



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

August 7, 2012

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

**SUBJECT: SOUTHERN NUCLEAR OPERATING COMPANY VOGTLE ELECTRIC  
GENERATING PLANT UNITS 3 AND 4 - NRC INTEGRATED INSPECTION  
REPORTS 05200025/2012-003, AND 05200026/2012-003**

Dear Mr. Ivey:

On June 30, 2012, 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 with Mr. Howard Mahan, Vogtle 3 & 4 Licensing Manager, and other members of your staff on July 19, 2012.

The inspection examined 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 10 CFR Part 52 license. Within these areas, the inspection consisted of the selected examination of procedures and representative records, observations of activities, and interviews with personnel.

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

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its Enclosures, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. 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. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected, and a redacted copy of your

response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy, or provide the information required, by 10 CFR 2.390(b), to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

**/RA/**

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

Docket Nos.: 52-00025  
52-00026

License Nos.: NPF-91 (Unit 3)  
NPF-92 (Unit 4)

Enclosure: Inspection Report 05200025/2012003 and 05200026/2012003  
w/Attachment: Supplemental Information

cc: w/encl: (See next page)

response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy, or provide the information required, by 10 CFR 2.390(b), to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

/RA/

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

Docket Nos.: 52-00025  
52-00026

License Nos.: NPF-91 (Unit 3)  
NPF-92 (Unit 4)

Enclosure: Inspection Report 05200025/2012003 and 05200026/2012003  
w/Attachment: Supplemental Information

cc: w/encl: (See next page)

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ADAMS: ■ Yes      ACCESSION NUMBER: ML12220A476      ■ SUNSI REVIEW COMPLETE

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DATE	8/7/2012	8/7/2012	8/7/2012	8/7/2012	8/7/2012	8/7/2012	8/7/2012
E-MAIL COPY?	YESNO	YES NO	YES NO	YES	YES NO	YES NO	YES NO

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Letter to Mr. B.L. Ivey from Michael Ernstes dated August 7, 2012

SUBJECT: SOUTHERN NUCLEAR OPERATING COMPANY VOGTLE ELECTRIC  
GENERATING PLANT UNITS 3 AND 4 - NRC INTEGRATED INSPECTION  
REPORTS 05200025/2012-003, AND 05200026/2012-003

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**U.S. NUCLEAR REGULATORY COMMISSION**  
**Region II**

Docket Nos.: 05200025; 05200026

License Nos.: NPF-91 (Unit 3), NPF-92 (Unit 4)

Report Nos.: 05200025/2012-003; 05200026/2012-003

Licensee: Southern Nuclear Operating Company

Facility: Vogtle Electric Generating Plant Units 3 and 4

Location: 7825 River Road  
Waynesboro, GA 30830

Inspection Dates: April 1 through June 30, 2012

Inspectors: J. Fuller, Senior Construction Resident Inspector, CPB4  
C. Abbott, Resident Inspector, CPB4  
C. Huffman, Resident Inspector, CPB4  
S. Smith, Senior Construction Inspector, CIB2  
C. Oelstrom, Construction Inspector, CIB2  
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S. Crane, Vendor Inspector, DCIP/CMVB  
J. Heisserer Senior Construction Inspector, CIB3  
A. Artayet, Senior Construction Inspector, CIB3  
D. Harmon, Construction Inspector, CIB3  
C. Welch, Senior Reactor Engineer DCIP/CITB

Accompanying Personnel: C. Smith, Summer intern, DCI  
M. Jardaneh, DCIP/CITB  
C. Cheung, DCIP/CITB

Approved by: Michael Ernstes, Chief  
Construction Projects Branch 4,  
Division of Construction Projects

Enclosure

## **SUMMARY OF FINDINGS**

Inspection Report (IR) 05200025/2012-003; 05200026/2012-003; 4/1/2012 – 6/30/2012; Vogtle Electric Generating Plant (VEGP) Units 3 and 4; integrated inspection report.

This report covers a three month period of inspection by resident inspectors, announced programmatic inspections by regional and headquarters inspectors, and announced Inspections, Tests, Analysis, and Inspection Criteria (ITAAC) inspections by regional inspectors.

No findings were identified.

The Nuclear Regulatory Commission's (NRC's) program for overseeing the construction of commercial nuclear power reactors is described in Inspection Manual Chapter 2506, "Construction Reactor Oversight Process General Guidance and Basis Document."

## REPORT DETAILS

### 1. CONSTRUCTION REACTOR SAFETY

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

### 2503 ITAAC-RELATED INSPECTIONS

#### .1 ITAAC Number: 760 and 763 / Family 01F

##### a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 760 (3.3.00.02a.i.a) and 763 (3.3.00.02a.i.d) at the Shaw Modular Solution (SMS) fabrication facility prior to the sub-modules being shipped to the Vogtle Unit 3 site. Using Inspection Procedure (IP) 65001.01, "Inspection of ITAAC-Related Foundation and Buildings;" and IP 65001.F, "Inspection of ITAAC-Related Design and Fabrication Requirements," the inspectors conducted field measurements on sub-modules, reviewed documents, and interviewed licensee personnel to:

- verify that design and fabrication was being completed in accordance with applicable specifications, drawings, and approved procedures;
- verify that key building critical dimensions, volumes, materials, and separation satisfied design specifications, requirements, and relevant ITAAC;
- determine whether licensee records established an adequate basis for the acceptance of ITAAC with design and fabrication attributes;
- determine whether fabrication activities were performed by qualified personnel;
- assess the implementation of the portion of the quality assurance (QA) program specific to design and fabrication activities; and
- determine whether records reflect that completed work meets design specifications and acceptance criteria.

The inspectors performed independent measurements on the following sub-modules for the proposed Unit 3 Containment Internals and Radiologically Controlled area of the auxiliary building: CA01\_24, CA20\_17, CA20\_27, CA20\_29, and CA20\_72. Specifically, the inspectors measured the following: headed stud spacing and dimensions, module plate thickness, angle and channel used to construct module trusses, and truss spacing. The inspectors also observed placement of reinforcing steel, general module assembly, and fillet and stud welds.

The inspectors reviewed various documents within the work packages for the selected modules (such as shop travelers, program instruction sheets, drawings, material traceability logs, weld and inspection records, certified material test reports (CMTRs), and Engineering and Departure Change Requests) to verify:

- the shape, size, dimensions, type, and grade of material conformed to the approved specifications and design drawings;

- CMTRs or a certified report of tests made by the fabricator or qualified testing laboratory were available; fit-up tolerances for length, depth, and straightness of structural members were as specified;
- the identification of welds and welders was maintained for each weld;
- welding procedures and welders were qualified in accordance with the American Welding Society requirements for structural steel welding, and other codes or standards referenced by the product specifications; and
- welding material and processes were adequately controlled as required by the licensee's QA program.

The inspectors also reviewed nonconformance reports and corrective action reports associated with the sub-modules to determine if:

- the licensee was identifying problems at an appropriate threshold and entering them into the corrective action program;
- nonconforming material was adequately identified and segregated; and
- deviations from requirements were effectively resolved.

Documents reviewed are listed in the attachment.

b. Findings

Introduction: The inspectors identified an unresolved item (URI) related to the identification of headed studs that failed to meet the applicable minimum and maximum spacing requirements.

Description: American Institute of Steel Construction (AISC) N690-94 states that "The minimum center-to-center spacing of stud connectors shall be 6 diameters along the longitudinal axis of the supporting composite beam and 4 diameters transverse to the longitudinal axis of the supporting composite beam."

Additionally, the structural wall modules as described in subsection 3.8.3.1.3 of the Vogtle 3&4 Updated Final Safety Analysis Report (UFSAR), states in part:

*[The information in Figure 3.8.3-8, Sheet 1 that is considered to be Tier 2\* information is the maximum design spacing ... of the headed studs for the modular wall in the containment internal structure in locations away from openings or penetrations in the walls...]\**

Westinghouse Electric Company, LLC (WEC) design calculation APP-1100-SUC-003, Revision 3, required spacing for both 3/4 and 5/8 inch studs to be placed in a 6-inch by 6-inch pattern. As described above, maximum stud spacing for the containment internals was considered Tier 2\* information and would require notification to the NRC prior to any change.

Based on the requirements above, the inspectors identified two examples where the placement of headed studs on safety-related sub-modules failed to meet the minimum and maximum spacing requirements.

The first example identified placement of headed studs on sub-modules for the

radiologically controlled area of the auxiliary building which did not meet the minimum allowable spacing as required by AISC N690-94. Specifically, two rows of 5/8 inch headed studs located on the CA20\_29 sub-module were located approximately 1.75 inches center-to-center. Per AISC N690-94 the minimum allowable spacing for 5/8 inch headed studs transverse to the longitudinal axis requires at least 2.5 inches center-to-center.

The second example identified placement of headed studs on sub-modules for the containment Internals where studs failed to meet the maximum spacing requirements. Specifically, inspectors identified 5/8 inch headed studs located approximately 8 inches away from the plate edge for the CA01\_24 sub-module. The inspectors were concerned that once the adjacent sub-module was joined to CA01-24, the distance between stud rows adjacent to the seam would exceed the maximum spacing requirements as specified by subsection 3.8.3.1.3 of the UFSAR.

Based on observations in the field, examples were identified where the minimum and maximum stud spacing failed to meet the requirements in AISC N690-94 and the UFSAR. This issue is unresolved pending the inspectors' evaluation of the licensee's response to determine if this issue of concern is more than minor. (URI 05200025/2012-003-01, Module Stud Spacing Requirements).

## .2 ITAAC Number 764 and 767 / Family 01A

### a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 764 (3.3.00.02a.ii.a) and 767 (3.3.00.02a.ii.d). The inspectors used the guidance in IP 65001.01, and IP 65001.A, "ITAAC Attributes for As-Built Inspection" to conduct field measurements to determine if the plate separation in the sub-module assembly conformed to the required concrete thicknesses of the building sections as specified in applicable specifications, drawings, and approved procedures.

