11/8/16
PT report for part 7ZR1-20020-02, dated 4/7/17
PT report for part 7ZR1-30012-01, dated 2/14/17
PT report for part 7ZR1-20020-02 (post weld), dated 5/2/17
Pneumatic pressure test for Subassembly P09 (SN 9093), dated 1/25/19

P26
CMTR SSC001-13-09-33904-5 from Laboratory Testing Inc., for P26 outside and inside header, heat SC17578, dated 11/5/13
CMTR TPS001-13-06-21374-1 from Laboratory Testing Inc., for P26 canister tube, heat T32197, dated 6/24/13
CMTR SSC001-13-10-36608-2 from Laboratory Testing Inc., for P26 weldment, heat 852672, dated 10/15/13
PT report for part 7ZR1-30000-01, dated 11/8/16
PT report for part 7ZR1-30001-01, dated 11/8/16
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PT report for part 7ZR1-30012-01, dated 2/14/17
PT report for part 7ZR1-20022-03 (post weld), dated 6/9/17
Pneumatic pressure test for Subassembly P26 (SN 9096), dated 1/25/19

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SV4-PV11-Z0-001, Design Specification for Butterfly Valves, ASME Boiler and Pressure Vessel Code Section III Class 2 and 3, Revision 4
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SV4-PV11-Z0R-001, Butterfly Valves, ASME Boiler and Pressure Vessel Code Section III, Class 2 and 3 Valve Data Sheet Report, Revision 7
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Certificate of Conformance / Compliance / CMTR for Cover Plate from DuBose National Energy Services, Serial Number 288516, Heat Code BRG, 5/17/2011
Certificate of Compliance 6952 for Valve Disc from PRL Industries, Serial Number AC458, Heat Number 1138, 6/8/2011
Certificate of Conformance for Hex Cap Screw from Ronson Manufacturing, Customer PO Number 855696, Heat Number 10101291, 1/13/2011
CMTR for Hex Cap Screw from Ronson Manufacturing, Customer PO Number 855696, Heat Number 10101291, 1/13/2011
Certificate of Conformance for Drive Shaft from Ronson Manufacturing, Customer PO Number 2004078, Heat Number 9HM8, 10/8/2012
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CMTR for Valve Body from Jorgensen Forge Corporation, Heat Number 2H062 / 2, 12/13/2010
CMTR for Valve Disc from Energy & Process Corporation, Heat Number 251145, 11/23/2010
Test Report, Test Procedure for Nozzle Check Valve, Job Number 960033, Valve Serial Number 11899, 11/20/2012
Test Report, Dimensional Inspection Procedure for Enertech Nozzle Check Valve, Valve Serial Number 11899, 12/10/2011
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N.D.E. Examination Report (Liquid Penetrant), Serial Number 38150, 5/10/2011

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Welding Material Requisitions (WMR) 445012 and 445016
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V-19-RT-302-0780, Computed Radiography Examination Report for Weld No. SV4-PXS-PLW-021-7, 8/22/2019

Weld SV4-PXS-PLW-021-10 :
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Welding Material Requisitions (WMR) 463729, 4637 32, and 463740
V-19-PT-301-2186, Liquid Penetrant Examination Report for Weld No. SV4-PXS-PLW-021-10 (buildup), 8/2/2019
V-19-PT-301-2351, Liquid Penetrant Examination Report for Weld No. SV4-PXS-PLW-021-10, 8/15/2019
V-19-RT-302-0781, Computed Radiography Examination Report for Weld No. SV4-PXS-PLW-021-10, 8/22/2019

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Welding Material Requisitions (WMR that include all three welds) 463741, 463749, 463753, 463757, and 444996
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26139-SV4-IR-SS-00241, Qualification of Unit 4 Containment Building Bolt Installers, Date: 5/17/19

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50019858, NI4 Containment 107'-2" elevation Slab North East Placement
50026844, Match Marking on Structural Bolts
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2019SCC1245, "Wood Report of Concrete Compression Test Results," 9/27/19
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CR 50015426, "Concrete in SV4-1242-CP-S07 placement," 3/12/19
QC IR 26139-SV4-IR-C0-00848, "Wall Placement 128 located on CL I starting 5' north of CL 1 to 8' north of CL 4 between El 117'-6" and 135'-3"," 8/23/19
QC IR 26139-SV4-IR-C0-00930, " SV4-1150-C0W-1033996," 7/30/19
QC IR 26139-SV4-IR-C0-00989, "NI4 Cylindrical Shield Wall / Placement RC10B / El 135'-3"," 8/20/19
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135470-D100.SB005-0105 WPS 1017, GTAW/Manual (ASTM A572 Gr 50 Plate to AWS D1.1-2000 Table 3.1 Group II or Group I steel)
135470-D100.SB005-0105 WPS 1021, Weld Procedure Specification FCAW/Semiautomatic
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ND-AD-002-027, "Nonconforming Items," Revision 4.0

