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

August 6, 2014

Mr. B. L. Ivey
Vice President, Regulatory Affairs
Southern Nuclear Operating Company
P.O. Box 1295
Bin B022
Birmingham, AL 35201

SUBJECT: VOGTLE ELETRIC GENERATING PLANT UNITS 3 AND 4 – NRC INTEGRATED INSPECTION REPORTS 05200025/2014-003, and 05200026/2014-003

Dear Mr. Ivey:

On June 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant (VEGP) Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on June 30, 2014, with Mr. Mark Rauckhorst, Vogtle 3 & 4 Construction Vice President, and other members of your staff.

The inspection examined a sample of construction activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings were identified during this inspection.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one for cases where a response is not required, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system Agencywide Documents Access & Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room). To the extent possible, your response should not include any personal privacy or proprietary, information so that it can be made available to the Public without redaction.

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

Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05200025/2014-003
and 05200026/2014-003
w/Attachment: Supplemental Information

cc w/encl: (See pages 2-3)

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

Sincerely,

/RA/

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cc w/encl: (See pages 2-3)

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Letter to B. L. Ivey from Michael E. Ernstes dated August 6, 2014

SUBJECT: VOGTLE ELETRIC GENERATING PLANT UNITS 3 AND 4 – NRC INTEGRATED INSPECTION REPORTS 05200025/2014-003 and 05200026/2014-003

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U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers:	5200025 5200026
License Numbers:	NPF-91 NPF-92
Report Numbers:	05200025/2014003 05200026/2014003
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Vogtle Unit 3 Electric Generating Plant Vogtle Unit 4 Electric Generating Plant
Location:	Waynesboro, GA
Inspection Dates:	April 1, 2014 through June 30, 2014
Inspectors:	C. Abbott, Resident Inspector, DCP J. Fuller, Senior Resident Inspector, DCP C. Huffman, Resident Inspector, DCP A. Ponko, Senior Construction Inspector, DCI C. Smith, Construction Inspector, DCI J. Vasquez, Construction Inspector, DCI
Approved by:	Michael Ernstes, Chief Construction Projects Branch 4 Division of Construction Projects

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2014003, 05200026/2014003; 04/01/2014 through 06/30/2014; Vogtle Unit 3, Vogtle Unit 4, routine integrated inspection report.

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

A. NRC-Identified and Self Revealed Findings

No findings were identified.

B. Licensee-Identified Violations

No findings were identified.

REPORT DETAILS

Summary of Plant Construction Status

During this inspection period construction continued for the auxiliary building walls and floors for elevations 66'6" to 82'6", concrete pour inside of the containment vessel up to 76'6" and underneath up to 82'6", the assembly of modules CA01 and CA05, and the assembly and preparation of the containment vessel (CV) lower, middle, and upper rings for Unit 3. For Unit 4, construction continued on the auxiliary building walls and floors for elevations 66'6" to 82'6", the containment vessel bottom head (CVBH) was set in place in the nuclear island (NI), and the assembly and preparation of the CV lower ring continued.

1. CONSTRUCTION REACTOR SAFETY

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

1A01 (Unit 3) ITAAC No. 2.2.02.07b.ii (139) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.02.07b.ii (139):

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
7.b) The PCS wets the outside surface of the containment vessel. The inside and the outside of the containment vessel above the operating deck are coated with an inorganic zinc material.	ii) Inspection of the containment vessel exterior coating will be conducted.	ii) A report exists and concludes that the containment vessel exterior surface is coated with an inorganic zinc coating above elevation 135' 3".

The inspectors observed in-process coating activities and reviewed the applicable design specification, coating installation and testing procedures, and work travelers for the exterior of the Unit 3 CV lower ring to determine whether coating activities were performed in accordance with applicable quality and technical requirements established by the licensee's Updated Final Safety Analysis Report (UFSAR), quality assurance manual, relevant design specifications, and industry codes and standards.

Specifically, the inspectors reviewed subcontractor, Williams Specialty Services, coating procedure WSS-3080-WP-02, "Applying Field Coating to the Lower Ring, Unit 3," revision 0. The inspectors reviewed this procedure to determine if it met the following requirements:

- UFSAR;
- Design Specification APP-GW-Z0-604, "Applications of Protective Coatings to Systems, Structures, and Components," revision 7;

- American Society for Testing and Materials (ASTM) D3912 “Standard Test method for Chemical Resistance of Coatings and Linings for use in Nuclear Power Plants,” revision 10;
- ASTM D7091 “Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals,” revision 13;
- ASTM D7230 “Standard Guide for Evaluating Polymeric Lining Systems for Water Immersion in Coating Service Level III Safety-Related Applications on Metal Substrates,” revision 13; and
- Manufacturer’s Product Data Sheet.

As a part of this review, the inspectors also reviewed the Certificates of Conformance for the coating material to determine whether the material met the requirements of the UFSAR and design specification. Specifically, the inspector reviewed the following physical properties of the inorganic zinc coating for conformance to the UFSAR and specification APP-GW-Z0-604:

- thermal conductivity;
- specific heat; and
- dry emissivity – Inspectors reviewed the Licensing Document Change Request (APP-FSAR-GLN-117, “Containment Vessel Emissivity,” revision 2).

The inspectors observed storage of the coating and the storage of the abrasive medium to determine whether the procedural requirements and the manufacturer’s recommendations for storage were met. Specifically, the inspectors observed the storage of the coating to verify that the required temperature and humidity were adequately monitored.

The inspectors observed the blasting of the CV surface to determine whether the requirements of the design specification and work procedure were met. Specifically, the inspectors observed:

- blotter testing to ensure no water or oil residue will be dispersed to the surface during blasting;
- environmental conditions were suitable and not predisposed to precipitate dew on the surface; and
- blasted areas were painted within four hours of abrasive blasting and before rust bloom occurs.

The inspectors observed mixing of the coating for the CV lower and middle rings to determine if the coatings were mixed according to the correct proportions, the mixture was constantly agitated, and the outlined procedures were followed. The inspectors reviewed WSS-3080-TWI-Z0-604-01, “Preparing and Applying Coatings to Service Level I, II, and III Surfaces,” revision 9, to determine if the mixing requirements met those set forth in the manufacturer's guidelines. The inspectors observed the environmental

testing procedures to verify that the correct parameters were considered and achieved. The parameters the inspector observed were:

- surface temperature;
- dry bulb temperature;
- wet bulb temperature;
- dew point; and
- relative humidity.

The inspectors also reviewed the calibration records to determine whether the instruments used to measure environmental parameters were properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

The inspectors reviewed the subcontractor's work procedure number WSS-3080-TWI-Z0-604-01, "Preparing and Applying Coatings to Service Level I, II, and II Surfaces," revision 9 to determine whether the procedure adequately implemented the requirements of the design specification (APP-GW-Z0-604) and the UFSAR. The inspectors observed the surface preparation checks to determine whether the anchor profiles were between 1-3 mils as stated in the design specification. The inspectors noted that the surface preparation check was a mandatory inspection hold point, which required quality control personnel to verify. The inspectors reviewed the process control document to determine that the hold point was signed by an authorized quality control inspector before work proceeded. The inspectors reviewed the calibration records to determine the optical surface comparator was properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits

The inspectors reviewed WSS-3080-QWI-02-02-01, "Qualifying and Certifying Coating/Lining Inspectors," revision 1 to determine if the procedures set forth within met the requirements of industry standards and the subcontractor's procedures. Specifically, the inspectors reviewed the procedure to determine if it met ASTM D4537-04a, " Standard Guide for Establishing Procedures to Qualify and Certify Personnel Performing Coating Work Inspection in Nuclear Facilities," revision 04a; and APP-GW-Z0-604, "Applications of Protective Coatings to Systems, Structures and Components," revision 7. The inspectors also sampled coatings inspectors' qualifications to determine if they met the requirements of the industry standards and work procedure. Specifically, the inspectors reviewed the records for:

- vision eligibility;
- education requirements;
- certification records; and
- training records.

The inspectors reviewed AP1000-PQAP-09-02, "Qualifying and Certifying Coating Applicators," revision 1 to determine whether procedures set forth within met the requirements of industry standards. Specifically, the inspectors reviewed the procedure to determine if it met the requirements of ASTM 4228, "Standard Practice for

Qualification of Coating Applicators for Application of Coatings to Steel Surfaces," revision 5. The inspectors reviewed the procedure to determine if it contained the following requirements from ASTM 4228:

- practical exam;
- appropriate number of evaluators; and
- re-qualification requirements.

The inspectors also observed the testing to determine the requirements from the procedure were carried out in the field. Specifically, the inspectors observed the practical exams for conventional coating application and the associated evaluation to determine whether the appropriate number of evaluators were present and the exam criteria was graded in accordance with the procedure.

The inspectors also observed the application of coatings to the exterior of the lower ring. As a part of this observation the inspectors reviewed the training records of the applicator to determine whether the applicator was qualified for the work performed. Specifically, that he was certified to the actual coating being applied, as required by the UFSAR. The inspectors observed the application techniques of the applicator to determine that they conformed to the requirements in the work procedure WSS-3080-TWI-Z0-604, "Preparing and Applying Coatings to Service Level I, II, and III Surfaces," revision 9. The inspectors observed the work to determine that the following requirements of the work procedure were met:

- spray pattern kept at right angles to the substrate;
- appropriate distance from substrate; and
- straight-line method was used.

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC No. 2.2.02.07b.iii (140) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.02.07b.iii (140):

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
7.b) The PCS wets the outside surface of the containment vessel. The inside and the outside of the containment vessel above the operating deck are coated with an inorganic zinc material.	iii) Inspection of the containment vessel interior coating will be conducted.	iii) A report exists and concludes that the containment vessel interior surface is coated with an inorganic zinc coating above 7' above the operating deck.

The inspectors observed in-process coating activities and reviewed the applicable design specification, coating installation and testing procedures, and work travelers for the interior of the Unit 3 CV middle ring to determine whether coating activities were performed in accordance with applicable quality and technical requirements established by the licensee's UFSAR, quality assurance manual, relevant design specifications, and industry codes and standards.

Specifically, the inspectors reviewed subcontractor, Williams Specialty Services, coating procedure WSS-3080-WP-004, "Applying Field Coating to the Unit 3 Containment Vessel Middle Ring," revision 0. The inspectors reviewed this procedure to determine if it met the following requirements:

- UFSAR;
- Design Specification APP-GW-Z0-604, "Applications of Protective Coatings to Systems, Structures, and Components," revision 7;
- ASTM D3912 "Standard Test method for Chemical Resistance of Coatings and Linings for use in Nuclear Power Plants," revision 10;
- ASTM D7091 "Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals," revision 13;
- ASTM D7230 "Standard Guide for Evaluating Polymeric Lining Systems for Water Immersion in Coating Service Level III Safety-Related Applications on Metal Substrates," revision 13; and
- Manufacturer's Product Data Sheet.

As a part of this review, the inspectors also reviewed the Certificates of Conformance for the coating material to determine whether the material met the requirements of the UFSAR and design specification. Specifically, the inspector reviewed the following physical properties of the inorganic zinc coating for conformance to the UFSAR and specification APP-GW-Z0-604:

- thermal conductivity;
- specific heat; and
- dry emissivity – Inspectors reviewed the Licensing Document Change Request (APP-FSAR-GLN-117, "Containment Vessel Emissivity," revision 2).