The inspection was performed at SMS fabrication facility prior to the sub-modules being shipped to the Vogtle Unit 3 site. The inspectors performed independent measurements on the following sub-modules for the proposed Unit 3 Containment Internals and Radiologically Controlled area of the auxiliary building: CA01\_24, CA20\_27, and CA20\_29.

Documents reviewed are listed in the attachment.

### b. Findings

No findings were identified.

## .3 ITAAC Number 93 / Family 06B

### a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 93 (2.2.01.03a), for Vogtle Unit 3. The inspectors used the following NRC IPs to perform these inspections:

- 65001.F, Section 02.04;
- 65001.06, "Inspection of ITAAC-Related Installation of Mechanical Components," Sections 02.05; and
- 65001.11, "Construction Inspection Program Inspection of ITAAC-Related Containment Integrity and Containment Penetrations," Section 02.11.

On April 26, 2012, the licensee's containment subcontractor, Chicago Bridge & Iron (CB&I), visually identified cracking on four welds for the lower ring of the Unit 3 containment vessel (CV), which had been subjected to post weld heat treatment (PWHT) in accordance with approved procedures. CB&I immediately stopped the work, initiated corrective action documents (SWO-U3-002, NCR-U3-076, and OB-VES-2012-286), and initiated an investigation into the cause of the cracking.

The inspectors reviewed the corrective action documents initiated by CB&I, the licensee (CR-445512), and Westinghouse (supplier CAR 12-129-M049) to verify that they were documented in the applicable corrective action programs. The inspectors observed the cracked vertical welds and reviewed CB&I's initial plan for the investigation into the cause of the cracking to ensure that the CB&I response was appropriate for the occurrence. The inspectors observed the locations of the thermocouples and insulation pins for PWHT, reviewed the thermal history strip charts, and interviewed personnel to determine if PWHT was performed in accordance with the approved procedure. The inspectors reviewed the weld filler material and base metal CMTRs, and welding procedure and supporting Procedure Qualification Record (PQR) for PWHT to determine if they were in compliance with the American Society of Mechanical Engineers (ASME) Code.

b. Findings

No findings were identified.

.4 ITAAC Number 91 / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 91 (2.2.01.02a), for Vogtle Unit 3. The inspectors used the following NRC IPs to perform these inspections:

- 65001.F, Sections 02.03, and 2.04;
- 65001.6, Sections 02.01, 02.02, and 02.05; and
- 65001.11, Sections 02.01, 02.02, 02.03, 02.05, and 02.11.

The inspectors reviewed CV procurement specifications to determine if parts and materials met the requirements of the UFSAR, ASME Section III Subsection NE, and 10 CFR Part 50 Appendix B.

The inspectors reviewed CMTRs to determine if shell plate and sleeve penetration materials met the requirements of ASME Section III Subsection NE. The reports were reviewed to determine if chemical and mechanical properties (including applicable impact testing, grain size and carbon equivalency), heat treatment, degassing process,

and required Nondestructive Examination (NDE) met the material requirements of the ASME Section III, Subsection NE code and WEC CV design and material specifications.

The inspectors reviewed CB&I PWHT Welding Procedure Specifications (WPSs) for machine flux core arc welding and temporary attachment of thermocouples and insulation pins to determine if the procedures were in accordance with the ASME Section III, Subsection NE and Section IX, as applicable.

The inspectors reviewed three design reports issued by the material supplier for the following nuclear parts:

- ASME Data Report Form N-2 dated 9/05/2011 with National Board No. 2695 for nuclear part B3-B4 (S/N IN-4758), includes electrical penetration sleeves E01 and E02, and mechanical penetration sleeve P30;
- ASME Data Report Form N-2 dated 8/24/2011 with National Board No. 2689 for nuclear part B3-B2 (S/N IN-4756), includes electrical penetration sleeves E11, E12, and E13; and
- ASME Data Report Form N-2 dated 8/17/2011 with National Board No. 2676 for nuclear part B3-A3 (S/N IN-4751), includes electrical penetration sleeves E20, E21, E22, E23, E24, E25 and E26.

b. Findings

No findings were identified.

.5 ITAAC Number 96 / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 96 (2.2.01.04a.ii) for Vogtle Unit 3. The inspectors used NRC IP 65001.F, Section 02.03 to perform this inspection.

The inspectors reviewed sixteen CMTRs for shell plate, mechanical and electrical sleeve penetration materials to determine if Charpy V-notch impact testing of pressure retaining materials conformed with the fracture toughness requirements of the WEC CV design specification and ASME Section III, Subsection NE.

The inspectors reviewed sixteen CMTRs from IHI for the following:

- first course of the bottom ring for CV shell plate piece mark B3-B4 with two electrical sleeve penetrations, E01 and E02, and mechanical penetration sleeve, P30;
- first course of the bottom ring for CV shell plate piece mark B3-B2 with three electrical sleeve penetrations, E11 through E13; and
- first course of the bottom ring for CV shell plate piece mark B3-A3 with seven electrical sleeve penetrations, E20 through E26.

b. Findings

No findings were identified.

.6 ITAAC Number 93 / Family 06B

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 93 (2.2.01.03a) for Vogtle Unit 4. The inspectors used the following NRC IPs to perform these inspections:

- 65001.B, "Inspection of the ITAAC-Related Welding Program," Sections 02.01, 02.02, 02.03, 02.04, 02.05, and 02.06;
- 65001.F, Sections 02.03, and 02.04;
- 65001.06, Sections 02.01, 02.02, and 02.05; and
- 65001.11, Sections 02.01, 02.02, 02.03, 02.05, and 02.11.

The inspectors reviewed the following four CMTRs from IHI that were receipt inspected by CB&I:

- CV bottom head plates of the BH3 sections C8-1 and C8-2, and C9-1 and C9-2.

The inspectors reviewed the reports to determine if chemical composition and mechanical properties (including applicable impact testing, grain size, and carbon equivalency), heat treatment, degassing process, and required NDE met the material requirements of the ASME Section III, Subsection NE code and WEC CV design and material specifications.

The inspectors observed machine welding of the internal portion of the BH-3 vertical double-V groove seam joining the C8 and C9 plates to determine if interpass welding was controlled in accordance with CB&I's welding procedure.

b. Findings

No findings were identified.

.7 ITAAC Number 91 / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 91 (2.2.01.02a) for Vogtle Unit 4. The inspectors used the following NRC IPs to perform these inspections:

- 65001.F, Sections 02.03, and 02.04;
- 65001.06, Sections 02.01, 02.02, and 02.05; and
- 65001.11, Sections 02.01, 02.02, 02.03, 02.05, and 02.11.



The inspectors reviewed CMTRs to determine if CV bottom head BH-3 plate materials met the requirements of ASME Section III Subsection NE.

The inspectors observed machine welding of the internal portion of the BH-3 vertical double-V groove seam joining the C8 and C9 plates to determine if interpass welding was controlled in accordance with CB&I's welding procedure.

The inspectors observed external air carbon arc gouging for the removal of temporary weld joint fit-up tools attached to the CV bottom head BH-3 plates to determine if the activity was performed in accordance with ASME Section III, Subsection NE.

b. Findings

No findings were identified.

.8 ITAAC Number 96 / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 96 (2.2.01.04a.ii) for Vogtle Unit 4. The inspectors used NRC IP 65001.F, Section 02.03 to perform this inspection.

The inspectors reviewed four CMTRs for CV bottom head BH-3 materials to determine if Charpy V-notch impact testing of pressure retaining materials met the fracture toughness and NDE-UT requirements of the WEC CV design and material specification, and ASME Section III, Subsection NE.

The inspectors reviewed four CMTRs from IHI for the following:

- CV bottom head BH3 plates C8-1 and C8-2, and C9-1 and C9-2.

b. Findings

No findings were identified.

.9 ITAAC Number 763 / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 763 (3.3.00.02a.i.d). The inspectors used the guidance in IP 65001.01, IP 65001.B, and IP 65001.F to conduct field measurements on sub-modules, document reviews, and interviews with licensee personnel to determine if structural deviations existed between nuclear island structural modules, the approved design, and/or applicable codes.

The inspection was performed at the Vogtle Units 3 & 4 construction site in the Modular Assembly Building (MAB). The inspectors performed independent measurements on the following sub-modules for the proposed Unit 3 Radiologically Controlled area of the auxiliary building: CA20\_06, CA20\_02, CA20\_07A, and CA20\_07B. Specifically, the

inspectors measured a sample of the following: headed stud spacing and dimensions, module plate thickness, angles and channels used to construct module trusses, and truss spacing. The inspectors also inspected reinforcing steel placement, general module assembly, and the MAB welding and NDE programs. Inspectors reviewed various documents within the work packages which included: sub-assembly drawings, material traceability logs, vertical tolerance survey records, and inspection and weld records. Inspectors also reviewed design drawings, specifications and corrective action reports associated with these sub-modules. The procedures and documents reviewed are listed in the attachment.

In addition, the inspectors performed a document review associated with weld number CV0376-1 to verify that the structural steel welding for the module assembly had been welded and inspected in accordance with applicable code and quality requirements. The documents reviewed included: the weld data sheet, weld filler metal CMTRs for heats 1039P & 1039M, qualification records of the inspector who performed final visual inspection, Magnetic Test (MT) report V-2012-MT-030, and associated Condition Report (CR) 467742.

The inspectors performed a walk down of the weld filler metal storage/issue room and interviewed the attendant to verify that filler metal was stored, issued, and returned in accordance with applicable procedures and ASME NQA-1-1994 storage requirements.

b. Findings

No findings were identified.

