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

February 14, 2019

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

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 - NRC INTEGRATED INSPECTION REPORTS 05200025/2018004, 05200026/2018004

Dear Mr. Yox:

On December 31, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Vogtle Electric Generating Plant, Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on January 15, 2019 with Mr. G. Chick, Senior Vice President Vogtle Units 3 & 4, 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 G. Khouri for/

Jamie Heisserer, Chief
Construction Inspection Branch 1
Division of Construction Oversight

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

Enclosure: NRC Inspection Report (IR) 05200025/2018004, 05200026/2018004
w/attachment: Supplemental Information

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Letter to Michael Yox from Jamie Heisserer dated February 14, 2019.

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 - NRC INTEGRATED INSPECTION REPORTS 05200025/2018004, 05200026/2018004

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DATE	2/7/2019	2/11/2019	2/7/2019	2/7/2019	2/14/2019	2/14/2019	

U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers:	5200025 5200026
License Numbers:	NPF-91 NPF-92
Report Numbers:	05200025/2018004 05200026/2018004
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Vogtle Electric Generating Plant Unit 3 Vogtle Electric Generating Plant Unit 4
Location:	Waynesboro, GA
Inspection Dates:	October 1, 2018 through December 31, 2018
Inspectors:	A. Artayet, Senior Construction Inspector, DCO B. Griman, Construction Inspector, DCO D. Harmon, Construction Inspector, DCO N. Karlovich, Resident Inspector, DCO B. Kemker, Senior Resident Inspector, DCO G. Khouri, Senior Construction Inspector, DCO J. Lizardi-Barreto, Construction Inspector, DCO R. Patterson, Physical Security Inspector, DRS A. Ponko, Senior Construction Inspector, DCO S. Smith, Senior Construction Inspector, DCO S. Temple, Resident Inspector, DCO J. Vasquez, Construction Inspector, DCO
Approved by:	Jamie Heisserer, Branch Chief Construction Inspection Branch 1 Division of Construction Oversight

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2018004, 05200026/2018004; 10/01/2018 through 12/31/2018; Vogtle Electric Generating Plant Units 3 & 4 integrated inspection report.

This report covers a three month period of inspection by regional and resident inspectors, and announced Inspections, Tests, Analysis, and Acceptance Criteria (ITAAC) inspections by Regional inspectors. The NRCs program for overseeing the safe 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

During this report period in Unit 3 containment, pipe and components that make up the passive core cooling system (PXS) and reactor coolant system (RCS) continued to be installed. Additional structural modules were installed in containment that make up the rooms inside containment. In the shield building, steel composite transition modules were installed, welded, and concrete place up to 189'-6". In the auxiliary building, floors at 117'-6" and walls from 117'-6" to 135' continued to be constructed and floors at 135'-3" began installation.

In Unit 4 containment, piping work for the PXS and RCS continued to be installed. Steam generator A was set in containment. In the shield building, work continued on the reinforced concrete portion. In the auxiliary building, work continued on floors at 100' and work continued on walls up to 117'-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 2.1.02.02a (13) / Family 06F

a. Inspection Scope

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

- 65001.03-02.03 - Installation and Welding
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection

The inspectors conducted an inspection of a weld between line PXS-L130A and the sparger A outlet nozzle. The inspectors observed manual gas tungsten arc welding (GTAW) and reviewed the weld data sheet (WDS) and welding material requisition (WMR) for field weld SV3-PXS-PLW-070-8 to determine whether welding activities were performed in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section III, 1998 Edition 2000 Addenda, Subsection ND, for Class 3 components. Specifically, the inspectors observed welding of an intermediate weld bead in the horizontal position to verify the amperage used was in accordance with WPS 1-8.8T01. In addition, the inspectors reviewed the WDS to verify inspection hold points during fit up for quality control (QC) and the authorized nuclear inspector (ANI) were signed-off for material identification markings, cleanliness, fit-up, and internal purge/backing gas in accordance with Section X of the licensee's quality assurance manual. Finally, the inspectors reviewed the WMR against the WDS entries to verify traceability of the welder and welding rods were controlled in accordance with the ASME Code, Section III, Subsection ND.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.03-02.01 - Purchase and Receipt of Materials
- 65001.03-02.03 - Installation and Welding
- 65001.03-02.06 - Nondestructive Examination (NDE)
- 65001.03-02.07 - Review of Records
- 65001.03-02.08 - Problem Identification and Resolution
- 65001.B-02.04-Production Controls
- 65001.F-02.02-Fabrication Records Review

The inspectors conducted an inspection of the Unit 3 module Q601. This module consists of the ASME piping, valves and supports for the Reactor Coolant System (RCS) Automatic Depressurization System (ADS) stages 1, 2, and 3.

The inspectors performed this inspection to verify if module Q601 was fabricated in accordance with the ASME Code, Section III, 1998 Edition 2000 Addenda, Westinghouse (WEC) design and fabrication specifications, and Chapter 3 of the Updated Final Safety Analysis Report (UFSAR). Specifically, the inspectors reviewed fabrication records which included piping pressure boundary welds as well as support welds for the following piping spools and supports:

- SV3-RCS-PLW-012-1 (RCS-L006A),
- SV3-RCS-PLW-01E-1 (RCS-L021B),
- SV3-RCS-PLW-01E-2A (RCS-L023B),
- SV3-RCS-PLW-01E-2B (RCS-L022B),
- piping support SV3-RCS-PH-11R2104
- piping support SV3-RCS-PH-11R2103, and
- the Q601 module support structure.

The inspectors reviewed fabrication records for the following motor operated valves (MOVs):

- SV3-RCS-PL-V002B, and
- SV3-RCS-PL-V012B.

The inspectors reviewed fabrication records for these components to determine if the module had been fabricated per the ASME Code, Section III, Subsection NB, NC, ND (for piping and valves) and NF (for the supports). The inspectors reviewed the applicable code data reports to verify that data reports were signed by the ANI. In addition, the inspectors reviewed design and fabrication drawings to determine if they

met the requirements of the design and fabrication specifications. The inspectors also reviewed the code data reports, weld travelers, design and fabrication drawings to verify traceability of the fabrication records to the components and their associated welding procedures, welders, NDE reports, and nonconformance reports. The inspectors reviewed the records to determine if they were fully traceable and retrievable per the ASME Code and Criterion XVII of Title 10 of the Code of Federal Regulations (CFR), Part 50, Appendix B. The inspectors reviewed the weld NDE reports to determine if the welds had been examined by certified examiners, and were in accordance with the ASME Code, Sections III and V. The inspectors reviewed the weld filler metal certified material test reports (CMTRs) to determine if the weld filler for the selected welds had been manufactured, tested, and certified per the requirements of the ASME Code, Sections II and III. The inspectors reviewed CMTRs for various components including pipe sections to verify if the materials were properly heat treated and met the specified chemical, mechanical, and nondestructive testing requirements of the ASME Code, Sections II and III. The inspectors reviewed the radiograph film of two welds to verify they were free of rejectable defects and were of sufficient film quality.

The inspectors performed a walkdown of module Q601 to determine if the selected piping spools, valves, and supports were fabricated per the design drawings. The inspectors compared the design drawings to the as built condition to determine if the selected sample of components was of the correct size, length, and installed in the designed location and orientation with the appropriate physical markings and nameplate data. The inspectors observed the weld joint geometry for the piping and supports to verify if clearances between the restraints and piping were as specified in the design drawings. The inspectors also inspected how the module was being stored to determine if it met the storage requirements as specified in the design specifications, site procedures, the MOV vendor manual, and Section 13 of the Southern Nuclear Company (SNC) Quality Assurance Program (QAP).

The inspectors reviewed a sample of nonconformances, condition reports, nonconformance and disposition reports (N&Ds), and engineering and design coordination reports (E&DCRs) to verify if fabrication issues were captured, initiated, processed, reviewed, dispositioned, and closed per the procedure for the control of nonconforming material and parts. Additionally, the inspectors reviewed these documents to verify if they were dispositioned by engineering as required by the QAP.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 2.1.03.03 (72) / Family 05F

a. Inspection Scope

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

- 65001.B-02.05-Inspection
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed a sample of NDE records for special applications on the reactor vessel and its appurtenances, as described in Section 5.3.2.3 of the Vogtle Units 3 & 4 UFSAR, to verify that NDE was conducted as described in the UFSAR and performed in accordance with the requirements of the ASME Code.

The inspectors reviewed two volumetric ultrasonic examination reports consisting of 26 welds. The inspectors reviewed full penetration ferritic pressure boundary welds in the reactor vessel to verify if ultrasonic test (UT) examinations were performed upon completion of the welding and intermediate heat treatment but prior to the final postweld heat treatment in accordance with Section 5.3.2.3.1 of the UFSAR. The inspectors also reviewed the full penetration ferritic pressure boundary welds in the reactor vessel to verify if the welds were ultrasonically examined after hydrotesting in accordance with Section 5.3.2.3.1 of the UFSAR. Also, the inspectors reviewed these reports to verify the use of calibration blocks, size of transducers, couplant, straight and angle beams, frequencies, amplitude linearity, and scanning sensitivity to determine whether the examinations were performed in accordance with the ASME Code, Section V, Article 5.

The inspectors reviewed 11 liquid penetrant test (PT) examination reports for the eight core support block attachment welds to verify if the welds were inspected by dye penetrant after the first layer of weld metal and after each 0.5 inch of weld metal in accordance with Section 5.3.2.3.2 of the UFSAR. The inspectors also reviewed the penetration time, developer bleed-out time, visible light source, and surface temperature requirements to verify the PT examinations were performed in accordance with the ASME Code, Section V, Article 6.

The inspectors reviewed two magnetic particle (MT) examination reports for the exterior vessel surface after hydrostatic pressure testing and inside diameter surfaces of carbon and low alloy steel products. The inspectors reviewed the reports to verify if MT examinations were conducted as described in Section 5.3.2.3.3 of the UFSAR. Also, the inspectors reviewed the reports to determine if the proper yoke lifting power, visible light source, and surface temperature were in accordance with the ASME Code, Section V, Article 7.

b. Findings

No findings were identified.

1A04 (Unit 3) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

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

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

The inspectors conducted an inspection of a weld on line CCS-PL-L207, which joins containment vessel penetration nozzle P04A to 10" diameter carbon steel pipe. Specifically, the inspectors observed manual GTAW and reviewed the WDS for field weld SV3-CCS-PLW-050-1 to determine whether welding and inspection activities were performed in accordance with the requirements of the ASME Code, Section III-NC. The inspectors observed welding of an intermediate weld pass in the vertical position to verify if the amperage used to melt the welding rods and sidewalls was in accordance with WPS 1-1.1C21. The inspectors reviewed the WDS to verify if QC and ANI hold points were signed-off for acceptance of material identification markings, internal cleanliness, fit-up, internal purge gas, and radiography in accordance with the licensee's quality assurance program. The inspectors observed the layout of the piping and fittings for orientation, squareness, levelness, flange two-hole alignment, and physical markings for material specifications, diameters, and thicknesses to verify installation was consistent with the construction isometric drawing SV3-CCS-PLW-050-R1.

The inspectors reviewed computerized RT to determine whether the technique and image brightness at the body of the required wire image quality indicators (IQI) location in the area of interest were in accordance with the requirements of MISTRAS radiography procedure 521-RT-302. Finally, the inspectors reviewed the computerized RT to the radiographic report to determine if the acceptance criteria and results were accurately recorded in accordance with the requirements of the ASME Code, Section III, Subsection NC-5320.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.03-02.03 - Installation and Welding
- 65001.03-02.06 - Nondestructive Examination (NDE)
- 65001.B-02.05-Inspection

The inspectors conducted an inspection of a weld on line CCS-PL-L201, which joins containment vessel penetration nozzle P03 to a 10" diameter carbon steel pipe. Specifically the inspectors reviewed the WDS for field weld SV3-CCS-PLW-040-1 to determine whether welding and inspection activities were performed in accordance with the requirements of the ASME Code, Section III-NC. The inspectors reviewed the WDS to verify applicable QC and ANI hold points were signed-off for acceptance of material identification markings, internal cleanliness, fit-up, internal purge gas, and radiography in accordance with the licensee's quality assurance program. The inspectors observed the layout of the piping orientation, levelness, and physical markings for material

specification, diameter, and thickness to verify installation was consistent with the construction isometric drawing SV3-CCS-PLW-040-R3.

The inspectors reviewed computerized RT for each shot on the weld to determine whether the technique and image brightness at the body of the required wire IQI location in the area of interest were in accordance with the requirements of MISTRAS radiography procedure 521-RT-302. Finally, the inspectors reviewed the computerized RT against the radiographic report to determine if the acceptance criteria and results were accurately recorded in accordance with the requirements of the ASME Code, Section III, Subsection NC-5320.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.B-02.04-Production Controls

The inspectors observed in-process welding activities associated with three containment vessel penetrations to verify if the following welds were in accordance with the ASME Code, Section III, Subsection NE. Specifically, the inspectors observed manual GTAW and reviewed weld records in the field for the following pressure retaining mechanical penetrations through the containment vessel:

- SV3-SFS-PY-C01, in-containment refueling water storage tank (IRWST) Reference Cavity Purification Inlet (P21);
- SV3-SGS-PY-C01A, Main Steam Line Outlet (Loop 1) (P23); and
- SV3-SGS-PY-C02A, Main Feedwater Inlet (Loop 1) (P25).

The inspectors observed in-process welding of the above welds to verify if amperage was within the limits specified in the qualified welding procedure specifications. The inspectors reviewed the work packages to determine if the proper welding procedure, detail drawings and instructions, and weld data sheet were readily available at the work location. The inspectors reviewed weld data sheets to verify if the applicable QC and ANI hold point sign-offs for material identification, cleanliness, location, preheat, and fit-up were controlled in accordance with the requirements of the ASME Code, Section III, NCA-4000. The inspectors also reviewed the associated WMR in the work area against the WDS entries to verify if traceability of the welders and electrodes were controlled in accordance with the requirements of ASME Code, Subsection NE.

