UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

July 28, 2016

Michael Yox
Regulatory Affairs Director
Southern Nuclear Operating Company
7835 River Road, Bldg. 140, Vogtle 3 & 4
Waynesboro, GA 30830

SUBJECT: VOGTLE UNIT 3 COMBINED LICENSE, VOGTLE UNIT 4 COMBINED LICENSE - NRC INTEGRATED INSPECTION REPORTS 05200025/2016002, 05200026/2016002

Dear Mr. Yox:

On June 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection for Vogtle Electric Generating Plant (VEGP) Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on July 7, 2016 with Mr. Rauckhorst, along with other members of your staff.

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

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be made available electronically for public inspection in the NRC Public Document Room or from the Publically Available Records (PARS) component of NRC's document system ADAMS.

ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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

Sincerely,

/RA/

Michael Ernstes, Chief
Construction Projects Branch 4
Division of Construction Projects

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

Enclosure: NRC Inspection Report (IR) 05200025/2016002, 05200026/2016002
w/attachment: Supplemental Information

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NAME	P. Braxton	J. Fuller	S. Temple	A. Lerch	C. Taylor	N. Karlovich	J. Kent
DATE	7/18/2016	7/22/2016	7/25/2016	7/15/2016	7/15/2016	7/25/2016	7/25/2016
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DATE	7/21/2016	7/15/2016					
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OFFICIAL RECORD COPY: G/CCI/DCP/CPB4/Vogtle 3 & 4 Integrated IR 05200025/26 2016002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Numbers:	5200025 5200026
License Numbers:	NPF-91 NPF-92
Report Numbers:	05200025/2016002 05200026/2016002
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Vogtle Unit 3 Vogtle Unit 4
Location:	Waynesboro, GA Charlotte, NC
Inspection Dates:	April 1, 2016 through June 30, 2016
Inspectors:	A. Artayet, Senior Construction Inspector, DCI P. Braxton, Resident Inspector, DCP P. Carman, Construction Inspector, DCI N. Coovert, Senior Construction Inspector, DCI G. Crespo, Senior Construction Inspector, DCI J. Fuller, Senior Resident Inspector, DCP D. Harmon, Construction Inspector, DCI N. Karlovich, Resident Inspector, DCP J. Kent, Construction Project Inspector, DCP A. Lerch, Construction Project Inspector, DCP C. Oelstrom, Construction Inspector, DCI A. Ponko, Senior Construction Inspector, DCI C. Smith, Construction Inspector, DCI K. Steddenbenz, Construction Inspector, DCI C. Taylor, Senior Construction Project Inspector, DCP S. Temple, Resident Inspector, DCP D. Terry-Ward, Construction Inspector, DCI
Approved by:	Michael Ernstes, Chief Construction Projects Branch 4 Division of Construction Projects

SUMMARY

Inspection Report (IR) 05200025/2016002, 05200026/2016002; 04/01/2016 through 06/30/2016; Vogtle Unit 3 Combined License, Vogtle Unit 4 Combined License, routine integrated inspection report.

A. NRC-Identified and Self Revealed Findings

None

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Construction Status

During this reporting period in Unit 3, the remaining walls of the CA20 structural module, which makes up part of the radiation controlled portion of the auxiliary building including the fuel transfer canal and the spent fuel pool, were filled with concrete from elevation 66'6" to 128'. Concrete was placed up to elevation 96' on the West side of containment and up to elevation 100' in the annulus area between the containment vessel and the shield building from 7.3-line to N-line. CA03, which forms the west wall of the in-containment refueling water storage tank was placed in the nuclear island.

For Unit 4, concrete was placed inside the containment vessel from elevation 76'6" to 80'6" and the CA05 structural module was placed inside containment, which is a wall section for a portion of the PXS valve room. Rebar work began on the west side, from line N to line Q, of the shield building outside containment from 87'6" to 96'.

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 and Unit 4) ITAAC Number 2.1.02.07a.ii (25) / Family 09F
(Unit 3 and Unit 4) ITAAC Number 2.1.03.09a.ii (082) / Family 10A
(Unit 3 and Unit 4) ITAAC Number 2.2.01.06a.ii (102) / Family 09F
(Unit 3 and Unit 4) ITAAC Number 2.2.03.07a.ii (171) / Family 09F
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07aa (789) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07ab (790) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07ac (791) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07ba (792) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07bb (793) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07bc (794) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.i (799) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.ii.a (800) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.ii.b (801) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.ii.c (802) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.iii.a (803) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.iii.b (804) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.iii.c (805) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.iv.a (806) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.iv.b (807) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.iv.c (808) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.v.a (809) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.v.b (810) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07d.v.c (811) / Family 09A
(Unit 3 and Unit 4) ITAAC Number 3.3.00.07e (812) / Family 09A

a. Inspection Scope

The inspectors performed a direct inspection of the Shaw Cable Manager Program (SCM) at WECTEC LLC offices in Charlotte, NC. This inspection was associated with ITAAC Numbers 2.1.02.07a.ii (25), 2.1.03.09a.ii (082), 2.2.01.06a.ii (102), 2.2.03.07a.ii (171), 3.3.00.07aa (789), 3.3.00.07ab (790), 3.3.00.07ac (791), 3.3.00.07ba (792), 3.3.00.07bb (793), 3.3.00.07bc (794), 3.3.00.07d.i (799), 3.3.00.07d.ii.a (800), 3.3.00.07d.ii.b (801), 3.3.00.07d.ii.c (802), 3.3.00.07d.iii.a (803), 3.3.00.07d.iii.b (804), 3.3.00.07d.iii.c (805), 3.3.00.07d.iv.a (806), 3.3.00.07d.iv.b (807), 3.3.00.07d.iv.c (808), 3.3.00.07d.v.a (809), 3.3.00.07d.v.b (810), 3.3.00.07d.v.c (811), and 3.3.00.07e (812).

The inspectors used the following NRC Inspection Procedures (IPs)/sections to perform this inspection:

- 65001.09-02.01 - Physical Separation of Cables
- 65001.09-02.02 - Attributes of Electrical Cable installation
- 65001.09-02.03 - Documentation
- 65001.09-02.04 - Problem Identification and Resolution
- 65001.10-02.01 - Pre-Inspection Activities
- 65001.E-02.03-Qualification
- 65001.F-02.04-General QA Review

The inspectors reviewed the reports, completed wiring diagrams, and user manual from the SCM for cable routing and for raceway fills. The inspectors reviewed the routing paths for raceways to verify that only one division was in each raceway and that the cable fill percentages were in accordance with WECTEC requirements. The inspectors reviewed Nuclear Construction and Startup Procedures (NCSPs), installation specs, user guides, and design specs in order to understand how requirements would be used in the field. The inspectors also reviewed installation procedures and specifications, as well as the electrical design specifications.

ITAACs 2.1.02.07a.ii, 2.1.03.09a.ii, 2.2.01.06a.ii, 2.2.03.07a.ii

The inspectors reviewed the mark numbers and environmental qualification (EQ) reports associated with selected class 1E cables to verify whether the cables were bounded by the sample in the associated EQ report per Institute of Electrical and Electronics Engineers (IEEE) standard 383-1974. The inspectors reviewed a sample of Class 1E Division cables from different divisions associated with the following structures, systems, and components (SSCs) for EQ:

- CCS-PL-V200, Component Cooling Water System (CCS) Containment Isolation Motor Operated Valve (MOV) - Inlet Line Outside Reactor Containment (ORC)
- RCS-PL-V002A, Second Stage Automatic Depressurization System (ADS) MOV
- RCS-PL-V004A, Fourth Stage ADS Squib Valve
- RCS-PL-V011A, First Stage ADS Isolation MOV
- RCS-PL-V012A, Second Stage ADS Isolation MOV
- RCS-140A, Reactor Coolant System (RCS) Wide Range Pressure Sensor
- RCS-191A, Pressurizer Pressure Sensor
- RXS-JE-NE001A, Source Range Detector
- PXS-011A, Core Makeup Tank (CMT) A Level Sensor

- PXS-PL-V014B, CMT B Discharge Isolation Valve
- PXS-PL-V101, Passive Residual Heat Removal (PRHR) Heat Exchanger (HX) Inlet Isolation MOV
- PXS-PL-V123A, In-containment Refueling Water Storage Tank (IRWST) Injection A Squib Valve
- VFS-PL-V009, Containment Purge Discharge Containment Isolation Valve – Inside Reactor Containment (IRC)

The inspectors examined vendor qualification reports associated with the sample cables to determine whether the following EQ characteristics were met:

- the qualification testing was conducted in accordance with the requirements from IEEE Standard 383-1974 as specified in NRC Regulatory Guide 1.131;
- the results for the report meet the acceptance criteria stated in the ITAAC from the AP1000 DCD; and
- the results from the report state the qualified life of the cables.

The inspectors determined that some of the EQ characteristic data for the sample of cables being reviewed was extrapolated from the vendor report related to similar cables in accordance with IEEE Standard 383-1974 as specified in NRC Regulatory Guide 1.131. The inspectors also verified that the cabling associated with the SSCs can withstand the 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. The inspectors determined that the cables associated with the SSCs were qualified in accordance with the associated design specifications and acceptance criteria.

The inspectors reviewed a number of cables associated with Electrical Penetration P30, IDSB-EY-P30Z to be installed inside and outside containment. The inspectors reviewed the mark numbers and EQ reports associated with selected class 1E cables to verify whether the cables were bounded by the sample in the associated EQ report per IEEE 383-1974.

ITAACs 3.3.00.07aa, 3.3.00.07ab, and 3.3.00.07ac

The inspectors performed a review of the SCM adequacy for ensuring that Class 1E electrical cables and communication cables located within containment and the radiologically and non-radiologically controlled areas of the auxiliary building are identified by the proper color code. The inspectors determined that the SCM does not track or require compliance with color coding. The SCM only identifies and tracks the safety-related division of Class 1E electrical and communication cables. Color coding for Class 1E cabling is defined under AP1000 cabling specifications and will be inspected for compliance under the appropriate installation procedures.

ITAACs 3.3.00.07ba, 3.3.00.07bb, and 3.3.00.07bc

The inspectors performed a review of the SCM adequacy for ensuring that Class 1E electrical cables and communication cables, located within containment and the radiologically and non-radiologically controlled areas of the auxiliary building, associated with only one division will be routed in raceways assigned to the same

division. The inspectors also ensured that there will not be any other safety division electrical cables in a raceway assigned to a different division. Specifically, the inspectors reviewed a sample of drawings and documentation associated with the following raceways: APP-1143-ER-CZT01A, APP-1133-ER-AZC12, APP-1152-ER-AYC01, APP-1133-ER-AZC22, APP-1242-ER-AZC04, APP-1231-ER-DXT01EA, APP-1123-ER-CZC09, and APP-1154-ER-BZC13.

ITAAC 3.3.00.07d.i

The inspectors performed a review of the SCM adequacy for ensuring that the Class 1E and non-Class 1E cables and raceways, located within the main control room and remote shutdown room, maintain a minimum vertical separation of 3 inches and a minimum horizontal separation of 1 inch. The inspectors also ensured that the Class 1E raceways of different divisions maintained the same minimum separation requirements. Specifically, the inspectors reviewed a sample of routing plans for Class 1E and non-Class 1E cables and raceways.

ITAACs 3.3.00.07d.ii.a, 3.3.00.07d.ii.b, and 3.3.00.07d.ii.c

The inspectors performed a review of the SCM adequacy for ensuring that the Class 1E and non-Class 1E cables and raceways, located within containment and the radiologically and non-radiologically controlled areas of the auxiliary building, maintain a minimum vertical and horizontal separation of 1 inch. The inspectors also ensured that the Class 1E raceways of different divisions maintained the same minimum separation requirements. Specifically, the inspectors interviewed engineering staff regarding the separation maintained by the SCM and verified that all safety-related Class 1E cables are routed in raceways that are indicated to be no less than 1 inch apart. The inspectors also reviewed a sample of drawings and verified that the 1 inch separation is maintained throughout the drawings.

ITAACs 3.3.00.07d.iii.a, 3.3.00.07d.iii.b, and 3.3.00.07d.iii.c

The inspectors performed a review of the SCM adequacy for ensuring that the Class 1E and non-Class 1E raceways, located within containment and the radiologically and non-radiologically controlled areas of the auxiliary building, will be enclosed or barriers provided for situations where the separation distances are not met. The inspectors also ensured that the Class 1E raceways of different divisions would meet the same requirements. Specifically, the inspectors interviewed engineering staff and reviewed documentation to verify that circuits in these areas will be enclosed in raceways.

ITAACs 3.3.00.07d.iv.a, 3.3.00.07d.iv.b, and 3.3.00.07d.iv.c

The inspectors performed a review of the SCM adequacy for ensuring that Class 1E and non-Class 1E raceways, located within containment and the radiologically and non-radiologically controlled areas of the auxiliary building, where the separation distances are not met and are not provided enclosed raceways or barriers, are analyzed. The inspectors interviewed engineering staff and reviewed documentation to verify that non-Class 1E wiring will not mix with Class 1E wiring within Class 1E designated raceways in these areas and that all Class 1E raceways will be enclosed and segregated. Therefore no analysis of separation distances or barriers for Class 1E and non-Class 1E raceways is required.

ITAACs 3.3.00.07d.v.a, 3.3.00.07d.v.b, and 3.3.00.07d.v.c

The inspectors performed a review of the SCM adequacy for ensuring that non-Class 1E wiring that is not separated from Class 1E wiring, located within containment and the radiologically and non-radiologically controlled areas of the auxiliary building, will be treated as Class 1E wiring. The inspectors interviewed engineering staff and reviewed documentation to verify that non-Class 1E wiring will not mix with Class 1E wiring within Class 1E designated raceways in these areas.

ITAAC 3.3.00.07e

The inspectors performed a review of the SCM adequacy for ensuring that Class 1E communication cables which interconnect two divisions are routed and separated such that the Protection and Safety Monitoring System (PMS) voting logic is not defeated by the loss of any single raceway or fire area. The inspectors interviewed engineering staff regarding the separation maintained by the SCM and reviewed drawings to verify fuses and isolation devices were adequately configured to maintain the voting logic. The inspectors verified that the SCM data showed no two interconnecting cables pass through the same raceway or fire area such that the loss of any single raceway or fire area could defeat the PMS logic.

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC Number 2.2.03.08c.vi.01 (189) / Family 06A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.vi.01 (189). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.04 - Testing and Verification
- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.F-02.01-Design Document Review
- 65001.F-02.02-Fabrication Records Review

The inspectors performed an inspection of vendor documentation, reviewed calculations, and reviewed acceptance information associated with the CMTs for Vogtle Unit 3 to determine whether the volume of both CMTs met the minimum volume established in the Vogtle Unit 3 Updated Final Safety Analysis Report (UFSAR), Section 5.4.13 "Core Makeup Tank" and the Vogtle Unit 3 Combined License (COL), Appendix C, Table 2.2.3-4, “Inspections, Tests, Analyses, and Acceptance Criteria.”

The inspectors reviewed documentation related to the volume verification to determine whether:

- critical attributes of the CMT were identified and measured;

- the method and controls used by the licensee to verify that the as-built dimensions conformed to the licensing basis were adequate;
- the as-built tank volume and dimensions were in accordance with the final design, the ITAAC, and UFSAR;
- equipment used for measurement was properly maintained and calibrated;
- equipment accuracy was within procedural specifications; and
- the nonconformances were resolved and their dispositions had adequate technical bases.

In addition, the inspectors performed an independent calculation of the volume using the as-built dimensions of the CMTs.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 2.5.02.11 (550) / Family 10F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.11 (550). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.F-02.04-General QA Review

The inspectors performed a walkdown of the WECTEC designated storage areas to determine whether the requirements of the WECTEC Standard Nuclear Quality Assurance (QA) Program and NQA-1-1994 were being met with respect to the storage and handling of items onsite. The inspectors examined various elements of the storage of items including, but not limited to, the following:

- storage levels for items were properly classified;
- containers and items were adequately marked to provide for proper identification;
- preservation maintenance activities for equipment in storage were identified and performed;
- a log was maintained to ensure that only designated personnel gained entry; and
- the storage area was clean and free of loose debris.

The inspectors observed that warehouse storage Level B area was maintained at an acceptable temperature and humidity level with controlled access. No indications of rain or other leaks were present. The PMS designated safety class C was stored in level B as required. The storage area was properly designated and the equipment was placed on pallets or shoring to permit air circulation and to prevent contact of items with the ground.

Additionally, the inspectors examined this area to determine whether storage was in accordance with the requirements of APP-GW-VHP-002. Specifically, the inspectors observed the following attributes:

- the storage area was clean, well-drained, paved and free of loose debris;

- the storage area was removed from the actual construction area and traffic to avoid damage from outside sources; and
- the exterior of the cabinets did not exhibit any visible damage, dents or scratches.

Humidity and temperature logs were presented by the licensee as documented evidence to verify temperature and humidity level were in compliance with manufacturers requirements.

b. Findings

No findings were identified.

1A04 (Unit 3) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.06 - Record Review
- 65001.02-02.07 - Problem Identification and Resolution

The inspectors conducted an inspection of structural concrete reinforcement T-head fabrication for inside containment from elevation 87'-6" to 95'-0" within Unit 3. The inspectors' objectives were to determine if:

- structural reinforcing steel on-site fabrication was accomplished under controlled conditions and in accordance with applicable procedures, specifications, drawings, and approved procedures using qualified personnel;
- structural reinforcing steel on-site fabrication and related licensee quality control (QC) activities were being performed in accordance with design specifications and approved procedures; and
- records reflected that completed work met design specifications and acceptance criteria.

The inspectors performed observations on sample areas of the structural reinforcing steel on-site fabrication and reviewed work packages and specifications to verify construction activities were being conducted in accordance with the design documents and applicable procedures.

Fabrication shops exist on-site for safety related and non-safety related applications for installing hooks, threads, or T-heads on rebar as required by design. After the rebar for safety related applications are modified on-site in a safety related designated fabrication area, QC inspectors will inspect the work, complete an inspection report, and will tag the bundles with a green tag listing the associated inspection report number.

The inspectors reviewed the work package and inspection reports and observed QC inspecting T-head installation for rebar to be installed inside containment from

elevation 87'-6" to 95'-0" within Unit 3. In addition the inspectors walked down several laydown yards in the fabrication areas and areas of the Unit 3 nuclear island, turbine building, annex building and inside containment.
The inspectors conducted reviews and observations of QC inspections and documentation to verify that:

- QC inspection reports matched the inspection reports listed on the green tags;
- for the work observed, QC inspected the bars being fabricated for safety related construction;
- green tags were observed on rebar bundles in the laydown yards;
- work packages contained QC signatures and initials where appropriate and at required hold points; and
- work packages contained QC completed inspection forms related to QC inspections of fabricated rebar.

In addition, the inspectors reviewed activities and documents to verify that:

- contractors performing safety-related work had approved implementing procedures that described administrative and procedural controls, approved work processes, and inspection requirements;
- procedures clearly prescribed acceptable methods of QC inspection which ensured that the as-built condition met specified design requirements, drawings and material specifications; and
- procedures included appropriate quantitative and/or qualitative acceptance criteria for determining that the prescribed activities had been accomplished satisfactorily.

b. Findings

No findings were identified.