.10 ITAAC Number 767 / Family 01A

The inspectors performed a direct inspection of construction activities associated with ITAAC 767 (3.3.00.02a.ii.d). The inspectors used the guidance in IP 65001.01, and IP 65001.A to conduct field measurements to determine if the plate separation in the sub-module assembly conforms to the required concrete thicknesses of the building sections.

The inspectors performed independent measurements on the following sub-modules for the proposed Unit 3 Radiologically Controlled area of the auxiliary building: CA20\_06, CA20\_02, and CA20\_07A and B.

b. Findings:

No findings were identified.

## **2504 NON-ITAAC-RELATED INSPECTIONS**

.1 IP 40600, "Licensee Program for Inspections, Tests, Analyses, and Acceptance Criteria Management" - Sections 01.01, 01.02 and 02.01

a. Inspection Scope

10 CFR 52.80 requires that the combined license application contain the proposed inspections, tests, and analyses that the licensee shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the

inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will be operated in conformity with the combined license, the provisions of the Atomic Energy Act, and the Commission's rules and regulations. 10 CFR 52.99 requires that licensees shall notify the NRC that prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria have been met. The notification must contain sufficient information to demonstrate that the prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria have been met.

The purpose of this inspection was to determine whether the licensee, Southern Nuclear Operating Company, Inc (SNC), and its engineering, procurement, and construction consortium suppliers (Shaw/Stone and Webster and Westinghouse Electric Company, LLC) had established adequate procedures and programmatic controls to govern closure of the inspections, tests, analyses, and acceptance criteria; to verify their process for preparing and approving ITAAC closure notifications (ICNs) conforms to the applicable quality assurance requirements of 10 CFR 50 Appendix B; and to determine if established ITAAC closure and records controls processes support creating accurate and verifiable ICNs.

The inspectors reviewed procedures and documents, interviewed personnel, observed meetings and reviewed ITAAC training documents. The inspectors focused on determining whether adequate guidance was provided to:

- plan, track, and execute ITAAC;
- identify principal ITAAC completion documents and capture them in the ITAAC closure packages;
- identify ITAAC requirements in purchase orders for vendor performance;
- prepare ICNs with sufficient information that demonstrate the prescribed inspections, tests, and analyses were performed and the prescribed acceptance criteria met;
- identify and capture system, structure, and component (SSC) deficiencies, reported via the various deficiency reporting mechanisms, that have a material effect on an ITAAC's acceptance criteria;
- identify ITAAC requirements impacted by proposed/planned changes;
- conduct ITAAC closure activities under the quality assurance program using guidance provided in NEI 08-01 and RG 1.215; and
- comply with the following reporting requirements:
  - ITAAC completion schedule
  - ITAAC completion notification
  - ITAAC 225 day letter
  - ITAAC all complete letter
  - ITAAC post closure notification
  - Initial fuel load 270 day letter

b. Findings

No findings were identified.

#### 4. **OTHER ACTIVITIES**

##### 4OA2 Quality Assurance Program Implementation During Construction and Pre-Construction Activities (IP 35007)

##### .1 Appendix 7, Inspection of Criterion VII – Control of Purchased Material, Equipment, and Services, Section A7.04.02, Inspection of Quality Assurance Program Implementation

##### a. Inspection Scope

The inspectors reviewed a sample of licensee assessments and inspections to determine whether they had adequately implemented the 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). Specifically, the inspectors reviewed the following to determine conformance with the above quality requirements:

- The inspectors reviewed Nuclear Development Quality Assurance Report Number ND-QA-2011-S39, “Safety Related Reinforcing Steel for Nuclear Island,” which documented an assessment of Shaw’s source inspection for the fabrication, storage, and shipping of safety-related rebar at the Gerdau Ameristeel / Shaw Nuclear Fabrication facility in Duluth, GA.
- The inspectors reviewed Nuclear Development Quality Assurance Report Number ND-QA-2011-S27, “Safety Related Reinforcing Steel for Nuclear Island,” which documented a programmatic assessment of the fabrication, storage, and shipping of safety-related rebar at the Gerdau Ameristeel / Shaw Nuclear Fabrication facility in Duluth, GA.
- The inspectors reviewed licensee inspection report number ND-QA-2011-S24, “Safety-related Reinforcing Steel for Nuclear Island,” which the licensee performed to ensure: 1) that the safety-related rebar was fabricated in accordance with the SNC Vogtle Unit 3 Final Safety Analysis Report, 2) that the Shaw source inspections performed at Gerdau were compliant with the requirements of ASME NQA-1-1994, “Quality Assurance Requirements for Nuclear Facility Applications.”
- The inspectors reviewed licensee inspection report number ND-QA-2011-S10, “Safety-related Reinforcing Rebar for Nuclear Island,” which the licensee performed to ensure that: 1) rebar supplied by Gerdau Ameristeel was fabricated in accordance with the purchase order requirements and associated specifications and drawings, 2) the licensee’s contractor, Shaw, was providing sufficient oversight of Gerdau to ensure that the rebar was fabricated in accordance with the applicable quality and technical requirements.
- The inspectors reviewed assessment report number NDQA-2012-S03, “Fabrication of Module CA20 Sub-Assembly,” dated January 24-26, 2012, which the licensee performed to assess Shaw Nuclear oversight of Shaw Modular Solution to ensure that safety-related structural module fabrication complied with the applicable quality and technical requirements.

- The inspectors reviewed licensee surveillance report number NDQA-2012-S25, “Unit 3 Containment Vessel Base Metal Repair,” which the licensee performed to verify that Westinghouse and Chicago Bridge and Iron quality assurance was providing the proper oversight of a base metal repair made to a Unit 3 Containment Vessel Bottom Head plate.

The inspectors reviewed the above assessment results to determine whether the licensee had appropriately assessed the effectiveness of the control of quality by Shaw 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 report was an adequate record of an activity affecting quality, (2) the report was 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.

The inspectors reviewed the licensee’s Technical Vendor Inspection Plan at SMS to determine whether the licensee had established an adequate oversight plan for the fabrication of structural modules at the SMS facility in Lake Charles, LA. The inspectors noted that the licensee had developed this plan to define the specific oversight that they plan to perform to monitor the quality assurance activities performed by the licensee’s contractor, Shaw, at the SMS facility. The inspectors noted that the licensee had elected to place a designated SNC senior technical advisor to perform specific monitoring and inspection activities at the SMS facility to help ensure that the safety-related structural modules were fabricated in full compliance with the applicable design drawings, specification, and codes.

The inspectors reviewed a sample of the licensee corrective action documents generated by the licensee to document the issues that the licensee identified during their oversight of their contractor’s construction and fabrication activities, to determine whether the licensee properly identified and corrected those conditions adverse to quality. Specifically, the inspectors reviewed the following SNC CRs: CR 344629 – Rebar diameter not verified, CR 349876 – Source inspector lacking certificate of qualification, CR 357013 – Rebar diameter measurements not performed, CR 390737 – Inadequate source inspection for floor module CA20\_34, CR 401948 – Attributes on inspection attribute list not implemented properly, CR 407359 – Shaw source inspection report not correct.

b. Findings

No findings were identified.

.2 Appendix 9, Inspection of Criterion IX – Control of Special Processes, Sections A9.04 Inspection Requirements and Guidance; and IP 65001.02, Sections 02.01b & 02.06c

a. Inspection Scope

The inspectors reviewed the following procedures and specification related to the installation of nuclear island reinforcing steel to determine whether the documents were compliant with the applicable quality and technical requirements:

- SV3-CR01-Z0-010, "Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel," Rev 4;
- 132175-J400A-00065, "Erico Lenton Instruction Manual CADWELD for Rebar Splicing System," Issue B; and
- NCSP 3-43-1, "Exothermic Splicing of Reinforcing Steel," Rev 1.

The inspectors reviewed the above documents to determine whether they provided instructions for the following attributes:

- type of special process performed;
- purpose of the special process;
- when performance of the special process is required;
- prerequisites:
  - qualification and re-qualification requirements (e.g., education, experience, certification) of personnel conducting the special process
  - performance qualification tests are fully documented
- mandatory hold points, such as documented, independent verification/witness by Quality Control (QC);
- other testing to be performed to verify that special process was performed properly;
- specified acceptance criteria; and
- special process records includes:
  - type of method used to perform special process
  - item upon which the special process was performed
  - date of performance of special process
  - person performing special process
  - evaluation of acceptability
  - name of independent evaluator

The inspectors observed the qualification activities of cadwelding personnel. Specifically, the inspectors observed a portion of the cadwelder's training and observed mechanical testing of the cadwelded rebar splices used for qualification of cadwelding personnel. The inspectors reviewed the qualification activities to determine whether the activities affecting quality were performed in accordance with the following procedures and industry standard:

- Quality Standard (QS) 9.11, "Exothermic Splicing of Reinforcing Steel," Rev F;
- Quality Site Instruction (QSI) 11.1-V, "Testing Reinforcing Steel and Mechanical Splices for Reinforcing Steel Bars," Rev B;
- Nuclear Construction Startup Procedure (NCSP) 3-43-1, "Exothermic Splicing of Reinforcing Steel," Rev 1; and
- American Society for Testing and Materials (ASTM) A370-07, "Standard Test Methods and Definitions for Mechanical Testing of Steel Products"

The inspectors observed tensile testing of a total of six qualification splices to determine whether:

- LT-950-EXT-SERVO Universal Testing Machine (Forney) was calibrated;
- tensile testing personnel had appropriate training;

- tensile testing of cadwelded reinforcing steel was documented on the required form;
- tensile testing strength results were equal to or exceeded 125 percent of the specified yield strength (ACI 12.14.3); and
- tensile testing was performed in accordance with industry testing standard ASTM A370-07, "Standard Test Methods and Definitions for Mechanical Testing of Steel Products."