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HII (Huntington Ingalls Industries Mechanical Inc., formerly Newport News Industrial Corporation)
NNI (Newport News Industrial Corporation)

Corrective Action Program Documents:
E&DCR APP-HA04-GEF-850016, "SB-AI/TR Weld Joint Alternatives," Revision 0
HII Letter 1902-0087, Notice of Potential Reportable Deficiency under 10 CFR 21, 2/15/19
HII Letter 1902-0088, Notice of Potential Reportable Deficiency under 10 CFR 21, 2/15/19
HII Letter 1902-0089, Notice of Potential Reportable Deficiency under 10 CFR 21, 2/15/19
HII Letter 1902-0090, Notice of Potential Reportable Deficiency under 10 CFR 21, 2/15/19
HII Letter 1902-0093, Notice of Potential Reportable Deficiency under 10 CFR 21, 2/25/19
HII Letter 1903-0101, Notice of Potential Reportable Deficiency under 10 CFR 21, 3/21/19
HII Letter 1903-0102, Notice of Potential Reportable Deficiency under 10 CFR 21, 3/21/19
HII Letter 1903-0103, Notice of Potential Reportable Deficiency under 10 CFR 21, 3/21/19
HII Letter 1903-0104, Notice of Potential Reportable Deficiency under 10 CFR 21, 3/21/19
HII Letter 1905-0133, Notice of Potential Reportable Deficiency under 10 CFR 21, 5/6/19
HII Letter 1905-0134, Notice of Potential Reportable Deficiency under 10 CFR 21, 5/6/19
HII Letter 1905-0136, Notice of Potential Reportable Deficiency under 10 CFR 21, 5/8/19
HII Letter 1905-0137, Notice of Potential Reportable Deficiency under 10 CFR 21, 5/8/19
SNC CR 50013812, Potential 21 issues with panels received from Huntington Ingalls Industries, 2/19/19
SNC CR 50016164, Potential Part 21 Notification from HII Industries, 3/22/19
SNC CR 50019624, Potential Part 21 Notification from HII Industries, 5/7/19
WECTEC Evaluation Identification No. 19-0016, HII U3 Lower SB 26 Panels & Embed Plate WPS, 4/15/19
WECTEC Evaluation Identification No. 19-0017, HII U4 SB Air Inlet 43 Panels WPS, 4/15/19
WECTEC Evaluation Identification No. 19-0018, HII U4 SB Air Inlet 43 Panels WPS, 4/15/19
WECTEC Evaluation Identification No. 19-0019, HII U4 SB Air Inlet 25 Panels WPS, 4/16/19
Westinghouse CAP-IR 2018-18309, Shield Building Tension Ring SV3-1278-SC-TR02, 10/29/18
Westinghouse CAP-IR 2019-3061, Vogtle Unit 3 Shield Building SC Panel Weld Procedure Specification, 2/15/19
Westinghouse CAP-IR 2019-3062, Vogtle Unit 4 Shield Building SC Panel Weld Procedure Specification, 2/15/19

Westinghouse CAP-IR 2019-3065, Vogtle Unit 3 Shield Building Air Inlet Panels Weld Procedure Specification, 2/15/19
Westinghouse CAP-IR 2019-3748, Vogtle Unit 3 Shield Building Tension Ring Panels - Incorrect Weld Procedure Specification, 4/10/19
Westinghouse CAP-IR 2019-5185, Vogtle Unit 3 Shield Building SC Panels - WPS Interpass Temperature, 4/10/19
Westinghouse CAP-IR 2019-5186, Vogtle Unit 4 Shield Building SC Panels - WPS Interpass Temperature, 4/10/19
Westinghouse CAP-IR 2019-5188, Vogtle Unit 3 Shield Building Air Inlet/Tension Ring Panels - WPS Interpass Temperature, 4/10/19
Westinghouse CAP-IR 2019-5189, Vogtle Unit 4 Shield Building Air Inlet Panels - WPS Interpass Temperature, 4/10/19