1A05 (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
- 65001.02-02.06 - Record Review
- 65001.A.02.02 - Installation Records Review
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records
- 65001.F-02.02-Fabrication Records Review

The inspectors performed a record review of two welds, CV8653-13-JK-I (between panels 13J and 13K) and CV8653-13-GH-I (between panels 13G and 13H) that

comprise the shield building cylinder to verify if it had been welded and inspected in accordance with the applicable code and quality requirements.

The inspectors also reviewed the backing bar and filler metal materials to verify they were traceable to Certified Material Test Reports (CMTRs) and were handled in accordance with materials handling procedures. Specifically, the inspectors reviewed:

- welding procedure WPS2-1.1F20-SB Flux Core Arc Welding (FCAW) and associated Procedure Qualification Record (PQR) 13405W to determine if they had been written and qualified in accordance with the requirements of the American Welding Society (AWS) welding code and site procedure GWS-2;
- CMTR 2501849 for the backing bars and 1186B for the weld filler metal to determine if the materials were in fact traceable to a CMTR and met the physical and chemical requirements of the American Society for Testing and Materials (ASTM) and AWS specifications;
- ultrasonic (UT) examination reports V-16-UT-312-0342 & V-16-UT-312-0355 to determine if the welds had been and were free of rejectable defects;
- weld records / Data sheets for the welds to determine if the required hold points and inspections had been accomplished;
- welder qualification records for JLH2338 and MEW6934 to determine if the welders had been qualified to use the welding procedure in accordance with the requirements of the AWS code;
- inspection plan F-S561-066 and Inspection report S561-16-11636 to determine if the fit up inspection had been performed and documented; and
- associated CARs 2016-1161 & 2016-1158 and Request For Information SVO-1208-GF-00032 to determine if issues raised during the fit up inspection had been adequately resolved.

The inspectors also reviewed the portions of the work package associated with the welds and determined that no structural deviations were identified.

b. Findings

No findings were identified.

1A06 (Unit 3) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.03 - Special Considerations
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors reviewed quality records and performed direct inspection of construction activities associated with the non-radiologically controlled area of the Auxiliary Building for Vogtle Unit 3. Specifically, the inspectors observed construction

activities associated with Wall K from column line 11 to column line 9.2 between elevation 82'-6" and 100'-0".

For the wall section stated above the inspectors observed concrete delivery and placement activities to determine whether:

- accepted procedures and specifications were followed throughout the concrete placement;
- transporting equipment was suitable, reliable, and in an acceptable condition;
- the placement equipment used was suitable for the work and performed as required;
- each truck was measured and each trip received proper ticketing and documentation;
- batch records were generated, controlled, reviewed for verification, and indicated placement location, mix, volume, date, transport time, amount of temper water being added at the truck delivery point, and special instructions;
- the time limit between mixing and placement was not been exceeded;
- temperature limits were not exceeded;
- concrete was placed in lifts in accordance with the concrete placement plan; and
- inspection during placement was performed as required.

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

- concrete temperature, slump flow, air content, and unit weight were determined at the proper location and frequency as required by procedures, and specifications;
- sample collection and testing techniques conformed to the procedures, and specifications;
- concrete strength test sample cylinders were made at the required location and frequency specified requirements; and
- personnel performing sampling and testing were trained and qualified.

For the wall section stated above, the inspectors reviewed a sample of Nonconformance & Disposition Reports (N&Ds) to determine whether:

- the licensee was identifying problems at an appropriate threshold and entering them into the corrective action program;
- any differences between the as-built and as-designed SSCs were documented and dispositioned in accordance with approved modification or change procedures; and
- the nonconforming conditions were resolved and their dispositions had adequate technical bases.

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.06 - Record Review
- 65001.02-02.07 - Problem Identification and Resolution

The inspectors conducted an inspection of structural concrete placement for Wall 9.3 within the non-radiological controlled area of the Unit 3 auxiliary building. The inspectors' objectives were to determine if:

- structural concrete construction was accomplished in accordance with applicable procedures, specifications, and approved procedures using qualified personnel;
- structural concrete work and related licensee QC activities were being performed in accordance with design specifications and approved procedures; and
- records reflected that completed work met design specifications.

The inspectors performed observations on sample areas of the structural concrete placement, specifications, procedures, inspection reports and interviewed licensee personnel to verify construction activities were being conducted in accordance with the design documents and applicable procedures. Specifically, the inspectors observed placement of structural concrete along Wall 9.3, from approximately column line L to column line M and from elevation 82'-6" to 100'-0", within the non-radiological controlled area of the Unit 3 auxiliary building to verify that:

- batch tickets were reviewed for verification of proper mix, transport time, placement location, and amount of temper water being added at the truck delivery point;
- inspection during placement is performed as required;
- concrete temperature, slump flow, air content, unit weight and concrete strength test specimens were being sampled at the proper location and frequency as required in the design specifications;
- concrete was placed by properly trained individuals using the proper equipment;
- temperature monitoring techniques and equipment were utilized; and
- provisions for maintaining concrete temperature within specification were provided.

b. Findings

No findings were identified.

1A08 (Unit 3) ITAAC Number 3.3.00.02a.ii.a (764) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.ii.a (764). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.06 - Records

- 65001.A.02.02 - Installation Records Review

The inspectors verified that the thickness of the shield wall between Reactor Vessel Cavity and Reactor Coolant Drain Tank (RCDT) room of the Vogtle Unit 3 Nuclear Island (NI) containment internal structures is in accordance with the Vogtle Unit 3 COL Appendix C, Table 3.3-1 "Definition of Wall Thickness for Nuclear Island Buildings, Turbine Building, and Annex Building". The inspectors reviewed survey data to verify that the shield wall thickness requirement from the table was met.

b. Findings

No findings were identified.

1A09 (Unit 4) ITAAC Number 2.1.03.02c (71) / Family 05A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.03.02c (71). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.05-02.07 - Records Review
- 65001.A- As-Built Attributes for SSCs associated with ITAAC

The inspectors reviewed a portion of the Quality Verification Documentation (QVD), QVD- N07049-20101/20102, Rev. 1, for the Vogtle Unit 4 reactor vessel assembly, supplied by Doosan Heavy Industries & Construction (Doosan) to determine whether the documentation met the requirements of the design specification and the UFSAR. Specifically, the inspectors reviewed Section 6.0 of the QVD, As-Built Dimension Record, to determine whether the as-built dimensions met the requirements of the design specification, as specified by the Vogtle Unit 4 COL, Appendix C, Figure 2.1.3-3 and Table 2.1.3-4 for the dimensions "A" through "I":

- Dimension "A": Reactor vessel (RV) inside diameter at beltline (inside cladding);
- Dimension "B": RV wall thickness at beltline (without cladding);
- Dimension "C": RV wall thickness at bottom head (without cladding);
- Dimensions "D" and "E", respectively: Inside diameter of RV inlet nozzles and outlet nozzles at safe-ends;
- Dimensions "F", "G", and "H", respectively: Elevation from RV mating surface to centerline of inlet nozzles, outlet nozzles, and DVI nozzles; and
- Dimension "I": Elevation from RV mating surface to inside of RV bottom head (inside cladding).

b. Findings

No findings were identified.

1A10 (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:

- 65001.05-02.07 - Records Review
- 65001.05-02.08 - Problem Identification and Resolution
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed Doosan fabrication, material, and examination documents associated with the assembly of the Vogtle Unit 4 reactor pressure vessel (RPV) to verify that applicable codes, standards, and specifications were met; proper reviews and approvals were obtained; nondestructive examination (NDE) results were acceptable; and material traceability was maintained in accordance with the requirements of the following:

- Westinghouse Electric Company (WEC), APP-MV01-Z0-101, Design Specification for the AP1000 Reactor Vessel, Revision 13;
- American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section III, Division 1, Subsection NB, Class 1 Components, 1998 Edition through 2000 Addenda;
- Unit 4 UFSAR with documents referencing applicability to 10 Code of Federal Regulations (CFR) Part 50, Appendix B, and 10 CFR 21.

Specifically, the inspectors reviewed ASME Code Data Report Forms N-1 (manufactured and certified by WEC for Southern Nuclear Company (SNC)) and N-2 (manufactured and certified by Doosan for WEC) to verify the following parts were traceable, hydrostatically tested at a pressure of 3,125 psia, and approved by an Authorized Nuclear Inspector (ANI):

- lower head
- transition ring
- lower shell
- upper shell
- inlet nozzle at location A
- outlet nozzle at location B
- direct vessel injection (DVI) nozzle at location A
- closure head
- QuickLoc instrument nozzles at locations A1 (Assembly Y11) and A4 (Assembly Y14)
- control rod drive mechanism (CRDM) latch housings, rod travel housings, and nozzles at locations 1(H8), 7(K8), 24(H4), 29(E11), 38(J13), 61(B8), 64(P6)

The inspectors also reviewed 9 base metal and 11 weld filler material CMTRs associated with the above parts to determine whether the applicable dimensions, chemical compositions, mechanical properties (tensile and yield strength, elongation and reduction of area, and Charpy V-notch and drop weight impact testing), heat treatments, and NDE were in accordance with the applicable requirements of ASME Section II and III as well as the following WEC and Doosan material specifications:

- Westinghouse Specification No. APP-GW-VLR-010, AP1000 Supplemental Fabrication and Inspection Requirements, Revision 2

- Westinghouse Specification No. APP-VL51-Z0-003, AP1000 Reactor Vessel Material Specification for SA-508/SA-508M Grade 3 Class 1 Non-Core Region Forgings (Section III-NB), Revision 3
- Westinghouse Specification No. APP-VL51-Z0-004, AP1000 Reactor Vessel Material Specification for SA-508/SA-508M Grade 3 Class 1 Core Region Forgings (Section III-NB), Revision 3
- Westinghouse Specification No. APP-VW01-Z0-101, AP1000 Filler Metal Specification: Requirements for Welding Materials With a General Classification, Revision 0
- Westinghouse Specification No. APP-VW40-Z0-050, AP1000 Filler Material Specification: SFA-5.5 Low Alloy Steel Electrodes for SMAW of ASME Section III Applications, Revision 1
- Westinghouse Specification No. APP-VW40-Z0-230, AP1000 Filler Material Specification: SFA-5.23 Low Alloy Steel Material for SAW of ASME Section III Applications, Revision 1
- Doosan Specification No. AP-MPS21-065, Material Purchase Specification for SA-508 Grade 3 Class 1 Forging (to be used for the Reactor Vessel Lower Head), Revision 4
- Doosan Specification No. EPS-A03-126, Material Purchase Specification for Mn-Mo Alloy Steel Wire and Flux for Submerged Arc Welding, Revision E
- Doosan Specification No. EPS-T03-107, Material Purchase Specification for ER80S-D2 Low Alloy Steel Wire or Rod, Revision A

The inspectors reviewed four Doosan Welding Defect Notices (WDNs) associated with weld repairs in the weld seams between the lower head to transition ring (Weld No. 201-40) and the upper shell assembly to an inlet nozzle (Weld No. 101-21A), outlet nozzle (Weld No. 102-21B), and DVI nozzle (Weld No. 103-21A) to verify:

- rejectable indications were properly identified in accordance with the acceptance standards of the ASME Code and material specifications;
- traceability for defects was adequately maintained through joint number locations;
- repair welding was performed in accordance with a WDN Repair Traveler;
- welds were re-examined through NDE in accordance with applicable procedures and the original acceptance criteria and found acceptable; and
- reportability screening and evaluations under 10 CFR Part 21 were performed.

b. Findings

No findings were identified.

1A11 (Unit 4) ITAAC Number 2.1.03.04 (73) / Family 05B

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.03.04 (73). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.05-02.07 - Records Review
- 65001.05-02.08 - Problem Identification and Resolution
- 65001.B-02.02-Welding Procedure Qualification

- 65001.B-02.03-Welder Qualification
- 65001.B-02.06-Records

The inspectors reviewed Doosan fabrication records associated with the Unit 4 RPV pressure boundary welds to verify that applicable codes, standards, specifications, and procedure requirements were met. Specifically, the inspectors reviewed a variation CMTRs, welding procedure specifications (WPSs), welder and welding operator qualifications, NDE reports, and WDNs to verify the records were in accordance with the requirements of ASME Sections II and III, as well as the design specification and applicable material specifications, for the following pressure boundary welds:

- girth weld seam between the lower head and transition ring (Weld No. 201-40)
- girth weld seam between the transition ring and lower shell assembly (Weld No. 101-40)
- girth weld seam between the lower shell assembly and upper shell assembly (Weld No. 101-51)
- weld seam between the upper shell assembly and inlet nozzle (Weld No. 101-21A)
- weld seam between the upper shell assembly and outlet nozzle (Weld No. 102-21B)
- weld seam between the upper shell assembly and DVI nozzle (Weld No. 103-21A)
- weld seams between the closure head and QuickLoc nozzles A1 (Assembly Y11) and A4 (Assembly Y14) (Weld Nos. 101-10A and 101-10D, respectively)
- weld seams between the closure head and CRDM nozzles H8, K8, H4, E11, J13, B8, P6 (Weld Nos. 103-10-01, 103-10-07, 103-10-24, 103-10-29, 103-10-38, 103-10-61, 103-10-64, respectively)

Specifically, the inspectors reviewed three weld maps to verify traceability between the weld numbers, base materials and filler metals, and WPSs used during production. The inspectors reviewed 23 CMTRs associated with those base and filler metals to verify the applicable dimension, chemical composition, mechanical property, heat treatment, and NDE requirements were met. The inspectors reviewed eight WPSs to verify, when applicable, the welding parameters used in production were the same as those indicated in the base and filler metal CMTRs. The inspectors also reviewed seven welder and welding operator qualifications to verify each welder was (1) assigned a unique identification number; (2) qualified to the processes and ranges allowed by the WPSs; and (3) properly re-qualified at the required durations.
The inspectors reviewed final NDE reports to verify NDE was performed and found acceptable by the proper certification level of NDE personnel and in accordance with applicable procedures and sections of the ASME Code. Specifically, the inspectors reviewed 22 liquid penetrant (PT) examination reports to verify the penetrant and developer wait times were adequate, the test temperature was within the required range, and there were no recordable defects on the surface of the weld. The inspectors reviewed seven magnetic particle (MT) examination reports to verify the proper method, flux type, yoke lifting power, visible light source, and surface temperature requirements were met and acceptable results were achieved. The inspectors reviewed 12 UT examination reports to verify adequate probe frequencies, angles, crystal sizes, and sensitivity were selected to examine the welds and all recordable indications were acceptable. The inspectors reviewed 10 radiography examination reports and a sample of the associated film to verify the density and sensitivity measurements were within the allowable ranges and there were no

rejectable indications in the welds. The inspectors also reviewed the examination times to verify adequate NDE was completed after post weld heat treatment (PWHT).

The inspectors reviewed four Doosan WDNs associated with weld repairs in the weld seams between the lower head to transition ring (Weld No. 201-40) and the upper shell assembly to an inlet nozzle (Weld No. 101-21A), outlet nozzle (Weld No. 102-21B), and DVI nozzle (Weld No. 103-21A) to verify:

- rejectable indications were properly identified in accordance with the acceptance standards of the ASME Code and material specifications;
- traceability for defects was adequately maintained through joint number locations;
- repair welding was performed in accordance with a WDN Repair Traveler;
- welds were re-examined through NDE in accordance with applicable procedures and the original acceptance criteria and found acceptable; and
- reportability screening and evaluations under 10 CFR Part 21 were performed.

b. Findings

No findings were identified.

1A12 (Unit 4) ITAAC Number 2.2.01.03a (93) / Family 06B

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.03a (93). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.11-02.05 - Nondestructive Examination
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records
- 65001.F-02.02-Fabrication Records Review

The inspectors performed a review of the NDE on the weld joining the containment vessel bottom head to lower ring. Specifically the inspectors reviewed the radiography report, U4-192, to determine if radiography was completed in accordance with the requirements of the ASME Code. Additionally the inspectors reviewed a sample of the radiograph film to determine if it was of adequate quality to be interpreted and was free of rejectable defects.

b. Findings

No findings were identified.

1A13 (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.A.02.01 - Observation of in-Process Installation Activities
- 65001.B-02.01-Program and Procedures Review
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.F-02.03-Observation of Fabrication Activities

The inspectors observed welding of the duplex stainless steel portion of the CA01 module to determine if it was being fabricated in accordance with the applicable codes, standards, procedures, and QA requirements. Specifically the inspectors observed manual gas tungsten arc welding of weld CV13400-L35-2 in the Southwest corner of the reactor cavity, between submodules CA01-19 and CA01-48. The inspectors observed the welding to determine if:

- welding variables were within the limits of the welding procedure;
- welding was performed in the vertical up progression;
- the welding filler metal was the correct size and classification described in the welding procedure;
- the welding environment was protected from wind, rain, or moisture;
- the weld area was clean and free of harmful contaminants such as paint, slag, grease, oil, etc; and
- the welder was in possession of a weld rod issue slip accurately listing his welder ID, the weld number, and type and size of filler metal.

The inspectors also reviewed the applicable welding procedures, associated PQRs, and welder qualification records in order to determine if they were in accordance with the AWS D1.6 Stainless Steel Welding Code. No structural deviations were identified.

b. Findings

No findings were identified.

1A14 (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:

- 65001.01-02.05 - Steel Structures
- 65001.A.02.02 - Installation Records Review
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed a sample of fabrication records for the Vogtle Unit 4 west reactor vessel cavity wall (CA01-17 submodule), which is a Seismic Category I steel

structure, to verify that fabrication activities were in compliance with applicable codes, standards, regulations, quality, and technical requirements.

The inspectors reviewed purchase order number 132176-D100.CA008, Rev. 24 to verify that the applicable quality and technical requirements for the Vogtle Unit 4 CA01-17 submodule were properly specified.

The inspectors reviewed a sample of fabrication records for the Vogtle Unit 4 CA01-17 submodule. The inspectors reviewed welding and inspection records to verify that they were adequate to furnish evidence of activities affecting quality and that the submodule conformed to the applicable quality and technical requirements. Specifically, the inspectors reviewed these records for conformance to the following requirements:

- 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants";
- ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications";
- American National Standards Institute (ANSI)/American Institute of Steel Construction (AISC) N690, "American National Standard Specification for the Design, Fabrication, and Erection of Steel Safety-Related Structures for Nuclear Facilities," 1994 Edition; and
- AWS D1.1, "Structural Welding Code," 2000 edition.

The inspectors reviewed welding and inspection records for a sample of welds that were completed at the manufacturing facility. The inspectors reviewed these weld records to determine whether:

- the welding activity was properly documented in the work traveler;
- records provided adequate traceability to all aspects of the welding activity, including traceability to the welder who performed the work;
- the records adequately documented the following attributes: reference to procedure and welder qualifications, inspector qualifications, weld material certifications and receipt inspection reports, weld data or process records (travelers), weld maps, weld inspection records, NDE records;
- the records were appropriately retained and stored in accordance with Quality Assurance (QA) program requirement;
- required inspections were identified in the traveler with hold points, as appropriate; and
- accepted, rejected, and repaired items were documented in written reports.