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC Number 2.2.01.02a (91) / Family 06F

a. Inspection Scope

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

- 65001.F-02.04-General QA Review

The inspectors reviewed the receipt inspection records for the Unit 3 fuel transfer tube to verify if the receipt inspection was performed in accordance with quality inspection plan F-Q445-014.

b. Findings

No findings were identified.

1A08 (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.B-02.05-Inspection
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed corrective action documents that were created as a result of NRC identified NCV 2018002-02, Failure to Meet Radiographic Film Requirements on PRHR HX. The CAP documents included the limited cause analysis and the plan for the expanded scope to review radiographic films. The WEC extent of condition review of radiographic films was associated with the fabrication records for the following ASME Class 1 components:

- Passive Residual Heat Removal Heat Exchanger (PRHR HX);
- Pressurizer (PZR);
- Core Make-up Tank (CMT A & B); and
- Accumulator (ACC A & B).

The inspectors reviewed the extent of condition to verify if the welds of the above components were scoped into the review. The inspectors reviewed a limited sample of NDE-RT to gain reasonable assurance that the extent of condition was adequate to address the previously identified deficiency. Specifically, the inspectors selected weld-nos. CW-033 and CW-035 for the PZR, and weld-no. CW-029/1 for the PRHR HX. For each weld, the inspectors reviewed the film package and associated NDE-RT report to verify that the film quality, density, and IQI sensitivity were in accordance with the requirements of the ASME Code, Section V.

b. Findings

No findings were identified.

1A09 (Unit 3) ITAAC Number 2.2.03.08c.iv.01 (183) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.iv.01 (183). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors observed licensee survey verification, performed independent evaluations, and reviewed records for the PXS DVI lines and the IRWST. The inspectors reviewed the survey procedures to verify they included instructions for performing ITAAC related surveys and appropriate quantitative acceptance criteria in accordance with 10 CFR 50, Appendix B, Criterion V. The inspectors observed the licensee perform surveying and reviewed survey records for the following pipe lines:

- SV3-PXS-PL-L112A/B,
- SV3-PXS-PL-L114,
- SV3-PXS-PL-L116A/B,
- SV3-PXS-PL-L117A/B,
- SV3-PXS-PL-L118A/B,
- SV3-PXS-PL-L123A/B,
- SV3-PXS-PL-L124A/B,
- SV3-PXS-PL-L125A/B, and
- SV3-PXS-PL-L127A/B.

The inspectors observed surveying to determine whether verified equipment was used and the surveying was done in accordance with procedures. Additionally, the inspectors observed surveying of the outside of these pipe lines to verify the selection of survey points included the maximum elevations for each line in accordance with the acceptance criteria. The inspectors reviewed the training records for the individual who performed the surveys to verify the individual was trained and qualified as required by the survey procedures. The inspectors reviewed the survey results to verify the data was correctly recorded and translated into quality records.

The inspectors reviewed the survey data and analysis for the portions of pipe SV3PXS-PL-L112A that were buried in concrete to verify any deflection in the pipe due to the concrete pour was accounted for in accordance with the acceptance criteria. The inspectors reviewed the survey data for the bottom inside surface of the IRWST to verify the surveys were documented in accordance with the survey procedures and the data was correctly translated into quality records. The inspectors reviewed a

nonconformance report associated with the reviewed records to verify the as-built field conditions aligned with the engineering disposition and was not material to the acceptance criteria of the ITAAC.

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

b. Findings

No findings were identified.

1A10 (Unit 3) ITAAC Number 2.2.03.08c.iv.03 (185) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.iv.03 (185). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed an inspection to verify the maximum elevation of the top inside surface of both Unit 3 core makeup tank (CMT) discharge lines to the direct vessel injection (DVI) connections are less than the elevation of each CMT bottom inside surface to satisfy the ITAAC requirement. The inspectors performed a walkdown of the two piping sections with the licensee and performed an independent assessment to verify the as-built piping elevations were consistent with the as-built elevation drawings. In addition, the inspectors reviewed quality records including the Principal Closure Document, survey results, and as-built elevation drawings to verify the elevation of the top inside surface of the piping remained below the bottom inside CMT surface as specified in Table 2.2.3-4 of Appendix C of the COL.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.08-02.02 - In-Process Installation
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.F-02.04-General QA Review

The inspectors observed the licensee's in-process receipt inspection of the Division S battery to verify the inspection was performed, and nonconforming items were identified and released in accordance with the receipt inspection procedure.
The inspectors also observed the storage, handling, and installation of a sample of the safety-related DC uninterruptable power supply system (IDS) Division A, C, and S batteries for Unit 3 to verify the activities were in accordance with the procedures, installation specification, and battery design specification. The inspectors observed the installation of battery cell 100 for Division A, battery cells 113 to 116 for Division C, and battery cells 91 to 94 for Division S to verify they were installed in accordance with the wiring and location drawings, rigging and electrical equipment installation, the vendor manuals for the batteries and battery racks, and the electrical installation and battery specifications. For Division S, the inspectors inspected the grease used on the rails of the battery racks to determine whether the type of grease was in accordance with the battery vendor manual.

As part of the installation of the batteries, the inspectors observed the torqueing of bolts for the spacers, posts, and end pieces for cells 101-120 of Division A, cells 91-94 of Division S, and cells 113-116 of Division C to determine whether bolts were torqued by torque wrenches set to the correct value in accordance with the vendor manual and the electrical equipment installation procedure. The inspectors observed the torqueing of bolts for the spacers, posts, and end pieces for cells 101-120 of Division A to determine whether bolts were torqued in the presence of QC in accordance with the electrical equipment installation procedure. The inspectors observed the torqueing of bolts for the spacers, posts, and end pieces for cells 101-120 of Division A to determine whether QC was determining whether the torque wrenches were set to the correct value for torqueing in accordance with the electrical equipment QC instruction.
The inspectors reviewed the torque wrench M&TE to determine whether the individual torque wrench label showed the calibration was current in accordance with procedure MS 01.02, "Calibration Identification Labels, M&TE Identification Numbers, and Inventory," Revisions 1.01 and 1.02.

During the installation, the inspectors reviewed drawings available in the field to determine whether the batteries were in the location specified by the drawings. The inspectors reviewed the drawings in the field and compared them to drawings in the controlled database to determine whether the drawings were the latest revision available in accordance with procedure 26139-00-4MP-T81C-N1204, "Construction Implementation and Closing of Work Packages," Revisions 5 and 6.

The inspectors observed the cleaning of terminal posts of the Division A battery cells to determine whether it was performed in accordance with the battery vendor manual. The inspectors also reviewed the battery room conditions after installation to verify that conditions satisfied storage level B requirements.

b. Findings

No findings were identified.

1A12 (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- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.04 - Review As-built Deviations/Nonconformance

The inspectors performed inspection of construction activities associated with the installation of reinforcing steel for the Unit 3 containment operating deck section located above the IRWST at elevation 135'-3". The inspectors observed ongoing reinforcement installation activities, reviewed licensee records including calculations, design specifications, drawings, installation procedures, and E&DCRs.

The inspectors reviewed design drawings to verify the reinforcement's configuration met the requirements of concrete “General Notes” drawing SV3-0000-C9-001. In addition, the inspectors reviewed design changes and compared them to design calculations to verify approved design changes did not affect the reinforcement configuration in accordance with American Concrete Institute (ACI) 349-01. The inspectors performed in-field measurements of installed top and bottom layers of reinforcing steel to verify they were the right size, met spacing requirements, had minimum concrete clear cover, lap splices met the minimum length, and the floor had the required thickness in accordance with the design drawings.

The inspectors compared design drawings to the installed reinforcement bars in the floor to verify reinforcing steel was installed in accordance with the latest approved design changes and within the requirements of ACI 349-01. Also, the inspectors observed the installation of type 2 Lenton mechanical couplers and reviewed calibration records for torque wrench No. V-N-0096 to verify the installation was performed in accordance with procedure APP-CR01-Z0-010.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.01-02.01 - Procedures
- 65001.B-02.02-Welding Procedure Qualification
- 65001.B-02.03-Welder Qualification
- 65001.B-02.04-Production Controls
- 65001.F-02.03-Observation of Fabrication Activities

The inspectors looked at various stages of construction for the shield building roof module to determine if welding fabrication was being performed in accordance with the requirements of the American Welding Society (AWS) D1.1:2000 for structural steel. Specifically, inspectors observed the welding area for welding on a crossbeam to determine if the weld area was clean, free of contaminants, and protected from wind and moisture in accordance with the Chicago Bridge and Iron (CB&I) welding procedure. The inspectors reviewed the electrode that was used to verify if its use was in accordance with the CB&I welding procedure. The inspectors also observed welding for weld R17D on a crossbeam to verify if the welding techniques and direction were in accordance with the CB&I welding procedure.

In addition, the inspectors reviewed the traveler spread sheet to determine if fit-up and cleanliness inspection hold points were sequentially signed-off and traceability of weld filler material and welders was maintained in accordance with CB&I welding procedures. The inspectors also reviewed the welder's qualification records to determine if the welder was qualified in accordance with the AWS Code for that specific weld. The inspectors reviewed the WPS and supporting procedure qualification records to determine if it was written and qualified in accordance with the requirements of the AWS Code D1.1, Section 4. The inspectors reviewed the CMTR for the weld filler metal being used to determine if it met the requirements for chemical analysis and mechanical properties in accordance with AWS A5.5 “Specification for Low-Alloy Steel Electrodes for Shielded Arc Metal Welding”. At the completion of welding, the inspectors performed an independent visual inspection to determine if the weld was of the required size and contour, and free from defects such as cracks, lack of fusion, or excessive porosity.

Finally, the inspectors visually inspected the fit-up and tack portion of crossbeam weld R32D to determine if met the requirements of the detail drawing and procedure. The inspector observed the double-welded joint to determine if the fit-up, cleanliness, tack welds, and root opening were in accordance the requirements of the AWS D1.1 Code. The inspectors reviewed the traveler spread sheet to determine if fit-up and cleanliness inspection hold points were sequentially signed-off, and traceability of weld filler material and welders were maintained in accordance with the CB&I welding procedures.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.02 - Laboratory Testing
- 65001.A.02.01 - Observation of in-Process Installation Activities

The inspectors performed inspection of construction activities associated with the Unit 3 shield building between elevations 169'-6" and 189'-6". The inspectors observed in-process concrete placement activities, in-process concrete testing, reviewed calibration records, and reviewed quality control documents.

The inspectors reviewed concrete pour card No. 4504 to determine whether concrete mix design requirements were translated into quality assurance documents in accordance with design specification SV4-CC01-Z0-026. Also, during placement, the inspectors compared the pour card to the batch tickets to verify concrete delivered to the site had the appropriate concrete mix type. The inspectors reviewed the batch tickets during the concrete placement to verify transport time was completed within the time allowed by ACI 349-01 and the delivery was intended for the proper location in accordance with the pour card.

The inspectors observed concrete testing activities to determine if the processes for testing self-consolidated concrete met the requirements of specification SV4-CC01-Z0-027. The inspectors also observed testing of fresh concrete to verify mix characteristics such as slump range, air content, mix temperature, and target wet density met the requirements of specification SV4-CC01-Z0-027. The inspectors observed the sampling of eight concrete cylinders to be tested for compressive strength and evaluated field-sample storage conditions to verify the sampling and curing methods used by the licensee met the requirements of American Society of Testing and Materials (ASTM) C31 and section 6.1.12 of specification SV4-CC01-Z0-027.

The inspectors observed concrete placement activities to determine whether placement for the safety related structure met requirements of specification SV4-CC01-Z0-031. The inspectors also observed the use of concrete vibrators to verify they were inserted and withdrawn in a consistent pattern, inserted to penetrate at least 6 inches into the preceding layer before it began to set, and the concrete mix was placed through congested reinforcement to avoid segregation of the aggregate in accordance with Section 4.2.11 of specification SV4-CC01-Z0-031.

The inspectors reviewed calculation CALC-VMD-032 associated with the laboratory mix trials for safety related, self-consolidating concrete mixes. The inspectors reviewed the calculations in order to verify the self-consolidated concrete mixes were able to reach

the minimum bulk dry density requirement of 140 pounds per cubic foot as it was described in Section 12.3.2.2 of the UFSAR. The inspectors also reviewed the concrete test report to verify the mix met the 6,000 psi strength requirements for concrete mix Y in accordance with specification SV3-CC01-Z0-026, section 4.2.10.

b. Findings

No findings were identified.

1A15 (Unit 3) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

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

The inspectors performed inspections of construction activities associated with the wall on column line 7.3, located between column line I and the shield building, and the wall on column line J, located between 7.3 and 9.2, between elevations 117'-6" and 135'-3" in the auxiliary building. The inspectors observed ongoing reinforcement installation, observed ongoing concrete placement activities, and reviewed licensee records including design drawings, specifications, E&DCRs, and N&Ds.

The inspectors performed independent measurements of installed reinforcement and embed plates. Specifically, the inspectors measured installed reinforcing steel to verify it was the right size, met spacing requirements, met minimum concrete clear cover, and lap splices met the minimum length in accordance with ACI 349-01. Also, the inspectors measured reinforcement around mechanical penetrations to verify the reinforcement configuration was installed in accordance with the latest approved design drawings. The inspectors independently measured reinforcement spacing in congested areas to verify reduced spacing between steel reinforcement met the requirements specified in Section 3.3.2 of ACI 349-01. The inspectors also evaluated the condition of embedments to verify they were secured in the structure, free of concrete or excessive rust, and had the proper clearances in accordance with “General Notes” drawing SV3-0000-C9-002A.