The inspectors observed storage of the coating and the storage of the abrasive medium to determine whether the procedural requirements and manufacturer's recommendations for storage were met. Specifically, the inspectors observed the storage of the coating to verify that the required temperature and humidity were adequately monitored.
The inspectors observed the blasting of the CV surface to determine whether the requirements of the design specification and work procedure were met. Specifically, the inspectors observed:

- blotter testing to ensure no water or oil residue will be dispersed to the surface during blasting;
- environmental conditions were suitable and not predisposed to precipitate dew on the surface; and

- blasted areas were painted within four hours of abrasive blasting and before rust bloom occurs.

The inspectors observed mixing of the coating for the CV lower and middle rings to determine if the coatings were mixed according to the correct proportions, the mixture was constantly agitated, and the outlined procedures were followed. The inspectors reviewed WSS-3080-TWI-Z0-604-01, “Preparing and Applying Coatings to Service Level I, II, and III Surfaces,” revision 9, to determine if the mixing requirements met those set forth in the manufacturers guidelines. The inspectors observed the environmental testing procedures to verify that the correct parameters were considered and achieved. The parameters the inspector observed were:

- surface temperature;
- dry bulb temperature;
- wet bulb temperature;
- dew point; and
- relative humidity.

The inspectors also reviewed the calibration records to determine whether the instruments used to measure environmental parameters were properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

The inspectors reviewed the subcontractor’s work procedure number WSS-3080-TWI-Z0-604-01, “Preparing and Applying Coatings to Service Level I, II, and II Surfaces,” revision 9 to determine whether the procedure adequately implemented the requirements of the design specification (APP-GW-Z0-604) and the UFSAR. The inspectors observed the surface preparation checks to determine whether the anchor profiles were between 1-3 mils as stated in the design specification. The inspectors noted that the surface preparation check was a mandatory inspection hold point, which required quality control personnel to verify. The inspectors reviewed the process control document to determine that the hold point was signed by an authorized quality control inspector before work proceeded. The inspectors reviewed the calibration records to determine the optical surface comparator was properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

The inspectors reviewed WSS-3080-QWI-02-02-01, “Qualifying and Certifying Coating/Lining Inspectors,” revision 1 to determine if the procedures set forth within met the requirements of industry standards and subcontractor’s procedures. Specifically, the inspectors reviewed the procedure to determine if it met ASTM D4537-04a, “ Standard Guide for Establishing Procedures to Qualify and Certify Personnel Performing Coating Work Inspection in Nuclear Facilities,” revision 04a; and APP-GW-Z0-604, “Applications of Protective Coatings to Systems, Structures and Components,” revision 7. The inspectors also sampled coatings inspectors' qualifications to determine if they met the requirements of the industry standards and work procedure. Specifically, the inspectors reviewed the records for:

- vision eligibility;
- education requirements;

- certification records; and
- training records.

The inspectors reviewed AP1000-PQAP-09-02, "Qualifying and Certifying Coating Applicators," revision 1 to determine whether procedures set forth within met the requirements of industry standards. Specifically, the inspectors reviewed the procedure to determine if it met the requirements of ASTM 4228, "Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces," revision 5. The inspectors reviewed the procedure to determine if it contained the following requirements from ASTM 4228:

- practical exam;
- appropriate number of evaluators; and
- requalification requirements.

The inspectors also observed the testing to determine the requirements from the procedure were carried out in the field. Specifically, the inspectors observed the practical exams for conventional coating application and the associated evaluation to determine whether the appropriate number of evaluators were present and the exam criteria was graded in accordance with the procedure.

The inspectors also observed the application of coatings to the interior of the middle ring. As a part of this observation the inspectors reviewed the training records of the applicator to determine whether the applicator was qualified for the work performed. Specifically, that he was certified to the actual coating being applied, as required by the UFSAR. The inspectors observed the application techniques of the applicator to determine that they conformed to the requirements in the work procedure WSS-3080-TWI-Z0-604, "Preparing and Applying Coatings to Service Level I, II, and III Surfaces," revision 9. The inspectors observed the work to determine that the following requirements of the work procedure were met:

- spray pattern kept at right angles to the substrate;
- appropriate distance from substrate; and
- straightline method was used.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC No. 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):

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
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.

The inspectors used the following NRC inspection procedures/sections to perform this inspection:

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

The inspectors reviewed Chicago Bridge and Iron (CB&I) Power Nonconformance and Disposition Report (N&D) number SV3-CA04-GNR-000005, "Welds at Ex-Core Detector Box WT Beams," revision 0; which was associated with the structural welds on the following wall sections:

- West Reactor Vessel Cavity Wall; N-S wall parallel with column line N; from 83'0' to 98'0";
- East Reactor Vessel Cavity Wall; N-S wall parallel with column line N; from 83'0' to 98'0";
- North Reactor Vessel Cavity Wall; E-W wall parallel with column line 7; from 83'0' to 98'0";

The inspectors reviewed this N&D, which documented a difference between the as-designed and as-built welds for the ex-core detector boxes welded to the CA04 module, to determine whether the difference was properly documented, evaluated, and incorporated into the as-built drawings. The inspectors reviewed this condition to verify that it was properly evaluated against the current licensing basis.

The inspectors also reviewed N&Ds SV3-CA04-GNR-000022, "CA04-03 Horizontal Stiffener now Inaccessible," revision 0; and SV3-CA04-GNR-000010, "CA04-03 Horizontal Stiffener," revision 0, which were associated with the structural welds of the North Reactor Vessel Cavity Wall (E-W wall parallel with column line 7; from 83'0' to 98'0"). The inspectors reviewed these N&Ds, which documented a difference between the as-designed and as-built weld sizes for a horizontal stiffener plate welded to the outside of CA04-03, to determine whether the difference was properly documented, evaluated, and incorporated into the as-built drawings. The inspectors reviewed this condition to verify that it was properly evaluated against the current licensing basis.

The inspectors compared these N&D reports to Section 15, “Nonconforming Materials, Parts, or Components,” of the CB&I quality assurance program (SWSQAP 1-74A, Rev.

B) and CB&I procedure Quality Standard (QS) 15.1, “Nonconformance & Disposition Report,” revision 4.

b. Findings

No findings were identified.

1A04 (Unit 3) ITAAC No. 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 inspection procedures/sections to perform this inspection:

- 65001.01 - Inspection of ITAAC-Related Foundations & Buildings
- 65001.01-02.01 - Procedures
- 65001.01-02.04 - Key Dimensions and Volumes
- 65001.01-02.05 - Steel Structures
- 65001.01-02.06 - Records
- 65001.01-02.07 - Identification and Resolution of Problem
- 65001.F - Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.02 - Fabrication Records Review
- 65001.B-02.01 - Program and Procedures Review
- 65001.B-02.02 - Welding Procedure Qualification
- 65001.B-02.03 - Welder Qualification
- 65001.B-02.04 - Production Controls
- 65001.B-02.05 - Inspection
- 65001.B-02.06 - Records
- 65001.A - As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.04 - Review As-built Deviations/Nonconformance
- 65001.F-02.01 - Design Document Review

The inspectors observed work associated with the CA05 module which primarily comprises the east and south boundary walls of the Chemical and Volume Control System (CVS) room from elevation 80'-6" to 107'-2" and the south wall providing separation between the vertical access and CVS room. The inspectors observed the location, arrangement, and attachment of structural components - angles, channels, shear studs, mechanical couplers - of sub-modules CA05-01, CA05-06, CA05-07 and CA05-08 to verify that the sub-modules were fabricated in accordance with the construction drawings and applicable regulatory requirements. These specific sub-modules are components of the east wall of the CVS room from elevation 80-6" to 107'-2".

The inspectors also observed on-going work associated with assembly of the CA05 module. Specifically, the inspectors observed machine welding of vertical seam weld CV2219-14 connecting a carbon steel faceplate of sub-module CA05-02 to a duplex stainless steel faceplate of sub-module CA05-01 on the west face of the module. The inspectors also observed machine welding of vertical seam weld CV2218-10 connecting

CA05-03 and CA05-04 on the south face of the module; and reviewed documents associated with completed weld CV2216-2 connecting the faceplates of sub-modules CA05-04 and CA05-05 on the north face of the module.

The inspectors reviewed design drawings and applicable procedures associated with the assembly of the CA05 module to verify the following:

- contractors performing safety-related work have approved implementing procedures that describe administrative and procedural controls, approved work processes, and inspection requirements;
- procedures clearly prescribe acceptable methods of quality control inspection to ensure that the as-built condition meets specified design requirements, drawings and material specifications;
- equipment used for process monitoring, tests, and/or data collection is calibrated and maintained in accordance with approved calibration procedures and vendor requirements;
- procedures ensure that craft and quality control inspection personnel performing installation and testing activities are qualified to perform their work;
- the identification of welds and welders is maintained for each weld;
- welding procedures and welders are qualified in accordance with the American Welding Society requirements for structural steel welding, and other codes or standards referenced by the product specifications;
- welding material and processes are adequately controlled as specified and referenced in Inspection Procedure 65001.B;
- nondestructive examination methods and acceptance criteria are as specified; and
- procedures specify the minimum visual examination of weld length requirements and the required inspection sampling for full-penetration and partial penetration welds.

Additionally, the inspectors observed as-built CA05 sub-modules and on-going work activities associated with the assembly of the CA05 module to verify the following:

- the licensee has confirmed that the sub-modules and miscellaneous connection steel conform to design drawings and that there are no deviations from the approved design;
- the licensee has established and implemented an effective method for tracking, evaluating, and dispositioning changes or modifications to the approved design;
- processes, materials, tools, and other equipment being used are qualified and approved in accordance with site procedures;
- personnel conducting work and quality assurance roles are qualified in accordance with site procedures;
- installation, inspection, and testing sequences are being maintained;
- any design changes or field modifications relevant to work observed were properly controlled and processed in accordance with quality and technical requirements; and
- the item(s) were located, installed, assembled, or connected in accordance with the latest approved-for-construction drawings, manufacturer’s instructions, and procedures.

The inspectors observed phased array ultrasonic testing on welds CV-2216-01 (CA05-03 to CA05-04) and CV-2216-02 (CA05-04 to CA05-05) to determine whether the nondestructive examination (NDE) requirements were performed in accordance with procedure 100-UT-312 and to determine whether the weld met the acceptance requirements of AWS D1.1-2000. The inspectors observed the calibration of the phased array ultrasonic testing instrumentation prior to the performance of the scan. The inspectors also observed visual inspection and liquid penetrant testing of dissimilar metal weld CV2219-14 (CA05-01 to CA05-02).

The inspectors also reviewed the following Mistras inspection reports to determine whether required testing had been performed and documented:

- 132175-QA-306-V-14-MT-302-999 (Magnetic Particle Examination - weld CV-2216-01);
- 132175-QA-306-V-14-MT-302-819 (Magnetic Particle Examination - weld CV-2216-01);
- 132175-QA-306-V-14-MT-302-1009 (Magnetic Particle Examination - weld CV-2216-02);
- 132175-QA-306-V-14-UT-312-295 (Ultrasonic Examination - weld CV-2216-02);
- 132175-QA-306-V-14-MT-302-886 (Magnetic Particle Examination - weld CV-2216-02);
- 132175-QA-306-V-14-PT-304-346 (Liquid Penetrant Examination - weld CV2219-14);
- 132175-QA-306-V-14-UT-312-377 (Ultrasonic Examination - weld CV2219-14); and
- 132175-QA-306-V-14-UT-312-375 (Ultrasonic Examination - weld CV2219-14).

b. Findings

No findings were identified.