The inspectors reviewed a sample of CMTRs for the structural steel plates used to fabricate the CA01-17 submodule. The inspectors verified that these plates met the requirements of ASTM A240, "Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications," 2013 edition and ASTM A572, “Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel,” 2007 edition.

b. Findings

No findings were identified.

1A15 (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:

- 65001.01-02.05 - Steel Structures
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.F-02.03-Observation of Fabrication Activities
- 65001.F-02.04-General QA Review

The inspectors performed a direct inspection of construction activities and documents associated with the assembly of the CA01 structural module in the Modular Assembly Building (MAB), including work package SV4-CA01-S4W-CV6400. The inspectors observed the full length of a completed weld joint between the faceplates on the east wall of submodules CA01-16 to CA01-17 for the west steam generator compartment to verify that the maximum reinforcement of the cover pass was within tolerances in accordance with the requirements of AWS D1.1, Subsection 5.24, Weld Profiles. The inspectors observed the fit-up and tack welding of two plug bar groove welds between the faceplates on the west wall of submodules CA01-16 to CA01-17 for reactor vessel compartment to verify that the root opening and faying surfaces between the edge of the bevels to the backing plate and plug bar were within tolerances in accordance with the requirements of AWS D1.1.

The inspectors observed two different stages of in-process fit-up and tack welding of submodules CA01-12 to CA01-13 for the leak chase located on the east wall of the reactor vessel compartment, and a single V-groove between faceplates on the west wall for the east steam generator compartment to verify that the root opening and faying surfaces between the backing bar and edge of bevels were within tolerances in accordance with the requirements of AWS D1.1.

Additionally, the inspectors reviewed a sample of design output documents, engineering and design coordination reports (E&DCRs), and N&Ds included in work package SV4-CA01-S4W-CV6400, to verify that AISC N690, AWS D1.1, AWS D1.6, and UFSAR welding requirements were being adequately implemented; and any nonconforming conditions, including deviations from the approved design, were being appropriately identified, evaluated, and dispositioned according to approved procedures and processes.

b. Findings

No findings were identified.

1A16 (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
- 65001.01-02.06 - Records
- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records
- 65001.F-02.01-Design Document Review
- 65001.F-02.02-Fabrication Records Review
- 65001.F-02.03-Observation of Fabrication Activities
- 65001.F-02.04-General QA Review

The inspectors reviewed quality records and performed independent verification of construction activities associated with the containment internal structures for Vogtle Unit 4. Specifically, the inspectors sampled a steel concrete composite submodule CA01-39, which is part of east wall of the pressurizer compartment from elevation 118'-6" to 160'-0", associated with structural module CA01 prior to on-site assembly.

The inspectors reviewed a sample of design drawings and design changes to determine whether the documents adequately defined the final design and arrangement of these submodules, critical attributes associated with the ITAAC were correctly identified, and the documents were consistent with code requirements and the UFSAR. The inspectors reviewed a sample of fabrication records to determine whether they were complete, accurate, and provided evidence that the quality and code requirements were satisfied. The inspectors reviewed a sample of purchase orders to determine whether they appropriately specified acceptable quality, technical, and regulatory requirements. The inspectors reviewed a sample of inspection records to determine whether:

- the records were adequate to furnish evidence of activities affecting quality
- the requisite material characteristics were documented;
- nondestructive tests, material certification, and other specification requirements were performed, documented, and met acceptance criteria;
- installation, inspection, and testing sequences were maintained;
- the records were reviewed and approved by the responsible organization;
- the recorded information was complete, accurate, and met the licensing basis and ITAAC requirements, and conformed to applicable specifications;
- the items were correctly shipped, stored, and maintained in such a manner as to demonstrate conformance with design and procedure requirements; and
- the as-fabricated submodule conformed to applicable codes, standards, quality requirements, and technical requirements.

The inspectors performed independent inspection and measurements of the size, spacing, and dimensions of headed reinforcement, plates, angles, reinforcement hooks, and mechanical couplers to determine whether:

- fabrication was completed in accordance with applicable specifications, drawings, and approved procedures;
- any nonconforming conditions were identified by the licensee and were adequately documented in the corrective action program; and
- the as-built configuration was in accordance with the final design, the ITAAC, and UFSAR.

The inspectors reviewed tagging and markings on the submodules to determine whether the marking system was adequate to identify the material and inspection status during storage and installation. The inspectors observed the storage of the submodules to determine whether the submodules were stored and maintained in accordance with applicable quality and technical requirements.

The inspectors performed independent inspection and measurements of the welds to determine whether they met the design drawings, including type, size, and location. Additionally, the inspectors performed independent inspection of the welds to verify they met visual inspection acceptance criteria for the applicable design and fabrication codes, including cracks, lack of fusion, undercut, porosity, weld size, and other visual defects. The inspectors reviewed a sample of weld records provided by the fabricator to determine whether:

- records provided adequate traceability to the welding activities;
- the records adequately documented weld material certifications, weld data or process records, weld inspection records, and NDE records;
- required inspections were identified with hold points as required by the design codes; and
- accepted, rejected, and repaired items were documented.

The inspectors reviewed a sample of nonconformances to verify:

- the licensee was identifying problems at an appropriate threshold and entering them into the corrective action program;
- any differences between the as-built and as-designed SSCs were documented and dispositioned in accordance with approved modification or change procedures; and
- the nonconformances were resolved and their dispositions had adequate technical bases.

b. Findings

No findings were identified.

1A17 (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:

- 65001.01-02.05 - Steel Structures
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records

The inspectors observed the assembly of the Vogtle Unit 4 CA01 module in the MAB. The inspectors reviewed welding and inspection records and performed independent visual examinations of two welds associated with the welding of submodules CA01-25 to CA01-47 (north refueling cavity wall, refueling cavity side, parallel with column line 7, from elevation 97'9" to 106'8").

The inspectors reviewed the completed weld records associated with work package SV4-CA01-S4W-CV6452 for the following welds associated with CA01-25 to CA01-47:

- CV12910-L22-1 (Duplex Stainless Steel)
- CV12910-L22-2 (Duplex Stainless Steel)

The inspectors reviewed these weld records to determine whether:

- the welding activity was properly documented in the work traveler;
- records provided adequate traceability to all aspects of the welding activity, including traceability to the welder who performed the work;
- the records adequately documented the following attributes: reference to procedure and welder qualifications, inspector qualifications, weld material certifications and receipt inspection reports, weld data or process records (travelers), weld maps, weld inspection records, NDE records;
- the records were appropriately retained and stored in accordance with QA program requirement;
- required inspections were identified in the traveler with hold points, as appropriate; and
- accepted, rejected, and repaired items were documented in written reports.

The inspectors reviewed the UT examination records for the welds listed above to determine whether the required examinations were performed in accordance with the MISTRAS UT procedure (100-UT-312, "Ultrasonic Phased Array Examination of Structural Welds in Accordance with AWS D1.1 and D1.6," Rev. 2), and the AWS D1.6:1999, Structural Welding Code – Stainless Steel.

The inspectors reviewed the PT examination records for the welds listed above to determine whether the required examinations were performed in accordance with the MISTRAS PT procedure (100-PT-304, "Liquid Penetrant Examination in Accordance with AWS Structural Welding Code," Rev. 6), and the AWS D1.6:1999, Structural Welding Code – Stainless Steel.

The inspectors reviewed the final visual examination inspection report and performed an independent visual inspection for the welds listed above to determine whether the final weld satisfied the requirements of section 6.28.1, “Visual Inspection,” of AWS D1.6:1999. The inspectors also verified that the final weld profile met the requirements of section 5.11, "Weld Profiles," of AWS D1.6:1999.

The inspectors reviewed a sample of the CMTRs for the plug bar material used for these welds to determine conformance with section 4.0, “Materials,” of APP-GW-S9-103, “AP1000 Structural Modules General Notes - IV,” Rev. 5, and ASTM A240-A240M. The inspectors reviewed a sample of CMTRs and welding material requisitions (WMRs) for the weld filler material to determine conformance with SFA 5.9 for Type ER2209 and the applicable WPS.

The inspectors reviewed the WPSs and associated PQRs for the welds listed above to determine if they met the requirements of AWS D1.6:1999. The inspectors also reviewed a sample of welder qualifications to verify personnel were qualified to the applicable processes and procedures.

The inspectors reviewed a sample of E&DCRs to determine whether these changes were performed in accordance with procedure APP-GW-GAP-420, "Engineering and Design Coordination Report." The inspectors evaluated these design changes for conformance to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and Supplement 3S-1, "Supplementary Requirements for Design Control," of ASME NQA-1-1994. The inspectors also reviewed the licensing impact determination screening associated with each of these design changes to determine whether each change was properly evaluated against the current licensing basis as described in the Vogtle Unit 3 and Unit 4 UFSAR and was performed in accordance with procedure APP-GW-GAP-147, “AP1000 Current Licensing Basis Review.” Furthermore, the inspectors reviewed these E&DCRs to determine whether each change received the proper level of engineering review and was incorporated into all affected documents.

b. Findings

No findings were identified.

1A18 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

- 65001.01-02.05 - Steel Structures
- 65001.01-02.06 - Records

- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed a sample of fabrication records for the Vogtle Unit 4 shield building (01K and 01L steel panels), which is a Seismic Category I steel structure, to verify that fabrication activities were in compliance with applicable codes, standards, regulations, quality and technical requirements.

The inspectors reviewed purchase orders listed in the documents reviewed section of the report to verify that the applicable quality and technical requirements for the Vogtle Unit 4 01K and 01L shield building steel panels were properly specified.

The inspectors reviewed a sample of fabrication records for the Vogtle Unit 4 01K and 01L shield building steel panels. The inspectors reviewed welding and inspection records to verify that they were adequate to furnish evidence of activities affecting quality and that the submodule conformed to the applicable quality and technical requirements. Specifically, the inspectors reviewed these records for conformance to the following requirements:

- 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants";
- ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications";
- ANSI/AISC N690, "American National Standard Specification for the Design, Fabrication, and Erection of Steel Safety-Related Structures for Nuclear Facilities," 1994 Edition; and
- AWS D1.1, "Structural Welding Code," 2000 edition.

The inspectors reviewed welding and inspection records for a sample of welds that were completed at the manufacturing facility. The inspectors reviewed these weld records to determine whether:

- the welding activity was properly documented in the work traveler;
- records provided adequate traceability to all aspects of the welding activity, including traceability to the welder who performed the work;
- the records adequately documented the following attributes: reference to procedure and welder qualifications, weld data or process records (travelers), weld maps, weld inspection records, NDE records;
- the records were appropriately retained and stored in accordance with QA program requirement;
- required inspections were identified in the traveler with hold points, as appropriate; and
- accepted, rejected, and repaired items were documented in written reports.

The inspectors reviewed a sample of CMTRs for the structural steel plates used to fabricate the 01K and 01L shield building steel panels. The inspectors verified that these plates met the requirements of ASTM A572, “Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel,” 2007 edition.

For the shield building steel panels stated above, the inspectors reviewed a sample of N&Ds to determine whether:

- the licensee was identifying problems at an appropriate threshold and entering them into the corrective action program;
- any differences between the as-built and as-designed SSCs were documented and dispositioned in accordance with approved modification or change procedures; and
- the nonconforming conditions were resolved and their dispositions had adequate technical bases.

b. Findings

No findings were identified.

1A19 (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:

- 65001.01-02.06 - Records
- 65001.F-02.04-General QA Review

The inspectors performed direct inspection of construction activities associated with the Shield Building for Vogtle Unit 4. Specifically, the inspectors observed construction activities associated with the dish reinforcement along the northwest quadrant of the shield building basemat between elevations 87’-6” and 96’-0”. The inspectors reviewed design specifications associated with procurement, receipt inspection, and installation in this area to ensure the associated requirements were adequately addressed.

The inspectors reviewed a purchase order for structural steel reinforcing bars to determine whether it appropriately specified acceptable quality, technical, and 10 CFR Part 21 and 10 CFR 50.55(e) requirements. The inspectors reviewed a sample of CMTRs included in the material shipment package to verify that materials meet the specified mechanical testing requirements. The inspectors reviewed a sample material records, including the purchase order, procurement documents, fabrication records, transportation records, material receiving report, certificate of compliance, CMTRs, and the quality receipt inspection report to determine whether:

- the records were adequate to furnish evidence of activities affecting quality;
- the requisite material characteristics were documented;
- performance tests, material certification, chemical and physical tests, and other specification requirements were performed, documented, and met acceptance criteria;
- inspection records provided evidence that the timing of events and time-dependent work activities were consistent with their specification requirements;
- the records were reviewed and approved by the responsible organization; and

- the recorded information was complete, accurate, met the licensing basis, and conformed to applicable specifications.

The inspectors independently examined a sample of structural reinforcing steel bars installed in the field to verify:

- the items were properly identified through markings and controlled in accordance with the approved implementing documents;
- markings were in accordance with the applicable quality and technical requirements;
- traceability of the items was consistent and accurate from identification through fabrication, storage, and installation;
- the inspection and testing status of the sampled items was easily verifiable and was current; and
- items that were indicated as incorrect, defective, or nonconforming were clearly marked, tagged, or segregated as appropriate.

b. Findings

No findings were identified.

1A20 (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.A.02.01 - Observation of in-Process Installation Activities
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.F-02.03-Observation of Fabrication Activities

The inspectors observed construction activities related to module CA20, which makes up part of areas 5 and 6 of the radiologically controlled area of the Auxiliary Building. The inspectors observed manual shielded metal arc welding of module CA20 to determine if welding was being accomplished in accordance with applicable codes, standards, procedures, and applicable quality requirements. Specifically the inspectors observed welding of Field Weld CV12373-1 (submodules CA20-15 to CA20-18) by welder KMP9341. The inspectors checked to determine if:

- the weld filler metal was the type specified on the welding procedure;
- the welding electrodes were accompanied by a rod issue slip accurately listing the welder, weld, welding procedure, electrode type and size;
- the welding variables were in accordance with the welding procedure;
- the weld area was clean and free of slag, grease, paint and other deleterious substances;
- welding progression was in the vertical up direction; and
- welding technique was sufficient to produce a quality weld.

In addition, inspectors reviewed the welding procedure to determine if it met the requirements of the 2000 edition of the AWS D1.1 Structural Steel welding code. Inspectors also verified that the welding electrodes were traceable to a CMTR and that the specific heat had been tested and found to be in accordance with the applicable requirements for chemical composition, toughness, and ductility. No structural deviations were identified.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.01-02.05 - Steel Structures
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records
- 65001.F-02.02-Fabrication Records Review
- 65001.F-02.03-Observation of Fabrication Activities

The inspectors performed a direct inspection of in-process welding activities and documents associated with the structural welds listed below during assembly of the CA20 structural module in the MAB. The completed CA20 module will eventually be located in the radiologically controlled area of the auxiliary building:

Carbon steel to carbon steel complete joint penetration groove welds CV14094-L09-3 and CV14094-L09-4 between the southwest edge of the CA20-13 submodule face plate and plug bar which is part of the connection between submodules CA20-12 and CA20-13. These submodules form a segment of the wall along column line J-2 between column lines 3 to 4 and elevations 66'-6" and 135'-3".

Specifically, the inspectors reviewed the following weld records to determine whether the welding activities were performed in accordance with approved design, construction specifications, and AWS D1.1:2000 Code:

- weld map with associated weld records for material traceability and QC hold point sign-offs for fit-up;
- actual weld wire ER80S-Ni1 and welding variables used on weld L09-3 against previously reviewed WPS2-1.1M73; and
- Welder Qualification Report (WQR) located in the MAB Rod Room 9 for continuity of two welding operator qualifications.

The inspectors also observed in-process preparatory mechanized grinding before depositing the last weld cover pass on weld CV14094-L09-3 to remove surface silicate deposits, and to ensure stability of the arc and molten weld pool during subsequent welding.

The inspectors reviewed a MISTRAS UT Examination Report for a random final 10% examination of an acceptable carbon steel to carbon steel complete joint penetration groove weld CV14012-9 between the faceplates on the west side of submodules CA20-03 and CA20-07 as specified in work package SV4-CA20-S4W-CV3268, "Installation of Sub-module CA20-07." These submodules form a segment of the wall at the center of column line 3 between column lines J-1 and J-2.

Specifically, the inspectors reviewed UT report V-16-UT-310-0548 to verify that the requirements of UFSAR section 3.8.3.6.2, "Nondestructive Examination", using proper sizes and frequencies for each straight-beam and 70° angle-beam search units checked with a calibration block, the technician who performed UT was appropriately certified, and the applicable acceptance criteria was used for evaluation of an AWS D1.1:2000 statically loaded nontubular connection in accordance with AISC N690-1994 paragraphs Q1.26.1.1 and Q1.26.2.1.

Additionally, the inspectors reviewed a sample of design output documents, E&DCRs, weld records, and N&Ds included in work package SV4-CA20-S4W-CV5302, "Installation of Sub-module CA20-13," to verify that AISC N690, AWS D1.1, AWS D1.6, and UFSAR welding requirements were being adequately implemented and any nonconforming conditions, including deviations from the approved design, were being appropriately identified, evaluated, and dispositioned according to approved procedures and processes.

b. Findings

No findings were identified.

1A22 (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:

- 65001.01-02.05 - Steel Structures
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 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 the assembly of the Vogtle Unit 4 CA20 module, which makes up part of areas 5 and 6 of the radiologically controlled auxiliary building, in the MAB. The inspectors observed in-process welding, reviewed welding and inspection

records, and performed independent visual examinations of two welds associated with the welding of submodule CA20-11 to CA20-12 (inside face, column line J-2 wall from 2 to 4 from 66'6" to 135'3").

The inspectors reviewed the completed weld records and in-process work package (SV4-CA20-S4W-CV5297) for the following welds associated with the Vogtle Unit 4 CA20 module:

- CV13501-L02-3 (Carbon Steel)
- CV13501-L02-4 (Carbon Steel)

The inspectors reviewed these weld records to determine whether:

- the welding activity was properly documented in the work traveler;
- records provided adequate traceability to all aspects of the welding activity, including traceability to the welder who performed the work;
- the records adequately documented the following attributes: reference to procedure and welder qualifications, inspector qualifications, weld material certifications and receipt inspection reports, weld data or process records (travelers), weld maps, weld inspection records, NDE records;
- the records were appropriately retained and stored in accordance with QA program requirement;
- required inspections were identified in the traveler with hold points, as appropriate; and
- accepted, rejected, and repaired items were documented in written reports.

The inspectors observed the in-process welding of weld numbers CV13501-L02-3 and CV13501-L02-4, which were associated with the carbon steel portions of the wall, to determine if the welding was performed within the ranges allowed by WPS number WPS2-1.1T71 and WPS2-1.1F03, and the requirements of the AWS D1.1:2000, "Structural Welding Code - Steel." Specifically, the inspectors verified that the following welding parameters were within the ranges allowed by the WPS: filler metal size and classification, voltage, travel speed, wire feed speed, shielding gas composition, and shielding gas flow rate.

The inspectors reviewed the UT examination record for weld numbers CV13501-L02-3 and CV13501-L02-4 to determine whether the required examinations were performed in accordance with the MISTRAS UT procedure (100-UT-310, "Ultrasonic Examination of Welds in Accordance with the AWS Structural Welding Code D1.1," Rev. 6), and the AWS D1.1:2000, Structural Welding Code - Steel. The inspectors verified that the testing angle was in accordance with Table 6.6, "Testing Angle," of AWD D1.1:2000.