Nonconformance & Disposition Reports:
APP-1278-GNR-850200, "HII Mechanical NCR 3778A-Delivered SV4-1278-SC-AI27: Wrong Stud Welding WPS used on Module," Revision 0
APP-1278-GNR-850201, "HII Mechanical NCR 3777A-DELIVERED SV3 MODULES - Wrong Stud Welding WPS Used," Revision 0
APP-1278-GNR-850205, "HII-Mech pre-production shot studs to incorrect plate thickness on Delivered panels for SV4," Revision 0
APP-1278-GNR-850206, "HII-Mech pre-production shot studs to incorrect plate thickness on Delivered panels SV3," Revision 0
SV3-1208-GNR-000121, "Vogtle Unit 3 - Shield Building SC Panels - HII - Incorrect WPS," Revision 0
SV3-1208-GNR-000122, "HII Mech. NCR 3905A Vogtle 3 welds performed utilizing incorrect WPS 1006 in lieu of WPS 1050," Revision 0
SV3-1208-GNR-000130, "Shield Bldg SV3 SC Panels - HII - WPS Interpass Temperature," Revision 0
SV3-1208-GNR-000132, "Shield Bldg SC Panels - HII Rebar Coupler Tensile Test not qualified to 1.25 x Fy," Revision 0
SV3-1278-GNR-000002, "HII Mechanical NCR 3902 A, Vogtle 3 (SV3), Air Inlet Groups, WPS 1072 in lieu of WPS 1084," Revision 0
SV3-1278-GNR-000003, "HII Mechanical NCR 3906 A, Vogtle 3 (SV3), AI & TR Groups, WPS 1006 in lieu of WPS 1050," Revision 0
SV3-1278-GNR-000004, "HII Mechanical NCR 3940 A, Vogtle 3, (SV3-1278-SC-TR09) WPS 1006 used in Overhead Position," Revision 0
SV3-1278-GNR-000007, "Unit 3 AI Vert 41/42 Peaking Inside (ESR#50017337),"
SV3-1278-GNR-000010, "Vogtle Unit 3 - HII Air Inlet Panels - Incorrect WPS Used in Production," Revision 0
SV3-1278-GNR-000011, "Vogtle Unit 3 - HII AI/TR Shield Bldg Panels - WPS Interpass Temperature," Revision 0
SV3-1278-GNR-000013, "Vogtle Unit 3 - HII Tension Ring Panels - Incorrect WPS Used in Production," Revision 0
SV4-1208-GNR-000036, "Vogtle Unit 4 - Shield Building SC Panels - HII - Incorrect WPS," Revision 0
SV4-1208-GNR-000037, "HII Mechanical NCR 3907A for WPS 1006 in lieu of WPS 1050," Revision 0
SV4-1208-GNR-000041, "HII Mechanical NCR 3963A, welds were performed utilizing the incorrect WPS 1050 in lieu of WPS 1006," Revision 0
SV4-1208-GNR-000042, "Indications for D2L Bars Course 09/10 (ESR#50016115)," Revision 0

SV4-1208-GNR-000048, "Shield Bldg SC Panels - HII Rebar Coupler Tensile Test not qualified to 1.25 x Fy," Revision 0
SV4-1208-GNR-000049, "HII MECHANICAL NCR 4077 A, Delivered SC Modules to SV4 with interpass temperature 100F Violation.," Revision 0
SV4-1278-GNR-000001, "HII Mechanical NCR 3903 A, Vogtle 4 (SV4), Air Inlet Groups, WPS 1072 in lieu of WPS 1084," Revision 0
SV4-1278-GNR-000005, "Vogtle Unit 4 - HII Air Inlet Shield Bldg Panels - WPS Interpass Temperature," Revision 0

Procedures:
APP-GW-GAP-428, "Nonconformance and Disposition Report," Revision 16
ND-AD-002, "Nuclear Development Program Corrective Action Program," Revision 29.1
ND-AD-002-025, "Issue Identification, Screening, and Dispatching," Revision 2.0
ND-AD-002-026, "Corrective Action Program Processing," Revision 2.0
ND-AD-002-027, "Nonconforming Items," Revision 5.0
SV3-1208-Z0-001, "Specification for the Fabrication and Field Erection of the SC Panels and the Conical Roof Steel Structure for the AP1000 Shield Building," Revision 2
SV3-CR01-Z0-010, "Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel," Revision 6
SV4-1208-Z0-001, "Specification for the Fabrication and Field Erection of the SC Panels and the Conical Roof Steel Structure for the AP1000 Shield Building," Revision 2
SV4-CR01-Z0-010, "Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel," Revision 6