1A05 (Unit 3) ITAAC No. 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 inspection procedures/sections to perform this inspection:

- 65001.01 - Inspection of ITAAC-Related Foundations & Buildings
- 65001.01-02.05 - Steel Structures
- 65001.F-02.03-Observation of Fabrication Activities
- 65001.B-02.04-Production Controls
- 65001.A- As-Built Attributes for SSCs associated with ITAAC

The inspectors observed work associated with the CA01 module which is a containment internal structure. Specifically, the inspectors performed inspections on submodules CA01-01, -03, -23 and -24. These modules form a portion of the south refueling cavity wall E-W wall parallel with column line 7 from elevation 98' 0" to 135' 3" and the east refueling cavity wall N-S wall parallel with column line N from elevation 98' 0" to 135' 3".

The inspectors observed the location, arrangement, and attachment of the following structural components to determine whether the aforementioned CA01 submodules were fabricated in accordance with the construction drawings, AISC N690-1994, AWS D1.1 2000, AWS D1.6 1999 and applicable regulatory requirements:

- angles;
- channels;
- shear studs;
- carbon and stainless steel faceplates;
- mechanical couplers; and
- rebar.

The inspectors also observed on-going work associated with assembly of CA01-01 and CA01-02 in the Modular Assembly Building (MAB). The inspectors observed weld edge preparation and fit-up of the vertical seam between these submodules to determine whether the requirements established in the applicable codes and procedures were met. The inspectors observed activities associated with the parallel fabrication process on submodules CA01-22, -23, and -24 to determine whether the as-built condition matched the design drawings and applicable codes. The inspectors observed liquid penetrant testing on CA01-22 to determine whether the base metal of the submodule met code and design requirements after the removal of temporary attachments.

Additionally, the inspectors observed as-built CA01 sub-modules and on-going work activities associated with the assembly of the CA01 module to verify the following:

- the licensee has confirmed that the sub-modules and miscellaneous connection steel conform to design drawings and that there are no deviations from the approved design;
- the licensee has established and implemented an effective method for tracking, evaluating, and dispositioning changes or modifications to the approved design;
- installation, inspection, and testing sequences are being maintained;
- any design changes or field modifications relevant to work observed were properly controlled and processed in accordance with quality and technical requirements; and
- the items were assembled in accordance with the latest approved-for-construction drawings and procedures.

b. Findings

No findings were identified.

1A06 (Unit 3) ITAAC No. 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):

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
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.

The inspectors used the following NRC inspection procedures/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.02-02.06 - Record Review

On June 23, 2014, the inspectors observed the Vogtle Unit 3 self-consolidating concrete placement outside of the CVBH up to elevation 82' 6" (placement 11) to determine whether work was performed in accordance with specification SV3-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel, Westinghouse Seismic Category I, Safety Class C 'Nuclear Safety'," revision 8. The inspectors verified that the contractors adhered to the following specific concrete placement parameters stipulated by the aforementioned specification:

- Concrete drop height did not exceed 6 feet;
- Contractor provided oversight to guard against concrete segregation; and
- Contractor provided oversight to maintain the maximum time interval between mixing and placing below the threshold of 90 minutes or 300 revolutions.

The inspectors also observed testing of the self-consolidating concrete to determine whether the testing was completed in accordance with ASTM 1611-09, "Standard Test Method for Slump Flow of Self-Consolidating Concrete," Revision 09b; specification SV3-CC01-Z0-026, "Safety Related Concrete Testing Services, Westinghouse Seismic Category 1, Safety Class C 'Nuclear Safety'," and revision 8; specification SV3-CC01-Z0-027, "Safety Related Mixing and Delivering Concrete, Westinghouse Seismic Category 1, Safety Class C 'Nuclear Safety'," revision 8; Specifically, the inspector observed the following parameters for the sample batch identified as 2014SCC0155:

- the in-process sampling of Self-Consolidating Concrete (SCC);
- slump testing;
- air concentration;
- concrete temperature;
- air temperature;
- unit weight; and
- the visual stability index.

Furthermore, the inspectors observed storage of concrete cylinders used for compression strength testing to determine whether the environmental requirements for the storage and curing of these samples was in accordance with ASTM C31-10, “Safety Related Placing Concrete and Reinforcing Steel, Westinghouse Seismic Category I, Safety Class C ‘NUCLEAR SAFETY’,” revision 8. The inspector reviewed calibration records for the thermometers that were used in the storage facility to determine whether this measuring and test equipment was properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

The inspectors reviewed engineering and design coordination report (E&DCR) SVO-CC01-GEF-000179, “Requirements When Placing with SCC,” revision 0 to determine whether these changes were performed in accordance with procedure number APP-GW-GAP-420, "Engineering and Design Coordination Report." The inspectors also evaluated these design changes for conformance to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," American Concrete Institute (ACI) 237R "Self-Consolidating Concrete," revision 2007, and ACI 349R, “Code Requirements for Nuclear Safety-Related Concrete Structures,” revision 2001. The inspectors also reviewed the licensing impact determination screening associated with each of these design changes to determine whether the change was properly evaluated against the current licensing basis as described in the Vogtle Unit 3 and Unit 4 UFSAR. Furthermore, the inspectors reviewed the E&DCR to determine whether each change received the proper level of engineering review and was incorporated into all affected documents.

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC No. 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):

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
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.

The inspectors used the following NRC inspection procedures/sections to perform this inspection:

- 65001.01 - Inspection of ITAAC-Related Foundations & Buildings
- 65001.F-02.01-Design Document Review
- 65001.B-02.04-Production Controls
- 65001.A.02.01 - Observation of in-Process Installation Activities

The inspectors observed installation of miscellaneous steel for connection of composite floors at 82'-6" to the exterior cast-in-place concrete wall along column line I in room 12101, located approximately between column lines 9.2 and 11. The inspectors reviewed work package SV3-1220-SSW-CV1591, "Auxiliary Building Structural Steel Framing Elevation 82’-6”," to verify:

- the detailed design was in conformance with regulatory requirements;
- final construction documents adequately define the final design and arrangement of these structures;
- contractors performing safety-related work have approved procedures that describe administrative and procedural controls, approved work processes, and inspection requirements;
- procedures clearly prescribe acceptable methods of quality control inspection to ensure that the as-built condition meets specified design requirements, drawings, and material specifications;
- procedures include appropriate quantitative and/or qualitative acceptance criteria for determining that the prescribed activities have been accomplished satisfactorily; and
- procedures ensure that craft and quality control inspection personnel performing installation and testing activities are qualified to perform their work.

The inspectors observed welding activities associated with ledger angle attachment to embed plates. The inspectors reviewed weld data sheets for the welds to determine whether inspections for fit up had been completed prior to the start of welding activities. The inspectors reviewed welding procedure specification WPS2-1.1S01, welding material requisition sheets and the drawing for the performance of field welds 181, 182 and 183 in Room 12201 along Column Line I to determine whether the ledger angles were installed in the correct locations and in accordance with the required welding variables. Specifically, the inspectors verified the following weld variables were in accordance with the required welding procedure:

- welding process;
- filler material size and type;
- amperage;
- volts; and
- weld type.

b. Findings

No findings were identified.

1A08 (Unit 3) ITAAC No. 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 inspection procedures/sections to perform this inspection:

- 65001.01-02.05 - Steel Structures
- 65001.01-02.06 - Records
- 65001.02-02.01 - Inspection of Concrete Placement

The inspectors performed a walkdown of room 12102 (Division C battery room 1) and room 12103 (Spare battery room), to determine whether safety-related construction activities were performed in accordance with applicable drawings, design specifications and applicable engineered approved design changes. During this inspection, the inspectors performed independent surveillance of installed reinforcement (rebar) for the 24" thick interior walls at column lines J and K, as well as small walls along the face of the battery rooms. The inspectors independently measured rebar spacing, location, as well as both splice lengths and development lengths for conformance with ACI 349-01 requirements and the following design drawings:

- SV3-1200-CR-912, "Auxiliary Building Area 2 Concrete Reinforcement Walls J & K Elevations," Rev. 8;
- SV3-1210-CR-912, "Auxiliary Building Area 2 Concrete Reinforcement Wall J Sections & Details EL 66'-6"," Rev. 2;
- SV3-1210-CR-918, "Auxiliary Building Area 2 Concrete Reinforcement Wall K Sections & Details EL 66'-6"," Rev. 2;
- SV3-1210-CR-990, "Auxiliary Building Concrete Reinforcement Secondary Walls Elevation EL 66'-6"," Rev. 4; and
- SV3-1210-CR-993, "Auxiliary Building Concrete Reinforcement Secondary Walls Sections & Details EL 66'-6"," Rev. 1.

The inspectors also observed installation of nuclear island safety-related embed plates along column lines J and K. The inspectors performed visual inspections of the anchor studs welded to the backside of the embed plates and also measured the lengths of the embed anchors. In addition, the inspectors also reviewed CB&I survey data to determine whether the quality control (QC) accepted- issued for construction, embed plates were installed in accordance with the following drawings:

- SV3-1212-CE-912, "Auxiliary Building Area 2 Embedments Wall J Elevation 66'-6" East View," Rev. 3;
- SV3-1212-CEX-912, "Auxiliary Building Area 2 Wall J Embedments Index Elevation 66'-6" East View," Rev. 3;
- SV3-1212-CE-918, "Auxiliary Building Area 2 Embedments Wall J Elevation 66'-6" West View," Rev. 3;
- SV3-1212-CEX-918, "Auxiliary Building Area 2 Wall J Embedments Index Elevation 66'-6" West View," Rev. 3;
- SV3-1212-CE-921, "Auxiliary Building Area 2 Embedments Wall K Elevation 66'-6" East View," Rev. 3;

- SV3-1212-CEX-921, “Auxiliary Building Area 2 Wall K Embedments Index Elevation 66’-6” East View,” Rev. 3;
- SV3-1212-CE-925, “Auxiliary Building Area 2 Embedments Wall K Elevation 66’-6” West View,” Rev. 3 and;
- SV3-1212-CEX-925, “Auxiliary Building Area 2 Wall K Embedments Index Elevation 66’-6” West View,” Rev. 3.

Prior to concrete placements of the small walls along the face of the battery rooms, the inspectors reviewed survey data of electrical conduits. During this inspection, the inspectors determined whether installed electrical conduits were in their designed locations and were within specified tolerances. The inspectors also reviewed CB&I quality control inspection plan 132175-QA-F-E225-001, “Raceway Installations, Supports, Embedment’s: Embedded Conduit,” Rev. 3, to determine whether CB&I had performed their required inspections prior to concrete placement.
In addition, the inspectors performed a concrete pre-placement inspection of the installed formwork, to determine whether the:

- clear cover dimensions were in accordance with the applicable Westinghouse Electric Company (WEC) concrete drawings;
- formwork was clean and secure;
- embed plates were flush to the face of formwork; and
- width of the formwork along column line J and K were correctly in place to provide the wall thickness specified on WEC concrete drawings.

Prior to concrete being placed, the inspectors also inspected the construction joint to determine whether the surface of the concrete joint was intentionally roughened in accordance with ACI 349-01, and whether the surface was clean and free of laitance. The inspectors observed in-process concrete placement activities in the aforementioned areas to determine whether:

- concrete drop heights were within specifications;
- concrete was properly placed and consolidated and;
- concrete was placed within the required testing limits and frequency.

b. Findings

No findings were identified.