The inspectors reviewed the MT examination record for weld numbers CV13501-L02-3 and CV13501-L02-4 to determine whether the required examinations were performed in accordance with the MISTRAS MT procedure (100-MT-302, "Magnetic Particle Examination in accordance with AWS Structural Welding Code," Rev. 3), and the AWS D1.1:2000, Structural Welding Code - Steel.

The inspectors reviewed the final visual examination inspection report and performed an independent visual inspection for welds CV13501-L02-3 and CV13501-L02-4 to determine whether the final weld satisfied the requirements of Table 6.1, "Visual Inspection Acceptance Criteria," of AWS D1.1:2000. The inspectors also verified that the final weld profile met the requirements of section 5.24.4, "Groove or Butt Welds," of AWS D1.1:2000.

The inspectors reviewed the material test report for plug bar (Heat 1503693 – Test Report L16984 Rev. 2, 430000-CMTR-11-000137) that was associated with welds CV13501-L02-3 and CV13501-L02-4 to determine conformance with section 4.0, “Materials,” of SV4-CA20-S5Y-00003, “Auxiliary Building Areas 5&6 Module CA20 Submodules General Notes – III,” Rev. 2, and ASTM A572 Grade 60. The inspectors reviewed the material test report for backing bar (Heat JI5426 – Test Report 430000-CMTR-12-000201) that was associated with welds CV13501-L02-3 and CV13501-L02-4 to determine conformance with section 4.0, “Materials,” of SV4-CA20-S5Y-00003, and ASTM A36.

The inspectors reviewed the Certificate of Conformance and CMTR for Weld Filler Metal Heats 1204V, and 1243B for conformance to section 4.9 of SV4-CA20-S5Y-00003 and the relevant procurement specifications. This filler material was used for welds CV13501-L02-3 and CV13501-L02-4.

The inspectors reviewed a sample of E&DCRs to determine whether these changes were performed in accordance with procedure APP-GW-GAP-420, "Engineering and Design Coordination Report." The inspectors evaluated these design changes for conformance to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and Supplement 3S-1, "Supplementary Requirements for Design Control," of ASME NQA-1-1994. The inspectors also reviewed the licensing impact determination screening associated with each of these design changes to determine whether each change was properly evaluated against the current licensing basis as described in the Vogtle Unit 3 and Unit 4 UFSAR and was performed in accordance with procedure APP-GW-GAP-147, “AP1000 Current Licensing Basis Review.” Furthermore, the inspectors reviewed these E&DCRs to determine whether each change received the proper level of engineering review and was incorporated into all affected documents.

b. Findings

No findings were identified.

1A23 (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:

- 65001.01-02.05 - Steel Structures
- 65001.01-02.06 - Records
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records

The inspectors observed the assembly of the Vogtle Unit 4 CA20 module in the MAB. The inspectors observed in-process welding, reviewed welding and inspection records, and performed independent visual examinations of four welds associated with the welding of submodules CA20-10 to CA20-15 (inside face, column line 2 wall from I to K-2 from 66'6" to 135'3") and CA20-14 to CA20-17 (inside face, column line 4 wall from J-2 to K-2 from 66'6" to 135'3").

The inspectors reviewed the completed weld records and in-process work package (SV4-CA20-S4W-CV5312) for the following welds associated with CA20-10 to CA20-15:

- CV12573-L08-3 (Carbon Steel)
- CV12573-L08-4 (Carbon Steel)

The inspectors reviewed the completed weld records and in-process work package (SV4-CA20-S4W-CV5322) for the following welds associated with CA20-14 to CA20-17:

- CV14171-L11-3 (Carbon Steel) and CV14171-L11-3-RW1
- CV14171-L11-4 (Carbon Steel) and CV14171-L11-4-RW1

The inspectors reviewed these weld records to determine whether:

- the welding activity was properly documented in the work traveler;
- records provided adequate traceability to all aspects of the welding activity, including traceability to the welder who performed the work;
- the records adequately documented procedure, welder and inspector qualifications;
- the records adequately documented weld material certifications;
- the records adequately documented receipt inspection reports;
- the records adequately documented weld data or process records (travelers);
- the records adequately documented weld maps, weld inspection records, and NDE records;
- the records were appropriately retained and stored in accordance with QA program requirement;
- required inspections were identified in the traveler with hold points, as appropriate; and
- accepted, rejected, and repaired items were documented in written reports.

The inspectors reviewed the UT examination records for the welds listed above to determine whether the required examinations were performed in accordance with the MISTRAS UT procedure (100-UT-310, "Ultrasonic Examination of Welds in Accordance with the AWS Structural Welding Code D1.1," Rev. 6), and the AWS D1.1:2000, Structural Welding Code - Steel. Moreover, the inspectors reviewed the UT and MT examination reports for the repaired areas of welds CV14171-L11-3-RW1

and CV14171-L11-4-RW1. The inspectors verified that the licensee expanded the volumetric examination sample in accordance with section Q1.26.2.3, “Weld Sample,” of AISC N690-1994, “American National Standard Specification For The Design, Fabrication, And Erection Of Steel Safety-Related Structures For Nuclear Facilities.” The inspectors observed the MT and UT examinations on the expanded 10% sample to determine whether the inspection was performed according to the contractor's procedures, AWS D1.1:2000 and AISC N690:1994.

The inspectors reviewed the MT examination records for the welds listed above to determine whether the required examinations were performed in accordance with the MISTRAS MT procedure (100-MT-302, "Magnetic Particle Examination in accordance with AWS Structural Welding Code," Rev. 3), and the AWS D1.1:2000, Structural Welding Code - Steel.

The inspectors reviewed the final visual examination inspection report and performed an independent visual inspection for the welds listed above to determine whether the final weld satisfied the requirements of Table 6.1, "Visual Inspection Acceptance Criteria," of AWS D1.1:2000. The inspectors also verified that the final weld profile met the requirements of section 5.24.4, "Groove or Butt Welds," of AWS D1.1:2000.

The inspectors reviewed a sample of the CMTRs for the plug bar material used for these welds to determine conformance with section 4.0, “Materials,” of SV4-CA20-S5Y-00003, “Auxiliary Building Areas 5&6 Module CA20 Submodules General Notes – III,” Rev. 2, and ASTM A572 Grade 60 and section 4.0, “Materials,” of SV4-CA20-S5Y-00003, and ASTM A36.

The inspectors reviewed a sample of E&DCRs to determine whether these changes were performed in accordance with procedure APP-GW-GAP-420, "Engineering and Design Coordination Report." The inspectors evaluated these design changes for conformance to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and Supplement 3S-1, "Supplementary Requirements for Design Control," of ASME NQA-1-1994. The inspectors also reviewed the licensing impact determination screening associated with each of these design changes to determine whether each change was properly evaluated against the current licensing basis as described in the Vogtle Unit 3 and Unit 4 UFSAR and was performed in accordance with procedure APP-GW-GAP-147, “AP1000 Current Licensing Basis Review.” Furthermore, the inspectors reviewed these E&DCRs to determine whether each change received the proper level of engineering review and was incorporated into all affected documents.

b. Findings

No findings were identified.

1A24 (Unit 4) ITAAC Number 3.3.00.02a.ii.a (764) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.ii.a (764). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.04 - Key Dimensions and Volumes
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed concrete thickness inspection associated with Containment Internal Structures for Vogtle Unit 4. Specifically, the inspectors sampled the following steel concrete composite submodules associated with structural module CA02, a containment internal structural module, which forms the northeast wall of the in-containment refueling water storage tank, prior to on-site assembly:

- CA02-01
- CA02-05

The inspectors reviewed the dimensions specified in the Vogtle Unit 4 COL, Appendix C, Table 3.3-1 for samples listed above. Additionally, the inspectors reviewed design drawings and independently measured the submodules and steel plate separation to verify the dimensions conformed to requirements specified in design drawings and the as-built concrete thickness completed wall sections would be in accordance with the final design, the ITAAC, and UFSAR.

b. Findings

No findings were identified.

1A25 (Unit 4) ITAAC Number 3.3.00.02a.ii.a (764) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.ii.a (764). The inspectors used the following NRC IPs/sections to perform this inspection:

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

The inspectors performed concrete thickness inspection associated with Containment Internal Structures for Vogtle Unit 4. Specifically, the inspectors sampled the following steel concrete composite submodules associated with structural module CA01, a containment internal structural module, prior to on-site assembly:

- CA01-09, submodule on the north side of the East Steam Generator Compartment
- CA01-37, submodule on the north side of the Reactor Vessel Cavity which contains the fuel transfer tube penetration

The inspectors reviewed the dimensions specified in the Vogtle Unit 4 COL, Appendix C, Table 3.3-1 for samples listed above. Additionally, the inspectors reviewed design drawings and independently measured the submodules and steel plate separation to verify the dimensions conformed to requirements specified in design drawings and the as-built concrete thickness completed wall sections would be in accordance with the final design, the ITAAC, and UFSAR.

b. Findings

No findings were identified.

1A26 (Unit 4) ITAAC Number 3.3.00.02a.ii.b (765) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.ii.b (765). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01-02.06 - Records
- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review

The inspectors reviewed quality records and performed direct inspection of construction activities associated with the shield building basemat for Vogtle Unit 3. Specifically, the inspectors observed construction activities associated with the reinforced concrete shield building basemat at elevation 82’6”. The inspectors reviewed measuring and surveying records associated with the shield building basemat to determine whether they were complete, accurate, and documented that the as-built configuration met the design specifications and the acceptance criteria listed in Table 3.3-1, "Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building," of Appendix C of the Vogtle Unit 3 COL.

b. Findings

No findings were identified.

1A27 (Unit 4) ITAAC Number 3.3.00.03c (779) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.03c (779). 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.02.02 - Installation Records Review

The inspector performed direct measurements and reviewed the as-built condition of the non-radiologically controlled area concrete walls of the Auxiliary Building for Vogtle Unit 4. The inspector verified the walls conformed to the as-built thickness as specified in the Appendix C of the Vogtle Unit 4 COL, Table 3.3-1. Specifically, the inspectors sampled the following wall segments between elevation 66’-6” and 82’-6”:

- wall section along column line L between column line 11 and the Shield Building
- wall section along column line M between column line 11 and the Shield Building

- wall section along column line P between column line 11 and the Shield Building

Additionally, the inspector verified adequate concrete density by reviewing concrete mix design calculations, fresh concrete testing reports taken at the time of placement, compressive strength testing reports, and hardened concrete testing report.

b. Findings

No findings were identified.

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

1P01 Construction QA Criterion 16

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

a. Inspection Scope

Daily Corrective Action Program Review
As part of the various inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during inspection activities and plant status reviews to verify they were being entered into the licensee's corrective action program at an appropriate threshold. The inspectors verified that adequate attention was being given to timely corrective actions and any adverse trends were identified and addressed.

Routine Review of Items Entered into the Corrective Action Program
On a routine basis, the inspectors screened a sample of issues entered into the licensee and the Engineering, Procurement, and Construction (EPC) consortium's corrective action programs. The inspectors attended several weekly management review committee meetings at the site and held discussions with licensee and EPC consortium personnel responsible for the screening and correction of the issues to determine if:

- the licensee and the EPC consortium were identifying equipment, human performance, and program issues at an appropriate threshold and were entering the issues into their respective corrective action programs;
- the licensee and the EPC consortium appropriately classified the issues and took appropriate short-term corrective actions;
- conditions adverse to quality were controlled in accordance with each company's QA program; and
- potential adverse trends were appropriately identified and corrected by the licensee or their contractors.

Selected Issues for Follow-Up Inspection
Based on the inspectors' routine screening of corrective action records, the inspectors selected a sample of issues entered in the corrective action programs to determine if the handling of these issues was consistent with the applicable QA program requirements and 10 CFR Part 50, Appendix B. Specifically, the inspectors reviewed the corrective action records listed in the documents reviewed section of this report.

The inspectors reviewed these corrective action documents to determine if:

- conditions adverse to quality were promptly identified and corrected;
- classification and prioritization of the resolution of the problem was commensurate with its safety significance;
- for significant conditions adverse to quality, the cause was determined, corrective actions were taken to prevent recurrence, and the cause and corrective actions taken were documented and reported to appropriate levels of management;
- conditions were appropriately screened;
- the licensee and their contractors properly evaluated and reported the condition in accordance with 10 CFR 50.55(e) and 10 CFR 21;
- the identification and correction of design deficiencies were being adequately addressed;
- extent of condition was adequately addressed; and
- appropriate corrective actions were developed and implemented.

b. Findings

No findings were identified.

3. OPERATIONAL READINESS

Cornerstones: Operational Programs

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

3P01 Non-licensed Plant Staff Training Program

- 41501-02.03 - Accreditation

a. Inspection Scope

The NRC has endorsed the National Nuclear Accrediting Board (NNAB) accreditation as a method of complying with the training program requirements of 10 CFR 50.120. Specifically, the NNAB accredited the following programs for Vogtle Units 3 and 4:

- instrument and control technician and supervisor;
- electrical maintenance personnel and supervisor;
- mechanical maintenance personnel and supervisor;
- chemistry technician;
- radiological protection technician; and
- engineering personnel.

The NRC inspectors verified the NNAB review was completed. The NNAB confirmed that the training programs were in accordance with the systems approach training (SAT) philosophy that requires training programs to analyze, design develop, implement and evaluate personnel training programs.

b. Findings

No findings were identified.

3P02 Reactor Operator Training

- 41501-02.03 - Accreditation

a. Inspection Scope

The NRC has endorsed the NNAB accreditation as a method of complying with the training program requirements of 10 CFR Part 55. Specifically, the NNAB accredited the following programs for Vogtle Units 3 and 4:

- non licensed operator;
- reactor operator;
- senior reactor operator;
- shift manager;
- continuing training for licensed personnel; and
- shift technical advisor.

The NRC inspectors verified the NNAB review was completed. The NNAB confirmed that the training programs were in accordance with the SAT philosophy that requires training programs to analyze, design develop, implement and evaluate personnel training programs.

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA5 Other Activities

NCV 05200025/2015-002 Follow up – (Unit 3) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

The inspectors observed in-process construction activities and reviewed documents associated with repair of the north wall of the spent fuel pool between elevations 92'-8" and 135'-3". The repair was undertaken to address out of tolerance distortion of north wall that impacts internal spent fuel pool dimensions and volume.

Specifically, the inspectors reviewed N&D SV3-CA20-GNR-000680, "Volume for Fuel Transfer and Spent Fuel Pool," and associated structural analysis prepared by Structural Integrity Associates, Inc. to verify that that nonconforming condition and repair activities were appropriately evaluated, approved, and dispositioned in accordance with applicable technical and QA requirements.

Additionally, the inspectors observed in-process welding of corner complete joint penetration welds between the duplex steel single sided wall along column line 4 and

the east and west faceplates of the two-sided module walls along column lines L-2 and K-2, respectively after straightening of north wall to verify that AISC N690, AWS D1.1, AWS D1.6, and UFSAR welding requirements were being adequately implemented.

The inspectors also verified that Gas Tungsten Arc Welding (GTAW) interpass welding variables and filler material were in accordance with the approved WPS and reviewed NDE reports associated with this work to determine whether inspection methods and techniques were performed in accordance with applicable requirements.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On July 7, 2016, the inspectors presented the inspection results to Mark Rauckhorst, Executive Vice President Vogtle 3&4 Construction, along with other licensee and contractor staff members. The inspectors stated that no proprietary information would be included in the inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensees and Contractor Personnel
R. Henderson, SNC Licensing
M. Washington, SNC Licensing
H. Agha, SNC Licensing
L. Buckley, WEC Licensing
J. Watkins, WEC Licensing Supervisor
V. Floyd, SNC Construction Oversight
J. Tull, WEC QA Director
F. Willis, SNC Licensing Supervisor
M. Yox, SNC Regulatory Affairs Director

Cable Manager Program Review Inspection contacts:
C. Castell, WECTEC, Licensing Manager
R. Parks, WECTEC, Electrical Engineer
C. Roseman, WECTEC, Director Elec + I&C Engineering
S. Kabra, WECTEC, Lead Electrical
R. Henderson, SNC, Licensing Engineer
K. Petty, WECTEC, Electrical Engineer
M. Detrick, WECTEC, Electrical Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Type	Status	Description
05200025/2015002-02	NCV	Discussed (4OA5)	SFP North Wall repaired without an approved engineering procedure

LIST OF DOCUMENTS REVIEWED

Section 1A01

Calculations:
APP-IDS-E0C-004, “IDS Power Cable Sizing and Voltage Drop Analysis”, Rev. 2
APP-G1-EWC-002, “Development of Power Cable Ampacities”, Rev. 2
APP-IDS-E0C-008, “IDS Powered Motor Operated Valve and IDS System Cable Lengths”, Rev. 2
APP-IDS-E0C-009, “IDS Powered Air and Solenoid Operated Valve, Plant Monitoring System Cabinets, and Switchgear Cable Lengths”, Rev. 2
Cabinets, and Switchgear Cable Lengths, Rev. 2

Drawings:
APP-1100-ER-200, “Containment Building Ex Core Instrumentation Embedded Conduit Plan, Sections and Details. Construction Number: VS2-1100-ER-200-R4., Rev. 5
APP-1100-ER-201, “Containment Building Ex Core Instrumentation Embedded Conduit Div. B Isometric View. Construction Number: VS2-1100-ER-201-R5., Rev. 6
10077D05, “AP1000 Reactor Coolant Pump Switchgear Wiring Schematic”, Rev. 3
APP-IDS-E3-011, “Class 1E UPS System One Line Meter & Relay Diagram Division A”, Rev. 1
APP-RCS-E5-PLV011A01, “Combined Wiring Diagram APP-RCS-PL-V011A First Stage ADS Isolation Valve A SH 1 of 4, Rev. 2
APP-RCS-E5-PLV011A02, “Combined Wiring Diagram APP-RCS-PL-V011A First Stage ADS Isolation Valve A SH 2 of 4, Rev. 2
APP-IDSB-E3-DD101, “Panel Schedule IDSB-DD-1 250 VDC Distribution Panel Auxiliary Bldg, Rev. 3
APP-RCS-E5-PLV004A01, “Combined Wiring Diagram APP-RCS-PL-V004A Class 1E Squib Valve SH 1 of 2, Rev. 0
APP-RCS-E5-PLV004A02, “Combined Wiring Diagram APP-RCS-PL-V004A Class 1E Squib Valve SH 2 of 2, Rev. 1
APP-1231-ER-101, “Auxiliary Building Area 1 Conduit Arrangement Plan at Elevation 100’-0”, Rev. 11
APP-1231-ER-104, “Auxiliary Building Area 1 Conduit Arrangement Plan at Elevation 100’-0” Room 12305 & 12300 (Partial), Rev. 2
APP-RCS-E5-PLV002A02, “Combined Wiring Diagram APP-RCS-PL-V002A Second Stage ADS Isolation Valve A SH 2 of 4”, Rev. 1
APP-RCS-E5-PLV003A03, “Combined Wiring Diagram APP-RCS-PL-V002A Second Stage ADS Isolation Valve A SH 3 of 4”, Rev. 1
APP-RCS-J5-100201, “Inst Loop Wiring Diag RCS System 2-Wire-PMS PWRD Class 1E Instruments-Inside Containment to Outside CAB Junction Box”, Rev. 1
APP-RCS-E5-PLV011A03, “Combined Wiring Diagram APP-RCS-PL-V011A First Stage ADS Isolation Valve A Sh 3 of 4”, Rev. 1
APP-RCS-E5-PLV011A02, “Combined Wiring Diagram APP-RCS-PL-V011A First Stage ADS Isolation Valve A Sh 2 of 4”, Rev. 1
APP-RXS-E5-JENE0002, “Combined Wiring Diagram APP-RXS-JE-NE NIC Power Range Neutron Detector SH 2 of 2”, Rev. 1
APP-PXS-E5-PLV014B01, “Combined Wiring Diagram APP-PXS-PL-V014B CMT Discharge Isolation Valve Sh 1 of 2”, Rev. 1
APP-PXS-E5-PLV014B02, “Combined Wiring Diagram APP-PXS-L-V014B CMT Discharge Isolation Valve Sh 2 of 2”, Rev. 1