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NNI PQR 1155, "Flux Core Arc Weld-Gas," Revision A
NNI PQR 1156, "Flux Core Wire," Revision A
NNI PQR 1193, "GTAW/Manual (ASTM A108 Gr 1030 to ASTM A572 Gr 50)," Revision B
NNI PQR 1194, "GTAW/Manual (ASTM A108 Gr 1030 to ASTM A572 Gr 50)," Revision B
NNI WPS 1006, "FCAW / Semiautomatic," Revision 11
NNI WPS 1050, "FCAW / Semiautomatic," Revision 1
NNI WPS 1059, "GTAW/Manual ASTM A572-50 to Lenton Couplers P9J (1030)," Revision 9
NNI WPS 1060, "GTAW/Manual ASTM A572 Gr. 50 to Lenton Couplers P9J (1030)," Revision 7
NNI WPS 1072, "FCAW Semiautomatic," Revision 3
NNI WPS 1072, "FCAW Semiautomatic," Revision 5
NNI WPS 1084, "FCAW Semiautomatic," Revision 0
NNI WPS 1106, "FCAW / Semiautomatic," Revision 2
NNI WPS 1106, "FCAW / Semiautomatic," Revision 3

Section 1P03
CR 50013430, "Arching Between Battery Terminal Plates," 2/13/19
CR 50014740, "Recreating CR for NCR disposition-Arching between battery terminal Plates," 3/1/19
CAR 8000349, "Arching Between Battery Terminal Plates," 2/27/2019
SV3-DB01-GNR-000001, "Arching Between Battery Terminal Plates During Installation ESR 50017209," Revision 0
ND-AD-002, "Nuclear Development Program Corrective Action Program," Revision 29.0
ND-AD-002-025, "Issue Identification, Screening, and Dispatching," Revision 1.1
ND-AD-002-026, "Corrective Action Program Processing," Revision 1.1
ND-AD-002-027, "Nonconforming Items," Revision 4.0

Section 1P04

ASME Code:
ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications"

Bechtel Procedures:
26139-000-4MP-T81C-N2102, "Housekeeping," Revision 3
26139-000-4MP-T81C-N7102, "Control of Measuring and Test Equipment," Revision 2
26139-000-4MP-T81C-N1601, "System Completion And Turnover," Revision 4

Condition Reports (CRs):
CR 50025529, "B-GEN-ITPA-003 does not reflect current ITP Organization," Dated July 30, 2019
CR 50025648, "Apparent Typo UFSAR Rev 8 Pg 1A-28," Dated July 31, 2019
CR 50025760, "B-GEN-ITPA-001 procedure enhancement," Dated August 1, 2019

Licensing Documents:
Vogtle Electric Plant Unit 3 & 4 Updated Final Safety Analysis Report (UFSAR), Chapter 5, "Reactor Coolant System and Connected Systems," Revision 7
Vogtle Electric Plant Unit 3 & 4 Updated Final Safety Analysis Report (UFSAR), Chapter 14, "Initial Test Program," Revision 8
Vogtle Electric Plant Unit 3 & 4 Updated Final Safety Analysis Report (UFSAR), Chapter 17, "Quality Assurance," Revision 4

SNC Procedures:
B-ADM-MNT-005, "Work Package Closure," Version 2.0
B-ADM-MNT-006, "Work Package Preparation," Version 4.0
B-ADM-PLMM-002, "General Plant Housekeeping and In-Process Materials Control," Version 0.3
B-ADM-WCO-001, "Operational Readiness Work Management," Version 6.0
B-GEN-ITPA-001, "ITP Administration and Organization," Version 7.0
B-GEN-ITPA-002, "Joint Test Working Group (JTWG)," Version 7.0
B-GEN-ITPA-003, "Initial Test Program Personnel Qualification & Training," Version 4.2
B-GEN-ITPA-004, "Conduct of Test," Version 11.0
B-GEN-ITPA-004-F01, "Test Narrative Log," Version 2.1
B-GEN-ITPA-004-F08, "Pre-Test System Walkdown Guide," Version 1.1
B-GEN-ITPA-004-F11, :Pre-Test Checklist," Version 2.1
B-GEN-ITPA-004-F12, "Post Test Checklist," Version 2.4
B-GEN-ITPA-007, "Jurisdictional Control," Version 2.1
B-GEN-ITPA-009, "ITP Configuration Control of Digital Information," Version 5.1
B-GEN-ITPA-010, "ITP Temporary Modifications," Version 9.0
B-GEN-ITPA-011, "ITP Administrative and Test Procedure Development," Version 7.0
B-GEN-ITPA-013, "Initial Test Program Troubleshooting," Version 3.1
B-GEN-ITPA-014, "Flushing and Initial Cleanness Verification," Version 4.1
B-GEN-ITPA-015, "Initial Test Program Temporary Operating Plans," Version 4.0
B-GEN-ITPA-017, "ITP Control System Interface Access Control," Version 4.0
B-GEN-ITPA-019, "Protection and Safety Monitoring System Initial Test Program Test Plan," Version 1.0
B-GEN-PLMC-076, "Chemistry Control for Flushing, System Cleanliness, and Wet Layup," Version 0.2
ND-AD-VNP-029, "Project Completion and Transition to Operations," Version 5.1

