UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30303-1257

November 9, 2017

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

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 - NRC INTEGRATED INSPECTION REPORTS 05200025/2017003, 05200026/2017003

Dear Mr. Yox:

On September 30, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Vogtle Electric Generating Plant, (VEGP) Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on October 11, 2017 with Mr. Martin Washington and other members of your staff.

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

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

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

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

Sincerely,

/RA/

Jamie Heisserer, Branch Chief
Construction Inspection Branch 1
Division of Construction Oversight (DCO)

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

Enclosure: NRC Inspection Report (IR) 05200025/2017003, 05200026/2017003
w/attachment: Supplemental Information

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SUBJECT: VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 - NRC INTEGRATED INSPECTION REPORTS 05200025/2017003, 05200026/2017003

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U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers:	5200025 5200026
License Numbers:	NPF-91 NPF-92
Report Numbers:	05200025/2017003 05200026/2017003
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Vogtle Electric Generating Plant Unit 3 Vogtle Electric Generating Plant Unit 4
Location:	Waynesboro, GA
Inspection Dates:	July 1, 2017 through September 30, 2017
Inspectors:	A. Artayet, Senior Construction Inspector, DCO T. Brimfield, Resident Inspector, DCO P. Carman, Construction Inspector, DCO T. Chandler, Resident Inspector, DCO J. Christensen, Construction Inspector, DCO N. Coovert, Senior Construction Inspector, DCO G. Crespo, Senior Construction Inspector, DCO B. Davis, Senior Construction Inspector, DCO P. Donnelly, Resident Inspector, DCO J. Fuller, Senior Resident Inspector, DCO D. Harmon, Construction Inspector, DCO B. Kemker, Senior Resident Inspector, DCO A. Lerch, Construction Inspector, DCO J. Lizardi-Barreto, Construction Inspector, DCO M. Magyar, Construction Inspector, DCO A. Matos-Marin, Construction Inspector, DCO K. McCurry, Construction Inspector, DCO A. Ponko, Senior Construction Inspector, DCO C. Read, Resident Inspector, DCO C. Smith, Construction Inspector, DCO S. Temple, Resident Inspector, DCO R. Williams, Senior Reactor Inspector, DRS
Accompanying Personnel:	Cheng-Ih (John) Wu, Mechanical Engineer, NRO
Approved by:	Jamie Heisserer, Branch Chief Construction Inspection Branch 1 Division of Construction Oversight

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2017003, 05200026/2017003; 07/01/2017 through 09/30/2017; Vogtle Electric Generating Plant Unit 3, Vogtle Electric Generating Plant Unit 4, routine integrated inspection report.

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

A. NRC-Identified and Self Revealed Findings
None

B. Licensee-Identified Violations
None

REPORT DETAILS

Summary of Plant Construction Status

On August 24, 2017, the NRC approved license amendments 85 and 84 for Vogtle Unit 3 and 4, respectively. These amendments consolidated 270 ITAAC by deleting 85 ITAAC and regrouping 185 pre-consolidation (old) ITAAC together into 42 post-consolidation (new) ITAAC. Specifics on these changes are available in ML17216A066 and ML17216A067.

As the previous ITAAC were wholly incorporated into the new ITAAC, any inspections and findings will be incorporated into the new ITAAC. Attachment 1 to this report contains the list of ITAAC numbers before and after the license amendment. Attachment 2 contains a list of inspection reports where the NRC conducted inspections on pre-consolidation license amendment ITAAC, which are now credited to the post-consolidation license amendment ITAAC numbers.

The LAR was issued in the middle of an inspection report period, therefore this report contains ITAAC from before and after the LAR. Any old ITAAC will be indicated with an asterisk and also listed in Attachment 2.

During this report period in unit 3, steam generator B and accumulator A & B were set in containment. In the accumulator compartments (rooms 11206 and 11207), installation of pipes, valves, and their associated supports began. In addition, concrete was placed in the In-Containment Refueling Water Storage Tank (IRWST) floor, the refueling cavity, and in the walls of the steam generator A compartment. In the auxiliary building, rebar installation continued for floors and walls and the first wall from 100’ – 117’ 6” was placed. In the shield building, rebar installation and concrete placement continued on additional reinforced concrete sections below 146’ 10”.

In unit 4, in containment the pressurizer compartment was placed. Concrete was placed up to 96’ 6” on the west side and up to 87’ 6” on the east side of containment. In the auxiliary building, additional floors and walls were placed at 82’ 6” and 100’. In the shield building, course 03 and 04 were set and concrete was placed up to 131’ 6”.

1. CONSTRUCTION REACTOR SAFETY

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

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

1A01 (Unit 3) ITAAC Number 2.1.01.07.iv (11) / Family 13F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.01.07.iv (11). The inspectors used the following NRC Inspection Procedures (IPs)/sections to perform this inspection:

- 65001.13-02.01 - Fuel Rack Installation

- 65001.13-02.05 - Quality Assurance Program (Corrective Action Program)

The inspectors conducted a direct inspection of the new and spent fuel racks to verify the racks met the criteria in the criticality analysis reports and structural/seismic analysis reports. The inspectors reviewed storage rack parameters to verify they were within the tolerances listed in the storage rack criticality analysis. The inspectors also reviewed the equipment preservation records for the new and spent fuel racks to verify preventative maintenance requirements were being satisfied.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.06-02.05 - Problem Identification and Resolution
- 65001.07-02.05 - Problem Identification and Resolution
- 65001.F-02.02-Fabrication Records Review
- 65001.F-02.04-General QA Review

The inspectors reviewed fabrication records associated with Unit 3 reactor coolant system (RCS) components to verify pressure boundary materials met the applicable requirements of design documents; the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section III, 1998 Edition, 2000 Addenda (ASME Code); and Westinghouse (WEC) design and fabrication specifications. Specifically, the inspectors selected the channel head, including the forged outlet and Passive Residual Heat Removal (PRHR) Heat Exchanger (HX) nozzles, the tubesheet, tubes, and the inlet and PRHR HX nozzle safe-ends for steam generator 1 (Serial No. SV3-RCS-MB-01); the reactor coolant pump (RCP) casing 1B (Serial No. 1282); and the body, nozzle, disc insert, disc holder and bellow assembly, bonnet bottom flange, bonnet stud, and outlet stud nut for pressurizer safety valve V005A (Serial No. N900028-00-0009).

The inspectors reviewed design documents to determine whether the documents adequately defined the final design of the steam generator, reactor coolant pump, and pressurizer safety valve. Specifically, the inspectors reviewed material and fabrication attributes of the parts identified above to ensure the ASME Code, Section III; WEC design report; design drawings; and the Updated Final Safety Analysis Report (UFSAR) requirements were captured in the final as-built condition of the components.

The inspectors reviewed fabrication records for the above components to verify compliance with applicable documents, codes, standards, regulations, and quality and

technical requirements. Specifically, the inspectors reviewed the following types of documents:

- purchase orders to verify design requirements and 10 Code of Federal Regulations (CFR) Part 21 and Part 50, Appendix B, requirements were appropriately specified;
- certified material test reports to verify the materials were properly heat treated, met the specified chemical, mechanical, impact, and nondestructive testing requirements, and that no repairs were made without approval from the purchaser;
- ASME Code data reports and hydrostatic test reports to ensure ASME Section III Code requirements were met and traceability of reports and materials was maintained; and
- final quality data packages to verify the records were complete, accurate, reviewed and approved by the responsible organization(s), and provided evidence that the quality and code requirements were satisfied.

The inspectors also reviewed a sample of purchase orders and vendor audits for the steam generator and pressurizer safety valve to determine whether:

- the contractor had adequate oversight of the vendor and the entire scope of work included in the purchase order was evaluated prior to purchasing and approving shipment of the applicable components;
- the records supplied by the vendor were the type required by the purchase order and included all applicable elements specified in the procedures and codes;
- critical attributes associated with the ITAAC were correctly identified, and the documents were consistent with code requirements and the UFSAR;
- purchase orders specified the applicable quality, technical, material, and regulatory requirements; and
- the licensee, vendor, and fabricator had established an effective method for tracking completion of design and test acceptance criteria for work.

The inspectors reviewed corrective action documents initiated by Southern Nuclear Operating Company (SNC) and Westinghouse associated with issues identified during the inspection to determine whether the issues were adequately captured in the appropriate corrective action programs.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.03 - Inspection of ITAAC-Related Installation of Piping
- 65001.03-02.01 - Purchase and Receipt of Materials
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.02-Fabrication Records Review
- 65001.F-02.04-General QA Review

The inspectors reviewed procurement and fabrication records associated with ASME pipe spools for the Unit 3 RCS to verify that materials met the applicable requirements of the ASME Section III Code, the UFSAR, and design documents. The inspectors reviewed documents associated with the following RCS pipe spools and associated pipe fittings:

- SV3-RCS-PLW-081-1 (automatic depressurization system (ADS) outlet piping, RCS-PL-L012A),
- SV3-RCS-PLW-081-2 (ADS outlet piping, RCS-PL-L012A),
- SV3-RCS-PLW-030-1R1 (ADS fourth-stage inlet piping, RCS-PL-L133B),
- SV3-RCS-PLW-021-1 (pressurizer spray piping, RCS-PL-L110A),
- SV3-RCS-PLW-021-2 (pressurizer spray piping, RCS-PL-L110A),
- SV3-RCS-PLW-022-5 (pressurizer spray piping, RCS-PL-L110A),
- SV3-RCS-PLW-022-6 (pressurizer spray piping, RCS-PL-L110A), and
- SV3-RCS-PLW-028-1 (chemical and volume control system (CVS) purification piping, RCS-PL-L112).

The inspectors reviewed certified material test reports (CMTRs) to verify materials were properly heat treated and met the specified chemical, mechanical, and nondestructive testing requirements of ASME Section II and ASME Section III Code, 1998 edition with 2000 addenda, the UFSAR, and WEC design documents. For pipe bends performed by the vendor, the inspectors reviewed quality control bending reports, post bend heat treatment reports, and vendor drawings to verify ASME Section III Code and WEC design requirements were met for post bend heat treatment and wall thickness.

The inspectors reviewed certificates of compliance, ASME Form NPP-1 reports, CMTRs, and vendor drawings to ensure material traceability was maintained. In addition, the inspectors reviewed the NPP-1 reports and design drawings to determine if attributes such as pipe length, pipe wall thickness, ovality, and bend radius were met, and if materials were traceable to quality fabrication records and were in accordance with ASME Code, Section III, and WEC design requirements.

The inspectors reviewed purchase orders and receipt inspections to verify purchase orders specified the applicable quality, technical, material, and regulatory requirements and the material in the receipt inspections conformed to the purchase order and is traceable to quality fabrication records.

In addition, the inspectors reviewed Engineering and Design Coordination Report (E&DCR) APP-RCS-GEF-106 to verify if the licensee has established an effective method for tracking, evaluating, and dispositioning changes. Specifically, the inspectors reviewed the E&DCR and its affected design drawings to verify changes were made to the design drawings as specified by a design change.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.06 - Inspection of ITAAC-Related Installation of Mechanical Components
- 65001.06-02.05 - Problem Identification and Resolution
- 65001.07 - Inspection of ITAAC-Related Installation of Valves
- 65001.07-02.04 - Testing and Verification
- 65001.07-02.05 - Problem Identification and Resolution
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.01-Design Document Review
- 65001.F-02.04-General QA Review

The inspectors reviewed design documents and applicable construction specifications, drawings, and procedures, and interviewed personnel to verify that the documents adequately defined the final design and arrangement of structures, systems and components (SSCs) in the RCS system. Additionally, the inspectors reviewed SSC attributes to ensure they were correctly identified, documented, reviewed, and approved by responsible engineering personnel. Specifically, the inspectors performed these reviews for the following components associated with the indicated commodity:

- steam generator A (MB01)
- steam generator B (MB01)
- RCS-PL-V005A, pressurizer safety valve (PV62)
- RCS-PL-V005B, pressurizer safety valve (PV62)

The inspectors reviewed the following design documents associated with the steam generators and pressurizer safety valves:

- WEC design specification
- ASME generic design report
- design drawings
- plant and system transient analyses
- licensing bases documents

The inspectors selected specific inspection criteria and critical attributes for the SSCs, along with inherent characteristics of engineering programs, to verify that the program controlling design and fabrication activities had been established and were correctly implemented. The criteria selected by the inspectors also considered requirements included by reference to test codes and references to requirements contained in the

UFSAR. In addition, the inspectors selected a sample of critical attributes and scenarios to determine if internal and external events or hazards could affect the component's performance and if that could result in a more than minimal impact to the conclusions made in the WEC transient analysis and in Chapter 15 of the UFSAR.

The inspectors reviewed a sample of personnel qualification records and job task training matrix for the engineers who performed design activities, specifically transient analyses. This review was to verify that the design documents were created and verified by qualified engineers and that personnel involved in the development of design documents met WEC procedure and ASME Section III qualification requirements. The inspectors also reviewed Registered Professional Engineer (RPEs) records for the WEC design specifications for the steam generators to verify qualification records met WEC procedure, ASME, and NQA-1 requirements.

Specifically for the steam generators, the inspectors reviewed the as-built component design documents for the Unit 3 steam generators to verify that the component was built in accordance with ASME Code Section III requirements. These documents included:

- as-built design report and applicable reconciliation documents;
- quality assurance data packages (QADP); and
- as-built design drawings.

For the steam generator, the inspectors selected the following criteria for review:

- a sample of design attributes associated with component classification and Service Level in accordance with applicable requirements of ASME Section III, Subpart NB, 1998 ed. with 2000 addenda;
- component parameters including moisture carryover, primary temperature and pressure, and secondary temperature and pressure;
- operating experience/lessons learned from San Onofre Nuclear Generating Station (SONGS), as documented in NRC Augmented Inspection Team Report, ML12188A748, for inadequate design margins, anti-vibration bars, and tube spacing/tolerances; and
- SSC conditions/operations with respect to design assumptions in heat transfer calculations, and as described in the UFSAR.

The inspectors selected a sample of stress and design analyses for subcomponents to verify that the design inputs were correctly identified and documented and that the subcomponents were designed in accordance with the ASME Section III requirements. Specifically, the review was focused on how the licensee's contractor related the design requirements to ASME requirements in order to ensure the component would meet its design safety functions during normal operations and event conditions. The inspectors reviewed the steam generator heat transfer calculations, design specifications, and transient analyses to verify that a selected sample of assumptions and results were consistent with Chapter 15 of the UFSAR.

The inspectors reviewed a sample of Unit 3 deviation notices to verify that the conditions were adequately evaluated by the responsible organizations and that the accepted condition complied with the final design. The inspectors also reviewed

corrective action documents issued during the inspection to verify that issues were entered into the licensee or applicable contractor corrective action program in accordance with corrective action program requirements.

Also, the inspectors reviewed the licensee's contractor and licensee's operating experience/lessons learned evaluations and Corrective Action Program (CAP) documentation with respect to historical design issues associated with tube spacing, tolerances, and anti-vibration bars. The inspectors reviewed these documents to verify that the licensee and contractor had considered and addressed the inadequate design margins from the SONGS' steam generators into the AP1000 steam generator design.

Specifically, for the pressurizer safety valves, the inspectors reviewed the as-built component design documents for the Unit 3 self-actuating pressurizer safety valves, RCS-PL-V005A/B, to verify that the valve was built in accordance with the ASME Code, Section III requirements. These documents included:

- valve data sheets;
- as-built design report and applicable reconciliation documents;
- as-built design drawings; and
- valve functional requirements analysis.

For the self-actuating pressurizer safety valves, the inspectors selected the following criteria for review:

- adequate service level code design, stresses (thermal, pressure, etc.) and minimum wall thickness were in accordance with the ASME Code, Section III Articles NB-3000 and NB-7000;
- no common mode design failures existed, including seat material;
- adequate opening time to ensure that the RCS remains protected; and
- sufficient design capacity existed such that no one RCS component goes above 110% of design pressure with two valves open.

The inspectors selected a sample of stress and design analyses for subcomponents to verify that the design inputs were correctly identified and documented and that the subcomponents were designed in accordance with the ASME Code, Section III requirements. Specifically, the review was focused on how the licensee's contractor related the design requirements to the ASME Code requirements in order to ensure the component would meet its design safety functions during normal operations and event conditions. The inspectors also reviewed the testing and analysis for the pressurizer safety valves to verify the testing was conducted and valve set pressure were in accordance with the ASME Code, Section III.

The inspectors reviewed a sample of deviation notices to verify that the conditions were adequately evaluated by the responsible organizations and that the accepted condition complied with the final design. The inspectors also reviewed corrective action documents issued during the inspection to verify that issues were entered into the licensee or applicable contractor corrective action program in accordance with program requirements.

b. Findings

No findings were identified.

1A05 (Unit 3) ITAAC Number 2.1.02.02b (14) / Family 03F ***ITAAC Deleted per LAR 85***

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02b (14). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03 - Inspection of ITAAC-Related Installation of Piping
- 65001.03-02.02 - Storage and Handling
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed storage conditions for a sample of ASME pipe spools for the Unit 3 RCS. Specifically, the inspectors observed ASME pipe storage areas to determine if proper measures were taken to protect against corrosion, contamination, deterioration, misuse, and physical damage in accordance with WECTEC equipment storage quality standards and that the storage level identified was appropriate for the ASME piping class and material type. The inspectors reviewed the markings on the pipe spools to determine whether they were in accordance with the ASME Code, Section III and provided traceability to receipt and fabrication documents. The pipe spools sampled were:

- SV3-RCS-PLW-081-1 (ADS outlet piping, RCS-PL-L012A),
- SV3-RCS-PLW-030-1R1 (ADS fourth-stage inlet piping, RCS-PL-L133B),
- SV3-RCS-PLW-021-1 (pressurizer spray piping, RCS-PL-L110A), and
- SV3-RCS-PLW-028-1 (CVS purification piping, RCS-PL-L112).

b. Findings

No findings were identified.

1A06 (Unit 3) ITAAC Number 2.1.02.03a (15) / Family 06B ***ITAAC Deleted per LAR 85***

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.03a (15). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06 - Inspection of ITAAC-Related Installation of Mechanical Components
- 65001.06-02.02 - Component Welding
- 65001.06-02.05 - Problem Identification and Resolution
- 65001.07 - Inspection of ITAAC-Related Installation of Valves
- 65001.07-02.02 - Component Welding

- 65001.07-02.05 - Problem Identification and Resolution
- 65001.B- Inspection of the ITAAC-Related Welding Program
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records

The inspectors reviewed welding and non-destructive examination (NDE) records for steam generator A to determine if the welding and associated inspections were completed in accordance with the applicable procurement specifications and portions of the ASME BPVC. The inspectors reviewed a sample of welding procedures and associated procedure qualification records that were used to weld the steam generator to determine if they had been written and qualified in accordance with the requirements of the ASME Code. The inspectors also selected a sample of steam generator welder qualification records to determine if the welders had been qualified in accordance with the ASME Code. The inspectors selected welds 5101-71, 109-51, 116-51, 113-51, 114-51, 103-51, 201-96b, and the weld prep build up on RCP casing 1B for review. For each weld the inspectors reviewed:

- weld maps and traceability records to verify the traceability of weld number to welders, welding procedures, and materials used;
- heat treatment reports to determine if the welds were post weld heat treated in accordance with the welding procedure and ASME Code;
- nondestructive testing reports to determine if the welds were examined and were acceptable in accordance with the ASME Code and applicable procurement specifications;
- associated nonconformance reports and weld deviation notices to determine if nonconformances were handled in accordance with the requirements of 10 CFR Part 50 Appendix B, Criterion 15;
- the radiograph film to determine if the film met the quality requirements of Section V of the ASME Code and that the welds were free of rejectable defects and met the acceptance requirements of Section III, Division 1 of the ASME Code; and
- welding filler metal CMTRs to determine if the welding materials that were used had been tested and met the requirements of the ASME Code and the procurement specifications.