The inspectors observed reinforcement installation activities to verify they were performed using the latest-approved design changes, design drawings, and design specifications in accordance with ASME Nuclear Quality Assurance Program (NQA-1) 1994, Basic Requirement 3. The inspectors reviewed an N&D report to verify non-conforming items were dispositioned without changing the design basis in accordance with Section 4.6.4 of procedure APP-GW-GAP-428. The inspectors also observed the installation of mechanical couplers and reviewed calibration records of the torque wrench used for the installation to verify the couplers were installed in accordance with Section 12.14.3.6 of ACI 349-01.

The inspectors reviewed quality records and observed concrete placement activities associated with walls 7.3 and J. The inspectors reviewed concrete pour card 4419 to determine whether concrete mix design requirements were properly translated into quality assurance documents in accordance with design specification SV3-CC01-Z0-026. Also, during placement, the inspectors compared the pour card to the batch tickets to verify concrete delivered to the site had the appropriate concrete mix type. In addition, the inspectors reviewed the batch tickets to verify transport time was completed within the time allowed by ACI 349-01 and the delivery was intended for the proper location in accordance with the pour card. The inspectors observed concrete placement activities to determine whether placement drop distances met requirements specified in Section 4.2.4 of specification SV3-CC01-Z0-031. The inspectors also observed the use of concrete vibrators to verify they were handled and operated to ensure adequate consolidation of the mix, including vertical operation and penetration into the previous placed concrete layer, in accordance with Section 4.2.9 of specification SV3-CC01-Z0-031.

During the concrete placement, the inspectors observed in-process concrete testing to determine if concrete temperature, slump, and air content were determined at the mix delivery location as required by specification SV3-CC01-Z0-026 and ACI 349-01. The inspectors observed in-process concrete testing to verify the methods used were in accordance with specification SV3-CC01-Z0-027 and required ASTM standards. The inspectors observed the sampling of 12 concrete strength test cylinders to verify sample collection was performed in accordance with specification SV3-CC01-Z0-027 and ASTM C172.

b. Findings

No findings were identified.

1A16 (Unit 3) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed an inspection of construction activities associated with the wall on column line K located between column line 11 and the shield building and from elevation 117'-6" to 135’-3”. The inspectors observed ongoing reinforcement installation, reviewed licensee records including design drawings, specifications, and E&DCRs.

The inspectors performed independent measurements of installed reinforcement and embedment plates. Specifically, the inspectors measured installed reinforcing steel to verify if the size, spacing requirements, minimum concrete clear cover, and lap splices were in accordance with Section 7.5 of ACI 349-01. Also, the inspectors measured the

reinforcement around mechanical penetrations to verify if the configuration was in accordance with the latest approved design drawings.

The inspectors independently measured reinforcement spacing in congested areas to verify if the spacing between steel reinforcements met Section 3.3.2 of ACI 349-01. The inspectors also measured the clear cover between permanent form plates and steel reinforcement to verify if they were secured and free of concrete or excessive rust in accordance design drawings and specification SV3-CC01-Z0-031.
The inspectors observed reinforcement installation activities to verify they were performed using the latest-approved design changes and design drawings. The inspectors also reviewed four E&DCRs to verify the design control process was implemented in accordance with APP-GW-GAP-420 and the reinforcement configuration of the wall reflected the approved changes described on the E&DCR's.

b. Findings

No findings were identified.

1A17 (Unit 3) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed inspection of construction activities associated with the floor slab located between column lines K, L, 9.2 and the shield building at elevation 117'-6" in the Unit 3 auxiliary building. The inspectors observed ongoing reinforcement installation activities and reviewed licensee documents including design specifications, design drawings, and E&DCRs.

The inspectors performed independent measurements of installed top and bottom layers of reinforcing steel to verify the size, spacing, concrete clear cover, lap splice length, and the floor design thickness field configuration were in accordance with the design drawings and concrete “General Notes” SV3-0000-C9-001. The inspectors reviewed two E&DCRs to determine whether approved design changes were implemented into the field reinforcement configuration in accordance with design specification SV3-CC01-Z0-031. In addition, the inspectors compared the E&DCRs with design drawings to verify approved design changes were incorporated into final design documents in accordance with ACI 349-01.

The inspectors also observed the installation of mechanical couplers to verify the couplers were installed in accordance with procedure APP-CR01-Z0-010 and Section 12.14.3.6 of ACI 349-01. In addition, the inspectors reviewed calibration records of torque wrench No. V-N 0035 to verify the couplers were installed in accordance with Section 12 of the Bechtel Project Nuclear Quality Assurance Program.

b. Findings

No findings were identified.

1A18 (Unit 3) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed inspections of construction activities associated with the wall on column line L located between column line 11 and the shield building and from elevation 117'-6" to 135’-3” of the Unit 3 auxiliary building. The inspectors observed ongoing reinforcement installation, reviewed licensee records including design drawings, specifications, E&DCRs, and condition reports.

The inspectors performed independent measurements of installed reinforcement and embedment plates. Specifically, the inspectors measured installed reinforcing steel to verify the size, spacing, concrete clear cover, and lap splice length were in accordance with ACI 349-01. The inspectors also measured reinforcement around penetrations to verify the configuration was in accordance with the latest approved design drawings.

The inspectors independently measured rebar spacing in congested areas to verify reduced spacing between steel reinforcement met the requirements specified in Section 3.3.2 of ACI 349-01 and Section 3H.5 of the UFSAR. The inspectors also measured the clear cover between embedment plates and steel reinforcement to verify it met spacing requirements, reinforcement was secured, and it was free of concrete or excessive rust in accordance with General Notes Drawing SV3-0000-C9-002A. The inspectors observed reinforcement installation activities to verify the activities were performed using the latest-approved design changes and design drawings in accordance with NQA-1 1994, Basic Requirement 3.

b. Findings

No findings were identified.

1A19 (Unit 3) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

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

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed inspections of construction activities associated with the Unit 3 auxiliary building wall on column line I between column lines 4 and 7 and the wall on column line 4.8 between I and the shield building and from elevation 117'-6" to 135'-3". The inspectors observed ongoing reinforcement installation, reviewed licensee records including design specifications, design drawings, calculations, E&DCRs, and N&D's.

The inspectors performed independent measurements of installed reinforcement and embedment plates. Specifically, the inspectors measured installed reinforcing steel to verify it was the right size, met spacing requirements, met minimum concrete clear cover, and lap splices met the minimum lengths in accordance with the design drawings and concrete 'General Notes" SV3-0000-C9-001. The inspectors independently measured reinforcement spacing in congested areas to verify reduced spacing between steel reinforcement bars would not hinder concrete flow nor cause consolidation to be difficult to control during concrete placement as specified on SV3-CC01-Z0-031. Also, the inspectors measured reinforcement around door openings to verify the configuration was in accordance with ACI 349-01.

The inspectors also reviewed design calculations, design drawings, E&DCRs, and N&Ds to verify if the reinforcement configuration was translated into design drawings and steel reinforcement was installed in accordance with the latest approved design changes.

b. Findings

No findings were identified.

1A20 (Unit 4) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

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

- 65001.03-02.06 - Nondestructive Examination (NDE)

The inspectors observed in-process field activities and performed an independent assessment of the final liquid penetrant examination on the Unit 4 RCS surface of the hot leg RCS-L001B to the reactor vessel inlet nozzle weld SV4-RCS-PL01-FW-BHL01. The inspectors also observed the final liquid penetrant examination on the Unit 4 RCS cold leg RCS-L002C to the east steam generator field weld SV4-RCS-PL01-FW-BCL04.

The inspectors observed the examinations performed in the field by PCI inspectors to determine if the requirements of procedure GQP 9.7 were adhered to, including surface

temperature of the weld, type of penetrant, solvent and developer used, and penetrant dwell time. The inspectors reviewed NDE-PT procedure GQP 9.7, to determine if the procedure met the requirements of ASME Section V, Article 6, and the acceptance criteria met the requirements in the ASME Code, Section III, Subsection NB-5350. The inspectors also performed an independent assessment of the test results to determine if the requirements of the ASME Code, Section III, Subsection NB-5350 were met.

The inspectors reviewed the final computerized radiography results for three stainless steel pipe field welds for the Unit 4 RCS loops to verify NDE-RT was performed in accordance with the requirements of MISTRAS procedure 521-RT-302. Specifically, the inspectors reviewed the following MISTRAS computed radiography examination reports to determine if the source type and size, source to object distance, object to image plate distance, geometric unsharpness, exposure time, and IQI used were in accordance with the procedure:

- NDE-RT report P-18-RT-302-0052 for Cold Leg - RCS - L002D weld-no. SV4-RCS-PL01-FW-BCL05;
- NDE-RT report P-18-RT-302-0053 for Cold Leg - RCS - L002C weld-no. SV4-RCS-PL01-FW-BCL03; and
- NDE-RT report P-18-RT-302-0055 for Hot Leg - RCS - L001B weld-no. SV4-RCS-PL01-FW-BHL02.

In addition, the inspectors reviewed computerized RT images of the welds to determine whether the technique and brightness at the body of the required wire image quality indicator locations in the area of interest were in accordance with the requirements of MISTRAS radiography procedure 521-RT-302 and ASME Code Section V, Article 2. The inspectors reviewed the computer screen images to determine the acceptance criteria were in accordance with the requirements of the ASME Code, Section III, Subsection NB-5320, Radiographic Acceptance Standards.

Finally, the inspectors reviewed the radiography reports listed above to determine if the results were accurately recorded for acceptance by an American Society of Nondestructive Testing (ASNT-TC-1A) Level II or higher certified examiner in accordance with procedure 521-RT-302 and quality assurance program.

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:

- 65001.03-02.01 - Purchase and Receipt of Materials
- 65001.03-02.03 - Installation and Welding
- 65001.03-02.06 - Nondestructive Examination (NDE)

- 65001.03-02.07 - Review of Records
- 65001.03-02.08 - Problem Identification and Resolution
- 65001.B-02.04-Production Controls
- 65001.F-02.02-Fabrication Records Review

The inspectors conducted an inspection of the Unit 4 module Q601. This module consists of the ASME piping, valves and supports for the RCS ADS stages 1, 2, and 3. The inspectors performed this inspection to verify if module Q601 was fabricated in accordance with ASME BPVC, Section III, Westinghouse (WEC) design and fabrication specifications, and UFSAR Chapter 3. Specifically, the inspectors reviewed fabrication records, which included piping pressure boundary welds as well as support welds, for the following piping spools and supports:

- SV4-RCS-PLW-016-1A (RCS-L031A),
- SV4-RCS-PLW-016-1B (RCS-L032A),
- SV4-RCS-PLW-016-1C (RCS-L033A),
- SV4-RCS-PLW-01C-1 (RCS-L006B),
- piping support SV4-RCS-PH-11V0113,
- piping support SV4-RCS-PH-11Y0112,
- piping support SV4-RCS-PH-11R0076, and
- the Q601 module support structure.

The inspectors reviewed fabrication records for MOVs SV4-RCS-PL-V003A and SV4-RCS-PL-V013A.

The inspectors reviewed fabrication records for these components to determine if the module had been fabricated per ASME Code Section III, Subsection NB, NC, ND (for piping and valves) and NF (for the supports). The inspectors reviewed the applicable code data reports and design and fabrication drawings to verify that data reports were signed by the ANI and drawings met the requirements of the design and fabrication specifications. The inspectors also reviewed the code data reports, weld travelers, and design and fabrication drawings to verify if traceability of the fabrication records to the components and their associated welding procedures, welders, NDE reports, and nonconformance reports. The inspectors reviewed the records to determine if they were fully traceable and retrievable per the ASME Code and criterion XVII of 10 CFR Part 50 Appendix B. The inspectors reviewed the weld NDE reports to determine if the welds had been examined by certified examiners and met acceptance requirements in accordance ASME Code Sections III and V. The inspectors reviewed the weld filler metal CMTRs to determine if the weld filler for the selected welds had been manufactured, tested, and certified per the requirements of ASME Code Sections III and II. The inspectors reviewed CMTRs for various components including pipe sections to verify if the materials were properly heat treated and met the specified chemical, mechanical, and nondestructive testing requirements of ASME Section III and ASME Section II. The inspectors reviewed the radiograph film of two welds to verify they were free of rejectable defects and were of sufficient film quality.

The inspectors performed a walkdown of module Q601 to determine if the selected piping spools, valves, and supports were fabricated per the design drawings. The inspectors compared the design drawings to the as built condition to determine if the selected sample of components was of the correct size, length, and installed in the

designed location and orientation with the appropriate physical markings and nameplate data. The inspectors observed the weld joint geometry for the piping and supports to verify if clearances between the restraints and piping were as specified in the design drawings. The inspectors also inspected how the module was being stored to determine if it met the storage requirements as specified in the design specifications, site procedures, the MOV vendor manual, and Section 13 of the SNC QAP.

The inspectors reviewed a sample of nonconformances, condition reports, Nonconformance and Disposition Reports, and Engineering and Design Coordination Reports to verify if fabrication issues were captured, initiated, processed, reviewed, dispositioned, and closed per the procedure for the control of nonconforming material and parts. Additionally, the inspectors reviewed these documents to verify if they were dispositioned by engineering as required by the QA Program.

b. Findings

No findings were identified.

1A22 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

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

- 65001.03-02.03 - Installation and Welding
- 65001.B-02.04-Production Controls
- 65001.B-02.05-Inspection

The inspectors observed manual GTAW and reviewed the WDS and WMR for field weld-no. SV4-PXS-PLW-02E-11 joining a 10" diameter stainless pipe and tee fitting for line-no. PXS-PL-L120 (IRWST to DVI-B) to determine whether welding activities were in accordance with ASME Code Section III-ND. Specifically, the inspectors observed the weld joint open root spacing to verify compliance with WPS 1-8.8T01 referenced in the WDS. The inspectors also observed the butt joint alignment, and internal tack welds with a partial root pass through the root openings for complete penetration against the bevel edges of the pipe and fitting to verify compliance with the requirement of ND-4200 and ND-4400, respectively. In addition, the inspectors reviewed the S&W WDS to verify the following QC inspection hold points were signed-off:

- material identification markings;
- internal and weld area cleanliness;
- bevel end-preparation and fit-up; and
- internal purge/backing gas.