APP-CCS-E5-PLV20003, “Combined Wiring Diagram APP-CCS-PL-V200 CCS Supply Containment Isolation Valve-ORC Sheet 3 of 4”, Rev. 2
APP-CCS-E5-PLV20002, “Combined Wiring Diagram APP-CCS-PL-V200 CCS Supply Containment Isolation Valve- ORC Sheets 2 of 4”, Rev. 2
APP-PXS-E5-PLV123A01, “Combined Wiring Diagram APP-PXS-PL-V123A IRWST Injection Isol. Valve SH 1 of 2”, Rev. 1
APP-PXS-E5-PLV123A02, “Combined Wiring Diagram APP-PXS-PL-V123A IRWST Injection Isol. Valve Sh 2 of 2”, Rev. 1
APP-PMS-E5-JDILCB0401, “Combined Wiring Diagram Integrated Logic Cabinet 04 Div. B APP-PMS-JD-ILCB04”, Rev. 0
APP-PMS-E5-JDILCAB0101, “Combined Wiring Diagram Integrated Logic Cabinet 01 Div. B APP-PMS-JD-ILCB01”, Rev. 0
APP-RCS-E5-PLV011A1, “Combined Wiring Diagram APP-RCS-PL-V011A Fist Stage ADS Isolation Valve A Sh1 of 4”, Rev. 2
APP-CSS-E5-PLV20001, Combined Wiring Diagram APP-CCS-PL-V200, CCS Supply Containment, Isolation Valve - ORC, Sheet 1of 4, Rev. 1
APP-CSS-E5-PLV20002, Combined Wiring Diagram APP-CCS-PL-V200, CCS Supply Containment, Isolation Valve - ORC, Sheet 2 of 4, Rev. 2
APP-CSS-E5-PLV20003, Combined Wiring Diagram APP-CCS-PL-V200, CCS Supply Containment Isolation Valve - ORC, Sheet 3 of 4, Rev. 2
APP-CSS-E5-PLV20003, Combined Wiring Diagram APP-CCS-PL-V200, CCS Supply Containment Isolation Valve - ORC, Sheet 4 of 4, Rev. 1
APP-ECS-E9-030, Conduit Notes and Details, Sheet 1, Rev. 6
APP-ECS-E9-031, Conduit Notes and Details, Sheet 2, Rev. 8
APP-ECS-E9-040, Electrical Raceway and Cable Identification Markers, Rev. 0
APP-PXS-E5-PLV014B01, Combined Wiring Diagram APP-PXS-PL-V014B, CMT Discharge Isolation Valve, Sheet 1 of 2, Rev. 1
APP-PXS-E5-PLV014B02, Combined Wiring Diagram APP-PXS-PL-V014B, CMT Discharge Isolation Valve, Sheet 2 of 2, Rev. 1
APP-PXS-E5-PLV123A01, Combined Wiring Diagram APP-PXS-PL-V123A, IRWST Injection Isol. Valve, Sheet 1 of 2, Rev. 1
APP-PXS-E5-PLV123A02, Combined Wiring Diagram APP-PXS-PL-V123A, IRWST Injection Isol. Valve, Sheet 2 of 2, Rev. 1
APP-RCS-E5-PLV81C01, Combined Wiring Diagram APP-RCS-PLV, Solenoid Operated Valve, Sheet 1 of 3, Rev. 1
APP-RCS-E5-PLV81C02, Combined Wiring Diagram APP-RCS-PLV, Class 1E, Solenoid Operated Valve, Sheet 2 of 3, Rev. 0
APP-RCS-E5-PLV81C03, Combined Wiring Diagram APP-RCS-PLV, Class 1E, Solenoid Operated Valve, Sheet 3 of 3, Rev. 0
APP-RCS-J5-100201, Inst Loop Wiring Diagram, RCS System, 2-Wire-PMS PWRD Class 1E, Instrs-Inside Containment to outside CAB Junction Box, Rev. 1
APP-RCS-J5-100601, Inst Loop Wiring Diagram, RCS System, 8-Wire-PMS PWRD Class 1E, Instrs-Inside Containment to outside CAB Junction Box, Rev. 0
APP-RCS-E5-PLV004A01, Combined Wiring Diagram, APP-RCS-PL-V004A, Class 1E, Squib Valve, Sheet 1 of 2, Rev. 0
APP-RCS-E5-PLV004A02, Combined Wiring Diagram, APP-RCS-PL-V004A, Class 1E, Squib Valve, Sheet 2 of 2, Rev. 1
APP-RCS-RXS-E5-JENE002, Combined Wiring Diagram, APP-RXS-JE-NE, NIC Power Range, Neutron Detector, Sheet 2 of 2, Rev. 1
APP-RCS-E5-JEST0202, Combined Wiring Diagram, APP-RCS-JE-ST, NIC Reactor Cooling Pumps, Speed Reference Sensors, Sheet 2 of 2, Rev. 1

APP-RXS-E5-JENE002A01, Combined Wiring Diagram APP-RXS-JE-NE002A, NIC Intermediate Range Neutron Detector, Division “A”, Rev. 1
APP-1100-ER-200, Containment Building Ex Core Instrumentation Embedded Conduit, Plan, Sections and Details, Rev. 5
APP-1100-ER-201, Containment Building Ex Core Instrumentation Embedded Conduit Div. B Isometric View, Rev. 6
VS2-1110-CEK-001, Leg support for EX-Core, Instrumentation Embedded Conduits, El. 71’-6” Inside Containment, Rev. B
APP-1130-ER-101, Conduit Layout Containment Building, SG West Compartment, El. 107’-2”-116’-0”, Rev. 4
VS2-ECS-E9-040, Electrical Raceway and Cable Identification Markers, Rev. 0
APP-1030-AF-001, Fire Area Drawing Nuclear Island, Plan Elevation 100’-0” & 107’ 2”, Rev. 6
APP-1040-AF-001, Fire Area Drawing Nuclear Island, Plan Elevation 117’6’, Rev. 5
APP-1230-P3-001, Auxiliary Building Equipment Location Plan Elevation 100’-0” Areas 1& 2, Rev. 2
APP-1232-ER-101, Auxiliary Building Area 2 Conduit Arrangement Plan Elevation 100’-0’, Rev. 11
APP-1240-P3-002, Auxiliary Building Equipment Location Plan Elevation 117’-6” Areas 3 & 4, Rev. 2
APP-1242-ER-101, Auxiliary Building Area 2 Conduit Arrangement Plan At Elevation 117’-6’, Rev 9
APP-1243-ER-103, Auxiliary Building Area 3 Class 1E Conduit Arrangement Plan at Elevation 117’-6”, Rev. 2
APP-GW-N4R-003, Fire Protection Analysis Report, Rev. H
NCSP03-02, Electrical Raceway Installation, Rev. 3.01

Raceway Drawings:
APP-1123-ER-102, “Conduit Layout Containment Building 11207 PXS-B Room EL 98’0” to 107’-2””, Rev. 6
APP-1154-ER-101, “Conduit Layout Containment Building Area 4 EL 135’-3”-180’-0””, Rev. 9
APP-1231-ER-001, “Auxiliary Building Area 1 Class 1E Cable Tray Arrangement Plan at Elevation 100’-0””, Rev. 10
APP-1242-ER-101, “Auxiliary Building Area 2 Conduit Arrangement Plan At Elevation 117’-6””, Rev. 9
APP-1152-ER-803, “Conduit Layout Sections Containment Building Area 2 EL 135’-3”-180’-0””, Rev. 6
APP-1133-ER-103, “Conduit Layout Containment Building Area 3 EL 107’2”-118’-6””, Rev.7
APP-1133-ER-013, “Tray Layout Containment Building Area 3 EL 107’2”-118’-6” Div C Trays”, Rev. 3
APP-1143-ER-007, “Tray Layout Containment Area 3 EL 118’-6”-135’-3””, Rev. 3

Specifications:
APP-EA03-Z0-001, Design Specification – Appendix F “Fuse Panel Layout” and “Appendix F.2 APP for Interface with DV01”, Rev. 6
APP-EW60-Z0-001, “Class 1E Control Cables”, Rev. 1
APP-EW50-Z0-001, “Class 1E Low Voltage 600V Power Cables”, Rev. 1
APP-EW21-ZO0-002, “Instrumentation and Thermocouple Extension Cables”, Rev. 1
APP-EW21-ZOD-002, “Instrumentation and Thermocouple Extension Cables (Class 1E) Data sheet, Rev. 1
APP-EW25-Z0-002, “AP1000 Design Specification for the In-core Instrument System (IIS) Mineral Insulated Cable Assemblies”, Rev. 1

APP-G1-V8-001, “AP1000 Electrical Installation Specification”, Rev. 4
APP-GW-E1-001, “Electrical Systems Design Criteria”, Rev. 0
APP-G1-E1-003, “Raceway Design, Discipline Design Criteria”, Rev. 3
APP-EW50-ZOD-001, Westinghouse, Class 1E Low Voltage 600V Cables Data Sheet, Rev. 1
APP-EW70-ZO-001, Westinghouse, Non-Class 1E Control Cables, Rev. 1
APP-EW21-Z0-005, AP1000 Instrumentation Cable Design Specification for Instrumentation & Control System Use Outside of Containment, Class 1E Applications, Rev. 1
APP-EW21-Z0-006, AP1000 Instrumentation Cable Design Specification for Instrumentation & Control System Use Outside of Containment, Non-Class Class 1E Applications, Rev. 1
APP-ECS-GEF-875000, Changes to Cable Specification, Rev. 0
APP-EW31-Z0-001, Fiber Optic Cables, Rev. 0
APP-EW31-Z0-002, AP1000 Fiber-Optic Design Specification for Instrumentation & Control System Use Outside of Containment, Non-Class 1E Application, Rev. 2
APP-EW31-Z0-003, AP1000 Fiber Optic Design Specification for Instrumentation & Control System Use Outside of Containment, Non-Class 1E Application, Rev. 0
APP-EW31-Z0-004, AP1000 Fiber Optic Design Specification for Instrumentation & Control Use Outside of Containment, Non-Class 1E Application, Rev. 0
APP-EW50-ZOD-001, Class 1E Low Voltage 600V Cables Data Sheet, Rev. 1
APP-ER02-GEF-850015, Electrical Raceway Spacing, Rev. 0
VS2-G1-V8-001: AP1000 Electrical Installation Specification, Rev. 4
APP-EW50-ZO-001, Class 1E Low Voltage 600V Cables, Rev.1
APP-EW60-Z0-001, Class 1E Control Cables, Rev. 1
APP-GW-E1R-003-RA, IEEE 384 Compliance Report of Class 1E Raceway Design- Exception to Fully Enclosed Raceway Criteria, Rev. A
APP-EW21-E1-001, AP1000 Standard Raceway and Cable Separation and Segregation, Rev.3

Procedures:
Domestic AP1000 Project Procedure, DAPP 05-21, AP1000 PROJECT IMPLEMENTATION PLAN OF CABLE MANAGER, Rev. 1
Nuclear Construction and Startup Procedure – NCSP 02-25, “Construction Developed Inspection Planning”, Rev. 0
APP-GW-GAP-420, “Engineering and Design Coordination Reports”, Rev. 10
Nuclear Construction and Startup Procedure – NCSP 02-12, “Construction Quality Completion Program”, Rev. 5.04
Nuclear Quality Standard – QS 14.02, “Inspection Report System”, Rev. 6
Nuclear Construction and Startup Procedure – NCSP 03-82, “Electrical Raceway Installation”, Rev. 03.01
Nuclear Construction and Startup Procedure – NCSP 03-83, “Insulated Cable Installation”, Rev. 01.01
Nuclear Construction and Startup Procedure – NCSP 03-81, “Shaw Cable Manager (SCM) Database System Implementation”, Rev. 01.01
Nuclear Construction and Startup Procedure – NCSP 03-84, “Cable Splices, Connections, and Terminations”, Rev. 01.01
APP-GW-GMP-006, “AP1000 Component Numbering Procedure”, Rev. 9
APP-G1-E1-003, Raceway Design, Discipline Design Criteria, Rev. 3
DTP-E-N-50007-02, Electrical Drawing Review Procedure, Rev. 02
NPP 10-01, Material Receipt, Storage, and Control, Rev. 05.00
QS 02.07, CBI User’s Manual (UM), Shaw Cable Manager EL-111, Rev. 03
QS 17.01, WECTEC, Quality Assurance Records System, Rev. 04.01
132175-516-003-00001, WECTEC, Record & Information Management, Rev. 02

Performance and Documentation Plans:
APP-RCS-ITH-013, “Standard Plant ITAAC 2.1 02.07a.ii Performance and Documentation Plan”, Rev. 0
APP-RXS-ITH-022, “Standard Plant ITAAC 2.1 03.09a.ii Performance and Documentation Plan”, Rev. 0
APP-CNS-ITH-006, “Standard Plant ITAAC 2.2 01.06a.ii Performance and Documentation Plan”, Rev. 0
APP-PXS-ITH-023, “Standard Plant ITAAC 2.2 03.07a.ii Performance and Documentation Plan”, Rev. 0
APP-11 OO-ITH-014, “Standard Plant ITAAC 3.3 00.07a.a Performance and Documentation Plan”, Rev. 0
APP-1200-ITH-011, “Standard Plant ITAAC 3.3 00.07a.b Performance and Documentation Plan”, Rev. 0
APP-1200-ITH-012, “Standard Plant ITAAC 3.3 00.07a.c Performance and Documentation Plan”, Rev. 0
APP-11 OO-ITH-002, “Standard Plant ITAAC 3.3 00.07b.a Performance and Documentation Plan”, Rev. 0
APP-1200-ITH-004, “Standard Plant ITAAC 3.3 00.07b.b Performance and Documentation Plan”, Rev. 0
APP-1200-ITH-005, “Standard Plant IT AAC 3.3 00.07b.c Performance and Documentation Plan”, Rev. 0
APP-1200-ITH-008, “Standard Plant ITAAC 3.3 00.07d.i Performance and Documentation Plan”, Rev. 0
APP-1100-ITH-003, “Standard Plant ITAAC 3.3.00.07d.ii.a, 3.3.00.07d.iii.a, 3.3.00.07d.iv.a, 3.3.00.07d.v.a Performance and Documentation Plan”, Rev. 1
APP-1200-ITH-009, “Standard Plant ITAAC 3.3.00.07d.ii.b, 3.3.00.07d.iii.b, 3.3.00.07d.iv.b, 3.3.00.07d.v.b Performance and Documentation Plan”, Rev. 1
APP-1200-ITH-010, “Standard Plant ITAACs 3.3 00.07d.ii.c, 3.3 00.07d.iii.c, 3.3 00.07d.iv.c, 3.3 00.07d.v.c Performance and Documentation Plan”, Rev. 0
APP-EFS-ITH-003, “Standard Plant ITAAC 3.3 00.07e Performance and Documentation Plan”, Rev. 0
APP-1200-ITH-006, Westinghouse, Standard Plant ITAAC 3.3.00.07c.i.a Performance and Documentation Plan, Rev. 0

Shaw Cable Management Cable Routing Reports:
Associated with RCS-PL-V002A
- Filtered by Equipment ID Contains IDSC-DK-1, dated by May 25, 2016
- Filtered by Equipment ID Contains PMS-JD-ILCC02, dated by May 25, 2016
- Filtered by Equipment ID Contains APP-RCS-EJ-PLV002A, dated by May 3, 2016

Associated with RCS-JE-PT191A, RCS-JE-PT140A
- Filtered by Equipment ID contains IDSA-EY-P11Z-ORC, dated May 25, 2016
- Filtered by Equipment ID contains APP-RCS-EJ-PT140A, dated May 3, 2016
- Filtered by Equipment ID contains APP-RCS-EJ-PT191A, dated May 3, 2016

Associated with RCS-PL-V011A
- Filtered by Equipment ID contains APP-RCS-EJ-PLV011A, dated May 3, 2016
- Filtered by Equipment ID contains IDSA-DK-1, dated May 25, 2016
- Filtered by Equipment ID contains PMS-JD-ILCA03, dated May 25, 2016

Associated with Intermediate Range Neutron Detector
- Filtered by Equipment ID contains PMS-EJ-002A, dated May 25, 2016
- Filtered by Equipment ID contains PMS-JD-NICA01, dated May 25, 2016
- Filtered by Equipment ID contains IDSA-EY-P11Z-ORC, dated May 25, 2016

Associated with PXS-PL-V014B
Filtered by Equipment ID contains IDSC-DD-1 dated May 25, 2016
Filtered by Equipment ID contains PMS-JD-ILCC01 dated May 25 2016
Associated with CCS-PL-V200
Filtered by Equipment ID contains APP-CCS-EJ-PLV200 dated May 3, 2016
Associated with PXS-PL-V123A
Filtered by Equipment ID contains PMS-JD-SVCB01
Filtered by Equipment ID contains APP-PXS-EJ-PLV123a (Note: Also P30 Penetration associated with this)
Associated by P30
Filtered by Equipment ID contains APP-IDSB-Ey-P30Z
Filtered by Equipment ID contains APP-PMS-JD-BCCC02

Shaw Cable Manager Cable in Raceway Reports:
Associated with PXS-PL-V123A Filtered by Raceway ID Contains 1154-er-bzc13 dated May 26, 2016
Associated with P30 Filtered by Raceway ID Contains 1133-er-czt01b dated May 26, 2016
Associated with RCS-PL-V002A, Filtered by Raceway ID Contains 1143-er-czt01a dated May 26, 2016
Associated with RCS-PL-V011A Filtered by Raceway ID Contains 1152-ER-AYC01 dated May 26, 2016
Associated with RCS-PT-140A Filtered by Raceway ID Contains 1133-er-azc22 dated May 26, 2016
Associated with RCS-PT-191A Filtered by Raceway ID Contains 1133-ER-AZC12 dated May 26, 2016
Associated with RXS-JE-NE002A Filtered by Raceway ID Contains 1242-er-azc04 dated May 26, 2016
Associated with CCS-PL-V200 Filtered by Raceway ID Contains 1231-ER-Dxt01EA
Associated with PXS-PL-V014B Filtered By Raceway ID Contains 1123-ER-CZC09