The inspectors reviewed welding and NDE records for pressurizer safety relief valve V005A to determine if the welding and subsequent inspection of the two pressure boundary welds were completed in accordance with the applicable procurement specifications and portions of the ASME Code. For each weld the inspectors reviewed:

- weld maps and records to verify the traceability of the welders, welding procedures, and materials used;
- the welding procedure and procedure qualification records to verify if the procedures had been written and qualified in accordance with the requirements of the ASME Code;
- welder qualification test records to determine if the welders had been qualified in accordance with the ASME Code;

- nondestructive testing reports to determine if the welds were examined and were acceptable in accordance with the ASME Code and applicable procurement specifications;
- the radiograph film to determine if the film met the quality requirements of Section V of the ASME Code, and that the welds were free of rejectable defects, and the welds met the acceptance requirements of Section III, Division 1 of the ASME Code; and
- welding filler metal CMTRs to determine if the welding materials that were used had been tested and met the requirements of the ASME Code and the procurement specifications.

The inspectors reviewed Condition Reports (CRs) initiated during the inspection to verify that issues were appropriately entered into the corrective action process.

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC Number 2.1.02.03b (16) / Family 03B ***ITAAC Deleted per LAR 85***

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.03b (16). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.03 - Installation and Welding
- 65001.03-02.06 - Nondestructive Examination (NDE)
- 65001.03-02.07 - Review of Records
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records

The inspectors observed in-process construction activities associated with the Unit 3 RCS piping to determine whether welding and inspection activities were performed in accordance with applicable quality and technical requirements. Specifically, the inspectors observed fit-up, welding, and inspection activities associated with the following pipes to the Unit 3 Reactor Pressure Vessel (RPV):

- Hot Leg - RCS - L001A
- Cold Leg - RCS - L002A
- Cold Leg - RCS - L002B

The inspectors observed the in-process welding of the above pipes to the RPV to determine if the welding was performed within the ranges allowed by welding procedure specification (WPS) numbers 8 MN-GTAW and 8 MC-GTAW, and the requirements of the ASME BPVC, Section III, Division I – Subsection NB, Class 1 Components. Specifically, the inspectors observed the in-process welding of the following welds:

- SV3-RCS-PL01-FW-ACL06 (Cold Leg L002A to RPV)
- SV3-RCS-PL01-FW-ACL04 (Cold Leg L002B to RPV)
- SV3-RCS-PL01-FW-AHL01 (Hot Leg L001A to RPV)

For the welds listed above, the inspectors observed in-process machine welding from the outside diameter and manual gas tungsten arc welding (GTAW) welding from the inside diameter after back grinding the root pass. Moreover, during the welding, the inspectors reviewed:

- piping was installed at the proper location in the plant;
- piping material and welding consumables were of the specified type and grade and were uniquely identified;
- welding consumable cleanliness was maintained;
- temporary attachments were removed and inspected in accordance with procedures and documented on the weld traveler;
- work was conducted in accordance with a "traveler," weld data record or similar document which coordinated and sequenced the welding and inspection operations;
- the weld joint was sufficiently protected from inclement conditions;
- surfaces to be welded were smooth, uniform, and free from surface discontinuities such as cracks or seams, and free from paint, oil, rust, scale, slag, grease, moisture or other harmful foreign materials that could be detrimental to welding for at least 2 inches from the weld joint;
- the weld joint geometry, including root opening and fit-up tolerances were as specified by the WPS;
- the bead log sheet was appropriately completed;
- shielding gas flow and composition was as specified in the WPS; and
- the weld joint was traceable to the welders.

The inspectors reviewed the in-process weld travelers 910962-006, 910962-007, and 910962-008 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;
- records adequately documented 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;
- 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 informational radiographic film taken at 1/3 and 2/3 thickness to determine whether the interim quality of the weld was acceptable. The inspectors also observed the informational liquid penetrant examination of the inside diameter of SV3-RCS-PL01-FW-ACL06 after back grinding but before manual GTAW welding. Moreover the inspectors observed the final liquid penetrant examination and reviewed final NDE reports for the following welds:

- inside diameter of SV3-RCS-PL01-FW-ACL06 (Cold Leg L002A to RPV);
- inside diameter of SV3-RCS-PL01-FW-ACL04 (Cold Leg L002B to RPV); and
- inside and outside diameter of V3-RCS-PL01-FW-AHL01 (Hot Leg L001A to RPV).

The inspectors observed the contractor's evaluation of relevant, but acceptable, indications on the inside diameter weld SV3-RCS-PL01-FW-ACL06. The inspectors interviewed NDE personnel to ensure the indications were appropriately measured and evaluated according to PCI procedure GQP-9.7 and Section NB-5350, "Liquid Penetrant Acceptance Standards," of ASME Code, Section III, Subsection NB. The inspectors also reviewed the contractor's examination report to determine whether the relevant indications were recorded in accordance with procedures and the ASME Code.

For the welds listed above, the inspectors independently reviewed the final radiographic film and associated examination reports to determine whether the welds met the acceptance criteria of NB-5320, "Radiographic Acceptance Standards," of ASME Code, Section III, Subsection NB. Moreover, the inspectors reviewed the examination reports to determine whether the reports documented all required information specified by T-292, "Radiograph Review Form," of ASME Code, Section V and radiographic test (RT) procedure 521-RT-302.

b. Findings

No findings were identified.

1A08 (Unit 3) ITAAC Number 2.1.02.05a.i (19) / Family 14A

a. Inspection Scope

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

- 65001.14-02.03 - Testing and Verification
- 65001.14-02.04 - Qualification Criteria
- 65001.14-02.05 - Problem Identification and Resolution
- 65001.E-02.01-Design Basis Requirements
- 65001.E-02.03-Qualification
- 65001.E-02.04-Documentation
- 65001.E-02.06-Problem Identification and Resolution

The inspectors performed a review for the following components associated with the indicated commodity:

- steam generator A (MB01)
- steam generator B (MB01)
- RCS-PL-V005A, pressurizer safety valve (PV62)

- RCS-PL-V005B, pressurizer safety valve (PV62)

For the steam generators and pressurizer safety valves, the inspectors reviewed documents and interviewed personnel to verify:

- the licensee used the appropriate limiting design basis parameters as input for the seismic qualification of the SSC and that the necessary design basis documents and calculations, as appropriate, were correctly incorporated into the qualification program for the SSC;
- seismic qualification was adequately completed and controlled in accordance with Regulatory Guide 1.100, ASME BPVC, Section III, and design specifications;
- licensee records established an adequate basis for acceptance of the ITAAC with qualification criteria attributes and that the qualification report concluded that the SSC could withstand the conditions that would exist before, during, and following a design basis seismic event without loss of safety function for the time required to perform the safety function;
- seismic qualification documentation was maintained in an auditable manner, was complete, and clearly documented completion of the ITAAC acceptance criteria for the samples inspected; and
- the limiting design basis parameters, as documented in the UFSAR, were appropriately incorporated into design requirements and qualification of the SSC.

The inspectors also reviewed seismic functional qualification test anomalies identified during the qualification process, as documented in the equipment qualification data package applicable to each component, to determine the effectiveness of the licensee's corrective measures. The inspectors reviewed problems identified during the qualification process to verify they were entered into the licensee/constructor corrective action program in accordance with program requirements and appropriately prioritized and adequately resolved.

Specifically for the steam generators, the inspectors reviewed the following design documents:

- design codes and standards
- analysis and testing methodologies
- loads and load combinations
- seismic acceleration
- required input design response spectrum and support anchor motion
- stress and fatigue evaluation

For the steam generators, the inspectors reviewed the design codes, analysis and testing methodologies, load combinations, analysis modeling, analytical methodology (dynamic response spectrum, time history method, or equivalent static method), damping values used, seismic acceleration, and required input motion to verify consistency with the UFSAR requirements. Documentation for testing was also reviewed to verify if testing accurately measured the test response spectrum and enveloped the required response spectrum defined in subsection 3.7.2 of the UFSAR. The inspectors reviewed the fatigue evaluation performed by the licensee to

verify it was based on appropriate cycles of safe shutdown earthquake seismic loads and were consistent with the requirements of 10 CFR 50, Appendix S requirements.

The inspectors reviewed the generic AP1000 seismic analysis to verify that it remained valid for the Vogtle site specific seismic design by comparing the Vogtle ground motion response spectra with the AP1000 generic seismic analysis. The inspector reviewed the analytical model in the seismic analysis for the Unit 3 steam generator A to verify that the effects of the structural coupling, required by the design specification, and the hydrodynamic mass of the steam generator were considered in the seismic model.

The inspectors reviewed the seismic analysis for the AP1000 steam generators to verify that the input used for the seismic response spectrum analysis, as defined in the design specification APP-MB01-Z0-101, Rev. 11, was consistent with subsection 3.7.2 of the UFSAR. The inspectors also reviewed the seismic support anchor motion documented in the calculation APP-1000-S2C-056, Rev 2, to verify that the required loads per the design specification were adequately considered for the service level design condition.

Specifically for the pressurizer safety valves, the inspectors reviewed the following design documents:

- design codes and standards
- analysis and testing methodologies
- loads and load combinations
- seismic acceleration
- stress and fatigue evaluation

For pressurizer safety valves, the inspectors reviewed qualification activities to verify that they were adequately controlled and that methodologies conformed to applicable regulatory guidance and industry standards. Additionally, the inspectors reviewed previously issued NRC inspection reports and interim 10 CFR Part 21 reports 2014-19-00, 2014-20-00, and 2014-21-00 from Pentair Valves and Controls, which documented deficiencies in the seismic testing of the pressurizer safety valves, RCS-PL-V005A and PL-V005B. The inspectors reviewed the final seismic testing reports to verify that corrective actions and completed tests were adequate and met the ITAAC.

b. Findings

No findings were identified.

1A09 (Unit 3) ITAAC Number 2.1.02.08d.vii (38) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.08d.vii (38). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.04 - Testing and Verification
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors reviewed the sparger, sparger flow area as-built analysis, and as-built drawings to determine whether the as-built sparger satisfied design requirements. The inspectors performed a direct inspection of the flow holes on the arms of one of the two spargers to verify the minimum flow area was greater than or equal to the UFSAR requirement of 274 in^2. The inspectors compared the actual number of flow holes on the sparger arms to the as-built drawings, performed direct measurements of the diameter of a sample of the flow holes, and compared the measurements to the UFSAR and Sparger Flow Area As-Built Analysis Report. The inspectors also reviewed the Certificates of Calibration and the calibration due dates for the measuring & test equipment (M&TE) the supplier used to fabricate the sparger arms.

b. Findings

No findings were identified.

1A10 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

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

- 65001.06-02.01 - General Installation
- 65001.06-02.05 - Problem Identification and Resolution

The inspectors reviewed the specifications associated with the installation of accumulator A to determine whether the documents adequately defined the installation requirements. The lifting and rigging of the accumulator was observed to verify whether it was completed in a manner that prevented damage to the accumulator. The inspectors observed the installation of accumulator A to determine whether it was installed in accordance with the specified requirements. Direct inspection of the mounting of accumulator A was performed to confirm whether the bolted connections were lubricated, torqued, and locked as required. The inspectors also observed quality control perform their inspections of the installation of the accumulator to determine whether hold points were met, inspections were completed using adequate acceptance criteria, and inspection records met the quality program requirements. E&DCRs and corrective action documents associated with the accumulator installation were reviewed to confirm whether field changes and problems identified during the installation process were entered into their respective processes.

b. Findings

No findings were identified.

1A11 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

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

- 65001.03-02.03 - Installation and Welding
- 65001.03-02.06 - Nondestructive Examination (NDE)
- 65001.04-02.01 - General Installation
- 65001.04-02.02 - Pipe Support and Restraint Welding
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection

The inspectors observed assembly of a carbon steel, ASME Class 3 whip restraint support, PXH-PH-11-R0126, downstream of motor operated valve (MOV) gate valve, PXS-PL-V121B, in the passive core cooling system (PXS). The inspectors performed a walkdown to determine the proper support number and location as shown on the construction isometric drawings. The inspectors observed welding of SV3-PXS-PLW-02N-R1 for line PXS-PL-L117B to determine whether the installation and welding was controlled in accordance with the requirements of ASME Code, Section III, Subsection NF.

Specifically, the inspectors observed installation of the whip restraint support to determine if it was free from damage, in the proper location and orientation, with contact points to the baseplate and clearance within tolerances. The inspector observed shielded metal arc welding techniques to ensure proper use of welding procedure and if the welding procedure, detailed drawings, and weld data sheet were available at the work area. The inspector reviewed the associated weld record/traveler to ensure that the QC hold points were properly signed-off and traceability and classification of weld filler metals and welders were in accordance with ASME Code, Section III, Subsection NB.

In addition, the inspectors reviewed WEC design and installation specifications to verify that the exemptions for the control of heat input during welding of the carbon steel whip restraint support were in accordance with the fracture toughness requirements of ASME Code, Section III, Subarticle NF-2300, Fracture Toughness Requirements for Materials.

The inspectors observed welding to determine if welding was controlled in accordance with the requirements of the ASME Code, Section III, Subsection NB for Class 1 components. The inspectors observed in-process manual tack and cover pass welding used to assemble an ASME Class 1 seamless pipe and tee fitting for weld SV3-PXS-PLW-021-1 on line PXS-PL-L015B. In addition, the inspectors performed a walkdown to determine the proper line number, weld number, and location as shown on the construction isometric drawings.

The inspectors reviewed the location and orientation of the piping, clearances from other piping, and weld record/traveler which were located in the work

package. Specifically, the inspectors reviewed the weld records to determine if hold points were signed-off by quality control (QC). The inspectors reviewed the Welding Material Requisition (WMR) to determine if the welder ID and filler metal information was transferred to the weld record. In addition, the inspectors observed manual welding to ensure that the welder was using the proper electrical characteristics & techniques, the correct filler metal, and argon shielding gas in accordance with the requirements of the welding procedure. Additionally the inspectors observed the surfaces being welded to determine if they were clean, free of deleterious materials such as oil or paint, and if the welding environment was adequately protected from rain, moisture, and wind in accordance with the ASME Code, Section III, Subsection NB.

The inspectors reviewed MISTRAS computed radiography images and NDE reports for five welds to determine if they were in accordance with the ASME Code, Section III. The inspectors reviewed radiographs to determine if they were in accordance with the requirements of the applicable ASME Code, Sections III and V, Article 2 and Appendix VIII. Specifically, the inspectors reviewed field welds SV3-PXS-PLW-02E-6 (L114B), SV3-PXS-PLW-02N-1 and -2 (L116B and L117B), and SV3-PXS-PLW-02P-1 and -3 (L015B) to determine if the following met ASME Code requirements for adequate sensitivity:

- the radiographic techniques;
- geometric unsharpness; and
- image brightness compared at the body of the wire IQI and area of interest.

In addition, the inspectors review associated weld records/travelers to verify the recording of welders and weld rods for traceability, and QC hold point sign-offs for inspections during welding activities where performed in accordance with the applicable requirements of the ASME Code, Section III, Articles NB/NC/ND-4000, “Fabrication and Installation”.

b. Findings

No findings were identified.

1A12 (Unit 3) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

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

- 65001.03-02.03 - Installation and Welding
- 65001.B-02.03-Welder Qualification
- 65001.B-02.06-Records

The inspectors performed a record review of weld SV3-PXS-PLW-02C-1, which had been made to join PXS check valve SV3-PXS-PL-V119B to PXS containment recirculation line B, PXS-PL-L113B. Specifically the inspectors reviewed:

- the weld data sheet to determine if the work steps had been completed and signed off and that information had been recorded to allow traceability to the personnel, procedures and materials;
- the welder's qualification record to determine if he had been qualified to make the weld in accordance with the requirements of the ASME Code Section IX;
- the liquid penetrant exam report to determine if the weld had been inspected in accordance with ASME Code Section V and had been found acceptable; and
- the welding procedure to determine if it had been written in accordance with the ASME Code, Sections III and IX, and was adequate for making the weld.

b. Findings

No findings were identified.

1A13 (Unit 3) ITAAC Number 2.2.03.02b (160) / Family 03F ***ITAAC Deleted per LAR 85***

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.02b (160). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.04 - Inspection of ITAAC-Related Installation of Pipe Supports and Restraints
- 65001.04-02.01 - General Installation
- 65001.04-02.04 - Documentation Packages
- 65001.B- Inspection of the ITAAC-Related Welding Program
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection

The inspectors reviewed quality records and performed direct inspection of construction activities associated with the PXS in the containment building of Unit 3. Specifically, the inspectors observed welding activities associated with piping support PXS-PH-11R0138 that supports the discharge piping of the 'B' core makeup tank, PXS-L018B, and piping support PXS-PH-11R0145 that supports the discharge piping of the 'B' accumulator, PXS-L029B. The inspectors observed welding activities associated with the fillet welds connecting the supports to the basemat embedment plates. The inspectors also observed welding activities associated with piping support PXS-PH-11R0125 that supports piping for the IRWST injection line PXS-L116B. The inspectors observed welding activities associated with the fillet weld connecting the support to the basemat embedment plate and a flare bevel weld within the support (welds SV3-PXS-PH-11R0125-4 and SV3-PXS-PH-11R0125-3).

The inspectors observed welding activities and reviewed quality records to determine if:

- material composition and physical characteristics of support components and welding consumables could be determined by their unique identification numbers;
- welding procedures, detailed drawings and instructions, and weld data sheets were at the work site;
- surfaces to be welded had been prepared, cleaned, and inspected in accordance with applicable procedures;
- piping material and welding consumables were of the specified type and grade and were uniquely identified;
- preheat and interpass temperatures were maintained in accordance with applicable procedure requirements;
- welding equipment, including power cables and gas lines, were in good condition;
- welding consumable cleanliness was maintained; and
- interpass cleaning and grinding were conducted in accordance with the applicable procedures.

The inspectors performed an as-built inspection to determine if:

- the restraint was assembled and installed at correct location in the plant in accordance with the approved drawings;
- functional restraint directions were in accordance with the design drawing;
- components were not bent, deformed, loose, or otherwise out of specification;
- clearances between the restraint and piping were within specified tolerances;
- the contact surfaces of the supports were free of weld spatter, concrete, or other construction debris that would invalidate assumed design forces; and
- contact area between the support and the basemat embedment plate met specified minimums or the fillet weld size had been increased.

The inspectors reviewed quality records to determine if:

- documentation packages for completed pipe support and restraint installations were thorough and accurate;
- welding procedures and personnel were identified for each weld;
- welders were qualified in accordance with welding procedures and had demonstrated their skill by performing specific performance qualification tests;
- records provided traceability to all aspects of the pipe support installation, such as materials certification, inspections performed and results, inspectors, and qualification records for procedures and personnel;
- welding procedures complied with the codes and standards specified in the design documents;
- control and identification of welds rods after being issued to the welder were maintained in accordance with procedures; and
- records were reviewed and approved by the proper authority.

Additionally, the inspectors selected a piece from the pipe support and traced it to the CMTR and reviewed it to verify that the material had been tested and met the chemical and physical requirements of the ASME Code, Section II for SA-36 steel. The inspectors also performed a visual examination of the completed welds to verify they

were free of defects and met the quality requirements of the ASME Code, Section III, Subsection NF, and the fillet weld size was as called for in the drawings.

b. Findings

No findings were identified.

1A14 (Unit 3) ITAAC Number 2.2.03.03b (162) / Family 03B ***ITAAC Deleted per LAR 85***

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.03b (162). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03-02.03 - Installation and Welding
- 65001.B-02.04-Production Controls
- 65001.F-02.03-Observation of Fabrication Activities

The inspectors observed a liquid penetrant examination of weld SV3-PXS-PLW-02N-2, which joins valve PXS-PL-V121B to the IRWST screen injection line PXS-PL-L117B to determine if the examination was performed in accordance with the procedure, met applicable code requirements, and was free from indications of weld defects. The inspectors observed the examination to verify that:

- appropriate penetrant and developer materials were appropriately applied;
- materials being examined were within the procedural temperature range;
- dwell times were met;
- the examination area was clean and free of deleterious materials; and
- the final interpretation was free of rejectable defects or indications.