Finally, the inspectors reviewed WMR 405688 against the WDS entries to verify if traceability of the welder and welding rods were controlled in compliance with ASME III-ND.

b. Findings

No findings were identified.

1A23 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

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

- 65001.B-02.05-Inspection
- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed corrective action documents that were created as a result of NRC identified NCV 2018002-02, Failure to Meet Radiographic Film Requirements on PRHR HX. The CAP documents included the limited cause analysis and the plan for the expanded scope to review radiographic films. The WEC extent of condition review of radiographic films was associated with the fabrication records for the following ASME Class 1 components:

- PRHR HX;
- PZR;
- CMT A & B; and
- ACC A & B.

The inspectors reviewed the extent of condition to verify if the welds of the above components were scoped into the review. The inspectors reviewed a limited sample of NDE-RT to gain reasonable assurance that the extent of condition was adequate to address the previously identified deficiency. Specifically, the inspectors selected weld-nos. CW-033 and CW-035 for the PZR and weld-no. CW-029/1 for the PRHR HX. For each weld, the inspectors reviewed the film package and associated NDE-RT report to verify that the film quality, density, and IQI sensitivity were in accordance with the requirements of the ASME Code, Section V.

b. Findings

No findings were identified.

1A24 (Unit 4) ITAAC Number 2.2.03.02a (159) / Family 06F

a. Inspection Scope

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

- 65001.F-02.02-Fabrication Records Review

The inspectors reviewed the quality assurance data package for accumulator A discharge isolation valve PXS-PL-V027A to determine if the pressure boundary aspects of the valve were manufactured in accordance with the ASME Code, Section III, Subsection ND. The inspectors reviewed the CMTR to determine if the materials used for the valve body met the chemical requirements of the ASME Code, Section II, SA351. The inspectors also reviewed the liquid penetrant and radiography reports to determine if the valve body casting had been inspected and found acceptable per the ASME Code, Section III.

b. Findings

No findings were identified.

1A25 (Unit 4) ITAAC Number 2.2.03.08c.iv.01 (183) / Family 03A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.iv.01 (183). The inspectors used the following NRC IPs/sections to perform this inspection:

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

The inspectors performed independent inspections for the PXS DVI lines SV4-PXS-PL-L112A and SV4-PXS-PL-L112B and the IRWST. The inspectors performed an independent walk-down of the IRWST and these pipe lines prior to concrete placement to verify the maximum elevations of the pipe lines were lower than the bottom inside surface of the IRWST as specified in Table 2.2.3-4 of Appendix C of the Vogtle Unit 4 COL. The inspectors also performed a walk down after concrete was placed to verify the pipe lines did not shift during the concrete placement.

b. Findings

No findings were identified.

1A26 (Unit 4) ITAAC Number 2.5.02.11 (550) / Family 10F

a. Inspection Scope

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

- 35007-A13.04.02 - Inspection of QA Program Implementation
- 65001.10-02.02 - Inspection Activities
- 65001.F-02.04-General QA Review

The inspectors observed the receipt surveillance of selected Unit 4 PMS cabinets. The inspectors observed the licensee's compliance monitoring program (CMP) to determine if it was in accordance with the surveillance checklist. The inspectors reviewed the

qualification records of the CMP representative to verify were qualified in accordance with ND-CA-VNP-021.

The inspectors observed the handling and placement of the PMS cabinets in the warehouse to verify they were handled with no damage to the shipping containers and stored in accordance with the requirements of specification APP-PMS-J0M-003. The sampled cabinets were:

- SV4-PMS-JD-BCCA01, BPL/LCL Cabinet A01
- SV4-PMS-JD-BCCC01, BPL/LCL Cabinet C01
- SV4-PMS-JD-SOEA01, Sequence of Events Cabinet A
- SV4-PMS-JD-QDPB01, QDPS Cabinet Division B
- SV4-PMS-JD-SOEC01, Sequence of Events Cabinet C
- SV4-PMS-JD-BCCC02, BPL/LCL Cabinet C02
- SV4-PMS-JD-BCCD01, BPL/LCL Cabinet D01

The inspectors walked down the warehouse to verify the PMS cabinets were being stored in accordance with the cabinet specification, the onsite storage procedure, and ASME NQA-1 1994, Part II, Subpart 2.2. The inspectors reviewed temperature and humidity records for storage of the cabinets from August 9, 2018 through November 27, 2018 to determine whether the temperature and humidity were within the range specified by specification APP-PMS-J0M-003 and ASME NQA-1 1994, Part II, Subpart 2.2. The inspectors inspected the temperature and humidity data logger to determine whether it was in an appropriate location and whether it had a sticker that indicated it was calibrated.

b. Findings

No findings were identified.

1A27 (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.A- As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.02 - Installation Records Review

The inspectors observed in-process concrete placement activities, observed in-process concrete testing, reviewed calibration records, and reviewed quality control documents associated with the containment internal structures for Vogtle Unit 3. This 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"; and
- below the In-Containment Refueling Water Storage Tank floor up to el. 102'-11".

The inspectors reviewed concrete pour card No. 4150 to determine whether concrete mix design requirements were properly translated into quality assurance documents in accordance with design specification SV4-CC01-Z0-026. Also, during placement, the inspectors compared the pour card to the batch tickets to verify concrete delivered to the site had the appropriate concrete mix type.

The inspectors reviewed the batch tickets during the concrete placement to verify transport time was completed within the time allowed by ACI 349-01 and the delivery was intended for the proper location in accordance with the pour card. The inspectors observed concrete testing activities to determine if the processes for testing self-consolidated concrete met the requirements of specification SV4-CC01-Z0-027. The inspectors observed testing of fresh concrete to verify mix characteristics such as slump range, air content, mix temperature, and target wet density met the requirements of specification SV4-CC01-Z0-027.

The inspectors observed the sampling of 48 concrete cylinders to be tested for compressive strength, evaluated field-samples storage conditions, and reviewed field curing logs to verify the sampling and curing methods used by the licensee met the requirements of ASTM C31 and section 6.1.12 of specification SV4-CC01-Z0-027. The inspectors observed concrete placement activities to determine whether placement for safety related components met requirements of specification SV4-CC01-Z0-031. The inspectors also observed the use of concrete vibrators to verify they were inserted and withdrawn in a consistent pattern, inserted to penetrate at least 6 inches into the preceding layer before it began to set, and the duration of each insertion was sufficient to ensure adequate consolidation of the mix in accordance with Section 4.2.9 of specification SV4-CC01-Z0-031.

The inspectors also reviewed the concrete mix density report to verify the concrete mix used met the minimum dry density requirements of 140 pounds per cubic foot as specified in Section 12.3.2.3 of the UFSAR.

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.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review

The inspectors performed concrete placement inspection associated with Unit 3 structural module CA02, which is part of the northeast boundary of the in-containment refueling water storage tank from elevation 103'-0" to 135'-3". The inspectors reviewed licensee documents and observed in-process testing and concrete placement inside the structural module.

The inspectors reviewed the approved concrete pour card to determine if concrete mix design requirements were properly translated in accordance with design specification SV4-CC01-Z0-026. During placement, the inspectors compared the pour placement card against a batch ticket to verify concrete delivered to the site had the proper concrete-mix type. In addition, the inspectors verified transport time was completed within the time allowed by ACI 349-01 and the delivery was intended for the proper location in accordance with the pour card.

During the concrete placement, the inspectors observed in-process concrete testing to determine if concrete temperature, slump size, unit weight, and air content were determined at the mix delivery location as required by the pour card, specification SV4-CC01-Z0-026, and ACI 349-01. The inspectors also observed the sampling of 12 concrete strength test cylinders to verify sample collection and testing techniques were performed in accordance with specification SV4-CC01-Z0-027 and ASTM C172.

The inspectors observed concrete placed at module wall CA02 to determine if the placement did not result in mix segregation and placement-drop distances met requirements specified in SV4-CC01-Z0-031. The inspectors also observed the use of concrete vibrators to verify they were handled and operated to ensure adequate consolidation of the mix, including vertical operation and penetration into the previous placed concrete layer in accordance with design specifications. The inspectors verified quality control inspections during placement were performed by the licensee as required by specification SV4-CC01-Z0-031.

b. Findings

No findings were identified.

1A29 (Unit 4) ITAAC Number 3.3.00.02a.i.c (762) / Family 01F

a. Inspection Scope

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

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

The inspectors performed inspection of construction activities associated with the Unit 4 wall on column line K between column lines 7.3 and 11 and from elevation 100'-0" to 117’-6”. The inspectors observed in-process concrete placement activities, in-process concrete testing, and reviewed quality control documents.

The inspectors reviewed concrete pour card No. 4399 to determine whether concrete mix design requirements were properly translated into quality records in accordance with design specification SV4-CC01-Z0-026. Also, during placement, the inspectors compared the pour card to the batch tickets to verify concrete delivered to the site had the appropriate concrete mix type.

The inspectors reviewed the batch tickets during the concrete placement to verify transport time was completed within the time allowed by ACI 349-01 and the delivery was intended for the proper location in accordance with the pour card. The inspectors observed concrete testing activities to determine if the processes for testing self-consolidated concrete met the requirements of specification SV4-CC01-Z0-027. The inspectors observed testing of fresh concrete to verify mix characteristics such as slump range, air content, mix temperature, and target wet density met the requirements of specification SV4-CC01-Z0-027.

The inspectors observed the sampling of 24 concrete cylinders to be tested for compressive strength and evaluated field-samples storage conditions to verify the sampling and curing methods used by the licensee met the requirements of ASTM C31 and Section 6.1.12 of specification SV4-CC01-Z0-027.

b. Findings

No findings were identified.

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

1P01 Construction QA Criterion 16

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

a. Inspection Scope

Quarterly Resident Inspector Corrective Action Program (CAP) Routine Review
The inspectors reviewed issues entered into the licensee's CAP daily to assess issues that might warrant additional follow-up inspection, to assess repetitive or long term issues, to assess adverse performance trends, and to ensure the CAP appropriately included regulatory required non-safety related SSCs. The inspectors periodically attended the licensee's corrective action program review meetings, held discussions with licensee and contractor personnel, and performed reviews of CAP activities during the conduct of other baseline inspection procedures. The inspectors reviewed conditions entered into the licensee's CAP to determine whether issues were appropriately classified in accordance with the licensee's quality assurance program and CAP implementing procedures. The inspectors reviewed corrective actions associated with conditions entered into the CAP to determine whether appropriate actions to correct the issues were identified and implemented effectively, including immediate or short-term corrective actions, in accordance with the licensee's quality assurance program requirements and 10 CFR 50, Appendix B, Criterion XVI.

Additionally, the inspectors reviewed corrective actions taken to determine whether they were commensurate with the significance of the associated conditions in accordance with the licensee's CAP implementing procedures.

The inspectors completed reviews of CAP entry logs to verify issues from all aspects of the project, including equipment, human performance, and program issues, were being identified by the licensee and its contractors at an appropriate threshold and entered into the CAP as required by the licensee's CAP implementing procedures.

b. Findings

No findings were identified.

1P02 Construction QA Criterion 16

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

a. Inspection Scope

The inspectors selected one issue that was entered into the licensee's CAP for additional follow-up inspection. The inspectors reviewed condition report 50005649 and technical evaluation 50005739, which identified the need for revisions to several Unit 3 operating procedures. The operating procedures address instrument channel failures in the protection and safety monitoring system. The inspectors reviewed the licensee's evaluation and corrective actions to verify the following attributes were in accordance with the licensee's corrective action program implementing procedures:

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

The inspectors discussed the condition report, evaluation, and corrective actions with licensee personnel to determine whether they were aware of different thresholds for classification and had considered the extent of condition in accordance with procedures ND-AD-002 and ND-AD-002-025.

b. Findings

No findings were identified.

2. SAFEGUARDS PROGRAMS

Cornerstones: Security Programs for Construction Inspection and Operations

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

2P01 Fitness for Duty - Construction

a. Inspection Scope

This input is security related. See non-public report 05200025/2018413 for details.

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA3 Follow-up of Licensee Reports and NOVs

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

a. Inspection Scope

The inspectors performed a review of the licensee's corrective actions associated with Non-Cited Violation (NCV) 05200025/2015002-002, Spent Fuel Pool Wall Repair without an Approved Procedure, identified in IR 05200025/2015002 (ML15223B074). The review was to determine whether the corrective actions taken by the licensee were complete and sufficient to address the issue and ensure the acceptance criteria for the related ITAAC could be met. Specifically, this violation was associated with the licensee's failure, through their contractor CB&I, to perform repair activities (i.e. an activity affecting quality) on a seismic category I structural module according to an approved engineering disposition or procedure. The violation represented an ITAAC finding because it was material to the acceptance criteria of Unit 3 ITAAC 3.3.00.02a.i.d (763), in that, if left uncorrected, the licensee would not have been able to show that the acceptance criteria of this ITAAC was met.

The inspectors reviewed SNC CR 10062982, CB&I CAR 2015-1585, and associated corrective actions taken to address this issue. The inspectors also reviewed the apparent cause evaluation which was completed to determine the apparent and contributing causes of the nonconformance. The inspectors concluded that issue was appropriately described in the corrective action documents listed above and that the corrective actions were appropriate. These corrective actions included briefing field engineering disciplines on the appropriate use of the Request for Information (RFI) and Nonconformance and Disposition reports.