The inspectors reviewed Shaw's quality inspection plan F-S510, "Cadwelding: Exothermic Reinforcing Steel Splicing," Rev 0, to determine whether the established hold/notification points were established in accordance with the aforementioned technical specification, and implementing procedures. The inspectors noted that the QC inspection plan established measures to ensure the following:

- craft personnel received the required training from the vendor (Erico/Lenton);
- craft personnel were qualified on the largest bar size and position to be used during field installation.

b. Findings

No findings were identified.

.3 Appendix 10, Inspection of Criterion X – Inspection, Section A10.04.02 Inspection of QA Program Implementation

a. Inspection Scope

The inspectors performed a direct inspection of the installation of construction aids in the Unit 3 nuclear island that will support both embed plates and the radioactive waste drain system (WRS system). The inspectors performed an inspection of Shaw's construction activities and QC oversight, to determine whether the construction aids were installed in accordance with the following technical and quality requirements:

- SV0-CC01-Z0-003, "Anchoring to Concrete," Rev 1;
- SV3-1000-CEK-CV0476 "Construction Aid Details For Installation of Embedded Steel Plates In Unit 3 Nuclear Island Basemat;"
- 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants;"
- ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications;" and
- S&W Standard Nuclear Quality Assurance Program (SWSQAP 1-74A).

The inspectors also reviewed two work packages associated with installation of the construction aids, rebar, and embed plates. Specifically, work packages SV3-1000-CRW-CV0295, "Unit Three Nuclear Island Installation of Reinforcing Bar for Basemat," and SV3-1000-CEW-CV0296, "Unit Three Nuclear Island Basemat Embedded Steel Plates" were reviewed to determine whether the records were sufficient to provide documentary evidence of activities affecting quality. The inspectors reviewed the above work packages to determine whether they provided instructions for construction and quality personnel to:

- install and verify that the embed plates and construction aids were in their specified location as defined by the applicable drawings and field sketch; and
- verify that the “as-built” embed plates remained in their proper horizontal and vertical position as specified by the applicable drawings after concrete placement.

The inspectors also reviewed a sample of QC inspection reports which provided documentary evidence that QC observed that construction personnel had not drilled through the mudmat and into the WPM during the installation of nuclear island construction aids for embed plates and WRS drain piping. The inspectors reviewed QC inspection reports C112-02-12-0007 and C112-02-12-0003.

b. Findings

No findings were identified.

.4 Appendix 13, Inspection of Criterion XIII – Handling, Storage and Shipping, Section A13.04.02.a Inspection of QA Program Implementation

a. Inspection Scope

The inspectors performed an inspection of Shaw’s designated storage locations for the Unit 4 WPM constituents to determine whether the constituents were stored in accordance with the following technical and quality requirements:

- SV0-AT01-Z0-800001 “Nuclear Island Waterproofing Membrane Installation,” Rev 3;
- SV0-AT01-Z0-001 “Nuclear Island Waterproofing Membrane,” Rev 5;
- NPP10-01-03, “Material Receipt, Storage, and Control,” Rev 3;
- 10 CFR Part 50, Appendix B, “Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants;”
- ASME NQA-1-1994, “Quality Assurance Requirements for Nuclear Facility Applications;” and
- SWSQAP 1-74A.

Specifically, the inspectors observed the actual storage conditions for conformance with the following attributes established by the quality and technical requirements identified above:

- waterproofing membrane (WPM) constituents were protected from weather, dirt, dust, corrosive substances, and physical damage;
- WPM constituents were stored in non-wet conditions and out of direct sunlight;
- WPM constituents did not exceed 90 degrees Fahrenheit or 100% relative humidity;
- materials were stored in an enclosure that was weather-tight, well ventilated, and was appropriately controlled or locked;
- the area was not subject to flooding;
- the floor was paved or equal;
- items were placed on pallets or shoring to permit air circulation;



- the area was provided with uniform temperature control; and
- nonconforming materials were segregated and tagged.

The inspectors also performed a walkdown of several of the Shaw Level D storage areas to determine whether Shaw had controlled the storage of safety-related rebar to prevent damage or deterioration. Specifically, the inspectors observed the storage areas to determine whether Shaw was adequately implementing Section 13, "Handling, Storage, and Shipping," of their Standard Nuclear Quality Assurance Program, Rev B; and Quality Standard (QS) 13.11, "Material/Equipment Storage," Rev C.

b. Findings

No findings were identified.

.5 Appendix 15, Inspection of Criterion XV – Nonconforming Materials, Parts, or Components; Section A15.04.02, Inspection of Quality Assurance Program (QAP) Implementation

a. Inspection Scope

The inspectors reviewed a sample of nonconformance and disposition (N&D) reports to determine whether the conditions were adequately reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures. The inspectors compared these N&Ds to Section 15, "Nonconforming Materials, Parts, or Components," of the SWSQAP 1-74A and S&W procedure QS 15.1, "Nonconformance & Disposition Report," Rev G.

Specifically, the inspectors reviewed the following N&Ds:

- V-ND-11-0430
- V-ND-11-0409
- V-ND-11-0414
- V-ND-11-0451
- V-ND-11-0420
- V-ND-11-0332
- V-ND-12-0187
- V-ND-12-0263
- V-ND-12-0315
- V-ND-12-0317
- V-ND-12-0335

b. Findings

No findings were identified.

.6 Appendix 16, Inspection of Criterion XVI – Corrective Action; Section A16.04.02, Implementation of Corrective Action Program

a. Inspection Scope

On a routine basis, the inspectors reviewed a sample of issues entered into the SNC, Shaw, and WEC corrective action programs to determine whether conditions adverse to quality were controlled in accordance with each company's QAP and whether potential adverse trends were appropriately identified and corrected by SNC or their contractors. Specifically, the inspectors: (1) attended weekly issue review committee meetings at the site; (2) reviewed a sample of SNC, Shaw, and WEC corrective action documents; and (3) held discussions with SNC, Shaw, and WEC personnel responsible for the screening and correction of the issues.

The inspectors selected a sample of issues entered in the corrective action programs to determine whether the handling of these issues were consistent with the applicable QAP requirements; and 10 CFR Part 50, Appendix B.

Specifically, the inspectors reviewed the following SNC CRs and Shaw CARs:

- CAR 2012-0298
- CAR 2012-270
- CAR 2011-0735
- CAR 2012-0642
- CAR 2012-0643
- CAR 2012-0644
- CAR 2012-0645
- CAR 2012-0267
- CR 451975
- CR 448230
- CR 464475
- CR 459707
- CR 477067

The inspectors reviewed the corrective action documents referenced above to determine whether:

- 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: (1) the cause was determined; (2) corrective actions were taken to prevent recurrence; and (3) the cause and corrective actions taken were documented and reported to appropriate levels of management;
- conditions were appropriately screened; and
- the organizations properly evaluated and reported the condition (e.g., 10 CFR 50.55(e), 10 CFR Part 21).

b. Findings

No findings were identified.

.7 Appendix 17, Section A17.04.01, "Inspection of QA Implementing Documents"

a. Inspection Scope

The inspectors reviewed a sample of QA program implementing documents to determine whether they described the processes for general record creation, maintenance, storage, and disposition in accordance with QAPD requirements. Implementing documents were reviewed to determine whether they adequately addressed the following attributes:

- methods to ensuring that records are legible, complete, and traceable to the activity or item; authenticated by authorized personnel; and classified in accordance with regulatory requirements;
- records were maintained and stored in designated facilities:
  - to prevent deterioration, damage, and loss
  - to be accessible to designated organization
  - for a specified duration
- records were retrievable within a reasonable time frame;
- disposal of records was performed by authorized personnel; and

The following implementing documents were reviewed by the NRC inspectors:

- Nuclear Quality Standard 17.1, Rev. G, "Quality Assurance Records System"
- Nuclear Construction and Startup Procedure 2-16-2, "Construction Documents, Records Management and Control"
- PWR-RIM-001, Rev 1, "Records Management Program"
- PWR-RIM-002, Revision 1, "Records Management Disposition and Retention"
- Quality Assurance Directive 17.4, Rev. H, "Quality Assurance Records Management Plan"
- Power Records Information Management Procedure 00007, Rev. 0, "Filing Criteria and System"
- Power Records Information Management Procedure 00008, Rev. 0, "Project Records Retention"
- Power Records Information Management Procedure 00010, Rev. 0, "Construction Site Document Control"
- Power Records Information Management Procedure 00011, Rev. 0, "Communication and Project Management Records"
- Power Records Information Management Procedure 00012, Rev. 0, "Procurement and Subcontract Commercial Records"
- Power Records Information Management Procedure 00013, Rev. 0, "Engineering Records"
- Power Records Information Management Procedure 00015, Rev. 0, "Record Archival"

Additionally, the inspectors interviewed document control staff and performed walk-downs of Shaw's record storage facility and various temporary storage locations

(particularly Room 81 of Shaw Building 120) to determine whether records were properly maintained and stored in designated facilities:

- to prevent deterioration, damage, and loss
- to be accessible to designated organization
- for a specified duration

b. Findings

No findings were identified.

4OA3 Follow-up of Licensee Reports and NOVs

.1 (Closed) VIO 05200025/2011009-01: "Failure to Assure That Material Qualification Testing Associated With the Waterproof System Simulated Field Conditions"

The inspectors performed a review of the licensee's actions to correct the deviations identified in 05200025/2011009-01, (ML11259A159). The purpose of this inspection was to determine whether the licensee's actions associated with the commitments made in their response to the NOV, dated October 12, 2011, (ML11290A219), were met by the licensee and were sufficient to adequately correct the issues identified by the aforementioned NOV.