The inspectors observed in-process pipe welding of the PXS system on the accumulator B discharge line to direct vessel injection line, PXS-PL-L029B. Specifically, for weld SV3-PXS-PLW-023-5, the inspectors observed welding activities and reviewed associated documentation to verify:

- welding activities were being performed in accordance with the welding procedure;
- the welder was qualified to make the welds in accordance with the ASME Code, Section IX;
- the welding procedure, detailed drawings, and weld data sheet were available at the work area;
- the surfaces to be welded were clean, free of deleterious materials, and the welding environment was protected from rain, moisture, and wind;
- the filler metal was as called for in the welding procedure and had the appropriate issue slips;
- traceability of the filler metal was being maintained by documentation of the heat number on the issue slip and weld data sheet; and
- the welder had a unique identifier that was traceable to qualification records and was recorded on the weld data sheet.

Additionally, the inspectors reviewed the welding procedure to verify whether it was written and qualified in accordance with the ASME BPVC, Sections III and IX.

b. Findings

No findings were identified.

1A15 (Unit 3) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

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

- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.07 - Problem Identification and Resolution
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.01-Design Document Review

The inspectors observed the installation of reinforcing steel and embed plates for the IRWST floor located on the west side of containment between elevations 96'-0" and 103'-0". The inspectors also reviewed quality records, the work package, design changes, and condition reports associated with the IRWST floor.

The inspectors reviewed a sample of design changes, drawings included in the work packages, and specifications to determine whether:

- design change activities were completed in accordance with applicable specifications, drawings, and approved procedures;
- design documents adequately defined the final design and arrangement of the structure;
- design changes and field modifications were properly controlled, documented, and processed in accordance with quality and technical requirements commensurate with the original design; and
- design documents were consistent with the design commitments and requirements specified within the UFSAR.

The inspectors performed independent inspection and measurements to determine whether the steel reinforcement and embedments conformed to the design specifications. The inspectors observed installation activities associated with formwork, embedments, and steel reinforcement, including horizontal and vertical reinforcing steel bars, shear reinforcement, dowel bars extending from the construction

joint at elevation 96'-0", dowel bars extending above the construction joint at elevation 103'-0", and bar splices, to determine whether:

- installation activities met applicable quality and technical requirements established by approved procedures, specifications, and drawings included in the work packages;
- reinforcing steel and embedments were located properly in the structure, were sized as specified in drawings and calculations, and had proper clearances; and
- reinforcing steel and embedments were secured and free of contaminants and excessive rust.

The inspectors reviewed a sample of nonconformances to verify:

- the licensee was identifying deviations at an appropriate threshold and entering them into the corrective action program;
- any differences between the as-built and as-designed structures 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.

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

a. Inspection Scope

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

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

The inspectors reviewed quality records and performed direct inspection of construction activities associated with the Unit 3 CA05 structural module walls. Specifically, the inspectors observed construction activities associated with the following wall sections between elevations 83’-0” and 87’-6” to 105’-2”. The placement for the CA05 walls consisted of sub-modules CA05-01 thru CA05-05 and CA05-07.

The inspectors attended the pre-placement planning meetings to verify that the licensee was prepared to deal with unplanned construction challenges, should they have arisen. During the concrete pours, the inspectors verified whether the concrete placement drop heights were in accordance with specification SV3-CC01-Z0-031, Section 4.2.4.1, and did not result in segregation during placement. The inspectors also reviewed the concrete placement order/pour card to verify that the mix, location, time placed, water additions, and temperature of the concrete mix and ambient

conditions did not cause excessive air voids, in accordance with specification SV3-CC01-Z0-027, Section 6.1.12.

The inspectors directly observed the licensee testing the concrete to determine if the concrete satisfied the acceptance criteria in the design documents. Specifically, the inspectors observed testing of the concrete temperature, slump, air content, and unit weight at the proper location and frequency as required in the specification SV3-CC01-Z0-027, Section 6.1.12. For the review of the testing frequency, the inspectors verified whether the testing was completed once every 200 cubic yards, in accordance with AMEC Statistical Analysis Report VCS30965 and E&DCR SV0-CC01-GEF-000299.

The inspectors reviewed a sample of non-conformances and deviations between the as-built and as-designed drawings to determine whether these deviations were properly evaluated and dispositioned by qualified personnel.

b. Findings

No findings were identified.

1A17 (Unit 3) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

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

- 65001.01-02.01 - Procedures
- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.03 - Special Considerations
- 65001.02-02.06 - Record Review
- 65001.02-02.07 - Problem Identification and Resolution
- 65001.02-02.08 - Construction Interface Concerns
- 65001.02-02.09 - Concrete Quality Process Problems
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors reviewed quality records and performed direct inspection of construction activities associated with the concrete placement for containment internal structures for Unit 3. The scope of this inspection included the following wall and floor sections:

- South, West, North, and East walls of West steam generator compartment from el. 103’-0” to 153’-0”
- South wall of pressurizer compartment from el. 103’-0” to 153’-6”
- West and North wall of pressurizer compartment from el. 107’-2” to 160’-0”
- East wall of pressurizer compartment from el. 118’-6” to 160’-0”
- in-containment refueling water storage tank floor up to el. 98’-0”
- refueling cavity floor up to 98’-0 1/2”

For the walls and floors referenced in the scope above, the inspectors reviewed a sample of approved design documents, implementing procedures, and specifications to determine whether the documents:

- met the requirements specified in the quality assurance program and the UFSAR, including the reconciliation of construction deviations in critical dimensions and tolerances;
- correctly translated requirements from applicable codes and standards;
- described work controls, approved work processes, and inspection requirements;
- included appropriate quantitative and/or qualitative acceptance criteria for determining that the prescribed activities were accomplished satisfactorily;
- clearly prescribed acceptable methods of quality control inspection to ensure that the as-built condition met specified design requirements, drawings and material specifications;
- required measuring and test equipment to be calibrated and maintained in accordance with approved calibration procedures and vendor requirements; and
- provided qualification requirements for craft and quality control inspection personnel performing installation and testing activities.

Prior to concrete placement, the inspectors independently evaluated, for the walls and floors referenced in the scope above, whether deviations were adequately captured and addressed, and preparation and cleanliness of the formwork was acceptable. The inspectors observed concrete pre-placement activities to determine whether pre-placement planning and training had been completed and the pre-placement inspection was performed by quality control before any concrete was placed. The inspectors reviewed the concrete placement plans included in the work packages to determine whether it included appropriate considerations for:

- hot weather, including maintaining concrete temperature within specified requirements;
- protection from the sun;
- mass concrete;
- large placements;
- contingencies for unexpected events or accidents;
- preparations for potential weather-related emergencies;
- pumping concrete, including configuration considerations for placeability and adequate consolidation; and
- contingency preparations for stopping a concrete placement earlier than designed.

For the walls and floors referenced in the scope above, the inspectors observed concrete delivery and reviewed batch plant records to determine whether:

- concrete was batched in accordance the specified mix design;
- specifications, procedures, codes, and design requirements were followed;
- equipment performed as required;

- batch records were generated, controlled, and indicated placement location, mix, volume, date, time, and special instructions;
- transporting equipment was suitable, reliable, and in an acceptable condition;
- the time limit between mixing and placement was not exceeded; and
- temperature limits were not exceeded.

For the walls and floors referenced in the scope above, the inspectors observed concrete placement activities to determine whether:

- accepted procedures and specifications were followed throughout the concrete placement;
- equipment used was suitable and sized for the work;
- each batch ticket was reviewed for verification of proper mix, transport time, placement location, and amount of temper water being added at the truck delivery point;
- mixing time and rotations were adequate, including after any field additions were made;
- placement drop distances did not exceed specification requirements and did not result in segregation;
- vibrators were handled and operated to ensure adequate consolidation and to avoid voiding or honeycombing, including vertical operation and penetration through the new concrete into the previously placed layer;
- concrete was placed in lifts in accordance with the concrete placement plan;
- inspection during placement was performed as required by procedures, specifications, and the quality assurance program; and
- records were produced, reviewed, and indicated mix, location, time placed, water additions, temperature of the concrete mix, and ambient conditions.

During the concrete placement, the inspectors observed in-process concrete testing for the walls and floors referenced in the scope above, the to determine whether:

- concrete temperature, slump, air content, and unit weight were determined at the proper location and frequency as required by procedures, specifications, and American Society for Testing and Materials (ASTM) standards;
- sample collection and testing techniques conformed to the procedures, specifications, and ASTM standards;
- test results were evaluated against applicable quantitative and qualitative acceptance criteria and were satisfactory;
- concrete strength test sample cylinders were made at the required location and frequency and were cured in accordance with specified requirements; and
- personnel performing sampling and testing were competent and experienced.

For the walls and floors referenced in the scope above, the inspectors reviewed aspects of the concrete placement processes to determine whether process controls were in place, to verify if issues identified were adequately documented and corrected, and to verify whether any process related issues did not adversely affect the concrete quality. The inspectors interviewed licensee and contractor personnel to determine whether:

- contractors performing safety-related work followed approved implementing procedures that describe administrative and procedural controls, approved work processes, and inspection requirements;
- design processes were performed in compliance with applicable instructions and procedures;
- personnel conducting work and quality assurance roles were qualified and knowledgeable; and
- effective oversight in accordance with specifications and program requirements was implemented for the installation activities observed.

For the walls and floors referenced in the scope above, the inspectors reviewed a sample of nonconformances to verify:

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

For the walls and floors referenced in the scope above, the inspectors reviewed the placement plan, associated work packages, E&DCRs, and Nonconformance and Disposition Reports (N&Ds) to verify the following activities were performed in accordance with procedural requirements:

- coordination of structural concrete activities with other disciplines;
- the interchange of design information between designers, constructors, inspectors, and managers regarding structural work, constructability issues, and field changes; and
- controls used to ensure construction quality for areas that would become inaccessible after concrete placement.

b. Findings

No findings were identified.

1A18 (Unit 3) ITAAC Number C.2.6.09.01 (658) / Family 17E
(Unit 4) ITAAC Number C.2.6.09.01 (658) / Family 17E

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.01 (658).

This is a security-related input. See non-public report 05200025/2017403 & 05200026/2017403 for inspection details and results.

b. Findings

No findings were identified.

1A19 (Unit 3) ITAAC Number C.2.6.12.06 (676) / Family 08F

a. Inspection Scope

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

- 65001.16-02.03 - Design Documents
- 65001.16-02.04 - Design Analysis
- 65001.16-02.05 - Design Verification
- 65001.F-02.01 - Design Document Review

The inspectors reviewed the principal closure document (PCD) for this ITAAC to ensure that the licensee's analyses, using Siemens/PTI PSS/E, satisfied the acceptance criteria. Specifically, the inspectors compared actual recordings obtained from the system control and data acquisition for a Vogtle Unit 1 turbine trip with the results from the Siemens/PTI PSS/E software. Also, the inspectors reviewed drawings and specifications to verify if the system was appropriately modeled in the software. The inspectors used the results from Vogtle Unit 1 because the grid connection for Unit 1 and Unit 3 are at the same voltage level. The inspectors reviewed results from two scenarios to ensure the reactor coolant pumps would continue to receive power for a minimum of three seconds at greater than 85% voltage, in accordance with UFSAR, Section 8.2.2. The two scenarios reviewed the power being provided by the grid upon loss of the main generator 1) through the unit auxiliary transformer, and 2) through the reserve auxiliary transformer.

The inspectors reviewed Siemens/PTI PSS/E software data, drawings and specifications to determine if design inputs appropriately considered for normal operations, anticipated operational occurrences, external events, and postulated accident conditions. Also, the inspectors reviewed drawings and specifications to determine if the PCD contained the author, verifier, and approver with signatures and dates. The inspectors reviewed training records and interviewed engineering personnel assigned to developing the engineering analyses to determine if personnel were appropriately trained in the applicable procedural and programmatic requirements

b. Findings

No findings were identified.

1A20 (Unit 4) ITAAC Number 2.1.01.07.iv (11) / Family 13F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.01.07.iv (11). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.13-02.01 - Fuel Rack Installation
- 65001.13-02.05 - Quality Assurance Program (Corrective Action Program)

The inspectors conducted a direct inspection of the new and spent fuel racks to verify the racks meet the criteria in the criticality analysis reports and structural/seismic analysis reports. The inspectors verified storage rack parameters were within the tolerances listed in the storage racks criticality analysis. The inspectors also reviewed the equipment preservation check records for the new and spent fuel racks to verify preventative maintenance requirements were being met.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.07-02.05 - Problem Identification and Resolution
- 65001.F-02.02-Fabrication Records Review
- 65001.F-02.04-General QA Review

The inspectors reviewed fabrication records associated with the Unit 4 pressurizer safety valve V005B (serial number: N900028-00-0014) to verify that materials met the applicable requirements of design documents; the ASME Code, Section III; and WEC design and fabrication specifications. Specifically, the inspectors reviewed documents associated with valve parts including the body, adjusting bolt, spring, spindle ball, bonnet cylinder, bonnet stud nut, and inlet stud.

The inspectors reviewed design documents to determine whether the documents adequately define the final design of the pressurizer safety valve. Specifically, the inspectors reviewed material and fabrication attributes of the valve parts identified above to ensure the ASME Code, Section III; WEC design report; design drawings; and the UFSAR requirements were captured in the final as-built condition of the valve.

The inspectors reviewed a sample of fabrication records for the valve parts selected above to verify compliance with applicable documents, codes, standards, regulations, and quality and technical requirements. Specifically, the inspectors:

- reviewed a sample of procurement documents from the supplier and sub-suppliers to verify that they appropriately specify acceptable quality, technical, and regulatory requirements;
- reviewed certified material test reports to verify the material met the specified chemical composition, mechanical testing, examination, and fabrication requirements;
- reviewed the ASME Code, Form NV-1 and hydrostatic test reports to ensure the requirements in the ASME Code, Section III were satisfied and traceability of reports and materials was maintained; and
- reviewed the final quality data packages to verify the records were complete, accurate, reviewed and approved by the responsible organization(s), and provided evidence that the quality and code requirements were satisfied.

The inspectors also reviewed a sample of purchase orders and vendor audits to determine whether:

- the contractor had adequate oversight of the vendor and the entire scope of work included in the purchase order was evaluated prior to purchasing and approving shipment of the applicable components;
- critical attributes associated with the ITAAC were correctly identified, and the documents were consistent with code requirements and the UFSAR;
- purchase orders specified the applicable quality, technical, material, and regulatory requirements; and
- the licensee, vendor, and fabricator had established an effective method for tracking completion of design and test acceptance criteria for work.

The inspectors reviewed corrective action documents initiated by SNC and Westinghouse associated with issues identified during the inspection to determine whether the issues were adequately captured in the appropriate corrective action programs.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.03 - Inspection of ITAAC-Related Installation of Piping
- 65001.03-02.01 - Purchase and Receipt of Materials
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.02-Fabrication Records Review
- 65001.F-02.04-General QA Review

The inspectors reviewed procurement and fabrication records associated with ASME pipe spools for the Unit 4 RCS to verify that materials met the applicable requirements of the ASME Code, Section III; the UFSAR; and design documents. The inspectors reviewed documents associated with the following RCS pipe spools and associated pipe fittings:

- SV4-RCS-PLW-01L-1 (safety valve inlet piping, RCS-PL-L005B),
- SV4-RCS-PLW-017-1 (ADS outlet piping, RCS-PL-L063A),
- SV4-RCS-PLW-017-2 (ADS outlet piping, RCS-PL-L063A),
- SV4-RCS-PLW-018-1 (ADS outlet piping, RCS-PL-L063A),
- SV4-RCS-PLW-03B-1 (ADS fourth-stage inlet piping, RCS-PL-137A), and
- SV4-RCS-PLW-024-5 (pressurizer spray piping, RCS-PL-L212B).

The inspectors reviewed CMTRs to verify materials were properly heat treated and met the specified chemical, mechanical, and nondestructive testing requirements of the ASME Code, Section II and Section III; the UFSAR; and WEC design documents. For pipe bends performed by the vendor, the inspectors reviewed quality control bending reports, post bend heat treatment reports, and vendor drawings to verify the ASME Code, Section III and WEC design requirements were met for post bend heat treatment and wall thickness.

The inspectors reviewed certificates of compliance, ASME Form NPP-1 reports, CMTRs, and vendor drawings to ensure material traceability was maintained. In addition, the inspectors reviewed the NPP-1 reports and design drawings to determine if attributes such as pipe length, pipe wall thickness, ovality, and bend radius were met and if materials were traceable to quality fabrication records and were in accordance to ASME Code, Section III; and WEC design requirements.

The inspectors reviewed purchase orders and receipt inspections to verify purchase orders specified the applicable quality, technical, material, and regulatory requirements; and the material in the receipt inspections conforms to the purchase order and is traceable to quality fabrication records.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.06 - Inspection of ITAAC-Related Installation of Mechanical Components
- 65001.06-02.05 - Problem Identification and Resolution
- 65001.07 - Inspection of ITAAC-Related Installation of Valves
- 65001.07-02.04 - Testing and Verification

- 65001.07-02.05 - Problem Identification and Resolution
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.01-Design Document Review
- 65001.F-02.04-General QA Review

The inspectors reviewed design documents and applicable construction specifications, drawings, and procedures, and interviewed personnel to verify that the documents adequately defined the final design and arrangement of SSCs in the RCS system. Additionally, the inspectors reviewed SSC attributes to ensure they were correctly identified, documented, reviewed, and approved by responsible engineering personnel. Specifically, the inspectors performed these reviews for the following components associated with the indicated commodity:

- steam generator A (MB01)
- steam generator B (MB01)
- RCS-PL-V005A, pressurizer safety valve (PV62)
- RCS-PL-V005B, pressurizer safety valve (PV62)

The inspectors reviewed the following design documents associated with the steam generators and pressurizer safety valves:

- WEC design specification
- ASME generic design report
- design drawings
- plant and system transient analyses
- licensing bases documents

The inspector selected specific inspection criteria and critical attributes for the SSCs, along with inherent characteristics of engineering programs, to verify that the program controlling design activities had been established and were correctly implemented. The criteria selected by the inspectors also considered requirements included by reference to test codes and references to requirements contained in the UFSAR. In addition, the inspectors selected a sample of critical attributes and scenarios to determine if internal and external events or hazards could affect the component's performance and if that could result in a more than minimal impact to the conclusions made in the WEC transient analysis and in Chapter 15 of the UFSAR.

The inspectors reviewed a sample of personnel qualification records and job task training matrix for the engineers who performed design activities, specifically transient analyses. This review was to verify that the design documents were created and verified by qualified engineers and that personnel involved in the development of design documents met WEC procedure and the ASME Code, Section III qualification requirements. The inspectors also reviewed RPE records for the WEC design specifications to verify qualification records met WEC procedure, ASME, and NQA-1 requirements.

For the steam generator, the inspectors selected the following criteria for review:

- a sample of design attributes associated with component classification and Service Level in accordance with applicable requirements of the ASME Code, Section III, Subpart NB;
- component parameters including moisture carryover, primary temperature and pressure, and secondary temperature and pressure;
- operating experience/lessons learned from San Onofre Nuclear Generating Station (SONGS), as documented in NRC Augmented Inspection Team Report, ML12188A748, for inadequate design margins, anti-vibration bars, and tube spacing/tolerances; and
- SSC conditions/operations with respect to design assumptions in heat transfer calculations, and as described in the UFSAR.

The inspectors selected a sample of stress and design analyses for subcomponents to verify that the design inputs were correctly identified and documented and that the subcomponents were designed in accordance with the ASME Code, Section III requirements. Specifically, the review was focused on how the licensee's contractor related the design requirements to the ASME Code requirements in order to ensure the component would meet its design safety functions during normal operations and event conditions. The inspectors reviewed the steam generator heat transfer calculations, design specifications, and transient analyses to verify that a selected sample of assumptions and results were consistent with Chapter 15 of the UFSAR.