ND-DC-001, "Records Management," Version 21.0
NMP-AP-001-003, "Review and Approval of Site Procedures," Version 13.0
NMP-AP-002, "SNC Fleet Procedures Writers Guide," Version 8.1
NMP-AP-003, "Procedure and Work Instruction Use and Adherence," Version 6
NMP-AD-025, "Quality Assurance and Non-Quality Assurance Records Administration," Version 8.0
NMP-DP-001, "Operational Risk Awareness," Version 16.0
NMP-ES-006, "Preventive Maintenance Implementation and Continuing Equipment Reliability Improvement," Version 10.0
NMP-GM-005-002, "Human Performance Tools Instruction," Version 8.1, Dated January 2019
NMP-MA-009-001, "Foreign Material Exclusion Program Requirements," Version 10.0
NMP-MA-012, "Conduct of Maintenance," Version 10.0
NMP-MA-053, "SNC Maintenance Department Measuring and Test Equipment Program (M&TE)," Version 2.2
NMP-MA-054, "General Plant Housekeeping," Version 1.1
Nuclear Development Quality Assurance Manual," Version 19.0
3-RCS-ITPP-503, "Reactor Coolant System Cold Hydrostatic Test Preoperational Test Procedure," Version 2.0
3-PXS-ITPP-502, "PXS Accumulator Mapping and Line Resistance Test," Version 1.0

Westinghouse Procedures:
APP-GW-GEM-200, "AP1000 Chemistry Manual," Revision 5

Other:
B-GEN-ITPA-004-F01, "Test Narrative Log: WO# SNC919531"
B-GEN-ITPA-004-F01, "Test Narrative Log: WO# SNC919491; 3-EDS3-DC-1"
ESR 50018362
ESR 50017190

TDR001-1037433/TE50005486
TDR002-1037433/TE50006749
TDR003-1037433/TE50006780
TDR004-1037433/TE50006782

3. OPERATIONAL READINESS

Section 3P01

Letter from the National Academy for Nuclear Training to Stephen E. Kuczynski, Southern Nuclear Operating Company, "Vogtle Electric Generating Plant Three and Four Final Accreditation Report," 5/1/18
Letter from the National Academy for Nuclear Training to Stephen E. Kuczynski, Southern Nuclear Operating Company, "Vogtle Electric Generating Plant Three and Four Final Accreditation Report," 7/24/19

Section 3P02

SV3-GW-GEI-100, "AP1000 Preservice Inspection Program Plan for Vogtle Unit 3", Revision 2
N&D SV3-RCS-GNR-000046, "Pre-service Inspection PT Indication - SV3-RCS-PLW-04B-SW9 (ESR 50016250)", Revision 0
N&D SV3-MV01-GNR-000013, "PCI Nonconformance NCR-913241-010", Revision 0

APP-GW-G1-014, "AP1000 Plant Nuclear Safety Classification and Seismic Requirement Methodology", Revision 9
APP-PXS-M3-001, "Passive Core Cooling System, System Specification Document", Revision 10
APP-RCS-M3-001, "Reactor Coolant System, System Specification Document", Revision 12

LIST OF ACRONYMS

10 CFR 50	Title 10, Code for Federal Regulations Part 50
AC	Alternating Current
ADS	Automatic Depressurization System
AI	Air-inlet
AISC	American Institute of Steel Construction
ANI	Authorized Nuclear Inspector
ANII	Authorized Nuclear Inservice Inspector
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AT&F	American Tank & Fabrication
AWS	American Welding Society
BOP	Balance of Plant
BPV	Boiler and Pressure Vessel
CAP	Corrective Action Program
CAPE	Computer Aided Protection Engineering
CB&I	Chicago Bridge and Iron
CCS	Component Cooling Water System
CMT	Core Makeup Tank
CMTR	Certified Material Test Report
CoC	Certificate of Conformance
COL	Combined License
CR	Condition Report
CVS	Chemical and Volume Control System
E&DCR	Engineering and Design Coordination Report
ECS	Main AC Power System
EPA	Electrical Penetration Assemblies
EQRR	Equipment Qualification Reconciliation Report
ESR	Engineering Service Requests
FCAW	Flux-Cored Arc Welding
FTT	Fuel Transfer Tube
GTAW	Gas Tungsten Arc Welding
HX	Heat Exchanger
IDS	Uninterruptible Power Supply System
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IRWST	In-containment Refueling Water Storage Tank
ISI	Inservice Inspection
ITAAC	Inspections, Test, Analyses, and Acceptance Criteria
ITP	Initial Test Program
JTWG	Joint Test Working Group
LAR	Licensing Amendment Request
MOV	Motor Operated Valve
MT	Magnetic Particle Testing
N&D	Nonconformance and Disposition
NDE	Nondestructive Evaluation