The inspectors also reviewed N&D SV3-CA20-GNR-000680, "Volume for Fuel Transfer and Spent Fuel Pool," and N&D SV3-CA20-GNR-000887, "North Wall Repair Spent Fuel Pool Supplemental Information," to determine whether appropriate action was taken to address the nonconforming condition. Based on the information provided, the inspectors concluded that the nonconforming condition was addressed to the extent that the as-built construction did not conflict with regulatory requirements. This review supplemented an earlier inspection that was documented in IR 05200025/2016002 (ML16210A448). During this previous inspection, NRC inspectors observed in-process construction activities associated with the repair of the north wall of the spent fuel pool between elevations 92'-8-1/2" and 135'-3" to determine whether repair activities were being conducted in accordance with applicable codes and standards, including AISC N690-94, AWS D1.1:2000, AWS D1.6:1999, and UFSAR welding requirements.

Additionally, the inspectors reviewed N&D SV3-CA20-GNR-000680 and associated structural analysis prepared by Structural Integrity Associates, Inc. to verify that the non-conforming condition and repair activities were appropriately evaluated, approved, and dispositioned in accordance with applicable technical and QA requirements.

Based on the reviews described above, the inspectors determined the licensee took adequate corrective actions to address this violation and the nonconforming condition had been appropriately addressed such that the acceptance criteria of Unit 3 ITAAC 3.3.00.02a.i.d (763) was no longer impacted. No additional findings were identified. NCV 05200025/2015002-002 is closed.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 Review of National Academy for Nuclear Training Operations Training Assessment Report

The inspectors reviewed the National Academy for Nuclear Training Operations Training Assessment Report of Vogtle 3&4 operations training programs dated April 19, 2018. During this review, the inspectors did not identify any new significant training issues.

4OA6 Meetings, Including Exit

Exit Meeting.

On January 15, 2019, the inspectors presented the inspection results to Mr. G. Chick, Senior Vice President Vogtle 3 & 4, and other licensee and contractor staff members. Proprietary information was reviewed during the inspection period, but was not included in the inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensees and Contractor Personnel

R. Calia, WECTEC Performance Improvement Senior Manager
C. Castell, SNC Licensing Engineer
D. Gardner, SNC Licensing Lead
L. Grissom, SNC Licensing Engineer
W. Lynn, SNC ITAAC Supervisor
M. Newberry, Bechtel, Subcontract Technical Representative
A. Pugh, SNC Licensing Manager
D. Reddick, Bechtel Area Manager
G. Scott, SNC Licensing Engineer
K. Stacy, SNC Licensing Supervisor
M. Koblansky, WEC ASME Section III Modules Mechanical Lead

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Type	Status	Description
05200025/2015002-002	NCV	Closed	Spent Fuel Pool Wall Repair without an Approved Procedure (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1A01

Southern Nuclear Development Quality Assurance Manual, Revision 17
WEC Construction Isometric Drawing SV3-PXS-PLW-070-R0, "Passive Core Cooling System Containment Building Room 11305 ADS Piping to Sparger A", Rev. 0
Stone and Webster (S&W) Weld Data Sheet (WDS) SV3-PXS-PLW-070-8 for work package SV3-PXS-P0W-800032, 4-2-18
S&W Welding Material Requisition (WMR) 405686 for welders CSK 8128 and NAH 1357, and GTAW rods for 3/32" and 1/8" dia. with heat-nos. 1030C and 1243V, respectively, 9/24/18

Section 1A02

Specifications
APP-GW-P0-008, AP1000 Specification for Field Fabricated Piping and Installation, ASME III, Code Classes 1, 2, and 3 and ASME B31.1 Rev. 7
APP-PL02-Z0-101, AP1000 Class 1 Piping and Non-Class 1 Extensions Design Specification, Rev. 4
APP-PV01-Z0-001, 3 AND Larger Motor Operated Gate and Globe Valves, ASME Boiler and Pressure Vessel Code Section III, Class 1, 2, and 3, Rev. 9
APP-Q601-Z0-001, Design Specification for AP1000 Piping Module 1102-Q6-01, Rev. 1
APP-GW-P0-008-ADD-02, Supplemental QA Requirements for the Pressurizer Upper Lateral Support Assembly (PRZUL)-Ring Girder and ASME III Mechanical Modules KB36, Q223, Q233, Q240, Q305, and Q601 Rev. 9
APP-GW-P0-007, AP1000 Specification for Shop Fabricated Piping Rev. 8

APP-PL02-Z0-001, AP1000 Standard Piping Specification Class BTA, Rev. 10

QA Document Packages

Aecon:
132175-G230.04-404-012-00014

CB&I Laurens:
132175-C601.08-404-012-00096
132175-C601.08-404-012-00064
132175-C601.08-404-012-00090
132175-C601.08-404-012-00066

Flowserve:
SV3-PV01-VQQ-030
SV3-PV01-VQQ-018

RT films
Weld W1301 from Aecon Document Package 132175-G230.04-404-012-00014
Weld 7 from CB&I Laurens Document Package 132175-C601.08-404-012-00064

Corrective Actions Documents
N&D APP-Q601-GNR-850140-2, Rev. 0
CARs: 260537, 269484, 271111, 50000825, 677254
CRs: 50008557, 50008982, 50008966
N&D SV3-RCS-GNR-000028, ADS 1,2,3 MOV Globe Valves, Rev. 0
E&DCR APP-PV01-GEF-071, PV01 ADS 123 Datasheet 1131 and 132 Changes Rev. 0
E&DCR APP-RCS-GEF-406, Resolution to CAPAL 100487069, Rev. 0
E&DCR APP-PV01-GEF-082, Modify E&DCR APP-PV01-GEF-071, Rev. 0

Drawings
SV3-RCS-M6-002, Piping and Instrumentation Diagram Reactor coolant System, Rev. 7
SV3-RCS-PLW-01E, RCS Containment Building Room 11603 Lower Tier 2nd Stage ADS Piping, Rev. 1

Procedures
SV0-PV01-VMM-001 , MAINTENANCE MANUAL for AP1000 PV01 Size 3 or Larger Motor Operated Gate Valves, Section III, Class 1, 2 & 3 Rev. 0
Design Calculations for Q601 Piping System & Pipe Supports:
APP-RCS-PLR-010, AP1000 Piping Analysis Report for Pressurizer Safety and Automatic Depressurization System PSADS, Rev. 10
APP-RCS-PHC-11R2103, Pipe Support Calculation for APP-RCS-PH-11R2103, Rev. 1
APP-RCS-PHC-11R2104, Pipe Support Calculation for APP-RCS-PH-11R2104, Rev. 1
Fabrication Records for Q601 Pipe Supports: APP-RCS-PH-11R0075 & APP-RCS-PH-11R0076
QAPD 132175-SMS-014, ASME Section III Div. 1 Safety Related Primary Equipment Supports for Vogtle Unit 3 PO 132175-PH02.01

Miscellaneous Documents Reviewed:
E&DCR APP-RCS-GEF-403, Pipe Support Reconciliation for APP-RCS-PLR-010, Rev. 0
E&DCR APP-RCS-GEF-406, Resolution to CAPAL 100487069, Rev. 0

DI 100487069, Slide Plate Required for Variable Spring Supports

Section 1A03

NDE Reports:
Doosan Report of Ultrasonic Examination No. U110927-007-001 (25 pages) after intermediate heat treatment in as-ground condition conducted from inside and outside surfaces for upper shell to inlet/outlet/DVI nozzles, 9/26/2011
Doosan Report of Ultrasonic Examination No. U120706-021-001 (108 pages) after hydro for three vessel girth welds, eight nozzle welds, and eight nozzle inner radius sections, 7/19/2012
Doosan Report of Liquid Penetrant Examination No. P110404-021-001 after first layer weld in as-ground condition of transition ring to core support pad, 4/5/11
Doosan Report of Liquid Penetrant Examination No. P110405-005-001 after back gouging in as-ground condition and after first 1/2" level and back groove of transition ring to core support pad, 4/6/11
Doosan Report of Liquid Penetrant Examination No. P110406-018-001 after half layer in as-ground condition on the progressively core support pad weld of transition ring, 4/7/11
Doosan Report of Liquid Penetrant Examination No. P110406-019-001 after half layer in as-ground condition on the progressively core support pad weld of transition ring, 4/7/11
Doosan Report of Liquid Penetrant Examination No. P110407-023-001 after half layer in as-ground condition on the progressively core support pad weld of transition ring, 4/8/11
Doosan Report of Liquid Penetrant Examination No. P110407-024-001 after half layer in as-ground condition on the progressively core support pad weld of transition ring, 4/9/11
Doosan Report of Liquid Penetrant Examination No. P110408-037-001 after half layer in as-ground condition on the progressively core support pad weld of transition ring, 4/11/11
Doosan Report of Liquid Penetrant Examination No. P110411-027-001 after half layer in as-ground condition on the progressively core support pad weld of transition ring, 4/12/11
Doosan Report of Liquid Penetrant Examination No. P110412-011-001 after half layer in as-ground condition on the progressively core support pad weld of transition ring, 4/13/11
Doosan Report of Liquid Penetrant Examination No. P110415-035-001 after back gouging in as-ground condition on the bottom side ground area of transition ring to core support pad, 4/18/11
Doosan Report of Liquid Penetrant Examination No. P110421-022-001 after weld in as-ground condition on the core support pad bottom weld, 4/23/11
Doosan Report of Magnetic Particle Examination No. M120706-018-001 after hydrostatic testing in as-ground condition on the outside surface of vessel, 7/12/12
Japan Steel Works, LTD, Muroran Plant Record of Magnetic Particle Examination No. 7042-1-16-2 of lower shell with manufacturing stage configuration at delivery (max. 250 microinch Ra surface condition, June 8 to 12, 2009

Section 1A04

WEC Construction Isometric Drawing SV3-CCS-PLW-050-R1, "Component Cooling Water System Containment Building Room 11400 CCS Return Line", Revision 1
WECTEC Weld Data Sheet (WDS) SV3-CCS-PLW-050-1 for work package SV3-CCS-P0W-1002504, 9-7-2018
MISTRAS V-18-RT-302-0546, Computed Radiography Examination Report for SV3-CCS-PLW-050-1, 10/03/2018 (P04A)

Section 1A05

WEC Construction Isometric Drawing SV3-CCS-PLW-040-R3, "Component Cooling Water System Containment Building Room 11400 CCS Supply Line", Revision 3
WECTEC Weld Data Sheet (WDC) SV3-CCS-PLW-040-1 for work package SV3-CCS-P0W-800010, 9-4-2018
MISTRAS V-18-RT-302-0528, Computed Radiography Examination Report for SV3-CCS-PLW-040-1, 9/24/2018 (P03)

Section 1A06

Weld Data Sheet for SV3-SFS-PY-C01-1 (P21 Penetration), Revision 0
Weld Data Sheet for SV3-SGS-PY-C01A-2 (P23 Penetration), Revision 0
Welding Procedure Specification No. WPS 1-1.8T01, Revision 4
Procedure Qualification Record A82-3, Revision 1
Procedure Qualification Record J2-17, Revision 3
Welding Procedure Specification No. WPS 1-1.1GT(M)SM-NE-2, Revision 8 with supporting PQRs PQ607A/B
APP-ML10-V6-004, "AP1000 Flued Head Detail Drawing for Penetration P21", Revision 1
APP-ML10-V6-101, "AP1000 Containment Vessel Flued Head Bevel Detail Drawing", Revision 2
SV3-SFS-MLK-882135, "Weld Map for SV3-SFS-PY-C01 (P21)", Revision 1 APP-MV50-V8-001, "AP1000 Containment Vessel Penetration Installation Specification", Revision 3
Welding Material Requisition No. 416067 for Filler Metal ER309L, 3/32" dia., Heat No. 1181K, October 25, 2018
Welding Material Requisition No. 415882 for Filler Metal ER70S-6, 1/8" dia., Heat No. 1186G, October 25, 2018

Section 1A07

Q-445-18-11196
Q-445-18-11197
F-Q445-014, "Receipt Inspection: Receipt of WEC Procured ASME III & Non-ASME Items," Rev. 07.03

Section 1A08

Procedures:
ND-AD-002, Nuclear Development Corrective Action Program, Version 27
W2-5.1-101, Westinghouse Corrective Action Program, Revision 5.1 and 6
W2-5.1-105, Limited Cause Analysis, Revision 2

CAP items:
CR 10491047
CR 10490570
IR-2018-9616

Drawings:
Mangiarotti Drawing-No. W3-WLM-00-00-001, AP1000 Core Make-up Tank, Weld Location Map (CW-054), Revision 0

Mangiarotti Drawing-No. W4-WLM-00-00-001, AP1000 Accumulator Tank, Weld Location Map (NZ-036), Revision 0

Radiographic Reports:
Mangiarotti Vogtle Unit 3 Radiographic Test Report No. N015-RT-W4-PCF-10-09-002-15 for Weld-No. NZ-036 (4 pages), 19/09/2011
Mangiarotti Vogtle Unit 3 Radiographic Test Report No. N021-RT-W3-PCF-10-09-002-65 for Weld-No. CW-054 (4 pages), 21/06/2012