The inspectors reviewed a sample of deviation notices to verify that the conditions were adequately evaluated by the responsible organizations and that the accepted condition complied with the design. The inspectors also reviewed corrective action documents issued during the inspection to verify that issues were entered into the licensee or applicable contractor corrective action program in accordance with corrective action program requirements.

Also, the inspectors reviewed the licensee's contractor and licensee's operating experience/lessons learned evaluations and CAP documentation with respect to historical design issues associated with tube spacing, tolerances, and anti-vibration bars. The inspectors reviewed these documents to verify that the licensee and contractor had considered and addressed the inadequate design margins from SONGS steam generators into the AP1000 steam generator design.

For the pressurizer safety valves, the inspectors selected the following criteria for review:

- adequate service level code design, stresses (thermal, pressure, etc.) and minimum wall thickness were in accordance with the ASME Code, Section III, Articles NB-3000 and NB-7000;
- no common mode design failures existed, including seat material;
- adequate opening time to ensure that the RCS remains protected; and
- sufficient design capacity exists such that no one RCS component goes above 110% of design pressure with two valves open.

The inspectors selected a sample of stress and design analyses for subcomponents to verify that the design inputs were correctly identified and documented and that the subcomponents were designed in accordance with the ASME Code, Section III requirements. Specifically, the review was focused on how the licensee's contractor

related the design requirements to the ASME Code requirements in order to ensure the component would meet its design safety functions during normal operations and event conditions. The inspectors also reviewed the testing and analysis for the pressurizer safety valves to verify it was conducted in accordance with the ASME Code, Section III, and to verify the valve set pressure.

The inspectors reviewed a sample of deviation notices to verify that the conditions were adequately evaluated by the responsible organizations and that the accepted condition complied with the design. The inspectors also reviewed corrective action documents issued during the inspection to verify that issues were entered into the licensee or applicable contractor corrective action program in accordance with program requirements.

b. Findings

No findings were identified.

1A24 (Unit 4) ITAAC Number 2.1.02.02b (14) / Family 03F ***ITAAC Deleted per LAR 84***

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02b (14). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.03 - Inspection of ITAAC-Related Installation of Piping
- 65001.03-02.02 - Storage and Handling
- 65001.F- Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed storage conditions for a sample of ASME pipe spools for the Unit 4 RCS. Specifically, the inspectors observed ASME pipe storage areas to determine if proper measures were taken to protect against corrosion, contamination, deterioration, misuse, and physical damage in accordance with WECTEC equipment storage quality standards, and that the storage level identified was appropriate for the ASME piping class and material type. The inspectors reviewed the markings on the pipe spools to determine whether they were in accordance with the ASME Code, Section III and provided traceability to receipt and fabrication documents. The pipe spools sampled were:

- SV4-RCS-PLW-01L-1 (safety valve inlet piping, RCS-PL-L005B),
- SV4-RCS-PLW-017-2 (automatic depressurization system (ADS) outlet piping, RCS-PL-L063A),
- SV4-RCS-PLW-018-1 (ADS outlet piping, RCS-PL-L063A),
- SV4-RCS-PLW-03B-1 (ADS fourth-stage inlet piping, RCS-PL-137A), and
- SV4-RCS-PLW-024-5 (pressurizer spray piping, RCS-PL-L212B).

b. Findings

No findings were identified.

1A25 (Unit 4) ITAAC Number 2.1.02.03a (15) / Family 06B ***ITAAC Deleted per LAR 84***

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.03a (15). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.07 - Inspection of ITAAC-Related Installation of Valves
- 65001.07-02.02 - Component Welding
- 65001.07-02.05 - Problem Identification and Resolution
- 65001.B- Inspection of the ITAAC-Related Welding Program
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection
- 65001.B-02.06-Records

The inspectors reviewed welding and NDE records for pressurizer safety relief valve V005B to determine if the two pressure boundary welds were welded and inspected in accordance with the applicable procurement specifications and portions of the ASME Code. For each weld the inspectors reviewed:

- weld maps and records to verify the traceability of the welders, welding procedures, and materials used;
- the welding procedure and procedure qualification records to verify if the procedures had been written and qualified in accordance with the requirements of the ASME Code;
- welder qualification test records to determine if the welders had been qualified in accordance with the ASME Code;
- an associated material rejection notice to determine if nonconformances were handled in accordance with the requirements of 10 CFR Part 50, Appendix B, Criterion 15;
- nondestructive testing reports to determine if the welds were examined and were acceptable in accordance with the ASME Code and applicable procurement specifications;
- the radiograph film to determine if the film met the quality requirements of Section V of the ASME Code and that the welds were free of rejectable defects and met the acceptance requirements of Section III, Division 1 of the ASME Code; and
- welding filler metal CMTRs to determine if the welding materials that were used had been tested and met the requirements of the ASME Code and the procurement specifications.

The inspectors reviewed CRs initiated during the inspection to verify that issues were appropriately entered into the corrective action process.

b. Findings

No findings were identified.

1A26 (Unit 4) ITAAC Number 2.1.02.05a.i (19) / Family 14A

a. Inspection Scope

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

- 65001.14-02.03 - Testing and Verification
- 65001.14-02.04 - Qualification Criteria
- 65001.14-02.05 - Problem Identification and Resolution
- 65001.E-02.01-Design Basis Requirements
- 65001.E-02.03-Qualification
- 65001.E-02.04-Documentation
- 65001.E-02.06-Problem Identification and Resolution

The inspectors performed a review for the following components associated with the indicated commodity:

- steam generator A (MB01)
- steam generator B (MB01)
- RCS-PL-V005A, pressurizer safety valve (PV62)
- RCS-PL-V005B, pressurizer safety valve (PV62)

For the steam generators and pressurizer safety valves, the inspectors reviewed documents and interviewed personnel to verify the following:

- the licensee used the appropriate limiting design basis parameters as input for the seismic qualification of the SSC and that the necessary design basis documents and calculations, as appropriate, were correctly incorporated into the qualification program for the SSC;
- seismic qualification was adequately completed and controlled in accordance with Regulatory Guide 1.100, the ASME BPVC, Section III, and design specifications;
- licensee records established an adequate basis for acceptance of the ITAAC with qualification criteria attributes and that the qualification report concluded that the SSC could withstand the conditions that would exist before, during, and following a design basis seismic event without loss of safety function for the time required to perform the safety function;
- seismic qualification documentation was maintained in an auditable manner, was complete, and clearly documented completion of the ITAAC acceptance criteria for the samples inspected; and
- the limiting design basis parameters, as documented in the UFSAR, were appropriately incorporated into design requirements and qualification of the SSC.

The inspectors also reviewed seismic functional qualification test anomalies identified during the qualification process, as documented in the equipment qualification data package applicable to each component, to determine the effectiveness of the licensee's corrective measures. The inspectors reviewed problems identified during the qualification process to verify they were entered into the licensee/constructor corrective action program in accordance with program requirements and appropriately prioritized and adequately resolved.

Specifically, for the steam generators, the inspectors reviewed the following design documents associated with the steam generators:

- design codes and standards
- analysis and testing methodologies
- loads and load combinations
- seismic acceleration
- required input design response spectrum and support anchor motion
- stress and fatigue evaluation

For the steam generators, the inspectors reviewed the design codes, analysis and testing methodologies, load combinations, analysis modeling, analytical methodology (dynamic response spectrum, time history method, or equivalent static method), damping values used, seismic acceleration, and required input motion to verify consistency with the UFSAR requirements. Documentation for testing was also reviewed to verify if testing accurately measured the test response spectrum and enveloped the required response spectrum defined in subsection 3.7.2 of the UFSAR. The inspectors reviewed the fatigue evaluation performed by the licensee to verify it was based on appropriate cycles of safe shutdown earthquake seismic loads and were consistent with the requirements of 10 CFR part 50 Appendix S requirements.

The inspectors reviewed the generic AP1000 seismic analysis to verify that it remained valid for Vogtle site specific seismic design by comparing the Vogtle ground motion response spectra with the AP1000 generic seismic analysis. The inspectors reviewed the seismic analysis for the AP1000 steam generators to verify that the input used for the seismic response spectrum analysis, as defined in the design specification APP-MB01-Z0-101, Rev. 11, was consistent with subsection 3.7.2 of the UFSAR. The inspectors also reviewed the seismic support anchor motion documented in the calculation APP-1000-S2C-056, Rev 2, to verify that the required loads per the design specification were adequately considered for the service level design condition.

Specifically, for the pressurizer safety valves, the inspectors reviewed the following design documents:

- design codes and standards
- analysis and testing methodologies
- loads and load combinations
- seismic acceleration
- stress and fatigue evaluation

For pressurizer safety valves, the inspectors reviewed qualification activities to verify that they were adequately controlled and that methodologies conformed to applicable regulatory guidance and industry standards. Additionally, the inspectors reviewed previously issued NRC inspection reports and interim 10 CFR, Part 21 reports 2014-19-00, 2014-20-00, and 2014-21-00 from Pentair Valves and Controls, which documented deficiencies in the seismic testing of the pressurizer safety valves, RCS-PL-V005A and –V005B. The inspectors reviewed the final seismic testing reports to verify that corrective actions and completed tests were adequate and met the ITAAC.

b. Findings

No findings were identified.

1A27 (Unit 4) ITAAC Number 2.1.02.08d.vii (38) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.08d.vii (38). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.06-02.04 - Testing and Verification
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors reviewed the sparger flow area as-built analysis and as-built drawings. The inspectors performed a direct inspection of the flow holes on the arms of one of the two spargers to verify the minimum flow area is greater than or equal to the UFSAR requirement of 274 in^2. The inspectors compared the actual number of flow holes on the sparger arms to the as-built drawings, performed direct measurements of the diameter of a sample of the flow holes, and compared the measurements to the Unit 4 UFSAR and Sparger Flow Area As-Built Analysis Report. The inspectors also reviewed the Certificates of Calibration and the calibration due dates for the M&TE the supplier used to fabricate the sparger arms.

b. Findings

No findings were identified.

1A28 (Unit 4) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.02 - Laboratory Testing
- 65001.02-02.03 - Special Considerations
- 65001.02-02.06 - Record Review

- 65001.02-02.07 - Problem Identification and Resolution
- 65001.02-02.08 - Construction Interface Concerns
- 65001.02-02.09 - Concrete Quality Process Problems
- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors reviewed quality records and performed direct inspection of construction activities associated with the containment internal structures for Unit 4. Specifically, the inspectors observed construction activities associated with the west side of the containment vessel bottom head from elevation 87'-6" to 96'-0".

The inspectors reviewed a sample of design changes (including E&DCRs), drawings included in the work package, and specifications to determine whether:

- design change activities were completed in accordance with approved procedures;
- design change outputs were translated into drawings;
- design change output documents demonstrated adequacy of design by reference to analyses, calculations, bounding condition checks, functional assessments, and/or engineering evaluations;
- critical attributes associated with the ITAAC were correctly identified during the design change process, and documented for review and approval by responsible engineering personnel;
- the changes were properly controlled, documented, and processed in accordance with quality and technical requirements commensurate with the original design; and
- these changes were consistent with the design commitments and requirements in Section 3.3 of Appendix C of the Unit 4 COL, and code commitments in ACI 349-01, American Welding Society (AWS) D1.1:2000, and AWS D1.4:1998.

The inspectors observed installation activities and performed independent inspection and measurements of embedments, formwork, and steel reinforcement, including north-south horizontal reinforcing steel bars, east-west horizontal reinforcing steel bars, dowel bars extending above elevation 96'-0", dowel bars extending from the construction joint at elevation 87'-6", and bar splices, to determine whether:

- installation activities met applicable quality and technical requirements established by approved procedures, specifications, calculations, and drawings included in the work package;
- reinforcing steel, embedments, and formwork conformed to the design specifications, were located properly in the structure, were sized as specified in drawings and the referenced calculations, and had proper clearances;
- reinforcing steel and embedments were secured and free of contaminants and excessive rust; and
- forms were secure, leak tight, and free from debris or excess water.

Prior to concrete placement, the inspectors independently evaluated whether deviations were adequately captured and addressed and cleanliness of the formwork was acceptable. The inspectors observed concrete pre-placement activities to determine whether pre-placement planning and training had been completed and the pre-placement inspection was performed by quality control before any concrete was placed. The inspectors reviewed the concrete placement plan included in the work package to determine whether it included appropriate considerations for:

- hot weather, including maintaining concrete temperature within specified requirements;
- mass concrete;
- contingencies for unexpected events or accidents;
- preparations for potential weather-related emergencies; and
- contingency preparations for stopping a concrete placement earlier than designed.

The inspectors observed concrete placement activities to determine whether:

- accepted procedures and specifications were followed throughout the concrete placement;
- equipment used was suitable and sized for the work;
- each batch ticket was reviewed for verification of proper mix, transport time, placement location, and amount of temper water being added at the truck delivery point;
- mixing time and rotations were adequate, including after any field additions were made;
- placement drop distances did not exceed specification requirements and did not result in segregation;
- vibrators were handled and operated to ensure adequate consolidation to avoid voiding or honeycombing, including vertical operation and penetration through the new concrete into the previously placed layer;
- concrete was placed in lifts in accordance with the concrete placement plan;
- inspection during placement was performed as required by procedures, specifications, and the quality assurance program; and
- records were produced, reviewed, and indicated mix, location, time placed, water additions, temperature of the concrete mix, and ambient conditions.

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

- concrete temperature, slump, air content, and unit weight were determined at the proper location and frequency as required by procedures, specifications, and ASTM standards;
- sample collection and testing techniques conformed to the procedures, specifications, and ASTM standards;
- test results were evaluated against applicable quantitative and qualitative acceptance criteria and were satisfactory; and
- concrete strength test sample cylinders were made at the required location and frequency and were cured in accordance with specified requirements.

The inspectors reviewed concrete cylinder compression break test results to determine whether:

- records were complete, accurate, and approved as required by procedures, specifications, and the quality assurance program;
- test results were reviewed and evaluated against the appropriate acceptance criteria from the specifications; and
- the records were retrievable.

The inspectors reviewed aspects of the concrete placement processes to determine whether process controls were in place, to verify issues identified were adequately documented and corrected, and to verify any process related issues did not adversely affect the concrete quality. The inspectors reviewed the in-process work package for reinforcing steel, embedments, formwork, and concrete placement to determine whether:

- the latest approved procedures, drawings, and work instructions were available at the installation area and were followed throughout installation;
- the installation, inspection, and testing sequences were maintained;
- the licensee verified the items to be installed met specified requirements;
- the items being installed were not damaged prior to installation;
- materials, tools, and other equipment being used were qualified and approved in accordance with site procedures;
- nonconforming items were clearly identified, segregated if possible, and dispositioned;
- inspection and test reports were current, accurate, and complete; and
- design changes, field modifications, and nonconformances associated with the work observed were properly controlled and processed in accordance with the quality assurance program.

The inspectors interviewed licensee and contractor personnel to determine whether:

- contractors performing safety-related work followed approved procedures, work package, and inspection requirements;
- personnel conducting work and quality assurance roles were qualified, knowledgeable, and followed approved procedures; and
- effective oversight in accordance with specifications and program requirements was implemented for the activities observed.

The inspectors observed curing activities to determine whether curing was in accordance with specifications and procedures with regard to the method, materials, duration, temperature, inspections, and records. The inspectors also performed independent inspection of the as-built concrete, including finishes and locations of embedments, to determine whether the as-built configuration met the design specifications.

The inspectors reviewed a sample of nonconformances to verify:

- the licensee was identifying deviations at an appropriate threshold and entering them into the corrective action program;
- any differences between the as-built and as-designed structures 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.

1A29 (Unit 4) ITAAC Number 3.3.00.02a.i.a (760) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.02 - Laboratory Testing
- 65001.02-02.03 - Special Considerations
- 65001.02-02.06 - Record Review
- 65001.02-02.08 - Construction Interface Concerns
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors reviewed quality records and performed direct inspection of construction activities associated with the containment internal structures for Unit 4. Specifically, the inspectors observed construction activities associated with the east side of the containment vessel bottom head from elevation 83'-0" to 87'-6".

Prior to concrete placement, the inspectors independently evaluated whether the reinforcing steel met specifications, deviations were adequately captured and addressed, and preparation and cleanliness of the formwork was acceptable. The inspectors observed concrete pre-placement activities to determine whether pre-placement planning and training had been completed and the pre-placement inspection was performed by quality control before any concrete was placed. The inspectors reviewed the concrete placement plan included in the work package to determine whether it included appropriate considerations for:

- hot weather, including maintaining concrete temperature within specified requirements;
- mass concrete;
- contingencies for unexpected events or accidents; and
- preparations for potential weather-related emergencies.

The inspectors observed concrete placement activities to determine whether:

- accepted procedures and specifications were followed throughout the concrete placement;
- equipment used was suitable and sized for the work;
- each batch ticket was reviewed for verification of proper mix, transport time, placement location, and amount of temper water being added at the truck delivery point;
- mixing time and rotations were adequate, including after any field additions were made;
- placement drop distances did not exceed specification requirements and did not result in segregation;
- concrete was placed in lifts in accordance with the concrete placement plan;
- quality control inspection during placement was performed as required by procedures, specifications, and the quality assurance program; and
- records were produced, reviewed, and indicated mix, location, time placed, water additions, temperature of the concrete mix, and ambient conditions.

The inspectors interviewed licensee and contractor personnel to determine whether:

- contractors performing safety-related work followed approved implementing procedures that describe administrative and procedural controls, approved work processes, and inspection requirements;
- design processes were performed in compliance with applicable instructions and procedures;
- personnel conducting work and quality assurance roles were qualified and knowledgeable; and
- effective oversight in accordance with specifications and program requirements was implemented for the installation activities observed.

The inspectors observed concrete cylinder compression break laboratory testing activities to determine whether:

- testing conformed to the test procedures and ASTM standards;
- concrete being tested was controlled and traceable as required;
- the test procedures were available at the work location;
- testing was performed at required intervals and times;
- testing apparatus were calibrated and maintained; and
- personnel running the tests were competent and knowledgeable.

The inspectors reviewed concrete test results to determine whether:

- records were complete, accurate, and approved as required by procedures, specifications, and the quality assurance program;
- test results were reviewed and evaluated against the appropriate acceptance criteria from the specifications; and
- deviations and adverse trends were identified at an appropriate threshold and documented in the corrective action program in accordance with approved procedures.

The inspectors observed curing activities to determine whether curing was in accordance with specifications and procedures with regard to the method, materials, duration, temperature, and inspections. The inspectors performed independent inspection of the as-built concrete, including finishes, to determine whether the as-built configuration met the design specifications.

b. Findings

No findings were identified.

1A30 (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.B-02.04-Production Controls
- 65001.F-02.03-Observation of Fabrication Activities

The inspectors observed welding of the pressurizer compartment onto the CA01 module inside containment after the remainder of CA01 had been set to verify that it was being welded in accordance with the AWS D1.1 welding code, 2000 edition. Specifically the inspectors observed welding and inspected the overall welding activity of vertical seam weld number 880832-3 to verify:

- welding activities were being performed in accordance with the welding procedure;
- the welding procedure, detailed drawings, and weld data sheet were available at the work area;
- the surfaces to be welded were clean, free of deleterious materials, and the welding environment was protected from rain, moisture, and wind;
- the filler metal was as called for in the welding procedure and had the appropriate issue slips;
- the welding technique and direction was in accordance with the welding procedure and the welder's qualifications;
- cleaning in between welding passes and starts and stops were sufficient to ensure adequate weld quality;
- base metal preheat and interpass temperatures were maintained within the limits set by the welding procedure;
- the filler metal heat number was documented on the weld record to provide traceability to the CMTR; and
- the welder had a unique identifier that was documented on the weld record which would be traceable to qualification records.