NI	Nuclear Instrumentation
NRC	U.S. Nuclear Regulatory Commission
OCS	Operation and Control Centers System
PCD	Principal Closure Document
PXS	Passive Core Cooling System
PJP	Partial Joint Penetration
PM	Preventative Maintenance
PQNM	Project Nuclear Quality Control Manual
PQR	Procedure Qualification Records
PRHR	Passive Residual Heat Removal System
PSI	Preservice Inspection
PT	Liquid Penetrant Testing
PXS	Passive Core Cooling System
QA	Quality Assurance
QAP	Quality Assurance Program
QAPD	Quality Assurance Program Description
QC	Quality Control
QOTTC	Quick Opening Transfer Tube Closure
RC/SC	Reinforced Concrete/Steel Composite
RCS	Reactor Coolant System
RCSC	Research Council on Structural Connections
RNS	Normal Residual Heat Removal System
S&W	Stone and Webster
SAW	Submerged Arc Welding
SC	Steel Composite
SCC	Self-Consolidated Concrete
SFS	Spent Fuel Pit Cooling System
SGS	Steam Generator System
SMAW	Shielded Metal Arc Welding
SSC	Structures, Systems, and Components
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic Testing
VES	Main Control Room Emergency Habitability System
WDS	Weld Data Sheet
WEC	Westinghouse Electric Company
WMR	Welding Material Requisitions
WPS	Weld Procedure Specification

ITAAC INSPECTED

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
13	2.1.02.02a	2.a) The components identified in Table 2.1.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.1.2-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.1.2□1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.1.2-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.1.2-2 as ASME Code Section III retains its pressure	Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested. Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability. Inspection will be performed for the existence of an LBB evaluation report or an evaluation report on the protection from dynamic effects of a pipe break. Section 3.3, Nuclear Island Buildings, contains the design descriptions and	The ASME Code Section III design reports exist for the as-built components and piping identified in Tables 2.1.2□1 and 2.1.2□2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Table 2.1.2□1 and Table 2.1.2□2 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that each of the as-built lines identified in Table 2.1.2-2 for which functional capability is required meets the requirements for functional capability. An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the

		boundary integrity at its design pressure. 5.b) Each of the lines identified in Table 2.1.2-2 for which functional capability is required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.1.2-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.	inspections, tests, analyses, and acceptance criteria for protection from the dynamic effects of pipe rupture.	as-built RCS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects of a line break is provided.
19	2.1.02.05a.i	5.a) The seismic Category I equipment identified in Table 2.1.2□1 can withstand seismic design basis loads without loss of safety function. 7.a) The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	i) Inspection will be performed to verify that the seismic Category I equipment and valves identified in Table 2.1.2-1 are located on the Nuclear Island. ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed. iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions. i) Type tests, analyses, or a	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

			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.	environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.1.2□1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.
36	2.1.02.08d.v	8.d) The RCS provides automatic depressurization during design basis events.	v) Inspections of the elevation of the ADS stage 4 valve discharge will be conducted. vi) Inspections of the ADS stage 4 valve discharge will be conducted. viii) Inspection of the elevation of each ADS sparger will be conducted.	v) The minimum elevation of the bottom inside surface of the outlet of these valves is greater than plant elevation 110 feet. vi) The discharge of the ADS stage 4 valves is directed into the steam generator compartments. viii) The centerline of the connection of the sparger arms to the sparger hub is < 11.5 feet below the IRWST overflow level.
72	2.1.03.03	3. The components identified in Table 2.1.3-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 4. Pressure boundary	Inspection will be conducted of the as-built components as documented in the ASME design reports. Inspection of as-built pressure boundary welds will be performed in accordance with the	The ASME Code Section III design reports exist for the as-built components identified in Table 2.1.3-1 as ASME Code Section III. A report exists and concludes that the ASME Code Section

		welds in components identified in Table 2.1.3-1 as ASME Code Section III meet ASME Code Section III requirements. 5. The pressure boundary components (RV, CRDMs, and incore instrument QuickLoc assemblies) identified in Table 2.1.3-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.	ASME Code Section III. A hydrostatic test will be performed on the components of the RXS required by the ASME Code Section III to be hydrostatically tested.	III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the pressure boundary components (RV, CRDMs, and incore instrument QuickLoc assemblies) conform with the requirements of the ASME Code Section III.
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	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