Section 1A09

Drawings:
SV3-1130-CE-045, "Containment Concrete Embedment Drawing at Elevation 103'-0" Detail A3," Revision 1
SV3-1130-CE-061, "Containment Concrete Embedment Drawing at Elevation 103'-0" Detail B3," Revision 2
SV3-PXS-FSK-800183, "As-Built IRWST Injection Lines Top Inside Surface Elevation Comparison to IRWST Bottom Inside Surface," Revision 0
SV3-PXS-MTK-891586, "IRWST Bottom Inside Tank Surface Comparison to DVI Nozzle Centerline Elevation," Revision 0
SV3-PXS-PLW-012, "Passive Core Cooling System Containment Building Room 11206 Common Injection Header to DVI-A," Revision 1
SV3-PXS-PLW-015, "Passive Core Cooling System Containment BLDG Room 11206 Containment Recirc. to DVI-A," Revision 1
SV3-PXS-PLW-016, "Passive Core Cooling System Containment BLDG Room 11206 Common Injection header to DVI-A," Revision 1
SV3-PXS-PLW-017, "Passive Core Cooling System Containment BLDG Room 11206 Common Injection Header to DVI-A," Revision 1
SV3-PXS-PLW-018, "Passive Core Cooling System Containment BLDG Room 11305/11206 from IRWST to DVI-A," Revision 0
SV3-PXS-PLW-019, "Passive Core Cooling System Containment Building Room 11206/11105 DVI-A to Reactor Vessel," Revision 2
SV3-PXS-PLW-01Q, "Passive Core Cooling System Containment BLDG Room 11206 Accumulator MT-01A Discharge Piping," Revision 1
SV3-PXS-PLW-01S, "Passive Core Cooling System Containment Building Room 11206 IRWST to DVI-A," Revision 1
SV3-PXS-PLW-01T, "Passive Core Cooling System Containment Building Room 11206 IRWST to DVI-A," Revision 1
SV3-PXS-PLW-01U, "Passive Core Cooling System Containment BLDG Room 11206 IRWST to DVI-A," Revision 0
SV3-PXS-PLW-022, "Passive Core Cooling System Containment Building Room 11207 Common Injection Header to DVI-B," Revision 0
SV3-PXS-PLW-025, "Passive Core Cooling System Containment Building Rooms 11204/11207 DVI-B to Reactor Vessel," Revision 1
SV3-PXS-PLW-026, "Passive Core Cooling System Containment Building Rooms 11105/11204 DVI-B to Reactor Vessel," Revision 2
SV3-PXS-PLW-027, "Passive Core Cooling System Containment Building Room 11207 IRWST & Containment Recirc. to DVI-B," Revision 1
SV3-PXS-PLW-029, "Passive Core Cooling System Containment Building Room 11207 from IRWST to DVI-B," Revision 0

SV3-PXS-PLW-02E, "Passive Core Cooling System Containment Building Room 11207 IRWST to DVI-B & RNS Pump Suction," Revision 1
SV3-PXS-PLW-02L, "Passive Core Cooling System Containment Building Room 11207 from Containment Recirc. to DVI-B," Revision 1
SV3-PXS-PLW-02N, "Passive Core Cooling System Containment Building Room 11207 IRWST & Cont. Recirc. to DVI-B," Revision 1
SV3-PXS-PLW-02U, "Passive Core Cooling System Containment Building Room 11207 IRWST & Cont. Recirc. to DVI-B," Revision 1
SV3-PXS-PLW-02W, "Passive Core Cooling System Containment Building Room 11207 IRWST & Containment Recirc. to DVI-B," Revision 1
SV3-PXS-PLW-02X, "Passive Core Cooling System Containment Building Room 11207 IRWST & Cont. Recirc. to DVI-B," Revision 1
SV3-PXS-M6-001, "Piping and Instrumentation Diagram Passive Core Cooling System," Revision 4
SV3-PXS-M6-002, "Piping and Instrumentation Diagram Passive Core Cooling System," Revision 7

Miscellaneous:
Principle Closure Document 2.2.03.08c.iv.01-U3-PRF, Revision 0
SNC Condition Report 10497430
N&D SV3-CA03-GNR-000100, "IRWST Channels to CA03 / P-Plates," Revision 0

Procedures :
26139-000-4MP-T81C-N3201, "Construction Survey," Revision 1
26139-000-4MP-T81C-N7102, "Control of Measuring and Test Equipment," Revision 0
NCSP 02-24, "ITAAC Support Activities (AP1000)," Revision 02.00
NCSP 03-03, "Construction Engineering," Revision 01.04
NCSP 0 3-24, "Field Surveying," Revision 05.00
SV3-PL02-Z0-001, "Piping Class Sheets and Standard Details," Revision 6

Survey Data:
Data File 3-241, Survey Data Reference NI-3 Field Book 97, Pages 100-101, 1-27/18
Survey Data Obtained from SWR Number 1048162
SV3-MV01-X4D-000001, Excerpt from Survey Book NI3 Book #75, Revision 0

Section 1A10

SV3-PXS-FSK-800185, "CMT Disch Line EL vs CMT Inside Bottom EL, Vogtle Unit 3 PCD Review," Revision 0
Survey Data Obtained from SWR Number - 1047046
SV3-PXS-PLW-019, "Passive Core Cooling System Containment Building Room 11206/11105 DVI-A To Reactor Vessel," Revision 2
SV3-PXS-PLW-012, "Passive Core Cooling System Containment Building Room 11206 Common Injection Header To DVI-A," Revision 1
SV3-PXS-PLW-010, "Passive Core Cooling System Containment BLDG Room 11206 Module Q2-33 CMT-A Discharge Piping," Revision 0
SV3-PXS-PLW-01K, "Passive Core Cooling System Containment BLDG Room 11206 CMT-A Discharge Piping," Revision 1
SV3-PXS-PLW-01V, "Passive Core Cooling System Containment Building Room 11206 CMT-A Discharge Piping," Revision 1

SV3-PXS-PLW-011, "Passive Core Cooling System Containment BLDG Room 11206 CMT-A Discharge Piping," Revision 1
SV3-PXS-PLW-026, "Passive Core Cooling System Containment Building Rooms 11105/11204 DVI-B To Reactor Vessel," Revision 2
SV3-PXS-PLW-025, "Passive Core Cooling System Containment Building Rooms 11204/11207 DVI-B To Reactor Vessel," Revision 1
SV3-PXS-PLW-022, "Passive Core Cooling System Containment Building Room 11207 Common Injection Header To DVI-B," Revision 0
SV3-PXS-PLW-02Y, "Passive Core Cooling System Containment Building Room 11207 RNS Connection To DVI-B Connection," Revision 0
SV3-PXS-PLW-02P, "Passive Core Cooling System Containment Building Room 11207 Common Injection HOR To RNS Connection," Revision 1
SV3-PXS-PLW-020, "Passive Core Cooling System Containment Building Room 11207 ISOL Valves To Common Injection HDR," Revision 2
SV3-PXS-PLW-021, "Passive Core Cooling System Containment Building Room 11207 CMT B Injection HDR To ISOL Valves," Revision 2

Section 1A11

Drawings
SV3-IDSA-E5-DB101, Wiring Diagram Class 1E 250 VDC Battery IDSA-DB-1, Rev. 0
SV3-IDSS-E5-DB101, Wiring Diagram Class 1E 250 VDC Battery IDSS-DB-1, Rev. 0
SV3-IDSC-E5-DB101-R0, Wiring Diagram Class 1E 250 VDC Battery IDSC-DB-1, Rev. 0
SV3-1210-P3-001, Auxiliary Building Equipment Location Plan EL 666 Areas 1 & 2, Rev. 2
SV3-1010-P2-0011, Nuclear Island Auxiliary BldG Area 1 &2 General Arrangement Plan at Elev 66-6, Rev. 1

Work Orders
SV3-IDS-DBW-860172, Install IDS Div. A battery racks in Room 12101 el. 666, Rev. 0
SV3-1212-DBW-1004270, U3 Aux Install IDSS-DB-1A/1B Spare Batteries Rm 12103 El 666
SV3-1212-DBW-1003989, U3 Install IDS 24 Hr Battery Division C Battery Room 12102 El 66-6
SV3-1212-DBW-1001929, U3 Aux Install IDS 24 Hr Battery Division A battery Room 12101 El. 666, Rev. 0

Specifications
SV3-G1-V8-001, AP1000 Electrical Installation specification, Rev. 6
SV3-DB01-Z0-001, Design Specification for Class 1E 250 VDC Batteries and Racks, Rev. 7

Procedures
F-Q445-014, Receipt inspection: Receipt of WEC procured ASME III and Non-ASME ITEMS, Rev. 07.02
26139-000-4MP-T81C-N6201, Field Material Storage Control, Rev. 4
26139-000-4MP-T81C-N1903, Construction Rigging Work Operations, Rev. 1
26139-000-FMP-T81C-N3301, Electrical Equipment Installation, Rev. 0
26139-000-2QI-Q07C-N3301, QC instruction for Electrical Equipment Installation Rev. 0

Vendor Manuals
SV3-DB01-V2-001, AP1000 Class 1E 250 VDC Battery System Assembly Drawings: Two Step Rack Assembly Drawing High Seismic 132 for Type G Batteries, Rev. 0
SV3-DB01-V0M-700, AP1000 Class 1E 250 VDC Battery Multipurpose Manual: Safety, Storage, Installation, Operation & Maintenance Manual, Rev. 1

SV3-DB01-V8M-001, AP1000 Class 1E 250 VDC Battery Assembly Drawings: Instruction for Assembling 1E Racks, Rev. 0

Miscellaneous
APP-DB01-GEF-850001, Safety related battery terminal exposed copper vendor letter, Rev. 0
26139-J132175-MRR-18-03460-000, Material Receiving Report for IDSS 1E Batteries, Rev. 0
SV3-DB01-VQQ-006, Conditional Quality Release and Final QA document package for IDSS 1E batteries, Rev. 0
SVC-2018-1087, Risk Release for IDSS-DB-1A Batteries, Rev.0
APP-IDSS-GEF-850000, IDSS 250V Spare Class 1E Battery Orientation, Rev. 0
SVC-2018-1080, Risk Release for IDSC-DB-1B 24 Hour Batteries, Rev. 0
APP-DB01-GEF-004, Battery Storage Classification Change, Rev. 0

Section 1A12

Design Specifications
SV3-CC01-Z0-031, Safety Related Placing Concrete & Reinforcing Steel, Rev. 8
Design Calculations
APP-CA55-S3C-008, AP1000 CA55 Structural Module Design Evaluation, Rev.0
APP-CA55-S3C-009, AP1000 CA55 Structural Module Design Evaluation, Rev.0
APP-CA56-S3C-007, AP1000 CA56 Structural Module Design Evaluation, Rev.0
APP-CA56-S3C-008, AP1000 CA56 Structural Module Connection Evaluation, Rev.0
APP-CA57-S3C-008, AP1000 CA57 Structural Module Connection Evaluation, Rev.0
APP-CA57-S3C-007, AP1000 CA57 Structural Module Design Evaluation, Rev.0

Drawings
SV3-0000-C9-001, AP1000 Concrete General Notes, Rev. 7
SV3-1150-CR-013, Containment Concrete Reinforcement CA55 Top, Rev. 2
SV3-1150-CR-045, Containment Concrete Reinforcement CA55 Bottom, Rev.0
SV3-1150-CR-030, Containment Concrete Reinforcement Drawing CA56 & CA57 Top, Rev. 1
SV3-1150-CR-030, Containment Concrete Reinforcement Drawing CA56 & CA57 Bottom, Rev.0
SV3-1150-CR-029, Containment Concrete Reinforcement Drawing Sections U & V Floor at El. 135'-3", Rev.1
SV3-1150-CR-024, Containment Concrete Reinforcement Drawing Section G Floor at EL. 135'-3", Rev.1
SV3-1150-CR-021, Containment Concrete Reinforcement Drawing Sections A&B Floor at EL. 135'-3", Rev.1
SV3-1150-CR-047, Containment Concrete Reinforcement CA55, CA56, CA57 & CA58 Type Details, Rev.0
SV3-1150-CR-011, Containment Concrete Reinforcement CA55, CA56, CA57 Bottom, Rev.1
APP-1150-CE-010, Containment Concrete Embedment AT EL. 135'-3" General Plan View, Rev.1

Engineering & Design Coordination Reports
SV3-CA55-GEF-000016, CA55 Slab Blockout (ESR), Rev.0
APP-1150-GEF-850033, CA55/56/57 Reinforcement Details, Rev.0
APP-CA55-GEF-850032, CA55 FB07 Unachievable Welds, Rev0
APP-1150-GEF-174, E&DCR for Modifying Base Plate on IRWST Tower, Rev, 0
APP-CA00-GEF-130, Stiffness Study CA55, CA56, CA57, and CA58 Floor Modules, Rev. 0
APP-CA01-GEF-077, Couplers on CA01 for Connection of CA55 and CA56, Rev. 0

SV3-CA57-GEF-000002, CA57 Clip Angle Alternative (ESR # 50000605), Rev.0

Procedures
APP-CR01-Z0-010, Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel, Rev. 8

Calibration Records
Torque Wrench V-N-0096, Calibration Date: 7/3/218; Calibration Due Date: 1/3/2019.

Section 1A13

Welding Procedures
181816-000-WS-SP-E71T1, Rev 1
181816-000-WS-SP-E8018, Rev. 2

Welding Procedure Qualification Records
1304 2/13/15, 13869 3/15/18, 13863 2/23/18, 13408 6/3/15, 13849 11/17/17, 13857 2/23/18

Miscellaneous
CMTR for Lot 1332R, 3/16/18
Welder qualification record for welder ID DLR6697
APP-1208-Z0-001, "Specification for the Fabrication and Field Erection of the SC Panels and the Conical Roof Steel Structure for the AP1000 Shield Building", Rev. 2

Section 1A14
Design Specifications
SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 8.
SV3-CC01-Z0-026, Safety Related Mixing and Delivering Concrete, Revision 7.
SV3-CC01-Z0-027, Safety Related Concrete Testing Services, Revision 6.