1A09 (Unit 3) ITAAC No. 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 inspection procedures/sections to perform this inspection:

- 65001.01 - Inspection of ITAAC-Related Foundations & Buildings
- 65001.01-02.05 - Steel Structures
- 65001.01-02.06 - Records

The inspectors performed a direct inspection of the reinforcing steel along the wall between room 12112 (Spare Room) and column lines J & K, to determine whether reinforcing steel was installed in accordance with WEC design drawing SV3-1210-CR-993, “Auxiliary Building Concrete Reinforcement Secondary Walls Sections & Details EL 66’-6”,” Rev. 1 and engineering and design coordination report APP-1210-GEF-195, “Auxiliary Building A2 Secondary (Small) Walls up to EL 82’-6” Reinforced Concrete Design," Rev. 0. During this inspection, the inspectors determined whether both horizontal and vertical reinforcing steel were installed in accordance with WEC design drawings and applicable engineered approved design changes and whether the reinforcing steel was of the correct size, type and spacing; and that horizontal reinforcing steel that terminated at edges were enclosed and the correct size / diameter. The inspectors also independently measured installed lapped splices and development lengths for conformance to WEC AP1000 Concrete General Notes and ACI 349-01, “Code Requirements for Nuclear Safety-Related Concrete Structures.”

The inspectors also inspected the #11 threaded U-bars installed at column line L, elevation 76’-6” to 82’-6”, to determine whether the reinforcement was installed at the beam header in accordance with WEC Design drawing SV3-1210-CR-995, "Auxiliary Building Areas 1 & 2 Concrete Reinforcement Walls L & M Sections & Details Sheet 2," Rev. 1. The inspectors verified that the reinforcement was installed at the appropriate elevations, the spacing was correct, and that the clear cover dimensions were achieved. The inspectors also reviewed 132175-J400A-00266, "ACI 349 & ACI 359 Splice System Qualification Test Program For Lenton EL36P8 Series Mechanical Splice Products," to determine whether the #11 mechanical couplers installed in the header beam were in conformance with Section 12.14.3.7 of ACI 349-01.

b. Findings

No findings were identified.

1A10 (Unit 3) ITAAC No. 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):

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
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.

The inspectors used the following NRC inspection procedures/sections to perform this inspection:

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

The inspectors reviewed CB&I Power N&D report number SV3-CA20-GNR-000175, "SV3 CA20 SA3 Bypassed Weld Inspection," revision 0; which was associated with leak chase welds on column line K-2 wall from 2 to 4 at elevation 66'6" to 135'3". The inspectors reviewed this N&D, which documented a difference between the as-designed and as-built leak chase weld to determine whether the difference was properly documented, evaluated, and incorporated into the as-built drawing (SV3-CA20-S5Y-00205, "Auxiliary Building Areas 5 and 6 Module CA20 Standard Welding Details," Revision 0). The inspectors verified that this condition was properly evaluated against the current licensing basis.

The inspectors also reviewed N&D SV3-CA20-GNR-000239, "CA20-08A and CA20-05 Backing Bar Weld Joint," Revision 0; which was associated with a weld on structural module wall at column line 4, from J-1 to J-2 (elevation 107'2" to 135'3"). The inspectors reviewed this N&D to determine whether the difference was properly documented, evaluated, and incorporated into the as-built drawing. The inspectors verified that this condition was properly evaluated against the current licensing basis.

The inspectors compared these N&D reports to Section 15, “Nonconforming Materials, Parts, or Components,” of the CB&I quality assurance program (SWSQAP 1-74A, Rev. B) and CB&I procedure QS 15.1, “Nonconformance & Disposition Report,” revisions 4 and 5.

b. Findings

No findings were identified.

1A11 (Unit 3) ITAAC No. 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 inspection procedures/sections to perform this inspection:

- 65001.01-02.01 - Procedures
- 65001.01-02.05 - Steel Structures
- 65001.F - Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.03 - Observation of Fabrication Activities
- 65001.B-02.05 - Inspection
- 65001.A - As-Built Attributes for SSCs associated with ITAAC
- 65001.A.02.01 - Observation of in-Process Installation Activities

The inspectors performed visual inspections on the CA20 module in the nuclear island and reviewed NDE records associated with duplex stainless steel welds for CA20 submodules on column line L2 wall from column line 2 to 4 from elevation 66' 6" to 135' 3" to determine whether the welding and NDE met procedures, drawings, and AISC N690 1994 requirements. The inspectors performed visual inspections of the CA20 module after it was placed in the nuclear island. The inspectors reviewed previously inspected welds in the subassembly areas bounded by column lines 2 to 4 and J1 to K2 to determine whether any detrimental effects occurred due to the handling, lifting and placement of CA20 into the nuclear island. The inspectors also performed visual inspections of welds in the spent fuel pool and transfer canal areas (walls K2 and L2). The inspectors directly examined the welds to determine whether the welds surface appearance, size, location, and profile were in accordance with drawings, AWS D1.1-2000 and AWS D1.6-1999 requirements.

The inspectors performed a visual inspection of the fit-up, weld preparation and Gas Tungsten Arc Welding (GTAW) on reworked welds on wall L-2 from column line 2 to 4 from Elevation 66' 6" to 135' 3" for CA20 submodules. The inspectors observed welding environmental conditions to determine whether the weld joint was sufficiently protected from inclement conditions. The inspectors observed the surface condition of the base metal to ensure weld edges were properly cleaned and met profile requirements prior to the beginning of welding. The inspectors observed activities and interviewed personnel to determine whether proper contamination controls were in place for welding activities involving duplex stainless steel. The inspectors reviewed Mistras penetrant test report V-14-PT-304-384 for weld numbers CV1888-6L to CV1888-6R which join submodules CA20-27 and CA20-28 to determine whether the welds met the acceptance criteria of AWS D1.6 1999.

The inspectors performed a visual inspection of the wall plates and welds on column line K-2 wall from column line 2 to 4 from elevation 66' 6" to 135' 3" for CA20 submodules. Specifically, the inspectors observed the first 8 feet of carbon steel wall plates and welds beginning at elevation 66' 6" to determine whether the welds were free of cracks, thorough fusion existed between the weld and base metals, and the weld profiles were in accordance with Section 5.11 of AWS D1.1.

b. Findings

No findings were identified.

1A12 (Unit 3) ITAAC No. 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 inspection procedures/sections to perform this inspection:

- 65001.01-02.01 - Procedures
- 65001.01-02.05 - Steel Structures
- 65001.A.02.01 - Observation of in-Process Installation Activities

The inspectors reviewed design drawings, calculations, and procedures associated with the connection of the CA20 module to the Nuclear Island basemat to verify the following:

- contractors performing safety-related work have approved implementing procedures that describe administrative and procedural controls, approved work processes, and inspection requirements;
- procedures clearly prescribe acceptable methods of quality control inspection to ensure that the as-built condition meets specified design requirements, drawings and material specifications; and
- procedures include appropriate quantitative and/or qualitative acceptance criteria for determining that the prescribed activities have been accomplished satisfactorily.

The inspectors observed completed and on-going work associated with drilling and tapping of holes in embed plates for the connection of CA20 attachment brackets to the basemat within Normal Residual Heat Removal pump rooms A and B, respectively, to verify the following:

- the installation, inspection, and testing sequences are being maintained;
- the item(s) were located, installed, assembled, or connected in accordance with the latest approved-for-construction drawings, manufacturer's instructions, and procedures; and
- problems identified during inspection are entered into the licensee/constructor corrective action program in accordance with program requirements.

b. Findings

No findings were identified.

1A13 (Unit 3) ITAAC No. 3.3.00.02a.ii.c (766) / Family 01A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.ii.c (766):

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	ii) An inspection of the as-built concrete thickness will be performed.	ii.c) A report exists that concludes that as-built concrete thicknesses of the non-radiologically controlled area of the auxiliary building sections conform to the building sections defined in Table 3.3-1.

The inspectors used the following NRC inspection procedures/sections to perform this inspection:

- 65001.A.02.01 - Observation of in-Process Installation Activities
- 65001.A.02.02 - Installation Records Review
- 65001.A.02.03 - Independent Assessment/Measurement Inspection

The inspectors performed a concrete thickness inspection of the non-radiological control portion of the auxiliary building. Specifically, column lines J and K at room 12102 (Division C battery room 1) and room 12103 (Spare battery room), to determine whether the interior walls were 24” thick, as specified by Westinghouse concrete drawings and Table 3.3-1, "Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building," of Appendix C "Vogtle Electric Generating Plant Unit 3 Inspections, Tests, Analyses, and Acceptance Criteria."

During this inspection, the inspectors performed independent surveillances of the formwork used for construction, as well observed in-process concrete placement activities. The inspectors measured formwork widths along the length of the wall prior to and during concrete placement activities. Post concrete placement, the inspectors reviewed CB&I survey data, to determine whether as-built concrete thicknesses were achieved, and whether measurements were taken in accordance CB&I procedure, NCSP 3-24, "Field Surveying," Rev. 2.

b. Findings

No findings were identified.

1A14 (Unit 4) ITAAC No. 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 inspection procedures/sections to perform this inspection:

- 65001.01 - Inspection of ITAAC-Related Foundations & Buildings
- 65001.01-02.05 - Steel Structures
- 65001.01-02.06 - Records
- 65001.02-02.01 - Inspection of Concrete Placement

The inspectors performed a record review of the portion of reinforcement (rebar) for the unit 4 NI basemat below shield building and containment internal structures that was attached to the unit 4 NI CVBH layers 9B and 10C. This rebar was attached to the outside of the CVBH prior to being set in place. During this inspection, the inspectors reviewed CB&I survey data, to determine whether both radial and circumferential rebar was installed in accordance with WEC design drawings. The inspectors specifically determined whether the rebar was at the correct location and elevations, as well as, whether the rebar was installed within allowable tolerances specified in WEC AP1000 Concrete General Notes and American Concrete Institute 349-01, “Code Requirements for Nuclear Safety-Related Concrete Structures.” Furthermore, the inspectors reviewed survey data to determine whether radial reinforcement ending at penetrations P-11 (Fuel Transfer Canal) and P-20 (Passive Residual Heat Removal pump to Reactor Coolant System in) were installed in accordance with the following drawings:

- SV4-1010-CR-210, “Nuclear Island Basemat Concrete Reinforcement Area Below Containment Vessel Penetration Reinf Details,” Rev. 2; and
- SV4-1010-CR-211, “Nuclear Island Basemat Concrete Reinforcement Area Below Containment Vessel Penetration Reinf Details,” Rev. 3.

In addition, the inspectors reviewed CB&I QC inspection report (IR) C112-002-14-0097, “SV4 CVBH Layers 9B & 10C,” to determine whether the following attributes were verified by CB&I QC organization prior to setting the unit 4 CVBH in the nuclear island:

- rebar size;
- rebar count;
- rebar lap splices;
- rebar spacing; and
- survey data.

Once the unit 4 CVBH was set in place, the inspectors observed safety-related grouting activities associated with the spacing between the top of the previously placed concrete pedestal and the bottom of the CVBH. During this inspection, the NRC inspectors independently performed pre-placement and placement grouting inspections, to determine whether grouting activities were performed in accordance with the following specifications, drawings, and procedures:

- SV4-CC01-Z0-027, “Safety Related Concrete Testing Services,” Rev. 4;

- SV4-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel," Rev. 4;
- SV4-1010-CR-101, “Nuclear Island Basemat Reinforcement Area Below Containment Vessel Installation Sequence,” Rev. 3;
- SV4-1010-CR-107, “Nuclear Island Basemat Concrete Reinforcement Area Below Containment Vessel Construction Joint,” Rev. 2; and
- 132176-102-002-00002, “Containment Vessel Bottom Head (CVBH) Foundation Grouting Plan,” Rev. 2.