The inspectors had previously observed and reviewed the licensee's activities associated with the onsite supplemental testing of the waterproofing membrane material, and documented the results of that inspection in NRC inspection report 05200011/2011-004 (ML12046A144). The purpose of the licensee's supplemental testing was to simulate field conditions at VEGP Unit 3 as well as satisfy the licensee's commitment to develop a test program and subsequently a report to document their compliance with the acceptance criteria of Unit 3 Site Specific ITAAC 3.8.5.1.1 (Appendix C to the Vogtle Unit 3 COL, ITAAC Number 844).

The inspectors had also previously reviewed the licensee's root cause evaluation related to this violation, which was documented by the NRC in inspection report 05200025/2012-006 (ML1217A330).

The inspectors reviewed National Technical Systems (NTS) Test Report TR63642-12N, "Acceptance Verification Report for On-site and Laboratory testing of Integritank Waterproofing Membrane System," Rev 1, to determine whether NTS adequately evaluated and documented the testing performed onsite (Tier 1 and Tier 2 testing). The inspectors noted that the onsite Tier 1 testing simulated field conditions with varying ambient temperatures, humidity and weathering effects, as well as joint configurations. The inspectors also noted that the Tier 2 testing tested the deviations that were identified and documented in the NOV, such as:

- the use of Metaset Flex Sealant in the joints;
- a 7-inch wide strip of methyl methacrylate reinforcement scrim material that was embedded into the as-built waterproof membrane stripe coat;

- two additional 8-inch wide layers of membrane material that were applied at the joints, creating a minimum thickness 80 mils greater than what was tested during qualification testing; and
- varying amounts of hardener used.

The inspectors also reviewed the NTS test report to determine whether the testing that occurred offsite at the NTS testing facilities (Tier 3 testing), was adequate to bound the environmental conditions experienced by the as-built waterproofing membrane that were not easily reproducible during the phase 1 and 2 testing, such as: the curing temperature, sunlight exposure, rain, weather cycling and aging.

The inspectors determined that the licensee adequately corrected the deviations identified in VIO 05200025/2011009-01. The NRC considers the NOV Closed.

#### 4OA6 Exit Meeting Summary

On July 19, 2012, the inspectors presented the inspection results to Mr. H. Mahan, Vogtle Units 3 and 4 Licensing Manager, along with other SNC and consortium staff members. The inspectors also discussed observations associated with the test results of the Stage 4 Squib Valve, documented in NRC Inspection Report 99900080/2012-201 (ML12158A154). The inspectors stated that no proprietary information would be included in the inspection report.

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee and Contractor Personnel

D. Jones, Regulatory Affairs Vice President, SNC  
H. Mahan, Licensing Manager, SNC  
D. Midlik, Licensing, SNC  
M. Dove, Engineering Supervisor Procurement, SNC  
J. Ernst, Executive Vice President, Shaw SMS  
R. Fay, QA Director, Shaw, SMS  
G. Sonnier, Action Items Administrator, Shaw SMS  
G. Grant, Licensing, Shaw  
K. Niemer, Project Manager, Shaw  
R. Aul, Senior Design Engineer, WEC  
W. Carnes, Program Manager, WEC  
S. Hand, Quality Manager, CB&I  
T. O'Brien, QC Supervisor, SNC  
J. Madden, Quality Manager, CB&I  
M. Jones, Construction Manager Nuclear Island, SNC  
A. Reynolds, QC Manager, Shaw  
B. Verret, Modular Construction Manager, Shaw  
C. Griffin, Licensing Project Manager ITAAC Execution Closure, WEC  
G. Wilson, ITAAC Mechanical Lead, SNC  
J. Davis, QA Oversight Manager, SNC  
M. Medlock, ITAAC Manager, SNC  
D. Whitehead, QC Engineering Supervisor, Shaw  
C. Fonseca, Program Manager ITAAC Execution and Closure, Shaw  
W. Crisler, Project Quality Director Vogtle Units 3 & 4, Shaw  
S. Huminsky, Vogtle Project Records Manager, Shaw  
H. Millard-Burns, Assistant Project Manager Vogtle Units 3 & 4, Shaw  
B. Poppell, Field Engineering Manager Vogtle Units 3 & 4, Shaw  
S. Dvorak, Records and Information Management Technician 4, Shaw

## **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

### Opened

05200025/2012-003-01	URI	Maximum and Minimum Stud Spacing Requirements (Section 2503.1)
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### Closed

05200025/2011009-01	VIO	Failure to Assure That Material Qualification Testing Associated With the Waterproof System Simulated Field Conditions (Section 4OA3.1)
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## LIST OF DOCUMENTS REVIEWED

### ITAAC Number 760, 763, 764, 767, (3.3.00.02a.i.a, 3.3.00.02a.i.d, 3.3.00.02a.ii.a, & 3.3.00.02a.ii.d):

#### SMS Procedures

QP-G-03, Shop Travelers, Rev 10  
QP-G-10, Inspection, Rev 6  
QP-PC-01, Weld Filler Material Control, Rev 6  
QP-G-09a, Welding Manual AWS D1.1 & D1.6, Rev 0  
QP-NDE-VT-01, Visual Examination Procedure, Rev 5  
QP-NDE-WP-01, Certification of NDE Personnel, Rev 7  
QP-G-05a, Managing Detail Drawings, Rev 1  
QP-WI-01, Welding Inspection Procedure, Rev 8  
QP-G-15, Control of Nonconforming Items, Rev 5  
QP-G-16, Corrective Action, Rev 4

#### SMS Work Packages

CA01-24  
CA 01-24 100  
CA 01-24 200  
CA20-17  
CA 20-27  
CA 20-27-100  
CA 20-27-200  
CA20-29-200  
CA20-72

#### WEC Specifications

APP GW S9-102, Structural Module AP1000 General Notes  
APP VW01-Z0-001, Structural Module Shear Stud Welding Spec  
APP-CA20-S5Y-00001, Structural Module CA20 General Notes  
APP-CA20-S5Y-00002A, Structural Module CA20 General Notes  
APP-CA20-S5Y-00002, Structural Module CA20 General Notes  
APP-CA20-S5Y-00003, Structural Module CA20 General Notes  
APP-CA20-S5Y-00004, Structural Module CA20 General Notes  
APP-CA20-S5Y-00005, Structural Module CA20 General Notes  
APP-VW01-Z0-001, Structural Module Shear Stud Welding Specification  
APP-VW20-Z0-023, Welding Specification for ASTM A240 UNS S32101 Duplex Stainless Steel Plate

#### Certified Material Test Reports:

Heat # 1017404 ASTM A992 angle  
Heat # C013102 ASTM A706 Grade 60 rebar  
Heat # 400250 ASTM A240 duplex stainless steel plate  
Heat # 1500346-02-3-01 ASTM A572 Grade 60 Carbon Steel Plate  
Lot 5889 ASTM A108 couplers  
Lot 1051B AWS 5.28 ER80S-Ni1 welding electrodes



Corrective Action / Nonconformance Records:

*SNC:*

CR 452847  
CR 452848  
CR 452850  
CR 452851  
CR 452852  
CR 452854  
CR 452857  
CR 452859

*SMS:*

NCR 11-095/0  
NCR 12-000480  
NCR 11-000021  
NCR 11-00029  
NCR 11-306  
NCR 12-499  
NCR 11-343  
NCR 12-249  
NCR-12-000232

CR 2012-454  
CR 2012-458  
CR 2012-459  
CR 2012-464  
CR 2012-474  
CR 2012-475  
CR 2012-476  
CR 2012-477  
CR 2012-478  
CR 2012-479  
CR 2012-480  
CR 2012-481  
CR 2012-482  
CR 2012-483  
CR 2012-484  
CR 2012-485  
CR 2012-487  
CR 2012-491  
CR 2012-492

*WEC*

IR 12-118-M037  
IR 12-123-M051  
IR 12-124-M001

Miscellaneous:

APP-1100-SUC-003, General Design of Shear Studs for Structural Modules for Inside Containment and CA20, Rev 03  
Request for Information (RFI) App-CA20-GF-659, dated March 12, 2012  
Weld Procedure Specification No.: 1-1-39, 1-1-40, 1-1-41, 1-1-99, 1-10-98  
Procedure Qualification Record No.: 1-1-37, 1-1-38, 1-1-118, 1-1-119, 1-1-120, 1-1-165, 1-1-166, 1-10-44, 1-10-97

**ITAAC Number: 93, 91, & 96 (2.2.01.03a, 2.2.01.02a, & 2.2.01.04a.ii), Vogtle Unit 3**

**ITAAC Number 93 (2.2.01.03a)**

Corrective Action / Nonconformance Records/Surveillances:

CB&I Observation Report OB-VES-2012-286  
CB&I Nonconformance Report No. U3-076  
SNC Service Request 445512 - Containment Vessel Course S1 weld seam cracking  
Westinghouse Surveillance Plan/Report, SVO-CBI-CV-0065, Rev 0 dated 04/27/2012  
Westinghouse Supplier CAR, 12-129-M049, ICAP Containment Vessel Course S1 weld seam cracking

**ITAAC Number 91 (2.2.01.02a)**

Procedures/Specifications:

CMS-165766-830-15-PR-000001, Postweld Heat Treat Procedure Shell Course S1 Vertical Seams, Rev 2  
CMS-720-03-PR-09551, Heat Treating, Rev 3  
CMS-830-12-SP-12049, Welding Material Specification for Low-Alloy Steel Flux Cored Electrode (Outershield 91K2-HSR), Rev 1  
CMS-830-15-54004, Quality Assurance Specification for Welding Materials Nuclear Power Plant Components, Rev 2  
CMS-830-14-WI-81026, Calibration of Temperature Recorders, Rev 1

Certified Material Test Reports:

CMTR 5994-1, Heat No. 6-6901 Plate No. EA262A, JFE Steel Corporation for SA-738 Grade B S1 shell plate ID mark B3-A7-1, 7/30/2010  
CMTR 5995-3, Heat No. 6-6901 Plate No. EA261A, JFE Steel Corporation for SA-738 Grade B S1 shell plate ID mark B3-A3-1 with electrical penetrations E20 thru E26, 7/30/2010  
CMTR 6006-5, Heat No. 6-6905 Plate No. EN176A, JFE Steel Corporation for SA-738 Grade B S2 shell plate ID mark B3-B2, 9/7/2010  
CMTR 6004-2, Heat No. 5-0532 Plate No. E5130A, JFE Steel Corporation for SA-738 Grade B S2 shell plate ID mark B3-B4, 8/27/2010  
CMTR G20818-017CM, Test Mark AF457 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E20, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)  
CMTR G20818-018CM, Test Mark AF-458 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E21, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)  
CMTR G20818-019CM, Test Mark AF-459 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E22, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-020CM, Test Mark AF-460 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E3, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-021CM, Test Mark AF-461 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-24, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-022CM, Test Mark AF-462 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E25, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-023CM, Test Mark AF-463 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E26, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-037CM, Test Mark AF-476, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve P-30, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-001CM, Test Mark AF-441, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-01, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-002CM, Test Mark AF-442, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-02, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-008CM, Test Mark AF-448, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-11, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-009CM, Test Mark AF-449, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-12, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-010CM, Test Mark AF-450, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-13, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR NS1462 Rev 3, Lincoln Electric Lot No. 958E for Outersshield 91K2-HSR with AWS Class. E91TG-H4 of SFA-5.29, 12/14/2010

#### Welding Procedures:

CB&I WPS E91TG-H4, Rev 4 dated 02/06/2012 with supporting PQR 12691 for PWHT

CB&I WPS TAU, Rev 1 dated 04/10/2012 for thermocouple attachment unit

CB&I WPS Pin, Rev 0 dated 02/27/2012 for insulation pins

#### Corrective Action / Nonconformance Records/Surveillances:

CB&I Observation Report OB-VES-2012-286

CB&I Nonconformance Report No. U3-076

SNC Service Request 445512 - Containment Vessel Course S1 weld seam cracking

Westinghouse Surveillance Plan/Report, SVO-CBI-CV-0065, Rev 0 dated 04/27/2012

#### Design Report:

IHI ASME Data Report Form N-2 dated 9/05/2011 with National Board No. 2695 for nuclear part B3-B4 (S/N IN-4758), includes electrical penetration sleeves E01 and E02, and mechanical penetration sleeve P30

IHI ASME Data Report Form N-2 dated 8/24/2011 with National Board No. 2689 for nuclear part B3-B2 (S/N IN-4756), includes electrical penetration sleeves E11, E12, and E13

IHI ASME Data Report Form N-2 dated 8/17/2011 with National Board No. 2676 for nuclear part B3-A3 (S/N IN-4751), includes electrical penetrations E20 thru E26

Miscellaneous:

CB&I Purchase Order 645993 for 1.2 mm diameter Flux Cored wire spools, Rev 3 dated 4/21/10

Thermo Electric Company C of C SOA12-1785, Part No. SR003-812 for W-Q/QS-20-KK type K thermocouple per ASTM E230-03

TE Wire & Cable C of C W93000-SJ, Part No. FW3111, Lot. No. W90876-1 for Q/QS-20-KK type K thermocouple per ANSI-MC96.1-82

CB&I Calibration and Verification Check Record for Superheat FGH Model DAQ4 Data Acquisition Recorder S/N 14211

CB&I Calibration and Verification Check Record for Superheat FGH Model DAQ4 Data Acquisition Recorder S/N 14214

CB&I Calibration and Verification Check Record for Superheat FGH Model DAQ4 Data Acquisition Recorder S/N 14215

CB&I Calibration and Verification Check Record for Superheat FGH Model DAQ4 Data Acquisition Recorder S/N 14219

CB&I Receipt Inspection Report – Nuclear No. U3-091 for B3-A3 S1-Shell Plate of bottom ring with electrical penetrations E20 thru E26 dated 1/17/12

**ITAAC Number 96 (2.2.01.04aii)**

CMTR 5994-1, Heat No. 6-6901 Plate No. EA262A, JFE Steel Corporation for SA-738 Grade B S1 shell plate ID mark B3-A7-1, 7/30/2010

CMTR 5995-3, Heat No. 6-6901 Plate No. EA261A, JFE Steel Corporation for SA-738 Grade B S1 shell plate ID mark B3-A3-1 with electrical penetrations E20 thru E26, 7/30/2010

CMTR 6006-5, Heat No. 6-6905 Plate No. EN176A, JFE Steel Corporation for SA-738 Grade B S2 shell plate ID mark B3-B2, 9/7/2010

CMTR 6004-2, Heat No. 5-0532 Plate No. E5130A, JFE Steel Corporation for SA-738 Grade B S2 shell plate ID mark B3-B4, 8/27/2010

CMTR G20818-017CM, Test Mark AF457 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E20, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-018CM, Test Mark AF-458 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E21, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-019CM, Test Mark AF-459 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E22, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-020CM, Test Mark AF-460 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E3, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-021CM, Test Mark AF-461 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-24, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

CMTR G20818-022CM, Test Mark AF-462 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E25, 8/10/2011 (includes reports for NDE-UT, MT

and PT; and temperature versus time strip charts for Q&T and PWHT)  
CMTR G20818-023CM, Test Mark AF-463 Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E26, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)  
CMTR G20818-037CM, Test Mark AF-476, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve P-30, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)  
CMTR G20818-001CM, Test Mark AF-441, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-01, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)  
CMTR G20818-002CM, Test Mark AF-442, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-02, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)  
CMTR G20818-008CM, Test Mark AF-448, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-11, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)  
CMTR G20818-009CM, Test Mark AF-449, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-12, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)  
CMTR G20818-010CM, Test Mark AF-450, Heat No. J9KC096, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-13, 8/10/2011 (includes reports for NDE-UT, MT and PT; and temperature versus time strip charts for Q&T and PWHT)

**ITAAC Number: 93, 91, & 96 (2.2.01.03a, 2.2.01.02a, & 2.2.01.04a.ii), Vogtle Unit 4**

**ITAAC Number 93 (2.2.01.03a)**

Certified Material Test Reports:

CMTR 6046-4, Heat No. 5-5151 Plate No. JJ147A, B (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C8-1 (BH-3), 10/29/2010  
CMTR 6025-15, Heat No. 6-8901 Plate No. J8067A, B, C (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C8-2 (BH-3), 10/29/2010  
CMTR 6046-5, Heat No. 5-5157 Plate No. J9369A, B (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C9-1 (BH-3), 10/29/2010  
CMTR 6025-3, Heat No. 6-8901 Plate No. J1187C, D (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C9-2 (BH-3), 09/27/2010

Welding Procedure:

CB&I WPS E91TG-H4, Rev 4 dated 02/06/2012 with supporting as-welded PQRs 12690 and 12723

**ITAAC Number 91 (2.2.01.02a)**

Certified Material Test Reports:

CMTR 6046-4, Heat No. 5-5151 Plate No. JJ147A, B (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C8-1 (BH-3), 10/29/2010

CMTR 6025-15, Heat No. 6-8901 Plate No. J8067A, B, C (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C8-2 (BH-3), 10/29/2010

CMTR 6046-5, Heat No. 5-5157 Plate No. J9369A, B (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C9-1 (BH-3), 10/29/2010

CMTR 6025-3, Heat No. 6-8901 Plate No. J1187C, D (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C9-2 (BH-3), 09/27/2010

Welding Procedure:

CB&I WPS E91TG-H4, Rev 4 dated 02/06/2012 with supporting as-welded PQRs 12690 and 12723

**ITAAC Number 96 (2.2.01.04aii)**

Certified Material Test Reports:

CMTR 6046-4, Heat No. 5-5151 Plate No. JJ147A, B (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C8-1 (BH-3), 10/29/2010

CMTR 6025-15, Heat No. 6-8901 Plate No. J8067A, B, C (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C8-2 (BH-3), 10/29/2010

CMTR 6046-5, Heat No. 5-5157 Plate No. J9369A, B (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C9-1 (BH-3), 10/29/2010

CMTR 6025-3, Heat No. 6-8901 Plate No. J1187C, D (including NDE-UT method and results), JFE Steel Corporation for SA-738 Grade B bottom head plate ID mark A4-C9-2 (BH-3), 09/27/2010

**ITAAC Number 763 & 767 (3.3.00.02a.i.d & 3.3.00.02a.ii.d)**

**Procedures**

Mistras

100-QC-005.2, Qualification and Certification of Nondestructive Test Personnel, Rev 2

100-QC-005.2G, Rev 1 Qualification and Certification of Nondestructive Test Personnel in Accordance with ASNT SNT-TC-1A, 1992 Edition and Shaw Power Group, Nuclear Division Requirements

100-PT-304 Liquid Penetrant Examination Rev 1

100-MT-302, Magnetic Particle Examination in Accordance with AWS Structural Steel Welding Code, Rev 2

Shaw Nuclear Services, Inc.