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

			cables, and terminations located in a harsh environment. i) Type tests, analyses, or a combination of type tests and analyses will be performed on non□Class 1E electrical penetrations located in a harsh environment. ii) Inspection will be performed of the as-built non-Class 1E electrical penetrations located in a harsh environment.	equipment and the associated wiring, cables, and terminations identified in Table 2.2.1-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses. i) A report exists and concludes that the non-Class 1E electrical penetrations identified in Table 2.2.1□1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of containment pressure boundary integrity. ii) A report exists and concludes that the as-built non-Class 1E electrical penetrations identified in Table 2.2.1-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.
159	2.2.03.02a	2.a) The components identified in Table 2.2.3-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.2.3-2 as	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	The ASME Code Section III design reports exist for the as□built components and piping identified in Table 2.2.3□1 and 2.2.3-2 as ASME Code Section III. A report exists and concludes that the ASME Code Section

		ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.2.3-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.2.3-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.2.3-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.2.3-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure. 5.b) Each of the lines identified in Table 2.2.3-2 for which functional capability is required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.2.3-2 as designed for LBB meets the LBB criteria, or an evaluation is	accordance with the ASME Code Section III. A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested. Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability. Inspection will be performed for the existence of an LBB evaluation report or an evaluation report on the protection from dynamic effects of a pipe break. Section 3.3, Nuclear Island Buildings, contains the design descriptions and inspections, tests, analyses, and acceptance criteria for protection from the dynamic effects of pipe rupture.	III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Table 2.2.3□1 and 2.2.3-2 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that each of the as-built lines identified in Table 2.2.3-2 for which functional capability is required meets the requirements for functional capability. An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the as-built RCS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects of a line break is provided.

		performed of the protection from the dynamic effects of a rupture of the line.		
182	2.2.03.08c.iii	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	iii) Inspections of the routing of the following pipe lines will be conducted: – CMT inlet line, cold leg to high point – PRHR HX inlet line, hot leg to high point	iii) These lines have no downward sloping sections between the connection to the RCS and the high point of the line.
184	2.2.03.08c.iv.02	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	iv) Inspections of the elevation of the following pipe lines will be conducted: 2. Containment recirculation lines; containment to IRWST lines	iv) The maximum elevation of the top inside surface of these lines is less than the elevation of: 2. IRWST bottom inside surface
597	2.6.03.02.i	2. The seismic Category I equipment identified in Table 2.6.3□1 can withstand seismic design basis loads without loss of safety function.	i) Inspection will be performed to verify that the seismic Category I equipment identified in Table 2.6.3□1 is located on the Nuclear Island. ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed. iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.	i) The seismic Category I equipment identified in Table 2.6.3□1 is located on the Nuclear Island. ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function. iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.
664	C.2.6.09.05a	5. Access control points are established to: a) control personnel and vehicle	Tests, inspections, or combination of tests and inspections of	The access control points for the protected area: a) are configured to

		access into the protected area. b) detect firearms, explosives, and incendiary devices at the protected area personnel access points.	installed systems and equipment at the access control points to the protected area will be performed. Tests, inspections, or combination of tests and inspections of installed systems and equipment at the access control points to the protected area will be performed.	control personnel and vehicle access. b) include detection equipment that is capable of detecting firearms, incendiary devices, and explosives at the protected area personnel access points.
668	C.2.6.09.08a	8.a) Penetrations through the protected area barrier are secured and monitored. 8.b) Unattended openings (such as underground pathways) that intersect the protected area boundary or vital area boundary will be protected by a physical barrier and monitored by intrusion detection equipment or provided surveillance at a frequency sufficient to detect exploitation.	Inspections will be performed of penetrations through the protected area barrier. Inspections will be performed of unattended openings that intersect the protected area boundary or vital area boundary.	Penetrations and openings through the protected area barrier are secured and monitored. Unattended openings (such as underground pathways) that intersect the protected area boundary or vital area boundary are protected by a physical barrier and monitored by intrusion detection equipment or provided surveillance at a frequency sufficient to detect exploitation.
675	C.2.6.12.05	5. The fault current contribution of each offsite circuit is compatible with the interrupting capability of the onsite short circuit interrupting devices.	Analyses of the as□built offsite circuit will be performed to evaluate the fault current contribution of each offsite circuit at the interface with the onsite ac power system.	A report exists and concludes the short circuit contribution of each as□built offsite circuit at the interface with the onsite ac power system is compatible with the interrupting capability of the onsite fault current interrupting devices.
676	C.2.6.12.06	6. The reactor coolant pumps continue to receive power from	Analyses of the as□built offsite power system will	A report exists and concludes that voltage at the