Prior to grout placement activities, the NRC inspectors independently verified the following:

- the concrete substrate was prepared in accordance with design specification SV4-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel," Rev. 2;
- the concrete substrate had reached the required design strength; and
- the concrete surface was roughened and that loosened aggregate and other identified unsound material was removed.

The NRC inspectors also reviewed CB&I quality control inspection plan F-C113-001, "Grout Placement," Rev. 4, to determine whether the CB&I quality control organization appropriately identified inspection points (hold, notification and/or routine) in accordance with the technical requirements specified in design specification SV3-CC01-Z0-031. During this review, the NRC inspectors reviewed CB&I nuclear quality assurance directive (QAD) 10.68, "Inspection Planning," Rev. 3, to ensure that the grout placement inspection plan was developed in accordance with quality procedures. Specifically, the NRC inspectors reviewed this plan to determine whether the CB&I QC inspection plan required personnel to verify the following attributes during the grout preparation and placement activities:

- grout was mixed in accordance with manufacturer’s instructions;
- grout compressive strength cylinders were obtained in accordance with manufactures recommendations; and
- grout curing activities were in accordance with manufacturer’s instructions.

During grouting activities, the NRC inspectors independently verified the following:

- mixed grout temperatures remained within specifications and manufacture's recommendations;
- CVBH internal temperatures were maintained within design specifications and procedures;
- grout mixing was performed in accordance with specifications and manufactures recommendations; and
- safety related grout materials were appropriately controlled and identifiable.

b. Findings

No findings were identified.

1A15 (Unit 4) ITAAC No. 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 inspection procedures/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 conducted an inspection of structural concrete reinforcement placement for the north exterior wall along column line 11 within the non-radiological controlled area of the Unit 4 auxiliary building. The objectives of this inspection were to:

- determine structural concrete design and construction was accomplished under controlled conditions and in accordance with applicable procedures, specifications, drawings, and approved procedures using qualified personnel;
- evaluate the performance of ITAAC-related structural concrete reinforcement placement, documentation, and verification activities;
- determine key building critical dimensions and materials satisfied design specifications, requirements, and relevant ITAAC;
- determine structural concrete work and related licensee quality control activities were being performed in accordance with design specifications and approved procedures; and
- determine records reflected that completed work met design specifications and acceptance criteria.

The inspectors performed observations and independent measurements on sample areas of the structural concrete reinforcement placement, reviewed applicable design drawings, work packages and specifications to verify construction activities were being conducted in accordance with the design documents and applicable procedures. Specifically, the inspectors observed structural concrete reinforcement in the north exterior wall along column line 11 between elevations 66'-6" and 82'-6" in the areas between column lines L & M and P & Q to verify that:

- contractors performing safety-related work had approved implementing procedures that described administrative and procedural controls, approved work processes, and inspection requirements;
- procedures clearly prescribed acceptable methods of quality control inspection which ensured that the as-built condition met specified design requirements, drawings and material specifications;
- procedures included appropriate quantitative and/or qualitative acceptance criteria for determining that the prescribed activities had been accomplished satisfactorily;
- construction records for reinforcing steel and embedments were adequate to furnish evidence of activities affecting quality and that structures, systems, and components (SSCs) conform to applicable codes, standards, regulations, and quality and technical requirements;

- reinforcing steel and embedments were located properly in the structure and forms were secured and free of concrete or excessive rust, and had proper clearances;
- reinforcing steel was installed in accordance with the latest approved-for-construction drawings, manufacturer's instructions, and procedures; and
- records related to inspected activities were accurate and met the requirements of the construction documents, UFSAR, and ITAAC.

b. Findings

No findings were identified.

1A16 (Unit 4) ITAAC No. 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 inspection procedures/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 reviewed the structural concrete reinforcement placement for the east exterior wall along column line I between elevations 66'-6" and 82'-6" in the area between column lines C4 and C5 within the radiological controlled area of the Unit 4 auxiliary building. The objectives of this inspection were to:

- determine structural concrete design and construction was accomplished under controlled conditions and in accordance with applicable procedures, specifications, drawings, and approved procedures using qualified personnel;
- evaluate the performance of ITAAC-related structural concrete reinforcement placement, documentation, and verification activities;
- determine key building critical dimensions and materials satisfied design specifications, requirements, and relevant ITAAC;
- determine structural concrete work and related licensee quality control activities were being performed in accordance with design specifications and approved procedures; and
- determine records reflected that completed work met design specifications and acceptance criteria.

The inspectors performed observations and independent measurements on sample areas of the structural concrete reinforcement placement, reviewed applicable design drawings, work packages and specifications to verify construction activities were being conducted in accordance with the design documents and applicable procedures. Specifically, the inspectors observed structural concrete reinforcement in the east exterior wall along column line I between elevations 66'-6" and 82'-6" in the area between column lines C4 and C5 to verify that:

- contractors performing safety-related work had approved implementing procedures that described administrative and procedural controls, approved work processes, and inspection requirements;
- procedures clearly prescribed acceptable methods of quality control inspection which ensured that the as-built condition met specified design requirements, drawings and material specifications;
- procedures included appropriate quantitative and/or qualitative acceptance criteria for determining that the prescribed activities had been accomplished satisfactorily;
- construction records for reinforcing steel and embedments were adequate to furnish evidence of activities affecting quality and that SSCs conform to applicable codes, standards, regulations, and quality and technical requirements;
- reinforcing steel and embedments were located properly in the structure and forms were secured and free of concrete or excessive rust, and had proper clearances;
- reinforcing steel was installed in accordance with the latest approved-for-construction drawings, manufacturer's instructions, and procedures; and
- records related to inspected activities were accurate and met the requirements of the construction documents, UFSAR, and ITAAC.

b. Findings

No findings were identified.

1P01 Quality Assurance Implementation, Appendix 3, Inspection of Criterion III – Design Control (35007)

a. Inspection Scope

During this inspection period, the resident inspectors reviewed E&DCR number SV3-CA20-GEF-000123, "Floor CA20-52 and 53 Alt. Weld," revision 0, which was associated with a Vogtle Unit 3 CA20 submodule floor (From J1 to J2 between column lines 2 and 3; at elevation 98'). The inspectors reviewed this E&DCR to determine whether the change received the proper level of engineering review and was incorporated into all impacted documents. Specifically, the inspectors verified that the E&DCR was properly incorporated by SV3-CA20-S5Y-00202, "Auxiliary Building Areas 5 and 6 Module CA20 Standard Welding Details," revision 0. Furthermore, the inspectors verified that this design change was performed in accordance with Domestic AP1000 Project Procedure (DAPP) 5-14-2, "AP1000 Engineering and Design Coordination Report," dated 9/20/2013.

The inspectors reviewed the licensing impact determination associated with this design change to determine whether the change was properly evaluated against the current licensing basis as described in the Vogtle Unit 3 and Unit 4 UFSAR and was performed in accordance with procedure DAPP 5-18-5, "AP1000 Licensing Basis Reviews," dated 5/21/2014. The inspectors also reviewed this design change to determine whether the change was performed in accordance with Supplement 3S-1, "Supplementary Requirements for Design Control," of ASME NQA-1-1994; 10 CFR Part 50, Appendix B, Criterion 3, "Design Control"; and the licensee's quality assurance program.

b. Findings

No findings were identified.

1P02 Quality Assurance Implementation, Appendix 7, Inspection of Criterion VII – Control of Purchased Material, Equipment, and Services (35007)

a. Inspection Scope

The inspectors reviewed Southern Nuclear Operating Company (SNC) Surveillance technical evaluation (TE) number 668395, which was performed by the licensee to confirm whether Westinghouse quality assurance (QA) and CB&I Services QC performed adequate oversight of the Vogtle Unit 3 CV welding activities. The inspectors reviewed SNC surveillance TE number 697366, which was performed by the licensee to confirm whether post weld heat treatment activities on course S1 of the Vogtle Unit 4 CV were compliant with the ASME Section III code. The inspectors also reviewed SNC surveillance TE number 722411, which was performed by the licensee to determine whether weld filler material was issued and controlled per CB&I Services procedures. The inspectors reviewed SNC surveillance TE number 741113, which was performed by the licensee to verify that adequate oversight was performed by Westinghouse QA and CB&I Services of Vogtle Unit 3 CV welding activities associated with the fabrication and configuration of attachment plates.

The inspectors reviewed these assessments to determine whether the licensee had adequately implemented the quality requirements of 10 CFR Part 50, Appendix B, Criterion VII, “Control of Purchased Material, Equipment, and Services,” and Section 7, “Control of Purchased Material, Equipment, and Services,” of the SNC Nuclear Development Quality Assurance Manual (NDQAM).

Furthermore, the inspectors reviewed the above assessment results to determine whether the licensee had appropriately assessed the effectiveness of the control of quality by CB&I and their subcontractors at intervals consistent with the importance, complexity, and quantity of the product or services. The inspectors also reviewed these reports to determine whether (1) the reports were adequate records of activities affecting quality, (2) the reports were completed in accordance with the licensee’s quality assurance program implementing procedures, and (3) any issues identified by the licensee were appropriately identified (documented) and corrected in accordance with the project quality requirements.

b. Findings

No findings were identified.

1P03 Quality Assurance Implementation, Appendix 13, Inspection of Criterion XIII – Handling, Storage and Shipping (35007)

a. Inspection Scope

The inspectors performed walkdowns of the CB&I controlled storage areas to determine whether CB&I had controlled the storage of safety-related equipment to prevent damage or deterioration. Specifically, the inspectors observed the storage areas to determine

whether CB&I was adequately implementing Section 13, “Handling, Storage, and Shipping,” of SWSQAP 1-74A, "CB&I Standard Nuclear Quality Assurance Program," revision B; and QS 13.11, “Material/Equipment Storage,” revision C. The inspectors examined the following items in the CB&I designated storage areas for compliance with program requirements:

- shield building panels;
- CA01 modules and materials;
- welding filler material;
- tools designated for work on stainless steel;
- embed plates;
- CA20 structural material; and
- reinforcing steel.

The inspectors observed storage areas to ensure the following storage requirements were properly implemented:

- Storage areas were properly designated;
- Materials were properly segregated to avoid deleterious effects; and
- Materials were properly supported.

The inspectors performed an inspection of the shipping configuration for submodule CA01-08 to determine whether blocking and bracing were used to prevent the movement of the submodule during shipment. The inspectors verified that the submodule was appropriately marked for identification and that the material was supported in a fashion to prevent corrosion or structural damage.

b. Findings

No findings were identified.

1P04 Quality Assurance Implementation, Appendix 15, Inspection of Criterion XV – Nonconforming Materials, Parts, or Components (35007)

a. Inspection Scope

The inspectors reviewed a sample of N&D to determine whether the conditions were adequately reviewed and accepted, rejected, repaired, or reworked in accordance with the QA program implementing documents for the control of nonconforming material, parts, and components. The inspectors compared these N&D reports to Section 15, “Nonconforming Materials, Parts, or Components,” of the CB&I quality assurance program (SWSQAP 1-74A, Rev. B) and CB&I procedure QS 15.1, “Nonconformance & Disposition Report,” revision 2. The inspectors reviewed N&D reports associated with both Units 3 and 4.