Additionally, the inspectors reviewed the welder’s qualification test records to determine if he was qualified to make the weld in accordance with AWS D1.1 Welding Code, 2000 edition. The inspectors also reviewed the CMTR for the filler metal to verify if the material had been tested and met the applicable chemical and physical requirements.

b. Findings

No findings were identified.

1A31 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls

The inspectors observed in-process work activities in the field and reviewed documentation associated with the panels that make up the shield building cylinder. Specifically, the inspectors observed the in-process welding for vertical seam welds at elevation 123'-6" for shield wall modules 01H to 04G and 04G to 04H to determine if:

- the welding complied with the requirements in the WPS, including voltage, heat input, and wire speed;
- the weld joint was sufficiently protected from inclement conditions and the surface temperature of the base metal was within WPS requirements;
- the surface to be welded was smooth, uniform, and free from discontinuities such as cracks and free from paint, oil, rust, scale, slag, grease, moisture and other harmful materials; and
- shielding gas flow and composition was as specified in the WPS.

The inspectors reviewed documentation associated with each weld to determine if:

- the work was conducted in accordance with a weld traveler that coordinated the sequence of operations, referenced procedures and specifications, established hold points, and provided for production welding and inspection signoffs;
- each weld was traceable to the welder;
- the weld filler material utilized was in compliance with the WPS and the applicable code specification; and
- the welder was appropriately qualified to perform the weld.

b. Findings

No findings were identified.

1A32 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.03 - Special Considerations
- 65001.02-02.06 - Record Review
- 65001.02-02.07 - Problem Identification and Resolution
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors reviewed quality records and performed direct inspection of construction activities associated with the Shield Building for Unit 4. Specifically, the inspectors observed construction activities associated with the steel concrete composite portion of the Shield Building between azimuths 182 and 342 degrees and elevations 122'-6" and 130'-6", including the vertical reinforced concrete/steel concrete composite transition located approximately at azimuths 182 and 342 degrees.

The inspectors observed concrete pre-placement activities to determine whether pre-placement planning had been completed. The inspectors reviewed the concrete placement plan included in the work package to determine whether it included appropriate considerations for:

- mass concrete;
- preparations for potential weather-related emergencies; and
- contingency preparations for stopping a concrete placement earlier than designed.

The inspectors observed concrete placement activities to determine whether:

- accepted procedures and specifications were followed throughout the concrete placement;
- equipment used was suitable and sized for the work;
- each batch ticket was reviewed for verification of proper mix, transport time, placement location, and amount of temper water being added at the truck delivery point;
- mixing time and rotations were adequate;
- placement drop distances did not exceed specification requirements and did not result in segregation;
- vibrators were handled and operated to ensure adequate consolidation and to avoid voiding or honeycombing, including vertical operation and penetration through the new concrete into the previously placed layer;
- concrete was placed in lifts in accordance with the concrete placement plan;
- quality control inspection during placement was performed as required by procedures, specifications, and the quality assurance program; and
- records were produced, reviewed, and indicated mix, location, time placed, water additions, temperature of the concrete mix, and ambient conditions.

The inspectors performed independent inspection and measurements of the as-built concrete, including finishes, to determine whether the as-built configuration met the design specifications. The inspectors reviewed test results for in-process concrete testing documented on the batch tickets to determine whether:

- records were complete, accurate, and approved as required by procedures, specifications, and the quality assurance program;
- test results were reviewed and evaluated against the appropriate acceptance criteria from the specifications;
- the records were retrievable; and
- deviations and adverse trends were identified at an appropriate threshold and documented in the corrective action program in accordance with approved procedures.

The inspectors reviewed a sample of nonconformances, design changes, and specifications to verify:

- the licensee was identifying deviations at an appropriate threshold and entering them into the corrective action program;
- any differences between the as-built and as-designed structures were documented and dispositioned in accordance with approved modification or change procedures;
- design change activities were completed in accordance with applicable specifications, drawings, and approved procedures;
- design changes and field modifications were properly controlled, documented, and processed in accordance with quality and technical requirements commensurate with the original design;
- the nonconformances were resolved and their dispositions had adequate technical bases; and
- the documents were consistent with the design commitments and requirements of Section 3.3 of Appendix C of the Unit 4 COL, and code commitments in ACI 349-01, AWS D1.1:2000, and AWS D1.4:1998.

b. Findings

No findings were identified.

1A33 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.02 - Laboratory Testing
- 65001.02-02.06 - Record Review

The inspectors observed field placement and concrete testing associated with the Unit 4 non-radiologically controlled area of the auxiliary building for the wall along column line L from column line 9.3 to column line 11 from elevation 82'6" to 99' 3". The inspectors observed the placement activities to determine if:

- the placement had been cleaned as defined in the concrete specification;
- accepted procedures and specifications were followed throughout the concrete placement;
- the placement drop height did not exceed the specified requirements in E&DCR SV0-CC01-GEF-000384 and did not result in segregation; and
- quality control performed inspection during the placement as required by NQA-1, Subpart 2.5, Section 7.5, "Concrete Placement".

During the concrete placement, the inspectors observed in-process concrete testing out of the pump truck to determine if the mix at the point of placement met the requirements of concrete pour card SV4-1220-CCW-CV2541-0002, "Unit 4 Aux Bldg Interior Walls from 82 ft 6 in to 99 ft 3 in, and concrete specification SV4-CC01-Z0-026, "Safety Related Mixing and Delivering Concrete, Westinghouse Seismic Category I, Safety Class C", including slump flow, air content, unit weight, and temperature. The inspectors reviewed the concrete batch tickets, field test data, and concrete compressive strength test results to determine whether:

- each batch ticket indicated mix, placement location, time placed, transport time, temper water being added at the truck delivery point, temperature of the concrete mix, and ambient conditions;
- mixing time and rotations were adequate, including after any field additions were made;
- records were complete, accurate, and approved as required by procedures, specifications, and the quality assurance program;
- test results were reviewed and evaluated against the appropriate acceptance criteria from the specifications; and
- the records were retrievable.

The inspectors reviewed a sample of design changes and specifications to determine whether:

- design change activities were completed in accordance with applicable specifications, drawings, and approved procedures;
- critical attributes associated with the ITAAC were correctly identified and documented for review and approval by responsible engineering personnel;
- design changes and field modifications were properly controlled, documented, and processed in accordance with quality and technical requirements commensurate with the original design; and
- the documents were consistent with the design commitments and requirements of the specifications, Section 3.3 of Appendix C of the Unit 4 Combined License (COL), and code commitments in ACI 349-01.

b. Findings

No findings were identified.

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

1P01 Construction QA Criterion 15

- 35007-A15.04.02 - Inspection of QA Program Implementation

a. Inspection Scope

On February 1, 2016, WECTEC (formerly CB&I) reported a Part 21 issued (Report 2015-69-01) that described manufacturing issues with pipe spools classified as ASME BPVC, Section III. The manufacturing errors for the pipe spools affected various safety systems and were related to bend radius, ovality, wall thickness, and flange orientation. These issues were documented in N&Ds by WECTEC. Because of these issues, Vogtle engineering staff segregated and performed measurements on all spools received from CB&I Laurens. Four N&Ds were evaluated by SNC engineering and determined to be within tolerance of ASME BPVC, Section III for pipe fabrication. These four N&Ds were dispositioned as "Use-As-Is". The inspectors reviewed the associated documentation of the N&Ds with the disposition of “Use-As-Is” to verify that they contained technically adequate explanations for the resulting dispositions of the nonconforming items.

b. Findings

No findings were identified.

1P02 Construction QA Criterion 16

- 35007-A16 - Appendix 16. Inspection of Criterion XVI – Corrective Action
- 35007-A16.04 - Inspection Requirements and Guidance
- 35007-A16.04.01 - Inspection of QA Implementing Documents
- 35007-A16.04.02 - Inspection of QA Program Implementation

a. Inspection Scope

Resident Inspector Corrective Action Program Routine Review

The inspectors reviewed issues entered into the licensee’s and contractors’ CAP daily through review of CAP entry logs, by attending CAP review meetings, during discussions with licensee and contractor personnel, and during inspection activities to assess issues that might warrant additional follow-up inspection, to remain alert to conditions ongoing at the site, to be able to recognize repetitive or long term issues, to be alert to adverse performance trends, and to ensure the various CAPs appropriately included regulatory required non-safety related SSCs. The inspectors completed this through reviews of CAP entry logs, attending CAP review meetings, discussions with licensee and contractor personnel, and inspection activities. The inspectors reviewed corrective actions associated with conditions entered into the CAPs to determine whether:

- appropriate actions to correct the issues were identified and implemented effectively, including immediate or short-term corrective actions;
- actions taken were commensurate with the significance of the associated condition;
- issues from all aspects of the project, including equipment, human performance, and program issues, were being identified by the licensee and contractors at an appropriate threshold and entered into the CAPs; and
- issues were appropriately classified in accordance with the Quality Assurance Program Document (QAPD) and CAP implementing procedures.

Resident Inspector Follow-Up of Selected Issues

Based on items reviewed during routine CAP reviews, the inspectors selected a sample of issues identified in the CAPs for a more in-depth review and follow-up. The selected issues included conditions adverse to quality, issues associated with NRC identified findings and/or violations of regulatory requirements, and issues identified through NRC construction experience.

The inspectors reviewed the following issues:

- Condition Reports 10279889, 10279408, and 10356418 regarding as-built rebar dowels extending through the construction joint of Column Line 1 between Column Lines I and N at elevation 100'-0" for both units;
- CAPAL 100457202 regarding excess bleed water and segregation that occurred during concrete placement 10 East up to elevation 105'-2" inside the Unit 3 containment; and
- Condition Report 10339684 regarding NRC findings of concrete voids around the steel reinforcement and baffle plate within the Unit 4 reinforced concrete/steel concrete composite horizontal transition located approximately between azimuths 173 and 342 degrees and elevations 100'-0" and 103'-6".

These issues were reviewed to determine whether:

- the licensee and contractors planned and implemented corrective actions were commensurate with the significance of the identified issue;
- classification, prioritization, and evaluation for reportability were conducted in accordance with the QAPD and CAP implementing procedures;
- issues were completely and accurately identified in a timely manner commensurate with the significance and ease of discovery;
- issues were screened as required to determine the proper level of evaluation and actions;
- issues associated with design deficiencies were completely identified and corrected, including determining the cause and instituting fixes to the design process and QA program to prevent recurrence of similar deficiencies when required;
- extents of condition, generic implications, common causes, and previous occurrences were evaluated when required;
- the resolution of problems was prioritized based on safety significance;

- corrective actions were appropriately focused and were sufficient to correct the problem identified;
- corrective actions were completed in a timely manner commensurate with the safety significance of the issues, including the implementation of interim corrective actions and compensatory actions to minimize the problem and mitigate its effects until the permanent action could be implemented;
- provisions were in place for escalating to higher management any corrective actions that were not adequate or were not timely;
- the licensee and contractors periodically conducted trend analyses and assessments of aggregated information from their associated CAPs to identify programmatic and common cause problems; and
- trend results were communicated to appropriated personnel and management.

b. Findings

No findings were identified.

1P03 Construction QA Criterion 9

- 35007-A9 - Appendix 9. Inspection of Criterion IX – Control of Special Processes
- 35007-A9.04 - Inspection Requirements and Guidance

a. Inspection Scope

The inspectors conducted an inspection of in-process GTAW activities for the installation of the Spent Fuel Pool stainless steel liner plates. The goal of this inspection was to verify that welding activities were conducted in accordance with Unit 3 UFSAR, Section 3.8, “Design of Category 1 Structures,” specifically, adherence with the requirements of AWS D1.6-1999, Structural Welding Code – Stainless Steel. The inspectors reviewed a sample of weld maps and weld details from the design drawings to determine whether they were consistent with AWS code requirements. The inspectors compared the weld maps and details to determine whether they were correctly implemented in the as-built condition. The inspectors reviewed weld records related to the in-process welding. Specifically, the inspectors reviewed weld travelers to determine whether traceability of the welds was being maintained. In this case, traceability included a review to determine if the proper filler metal used, the correct WPS referenced, and the unique welder identification recorded were documented. For the filler metal, the inspectors also reviewed the Certificate of Conformance & CMTR to determine if they were in conformance with ASME Section II, Part C, SFA 5.9, for classification ER2209. The inspectors also observed the surface of the deposited weld metal for compliance to visual inspection acceptance criteria of AWS D1.6, and the performance of the welder’s ability to deposit acceptable welds. Additionally, the inspectors also reviewed the Welder Performance Qualification Records (WPQR) to verify the individuals performing the work were appropriately qualified for the WPS they were using.

b. Findings

No findings were identified.

3. OPERATIONAL READINESS

Cornerstones: Operational Programs

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

3P01 (Unit 3) Preservice Inspection

- 73754-02.02 - Personnel Qualification & Certification
- 73754-02.03 - Non-destructive Examination (NDE) Review

a. Inspection Scope

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

The inspectors reviewed qualification and certification records for two level II and one level III NDE technicians performing the examinations discussed below to determine if they were in compliance with the ASME Code, Section XI requirements and to verify that qualification certificates, visual acuity examinations, and color vision test results were part of the NDE records.

The inspectors reviewed two of the licensee contractor's (Wesdyne) implementing procedures for ultrasonic testing (UT) for the reactor vessel head penetration exams required by ASME Code, Section XI, case N-729-1 to verify that:

- essentially 100 percent of the examination volume was discussed and any limitations that may be found were adequately documented;
- requirements were specified and agreed with the ASME Code, Section XI requirements;
- qualification of NDE personnel were specified and in accordance with the licensee's PSI program; and
- methods of recording, evaluating, and disposition findings were established and reporting requirements were in compliance with the applicable code requirements.

The inspectors reviewed four of the licensee contractor's (Wesdyne) implementing procedures for eddy current testing (ECT) for the reactor vessel head penetration exams required by ASME Section XI Code case N-729-1 to verify that:

- requirements were specified and agreed with the ASME Code, Section XI requirements;

- qualification of NDE personnel were specified and in accordance with the licensee's PSI program;
- methods of recording, evaluating, and disposition findings were established and reporting requirements were in compliance with the applicable code requirements;
- requirements specified the multi-channel examination unit;
- the method of examination was specified;
- the method of calibration and sequencing of calibration was specified;
- addressed the requirements of ASME Section XI; and
- referenced written approval for use of code cases;

The inspectors directly observed the NDE activities listed below to verify that approved procedures were available, were being followed, and specified NDE equipment was being used. These activities were mandated by the ASME BPVC. The inspectors evaluated the NDE activities for compliance with the requirements in Section XI and Section V of the ASME Code. The inspectors also evaluated examination and evaluation of the results to verify that any identified indications or defects were dispositioned in accordance with the licensee's PSI program and NDE procedures. Additionally, the inspectors reviewed the qualifications of the NDE technicians performing the examinations to determine if they were in compliance with ASME Code requirements.

The inspectors observed automated ECT for outer diameter (OD) and inner diameter (ID) surfaces of closure head penetrations for:

- SV3-RPVH-729-1.1, ID Surface of Closure Head Penetrations (Vent line), Cat. AUG, Item N-729-1.1;
- SV3-RPVH-729-1.2, OD Surface of Closure Head Penetration 37 (Wetted Surface), Cat. AUG, Item N-729-1.2;
- SV3-RPVH-729-1.2, OD Surface of Closure Head Penetration 45 (Wetted Surface), Cat. AUG, Item N-729-1.2; and
- SV3-RPVH-729-1.2, OD Surface of Closure Head Penetration 49 (Wetted Surface), Cat. AUG, Item N-729-1.2.

b. Findings

No findings were identified.

3P02 (Unit 4) Preservice Inspection

- 73754-02.02 - Personnel Qualification & Certification
- 73754-02.03 - Non-destructive Examination (NDE) Review

a. Inspection Scope

The inspectors conducted an onsite review of the implementation of the licensee's PSI program for Unit 4. The PSI program is designed to provide the baseline examination data for which future ISI results can be compared to monitor degradation of pressure retaining components in vital system boundaries. The scope of this program includes

components within the reactor coolant system boundary, risk-significant piping boundaries, and containment system boundaries.

The inspectors reviewed qualification and certification records for two Level II and one Level III NDE technicians performing the examinations discussed below to determine if they were in compliance with the ASME Code, Section XI requirements and to verify that qualification certificates, visual acuity examinations, and color vision test results were part of the NDE records.

The inspectors reviewed two of the licensee contractor's (Wesdyne) implementing procedures for UT for the reactor vessel head penetration exams required by the ASME Code, Section XI, case N-729-1 to verify that:

- essentially 100 percent of the examination volume was discussed and any limitations that may be found were adequately documented;
- requirements were specified and agreed with ASME section XI code requirements;
- qualification of NDE personnel were specified and in accordance with the licensee's PSI program; and
- methods of recording, evaluating, and disposition findings were established and reporting requirements were in compliance with the applicable code requirements.

The inspectors reviewed four of the licensee contractor's (Wesdyne) implementing procedures for ECT for the reactor vessel head penetration exams required by the ASME Code, Section XI, case N-729-1 to verify that:

- requirements were specified and agreed with the ASME Code, Section XI requirements;
- qualification of NDE personnel were specified and in accordance with the licensee's PSI program;
- methods of recording, evaluating, and disposition findings were established and reporting requirements were in compliance with the applicable code requirements;
- requirements specified the multi-channel examination unit;
- the method of examination was specified;
- the method of calibration and sequencing of calibration was specified;
- addressed the requirements of the ASME Code, Section XI; and
- referenced written approval for use of code cases.

The inspectors directly observed or reviewed the NDE activities listed below to verify that approved procedures were available, were being followed, and specified NDE equipment was being used. These activities were mandated by the ASME BPVC. The inspectors evaluated the NDE activities for compliance with the requirements in Section XI and Section V of the ASME Code. The inspectors also evaluated examination and evaluation of the results to verify that any identified indications or defects were dispositioned in accordance with the licensee’s PSI program and NDE procedures. Additionally, the inspectors reviewed the qualifications of the NDE technicians performing the examinations to determine if they were in compliance with the ASME Code requirements.

The inspectors observed automated ECT for inner diameter surfaces of closure head penetrations for:

- SV4-RPVH-729-1.1, ID Surface of Closure Head Penetration 51, Cat. AUG, Item N-729-1.1;
- SV4-RPVH-729-1.1, ID Surface of Closure Head Penetration 59, Cat. AUG, Item N-729-1.1; and
- SV4-RPVH-729-1.1, ID Surface of Closure Head Penetration 63, Cat. AUG, Item N-729-1.1.

The inspectors observed automated UT for inner diameter surfaces of closure head penetrations for:

- SV4-RPVH-729-1.1, ID Surface of Closure Head Penetration 30, Cat. AUG, Item N-729-1.1; and
- SV4-RPVH-729-1.1, ID Surface of Closure Head Penetration 68, Cat. AUG, Item N-729-1.1.