Miscellaneous:
General Cable Memorandum - Report # W05162016 “Qualification Sample Correlation for ULTROL 60+ Cables for CB&I, dated: May 16, 2016.
Report W05162016, Qualification Sample Correlation for UTROL 60+ Cables for CB&I, Rev. 1, dated May 25, 2016
Westinghouse Memo dated: 9/8/2015, Reference: DCP_SHW_003321, Subject: Bounding Values with Respect to the Domestic AP1000 IDS Powered Motor Operated Valves and IDS System Cable Lengths.
NCTR 11-014, “Technical Manual for NY-10866 – Intermediate Range Detectors Assembly Fission Chamber” (cable: RXS-JE-NE-002A / W-10ZTR1AX-NIS-MI), Rev. 04
APP-JE92-J0M-002, “AP1000 Protection and Safety Monitoring System Nuclear Instrumentation System Intermediate Range Detector Technical Manual”, Rev. 3
Engineering & Design Coordination Report (E&DCR) No. APP-ER02-GEF-850015, “Electrical Raceway Spacing”, Rev. 0
CAPAL – 100170963 Coordination of Fuses for RCP Switchgear. Based on Non-conformance vendor inspection.
EL-111, “User’s Manual for the SCM”, Rev. 1
W05162016, General Cable Report, Memorandum Qualification Sample Correlation for ULTROL 60+ Cables for CB&I, Rev. 0
Shaw Cable Manager - EL-113, Cable Routing, Job order number 1268970400, Equipment ID APP-RCS-EJ-PLV150A, print date 03-May-2016

Shaw Cable Manager - EL-113, Cable Routing, Job order number 1268970400, Equipment ID APP-RCS-JE-ST281, print date 03-May-2016
Shaw Cable Manager - EL-113, Cable Routing, Job order number 1268970400, Equipment ID APP-PXS-EJ-PLV014B, print date 03-May-2016
Shaw Cable Manager - EL-113, Cable Routing, Job order number 1268970400, Equipment ID APP-PXS-EJ-PLV123A, print date 03-May-2016
Shaw Cable Manager - EL-113, Cable Routing, Job order number 1268970400, Equipment ID APP-RXS-JE-NE002A, print date 03-May-2016
Shaw Cable Manager - EL-113, Cable Routing, Job order number 1268970400, Equipment ID APP-RCS-EJ-PLV004A, print date 03-May-2016
Shaw Cable Manager - EL-113, Cable Routing, Job order number 1268970400, Equipment ID APP-CCS-EJ-PLV200, print date 03-May-2016
02-3256, General Cable drawing, Shaw Mark Number S-6Z1TWSPR-16, Rev. 1
Shaw Cable Manager - EL-113, Cable Termination Ticket, Job order number 1268970400, Document No. APP-RCS-EW-PLV004ARZC (TTF), Cable Mark No. S-6Z1TWSPR-16print date 23-May-2016
APP-EW50-VTR-850004, HELB (Zone 5 & 10) Environmental Qualification Report for 60 Year Service Life Class 1E; Ultrol 60+ Low Voltage Insulated Single Conductor Cables, Low Voltage Jacketed Cables and Non-Class 1E Medium Voltage Cables for AP1000 Nuclear Plants, Rev. 2
APP-EW50-VTR-85005, Environmental Qualification Report for 60 Year Normal Service Life Non-Class 1E and Class 1E Outside Containment, Rev. 2
APP-EW50-VTR-850014, LOCA/MSLB (Zone 1) Environmental Qualification Operability Report for 60 Year Service Life Class 1E ULTROL 60+ Low Voltage Jacketed Cables and Non-Class 1E Medium Voltage Cables Submersed in Hot Boric Acid Solution for AP1000 Nuclear Plants, Rev. 1

Work Package:
VS2-1100-ERW-017-ITAAC, Install -Embedded Raceway In Containment\Building Ex Core Instrumentation DIV. 8 Inside CVBH Elev. 79ft To 107ft, Safety Class: C, Seismic Category: NS, Rev. 0

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K-W2014-AP1000-2, LOCA/MSLB (Zone 1) Environmental Qualification Report for 60 year Service Life Class 1E, Ultrol 60+ Low Voltage Insulated single conductor cables, low voltage Jacketed Cables and Non-Class 1E Medium Voltage Cables for AP1000 Nuclear Plants, Rev. 2

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SV3-MT01-VDR-001, "AP1000 Vogtle Unit 3 Core Makeup Tanks Volumetric Scanning Report", Rev. 1
SV3-MT01-Z0R-201, "AP1000 Core Makeup Tank – Vogtle Unit 3 (SV3) As-Built Analysis", Rev. 0

Project Instructions
PI-2411401-MT-001-CMT_4595, "Vogtle Core Make-Up and Accumulator Tanks Data Collection and Volume Verification Plan", Rev. 0
PI-2411401-MT-001-CMT_4596, "Vogtle Core Make-Up and Accumulator Tanks Data Collection and Volume Verification Plan", Rev. 0
PI-2411401-MT-002, "Vogtle Core Make-Up and Accumulator Tanks Invar Bar Measurement Check", Rev. 0
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M&TE
Laser Scanner BC-SCH5X025979
Invar Bar CB 120406
Contact Pyrometer PCI-QTC-07

Corrective Action Documents
WEC CAPAL 100042943
SNC CAR 212512

Section 1A03

Procedures:
APP-PMS-J0M-003, “Protection and Safety Monitoring System- Technical Manual," Rev.0
APP-GW-VHP-002, “Packing and Crating Instructions for Westinghouse Equipment," Rev. 3
APP-PMS-J0M-001, " QUINT Power Supply Technical Manual," Rev. 2
CMP-RSHT-2016-3-11477, Digital Cabinets/ Receipt and Storage Compliance for Protection and Safety Monitoring System (PMS) Digital Cabinets, dated 3/22/16
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Equipment Preservation History Cards:
132175-16-1997_SV3-PMS-JW-006A
132175-16-1998_SV3-PMS-JW-006B
132175-16-1999_SV3-PMS-JW-006C
132175-16-1999_SV3-PMS-JW-006D
132175-16-2001_SV3-PMS-JW-005A
132175-16-2001_SV3-PMS-JW-005B

Temperature and Humidity Logs:
V-U-0126, March- April 2016
V-U-0237, March- April 2016

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Procedures
QS 13.11, Material, Equipment Storage, Rev. 3.00
NCSP 02-09, "Construction Materials Management", Rev. 05.03
NCSP 03-42, Reinforcing Steel Installation, Rev. 03.01
NCSP 03-44, Mechanical Splicing of Reinforcing Steel, Rev. 02.01

Specifications
SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 7

Work Packages
SV3-1130-COW-85002, Reinforced Concrete Inside Containment 87’-6” to 95’-0” Reactor Vessel and Refueling Compartments

Miscellaneous
Inspection Plan F-C112-002

CSI 3.41 Form 8.1
CSI 3.42 Form 8.3
CSI 3.42 Form 8.4

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CB&I Power Welding Procedure WPS2-1.1F20-SB (FCAW) Rev. 4
CB&I Power Procedure Qualification Record 13405W dated 1/6/15
CMTR 2501849 dated 6/14/12
CMTR 1186B dated 3/26/14
Ultrasonic examination report V-16-UT-312-0342 dated 3/29/16
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"Construction Materials Management", NCSP 02-09, Rev. 05.02
"AWS D1.1 - Structural Steel General Welding Specification" GWS-2, Rev. 4
"Specification for the Fabrication and Field Erection of the SC Panels for the AP1000 Shield Building", APP-1208-Z0-001, Rev. 1
Weld Records for welds CV8653-13-JK-I and CV8653-13-GH-I
Welder qualification records for JLH2338 11/25/14 and MEW6934 2/12/15
Inspection Plan "(Shield Building) AWS D1.1 Structural Welding of the SC Panels and FW/MS Weldment / Erection Tolerances", F-S561-066, Rev. 3
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CAR 2016-1158, dated 3/10/16
Request for Information SV0-1208-GF-000032 dated 3/14/16

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SV3-1220-CRW-CV1587, “Unit 3 Auxiliary Building A3 (82’-6” to 100’-0”) Interior Wall Rebar – Areas 1 & 2”
SV3-1230-CCW-CV2443, “Aux Building Battery Rack Walls (32, 33, 34, 36, & 37) up to EL. 100’-0””
SV3-CR01-GNR-000482, “Wall K West Face Bar Spacing,” Rev. 0
SV3-CR01-GNR-000486, “U-3 Aux: Reduced Clear Cover, K-line, West Face, EL 82’-6”,” Rev. 0
SV3-CR01-GNR-000491, “Lap Splice Location Wall K,” Rev. 0

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Specifications
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Procedures
NCSP 03-30, Concrete Mixing and Delivery, Rev. 02.00
NCSP 03-31, Concrete Placement, Rev. 04.00

Work Packages
SV3-1230-CCW-CV2442, Aux Building Battery Rack Walls (29, 30, 31 & 35) up to EL 100’-0, Rev. 2

Miscellaneous
Inspection Plan F-C112-002

Inspection Plan F-C113-000
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CAR 2015-0280, “ITAAC As-built concrete thickness measurement between CB65 and CA04 exceed ITAAC construction tolerance.” Initiated on: 1/28/2015
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Section 1A09

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Dimensional Examination Records:
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Doosan Drawings:
D-AA-11104-M06, “Vogtle #4 Vessel As-Built,” Revision 0, Sheet 1
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*Applicable weld seams are indicated in parenthesis

Data Reports
Form N-1 Certificate Holder’s Data Report for Nuclear Vessels, Serial No. SV4-RCS-MV-01
Form N-2 Certificate Holders’ Data Report for Identical Nuclear Parts and Appurtenances, Serial No. N07049-20101
Form N-2 Certificate Holders’ Data Report for Identical Nuclear Parts and Appurtenances, Serial No. N07049-20102

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118786-001A, Heat No. NX8955TK, Revision 1 (Filler Metal, 101-10A, 101-10D)
22945, Heat No. 2169 0 8264, 11/23/2011 (CRDM Nozzles)
CMTR-T10-DS06, Heat No. M21673, Revision 1 (Filler Metal, 101-10A, 101-10D)
CMTR-T10-DS14, Heat No. M21673, Revision 0 (Filler Metal, 101-10A, 101-10D)
CMTR-T13-DS21, Heat No. L1616, Revision 0 (Filler Metal, 101-10A, 101-10D)
CN2010020008, Heat No. 2C95859, Revision 0 (Outlet Nozzle)
CN2010030041, Heat No. 2C96127, Revision 0 (DVI Nozzle)
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KN-1453, Mfg. No. GZ906289727, Mfg Date 11/25/2009 (Filler Metal, 102-21B)
KN-1481, Mfg. No. GZ005499727, Mfg Date 10/18/2010 (Filler Metal, 101-40, 101-51)
KN-1487, Mfg. No. GZ006139727, Mfg Date 12/21/2010 (Filler Metal, 201-40, 102-21B, 103-21A)
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TR-P0711, Heat No. SA33647, 08/23/2007 (E8016-G Filler Metal Experience)
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TR-P104-1, Heat No. SA06378, 05/17/2010 (Filler Metal, 201-40, 101-21A, 102-21B, 103-21A)
TR-P1065, Heat No. SA44017, 11/04/2010 (Filler Metal, 201-40)

Welding Defect Notices
WDN_110496 (201-40)
WDN_120236 (102-21B)
WDN_120239 (103-21A)
WDN_120377 (101-21A)

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*Applicable weld seams are indicated in parenthesis

Weld Maps
WM-VG34AP1000-201RV, “Weld Map of Closure Head Ass’y (AP-1000 Reactor Vessel),” Revision 0
WM-VG34AP1000-202RV, “Weld Map of Upper Vessel Ass’y (AP-1000 Reactor Vessel),” Revision 2
WM-VG34AP1000-203RV, “Weld Map of Lower Vessel Ass’y (AP-1000 Reactor Vessel),” Revision 2

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APP-GW-VLR-010, “AP1000 Supplemental Fabrication and Inspection Requirements,” Revision 2
APP-VL51-Z0-003, “AP1000 Reactor Vessel Material Specification for SA-508/SA-508M Grade 3 Class 1 Non-Core Region Forgings (Section III-NB),” Revision 3
APP-VL51-Z0-004, “AP1000 Reactor Vessel Material Specification for SA-508/SA-508M Grade 3 Class 1 Core Region Forgings (Section III-NB),” Revision 3
APP-VW01-Z0-101, “AP1000 Filler Metal Specification: Requirements for Welding Materials with a General Classification,” Revision 0
APP-VW40-Z0-050, “AP1000 Filler Metal Specification: SFA-5.5 Low Alloy Steel Electrodes for SMAW of ASME Section III Applications,” Revision 1
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AP-MPS21-065, “Material Purchase Specification for SA-508 Grade 3 Class 1 Forgings (To be Used for Reactor Vessel Lower Head),” Revision 4

EPS-A03-126, “Material Purchase Specification for Mn-Mo Alloy Steel Wire and Flux for Submerged Arc Welding,” Revision E
EPS-T03-107, “Material Purchase Specification for ER80S-D2 Low Alloy Steel Wire or Rod,” Revision A

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EPAM1102, “Procedure for Magnetic Particle Examination,” Revision 5
EPAP1102, “Procedure for Liquid Penetrant Examination,” Revision 4
EPAR1102, “Procedure for Radiographic Examination,” Revision 2
EPAU1102, “Ultrasonic Examination Procedure of AP1000 RV,” Revision 3

Welding Procedure Specifications
A-M-0303-151, Revision 5
A-M-0303-152, Revision 1
A-M-0303-156, Revision 1
A-MA-0303-216, Revision 1
A-MA-0303-217, Revision 4
A-T-0303-149, Revision 3
A-T-0843-135, Revision 3
A-T-0843-136, Revision 2

Welder/Welding Operator Qualifications
TW-16-ACO, Table of Certified Welder, Revision 3
TW-16-BFI, Table of Certified Welder, Revision 6
TW-16-BPZ, Table of Certified Welder, Revision 3
TW-16-EYY, Table of Certified Welder, Revision 6
TW-16-SMY, Table of Certified Welder, Revision 6
TW-16-UTO, Table of Certified Welder, Revision 6
TW-16-WZK, Table of Certified Welder, Revision 6
TWO-16-ACO, Table of Certified Welding Operator, Revision 3
TWO-16-BFI, Table of Certified Welding Operator, Revision 6
TWO-16-BPZ, Table of Certified Welding Operator, Revision 3
TWO-16-EYY, Table of Certified Welding Operator, Revision 6
TWO-16-SMY, Table of Certified Welding Operator, Revision 6
TWO-16-UTO, Table of Certified Welding Operator, Revision 6
TWO-16-WZK, Table of Certified Welding Operator, Revision 6

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22945, Heat No. 2169 0 8264, 11/23/2011 (CRDM Nozzles)
CMTR-T10-DS06, Heat No. M21673, Revision 1 (Filler Metal, 101-10A, 101-10D)
CMTR-T10-DS14, Heat No. M21673, Revision 0 (Filler Metal, 101-10A, 101-10D)
CMTR-T13-DS21, Heat No. L1616, Revision 0 (Filler Metal, 101-10A, 101-10D)
CN2010020008, Heat No. 2C95859, Revision 0 (Outlet Nozzle)
CN2010030041, Heat No. 2C96127, Revision 0 (DVI Nozzle)
CN2010100008, Heat Nos. 2C06966, 2B06967, 2C06968, Revision 3 (Lower Shell)
CN2011010001, Heat No. 2C07611, Revision 0 (Inlet Nozzle)
CN2011040031, Heat Nos. 2B07975, 2C07976, Revision 1 (Transition Ring)
CN2011060024, Heat No. 2B07985, Revision 0 (Lower Head)
CN2012020038, Heat Nos. 2C19086, 2C19087, Revision 2 (Upper Shell)
HKQ-090630-012, Heat No. E90130, Revision 3 (QuickLoc Nozzles)

KN-1453, Mfg. No. GZ906289727, Mfg Date 11/25/2009 (Filler Metal, 102-21B)
KN-1481, Mfg. No. GZ005499727, Mfg Date 10/18/2010 (Filler Metal, 101-40, 101-51)
KN-1487, Mfg. No. GZ006139727, Mfg Date 12/21/2010 (Filler Metal, 201-40, 102-21B, 103-21A)
NQC-11-241, Heat No. NX8040TK, 09/23/2011 (Filler Material, 103-10)
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TR-P0830-1, Heat No. SA80912, 08/26/2008 (E8016-G Filler Metal Experience)
TR-P0930, Heat No. SA06378, 06/26/2009 (E8016-G Filler Metal Experience)
TR-P1026-2, Heat No. SA06378, 08/09/2010 (Filler Metal, 101-21A, 102-21B, 103-21A)
TR-P104-1, Heat No. SA06378, 05/17/2010 (Filler Metal, 201-40, 101-21A, 102-21B, 103-21A)
TR-P1065, Heat No. SA44017, 11/04/2010 (Filler Metal, 201-40)

Reports of Liquid Penetrant Examination
P130807-006-001 (101-10A, 101-10D, After Machined)
P130909-009-001 (103-10-07, After First Layer W/D)
P130909-010-001 (103-10-24, 103-10-29, After First Layer W/D)
P130909-011-001 (103-10-38, After First Layer W/D)
P130909-012-001 (103-10-61, 103-10-64, After First Layer W/D)
P130909-030-001 (103-10-01, After First Layer W/D)
P130923-016-001 (103-10-01, After Half Layer W/D)
P130923-017-001 (103-10-07, After Half Layer W/D)
P130923-018-001 (103-10-24, 103-10-29, After Half Layer W/D)
P130923-020-001 (103-10-38, After Half Layer W/D)
P130923-022-001 (103-10-61, 103-10-64, After Half Layer W/D)
P130930-041-001 (103-10-01, After Half Layer W/D)
P130930-044-001 (103-10-07, After Half Layer W/D)
P130930-045-001 (103-10-24, 103-10-29, After Half Layer W/D)
P130930-046-001 (103-10-38, After Half Layer W/D)
P130930-047-001 (103-10-61, 103-10-64, After Half Layer W/D)
P131014-013-001 (103-10-01, After Half Layer W/D)
P131014-014-001 (103-10-07, After Half Layer W/D)
P131014-015-001 (103-10-24, 103-10-29, After Half Layer W/D)
P131014-016-001 (103-10-38, After Half Layer W/D)
P131014-017-001 (103-10-61, 103-10-64, After Half Layer W/D)
P131129-017-001 (103-10-01, 103-10-07, 103-10-24, 103-10-29, 103-10-38, 103-10-61, 103-10-64, After Weld)

Reports of Magnetic Particle Examination
M120720-071-001 (103-21A, After PWHT)
M120720-073-001 (102-21B, After PWHT)
M120917-077-001 (201-40, After PWHT)
M121029-040-001 (101-21A, After PWHT)
M130610-014-001 (101-40, After PWHT)
M131024-029-001 (101-51, After PWHT)
M140103-048-001 (Outside Surface of Vessel, After Hydro)

Reports of Ultrasonic Examination
U120723-014-001 (102-21B, After PWHT)
U120723-021-001 (103-21A, After PWHT)
U120817-032-001 (102-21B, After Repair Weld)
U120917-048-001 (201-40, After PWHT)