The inspectors toured several of the on-site Level B, C, and D storage areas to confirm that the licensee had established areas for segregating and controlling non-conforming items. The inspectors selected a sample of nonconforming items in storage to determine if the items were segregated or marked to preclude inadvertent use, further processing, delivery, or installation.

The inspectors selected the following evaluations of nonconforming items that the licensee either rejected, repaired, reworked, or accepted through evaluation:

- SV3-CA04-GNR-000015, "WT Beam CJP Welds Inaccessible for 100% Inspection," Revision 0;
- SV3-CA04-GNR-000013, "CA04 WT Beam CJP Weld Inaccessible for 100% Inspection," Revision 0;
- SV3-CA04-GNR-000005, "Welds at Ex-core Detector Box WT Beams," Revision 0;
- SV3-CA04-GNR-000010, "CA04-03 Horizontal Stiffener," Revision 0;
- SV3-CA04-GNR-000022, "CA04-03 Horizontal Stiffener now Inaccessible," Revision 0;
- SV3-CA20-GNR-000175, "SV3 CA20 SA3 Bypassed Weld Inspection," Revision 0;
- SV3-CA20-GNR-000206, "Floor Angle MT," Revision 0;
- SV3-CA20-GNR-000239, "CA20-08A and CA20-05 Backing Bar Weld Joint," Revision 0;
- SV3-AT01-GNR-000012, "MSE Wall Waterproofing Damage," Revision 0; and
- SV3-CA01-GNR-000051, "CA01-01 Missing vendor weld," Revision 0.

During the review of the above N&D reports, the inspectors determined if the reports properly identified the nonconforming items, and if the systems for initiating, processing, and closing non-conformances were adhered to. The inspectors specifically determined if:

- reportability screening and evaluations under 10 CFR Part 21 and 10 CFR 50.55(e) were performed;
- the disposition, such as use-as-is, reject, repair, or rework of nonconforming items were properly identified and documented;
- adequate technical justification for the acceptability of a nonconforming item, dispositioned repair, or use-as-is was appropriately documented;
- non-conformances to design requirements dispositioned use-as-is or repair were subjected to design control measures commensurate with those applied to the original design;
- the as-built records properly reflected the accepted deviation, if applicable;
- controls were implemented to preclude the inadvertent use of nonconforming items and that nonconforming items were marked or tagged and segregated; and
- repaired or reworked items were reexamined in accordance with applicable procedures and with the original acceptance criteria unless the disposition had established alternate acceptance criteria.

b. Findings

No findings were identified.

1P05 Quality Assurance Implementation, Appendix 16, Inspection of Criterion XVI – Corrective Action (35007)

a. Inspection Scope

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

- classification, prioritization, and evaluation for reportability (i.e., 10 CFR 50.55(e)) of conditions adverse to quality;
- complete and accurate identification of the problem in a timely manner commensurate with its significance and ease of discovery;
- screening of items entered into the CAP to determine the proper level of evaluation;
- identification and correction of: procurement documents errors; deviations from procurement document requirements; defective items; poor workmanship; incorrect vendor instructions; significant recurring deficiencies at both vendor shops and on site; and generic procurement related deficiencies;
- identification and correction of design deficiencies;
- consideration of extent of condition, generic implications, common cause, and previous occurrences;
- classification and prioritization of the resolution of the problem commensurate with its safety significance;
- identification of corrective actions that are appropriately focused to correct the problem;
- identification of root and contributing causes, as well as actions to preclude recurrence for significant conditions adverse to quality;
- completion of corrective actions in a timely manner commensurate with the safety significance of the issue;
- provisions for escalating to higher management those corrective actions that are no adequate or not timely; and
- conditions adverse to quality were trended to proactively identify potential adverse trends and potential common cause problems, and the trending results were reported to management.

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

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

Selected Issues for Follow-Up Inspection

Based on the inspectors' routine screening of corrective action records, the inspectors selected a sample of issues entered in the corrective action programs to determine if the handling of these issues was consistent with the applicable quality assurance program requirements and 10 CFR Part 50, Appendix B. Specifically, the inspectors reviewed the corrective action records listed in the documents reviewed section of this report. The inspectors reviewed these corrective action documents to determine if:

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

The inspectors performed a detailed review of Corrective Action Report (CAR) 2013-1969, which was associated with a licensee-identified adverse trend related to missed or bypassed quality control hold points. The inspectors also reviewed the CB&I apparent cause evaluation that was associated with this issue. The inspectors compared the CAR and apparent cause evaluation to CB&I Power procedures QS 16.05, "Corrective Action Program," Revision 3 and QS 16.06, "Causal Analysis," revision A.1-TCN, respectively. The inspectors reviewed the CAR and apparent cause evaluation to determine whether the issue was properly evaluated and adequate corrective actions were taken to restore compliance with the CB&I quality assurance program, 10 CFR Part 50, Appendix B, and ASME NQA-1-1994. Furthermore, the inspectors reviewed each CAR that was included in the extent of condition analysis performed as part of the apparent cause evaluation. From that review, the inspectors selected a sample of CARs that were associated with safety related welding and inspection activities for further review. Each of the CARs selected was also associated with a N&D to resolve the technical issues caused by missing a required QC hold point. The inspectors reviewed each of the N&D reports to determine whether the conditions were adequately reviewed and accepted, rejected, repaired, or reworked in accordance with the QA program implementing documents for the control of nonconforming material, parts, and components. The inspectors also

reviewed each of these N&Ds to determine whether the engineering evaluations were consistent with the current licensing basis. The specific N&Ds reviewed are documented within other sections of this inspection report.

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA5 Other Activities

.1 (Closed) Non-Cited Violation (NCV) 05200025/2014002-001: "Inadequate Anchorage of Shear Stirrups in Precast Elements of Reinforced Concrete Slabs"

The inspectors performed a review of the licensee's corrective actions associated with NCV 05200025/2014002-001, "Failure to translate design basis for the Auxiliary Building precast panels," identified in IR 05200025/2014002 (ML14112A413). 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 Westinghouse, to correctly translate design basis into specifications, drawings, procedures, and instructions. 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, it represented a deviation from design requirements that would not have been reconciled by the licensee as required by the ITAAC.

The inspectors reviewed SNC CR 790174, SNC CR 80739, WEC Issue No. 100017210 and associated corrective actions taken to address this issue. The inspectors also reviewed E&DCR SV0-CE01-GEF-00032 Rev. 1 and N&D SV3-CP01-GNR-000001 Rev. 0 to determine whether appropriate action was taken to address the affected design documents and fabricated non-conforming precast panels, respectively.

The inspectors determined the licensee took adequate corrective actions to address this violation. No additional findings were identified. NCV 05200025/2014002-001 is closed.

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On June 30, 2014, the inspectors presented the inspection results to Mark Rauckhorst, Vogtle 3 & 4 Construction Vice President, along with other licensee and consortium staff members. The inspectors stated that no proprietary information would be included in the inspection report.

KEY POINTS OF CONTACT

Licensees and Contractor Personnel

S. Alger, CB&I Vendor Oversight
C. Cone, CB&I QC Supervisor
M. Jacobs, SNC Engineering
M. Jones, SNC Supplier Compliance Supervisor
K. Logue, CB&I QC Supervisor
C. Morrow, SNC Licensing
T. O'Brien, SNC Supplier Compliance Supervisor
R. Thompson, Mistras NDE Level III

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Type	Status	Description
05200025/2014002-001	NCV	Closed	Inadequate Anchorage of Shear Stirrups in Precast Elements of Reinforced Concrete Slabs (Section 4OA5.1)

LIST OF DOCUMENTS REVIEWED

Section 1A01:

WSS-3080-WP-02, “Applying Field Coating to the Lower Ring, Unit 3,” Revision 0
Updated Final Safety Analysis
ASTM D3912 “Standard Test method for Chemical Resistance of Coatings and Linings for use in Nuclear Power Plants,” revision 10
ASTM D7091 “Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals,” revision 13
ASTM D7230 “Standard Guide for Evaluating Polymeric Lining Systems for Water Immersion in Coating Service Level III Safety-Related Applications on Metal Substrates,” revision 13
APP-GW-Z0-604, “Applications of Protective Coatings to Systems, Structures, and Components,” revision 7
WSS-3080-TWI-Z0-604-01, “Preparing and Applying Coatings to Service Level I, II, and III Surfaces,” revision 9
WSS-3080-QWI-02-02-01, “Qualifying and Certifying Coating/Lining Inspectors,” revision 1
ASTM D4537-04a, “Standard Guide for Establishing Procedures to Qualify and Certify Personnel Performing Coating Work Inspection in Nuclear Facilities,” revision 04a
AP1000-PQAP-09-02, “Qualifying and Certifying Coating Applicators,” revision 1
ASTM 4228, “Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces,” revision 05
APP-GW-T2R-013, "AP1000 Containment Vessel Coating Test Report Summary," revision 1
APP-FSAR-GLN-117, "Containment Vessel Emissivity,” revision 2
APP-GW-T2R-013, "AP1000 Containment Vessel Coating Test Report Summary," revision 1

Section 1A02:

WSS-3080-WP-004, “Applying Field Coating to the Unit 3 Middle Ring,” Revision 0
ASTM D3912 “Standard Test method for Chemical Resistance of Coatings and Linings for use in Nuclear Power Plants,” revision 10
ASTM D7091 “Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals,” revision 13
ASTM D7230 “Standard Guide for Evaluating Polymeric Lining Systems for Water Immersion in Coating Service Level III Safety-Related Applications on Metal Substrates,” revision 13
APP-GW-Z0-604, “Applications of Protective Coatings to Systems, Structures, and Components,” revision 7
WSS-3080-TWI-Z0-604-01, “Preparing and Applying Coatings to Service Level I, II, and III Surfaces,” revision 9
WSS-3080-QWI-02-02-01, “Qualifying and Certifying Coating/Lining Inspectors,” revision 1
ASTM D4537-04a, “Standard Guide for Establishing Procedures to Qualify and Certify Personnel Performing Coating Work Inspection in Nuclear Facilities,” revision 04a
AP1000-PQAP-09-02, “Qualifying and Certifying Coating Applicators,” revision 1
ASTM 4228, “Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces,” revision 05
APP-GW-T2R-013, "AP1000 Containment Vessel Coating Test Report Summary," revision 1
APP-FSAR-GLN-117, "Containment Vessel Emissivity,” revision 2
APP-GW-T2R-013, "AP1000 Containment Vessel Coating Test Report Summary," revision 1

Section 1A03:

SV3-CA04-GNR-000005, "Welds at Ex-Core Detector Box WT Beams," revision 0;
SV3-CA04-GNR-000022, "CA04-03 Horizontal Stiffener now Inaccessible," revision 0;
SV3-CA04-GNR-000010, "CA04-03 Horizontal Stiffener," revision 0;

Section 1A04:

Work Packages:
SV3-CA05-S4W-CV1867, CA-05 Wall Assembly

Drawings:
APP-GW-S9-100, AP1000 Structural Modules General Notes – I, Rev. 4
APP-GW-S9-101, AP1000 Structural Modules General Notes – VII, Rev. 0
APP-GW-S9-102, AP1000 Structural Modules General Notes – II, Rev. 3
APP-GW-S9-103, AP1000 Structural Modules General Notes – III, Rev. 3
APP-CA05-S5X-07001, Containment Building Area 3 Module CA05 Sub module CA05_07 Index, Rev. 2
APP-CA05-S5B-07001, Bill of Materials, Rev. 2
APP-CA05-S5-07001, Containment Building Area 3 Module CA05 Sub Module CA05_07 Isometric Views, rev. 2
APP-CA05-S5-07002, Containment Building Area 3 Module CA05 Sub Module CA05_07 Break-Down, Rev. 2
APP-CA05-S5-07003, Containment Building Area 3 Module CA05 Sub Module CA05_07 Structural Outline – Vertical Sections / Views, Rev. 2
APP-CA05-S5-07004, Containment Building Area 3 Module CA05 Sub Module CA05_07 Structural Outline – Horizontal Sections / Views, Rev. 2

APP-CA05-S5-07005, Containment Building Area 3 Module CA05 Sub Module CA05_07 Structural Outline Specific Details, Rev. 2
APP-CA05-S5B-07001, Bill of Materials, Rev. 2
APP-CA05-S5X-08001, Containment Building Area 3 Module CA05 Sub module CA05_08 Index, Rev. 3
APP-CA05-S5-08001, Containment Building Area 3 Module CA05 Sub Module CA05_08 Isometric Views, rev. 2
APP-CA05-S5-08002, Containment Building Area 3 Module CA05 Sub Module CA05_08 Break-Down, Rev. 3
APP-CA05-S5-08003, Containment Building Area 3 Module CA05 Sub Module CA05_08 Structural Outline – Vertical Sections / Views I, Rev. 2
APP-CA05-S5-08004, Containment Building Area 3 Module CA05 Sub Module CA05_08 Structural Outline – Horizontal Sections / Views, Rev. 3
APP-CA05-S5-08005, Containment Building Area 3 Module CA05 Sub Module CA05_08 Structural Outline Specific Details, Rev. 2
APP-CA05-S5-08006, Containment Building Area 3 Module CA05 Sub Module CA05_08 Structural Outline – Vertical Sections / Views II, Rev. 0
APP-CA05-S5B-08001, Containment Building Area 3 Module CA05 Sub Module CA05_08 Bill of Materials, Rev. 2
APP-CA05-S5-01001, Containment Building Area 3 Module CA05 Sub Module CA05_01 Isometric Views, Rev. 3
APP-CA05-S5-01002, Containment Building Area 3 Module CA05 Sub Module CA05_01 Break-Down, Rev. 3
APP-CA05-S5-01003, Containment Building Area 3 Module CA05 Sub Module CA05_01 Structural Outline – Vertical Sections / Views I, Rev. 3
APP-CA05-S5-01004, Containment Building Area 3 Module CA05 Sub Module CA05_01 Structural Outline – Horizontal Sections / Views, Rev. 2
APP-CA05-S5-01005, Containment Building Area 3 Module CA05 Sub Module CA05_01 Structural Outline Specific Details, Rev. 3
APP-CA05-S5-01006, Containment Building Area 3 Module CA05 Sub Module CA05_01 Structural Outline – Vertical Sections / Views II, Rev. 1
APP-CA05-S5B-01001, Containment Building Area 3 Module CA05 Sub Module CA05_01 Bill of Materials, Rev. 2
APP-CA05-S5-06001, Containment Building Area 3 Module CA05 Sub Module CA05_06 Isometric Views, Rev. 2
APP-CA05-S5-06002, Containment Building Area 3 Module CA05 Sub Module CA05_06 Break-Down, Rev. 3
APP-CA05-S5-06003, Containment Building Area 3 Module CA05 Sub Module CA05_06 Structural Outline – Vertical Sections / Views I, Rev. 2
APP-CA05-S5-06004, Containment Building Area 3 Module CA05 Sub Module CA05_06 Structural Outline – Horizontal Sections / Views, Rev. 3
APP-CA05-S5-06005, Containment Building Area 3 Module CA05 Sub Module CA05_06 Structural Outline Specific Details I, Rev. 2
APP-CA05-S5-06006, Containment Building Area 3 Module CA05 Sub Module CA05_06 Structural Outline – Vertical Sections / Views II, Rev. 1
APP-CA05-S5-06007, Containment Building Area 3 Module CA05 Sub Module CA05_07 Structural Outline Specific Details II, Rev. 1
APP-CA05-S5B-06001, Containment Building Area 3 Module CA05 Sub Module CA05_06 Bill of Materials, Rev. 3
APP-GW-S9-200, AP1000 Structural Modules Standard Weld Details, Rev. 5
APP-GW-S9-300, AP1000 Structural Modules Standard Weld Details, Rev. 5

Procedures:
GWS-2, AWS D1.1 – Structural Steel General Welding Specification, Rev. 1
GWS-5, AWS D1.6 – Stainless Steel General Welding Specification, Rev. 2
100-PT-304, Liquid Penetrant Examination in accordance with the AWS Structural Steel Welding code, Rev. 5
100-MT-302, Magnetic Particle Examination in Accordance with AWS Structural Steel Welding Code, Rev. 3
100-UT-312, Ultrasonic Phased Array Examination of Structural Welds In Accordance with AWS D1.1 and AWS D1.6, Rev. 2
100-QC-005.2, Qualification and Certification of Nondestructive Personnel, Rev. 4
100-QC-005.2G, Qualification and Certification of Nondestructive Test Personnel in Accordance with ASNT SNT-TC-1A, 1992 Edition and Shaw Power Group, Nuclear Division Requirements, Rev. 0

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WPS2-1.1M71, Machine GMAW of AWS Group I, II, and II (A572 Gr. 60) steels
WPS5-1.10HT03, Manual Welding of A572 -50/60 to A240 UNS 32101 using GTAW, Rev. 1
WPS2-1.1M02, GMAW of Carbon and Low Alloy Steels, AWS D1.1 Group III to Group III, II, and I without Impacts, Rev. 2
WPS2-1.1T71, Manual Welding of Carbon and Low Alloy Steel Base Metal Group I, II, and III, Rev. 3

Procedure Qualification Record:
SP-154, Qualification for welding of A572 50/60 Group II/II to A572 50/60 Group II/III, Rev. 0
SP-160, Qualification for welding of A572 50/60 Group II/II to A572 50/60 Group II/III, Rev. 0
SP-254, Welding ASTM A572-50/60 to ASTM A240 UNS S32101 GTAW machine welding process, Rev. 0

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CSI 3-91, Remote Modular Tooling System (RMTS) Serial No. 103323, Lincoln Power Wave R350
Thermometer Serial No. 03A11, Purchase Order No. 50148, Report No. 115.7

CMTR:
Heat No. 10139030, Nelson Studs. Report No. L19336
Heat No. 1500206-01, Steel Sheet ASTM A572 Grade 60-07. Report No. 430000-MTR-11-000016
Heat No. 1500204-04, Steel Sheet ASTM A572 Grade 60-07. Report No. 430000-MTR-11-000040
Heat No. 1017119, Channel 6”x13.0 # 20’0” ASTM A992-1. Report No. 430000-MTR-11-000332
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132175-QA-306-V-14-MT-302-999 (Magnetic Particle Examination - weld CV-2216-01)
132175-QA-306-V-14-MT-302-819 (Magnetic Particle Examination - weld CV-2216-01)
132175-QA-306-V-14-MT-302-1009 (Magnetic Particle Examination - weld CV-2216-02)
132175-QA-306-V-14-UT-312-295 (Ultrasonic Examination - weld CV-2216-02)
132175-QA-306-V-14-MT-302-886 (Magnetic Particle Examination - weld CV-2216-02)
132175-QA-306-V-14-PT-304-346 (Liquid Penetrant Examination - weld CV2219-14)
132175-QA-306-V-14-UT-312-377 (Ultrasonic Examination - weld CV2219-14)
132175-QA-306-V-14-UT-312-375 (Ultrasonic Examination - weld CV2219-14)

Section 1A05:

APP-CA01-S5-23001, "Containment Building Area 1 Module CA01 Submodule CA01_23 Isometric Views," Revision 5.
APP-CA01-S5-23002, "Containment Building Area 1 Module CA01 Submodule CA01_23 Break Down," Revision 5.
APP-CA01-S5-23003, "Containment Building Area 1 Module CA01 Submodule CA01_23 Structural Outline - Vertical Sections/Views," Revision 5.
APP-CA01-S5-23004, "Containment Building Area 1 Module CA01 Submodule CA01_23 Structural Outline - Horizontal Sections/Views," Revision 5.
APP-CA01-S5-23005, "Containment Building Area 1 Module CA01 Submodule CA01_23 Structural Outline Specific Details," Revision 6.
APP-CA01-S5B-23001, "Containment Building Area 1 Module CA01 Submodule CA01_23 Bill of Materials," Revision 5.
APP-CA01-S5-01001, "Containment Building Area 1 Module CA01 Submodule CA01_01 Isometric Views," Revision 7.
APP-CA01-S5-01002, "Containment Building Area 1 Module CA01 Submodule CA01_01 Break Down," Revision 6.
APP-CA01-S5-01003, "Containment Building Area 1 Module CA01 Submodule CA01_01 Structural Outline - Vertical Sections/Views-I," Revision 6.
APP-CA01-S5-01004, "Containment Building Area 1 Module CA01 Submodule CA01_01 Structural Outline - Vertical Sections/Views-II," Revision 6.
APP-CA01-S5-01005, "Containment Building Area 1 Module CA01 Submodule CA01_01 Structural Outline - Horizontal Sections/Views," Revision 6.
APP-CA01-S5-01006, "Containment Building Area 1 Module CA01 Submodule CA01_01 Structural Outline Specific Details-I," Revision 5.
APP-CA01-S5-01007, "Containment Building Area 1 Module CA01 Submodule CA01_01 Structural Outline Specific Details-II," Revision 5.
APP-CA01-S5-24001, "Containment Building Area 1 Module CA01 Submodule CA01_24 Isometric Views," Revision 5.
APP-CA01-S5-24002, "Containment Building Area 1 Module CA01 Submodule CA01_24 Break Down," Revision 5.
APP-CA01-S5-24003, "Containment Building Area 1 Module CA01 Submodule CA01_24 Structural Outline - Vertical Sections/Views," Revision 5.
APP-CA01-S5-24004, "Containment Building Area 1 Module CA01 Submodule CA01_24 Structural Outline - Horizontal Sections/Views," Revision 5.
APP-CA01-S5-24005, "Containment Building Area 1 Module CA01 Submodule CA01_24 Structural Outline Specific Details," Revision 5.
APP-CA01-S5B-24001, "Containment Building Area 1 Module CA01 Submodule CA01_24 Bill of Materials," Revision 5.
APP-GW-S9-100, "AP1000 Structural Modules General Notes - I," Revision 4.
APP-GW-S9-300, " AP1000 Structural Modules Standard Weld Details," Revision 5.
Mistras 100-PT-304, "Liquid Penetrant Examination in Accordance with AWS Structural Welding Code," Revision 6.