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA6 Meetings, Including Exit

Exit Meeting

On October 11, 2017, the inspectors presented the inspection results to Mr. Martin Washington along with other licensee and contractor staff members. The inspectors stated that no proprietary information would be included in the inspection report. The applicant acknowledged the observations, and provided no dissenting comments.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensees and Contractor Personnel

M. Washington, SNC Licensing - Inspection Supervisor
D. Mickinac, SNC Licensing
A. Buckley, WECTEC Licensing Engineer
J. Hurst, WEC Engineering
M. Yox, Vogtle 3 & 4 Regulatory Affairs Director
S. Hsu, SCS Transmission Planning
J. Hughes, SNC ITAAC Supervisor
D. Gray, SNC ITAAC Project Manager
K. Durrwachter, SNC Licensing Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Type	Status	Description
None			

LIST OF DOCUMENTS REVIEWED

Section 1A01
Vogtle 3&4 UFSAR Figure 9.1-1 and Figure 9.1-2, Rev. 6.
APP-GW-GLR-029, “AP1000 Spent Fuel Storage Racks Criticality Analysis”, Rev. 4
APP-GW-GLR-033, “Spent Fuel Storage Racks Structural/Seismic Analysis”, Rev. 5
APP-FS02-VMM-001. “Instruction Manual for AP1000 GS01 New Fuel Storage Rack and FS02 Spent Fuel Storage Racks”, Rev. 1
SV3-FS01-VQQ-001, “Quality Release and Certificate of Conformance”, Rev. 1
SV3-FS02-VQQ-001, “Quality Release and Certificate of Conformance”, Rev. 2
SV3-FS02-VQQ-002, “Quality Release and Certificate of Conformance”, Rev. 2

Section 1A02
Unit 3 Steam Generator 1 (supplied by Doosan)
SV3-MB01-VQQ-004, "Steam Generator Quality Release and Certificate of Conformance," Revision 3
SV3-MB01-Z0-101, “Design Specification for AP1000 Steam Generator for RCS,” Revision 4
APP-VL51-Z0-002, “Material Specification for SA-508/508M Grade 3 Class 2 Forgings (Section III-NB),” Revision 4
APP-VL51-Z0-011, “Material Specification for SA-336 Grade F316LN Forging (Section III-NB),” Revision 0
APP-VL51-Z0-021, “Material Specification for SB-564, UNS N06690, Section III-NB (Alloy 690 Forgings),” Revision 1
APP-VL53-Z0-011, “Thermally Treated Alloy UNS N06690 (Alloy 690) Tubing for AP1000,” Revision 4
Certification of Conformance from Doosan Heavy Industries and Construction for Steam Generator #3A, Serial Number N07049-01, 11/18/2015
ASME Form N-1 for Steam Generator, Serial Number SV3-RCS-MB-01, 12/21/2016
ASME Form N-2 for Steam Generator, Serial Number N07049-01, 12/5/2014
ASME Form N-5 for Steam Generator, Serial Number DN-3247, 3/23/2015
Average Co Content of SG for Vogtle Unit #3 / SG#3-A, P.O. No. 2008030898, dated June 18, 2010
Average Co Content of SG for Vogtle Unit #3,#4 / SG#3,#4 Spare, P.O. No. 2008030898, dated June 18, 2010
Change to Purchase Order 4500264977, dated 21 June 2016
CMTR Certificate No. 0YUE961196129613, SB-163 UNS N06690, dated June 18, 2010
CMTR Certificate No. 0YUE965196529653, SB-163 UNS N06690, dated June 18, 2010
CMTR Certificate No. F015, SB-163 UNS N06690, Heat No. F92A104, dated May 18, 2010
CMTR Certificate No. F023, SB-163 UNS N06690, Heat No. F92A105, dated April 21, 2010
CMTR Certificate No. F026, SB-163 UNS N06690, Heat No. F92B001, dated April 21, 2010
CMTR Certificate No. F043, SB-163 UNS N06690, Heat No. F92B002, dated May 07, 2010
CMTR Certificate No. F045, SB-163 UNS N06690, Heat No. F92B002, dated May 07, 2010
CMTR Certificate No. F050, SB-163 UNS N06690, Heat No. F92B001, dated May 24, 2010
CMTR Certificate No. F061, SB-163 UNS N06690, Heat No. F92C073, dated May 07, 2010
CMTR Certificate No. F064, SB-163 UNS N06690, Heat No. F92B002, dated May 18, 2010
CMTR Certificate No. F070, SB-163 UNS N06690, Heat No. F92B002, dated May 24, 2010
CMTR Certificate No. F135, SB-163 UNS N06690, Heat No. F92B001, dated May 18, 2010
CMTR No. 08376, PRHR Nozzle Safe-End, SB-564 N06690, Heat No. NX7617HK 11, dated July 8, 2011

CMTR No. JQA-09-075, Tubesheet, SA-508 Gr.3 Cl.2, Heat No. 08W286-1-1, dated September 2, 2009
CMTR 5014 from Lenape Forged Products Corporation, 4/28/2010
CMTR JQA-10-016 from The Japan Steel Works, 1/29/2010
Drawing APP-MB01-V2-102, “AP1000 Steam Generator Channel Head Assembly,” Revision 8
Drawing APP-MB01-V2-103, “AP1000 Steam Generator Channel Head Assembly,” Revision 8
Drawing APP-MB01-V2-104, “AP1000 Steam Generator Channel Head Assembly,” Revision 9
Drawing APP-MB01-V2-182, “AP1000 Steam Generator Tubesheet-to-Channel Head Weld Primary Side Final Assembly,” Revision 3
Drawing APP-MB01-V2-241, “AP1000 Steam Generator Tube Schedule,” Revision 3
Drawing APP-MB01-V2-243, “AP1000 Steam Generator Tube Schedule,” Revision 3
Pressure Test Record 101125211-115 from Doosan, 11/2/2012
Extrados at 3 Points of Bend Portion for Vogtle Unit #3 / SG#3-A, P.O. No. 2008030898, dated June 18, 2010
Extrados at 3 Points of Bend Portion for Vogtle Unit #3,#4 / SG#3,#4 Spare, P.O. No. 2008030898, dated June 18, 2010
Flare Test of Each Bend Tube for Vogtle Unit #3 / SG#3-A, P.O. No. 2008030898, dated June 18, 2010
Flare Test of Each Bend Tube for Vogtle Unit #3,#4 / SG#3,#4 Spare, P.O. No. 2008030898, dated June 18, 2010
Hydrostatic Test Report for Vogtle Unit #3 / SG#3-A
Hydrostatic Test Report for Vogtle Unit #3,#4 / SG#3,#4 Spare
Issue Report 06-074-M007
Issue Report 06-074-M008
Issue Report 06-074-M009
Issue Report 06-074-M010
Issue Report 11-354-M025
Issue Report 11-354-M026
Issue Report 11-354-M027
Issue Report 11-354-M028
Max., Min., and Average of Wall Thickness and Outside Diameter for Each Straight Tube and Average Wall Thickness of SG for Vogtle Unit #3 / SG#3-A, P.O. No. 2008030898, dated June 18, 2010
Max., Min., and Average of Wall Thickness and Outside Diameter for Each Straight Tube and Average Wall Thickness of SG for Vogtle Unit #3,#4 / SG#3,#4 Spare, P.O. No. 2008030898, dated June 18, 2010
MD-100042222, “Material Drawing,” dated March 1, 2010
Procedure W2-9.5-101, “Supplier QA Program Qualification and Assessment,” Revision 1.0
Procedure W2-9.5-104, “Supplier Oversight,” Revision 1.0
PS-11102AA, “Purchase Specification,” Revision 4
Purchase Order 4500264977, “Doosan Heavy Industries & Construction Company Ltd,” date 29 April 2008
Quantity and Tube Series of Tubes Allocated to Vogtle Unit #3 / SG#3-A, P.O. No. 2008030898, dated June 18, 2010
Quantity and Tube Series of Tubes Allocated to Vogtle Unit #3,#4 / SG#3,#4 Spare, P.O. No. 2008030898, dated June 18, 2010
QVD-N07049-01, “Quality Verification Documentation for Vogtle #3A Steam Generator Assembly,” Revision 3
Stress Relieved Record for Vogtle Unit #3 / SG#3-A
Stress Relieved Record for Vogtle Unit #3,#4 / SG#3,#4 Spare

Traceability in All Inspection Process for Vogtle Unit #3 / SG#3-A, P.O. No. 2008030898, dated June 18, 2010
VG3A-SG-BM-TM, "Tabulation of Material for Steam Generator Assembly," Mfg Serial No. N07049-01
WES-2008-231, "Supplier Quality Program Audit Report," dated 11/24/2008
WES-2008-231, "Westinghouse Quality Program Audit Plan," dated 10/10/2008
WES-2011-183, "Supplier Quality Program Audit Report," dated 12/22/2011
WES-2011-183, "Westinghouse Quality Program Audit Plan," dated 10/24/2011
Vogtle Electric Generating Plant, Units 3 and 4 Updated Final Safety Analysis Report (UFSAR), Revision 5.2, Section 5.4.2, Steam Generators
Vogtle Electric Generating Plant, Units 3 and 4 Updated Final Safety Analysis Report (UFSAR), Revision 5.2, Section 5.2.3, Reactor Coolant Pressure Boundary Materials

Unit 3 RCP Casing 1B (supplied by CW-EMD)
SV3-MP01-M2-001, "AP1000 Reactor Coolant Pump Design Specification," Revision 3
ASME Form N-2 for Reactor Coolant Pump Casing, Serial Number 1282, 9/10/2014CMTR 40588-1 from Bradken Atlas, 2/15/2011
Bradken Radiographic Examination Report for RCP Casing, Serial Number TN1816-8, 1/25/2011
Radiographic Examination Report from Bradken for RCP Casing, Serial Number TN1816-8, 4/7/2012
Vogtle Electric Generating Plant, Units 3 and 4 Updated Final Safety Analysis Report (UFSAR), Revision 5.2, Section 5.2.3, Reactor Coolant Pressure Boundary Materials

Unit 3 PZR Safety Valve V005A (supplied by Pentair, formerly Anderson Greenwood Crosby)
Anderson Greenwood Crosby Sales Order No. G466750000, Product Certification (Valves) for Serial No. N900028-00-009, Tag No. APP-RCS-PL-V005A, dated October 25, 2012
APP-PV62-Z0R-001, "Pressurizer Safety Valves (PSV), ASME Code Section III, Class I Valve Datasheet Report," Revision 4
SV3-PV62-Z0-001, "Pressurizer Safety Valve, ASME B&PV Code, Section III, Class 1," Revision 3
SV3-PV62-V2-100001, "Pressurizer Safety Valve General Assembly Drawing," Revision 0
SV3-PV62-V2-100002, "Pressurizer Safety Valve General Assembly Drawing," Revision 0
Certificate of Compliance 295404 from Dubose National Energy Service for Heat No. M73N-2, dated January 11, 2012
Certificate of Compliance from Energy Steel for Heat No. 153445, dated April 23, 2012
Certificate of Compliance from Mackson, Incorporated for Heat No. G17364R01, dated February 2, 2012
CMTR from Charles E. Larson & Sons for Heat No. 47216, dated December 29, 2011
CMTR from Consolidated Power Supply for Heat No. 01249, dated November 3, 2011
CMTR from Custom Alloy Corporation for Heat No. A110144, dated March 15, 2012
CMTR from Custom Alloy Corporation for Heat No. AS4903, dated April 1, 2012
Drawing No. DS B900028, "Nozzle Type Relief Valve," Revision J
Form NV-1, "Certificate Holders' Data Report for Pressure of Vacuum Relief Valves as required by the Provision of the ASME Code, Section III, Division 1," (Manufactured and certified by Anderson Greenwood Crosby for Westinghouse Electric Corporation), for Safety Valve Tag No. APP-RCS-PL-V005A, dated October 26, 2012
Helium Leak Test Report from Anderson Greenwood Crosby, dated September 4, 2012
Liquid Penetrant Inspection Report 36680 from Anderson Greenwood Crosby, dated December 5, 2011

Liquid Penetrant Inspection Report 36810 from Anderson Greenwood Crosby, dated July 25, 2012
Liquid Penetrant Inspection Report 36987 from Anderson Greenwood Crosby, dated September 6, 2012
Liquid Penetrant Inspection Report 37038 from Anderson Greenwood Crosby, dated September 18, 2012
Liquid Penetrant Inspection Report 37041 from Anderson Greenwood Crosby, dated September 18, 2012
Liquid Penetrant Inspection Report 37042 from Anderson Greenwood Crosby, dated September 19, 2012
NIAC Assessment Plan 15116, "ASME Class 1, 2, 3 Valve Parts, Appurtenace & Non Code Safety-Related Items, Valve Refurbishment, and Testing," 02/15/2010
QR-16-1974, "Quality Release & Certificate of Conformance," Serial No. N900028-00-0009, Revision 0
SCAR 100461298
SCAR 100461999
SCAR 100462046
SCAR 100462049
SCAR 100462095
SV0-PV62-Z5-002, Purchase order 4500365094, "Vogtle Project, Units 3 and 4, PV62, Pressurizer Safety Valves," Oct 25 2010
SV0-PV62-Z5-002, Purchase order 4500365094, "Vogtle Project, Units 3 and 4, PV62, Pressurizer Safety Valves," Jun 09 2016
SV3-PV62-V2-100001, "Pressurizer Safety Valve General Assembly Drawing," Revision 0
SV3-PV62-V2-100002, "Pressurizer Safety Valve General Assembly Drawing," Revision 0
SV3-PV62-VQQ-002, QA Data Package for Pressurizer Safety Valve Tag No. APP-RCS-PL-V005A, Revision 0
SV3-PV62-Z0-001, "Pressurizer Safety Valve, ASME B&PV Code, Section III, Class 1," Revision 3
Ultrasonic Inspection Report from OST Services for Part No. N900650, dated August 1, 2012
Ultrasonic Inspection Report from OST Services for Part No. N900652, dated August 1, 2012
Ultrasonic Inspection Report from OST Services for Part No. N900658, dated August 1, 2012
Ultrasonic Inspection Report UT-7615 from Anderson Greenwood Crosby, dated May 10, 2012
Ultrasonic Inspection Report UT-7673 from Anderson Greenwood Crosby, dated August 8, 2012
Valve Test Report from Anderson Greenwood Crosby, for Serial Number N900028-00-0009, dated September 27, 2012
W2-9.5-101, "Supplier QA Program Qualification and Assessment," Revision 1.0
W2-9.5-104, "Supplier Oversight," Revision 1.0
Westinghouse Quality Program Audit Plan Number WES-2017-027, "ASME Class 1, 2, 3 Valve Parts, Appurtenace & Non Code Safety Components," 02/23/2017
Westinghouse Supplier Quality Audit Report WES-2010-046, NIAC Audit 15116, "ASME Class 1, 2, 3 Valve Parts, Appurtenace and Non Code Safety Valves," 03/12/2010
Westinghouse Supplier Quality Audit Report WES-2017-027, "Pentair Valves & Controls, US LP dba Anderson Greenwood Crosby," 04/13/2017
Vogtle Electric Generating Plant, Units 3 and 4 Updated Final Safety Analysis Report (UFSAR), Revision 5.2, Section 5.2.3, Reactor Coolant Pressure Boundary Materials

Corrective Action Documents
CR 10396911
CR 10396915
CR 10396916

CR 10396921
DI 100400385, “SNC ND-16-0366 SV3/SV4 PV62 QADP Comments,” dated November 28, 2016
DI 100484845, "Missing Page from SV3-PV62-VQQ-002 Rev. 0," dated July 25, 2017
DI 100488652, "IOC 17-045, Heat Analysis not in CMTR for U3 Pressurizer Safety Valve QAPD," dated August 16, 2017
Doosan Nonconformance Report NCR_15100531, Revision 0
SV4-MB01-GNR-033, “Deviation Notice for Vogtle Steam Generators 4A & 4B – Certified Material Test Results (CMTR) Numbers 5014, 5015, and 5016," Revision 0

Section 1A03
Design Documents
SV3-GW-P0-007, “AP1000 Specification for Shop Fabricated Piping,” Revision 4
SV3-PL02-Z0-001, “Piping Class Sheets and Standard Details,” Revision 6
SV3-PL02-Z0-101, “AP1000 Class 1 Piping and Non-Class 1 Extensions Design Specification,” Revision 4
SV3-PL02-Z0-102, “AP1000 Class 2, 3 Piping and B31.1 Extensions Design Specification,” Revision 4
E&DCR APP-RCS-GEF-106, Rev. 0
"Reactor Coolant System Containment Bldg Rooms 11401/11403 PRZ Spray Line from Cold Leg 2A", SV3-RCS-PLW-021, Rev. 4
"Reactor Coolant System Containment Building Room 11403 PZR Spray Piping Valve Module", SV3-RCS-PLW-022, Rev. 5
"Reactor Coolant System Containment Building Rooms 11401/11303 CVS Return Link to SG 01", SV3-RCS-PLW-028, Rev. 2
"Reactor Coolant System Containment Building Rooms 11302 ADS 4th Stage Discharge Line", SV3-RCS-PLW-030, Rev. 3
"Reactor Coolant System Containment Building Room 11701 ADS Stage I Upper Tier", SV3-RCS-PLW-081, Rev. 4

Quality Assurance Documents
Certificate of Compliance for RCS pipe spool SV3-RCS-PLW-021-1 from B. F. Shaw Inc., Rev. 02
Certificate of Compliance for RCS pipe spool SV3-RCS-PLW-021-2 from B. F. Shaw Inc., Rev. 02
Certificate of Compliance for RCS pipe spool SV3-RCS-PLW-022-5 from CB&I Laurens, Rev. 7.00
Certificate of Compliance for RCS pipe spool SV3-RCS-PLW-022-6 from B. F. Shaw Inc., Rev. 6
Certificate of Compliance for RCS pipe spool SV3-RCS-PLW-030-1R1 from CB&I Laurens, Rev. 6.00
Certificate of Compliance for RCS pipe spool SV3-RCS-PLW-028-1BCR1 from CB&I Laurens, Rev. 9.00
Certificate of Compliance for RCS pipe spool SV3-RCS-PLW-081-1 from B. F. Shaw Inc., Rev. 6
Certificate of Compliance for RCS pipe spool SV3-RCS-PLW-081-2 from B. F. Shaw Inc., Rev. 001
ASME Form NPP-1 for SV3-RCS-PLW-021-2, 10/8/14
ASME Form NPP-1 for SV3-RCS-PLW-022-5, 2/16/16
ASME Form NPP-1 for SV3-RCS-PLW-030-1R1, 1/9/16
ASME Form NPP-1 for SV3-RCS-PLW-081-2, 6/26/14

CBI Nuclear Quality Assurance Inspection Report Q445-17-10149, dated 1/18/17
CBI Nuclear Quality Assurance Inspection Report S562-17-10091, dated 3/21/17
CBI Nuclear Quality Assurance Inspection Report Q445-17-10847, dated 3/21/17
CBI Nuclear Quality Assurance Inspection Report S562-16-10787, dated 10/15/16
CBI Nuclear Quality Assurance Inspection Report Q445-16-12523, dated 10/15/16
CBI Nuclear Quality Assurance Inspection Report Q445-008-14-0103, dated 11/11/14
CBI Nuclear Quality Assurance Inspection Report Q445-17-12098, dated 6/8/17
CBI Nuclear Quality Assurance Inspection Report Q445-16-12153, dated 8/31/16
CBI Nuclear Quality Assurance Inspection Report S562-16-10577, dated 8/31/16
CBI Nuclear Quality Assurance Inspection Report Q445-008-14-0144, dated 6/9/14
CBI Nuclear Quality Assurance Inspection Report Q445-008-14-0388, dated 10/8/14

CMTRs
CMTR 0YYC1320 from Sumitomo Metal Industries for heat # F221012, 5/31/12
CMTR 0YYU5910 from Sumitomo Metal Industries for heat # F213072, 6/26/12
CMTR 0YYC1319 from Sumitomo Metal Industries for heat # F12A024, 6/13/12
CMTR 13CM-00204 from Tectubi Raccordi for heat # 51647, 2/11/13
CMTR 12AC-01261 from Tectubi Raccordi for heat # 50457, 9/11/12
CMTR 14AC-00024 from Tectubi Raccordi for heat # 200564, 9/19/13
CMTR 270,894 from WFI Nuclear Products for heat # 6316ANE2, 3/5/14
CMTR 0902/12 from Productos Tubularles for heat # 51035 and 51042, 3/4/12
CMTR 18979 from Western Forge & Flange Co. for heat # 51904, 7/31/22

Purchase Orders
PO J132175-C601.02, “Shop Fabricated ASME III Piping,” Revision 0
PO J132175-C601.02, “Shop Fabricated ASME III Piping,” Revision 45