		either the main generator or the grid for a minimum of 3 seconds following a turbine trip.	be performed to confirm that power will be available to the reactor coolant pumps for a minimum of 3 seconds following a turbine trip when the buses powering the reactor coolant pumps are aligned to either the unit auxiliary transformers (UATs) or the reserve auxiliary transformers (RATs).	high□side of the generator stepup transformer (GSU), and the RATs, does not drop more than 0.15 per unit (pu) from the pre□trip steady□state voltage for a minimum of 3 seconds following a turbine trip when the buses powering the reactor coolant pumps are aligned to either the UATs or the RATs.
678	2.7.01.02a	2.a) The components identified in Table 2.7.1-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.7.1-2 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 2.7.1-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.7.1-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table	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 pressure test will be performed on the components and 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 identified in Table 2.7.1-1 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for nondestructive examination of pressure boundary welds. A report exists and concludes that the results of the pressure test of the components and piping identified in Tables 2.7.1-1 and 2.7.1-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.

		2.7.1-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.7.1-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.		
760	3.3.00.02a.i.a	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	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.	i.a) A report exists which reconciles deviations during construction and concludes that the as-built containment internal structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.
761	3.3.00.02a.i.b	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	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.	i.b) A report exists which reconciles deviations during construction and concludes that the as-built shield building structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.
762	3.3.00.02a.i.c	2.a) The nuclear island structures, including the critical	i) An inspection of the nuclear island structures will be	i.c) A report exists which reconciles deviations during

		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.	performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	construction and concludes that the as-built structures in the non-radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.
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.	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.	i.d) A report exists which reconciles deviations during construction 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.
766	3.3.00.02a.ii.c	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and	ii) An inspection of the as□built concrete thickness will be performed.	ii.c) A report exists that concludes that as-built concrete thicknesses of the non-radiologically controlled area of the auxiliary building sections conform to the building sections defined in Table 3.3-1.

		the safety-related functions.		
767	3.3.00.02a.ii.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.	ii) An inspection of the as□built concrete thickness will be performed.	ii.d) A report exists that concludes that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building sections conform to the building sections defined in Table 3.3-1.
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.
793	3.3.00.07bb	7.b) Class 1E divisional electrical cables and communication cables associated with only one division are routed in their respective divisional raceways.	Inspections of the as-built Class 1E divisional cables and the as-built raceways that route the Class 1E cables will be conducted.	b) Class 1E electrical cables and communication cables in the non-radiologically controlled area of the auxiliary building associated with only one division are routed in raceways assigned to the same division. There are no other safety division electrical cables in a raceway assigned to a different division.
819	3.3.00.13	13. Separation is provided between the	An inspection of the separation of the	The minimum horizontal clearance

		structural elements of the turbine and annex buildings and the nuclear island structure. This separation permits horizontal motion of the buildings in the safe shutdown earthquake without impact between structural elements of the buildings.	nuclear island from the annex and turbine building structures will be performed. The inspection will verify the specified horizontal clearance between structural elements of the adjacent buildings, consisting of the reinforced concrete walls and slabs, structural steel columns and floor beams.	above floor elevation 100′-0″ between the structural elements of the annex building and the nuclear island is 3 inches. The minimum horizontal clearance above floor elevation 100′-0″ between the structural elements of the turbine building and the nuclear island is 3 inches.
820	3.3.00.14	14. The external walls, doors, ceiling, and floors in the main control room, the central alarm station, and the secondary alarm station are bullet□resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4. 15. Deleted	Type test, analysis, or a combination of type test and analysis will be performed for the external walls, doors, ceilings, and floors in the main control room, the central alarm station, and the secondary alarm station.	A report exists and concludes that the external walls, doors, ceilings, and floors in the main control room, the central alarm station, and the secondary alarm station are bullet□resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4.
855	E.3.9.05.01.07	5.1 The licensee has established a technical support center (TSC) and an onsite operations support center (OSC). [H.1]	5.1 An inspection of the as□built TSC and OSC will be performed, including a test of the capabilities.	5.1.7 A reliable and backup electrical power supply is available for the TSC.
880	2.2.05.07e	7e) Shielding below the VES filter is capable of providing attenuation that is sufficient to ensure main control room doses are below an acceptable level during VES operation.	Inspection will be performed for the existence of a report verifying that the as-built shielding meets the requirements for functional capability.	A report exists and concludes that the as-built shielding identified in Table 2.2.5-1 meets the functional requirements and exists below the filtration unit, and within its vertical projection.