U121029-043-001 (101-21A, After PWHT)
U121030-009-001 (102-21B, After PWHT)
U121030-010-001 (103-21A, After PWHT)
U130308-016-001 (101-21A, After PWHT)
U130610-016-001 (101-40, After PWHT)
U131024-029-001 (101-51, After PWHT)
U131204-037-001 (101-10A, 101-10D, After Weld)
U140107-017-001 (201-40, 101-40, 101-51, 101-21A, 102-21B, 103-21A, After Hydro)

Reports of Radiographic Examination
R111223-053-001 (201-40, Before PWHT)
R120725-027-001 (102-21B, After PWHT)
R120725-029-001 (103-21A, After PWHT)
R121103-002-001 (101-21A, After PWHT)
R121103-005-001 (102-21B, After PWHT)
R121103-015-001 (103-21A, After PWHT)
R130401-022-001 (101-21A, After PWHT)
R130527-040-001 (101-40, Before PWHT)
R131014-001-001 (101-51, Before PWHT)
R131206-021-001 (101-10A, 101-10D, After Machined)

Welding Defect Notices
WDN_110496 (201-40)
WDN_120236 (102-21B)
WDN_120239 (103-21A)
WDN_120377 (101-21A)

Miscellaneous
101041682-4040, (DIM) Inspection Record (A), Upper Vessel DVI Nozzle Ass'y (103-21A)
AHTR-VOGTLE#4-01, Accumulated Heat Treatment Time Record for Vogtle (#4)
AP-1000-EFDI, Elect. & Flux Drying Instruction, Revision 0
PWHT-12-078B, PJT No. N07049, Upper Shell/DVI Nozzle, 10/30/2012
PWHT-13-033, PJT No. N07049, Upper Shell Final Ass'y, 04/12/2013
Strip Chart for PWHT No. 4E10020, (Lower Head), 05/20/2011
VOGTLE#4-01, Weld Status / Location of Weld Filler Metal

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CB&I RT report U4-192, 3/4/16

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CB&I Power welding procedure WPS5-8.10HT70 Rev. 13
CB&I Power PQRs: 8-10-567 dated 6/25/14, 8-8-331 dated 8/13/12, 8-8-335 dated 5/13/12, and SP395 dated 9/19/14
CB&I Power Welder Performance Qualification Record for welder RNB2159 dated 11/6/14

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APP-VL52-Z0-023, "Material Specification for ASTM A240, UNS S32101, Duplex Stainless Steel Plate," Rev. 3

APP-VW20-Z0-023, “Welding Specification for ASTM A240 UNS S32101 Duplex Stainless Steel Plate,” Rev. 3

PO NO. 132176-D100.CA008
PO NO. 132176-D100.CA008

CMTR No. CMTR-CA01-SV4-0007
CMTR No. 6570-1

Traveler No. PB1FHE3D00
Traveler No. PB180P6C00

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APP-CA01-GEF-850156, Rebar Material Substitution
APP-GW-GEF-1100, Leak Chase SWD-131 Modification
SV0-CA00-GEF-000031, NDE after Surfacing of Welds
SV4-CA01-GNR-000016, CA01-13 Weld Access Holes (APP-CA01-GEF-703)
F-S561-004, Structural Weld Inspection Modules, and "Fabrication" and "Subassembly" Tolerances, Rev. 18

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APP-CA01-GEF-478, “CA01-09 MK10 Channel Quantity,” Revision 0
APP-CA01-GEF-850093, “CA01-09 MK10 Channel Quantity,” Revision 1
APP-CA01-GNR-850560, “TANE-IHI_VNNR-15-101 Rev. 0 Unacceptable yield strength on CA01 SV4,” Revision 0
APP-CA01-GNR-850733, “TANE-IHI_VNNR-15-178 Rev. 0 Unnecessary edge preparation on SV4 CA01_39,” Revision 0
APP-CA01-GNR-850735, “TANE-IHI_VNNR-15-182 Rev. 0 Temperature deviation of coatings for SV4 CA01,” Revision 0
IHI Toshiba Project Document Number VOG4-CIS-CA01-7501-39-01, “39 Sub-module Fabrication Record Package,” Revision 0
Quality Assurance Inspection Report Q445-16-11294, “Receipt Inspection – Modules – Structural,” 05/23/16

Drawings
SV4-CA01-S5-39001, “Containment Building Area 2 Module CA01 Submodule CA01_39 Isometric Views,” Rev. 0
SV4-CA01-S5-39002, “AP1000 Containment Building Area 2 Module CA01 Submodule CA01_39 Break-Down,” Rev. 0
SV4-CA01-S5-39003, “Containment Building Area 2 Module CA01 Submodule CA01_39 Structural Outline – Vertical Sections/Views I,” Rev. 0
SV4-CA01-S5-39004, “Containment Building Area 2 Module CA01 Submodule CA01_39 Structural Outline – Horizontal Sections/Views,” Rev. 0
SV4-CA01-S5-39005, “Containment Building Area 2 Module CA01 Submodule CA01_39 Structural Outline – Specific Details,” Rev. 0
SV4-CA01-S5-39006, “Containment Building Area 2 Module CA01 Submodule CA01_39 Structural Outline – Vertical Sections/Views II,” Rev. 0

SV4-CA01-S5-39007, “Containment Building Area 2 Module CA01 Submodule CA01_39 Lateral Support Isometric and Breakdown View,” Rev. 0
SV4-CA01-S5B-39001, “Containment Building Area 2 Module CA01 Submodule CA01_39 Bill of Materials,” Rev. 0
SV4-GW-S9-100, “AP1000 Structural Modules General Notes I,” Rev. 3
SV4-GW-S9-101, “AP1000 Structural Modules General Notes - II,” Rev. 1
SV4-GW-S9-102, “AP1000 Structural Modules General Notes III,” Rev. 3
SV4-GW-S9-103, “AP1000 Structural Modules General Notes - IV,” Rev. 3
SV4-GW-S9-104, “AP1000 Structural Modules General Notes - V,” Rev. 2
SV4-GW-S9-105, “AP1000 Structural Modules General Notes VI,” Rev. 3
SV4-GW-S9-106, “AP1000 Structural Modules General Notes VII,” Rev. 3
SV4-GW-S9-200, “AP1000 Structural Modules Standard Structural Details,” Rev. 1
SV4-GW-S9-201, “AP1000 Structural Modules Standard Structural Details,” Rev. 1
SV4-GW-S9-202, “AP1000 Structural Modules Standard Structural Details,” Rev. 1
SV4-GW-S9-203, “AP1000 Structural Modules Standard Structural Details,” Rev. 0
SV4-GW-S9-204, “AP1000 Structural Modules Standard Structural Details,” Rev. 0
SV4-GW-S9-205, “AP1000 Structural Modules Standard Structural Details,” Rev. 0
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SV4-GW-S9-210, “AP1000 Structural Modules Standard Structural Details,” Rev. 1
SV4-GW-S9-211, “AP1000 Structural Modules Standard Structural Details,” Rev. 0
SV4-GW-S9-300, “AP1000 Structural Modules Standard Weld Details,” Rev. 1
SV4-GW-S9-301, “AP1000 Structural Modules Standard Weld Details,” Rev. 2
SV4-GW-S9-302, “AP1000 Structural Modules Standard Weld Details,” Rev. 1
SV4-GW-S9-303, “AP1000 Structural Modules Standard Weld Details,” Rev. 2
SV4-GW-S9-304, “AP1000 Structural Modules Standard Weld Details,” Rev. 1
SV4-GW-S9-305, “AP1000 Structural Modules Standard Weld Details,” Rev. 2
SV4-GW-S9-306, “AP1000 Structural Modules Standard Weld Details,” Rev. 2
SV4-GW-S9-307, “AP1000 Structural Modules Standard Weld Details,” Rev. 2
SV4-GW-S9-308, “AP1000 Structural Modules Standard Weld Details,” Rev. 2
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SV4-GW-S9-311, “AP1000 Structural Modules Standard Weld Details,” Rev. 1

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Design Documents
SV4-CA01-S4-08100, “Containment Building Areas 1&4 Module CA01 Subassembly 08 Structural Outline - Plan View,” Revision 0;
SV4-CA01-S4-08101, “Containment Building Areas 1&4 Module CA01 Subassembly 08 Structural Outline - Elevation View,” Revision 0;
SV4-GW-S9-103, “AP1000 Structural Modules General Notes IV,” Revision 3;
SV4-GW-S9-104, “AP1000 Structural Modules General Notes V,” Revision 2;
SV4-GW-S9-105, “AP1000 Structural Modules General Notes VI,” Revision 3;
SV4-GW-S9-311, “AP1000 Structural Modules Standard Weld Details,” Revision 1;
SV4-CA01-S4K-CV12910, “CA01-25 Installation of CA01-25, Leak Chase 22,” Revision 6;

Welding / Inspection Records
Welding Records for: CV12910-L22-1 and CV12910-L22-2;

S561-16-11564 (Alignment / Fit-up Report for CV12910-L22-1 and CV12910-L22-2);
S561-16-13386 (VT Report for CV12910-L22-1 and CV12910-L22-2);
V-16-PT-304-0748 (Root PT Report for CV12910-L22-1 and CV12910-L22-2);
V-16-PT-304-0784 (Final PT Report for CV12910-L22-1 and CV12910-L22-2);
V-16-UT-312-0450 (UT Report for CV12910-L22-1 and CV12910-L22-2);
WMR # 156637, Dated 3/24/2016;
WMR # 156644, Dated 3/28/2016;
WMR # 160170, Dated 4/11/2016;
WMR # 160591, Dated 4/7/2016;
Welder Performance Qualification Test # 5SS-02, ID 2159, Dated 11/6/2014;
Welder Performance Qualification Test # 5SS-14, ID 6953, Dated 2/23/2016;
Welder Performance Qualification Test # 5SS-14, ID 5597, Dated 3/17/2016

Material Test Reports
Certificate of Conformance and Certified Material Test Report from The Lincoln Electric Company, Customer PO # 132175-FPR12-01836-4, Lot 1181X;
Certificate of Conformance and Certified Material Test Report from The Lincoln Electric Company, Customer PO # 132175-FPR12-01836-8, Lot 1243B;
Certified Material Test Report CMTR-CA01-SV4-0012, Dated 2/26/2015 (CV12910-L22-1 and CV12910-L22-2 Plug Bar ASTM A240-S32101, Heat # 441228

Procedures
GWS-5, “AWS D1.6 - Stainless Structure Steel General Welding Specification,” Revision 4;
APP-VW20-Z0-023, “Welding Specification for ASTM A240 UNS S32101 Duplex Stainless Steel Plate,” Revision 3;
100-UT-312, "Ultrasonic Phased Array Examination of Structural Welds in Accordance with AWS D1.1 and D1.6," Revision 2;
100-PT-304, "Liquid Penetrant Examination in Accordance with AWS Structural Welding Code," Revision 6;
WPS5-10H.10HM70, Revision 14;
WPS5-10H.10HT70, Revision 7;
PQR PQ107-1, Revision 1;
PQR PQ871, Revision 0;
PQR SP256, Revision 2;
PQR SP394, Revision 1

Engineering and Design Coordination Reports
APP-CA00-GEF-119, “Leak Chase Weld Modifications,” Revision 0;
SV3-CA00-GEF-000007, “Optional Seal Weld SWD-131,” Revision 0

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Specifications:
APP-VL52-Z0-572, “Material Specification for ASTM A572 Grade 50 for SC Shield Building,” Rev. 0
APP-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,” Rev. 2

CMTR Packages:
12NNI136, Heat No. 2506069
12NNI154, Heat No. 2506067

NNI Nonconformity Reports:
NCR No/Rev: 878/A
NCR No/Rev: 280/C

Purchase Order Documentation Packages:
SV4-1208-SC-01K, “AP1000 Shield Building Structural Modules, Group 26 NNI JO 7342-F”
SV4-1208-SC-01L, “AP1000 Shield Building Structural Modules, Group 26 NNI JO 7342-F”

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Material Receiving Report J132175-MRR-15-05677
Purchase Order J132175-J400A-00, Revision 159
Quality Assurance Inspection Report Q445-15-11448
Technical Document List 132175-J400A-00-TDL, Revision 170

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WPS2-1.1S03, Revision 5
Lincoln Electric CMTR for Lot 1229P dated 4/9/2015
CAR 2016-1677, 4/19/16
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Construction Documents
Work Package, SV4-CA20-S4W-CV5302, "Installation of Sub-module CA20-13,"
Work Package, SV4-CA20-S4W-CV3268, "Installation of Sub-module CA20-07"
Drawing. SV4-CA20-S4K-CV14094, Installation of CA20-13, Leak Chase 09, Rev. 0
Weld Record CV14094-L09-3 with fit-up QC HP sign-off on 5/11/16
Weld Record CV14094-L09-4 with fit-up QC HP sign-off on 5/11/16
WPS2-1.1M73, Rev. 9
WQR for welding operators JCB5929 and PDM4746
MISTRAS V-16-UT-310-0548, Ultrasonic Examination Report, dated 5/10/2016

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Design Documents
APP-CA00-GEF-022, Rev. 1;
APP-CA00-GEF-850066, “CA01 & CA20 Leak Chase SWD Details,” Rev. 0;
APP-CA20-GEF-696, “Changes to CA20 Standard Weld Detail (SWD) 51, Rev. 0;
SV4-CA20-S5Y-00205, “Auxiliary Building Areas 5&6 Module CA20 Standard Welding Details,” Rev. 0
SV4-CA20-S4K-CV13501 Sheet 1 of 2, “CA20-12 Installation of CA20-12 Leak Chase 02,” Rev. 0;
SV4-CA20-S5B-12001, “Auxiliary Building Areas 5&6 Module CA20 Submodule CA20_12 Bill of Materials,” Rev. 0;
SV4-CA20-S5B-11001, “Auxiliary Building Areas 5&6 Module CA20 Submodule CA20_11 Bill of Materials,” Rev. 0;
SV4-CA20-S5Y-00003, “Auxiliary Building Areas 5&6 Module CA20 Submodules General Notes – III,” Rev. 2;

Welding / Inspection Records
Welding Records for CV13501-L02-1, -2, -3 and -4;
V-16-UT-310-0597, 10% UT examination report for CV13501-L01-3 and -4;
QC Inspection Reports: S561-16-14585 (CV13501-L02-3 fit-up), S561-16-14583 (CV13501-L02-4 fit-up), S561-16-14781 (CV13501-L02-3 and -4 Final Visual);

Welding Filler Material Procurement Specifications
TR-5.29-E81T1-K2M-JH4, “Specification for Low-Alloy Steel Electrodes for Flux Cored Arc Welding,” Rev 2;
TR-5.9-2209-GTAW, “Duplex Stainless Steel Bare Wire / Rods,” Rev. 2;

Material Test Reports
Test Report L16984 Rev. 2 (CV13501-L02-3 and -4 Plug Bar ASTM A572 Gr 60), document number 430000-CMTR-11-000137;
Heat JI5426 – Document Number 430000-CMTR-12-000201 (CV13501-L02-3 and -4 Backing Bar ASTM A36;
Certificate of Conformance and Certified Material Test Report for Weld Filler Metal Heat 1204V, and 1243B;

Procedures
APP-GW-GAP-420, "Engineering and Design Coordination Report," Rev. 10;
APP-GW-GAP-147, "AP1000 Current Licensing Basis Review," Rev. 3;
Quality inspection plan F-S561-004, “Structural Weld Inspection – Modules, and “Fabrication” and “Submodule Assembly” Tolerances,” Rev. 18 Changes 1 and 2;
Figure 8, “Prequalified CJP Groove Welded Joint Details,” from GWS-2, “AWS D1.1 – Structural Steel General Welding Standard,” Rev. 4 and 5;
APP-VW20-Z0-023, “Welding Specification for ASTM A240 UNS S32101 Duplex Stainless Steel Plate,” Rev. 3;
100-UT-310, "Ultrasonic Examination of Welds in Accordance with the AWS Structural Welding Code D1.1," Rev. 6;
100-MT-302, "Magnetic Particle Examination in accordance with AWS Structural Welding Code," Rev. 3;

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Design Documents
APP-CA20-GEF-696, “Changes to CA20 Standard Weld Detail (SWD) 51, Rev. 0;
APP-CA00-GEF-119, “Leak Chase Weld Modification,” Rev. 0;
SV4-CA20-S5Y-00205, “Auxiliary Building Areas 5&6 Module CA20 Standard Welding Details,” Rev. 0
SV4-CA20-S5Y-00003, “Auxiliary Building Areas 5&6 Module CA20 Submodules General Notes – III,” Rev. 2;
SV4-CA20-S5Y-00004, “Auxiliary Building Areas 5&6 Module CA20 Submodules General Notes – II,” Rev. 3;

Welding / Inspection Records
Welding Records for: CV12573-L08-3, CV12573-L08-4, CV14171-L11-3, CV14171-L11-3-RW1, CV14171-L11-4, and CV14171-L11-4-RW1;
V-16-MT-302-1638 (MT Report for CV12573-L08-3 and CV12573-L08-4);
V-16-MT-302-1622 (MT Report for CV14171-L11-3 and CV14171-L11-4);
V-16-MT-302-1646 (MT Report for CV14171-L11-3-RW1 and CV14171-L11-4-RW1);

V-16-UT-310-0710 (UT Report for CV14171-L11-3 and CV14171-L11-4);
V-16-UT-310-0714, 10% UT examination report for CV12573-L08-3 and CV12573-L08-4;
QC Inspection Reports: S561-16-15770 (100% Final Visual for CV12573-L08-3 and CV12573-L08-4), S561-16-15799 (CV14171-L11-3-RW1 and CV14171-L11-4-RW1 Cavity VT and Fit-up); S561-16-15684 (CV14171-L11-3 and CV14171-L11-4 Final Visual);

Material Test Reports
Test Report L16984 Rev. 2 (CV13501-L02-3 and -4 Plug Bar ASTM A572 Gr 60, Heat # 1503693), document number 430000-CMTR-11-000137;
Certificate of Conformance and Certified Material Test Report for Weld Filler Metal Heat 1204V;

Procedures
APP-GW-GAP-420, "Engineering and Design Coordination Report," Rev. 10;
APP-GW-GAP-147, "AP1000 Current Licensing Basis Review," Rev. 3;
Quality inspection plan F-S561-004, “Structural Weld Inspection – Modules, and “Fabrication” and “Submodule Assembly” Tolerances,” Rev. 18 Changes 1 and 2;
Figure 8, “Prequalified CJP Groove Welded Joint Details,” from GWS-2, “AWS D1.1 – Structural Steel General Welding Standard,” Rev. 4 and 5;
100-UT-310, "Ultrasonic Examination of Welds in Accordance with the AWS Structural Welding Code D1.1," Rev. 6;
100-MT-302, "Magnetic Particle Examination in accordance with AWS Structural Welding Code," Rev. 3;

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SNC CR 10241933;

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APP-CA02-S5-05003, “Containment Building Area 2 Module CA02 Submodule CA02-05 Structural Outline Vertical Sections / Views,” Rev. 2
APP-CA02-S5-01003, “Containment Building Area 2 Module CA02 Submodule CA02-01 Structural Outline Vertical Sections / Views,” Rev. 2