Licensing Documents
Vogtle Electric Generating Plant, Units 3 and 4 Updated Final Safety Analysis Report (UFSAR), Revision 5.2, Section 5.2.3, Reactor Coolant Pressure Boundary Material
Vogtle Electric Generating Plant, Units 3 and 4 Updated Final Safety Analysis Report (UFSAR), Revision 5.2, Section 5.4.3, Reactor Coolant System Piping

Section 1A04
Drawings
APP-PV62-V1-001, AP1000 Pressurizer Safety Valve Outline Drawing, Rev. 0
APP-RCS-M6-002, Piping and Instrumentation Diagram Reactor Coolant System, Rev. 19

Corrective Action
100000651, QME-1 testing for PV-16 and PV-62 inadequate per NRC NON
100375579, Relief Valve Leak Tightness Loads
100388412, Safety Valve Position Indication for PAMS
CAR673, Adequate performance of static side load testing for PV-62
CAPAL100489770, PV62 Design Report Issues
CAPAL 100489382, Errors in AP1000 PRHR HX E&DCR APP-ME02-GEF-115
CR 10401949, Errors in AP1000 PRHR HX E&DCR APP-ME02-GEF-115
CR 10401846, IOC 17-056, ASME Inspection PV62 Design Report Issues
100489198, RPE Qualification Records Missing Applicable ASME Subsections
APP-MB01-GEF-082, Steam Generator Design Modification – Final Closure Seam Weld Offset and Thickness – APP-MB01-V2-601, Rev. 0

SV3-MB01-GNR-004, AP1000 Steam Generator Deviation Notice for Vogtle 3A SG Transition Cone to Lower Shell "C" Assembly Wall Thickness, Rev. 0
SV3-MB01-GNR-017, AP1000 Steam Generator Deviation Notice – Surface Damage on Vogtle 3A Upper Shell Assembly – APP-MB01-V2-152, Rev. 0
SV3-MB01-GNR-028, AP1000 Steam Generator Deviation Notice for Vogtle 3A – Final Vessel Assembly – APP-MB01-V2-152, Rev. 1
SV3-MB01-GNR-502, AP1000 Steam Generator Deviation Notice for Vogtle 3B Startup Feedwater Nozzle Deviation – APP-MB01-V2-156, Rev. 0

Design Documents
APP-MB01-Z0-101, Design Specification, Rev. 8
APP-MB01-Z0C-062, AP1000 Steam Generator Moisture Separator Performance, Rev. 0
APP-MB01-Z0C-103, AP1000 Steam Generator Primary Outlet Nozzle Analysis, Rev. 1
APP-MB01-Z0C-107, AP1000 Steam Generator – Divider Plate Analysis, Rev. 1
APP-MB01-Z0C-110, AP1000 Steam Generator Lower Shell, Transition Cone and Upper Shell Analysis, Rev. 0
APP-MB01-Z0C-115, AP1000 Steam Generator Startup Feedwater Nozzle Analysis, Rev. 1
APP-MB01-Z0C-201, AP1000 Steam Generator Analysis: Thermal – Hydraulic Design Data, Rev. 1
APP-MB01-Z0R-100, AP1000 Steam Generator Generic Design Report, Rev. 4 and Rev. 6
SV3-MB01-Z0R-101, AP1000 Steam Generator – Vogtle Unit 3 (SV3) ASME Design Report, Rev. 0
SV3-MB01-Z0R-201, AP1000 Steam Generator – Vogtle Unit 3 As-Built Analysis, Rev. 0
APP-PV62-VDR-100, Compilation of Design Reports for PV62 Datasheet 100, Rev. 0
APP-PV62-VDR-100, Compilation of Design Reports for PV62 Datasheet 100, Rev. 0
APP-PV62-Z0-001, Pressurizer Safety Valve ASME B&PV Code Section III Class 1, Rev. 7
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ML16323A463, “Nuclear Regulatory Commission Inspection Report of Pentair Valves & Controls Report No. 99901431/2016-201 and Notice of Nonconformance,” December 7, 2016
ML17023A232, “Reply to a Notice of Nonconformance: NRC Inspection Report No. 99901431/2016-201 Notice of Nonconformance 99901431/2016-201-01” January 19, 2017
ML17025A387, “Response Extension Request – Nuclear Regulatory Commission Inspection of Pentair Valves and Control, Inspection Report No. 99901431/2016-201 and Notice of Nonconformance," January 26, 2017
ML17037D205, “Reply to Notice of Nonconformance NRC Inspection Report No. 99901431/2016-201 Nonconformance 99901431/2016-201-01,” February 3, 2017
ML17044A266, “Pentair Valves and Controls Response to the U.S. Nuclear Regulatory Commission Inspection Report No. 99901431/2016-201 and Notice of Nonconformance,” February 15, 2017
ML17076A084, “Reply to Notice of Nonconformance NRC Inspection Report No. 99901431/2016-201 Nonconformance 99901431/2016-201-01,” March 15, 2017
ML17081A246, “Pentair Valves and Controls Response to the U.S. Nuclear Regulatory Commission Inspection Report No. 99901431/2016-201, Notice of Nonconformance,” March 22, 2017

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SV4-MW01-Z0R-003, Rev. 0, AP1000 ADS Sparger – Vogtle Unit (4) Flow Area As –Built Analysis
E&DCR No. APP-MW01-GEF-007, Rev. 0, Revised Dimensions of MW01 Sparger with No Changes in Geometry
E&DCR No. APP-MW01-GEF—009, Rev. 0, MW01 Sparger Design Input References and Loading Requirements
E&DCR No. APP-MW01-GEF-002, Rev. 0, MW01 ADS Sparger Drawing Clarifications
APP-MW01-Z0-001, Rev. 3, Automatic Depressurization System (ADS) Sparger Shop
APP-MW01-Z0R-001, Rev. 3, Sparger Data Sheet Report
WEC CAPAL 100471604, Incorrect Loads used in E&DCR APP-MW01-GEF-007
Vogtle 3&4 UFSAR, Rev. 5.2, Table 6.3-2 Component Data - Passive Core Cooling System

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AMEC Concrete Field and Lab Test Data, Set ID 2017SCC0690, 08/21/2017
AMEC Concrete Field and Lab Test Data, Set ID 2017SCC0692, 08/21/2017
AMEC Concrete Field and Lab Test Data, Set ID 2017SCC0694, 08/21/2017
AMEC Concrete Field and Lab Test Data, Set ID 2017SCC0697, 08/21/2017
Concrete/Grout Delivery Ticket #73100, Pour #3473, 07/22/2017
Concrete/Grout Delivery Ticket #73104, Pour #3473, 07/22/2017
Concrete/Grout Delivery Ticket #73106, Pour #3473, 07/22/2017
Concrete/Grout Delivery Ticket #73107, Pour #3473, 07/22/2017
Concrete/Grout Delivery Ticket #73108, Pour #3473, 07/22/2017
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Concrete/Grout Delivery Ticket #73125, Pour #3473, 07/22/2017
Concrete/Grout Delivery Ticket #73126, Pour #3473, 07/22/2017
Concrete/Grout Delivery Ticket #73130, Pour #3473, 07/22/2017
Concrete/Grout Delivery Ticket #73136, Pour #3473, 07/22/2017
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Concrete/Grout Delivery Ticket #73145, Pour #3473, 07/22/2017
Concrete/Grout Delivery Ticket #73169, Pour #3473, 07/22/2017
Concrete/Grout Delivery Ticket #73172, Pour #3473, 07/22/2017

Engineering & Design Coordination Reports
SV4-CR01-GEF-000189, “Type 14CH, 14CA, 14CB Forest Dowels Spacing,” Revision 0
SV4-CR01-GEF-000178, “NI4-Containment-Pressurizer Bay Shoring Rebar Mod,” Revision 0
SV0-CC01-GEF-000393, “Concrete Curing Time Period for Safety Related C Seismic Class I,” Revision 0

Miscellaneous
132175-108-003-000012 “Stay-Form Stay-in-place Concrete Form,” 02/17/2014
CAPAL 100450386
Quality Inspection Report C112-17-11667, “Pre-Placement: Concrete,” 07/20/2017
Quality Inspection Report C113-17-10090, “Placing Safety Related Concrete,” 07/24/2017
Specification SV4-CC01-Z0-026, “Safety Related Mixing and Delivering Concrete,” Revision 6
Specification SV4-CC01-Z0-027, “Safety Related Concrete Testing Services,” Revision 5
Specification SV4-CC01-Z0-031, “Safety Related Placing Concrete and Reinforcing Steel,” Revision 7

Work Package SV4-1130-C0W-850000, “Reinforced Concrete Inside Containment 87’-6” to 96’-0” West Side (Layer 6V and 7V),” Revision 0

Nonconformance & Disposition Reports
SV4-CC01-GNR-000213, “U4 Inside CVBH Placement up to 96’0” West – Trim Water Added After Truck Discharged,” Revision 0
SV4-CC01-GNR-000215, “U4 Inside CVBH Placement up to 96’0” (West) – Seepage thru Stayform,” Revision 0
SV4-CR01-GNR-000185, “Missed Vertical Dowels in Containment for Elevation 83’-0” Placement,” Revision 0

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AMEC Concrete Field and Lab Test Data, Set ID 2017SCC0713, 09/20/2017
AMEC Concrete Field and Lab Test Data, Set ID 2017SCC0714, 09/20/2017
AMEC Concrete Field and Lab Test Data, Set ID 2017SCC0715, 09/20/2017
Concrete/Grout Delivery Ticket #46181, Pour #3526, 08/23/2017
Concrete/Grout Delivery Ticket #46182, Pour #3526, 08/23/2017
Concrete/Grout Delivery Ticket #46191, Pour #3526, 08/23/2017
Concrete/Grout Delivery Ticket #46199, Pour #3526, 08/23/2017
Concrete/Grout Delivery Ticket #46202, Pour #3526, 08/23/2017
Concrete/Grout Delivery Ticket #46210, Pour #3526, 08/23/2017
Concrete/Grout Delivery Ticket #46220, Pour #3526, 08/23/2017
Concrete/Grout Delivery Ticket #46222, Pour #3526, 08/23/2017
Quality Inspection Report C113-17-10101, “Placing Safety Related Concrete,” 08/25/2017
Specification SV4-CC01-Z0-026, “Safety Related Mixing and Delivering Concrete,” Revision 6
Specification SV4-CC01-Z0-027, “Safety Related Concrete Testing Services,” Revision 5
Specification SV4-CC01-Z0-031, “Safety Related Placing Concrete and Reinforcing Steel,” Revision 7
SV0-CC01-GEF-000299, “Concrete Testing Sequence,” Revision 0
Work Package SV4-1130-C0W-850010, “Containment Bldg – East Concrete – Elev 83’-0” & 84’-6” to 87’-6”,” Revision 1

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WECTEC Weld Data Sheet for Weld #880832-3
WECTEC Welder FCAW qualification record for welder ID NAB6348
Lincoln Electric CMTR for FCAW welding wire lot No. 1204V
WPS2-1.1F03, WECTEC welding procedure, Rev. 3

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Certificate of Conformance and Certified Material Test Report, 132175-FPR12-01836-4, QC Lot 1186B, dated 4/29/2015
Drawing SV4-1208-SC-101, “Shield Building Steel Wall Panels El. 100’-0” to El. 284’-6 ½” Location and Identification Rollout View,” Revision 4
Drawing SV4-1208-SCK-CV12244, “Course 4 Weld Map for Unit 4 Shield Building,” Revision 1
Master Welder Qualification List, welder CMB9079, dated September 7, 2017
Master Welder Qualification List, welder JLC7965, dated August 15, 2017
Procedure Qualification Record 13404, dated February 13, 2015
Traveler, "Weld Vertical Seams for Panels U4 01H/04G I/O", dated 8/15/17
Traveler, "Weld Vertical Seams for Panels U4 04G/04H I/O", dated 8/15/17
Welding Procedure Specification E71T1, "Shield Wall", Revision 0A
Welding Procedure Specification E71T1, "Shield Wall", Revision 0C

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Concrete/Grout Delivery Ticket #73666, Pour #3573, 09/19/2017
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Concrete/Grout Delivery Ticket #73676, Pour #3573, 09/19/2017
Concrete/Grout Delivery Ticket #73677, Pour #3573, 09/19/2017
Concrete/Grout Delivery Ticket #73679, Pour #3573, 09/19/2017
Concrete/Grout Delivery Ticket #73681, Pour #3573, 09/19/2017
Quality Inspection Report C113-17-10117, “Placing Safety Related Concrete,” 09/19/2017
Specification SV4-CC01-Z0-026, “Safety Related Mixing and Delivering Concrete,” Revision 6
Specification SV4-CC01-Z0-027, “Safety Related Concrete Testing Services,” Revision 5
Specification SV4-CC01-Z0-031, “Safety Related Placing Concrete and Reinforcing Steel,” Revision 7
SV0-CC01-GEF-000384, “Increased Drop Height,” Revision 0
SV0-CC01-GEF-000393, “Concrete Curing Time Period for Safety Related C Seismic Class I,” Revision 0
SV4-1208-GNR-000017, “SV4 Course 4 CBIS NCR-U4-004,” Revision 0
SV4-CR01-GNR-000281, “Unit 4 Panel 01G Elevation 125’-0” to 146’-10” RC/SC Connection,” Revision 0
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AMEC Concrete Field and Lab Test Data, Set ID SCC-FYI-0070, 09/18/2017
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Concrete/Grout Delivery Ticket #73634, Pour #3565, 09/07/2017
Concrete/Grout Delivery Ticket #73635, Pour #3565, 09/07/2017
Concrete/Grout Delivery Ticket #73636, Pour #3565, 09/07/2017
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SV0-CC01-GEF-000366, “Testing required for concrete constituents,” Revision 0
SV0-CC01-GEF-000384, “Increased Drop Height,” Revision 0
SV0-CC01-GEF-000393, “Concrete Curing Time Period for Safety Related C Seismic Class I,” Revision 0
SV0-CC01-GEF-000402, “Concrete Crack Repair for Horizontal and Vertical Surfaces,” Revision 0
SV4-1220-CCW-CV2541, "Unit 4 Nuclear Island Auxiliary Building Areas 1 and 2 Concrete Placement for Interior Walls from Elevation 82'-6" to 100'-0"," Revision 0
SV4-1220-CCW-CV2541-0002, "Unit 4 Aux Bldg Interior Walls from 82Ft 6In to 99Ft 3in", dated 9/6/2017
SV4-CC01-Z0-026, "Safety Related Mixing and Delivering Concrete, Westinghouse Seismic Category I, Safety Class C", Revision 6
SV4-CC01-Z0-027, “Safety Related Concrete Testing Services,” Revision 5
SV4-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel, Westinghouse Seismic Category I, Safety Class C", Revision 7

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SV3-PL02-GNR-000007, "Spool SV3-RCS-PLW-560-1 Wall Thickness Deviation", Rev. 0
SV3-PL02-GNR-000008, "Spools (SV3-SGS-PLW-193-1& SV3-SGS-PLW-203-3-1) Wall Thickness Deviation", Rev. 0
SV3-PL02-GNR-000011, "SV3-SGS-PLW-570-3, bend #1 wall thickness violation", Rev. 0
SV3-PL02-GNR-000012, "Spool# (SV3-RCS-PLW-511-1), bend #1 wall thickness violation", Rev. 0
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Focused Review of CRs 10279889, 10279408, and 10356418
APP-CE01-GEF-850060, "Wall 1 Vertical Reinforcing Section Cut Corrections," Revision 0
CAPAL 100421244
CAPAL 100469462
SV3-CR01-GNR-000633, "Wall 1 Vertical Bars El. 100'-0"," Revision 0
SV4-CR01-GNR-000148, "Wall 1 Vertical Bars El. 100'-0"," Revision 0

Focused Review of CAPAL 100457202
132175-MS0W-17-0001, "Management Suspension of Work (MSOW) All Safety-Related Concrete Placements – CAT I," Revision 3
132175-MS0W-17-0001, "Management Suspension of Work (MSOW) All Safety-Related Concrete Placements – CAT I," Revision 0
132175-MSOW-17-0001-PR0009, "U3 Containment – Placement 8V (North) up to Elev. 98'-0" and 98'-6"," 05/16/2017
SV0-CC01-GEF-000308, "SCC pump pressure limitations," Revision 0
SV3-CC01-GNR-000401, "Segregation of concrete on top out of 105'-2" east," Revision 0

Focused Review of CR 10339684
APP-1208-GEF-398, "Shield Building RC/SC Panels- Hex nut inspection," Revision 0
C113-17-10022, "Placing Safety Related Concrete," 02/24/17
C155-17-10021, "CIVIL – Fabrication and Erection of Structural Steel," 03/08/17
C155-17-10023, "CIVIL – Fabrication and Erection of Structural Steel," 03/22/17
CAPAL 100454276
CAPAL 100456124
CAPAL 100456280
CSI 02-19, "Construction Materials Management," Revision 08.06
NCSP 02-09, "Construction Materials Management," Revision 06.02
SV4-CR01-GNR-000199, "Unit 4 post inspection of the 13M placement 2 issues found," Revision 0
SV4-CR01-GNR-000201, "Unit 4 13M Nuts and Washers Storage Requirement Violation," Revision 0

Miscellaneous
SV4-CA20-GEF-000043, "CA20 Room 12262 Penetration Interference," Revision 0

Section 1P03
Design Documents
SV3-CA20-S5Y-00201, "Auxiliary Building Areas 5 & 6 Module CA20 Standard Welding Details," Rev. 1
SV3-CA20-S8-601, "Auxiliary Building Areas 5 & 6 Module Floor Liner Plates Spent Fuel Pool," Rev. 0

APP-CA20-S4-03009, “Auxiliary Building Areas 5 & 6 CA20 Module Subassembly 3 Liner and Leak Chase System Details,” Rev. 1
SV3-CA20-S4K-880847, “Unit 3 CA20 Spent Fuel Pool Floor Liner Plate Weld Map,” Rev. 2

Welding Records
WPS5-10H.10HT70
“Record of Welder Qualification Test – AWS D1.6”, Test No.: 5SS-14
“Record of Welder Performance Qualification Test – ASME Section IX”, Test No.: 1CS-03
“Certificate of Conformance & Certified Material Test Report”, Lot 1203C, Purchase Order: 132175-FPR12-01836-7

3. OPERATIONAL READINESS

Section 3P01
Procedures:
WDI-STD-1040, "Procedure for Ultrasonic Examination of Reactor Vessel Head Penetrations", Rev. 15
WDI-STD-1041, "Reactor Vessel Head Penetration Ultrasonic Examination Analysis", Rev. 11
WDI-STD-1042, "Procedure for Eddy Current Examination of Reactor Vessel Penetrations", Rev. 6
WDI-STD-1121, "Procedure for IntraSpect Eddy Current Examination of Reactor Vessel Head Vent Line Penetrations", Rev. 2
WDI-STD-010, "IntraSpect Eddy Current Inspection of Reactor Vessel Head Penetrations J-Welds and Tube OD Surfaces", Rev. 19
WDI-STD-041, "IntraSpect Eddy Current Analysis Guidelines", Rev. 20

Personnel Qualifications and Certifications:
Wesdyne Certificate of Qualification: II/UT, Akutu, dated 07/12/17
Wesdyne Certificate of Qualification: III/ET, II/MT, III,PT, III/UT, II/VT, Wyffels, dated 07/12/17
SSI Certificate of Qualification: II/ET, II-L/PT, II/UT, Overly, dated 07/12/17
WEC Vision Acuity Record: Akutu, dated 02/08/17
WEC Vision Acuity Record: Wyffels, dated 02/21/16
SSI Vision Acuity Record: Overly, dated 06/18/17