Calculation
CALC-VMD-032, Mix Y Recommended Mix Proportions, Date Issued: 1/28/12

Pour Card
4504, Unit 3 Shield Building Course 9 & 10, Date: 05/12/2018
Batch Tickets
51068
51056
51075
51084
51096
51105
51117
51125
51134

Concrete Compression Test Results
Wood Lab/Ref. # 2018VEGP8017T. Sample Date: 12/5/2018

Section 1A15

Design Specifications
SV3-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel," Rev. 8
SV3-CC01-Z0-026, "Safety Related Mixing and Delivering Concrete," Rev. 7
SV3-CC01-Z0-027, "Safety Related Concrete Testing Services," Rev. 6
APP-CR01-Z0-010, "Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel", Rev. 8

Procedure
APP-GW-GAP-428, Nonconformance and Disposition Report (N&D), Rev. 15

Drawings
SV3-0000-C9-001, AP1000 Concrete General Notes, Rev. 8
SV3-0000-C9-002A, AP1000 Concrete General Notes, Rev. 2
APP-1200-CR-931, Auxiliary Building Areas 2 & 3 Concrete Reinforcement Wall 7.3 Elevation, Rev. 19
APP-1240-CR-931, Auxiliary Building Areas 2 & 3 Concrete Reinforcement Wall 7.3 Section & Details Elevation 117'-6", Rev. 6
APP-1200-CR-912, Auxiliary Building Area 2 Concrete Reinforcement Walls J & K Elevations, Rev. 18
APP-1240-CR-912, Auxiliary Building Area 2 Concrete Reinforcement Wall J Sections & Details Elevation 117'-6", Rev. 5
SV3-1200-CR-992, Auxiliary Building Concrete Reinforcement Typical Detail Opening (sheet 2), Rev. 10

E&DCRs
APP-1240-GEF-850044, Wall 7.3 Reinforcement and Penetrations, Rev, 1
APP-1240-GEF-850074, Wall 7.3 Reinforcement and Penetrations, Rev. 0
SV3-1240-GEF-000003, Hold on Formwork Installation on Wall 7.3 between El. 117'-6" and El. 135'-3"
SV3-CR01-GNR-000993, 7.3 Line Elevation 117'-6" Doorway Details, Rev. 0
APP-1200-GEF-1019, Wall J Drawing Modificationsper APP-1240-E0-912, Rev. 6_ADL
APP-CR01-GEF-850514, Wall J Added SPLC Location for Add'l Steel Elevation 117'-6"
APP-1200-GEF-1020, Modifications to Auxiliary Building Rebar Placement EL. 117'-6" & El. 135'-3", Rev. 0

Non-conformance and Disposition Report
SV3-CR01-GNR-000994, J-Line Elevation 117'-6" Doorway Details, Rev. 0

Pour Card
4419, Unit 3 Auxiliary Building Interior Wall Placement #131 on 7.3 Line
Batch Tickets
50734
50735
50738
50751
50756

Torque Wrench Calibration Records
V-N-0126, Calibration Date: 06/09/18 through 12/09/18

Condition Report
50007586, Date: 10/29/18

Section 1A16

Specifications
SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 8

Drawings
SV3-0000-C9-001, AP1000 Concrete General Notes, Rev. 9
SV3-0000-C9-002A, AP1000 Concrete General Notes, Rev. 2
SV3-1200-CR-992, Auxiliary Building Concrete Typical Reinforcement Typical Detail Opening (sheet 2), Rev. 6
SV3-0000-C9-002, AP1000 Concrete General Notes, Rev. 7
APP-1240-CR-918, Auxiliary Building Area 2 Concrete Reinforcement Wall K Sections & Details EL. 117'-6", Rev. 6
APP-1200-CR-912, Auxiliary Building Area 2 Concrete Reinforcement Walls J & K Elevations, Rev. 18

E&DCR's
APP-1232-GEF-115, Horizontal Construction Joints at EL. 115'-8 ", Rev. 0
APP-CR01-GEF-850158, Wedge at Wall K EL 117'-6", Rev. 0
APP-CR01-GEF-850419, Wall K Rebar Details EL. 117'-6", Rev. 0
SV0-CR01-GEF-000873, Allowance to Field Bend Reinforcing Bars and Hairpin Requirements, Rev. 0

Procedures
APP-GW-GAP-420, Engineering and Design Coordination Reports, Rev. 12

Section 1A17

Design Specification
SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 8

Drawings
SV3-000-C9-001, Concrete General Notes, Rev. 8
SV3-1242-CR-204, Auxiliary Building Area 2 Concrete Reinforcement Floor EL. 117'-6" Plan, Rev. 4
SV3-1040-CR-101, Auxiliary Building Concrete Reinforcement Slab Joint Rebar to connect the Shield Building EL. 117'-6" Detail (Sheet 2), Rev. 2
SV3-1242-CR-264, Auxiliary Building Area 2 Concrete Reinforcement Floor EL. 117'-6" Details (sheet 5), Rev. 2
SV3-1242-CR-204, Auxiliary Building Concrete Outline Area 2 Floor EL. 117'-6", Rev. 8

Condition Report
70000127, Bars off elevation on SP34A Slab, Date, 11/26/18
Engineering & Design Coordination Reports
APP-1242-GEF-850014, Area2 El. 117'-6" Slab Reinforcement & Drawings Clean up, Rev. 0
APP-1240-GEF-375, Relocation of Embedments Supporting DK-1 and Localized Conduits, Rev. 0

Procedure
APP-CR01-Z0-010, Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel, Rev. 8
Bechtel Project Quality Assurance Manual, Rev. 0

Calibration Records
Torque Wrench No. V-N 0035, Calibration Date: 08/11/18. Calibration Due Date: 02/14/19.

Section 1A18

Specifications
SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 8

Drawings
SV3-0000-C9-001, AP1000 Concrete General Notes, Rev. 9
SV3-0000-C9-002A, AP1000 Concrete General Notes, Rev. 2
SV3-1200-CR-913, Auxiliary Building Areas 1 & 2 Concrete Reinforcement Walls L & M Elevations, Rev. 12
SV3-1252-CR-215, Auxiliary Building Area 2 Concrete Reinforcement Floor EL. 135'-3" Details (Sheet 1), Rev. 2
SV3-1250-CR-913, Auxiliary Building Areas 1 & 2 Concrete Reinforcement Walls L & M Sections and Details, Rev. 3
SV3-1240-CR-913, Auxiliary Building Areas 1 & 2 Concrete Reinforcement Walls L & M Sections and Details, Rev. 5
SV3-1200-CR-991, Auxiliary Building Concrete Reinforcement Typical Opening Detail, Rev.5

Engineering & Design Coordination Reports
APP-1240-GEF-364, Horizontal Construction Joint at EL. 133'-3" for Wall L, Rev. 0
SV0-CR01-GEF-001164, SPLC Locations on Walls L, M, P, and Q, Rev. 0

Nonconformance and Disposition Report
SV3-CR01-GNR-000949, Reinforcement in Wall L, Rev. 0

Section 1A19

Design Specifications
SV3-CC01-Z0-031, Safety Related Placing concrete and Reinforcement Steel, Rev. 8

Calculations
APP-1240-S3C-123, Auxiliary Building Secondary (Small) Walls Between EL. 100'-0" & EL. 135'-3", Reinforced Concrete Design, Rev. 1

Drawings
SV3-0000-C9-001, AP1000 Concrete General Notes, Rev. 8
SV3-1200-CR-932, Auxiliary Building Areas 3&4 Concrete Reinforcement Wall I Elevation, Rev. 11
SV3-1240-CR-932, Auxiliary Building Areas 3&4 Concrete Reinforcement Wall I Sections & Details EL. 117'-6" (Sheet 1), Rev. 6
SV3-1240-CR-937, Auxiliary Building Areas 3&4 Concrete Reinforcement Wall I Sections & Details EL. 117'-6" (Sheet 2), Rev.4

SV3-1230-CR-937, Auxiliary Building Areas 3&4 Concrete Reinforcement Wall I Section & Detail EL. 100'-0", 105'-0", & 107'-2" (Sheet 2), Rev.6
APP-1240-CR-990, Auxiliary Building Concrete Reinforcement Secondary Walls Elevation EL. 117'-6", Rev.6
APP-1240-CR-992, Auxiliary Building Concrete Reinforcement Secondary Walls Sections & details EL. 117'-6" (Sheet 2), Rev. 5

Engineering & Design Coordination Reports
APP-1240-GEF-286, Block Out Addressed on Drawings for Wall 4.8, Rev. 0
APP-1240-GEF-850021, Wall 4.8 Embedded Plate PL13, Rev. 0
APP-1240-GEF-850040, Wall 4.8 Reinforcement and CJs, Rev.0

Nonconformance & Disposition Report
SV3-CR01-GNR-001048, Wall #120 @ I-Line Crack Control Bars at Equipment Door Corner, Rev. 0

Section 1A20
SV0-RCS-M0P-800315, GQ P 9.7, "Solvent Removable Liquid Penetrant Examination and Acceptance Standards for Welds, Base Materials, and Cladding", Revision 19
MISTRAS Computed Radiography Examination Report P-18-RT-302-0052 for Cold Leg - RCS - L002D weld-no. SV4-RCS-PL01-FW-BCL05 (all film), 10/01/2018
MISTRAS Computed Radiography Examination Report P-18-RT-302-0053 for Cold Leg - RCS - L002C weld-no. SV4-RCS-PL01-FW-BCL03 (all film), 10/01/2018
MISTRAS Computed Radiography Examination Report P-18-RT-302-0055 for Hot Leg - RCS - L001B weld-no. SV4-RCS-PL01-FW-BHL02 (all film), 10/01/2018
MISTRAS 521-RT-302, "Radiographic Examination using Computed Radiography in Accordance with ASME Section V, Article 2", Revision 0

Section 1A21

Specifications
APP-GW-P0-008, AP1000 Specification for Field Fabricated Piping and Installation, ASME III, Code Classes 1, 2, and 3 and ASME B31.1 Rev. 7
APP-PL02-Z0-101, AP1000 Class 1 Piping and Non-Class 1 Extensions Design Specification, Rev. 4
APP-PV01-Z0-001, 3 AND Larger Motor Operated Gate and Globe Valves, ASME Boiler and Pressure Vessel Code Section III, Class 1, 2, and 3, Rev. 9
APP-Q601-Z0-001, Design Specification for AP1000 Piping Module 1102-Q6-01, Rev. 1
APP-GW-P0-008-ADD-02, Supplemental QA Requirements for the Pressurizer Upper Lateral Support Assembly (PRZUL)-Ring Girder and ASME III Mechanical Modules KB36, Q223, Q233, Q240, Q305, and Q601 Rev. 9
APP-GW-P0-007, AP1000 Specification for Shop Fabricated Piping Rev. 8
APP-PL02-Z0-001, AP1000 Standard Piping Specification Class BTA, Rev. 10

QA Document Packages

Aecon:
132176-G230.04-404-012-00007

CB&I Laurens:
132176-C601.08-404-012-00089

132176-C601.08-404-012-00072
132176-C601.08-404-012-00038
132176-C601.08-404-012-00094

Flowserve:
SV4-PV01-VQQ-010
SV4-PV01-VQQ-024

RT film
Weld W1064 from Aecon Document Package 132176-G230.04-404-012-00007
Weld #9 from CB&I Laurens Document Package 132176-C601.08-404-012-00072

Corrective Actions Documents
N&D APP-Q601-GNR-850140-2, Rev. 0
CARs: 260537, 269484, 271111, 50000825, 677254
CRs: 50008557, 50008982, 50008966
N&D SV3-RCS-GNR-000028, ADS 1,2,3 MOV Globe Valves, Rev. 0
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E&DCR APP-PV01-GEF-082, Modify E&DCR APP-PV01-GEF-071, Rev. 0

Drawings
SV4-RCS-M6-002, Piping and Instrumentation Diagram Reactor coolant System, Rev. 7
SV4-RCS-PLW-016, RCS Containment Building Room 11703 Upper Tier 3rd Stage ADS Piping, Rev. 1
SV4-PLW-01C, RCS Containment Building Rm 11603 PZR to Lower Tier ADS Piping, Rev. 1
Procedures
SV0-PV01-VMM-001 , MAINTENANCE MANUAL for AP1000 PV01 Size 3 or Larger Motor Operated Gate Valves, Section III, Class 1, 2 & 3 Rev. 0

Design Calculations for Q601 Piping System & Pipe Supports
APP-RCS-PLR-010, AP1000 Piping Analysis Report for Pressurizer Safety and Automatic Depressurization System PSADS, Rev. 10
APP-RCS-PHC-11R0075, Pipe Support Calculation for APP-RCS-PH-11R0075, Rev. 0
APP-RCS-PHC-11R0076, Pipe Support Calculation for APP-RCS-PH-11R0076, Rev. 2
APP-RCS-PHC-11V0113, Pipe Support Calculation for APP-RCS-PH-11V0113, Rev. 1
APP-RCS-PHC-11Y0112, Pipe Support Calculation for APP-RCS-PH-11Y0112, Rev. 1
Fabrication Records for Q601 Pipe Supports: APP-RCS-PH-11R2103, APP-RCS-PH-11R2104, APP-RCS-PH-11V0113 & APP-RCS-PH-11Y0112
QAPD 132176-SMS-011, ASME Section III Div. 1 Safety Related Primary Equipment Supports for Vogtle Unit 4 PO 132176-PH02.01

Section 1A22
WEC Isometric Drawing APP-PXS-PLW-02E, "Passive Core Cooling System Containment Building Room 11207 IRWST to DVI-B & RNS Pump Suction", Rev. 4
Stone and Webster (S&W) Weld Data Sheet (WDC) SV4-PXS-PLW-02E-11 for work package SV4-PXS-P0W-800006, 1-29-18
S&W Welding Material Requisition (WMR) 405688 for welder MAJ 2161 and welding rods 3/32" and 1/8" dia. with heat-nos.1203F and 1203E, respectively, 9/25/18

Section 1A23

Procedures:
ND-AD-002, Nuclear Development Corrective Action Program, Version 27
W2-5.1-101, Westinghouse Corrective Action Program, Revision 5.1 and 6
W2-5.1-105, Limited Cause Analysis, Revision 2