Section 1A06:

SV3-CC01-Z0-031, “Safety Related Placing Concrete and Reinforcing Steel, Westinghouse Seismic Category I, Safety Class C ‘Nuclear Safety’,” revision 8
ASTM 1611-09, “Standard Test Method for Slump Flow of Self-Consolidating Concrete,” Revision 09b

SV3-CC01-Z0-026, “Safety Related Concrete Testing Services, Westinghouse Seismic Category 1, Safety Class C ‘Nuclear Safety’,” and revision 8
SV3-CC01-Z0-027, “Safety Related Mixing and Delivering Concrete, Westinghouse Seismic Category 1, Safety Class C ‘Nuclear Safety’,” revision 8
ASTM C31-10, “Safety Related Placing Concrete and Reinforcing Steel, Westinghouse Seismic Category I, Safety Class C ‘NUCLEAR SAFETY’,” revision 8
SVO-CC01-GEF-000179, “Requirements When Placing with SCC,” revision 0
APP-GW-GAP-420, "Engineering and Design Coordination Report,"
ACI 237R "Self-Consolidating Concrete," revision 2007;
ACI 349R, “Code Requirements for Nuclear Safety-Related Concrete Structures,” revision 2001;

Section 1A07:

Work Packages
SV3-1220-SSW-CV1591, Auxiliary Building Structural Steel Framing Elevation 82’-6”

Design Specifications
APP-SS01-Z0-002, Erection of Structural Steel, Westinghouse Safety Class C, Seismic Category I "NUCLEAR SAFETY RELATED"
APP-SS01-Z0-005, Erection of Steel Decking and Stay-In-Place Forms, Westinghouse Safety Class C, Seismic Category I "NUCLEAR SAFETY RELATED"
SV3-1220-SSK-CV2481, "Unit 3 Auxiliary Building Area 2 Decl/Panel Seats Weld Map"
WPS2-1.1S01, SMAW of carbon and low alloy steels, Revision 1.
WMR No. 39792, March 20, 2014
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Weld Data Sheet for Weld Number SV3-1220-SSK-CV2481-182
Weld Data Sheet for Weld Number SV3-1220-SSK-CV2481-183

Section 1A08:

SV3-1200-CR-912, “Auxiliary Building Area 2 Concrete Reinforcement Walls J & K Elevations,” Rev. 8
SV3-1210-CR-912, “Auxiliary Building Area 2 Concrete Reinforcement Wall J Sections & Details EL 66’-6”,” Rev. 2
SV3-1210-CR-918, “Auxiliary Building Area 2 Concrete Reinforcement Wall K Sections & Details EL 66’-6”,” Rev. 2
SV3-1210-CR-990, “Auxiliary Building Concrete Reinforcement Secondary Walls Elevation EL 66’-6”,” Rev. 4
SV3-1210-CR-993, “Auxiliary Building Concrete Reinforcement Secondary Walls Sections & Details EL 66’-6”,” Rev. 1
SV3-1212-CE-912, “Auxiliary Building Area 2 Embedments Wall J Elevation 66’-6” East View,” Rev. 3
SV3-1212-CEX-912, “Auxiliary Building Area 2 Wall J Embedments Index Elevation 66’-6” East View,” Rev. 3
SV3-1212-CE-918, “Auxiliary Building Area 2 Embedments Wall J Elevation 66’-6” West View,” Rev. 3
SV3-1212-CEX-918, “Auxiliary Building Area 2 Wall J Embedments Index Elevation 66’-6” West View,” Rev. 3
SV3-1212-CE-921, “Auxiliary Building Area 2 Embedments Wall K Elevation 66’-6” East View,” Rev. 3

SV3-1212-CEX-921, “Auxiliary Building Area 2 Wall K Embedments Index Elevation 66’-6” East View,” Rev. 3
SV3-1212-CE-925, “Auxiliary Building Area 2 Embedments Wall K Elevation 66’-6” West View,” Rev. 3
SV3-1212-CEX-925, “Auxiliary Building Area 2 Wall K Embedments Index Elevation 66’-6” West View,” Rev. 3

Section 1A09:

SV3-1210-CR-995, "Auxiliary Building Areas 1 & 2 Concrete Reinforcement Walls L & M Sections & Details Sheet 2," Rev. 1.
132175-J400A-00266, "ACI 349 & ACI 359 Splice System Qualification Test Program For Lenton EL36P8 Series Mechanical Splice Products,"
SV3-1210-CR-993, “Auxiliary Building Concrete Reinforcement Secondary Walls Sections & Details EL 66’-6”,” Rev. 1
APP-1210-GEF-195, “Auxiliary Building A2 Secondary (Small) Walls up to EL 82’-6” Reinforced Concrete Design," Rev. 0.

Section 1A10:

SV3-CA20-GNR-000175, "SV3 CA20 SA3 Bypassed Weld Inspection," Revision 0;
CB&I procedure QS 15.1, “Nonconformance & Disposition Report,” Revisions 4 and 5;
SV3-CA20-S5Y-00205, "Auxiliary Building Areas 5 and 6 Module CA20 Standard Welding Details," Revision 0;
SV3-CA20-GNR-000239, "CA20-08A and CA20-05 Backing Bar Weld Joint," Revision 0;

Section 1A11:

100-PT-304, Liquid Penetrant Examination In Accordance with the AWS Structural Steel Welding Code
GWS-5, "Stainless Structural Steel General Welding Specification"
APP-VW20-Z0-023, "Welding Specification for ASTM A240 UNS S32101 Duplex Stainless Steel Plate," Rev. 3.
Welding Procedure Specification WPS5-10H.10HT70
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Section 1A12:

<u>Procedures:</u>
PI-907021-02, Vogtle Units 3&4: CA-20 Module Basemat Attachment Bracket Installation - Drilling and Tapping, Rev. 3

<u>Drawings:</u>
SD-CA20 Bracket, Attachment Bracket Kit, Rev.1
SD-CA20 Bracket, Attachment Bracket Kit, Rev. 0
APP-CA20-S4-520, Auxiliary Building Areas 5 & 6 CA20 Module Basemat Attachment Bracket Installation Details, Rev. 1
APP-CA20-S4-521, Auxiliary Building Areas 5 & 6 CA20 Module Basemat Attachment Base Design Details, Rev.0
APP-1215-CE-005, Auxiliary Building Area EL 66’-6” CA20 Basemat Interface Embedment & Recess Locations, Rev. 10

APP-1215-CE-007, Auxiliary Building Areas 5 & 6 El 66'-6" CA20 Basemat Interface Embedment and Recess Details, Rev. 5

Calculations
APP-CA20-S3C-002, CA20 Connection Design: Module Wall-to-Basemat, Rev. 7
APP-CA20-S3C-017, AP1000 CA20 Structural Module Connection Design Evaluation, Rev. 0

Section 1A13:

NCSP 3-24, "Field Surveying," Rev. 2

Section 1A14:

SV4-1010-CR-210, "Nuclear Island Basemat Concrete Reinforcement Area Below Containment Vessel Penetration Reinf Details," Rev. 2
SV4-1010-CR-211, "Nuclear Island Basemat Concrete Reinforcement Area Below Containment Vessel Penetration Reinf Details," Rev. 3
C112-002-14-0097, "SV4 CVBH Layers 9B & 10C"
SV4-CC01-Z0-027, "Safety Related Concrete Testing Services," Rev. 4;
SV4-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel," Rev. 4;
SV4-1010-CR-101, "Nuclear Island Basemat Reinforcement Area Below Containment Vessel Installation Sequence," Rev. 3;
SV4-1010-CR-107, "Nuclear Island Basemat Concrete Reinforcement Area Below Containment Vessel Construction Joint," Rev. 2; and
132176-102-002-00002, "Containment Vessel Bottom Head (CVBH) Foundation Grouting Plan," Rev. 2.
F-C113-001, "Grout Placement," Rev. 4
QAD 10.68, "Inspection Planning," Rev. 3

Section 1A15:

Work Packages:
SV4-1200-CRW-CV 1740

Section 1A16:

Work Packages:
SV4-1200-CRW-CV 1740

Section 1P01:

E&DCR number SV3-CA20-GEF-000123, "Floor CA20-52 and 53 Alt. Weld," revision 0;
SV3-CA20-S5Y-00202, "Auxiliary Building Areas 5 and 6 Module CA20 Standard Welding Details," revision 0;
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SNC TE 697366, CMP-SURV-Unit 4 containment vessel - post weld heat treatment of course S1, dated October 7, 2013;
SNC TE 722411, CMP-SURV-Unit 3 and 4 containment vessel weld materials controls, dated November 21, 2013;
SNC TE 741113, CMP-SURV-Unit 3 fabrication and configuration of attachment plates, dated December 16, 2013;

Section 1P04:

SV3-CA04-GNR-000015, "WT Beam CJP Welds Inaccessible for 100% Inspection," Revision 0;
CB&I Power Weld Record SV3-CA04-S5K-CV2034-20-0042 RW-1, and RW-2;
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SV3-CA04-GNR-000013, "CA04 WT Beam CJP Weld Inaccessible for 100% Inspection," Revision 0;
SV3-CA04-GNR-000005, "Welds at Ex-core Detector Box WT Beams," Revision 0;
SV3-CA04-GNR-000010, "CA04-03 Horizontal Stiffener," Revision 0;
SV3-CA04-GNR-000022, "CA04-03 Horizontal Stiffener now Inaccessible," Revision 0;
SV3-CA20-GNR-000175, "SV3 CA20 SA3 Bypassed Weld Inspection," Revision 0;
SV3-CA20-GNR-000206, "Floor Angle MT," Revision 0;
SV3-CA20-GNR-000239, "CA20-08A and CA20-05 Backing Bar Weld Joint," Revision 0;
SV3-AT01-GNR-000012, "MSE Wall Waterproofing Damage," Revision 0;
SV3-CA01-GNR-000051, "CA01-01 Missing vendor weld," Revision 0;

Section 1P05:

QS 16.05, "Corrective Action Program," Revision 3;
QS 16.06, "Causal Analysis," revision A.1-TCN;
CAR 2013-1969, "Bypass of Weld Inspection Notification and Hold Points";
CAR 2013-2066, "Required MT Inspections not Performed";
CAR 2013-2105, "Open Butt Weld Performed to Wrong Procedure and Bypassed Weld Inspections";
CAR 2014-0049, "Removal of CA20-36/CA20-37 Ledger Angle Temporary Attachments";
CAR 2014-0257, "PT/MT Inspection Bypassed During Fit-up";
CAR 2014-0435, "Bypassed QC fit-up Hold Point on Embedded Steel Plate";

LIST OF ACRONYMS

ACI	American Concrete Institute
ADAMS	Agencywide Documents Access & Management System
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
CAR	Corrective Action Report
CB&I	Chicago Bridge and Iron
CFR	Code of Federal Regulations
CVBH	Containment Vessel Bottom Head
CVS	Chemical and Volume Control System
DAPP	Domestic AP1000 Project Procedure
E&DCR	Engineering and Design Coordination Report
EPC	Engineering, Procurement, and Construction
GTAW	Gas Tungsten Arc Welding
IMC	Inspection Manual Chapter
IR	Inspection Report
ITAAC	Inspections, Tests, Analysis, and Acceptance Criteria
MAB	Modular Assembly Building
N&D	Nonconformance and Disposition Report
NCV	Non-Cited Violation
NDE	Nondestructive Examination
NDQAM	Nuclear Development Quality Assurance Manual
NI	Nuclear Island
NRC	Nuclear Regulatory Commission
QA	Quality Assurance
QAD	Quality Assurance Directive
QC	Quality Control
QS	Quality Standard
SCC	Self-Consolidating Concrete
SNC	Southern Nuclear Operating Company
SSC	Structures, Systems, and Components
TE	Technical Evaluation
UFSAR	Updated Final Safety Analysis Report
VEGP	Vogtle Electric Generating Plant
WEC	Westinghouse Electric Company