Section 3P02
Procedures:
WDI-STD-1040, "Procedure for Ultrasonic Examination of Reactor Vessel Head Penetrations", Rev. 15
WDI-STD-1041, "Reactor Vessel Head Penetration Ultrasonic Examination Analysis", Rev. 11
WDI-STD-1042, "Procedure for Eddy Current Examination of Reactor Vessel Penetrations", Rev. 6
WDI-STD-1121, "Procedure for IntraSpect Eddy Current Examination of Reactor Vessel Head Vent Line Penetrations", Rev. 2
WDI-STD-010, "IntraSpect Eddy Current Inspection of Reactor Vessel Head Penetrations J-Welds and Tube OD Surfaces", Rev. 19
WDI-STD-041, "IntraSpect Eddy Current Analysis Guidelines", Rev. 20

Personnel Qualifications and Certifications:
Wesdyne Certificate of Qualification: II/UT, Akutu, dated 07/12/17
Wesdyne Certificate of Qualification: III/ET, II/MT, III,PT, III/UT, II/VT, Wyffels, dated 07/12/17
SSI Certificate of Qualification: II/ET, II-L/PT, II/UT, Overly, dated 07/12/17

WEC Vision Acuity Record: Akutu, dated 02/08/17
WEC Vision Acuity Record: Wyffels, dated 02/21/16
SSI Vision Acuity Record: Overly, dated 06/18/17

LIST OF ACRONYMS

ACC	Accumulator
ADS	Automatic Depressurization System
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
BPVC	Boiler and Pressure Vessel Code
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CMTR	Certified Material Test Report
COL	Combined License
CR	Condition Report
CVS	Chemical and Volume Control System
DCO	Division of Construction Oversight
E&DCR	Engineering and Design Coordination Reports
ECT	Eddy Current Testing
GTAW	Gas Tungsten Arc Welding
HX	Heat Exchanger
IMC	Inspection Manual Chapter
ID	Inner Diameter
IP	Inspection Procedure
IR	Inspection Report
IRWST	In-Containment Refueling Water Storage Tank
ISI	Inservice Inspection
ITAAC	Inspections, Tests, Analysis, and Inspection Criteria
M&TE	Measuring & Test Equipment
MOV	Motor Operated Valves
N&D	Nonconformance and Disposition Report
NDE	Non-Destructive Examination
NRC	Nuclear Regulatory Commission
OD	Outer Diameter
PCD	Principal Closure Document
PRHR	Passive Residual Heat Removal
PSI	Preservice Inspection
PXS	Passive Core Cooling System
QADP	Quality Assurance Data Package
QAPD	Quality Assurance Program Document
QC	Quality Control
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RPE	Registered Professional Engineer
RPV	Reactor Pressure Vessel
RT	Radiographic Test
SNC	Southern Nuclear Operating Company
SONGS	San Onofre Nuclear Generating Station
SSC	Structure, System, and Component
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic Testing
VEGP	Vogtle Electric Generating Plant
WEC	Westinghouse Electric Company

WMR	Welding Material Requisition
WPQR	Welder Performance Qualification Records
WPS	Welding Procedure Specification

ITAAC INSPECTED

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
11	2.1.01.07.iv	7. The new and spent fuel storage racks maintain the effective neutron multiplication factor required by 10 CFR 50.68 limits during normal operation, design basis seismic events, and design basis dropped spent fuel assembly accidents over the spent fuel storage racks.	iv) Analysis of the spent fuel storage racks under design basis dropped spent fuel assembly loads will be performed.	iv) A report exists and concludes that the spent fuel racks can withstand design basis dropped spent fuel assembly loads and maintain the calculated effective neutron multiplication factor required by 10 CFR 50.68(1) limits.

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

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
		without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.1.2-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.		
14	2.1.02.02b	**Not used per Amendment No. 85** 2.b) The piping identified in Table 2.1.2-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements.	**Not used per Amendment No. 85** Inspection will be conducted of the as-built piping as documented in the ASME design reports.	**Not used per Amendment No. 85** The ASME code Section III design reports exist for the as-built piping identified in Table 2.1.2-2 as ASME Code Section III.
15	2.1.02.03a	**Not used per Amendment No. 85** 3.a) Pressure boundary welds in components identified in Table 2.1.2□1 as ASME Code Section III meet ASME Code Section III requirements.	**Not used per Amendment No. 85** Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.	**Not used per Amendment No. 85** A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.
16	2.1.02.03b	**Not used per Amendment No. 85** 3.b) Pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements.	**Not used per Amendment No. 85** Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.	**Not used per Amendment No. 85** A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.

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

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
38	2.1.02.08d.vii	8.d) The RCS provides automatic depressurization during design basis events.	vii) Inspection of each ADS sparger will be conducted to determine the flow area through the sparger holes.	vii) The flow area through the holes in each ADS sparger is > 274 in2.

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

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
		without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.2.3-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.		
160	2.2.03.02b	**Not used per Amendment No. 85** 2.b) The piping identified in Table 2.2.3-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements.	**Not used per Amendment No. 85** Inspection will be conducted of the as-built piping as documented in the ASME design reports.	**Not used per Amendment No. 85** The ASME Code Section III design reports exist for the as□built piping identified in Table 2.2.3-2 as ASME Code Section III.
162	2.2.03.03b	**Not used per Amendment No. 85** 3.b) Pressure boundary welds in piping identified in Table 2.2.3-2 as ASME Code Section III meet ASME Code Section III requirements.	**Not used per Amendment No. 85** Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.	**Not used per Amendment No. 85** A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.
658	C.2.6.09.01	1. The external walls, doors, ceiling, and floors in the location within which the last access control function for access to the protected area is performed are bullet□resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4.	Type test, analysis, or a combination of type test and analysis will be performed for the external walls, doors, ceilings, and floors in the location within which the last access control function for access to the protected area is performed.	The external walls, doors, ceilings, and floors in the location within which the last access control function for access to the protected area is performed are bullet□resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
676	C.2.6.12.06	6. The reactor coolant pumps continue to receive power from either the main generator or the grid for a minimum of 3 seconds following a turbine trip.	Analyses of the as□built offsite power system will be performed to confirm that power will be available to the reactor coolant pumps for a minimum of 3 seconds following a turbine trip when the buses powering the reactor coolant pumps are aligned to either the unit auxiliary transformers (UATs) or the reserve auxiliary transformers (RATs).	A report exists and concludes that voltage at the high□side of the generator stepup transformer (GSU), and the RATs, does not drop more than 0.15 per unit (pu) from the pre□trip steady□state voltage for a minimum of 3 seconds following a turbine trip when the buses powering the reactor coolant pumps are aligned to either the UATs or the RATs.
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.

Attachment 1 - ITAAC Numbers Before and After License Amendment

New ITAAC	Old ITAAC	New ITAAC	Old ITAAC	New ITAAC	Old ITAAC
Deleted	2.1.01.03	Deleted	2.2.04.07c	Deleted	2.3.13.06c
2.1.02.02a	2.1.02.02a	Deleted	2.2.04.08b.i	Deleted	2.3.13.07
	2.1.02.02b	Deleted	2.2.04.08c	Deleted	2.3.14.02
	2.1.02.03a	Deleted	2.2.04.09b.i	Deleted	2.3.15.02
	2.1.02.03b	2.2.04.12a.i	2.2.04.12a.i	Deleted	2.5.01.01
	2.1.02.04a		2.2.04.12a.ii	Deleted	2.5.01.05
	2.1.02.04b	2.2.05.02a	2.2.05.02a	Deleted	2.5.02.01
	2.1.02.05b		2.2.05.02b	2.5.02.02.i	2.5.02.02.i
	2.1.02.06		2.2.05.03a		2.5.02.02.ii
2.1.02.05a.i	2.1.02.05a.i		2.2.05.03b		2.5.02.02.iii
	2.1.02.05a.ii		2.2.05.04a		2.5.02.03
	2.1.02.05a.iii		2.2.05.04b		2.5.02.04
	2.1.02.07a.i		2.2.05.05b	Deleted	2.5.02.05b
	2.1.02.07a.ii	2.2.05.05a.i	2.2.05.05a.i	Deleted	2.5.03.01
Deleted	2.1.02.07c		2.2.05.05a.ii	2.5.05.02.i	2.5.05.02.i
2.1.02.12a.i	2.1.02.12a.i		2.2.05.05a.iii		2.5.05.02.ii
	2.1.02.12a.ii	Deleted	2.2.05.06b	2.5.05.02.i	2.5.05.02.iii
2.1.02.12a.iv	2.1.02.12a.iv	Deleted	2.3.01.02		2.5.05.03a.i
	2.1.02.12a.v	2.3.02.02a	2.3.02.02a		2.5.05.03a.ii
Deleted	2.1.02.12a.vi		2.3.02.02b	Deleted	2.5.05.03c
Deleted	2.1.02.12a.vii		2.3.02.03a	2.6.01.02.i	2.6.01.02.i
2.1.03.03	2.1.03.03		2.3.02.03b		2.6.01.02.ii
	2.1.03.04		2.3.02.04a		2.6.01.02.iii
	2.1.03.05		2.3.02.04b	Deleted	2.6.01.03b
2.1.03.06.i	2.1.03.06.i	2.3.02.05.i	2.3.02.05.i	Deleted	2.6.01.04b
	2.1.03.06.ii		2.3.02.05.ii	Deleted	2.6.02.01
	2.1.03.06.iii		2.3.02.05.iii	Deleted	2.6.03.01
	2.1.03.09a.i		2.3.02.06a.i	2.6.03.02.i	2.6.03.02.i
	2.1.03.09a.ii		2.3.02.06a.ii		2.6.03.02.ii
Deleted	2.1.03.09c	Deleted	2.3.02.06c		2.6.03.02.iii
2.2.01.02a	2.2.01.02a	Deleted	2.3.02.07a	Deleted	2.6.03.03
	2.2.01.02b	Deleted	2.3.02.07b	Deleted	2.6.05.01
	2.2.01.03a	Deleted	2.3.02.07c	2.6.05.03.i	2.6.05.03.i
	2.2.01.03b	2.3.02.11a.i	2.3.02.11a.i		2.6.05.03.ii
	2.2.01.04a.i		2.3.02.11a.ii	Deleted	2.6.05.04
	2.2.01.04b	Deleted	2.3.04.03	Deleted	2.6.09.01

New ITAAC	Old ITAAC
2.2.01.05.i	2.2.01.05.i
	2.2.01.05.ii
	2.2.01.05.iii
	2.2.01.06a.i
	2.2.01.06a.ii
	2.2.01.06d.i
	2.2.01.06d.ii
Deleted	2.2.01.06c
2.2.01.11a.i	2.2.01.11a.i
	2.2.01.11a.ii
2.2.02.02a	2.2.02.02a
	2.2.02.02b
	2.2.02.03a
	2.2.02.03b
	2.2.02.04a
	2.2.02.04b
	2.2.02.05b
2.2.02.05a.i	2.2.02.05a.i
	2.2.02.05a.ii
	2.2.02.05a.iii
	2.2.02.06a.i
	2.2.02.06a.ii
Deleted	2.2.02.06c
Deleted	2.2.02.07e.i
Deleted	2.2.02.08c
2.2.02.11a.i	2.2.02.11a.i
	2.2.02.11a.ii
2.2.03.02a	2.2.03.02a
	2.2.03.02b
	2.2.03.03a
	2.2.03.03b
	2.2.03.04a
	2.2.03.04b
	2.2.03.05b
	2.2.03.06
2.2.03.05a.i	2.2.03.05a.i
	2.2.03.05a.ii
	2.2.03.05a.iii
	2.2.03.07a.i
	2.2.03.07a.ii
Deleted	2.2.03.07c

New ITAAC	Old ITAAC
2.3.05.02.i	2.3.05.02.i
	2.3.05.02.ii
	2.3.05.02.iii
2.3.06.02a	2.3.06.02a
	2.3.06.02b
	2.3.06.03a
	2.3.06.03b
	2.3.06.04a
	2.3.06.04b
	2.3.06.05b
	2.3.06.06
2.3.06.05a.i	2.3.06.05a.i
	2.3.06.05a.ii
	2.3.06.05a.iii
	2.3.06.07a.i
	2.3.06.07a.ii
Deleted	2.3.06.07c
Deleted	2.3.06.08a
Deleted	2.3.06.08b
2.3.06.12a.i	2.3.06.12a.i
	2.3.06.12a.ii
2.3.07.02a	2.3.07.02a
	2.3.07.02b
	2.3.07.03
	2.3.07.04
2.3.07.05.i	2.3.07.05.i
	2.3.07.05.ii
	2.3.07.05.iii
Deleted	2.3.07.06b
Deleted	2.3.07.07a
Deleted	2.3.07.07b.iii
Deleted	2.3.07.07b.iv
Deleted	2.3.07.07b.v
Deleted	2.3.07.07b.vi
2.3.10.02a	2.3.10.02a
	2.3.10.02b
	2.3.10.03a
	2.3.10.03b
	2.3.10.04a
	2.3.10.04b
	2.3.10.05b

New ITAAC	Old ITAAC
Deleted	2.6.09.03
Deleted	2.6.09.04
2.7.01.02a	2.7.01.02a
	2.7.01.02b
	2.7.01.03a
	2.7.01.03b
	2.7.01.04a
	2.7.01.04b
2.7.01.05.i	2.7.01.05.i
	2.7.01.05.ii
	2.7.01.05.iii
Deleted	2.7.01.06b
Deleted	2.7.01.07
Deleted	2.7.01.08a
Deleted	2.7.01.08b
Deleted	2.7.01.08c
Deleted	2.7.02.02
Deleted	2.7.03.02a
Deleted	2.7.03.02b
Deleted	2.7.04.02a
Deleted	2.7.04.02b
Deleted	2.7.04.02c
Deleted	2.7.06.02.i
Deleted	3.1.00.06
Deleted	3.2.00.03.i
Deleted	3.2.00.03.ii
Deleted	3.2.00.03.iii
Deleted	3.2.00.03.iv
Deleted	3.2.00.03.v
Deleted	3.2.00.06.i
Deleted	3.2.00.06.ii
Deleted	3.2.00.06.iii
Deleted	3.3.00.02c
Deleted	3.3.00.02d
Deleted	3.3.00.02e
3.5.00.01.i	3.5.00.01.i
	3.5.00.01.ii
	3.5.00.01.iii
	3.5.00.02.i
	3.5.00.02.ii
Deleted	3.5.00.03

New ITAAC	Old ITAAC
Deleted	2.2.03.08a
2.2.03.12a.i	2.2.03.12a.i
	2.2.03.12a.ii
2.2.04.02a	2.2.04.02a
	2.2.04.02b
	2.2.04.03a
	2.2.04.03b
	2.2.04.04a
	2.2.04.04b
	2.2.04.05b
	2.2.04.06
2.2.04.05a.i	2.2.04.05a.i
	2.2.04.05a.ii
	2.2.04.05a.iii
	2.2.04.07a.i
	2.2.04.07a.ii

New ITAAC	Old ITAAC
2.3.10.05a.i	2.3.10.05a.i
	2.3.10.05a.ii
	2.3.10.05a.iii
Deleted	2.3.10.06a
Deleted	2.3.10.06b
2.3.11.02.i	2.3.11.02.i
	2.3.11.02.ii
	2.3.11.02.iii
2.3.13.02	2.3.13.02
	2.3.13.03
	2.3.13.04
2.3.13.05.i	2.3.13.05.i
	2.3.13.05.ii
	2.3.13.05.iii
	2.3.13.06a.i
	2.3.13.06a.ii

New ITAAC	Old ITAAC
Deleted	3.6.00.01.i
Deleted	3.6.00.01.ii
Deleted	3.6.00.01.iii
Deleted	3.6.00.01.iv
Deleted	3.6.00.01.v
Deleted	3.6.00.01.vi
Deleted	3.6.00.01.vii

Attachment 2 – NRC Inspection Samples Pre-License Amendment Credited to Post-License Amendment ITAAC Numbers

New ITAAC	Old ITAAC	Report Numbers where Old ITAAC was inspected	Findings
2.1.02.02a	2.1.02.02a	U3: 2017001 2017002 2017003 U4: 2017002 2017003	NCV - 05200025/2017002-01 NCV - 05200026/2017002-01
	2.1.02.02b	U3: 2016004 2017002 2017003 U4: 2016004 2017002 2017003	None
	2.1.02.03a	U3: 2017001 2017003 U4: 2017001 2017003	None
	2.1.02.03b	U3: 2017001 2017003 U4: 2017001	None
2.1.02.05a.i	2.1.02.05a.ii	U3 and U4: 2017001 2017002	None
	2.1.02.07a.i	U3 and U4: 2017002	None
	2.1.02.07a.ii	U3 and U4: 2016002	None
2.1.02.12a.iv	2.1.02.12a.iv	U3 and U4: 2017002	None

New ITAAC	Old ITAAC	Report Numbers where Old ITAAC was inspected	Findings
2.1.03.03	2.1.03.03	U3: 2014004, 2014005, 2016004 U4: 2016002	None
	2.1.03.04	U3 and U4: 2016002	None
2.1.03.06.i	2.1.03.06.ii	U3 and U4: 2016004	None
	2.1.03.09a.i	U3 and U4: 2016004	None
	2.1.03.09a.ii	U3 and U4: 2016002	None
2.2.01.02a	2.2.01.02a	U3: 2010002, 2011004, 2011005, 2011006, 2012002, 2012003, 2012004, 2013002, 2013003, 2014002, 2014005, 2015001, 2015002, 2016003, 2016004, 2017002 U4: 2011004, 2012003, 2012004, 2012005, 2013002, 2013003, 2013004, 2014002, 2014004, 2014005, 2015001, 2016003, 2016004, 2017002	NOV - 05200025/2010002-01
	2.2.01.03a	U3: 2011006, 2012002, 2012003, 2012004, 2012005, 2013002, 2013003, 2013004, 2014002, 2014005, 2015002, 2015003, 2015004, 2016003, 2016004, 2017002 U4: 2011004, 2012003, 2012004, 2012005, 2013002, 2013003, 2013004, 2013005, 2014002, 2014004, 2014005, 2015001, 2015002, 2015004, 2016001, 2016002, 2016003, 2016004	None
	2.2.01.04a.i	U3: 2012002 U4: 2013003	None

New ITAAC	Old ITAAC	Report Numbers where Old ITAAC was inspected	Findings
2.2.01.05.i	2.2.01.05.ii	U3 and U4: 2016004 2017001 2017002	None
	2.2.01.06a.i	U3 and U4: 2017001 2017002	None
	2.2.01.06a.ii	U3 and U4: 2016002	None
	2.2.01.06d.i	U3 and U4: 2017001	None
2.2.01.11a.i	2.2.01.11a.i	U3 and U4: 2017002	URI - 05200025/2017002-02 URI - 05200026/2017002-02
2.2.02.05a.i	2.2.02.05a.ii	U3 and U4: 2017001 2017002	None
2.2.03.02a	2.2.03.02a	U3: 2016004, 2016008, 2017001 2017002, 2017003 U4: 2016008 2017002	None
	2.2.03.02b	U3: 2016003 2016004 2017003 U4: 2016004	None
	2.2.03.03a	U3: 2016003 2016004 2017003 U4: 2016003	None
	2.2.03.03b	U3: 2016003 2017001 2017002 U4: 2016003	None

New ITAAC	Old ITAAC	Report Numbers where Old ITAAC was inspected	Findings
2.2.03.05a.i	2.2.03.05a.ii	U3 and U4: 2016004 2017001 2017002	None
	2.2.03.07a.i	U3 and U4: 2017002	None
	2.2.03.07a.ii	U3 and U4: 2016002	None
2.2.03.12a.i	2.2.03.12a.i	U3 and U4: 2017002	None
2.2.05.05a.i	2.2.05.05a.ii	2017001	None
2.3.02.02a	2.3.02.02b	2016004	None
2.3.06.05a.i	2.3.06.05a.ii	2017002	None
2.5.02.02.i	2.5.02.02.ii	2016004 2017001	None
	2.5.02.03	2016004 2017001	None
	2.5.02.04	2016004 2017001	None
2.6.03.02.i	2.6.03.02.ii	U3: 2017001 2011007 U4: 2017001	None