CAP items:
CR 10491047
CR 10490570
IR-2018-9616

Drawings:
Mangiarotti Drawing-No. W2-WLM-00-00-001, AP1000 Pressurizer, Weld Location Map (CW-033 and CW-035), Revision 0
Mangiarotti Drawing-No. W1-DWF-11-00-025, AP1000 Passive Heat Removal Heat Exchanger, Weld Location Map (CW-029/1), Revision 7
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Mangiarotti Vogtle Unit 4 Radiographic Test Report No. N016-RT-W2-PCF-10-11-003-16.2 for Weld-No. CW-033 (4 pages), 22/11/2013
Mangiarotti Vogtle Unit 4 Radiographic Test Report No. N016-RT-W2-PCF-10-11-003-16.3 for Weld-No. CW-035 (4 pages), 22/11/2013
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Section 1A24
CMTR for heat Number K5684
APP-PV01-Z0D-106, "PV01 Datasheet 106", Rev. 4
Drawing 09-91175-07 Sheets 1-5, Rev. 0
NDE Reports ARE3958, ABD00172

Section 1A25
Drawings:
SV4-1130-CE-045, "Containment Concrete Embedment Drawing at Elevation 103'-0" Detail A3," Revision 1
SV4-1130-CE-061, "Containment Concrete Embedment Drawing at Elevation 103'-0" Detail B3," Revision 2
SV4-PXS-PLW-018, "Passive Core Cooling System Containment BLDG Room 11305/11206 from IRWST to DVI-A," Revision 0
SV4-PXS-PLW-029, "Passive Core Cooling System Containment Building Room 11207 from IRWST to DVI-B," Revision 0
SV4-PXS-M6-001, "Piping and Instrumentation Diagram Passive Core Cooling System," Revision 4
SV4-PXS-M6-002, "Piping and Instrumentation Diagram Passive Core Cooling System," Revision 7

Section 1A26
CMP-RSHT-2018-5-13614, PMS Digital Cabinets/Receipt Inspection and Storage Compliance for Units 4 PMS Digital Cabinets, May 17, 2018
Qualification and Curriculum for Surveillance Representatives

ND-CA-VNP-013, Nuclear Development Compliance Monitoring Program (CMP) Surveillance Program, Rev. 13
ND-CA-VNP-021, Management of the Compliance Monitoring Program, Rev. 18
APP-PMS-J0M-003, AP1000 Protection and Safety Monitoring System Technical Manual, Rev. 1
26139-000-4MP-T81C-N6201, Field Material Storage Control, Rev. 4
V-U-0092-Oct_Summary, August 9, 2018 through October 23, 2018
V-U-0092_Summary-Nov, October 23, 2018 through November 27,2018
V-U-0193-Oct_Summary, August 9, 2018 through October 23, 2018
V-U-0193_Summary-Nov, October 23, 2018 through November 27, 2018

Section 1A27
Design Specifications
SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 8.
SV3-CC01-Z0-026, Safety Related Mixing and Delivering Concrete, Revision 7.
SV3-CC01-Z0-027, Safety Related Concrete Testing Services, Revision 6.

Concrete Mix Dry Density Report
132175-102-006-04-000004 - Mix E(r1)

Concrete Pour Card
Concrete Placement/Order Pour Card, Pour Number 4150,
Batch Tickets
Pump No. 1
50296
77212
50339
77226
77235
77246
77310 (Correlation Test)
Pump No. 2
50307
50330
50338
77223
50364 (Correlation Test)
50374
50398
50409
77292 (Correlation Test)
Pump No. 3
50317
77209
50331
50388 (Correlation Test)
77256
77269
77280
77302
77330 (Correlation Test)

77333 (Correlation Test)

Condition Reports
50005968, Date 10/01/18
50006023, Date 10/02/18
50006091, Date 10/03/18
50006684, Date 10/03/18

Miscellaneous
Concrete Specimen Initial Curing Log, Pour 4150, Date: 9/26/2018
Curing Box Logs, Pour 4150, Date: 9/26/2018
Vibrator Serial No. 9-1100980, Calibration Date 9/01/18 through 11/30/18

Section 1A28

Specifications
SV4-CC01-Z0-026, Safety Related Mixing and Delivering Concrete, Rev. 8
SV4-CC01-Z0-027, Safety Related Concrete Testing Services, Rev. 7
SV4-CC01-Z0-031, Safety Related Placing Concrete and Reinforcement Steel, Rev. 8

Pour Card
4422, Unit 4 CA01/CA02 Concrete Placement to Elevation 135'-3", Date: 7/12/18
Batch Tickets
51147
51157
51189
51217

Section 1A29

Design Specifications
SV3-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel, Rev. 8.
SV3-CC01-Z0-026, Safety Related Mixing and Delivering Concrete, Revision 7.
SV3-CC01-Z0-027, Safety Related Concrete Testing Services, Revision 6.

Pour Card
4399, Unit 4 Aux. EL. 100-0 to 117-6 (Wall 98), Date: 12/19/2018
Batch Ticket
51332

Section 1P01
ND-AD-002, Nuclear Development Program Corrective Action Program, Rev. 28.0
APP-GW-GAP-428, "Nonconformance and Disposition Report," Revision 15
APP-GW-GAP-420, "Engineering and Design Coordination Reports," Revision 16
CAPAL 100497762
Quality Inspection Report S511-17-11031, "Mechanical Rebar Splices: Threaded Lenton Coupler Splices/Weldable Couplers," 10/16/17
Quality Inspection Plan F-S511-001, "Mechanical Rebar Splices: Threaded Lenton Splices/Weldable Couplers," Revision 14.01
N&D SV3-CR01-GNR-000905, "Sister Splices not taken per required frequency," Revision 0

Quality Inspection Report S511-17-12279, "Mechanical Rebar Splices: Threaded Lenton Coupler Splices/Weldable Couplers," 09/24/17
E&DCR SV0-CR01-GEF-001010, "Revision of Taper Threaded Mechanical Splice Testing & Inspection Requirements," Revision 0
CAPAL 100501995
Quality Inspection Report C114-17-10189, "Post Placement: Concrete Repair," 11/01/17
N&D SV4-CR01-GNR-000306, "Form Saver with No Internal Threads," Revision 0
CAPAL 100502331
Quality Inspection Report C114-17-10212, "Post Placement: Concrete Repair," 11/17/17
N&D SV4-CC01-GNR-000242, "Voids Below Horizontal Construction Joint of N-Line/13M Interface," Revision 0
E&DCR SV4-CC01-GEF-000056, "NI4 SBW Optional horizontal construction joint," Revision 0
Quality Inspection Report C113-17-10152, "Placing Safety Related Concrete (See Gen. Inst. #6)," 11/16/17
N&D SV4-CR01-GNR-000317, "13M U-Bar Splice/Development Issue," Revision 0
CAPAL 100494292
N&D SV4-CA20-GNR-000217, "Cracked weld in SV4-CA20 room 12264," Revision 0
Request For Information SV4-CA20-GF-000084, "[Part 21 RFI] Cracked weld in SV4-CA20 room 12264," 10/09/2017
WDS 870522-120
Record Of Magnetic Particle Examination NDE Report No. V-17-MT-302-1933, 08/22/17
Record Of Magnetic Particle Examination NDE Report No. V-17-MT-963-0023, 10/17/17
CAPAL 100497412
N&D SV4-CC01-GNR-000221, "U4-Aux Bldg. Wall Placement # 48 South Face Consolidation," Revision 0
Quality Inspection Report C114-18-10030, "Post Placement: Concrete Repair," 02/03/18
Quality Inspection Report C114-18-10018, "Post Placement: Concrete Repair," 02/01/18

Section 1P02
ND-AD-002, "Nuclear Development Corrective Action Program," Version 28.0
ND-AD-002-025, "Issue Identification, Screening, and Dispatching", Version 1.0
3-AOP-404, "Instrument Failure PMS Division B", Version C
3-AOP-405, "Instrument Failure PMS Division C", Version C
3-AOP-406, "Instrument Failure PMS Division D", Version C
SV3-1030-P2-0011-R1, "Nuclear island Auxiliary Bldg Area 1 & 2 General Arrangement Plan at EL 100'-0" & 107'-2", Rev. 1
CR 50005649, "3-AOP-404, 405, and 406 need revisions", 9/26/18
TE 50005739, "3-AOP-404, 405, and 406 need revisions", 9/26/18

Section 2P01
This input is security related. See non-public report 05200025/2018413 for details.

4. OTHER INSPECTION RESULTS

4OA3

Corrective Action Documents
SNC CR 10062982
CB&I CAR 2015-1585

Nonconformance and Disposition Reports (N&Ds)
N&D SV3-CA20-GNR-000680, Volume for Fuel Transfer and Spent Fuel Pool, Revision 0
N&D SV3-CA20-GNR-000887, North Wall Repair Spent Fuel Pool Supplemental Information, Revision 0

LIST OF ACRONYMS

ACC	accumulator
ACI	American Concrete Institute
ADS	automatic depressurization system
ANI	authorized nuclear inspector
ASME BPVC	American Society of Mechanical Engineers Boiler & Pressure Vessel Code
ASNT	American Society of Nondestructive Testing
ASTM	American Society of Testing and Materials
AWS	American Welding Society
CB&I	Chicago Bridge and Iron
CFR	Code of Federal Regulations
CMP	compliance monitoring program
CMT	core makeup tank
CMTR	certified material test report
DVI	direct vessel injection
E&DCR	engineering and design coordination report
GTAW	gas tungsten arc welding
IDS	uninterruptable power supply system
IMC	inspection manual chapter
IQI	image quality indicator
ITAAC	Inspections, Tests, Analysis, and Acceptance Criteria
IRWST	in-containment refueling water storage tank
MOV	motor operated valve
MT	magnetic particle test
N&D	nonconformance and disposition
NDE	nondestructive examination
NQA-1	ASME Nuclear Quality Assurance Program
PCD	principle closure document
PRHR HX	passive residual heat removal heat exchanger
PT	liquid penetrant test
PXS	passive core cooling system
PZR	pressurizer
QAP	Quality Assurance Program
QC	quality control
RCS	reactor coolant system
RT	radiographic test
SNC	Southern Nuclear Company
UFSAR	Updated Final Safety Analysis Report
UT	ultrasonic test
WDS	weld data sheet
WEC	Westinghouse
WMR	welding material requisition

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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	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

		required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.1.2-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.		the dynamic effects of a line break is provided.
72	2.1.03.03	3. The components identified in Table 2.1.3-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 4. Pressure boundary welds in components identified in Table 2.1.3-1 as ASME Code Section III meet ASME Code Section III requirements. 5. The pressure boundary components (RV, CRDMs, and incore instrument QuickLoc assemblies) identified in Table 2.1.3-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.	Inspection will be conducted of the as-built components as documented in the ASME design reports. Inspection of as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components of the RXS required by the ASME Code Section III to be hydrostatically tested.	The ASME Code Section III design reports exist for the as-built components identified in Table 2.1.3-1 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the pressure boundary components (RV, CRDMs, and incore instrument QuickLoc assemblies) conform with the requirements of the ASME Code Section III.

91	2.2.01.02a	2.a) The components identified in Table 2.2.1-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.2.1-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.2.1-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.2.1-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.2.1-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.2.1-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.	Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. i) A hydrostatic or pressure test will be performed on the components required by the ASME Code Section III to be tested. A hydrostatic or pressure test will be performed on the piping required by the ASME Code Section III to be pressure tested.	The ASME Code Section III design reports exist for the as-built components and piping identified in Table 2.2.1-1 and 2.2.1-2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. i) A report exists and concludes that the results of the pressure test of the components identified in Table 2.2.1-1 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that the results of the pressure test of the piping identified in Table 2.2.1-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.

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	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

		combined normal and seismic design basis loads without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.2.3-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.		a line break is provided.
183	2.2.03.08c.iv.01	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	iv) Inspections of the elevation of the following pipe lines will be conducted: 1. IRWST injection lines; IRWST connection to DVI nozzles v) Inspections of the elevation of the following tanks will be conducted: 2. IRWST	iv) The maximum elevation of the top inside surface of these lines is less than the elevation of: 1. IRWST bottom inside surface v) The elevation of the bottom inside tank surface is higher than the direct vessel injection nozzle centerline by the following: 2. IRWST ≥ 3.4 ft
185	2.2.03.08c.iv.03	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	iv) Inspections of the elevation of the following pipe lines will be conducted: 3. CMT discharge lines to DVI connection	iv) The maximum elevation of the top inside surface of these lines is less than the elevation of: 3. CMT bottom inside surface

550	2.5.02.11	11. The PMS hardware and software is developed using a planned design process which provides for specific design documentation and reviews during the following life cycle stages: a) Not used b) System definition phase c) Hardware and software development phase, consisting of hardware and software design and implementation d) System integration and test phase e) Installation phase	Inspection will be performed of the process used to design the hardware and software.	A report exists and concludes that the process defines the organizational responsibilities, activities, and configuration management controls for the following: a) Not used. b) Specification of functional requirements. c) Documentation and review of hardware and software. d) Performance of system tests and the documentation of system test results, including a response time test performed under maximum CPU loading to demonstrate that the PMS can fulfill its response time criteria. e) Performance of installation tests and inspections.

597	2.6.03.02.i	2. The seismic Category I equipment identified in Table 2.6.3-1 can withstand seismic design basis loads without loss of safety function.	i) Inspection will be performed to verify that the seismic Category I equipment identified in Table 2.6.3-1 is located on the Nuclear Island. ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed. iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.	i) The seismic Category I equipment identified in Table 2.6.3-1 is located on the Nuclear Island. ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function. iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.
760	3.3.00.02a.i.a	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i.a) A report exists which reconciles deviations during construction and concludes that the as-built containment internal structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.

761	3.3.00.02a.i.b	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i.b) A report exists which reconciles deviations during construction and concludes that the as-built shield building structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.
762	3.3.00.02a.i.c	2.a) The nuclear island structures, including the critical 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.

763	3.3.00.02a.i.d	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i.d) A report exists which reconciles deviations during construction and concludes that the as-built structures in the radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.