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APP-CA01-S5-09004, “Containment Building Area 3 Module CA01 Submodule CA01-09 Structural Outline – Horizontal Sections / Views I,” Rev. 6
APP-CA01-S5-09007, “Containment Building Area 3 Module CA01 Submodule CA01-09 Structural Outline – Horizontal Sections / Views II,” Rev. 0
APP-CA01-S5-37003, “Containment Building Area 4 Module CA01 Submodule CA01-37 Structural Outline – Vertical Sections / Views,” Rev. 5
APP-CA01-S5-37004, “Containment Building Area 4 Module CA01 Submodule CA01-37 Structural Outline – Horizontal Sections / Views,” Rev. 5
APP-CA01-S5-37002, “Containment Building Area 4 Module CA01 Submodule CA01-37 Break-down,” Rev. 6
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SV4-1020-CCK-880186, "Unit 4 Basemat Top Surface As Built El. 82'6"," Rev. 0

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Licensing Basis:
VEGP 3 & 4 FSAR, Rev. 3.2

Drawings:
SV4-1200-CRK-CV2456, "Unit 4 Auxiliary Building walls Elevation 66"-6' Concrete Placement Location," Rev. 1

Work Package:
SV4-1210-CCW-CV1815, " Unit 4 Nuclear Island-Auxiliary Building Interior Walls: Interior Wall Placements 9 thru 38 Elevation 66'-6" to 82'-6", Rev. 0

Design Specification:
SV3-CC01-Z0-027, “Safety Related Concrete Testing Services, Westinghouse," Rev. 4
SV3-CC01-Z0-026, “Safety Related Mixing and Delivering Concrete, Westinghouse," Rev. 6
SV3-CC01-Z0-031, “Safety Related Placing Concrete and Reinforcing Steel," Rev. 7

VSC26782, Density and Compression Strength Test Report, dated 3/16/2016

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Calculations
APP-1208-CCC-021, “Shield Building Connection Design Calculation: Auxiliary Building Reinforced Concrete Wall Q to Steel Composite Wall,” Revision 4
APP-1208-S3C-045, “Shield Building – SC Panel Fit-up Modified Weld Joint,” Revision 0

Engineering and Design Coordination Reports
APP-1208-GEF-345, “Shield Building, SC Panels, weld Joint for a face plate mismatch,” Revision 0
APP-CE01-GEF-058, “E&DCR for DWA Diameter Reduction, Addition of Hook Bar Detail and Modifying Direct Welded Rebar Fillet Sizes,” Revision 1
APP-CE01-GEF-060, “E&DCR for DWA Diameter Reduction, Addition of Hook Bar Detail and Modifying Direct Welded Rebar Fillet Sizes,” Revision 1
APP-CE01-GEF-063, “E&DCR for DWA Diameter Reduction, Addition of Hook Bar Detail and Modifying Direct Welded Rebar Fillet Sizes,” Revision 1
APP-CE01-GEF-064, “E&DCR for DWA Diameter Reduction, Addition of Hook Bar Detail and Modifying Direct Welded Rebar Fillet Sizes,” Revision 1
APP-CE01-GEF-070, “E&DCR for DWA Diameter Reduction, Addition of Hook Bar Detail and Modifying Direct Welded Rebar Fillet Sizes,” Revision 0

Miscellaneous
DCP_DCP_007527, “Documentation of ACI 349-01 Strength Reduction Factor,” 09/19/2015
DCP_DCP_007785, “Position on AP1000 Shield Building RC/SC Connection Reinforcing Bar Testing,” 01/14/2016
Procedure QS 09.04, “Visual Examination – Structural Welding AP1000 Modules – Safety Related,” Revision 03.01
Tensile Test Data Record MS-16-00008, Revision 0
UNSAT Inspection Report S561-16-13800, dated 04/26/2016

Nonconformance & Disposition Reports
SV0-MB01-GNR-000001, "MB01 Steam Generator Storage Condition," Revision 0
SV3-1208-GNR-000052, “Course 3 Q-Wall Transition Shield Building,” Revision 0
SV3-CA20-GNR-000830, "CA20 Rebar Assembly Holes," Revision 0
SV3-CA20-GNR-000842, “CA20 Coupler Hole Dimensions Part 2,” Revision 0
SV3-CC01-GNR-000272, “High Slump Placement 13M,” Revision 0
SV3-CC01-GNR-000285, “NI-3 Aux. Bldg. wall thickness violation El. 94 to 100,” Revision 0
SV3-CC01-GNR-000291, “NI3 Aux, Wall Q violating ACI 117 and d-dimension 66’-6” to 82’-6”,” Revision 0
SV3-CE01-GNR-000170, “Cives - Incorrect plate material,” Rev. 0
SV3-CE01-GNR-000171, “CA03 Landing Plates Construction aid Holes,” Rev. 0
SV3-CR01-GNR-000437, "Reduced Wall Thickness; placement #26 at I-line," Revision 0
SV3-CR01-GNR-000493, “87’-6” PXS A Rebar Top Mat Clear Cover,” Revision 0
SV3-WRS-GNR-000079, "Foreign Material Within WRS-PLW-872", Revision 0
SV3-WRS-GNR-000081, "Indeterminate Internal Cleanliness", Revision 0
SV4-CR01-GNR-000094, “Aux. Bldg Wall 5 Short Lap Splice,” Revision 0

SNC Condition Reports
10093281
10093390
10135177
10153759
10171948
10229147

WEC Corrective Action, Prevention and Learnings
100316580
100328531
100353583
100375528

WECTEC Corrective Action Reports
2015-3294
2015-3998
2016-1805
2016-1950
2016-1951
2016-1961

4. OTHER INSPECTION RESULTS

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Nonconformance and Disposition Reports (N&D):
SV3-CA20-GNR-000680, "Volume for Fuel Transfer and Spent Fuel Pool"

Weld Data Records:
CB&I SV3-CA20-S4K-CV1887, Weld Map – CA20 SA4 Wall Assembly – Section A-A, Sheets 1 & 2, Rev. 7
CB&I SV3-CA20-S4K-CV1519, Weld Map – CA20 SA3 Wall Assembly – Section B-B, Sheet 1 of 1, Rev. 1

Stone & Webster, Inc. Weld Record for CV1519-2-C1 and work package SV3-CA20-S4W-CV2560

Non-Destructive Examination (NDE) reports:
V-16-PT-304-1143 for weld-no. CV1887-15L-C1
V-16-UT-312-0676 for weld-no. CV1887-15L-C1
V-16-PT-304-1110 for weld-no. CV1519-2-C1
V-16-UT-311-0662 for weld-no. CV1519-2-C1
V-16-MT-302-1482 for weld-no. CV1887-14L-C1
V-16-UT-310-0673 for weld-no. CV1887-14L-C1
V-16-MT-302-1462 for weld-no. CV1519-1-C1
V-16-UT-310-0669 for weld-no. CV1519-1-C1

Miscellaneous:
SV3-CA20-SUR-800000, "SFP North Wall Alignment Plan Evaluation" prepared by Structural Integrity Associates, Inc., Revision 0
SV3-CA20-SUR-800001, "Addendum to Structural Integrity Calculation 1501235.301.R0 - Proposed SFP North Wall Corner Weld Cutout Modification" prepared Structural Integrity Associates, Inc., Revision 0

ITAAC INSPECTED

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
25	2.1.02.07a.ii	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.	ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	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.
71	2.1.03.02c	2.c) The reactor vessel arrangement is as shown in Figure 2.1.3-3.	Inspection of the as-built system will be performed.	The as-built RXS will accommodate the reactor vessel arrangement shown in Figure 2.1.3-3.
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.	Inspection will be conducted of the as-built components as documented in the ASME design reports.	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.
73	2.1.03.04	4. Pressure boundary welds in components identified in Table 2.1.3-1 as ASME Code Section III meet ASME Code Section III requirements.	Inspection of as-built pressure boundary welds will be performed in accordance with the 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.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
82	2.1.03.09a.ii	9.a) The Class 1E equipment identified in Table 2.1.3-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.1.3-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.
93	2.2.01.03a	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.	Inspection of the as-built pressure boundary welds will be performed in accordance with the 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.
102	2.2.01.06a.ii	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.	ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.2.1-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
171	2.2.03.07a.ii	7.a) The Class 1E equipment identified in Table 2.2.3-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.2.3‑1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.
189	2.2.03.08c.vi.01	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	vi) Inspections of each of the following tanks will be conducted: 1. CMTs	vi) The calculated volume of each of the following tanks is as follows: 1. CMTs ≥ 2487 ft3

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
550	2.5.02.11	11. The PMS hardware and software is developed using a planned design process which provides for specific design documentation and reviews during the following life cycle stages: a) Not used b) System definition phase c) Hardware and software development phase, consisting of hardware and software design and implementation d) System integration and test phase e) Installation phase	Inspection will be performed of the process used to design the hardware and software.	A report exists and concludes that the process defines the organizational responsibilities, activities, and configuration management controls for the following: a) Not used. b) Specification of functional requirements. c) Documentation and review of hardware and software. d) Performance of system tests and the documentation of system test results, including a response time test performed under maximum CPU loading to demonstrate that the PMS can fulfill its response time criteria. e) Performance of installation tests and inspections.
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.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
761	3.3.00.02a.i.b	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	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 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.c) A report exists which reconciles deviations during 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.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
763	3.3.00.02a.i.d	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	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.
764	3.3.00.02a.ii.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.	ii) An inspection of the as-built concrete thickness will be performed.	ii.a) A report exists that concludes that the containment internal structures as-built concrete thicknesses conform to the building sections defined in Table 3.3-1.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
765	3.3.00.02a.ii.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.	ii) An inspection of the as-built concrete thickness will be performed.	ii.b) A report exists that concludes that the as-built concrete thicknesses of the shield building sections conform to the building sections defined in Table 3.3-1.
779	3.3.00.03c	3. Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations provide shielding during normal operations.	Inspection of the as-built nuclear island structures wall and floor thicknesses will be performed.	c) A report exists and concludes that the shield walls and floors of the non-radiologically controlled area of the auxiliary building as defined in Table 3.3-1 except for designed openings or penetrations are consistent with the concrete wall thicknesses provided in Table 3.3-1.
789	3.3.00.07aa	7.a) Class 1E electrical cables, communication cables associated with only one division, and raceways are identified according to applicable color-coded Class 1E divisions.	Inspections of the as-built Class 1E cables and raceways will be conducted.	a) Class 1E electrical cables, and communication cables inside containment associated with only one division, and raceways are identified by the appropriate color code.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
790	3.3.00.07ab	7.a) Class 1E electrical cables, communication cables associated with only one division, and raceways are identified according to applicable color-coded Class 1E divisions.	Inspections of the as-built Class 1E cables and raceways 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, and raceways are identified by the appropriate color code.
791	3.3.00.07ac	7.a) Class 1E electrical cables, communication cables associated with only one division, and raceways are identified according to applicable color-coded Class 1E divisions.	Inspections of the as-built Class 1E cables and raceways will be conducted.	c) Class 1E electrical cables, and communication cables in the radiologically controlled area of the auxiliary building associated with only one division, and raceways are identified by the appropriate color code.
792	3.3.00.07ba	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 raceways will be conducted.	a) Class 1E electrical cables and communication cables inside containment 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.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
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 raceways 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.
794	3.3.00.07bc	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 raceways will be conducted.	c) Class 1E electrical cables and communication cables in the 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.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
799	3.3.00.07d.i	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: i) Within the main control room and remote shutdown room, the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch.	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: i) Within the main control room and remote shutdown room, the vertical separation is 3 inches or more and the horizontal separation is 1 inch or more.

800	3.3.00.07d.ii.a	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: ii) Within other plant areas (limited hazard areas), the minimum separation is defined by one of the following: 1) The minimum vertical separation is 5 feet and the minimum horizontal separation is 3 feet. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables <2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations involving an enclosed raceway and an open raceway, the	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: ii.a) Within other plant areas inside containment (limited hazard areas), the separation meets one of the following: 1) The vertical separation is 5 feet or more and the horizontal separation is 3 feet or more except. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables <2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations that involve an enclosed raceway and an open raceway, the minimum vertical separation is 1 inch if the enclosed raceway is below the open raceway. 5) For configurations that involve enclosed

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
			minimum vertical separation is 1 inch if the enclosed raceway is below the open raceway. 5) For configuration involving enclosed raceways, the minimum separation is 1 inch in both horizontal and vertical directions.	raceways, the minimum vertical and horizontal separation is 1 inch.

801	3.3.00.07d.ii.b	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: ii) Within other plant areas (limited hazard areas), the minimum separation is defined by one of the following: 1) The minimum vertical separation is 5 feet and the minimum horizontal separation is 3 feet. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables <2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations involving an enclosed raceway and an open raceway, the	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: ii.b) Within other plant areas inside the non-radiologically controlled area of the auxiliary building (limited hazard areas), the separation meets one of the following: 1) The vertical separation is 5 feet or more and the horizontal separation is 3 feet or more except. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables < 2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations that involve an enclosed raceway and an open raceway, the minimum vertical separation is 1 inch if the enclosed raceway is below the open raceway. 5) For

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
			minimum vertical separation is 1 inch if the enclosed raceway is below the open raceway. 5) For configuration involving enclosed raceways, the minimum separation is 1 inch in both horizontal and vertical directions.	configurations that involve enclosed raceways, the minimum vertical and horizontal separation is 1 inch.

802	3.3.00.07d.ii.c	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: ii) Within other plant areas (limited hazard areas), the minimum separation is defined by one of the following: 1) The minimum vertical separation is 5 feet and the minimum horizontal separation is 3 feet. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables <2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations involving an enclosed raceway and an open raceway, the	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: ii.c) Within other plant areas inside the radiologically controlled area of the auxiliary building (limited hazard areas), the separation meets one of the following: 1) The vertical separation is 5 feet or more and the horizontal separation is 3 feet or more except. 2) The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables < 2/0 AWG. 3) For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch. 4) For configurations that involve an enclosed raceway and an open raceway, the minimum vertical separation is 1 inch if the enclosed raceway is below the open raceway. 5) For

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
			minimum vertical separation is 1 inch if the enclosed raceway is below the open raceway. 5) For configuration involving enclosed raceways, the minimum separation is 1 inch in both horizontal and vertical directions.	configurations that involve enclosed raceways, the minimum vertical and horizontal separation is 1 inch.
803	3.3.00.07d.iii.a	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iii) Where minimum separation distances are not maintained, the circuits are run in enclosed raceways or barriers are provided.	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iii.a) Where minimum separation distances are not met inside containment, the circuits are run in enclosed raceways or barriers are provided.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
804	3.3.00.07d.iii.b	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iii) Where minimum separation distances are not maintained, the circuits are run in enclosed raceways or barriers are provided.	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iii.b) Where minimum separation distances are not met inside the non-radiologically controlled area of the auxiliary building, the circuits are run in enclosed raceways or barriers are provided.
805	3.3.00.07d.iii.c	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iii) Where minimum separation distances are not maintained, the circuits are run in enclosed raceways or barriers are provided.	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iii.c) Where minimum separation distances are not met inside the radiologically controlled area of the auxiliary building, the circuits are run in enclosed raceways or barriers are provided.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
806	3.3.00.07d.iv.a	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iv) Separation distances less than those specified above and not run in enclosed raceways or provided with barriers are based on analysis	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iv.a) For areas inside containment, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.
807	3.3.00.07d.iv.b	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iv) Separation distances less than those specified above and not run in enclosed raceways or provided with barriers are based on analysis	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iv.b) For areas inside the non-radiologically controlled area of the auxiliary building, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
808	3.3.00.07d.iv.c	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iv) Separation distances less than those specified above and not run in enclosed raceways or provided with barriers are based on analysis	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: iv.c) For areas inside the radiologically controlled area of the auxiliary building, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.
809	3.3.00.07d.v.a	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: v) Non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is considered as associated circuits and subject to Class 1E requirements.	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: v.a) For areas inside containment, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring.

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

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
811	3.3.00.07d.v.c	7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: v) Non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is considered as associated circuits and subject to Class 1E requirements.	Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following: v.c) For areas inside the radiologically controlled area of the auxiliary building, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring.
812	3.3.00.07e	7.e) Class 1E communication cables which interconnect two divisions are routed and separated such that the Protection and Safety Monitoring System voting logic is not defeated by the loss of any single raceway or fire area.	Inspections of the as-built Class 1E communication cables will be conducted.	Class 1E communication cables which interconnect two divisions are routed and separated such that the Protection and Safety Monitoring System voting logic is not defeated by the loss of any single raceway or fire area.

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access & Management System
ADS	Automatic Depressurization System
AISC	American Institute of Steel Construction
ANI	Authorized Nuclear Inspector
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
CAR	Corrective Action Report
CB&I	Chicago Bridge and Iron
CCS	Component Cooling Water System
CFR	Code of Federal Regulations
CMT	Core Makeup Tank
CMTR	Certified Material Test Report
COL	Combined License
CRDM	Control Rod Drive Mechanism
DCD	Design Control Document
DVI	Direct Vessel Injection
E&DCR	Engineering and Design Coordination Report
EPC	Engineering, Procurement, and Construction
EQ	Environmental Qualification
FCAW	Flux Core Arc Welding
GTAW	Gas Tungsten Arc Welding
IEEE	Institute of Electrical and Electronics Engineers
IP	Inspection Procedures
IR	Inspection Report
IRC	Inside Reactor Containment
IRWST	In-containment Refueling Water Storage Tank
ITAAC	Inspections, Tests, Analyses, and Acceptance Criteria
HX	Heat Exchanger
MAB	Modular Assembly Building
MOV	Motor Operated Valve
MT	Magnetic Particle Testing
N&D	Nonconformance & Disposition Report
NCSP	Nuclear Construction and Startup Procedures
NCV	Non-cited Violation
NDE	Nondestructive Examination
NI	Nuclear Island
NNAB	National Nuclear Accrediting Board
NQA	Nuclear Quality Assurance
NRC	Nuclear Regulatory Commission
ORC	Outside Reactor Containment
PARS	Publically Available Records
PMS	Protection and Safety Monitoring System
PQR	Procedure Qualification Record
PRHR	Passive Residual Heat Removal
PT	Liquid Penetrant Testing
PWHT	Post Weld Heat Treatment
QA	Quality Assurance

QC	Quality Control
QVD	Quality Verification Documentation
RCDT	Reactor Coolant Drain Tank
RCS	Reactor Coolant System
RPV	Reactor Pressure Vessel
SAT	Systems Approach Training
SAW	Submerged Arc Welding
SCM	Shaw Cable Manager Program
SNC	Southern Nuclear Company
SSC	Structure(s), System(s), and Component(s)
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic Testing
VEGP	Vogtle Electric Generating Plant
WDN	Welding Defect Notice
WEC	Westinghouse Electric Company
WMR	Welding Material Requisitions
WPS	Welding Procedure Specification
WQR	Welder Qualification Report

Letter to M. Yox from Michael Ernstes dated July 28, 2016

SUBJECT: VOGTLE UNIT 3 COMBINED LICENSE, VOGTLE UNIT 4 COMBINED LICENSE - NRC INTEGRATED INSPECTION REPORTS 05200025/2016002, 05200026/2016002

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