QS 8.11 Welding Material Control, Rev D

NCSP 2-12-2, Construction Quality Completion Program

NCSP 3-2-0, On-Site Modular Assembly (AP 1000 Projects)

NCSP 3-60-1, Structural Welding, Rev 1

NCSP 3-12-1, Control of Special Processes  
NCSP 3-66-1, Welder Qualification Program  
FMC-1, Filler Metal Control, Rev 1  
WQ-1, Qualification of Welders and Welding Operators, Rev 0  
Qualification records for weld inspector G. Findlay  
QAD 2.15, Qualification and Certification of Inspection and Test Personnel, Rev F  
QAD 2.14, Qualification and Certification of Nondestructive Examination Personnel, Rev J  
Quality Inspection Plan F-S561-04  
F-Q445-04, Receipt Inspection – Modules- Structural

### **Work Packages**

SV3-CA20-S4W-CV0308 CA20 SA1 Wall Submodule Assembly 1, 2, 3, 4, 5, 6, 7, 8

### **Specifications**

APP-CA20-S5-02004, Structural Outline Vertical Sections / Views  
APP-CA20-S5-06004, Structural Outline Vertical Sections / Views  
APP-CA20-S5Y-00001, Structural Module CA20 General Notes  
APP-CA20-S5Y-00002, Structural Module CA20 General Notes  
APP-CA20-S5Y-00001, Structural Module CA20 General Notes  
APP-CA20-S5Y-00002A, Structural Module CA20 General Notes  
APP-CA20-S5Y-00002, Structural Module CA20 General Notes  
APP-CA20-S5Y-00003, Structural Module CA20 General Notes  
APP-CA20-S5Y-00004, Structural Module CA20 General Notes  
APP-CA20-S5Y-00005, Structural Module CA20 General Notes  
APP-CA20-S5Y-00100-00103, Auxiliary Building Areas 5 & 6 Module CA20 Standard Structural Details  
Domestic AP1000 Project Specification, Nondestructive Examination, SV0-G1-T1-001 Rev 2  
GWS-2 AWS D1.1- Structural Steel, General Welding Specification, Rev 1  
GWS-5 AWS D1.6- Stainless Structural Steel General Welding Specification

### **Corrective Action / Nonconformance Records:**

CAR 2012-0693  
CAR 2012-0682  
CAR 2012-0122  
CR 469856  
CR 468859  
CR 469865  
CR 467742  
Nonconformance and Disposition Report V-ND-11-0204

### **Miscellaneous:**

SV3-CA20-S4K-CV0376  
SV3-CA20-SUX-001, Rev 9

MT inspection report V-2012-MT-030

Weld Procedure Specification (WPSs) No.: WPS2-1.1M02 Rev 2, WPS2-1.1M71 Rev 0, WPS2-1.1T71 Rev 0

Procedure Qualification Record (PQRs) No.: SP154, SP160, SP227, SP155, SP157, SP158, SP156,

Surveillance Report S-132175-2012-028

CMTRs and COCs for weld filler metal heat #s: 1039P, 1039M

APP-CA20-S5-01001, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_01 Isometric Views

APP-CA20-S5-01002, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_01 Break-Down

APP-CA20-S5-01003, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_01 Structural Outline Horizontal Sections/ Views

APP-CA20-S5-01004, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_01 Structural Outline Vertical Sections/ Views Sheet 1

APP-CA20-S5-01005, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_01 Structural Outline Specific Details Sheet 1

APP-CA20-S5-01006, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_01 Structural Outline Specific Details Sheet 2

APP-CA20-S5-01007, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_01 Structural Outline Vertical Sections/ Views Sheet 2

APP-CA20-S5-06001, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_06 Isometric Views

APP-CA20-S5-06002, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_06 Break-Down

APP-CA20-S5-06003, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_06 Structural Outline Horizontal Sections/ Views

APP-CA20-S5-06004, Auxiliary Building Areas 5 & 6 Module CA20 Submodule CA20\_06 Structural Outline Vertical Sections/ Views

## **NON-ITAAC-RELATED INSPECTIONS**

### **IP 40600**

#### **Documents Reviewed:**

##### Shaw

CSI 2-11-14, Work package Planning, Development, Approval and Closure, Revision (03/09/2012)

CSI 2-19-1, Construction Materials Management, Revision (01/20/2012)

QS 15.1, Nonconformance and Disposition report, Rev G

QS 16.5, Corrective Action System, Rev F

NCSP 2-7-0, Post Acceptance Work Control, Revision (9/30/2010)

##### WEC

APP-GW-GAP-114, Non-Conformance Interface Procedure, Rev 0

APP-GW-GAP-117, Implementation and Control of Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC), Rev 2

APP-GW-GAP-140, AP1000 Licensing Applicability Determination and 10 CFR 50.59/10 CFR 52 Appendix D Section VIII Screening, Rev 0

F-APP-GW-GAP-140-1/APP-FSAR-GLN-YYY, Form Westinghouse AP1000 Licensing



Applicability Determination and 10 CFR 50.59/10 CFR 52 Appendix D Section VIII Screening, Rev 2  
 APP-GW-GAP-147, AP1000 Current Licensing Basis Review, Rev 0  
 APP-GW-GAP-420, Engineering and Design Coordination Report, Rev 5  
 APP-GW-GAP-428, Control of Nonconforming Items for the AP1000 Program, Rev 1  
 APP-GW-GAP-430, Engineering and Design Coordination Report, Rev 5  
 APP-GW-GAP-433, AP1000 Witness and Hold Point Process, Rev 1  
 APP-GW-TSM-309, Westinghouse ITP Tracking: ITAAC / LCO / Repetitive Task, Revision, Rev 0  
 APP-GW-TSP-105, Preparation of AP1000 Startup & Operations Support Test Procedures and Specifications  
 APP-GW-GDP-008, Guidance on the Use of ITAAC in SmartPlant Foundation, Rev 1  
 SV0-GW-GAP-111, Identification and Documentation of Manufacturing-Related ITAACs for Vogtle 3 & 4, Rev 0  
 SV0-GW-GBH-300, Vogtle 3 & 4 project execution Plan, Rev 2  
 SV0-GW-GBP-8000, Vogtle Units 3 & 4 Execution and Closure Program, Rev 0  
 SV0-GW-GLH-001, Vogtle 3 & 4 Project Licensing Plan, Rev 0  
 SV0-GW-GLH-002 Vogtle Units 3 & 4 ITAAC Program Execution Plan, Rev 0  
 WEC 16.2, Corrective Actions Process, Rev 4.1  
 APP-MV60-Z5-003, Appendix 3 – Technical and Quality Requirements for AP1000, ASME Section VIII Demineralizers, Guard Bed and Delay Beds, MV60, Rev 3  
 APP-MV99-Z5-003, Appendix 3 – Technical and Quality Requirements for AP1000, MV99 Spent Resin Tanks, Rev 1  
 SV0-MT01-Z5-003, Appendix 3 Technical Requirements for the AP1000 Core Makeup Tank Purchase Order for the Vogtle Project, Rev 2  
 SV0-MT02-Z5-003, Appendix 3 - Technical Requirements for the AP1000 Accumulator Tank, Rev 2  
 APP-RCS-ITH-010, Westinghouse Standard Plant ITAAC 2.1 02.05a.ii Performance and Documentation Plan, Rev 0  
 APP-CVS-ITH-023, Westinghouse Standard Plant ITAAC 2.3 02.01 Performance and Documentation Plan, Rev 0  
 APP-RCS-ITH-049, Westinghouse Standard Plant ITAAC 2.1 02.11c.ii Performance and Documentation Plan, Rev 0  
 APP-CVS-ITH-013, Westinghouse Standard Plant ITAAC 2.3 02.08a.ii Performance and Documentation Plan, Rev 0  
 APP-RXS-ITH-007, Westinghouse Standard Plant ITAAC 2.1 03.09c Performance and Documentation Plan, Rev 0  
 APP-CNS-ITH-001, Westinghouse Standard Plant ITAAC 2.2 01.04a.ii Performance and Documentation Plan, Rev 0

### SCN

Training Package – Procedure APP-GW-GAP-117, DAPIP 5-16, Implementation and Control of ITAAC  
 Training Slides – SNC Vogtle Units 3 & 4 ITAAC Basics (Shaw)  
 Overview Slides – NRC ITAAC Program Inspection, May 2012  
 Construction Management Review Committee (CMRC) package, 5/18/2012  
 Construction Management Review Committee (CMRC) package, 5/22/2012  
 ND-LI-VNPO-004, ITAAC Closure Review, Rev 1  
 ND-LI-VNP-001, ITAAC Performance and Documentation Plan Review, Rev 3  
 ND-LI-VNP-006, Specific Implementation and Control of ITAAC, Rev 1  
 ND-LI-VNP-009, CR Evaluation for ITAAC Applicability, Rev 1

ND-AD-002, Nuclear Development Corrective Action Program, Rev 13  
 ND-AD-002, Nuclear Development Corrective Action Program, Rev 12  
 ND-AD-VNP-001, Integrated Corrective Action Program, Rev 1  
 NMP-GM-003-F04, Self-Assessment Final Report (Focused Self Assessment), Rev 1.0  
 ND-LI-VNP-003, 50.59 / Departure Evaluations for Vogtle 3&4, Rev 3.0  
 ND-LI-VNP-002, Applicability Determination and 50.59 / Departure Screening for VEGP 3&4, Rev 4.0  
 ND-LI-013-F01, Licensing Position – Shear Wave Velocity Testing Finish Grade, Rev 3.0  
 ND-12-950, Licensing Position – Functional Arrangement ITAAC for Spent Fuel Pool Cooling System (SFS)  
 Condition Reports Screening package for May 23, 2012  
 ND-TR-002-F01 Training Plan for (Licensing ITAAC Version 1.0)  
 ND-JPR-LI-005, JPR Approval (ITAAC Performance and Documentation Plan Review Training), Version 1.0  
 ND-JPR-LI-007, Job Performance Requirement (Licensing Position Training), Version 3.0  
 ND-JPR-LI-010, JPR Approval (VNP 3 and 4 Applicability Determination Process and the 10 CFR 50.59 and 10 CFR 52 Appendix D Section VIII Processes), Version 3.0  
 ND-JPR-LI-014, Job Performance Requirement (ITAAC Closure Review), Version 1.0  
 ND-JPR-LI-015 Job Performance Requirement (Understanding NRC Inspection Plans for ITAAC), Version 1.0  
 ND-JPR-LI-013, Job Performance Requirement (Understanding NEI 08-01), Version 1.0  
 ND-TR-002-F02 Job Performance Requirement, Version 2.0  
 ND-TR-002-F03 SME Trainer and Evaluator Approval, Version 3.0  
 ND-TR-002-F04 Training Exemption, Version 2.0

#### **IP 35007, Appendix 7**

Nuclear Development Quality Assurance Report Number ND-QA-2011-S39, Safety Related Reinforcing Steel for Nuclear Island  
 Nuclear Development Quality Assurance Report Number ND-QA-2011-S27, Safety Related Reinforcing Steel for Nuclear Island  
 SNC inspection report number ND-QA-2011-S24, Safety-related Reinforcing Steel for Nuclear Island  
 SNC inspection report number ND-QA-2011-S10, Safety-related Reinforcing Rebar for Nuclear Island  
 NDQA 2012-S03, Fabrication of Module CA20 Sub-Assembly  
 SNC surveillance report number NDQA-2012-S25, Unit 3 Containment Vessel Base Metal Repair  
 SNC Nuclear Development Quality Assurance Manual, Revision 10

CR 344629 – Rebar diameter not verified  
 CR 349876 – Source inspector lacking certificate of qualification  
 CR 357013 – Rebar diameter measurements not performed  
 CR 390737 – Inadequate source inspection for floor module CA20\_34  
 CR 401948 – Attributes on inspection attribute list not implemented properly  
 CR 407359 – Shaw source inspection report not correct

#### **IP 35007, Appendix 9**

QS 9.11, Exothermic Splicing of Reinforcing Steel, Rev F  
 QSI 11.1-V, Testing Reinforcing Steel and Mechanical Splices for Reinforcing Steel Bars, Rev B  
 ASTM A370-07 Standard Test Methods and Definitions for Mechanical Testing of Steel Products

SV3-CR01-Z0-010, Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel, Rev 4  
132175-J400A-00065, Erico Lenton Instruction Manual CADWELD for Rebar Splicing System, Issue B  
NCSP 3-43-1, Exothermic Splicing of Reinforcing Steel, Rev 1  
Quality inspection plan F-S510, Cadwelding: Exothermic Reinforcing Steel Splicing, Rev 0

**IP 35007, Appendix 10**

SV0-CC01-Z0-003, Anchoring to Concrete, Rev 1  
SV3-1000-CEK-CV0476 Construction Aid Details For Installation of Embedded Steel Plates In Unit 3 Nuclear Island Basemat  
S&W Standard Nuclear Quality Assurance Program (SWSQAP 1-74A)  
SV3-1000-CRW-CV0295, Unit Three Nuclear Island Installation of Reinforcing Bar for Basemat  
SV3-1000-CEW-CV0296, Unit Three Nuclear Island Basemat Embedded Steel Plates  
QC IR C112-02-12-0007  
QC IR C112-02-12-0003

**IP 35007, Appendix 13**

132175-QA-F-S530-02 Nuclear Island Membrane for MSE Wall, Rev 2  
SV0-AT01-Z0-001 Nuclear Island Waterproofing Membrane, Rev 5  
SV0-AT01-Z0-800001 Nuclear Island Waterproofing Membrane Installation, Rev 3  
NPP10-01-03, Material Receipt, Storage, and Control, Rev 3  
Shaw Standard Nuclear Quality Assurance Program, SWSQAP 1-74A, Rev B  
QS 13.11, Material/Equipment Storage, Rev C.

**IP 35007, Appendix 15**

V-ND-11-0430  
V-ND-11-0409  
V-ND-11-0414  
V-ND-11-0451  
V-ND-11-0420  
V-ND-11-0332  
V-ND-12-0187  
V-ND-12-0263  
V-ND-12-0315  
V-ND-12-0317  
V-ND-12-0335

**IP 35007 – Appendix 16**

CAR 2012-0298  
CAR 2012-270  
CAR 2011-0735  
CAR 2012-0642  
CAR 2012-0643  
CAR 2012-0644  
CAR 2012-0645  
CAR 2012-0267  
CR 451975  
CR 448230  
CR 464475

CR 459707  
CR 477067

**IP 35007 – Appendix 17**

Nuclear Quality Standard 17.1, Quality Assurance Records System  
Nuclear Construction and Startup Procedure 2-16-2, Construction Documents, Records Management and Control, Rev G,  
PWR-RIM-001, Records Management Program , Rev 1  
PWR-RIM-002, Records Management Disposition and Retention , Rev 1  
Quality Assurance Directive 17.4, Quality Assurance Records Management Plan , Rev H  
Power Records Information Management Procedure 00007, Filing Criteria and System, Rev 0  
Power Records Information Management Procedure 00008, Project Records Retention, Rev 0  
Power Records Information Management Procedure 00010, Rev 0, Construction Site Document Control  
Power Records Information Management Procedure 00011, Communication and Project Management Records, Rev 0  
Power Records Information Management Procedure 00012, Procurement and Subcontract Commercial Records, Rev 0  
Power Records Information Management Procedure 00013, Engineering Records, Rev 0  
Power Records Information Management Procedure 00015, Record Archival, Rev 0

**40A3 Followup of Licensee Reports and NOVs**

National Technical Systems Test Report TR63642-12N Acceptance Verification Report for On-site and Laboratory testing of Integritytank Waterproofing Membrane System, Rev 1

## LIST OF ACRONYMS

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ACI	American Concrete Institute
ADAMS	Agency-Wide Document Access and Management System
AISC	American Institute of Steel Construction
AP1000	Westinghouse Advanced Passive Pressurized Water Reactor
ANST	American Society of Nondestructive Testing
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
CAQ	Condition Adverse to Quality
CAR	Corrective Action Report
CB&I	Chicago Bridge & Iron
CFR	Code of Federal Regulations
CMTR	Certified Material Test Report
COC	Certificate of Conformance
COL	Combined License
CR	Condition Report
CV	Containment Vessel
CVBH	Containment Vessel Bottom Head
DCD	Design Control Document
EDCR	Engineering and Design Coordination Report
FE	Field Engineer
GMAW	Gas Metal Arc Welding
IHI	IHI Corporation
EGM	Enforcement Guidance Memorandum
ICN	ITAAC Closure Notification
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report (NRC/Shaw)
IR	Issue Report (WEC)
IRWST	In-Containment Refueling Water Storage Tank
ITAAC	Inspection, Test, Analysis, and Acceptance Criteria
MAB	Module Assembly Building
MRR	Material Receipt Record
MT	Magnetic Particle Examination
M&TE	Measuring and Test Equipment
NCR	Nonconformance Report
NCSP	Nuclear Construction and Startup Procedure
N&D	Nonconformance and Disposition Report
NDQAM	Nuclear Development Quality Assurance Manual
NDE	Nondestructive Examination
NI	Nuclear Island
NIRMA	Nuclear Information and Records Management Association
NOV	Notice of Violation
NQA	Nuclear Quality Assurance
NQAM	Nuclear Quality Assurance Manual
NRC	Nuclear Regulatory Commission
NTS	National Technical Systems
OR	Observation Report

PO	Purchase Order
PQR	Procedure Qualification Record
PT	Liquid Penetrant Examination
PWHT	Postweld Heat Treatment
QA	Quality Assurance
QAP	Quality Assurance Program
QAPD	Quality Assurance Program Description
QC	Quality Control
QS	Quality Standard
Q&T	Quenched and Tempered (heat treatment)
Rev	Revision
RIR	Receipt Inspection Record
RT	Radiographic Examination
SAW	Submerged Arc Welding
SSCs	Structures, Systems and Components
SDP	Significance Determination Process
SFT	Solution Film Testing
Shaw	Shaw Stone and Webster, Inc
SMS	Shaw Modular Solutions
SMAW	Shielded Metal Arc Welding
SNC	Southern Nuclear Operating Company, Inc (Licensee)
SR	Service Request
SRPD	Safety Related Parts Dedication
SWSQAP	Shaw Standard Nuclear Quality Assurance Program
SW	Stud Welding
TE	Technical Evaluation
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
UT	Ultrasonic Examination
VEGP	Vogtle Electric Generating Plant
VIO	Violation
WEC	Westinghouse Electric Company, LLC
WPM	Waterproofing Membrane
WPS	Welding Procedure Specification
WRS	Radioactive waste drain system

## ITAAC INSPECTED

The inspectors verified portions of the following ITAAC during this inspection period:

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
760	3.3.00.02a.i.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.	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.	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.
763	3.3.00.02a.i.d	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.	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.	A report exists which reconciles deviations during construction and concludes that the as-built structures in the radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.
764	3.3.00.02a.ii.a	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	An inspection of the as-built concrete thickness will be performed.	A report exists that concludes that the containment internal structures as-built concrete thicknesses conform to the building sections defined in Table 3.3-1.

		integrity and the safety-related functions.		
767	3.3.00.02a.ii.d	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.	An inspection of the as-built concrete thickness will be performed.	A report exists that concludes that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building sections conform to the building sections defined in Table 3.3-1.
93	2.2.01.03a	Pressure boundary welds in components identified in Table 2.2.1-1 as ASME Code Section III meet ASME Code Section III requirements.	Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.	A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.
91	2.2.01.02a	The components identified in Table 2.2.1-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the as-built components as documented in the ASME design reports.	The ASME Code Section III design reports exist for the as-built components identified in Table 2.2.1-1 as ASME Code Section III.
96	2.2.01.04a.ii	The components identified in Table 2.2.1-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.	Impact testing will be performed on the containment and pressure-retaining penetration materials in accordance with the ASME Code Section III, Subsection NE, to confirm the fracture toughness of the materials.	A report exists and concludes that the containment and pressure retaining penetration materials conform with fracture toughness requirements of the ASME Code Section III.