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

August 6, 2012

Mr. Ron Clary
Vice President, New Nuclear Deployment
South Carolina Electric and Gas, LLC
P.O. Box 88 (Mail Code P40)
Jenkinsville, SC 29065-0088

SUBJECT: SOUTH CAROLINA ELECTRIC AND GAS V.C. SUMMER NUCLEAR STATION UNITS 2 AND 3 - NRC INTEGRATED INSPECTION REPORTS 05200027/2012-003, 05200028/2012-003 AND NOTICE OF VIOLATION

Dear Mr. Clary:

On June 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your V.C. Summer Nuclear Station Units 2 and 3. The enclosed inspection report documents the inspection results, which the inspectors discussed with you and other members of your staff on June 27, 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. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the NRC identified one finding, associated with one violation that was evaluated under the construction significance determination process as having very low safety significance (Green).

The violation was evaluated in accordance with the NRC Enforcement Policy, Section 2.3 and the temporary enforcement guidance outlined in enforcement guidance memorandum number EGM-11-006. The current Enforcement Policy is included on the NRC's Web site at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html. The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the enclosed report. As described in Section 2.3, "Disposition of Violations," of the NRC Enforcement Policy, the violation is cited in the Notice, because for reactor facilities under construction in accordance with 10 CFR Part 52, the site corrective action program must have been demonstrated to be adequate prior to the issuance of non-cited violations for NRC identified violations. As of this inspection, the NRC had not yet made this determination for V.C. Summer Nuclear Station Units 2 and 3.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements. If you contest the violation or

significance of the NOV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region II; (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) NRC Senior Resident Inspector at V.C. Summer Nuclear Station Units 2 and 3.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its Enclosures and Attachments, and your response 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.: 05200027, 05200028
Combined Licenses Numbers: NPF-93 (Unit 2), NPF-94 (Unit 3)

Enclosures: 1. Notice of Violation (Notice)
2. NRC Inspection Report 05200027/2012-003; 05200028/2012-003; w/attachment: Supplemental Information

cc w/encl: (See page 4-5)

significance of the NOV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region II; (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) NRC Senior Resident Inspector at V.C. Summer Nuclear Station Units 2 and 3.

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05200027/2012-003;
05200028/2012-003;
with attachment:
Supplemental Information

cc w/encl: (See page 4-5)

× PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE × NON-SENSITIVE

ADAMS: × Yes ACCESSION NUMBER: ML 12219A188 × SUNSI REVIEW COMPLETE ☐ FORM 665 ATTACHED

OFFICE	RII: DCP	RII:DCP	RII: DCP	RII: DCP	RII: DCI	HQ	RII: DCI
SIGNATURE	RLJ3	TCS for MSM4	TCS for PBD1	ASA1	JPB2	SXC3	TCS for DMF1
NAME	R. Jackson	M. Magee	P. Donnelly	A. Artayet	J. Bartleman	S. Crane	D. Failla
DATE	07/29/2012	08/02/2012	08/02/2012	07/20/2012	07/27/2012	07/26/2012	08/02/2012
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICE	RII: DCI	RII: DCI	RII: DCP	RII: DCI	RII: DCI	RII: DCI	RII: DCI
SIGNATURE	DMH3	CTJ1	SLL1	JXL2	ADM2	CNO1	EJP1
NAME	D. Harmon	C. Jones	S. Lewis	J. Lizardi	A. Masters	C. Oelstrom	E. Patterson
DATE	07/23/2012	07/30/2012	07/19/2012	07/27/2012	07/30/2012	07/23/2012	07/30/2012
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICE	RII: DCI	RII: DCI	HQ	HQ	RII: DCP	RII: DCP	RII:
SIGNATURE	DJS3	TCS for SPS2	SMS4	CRW	TCS	MEE	
NAME	J. Seat	S. Smith	S. Smith	C. Welch	T. Steadham	M. Ernstes	
DATE	07/30/2012	08/02/2012	07/31/2012	07/19/2012	08/02/2012	08/02/2012	
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\CCI\DCP\CPB4\Project V C Summer\Inspection Reports\2012-003 Report Feeders\Summer 2nd Qtr Report - FINAL.docx

cc w/encl:

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Letter to Ron Clary from Michael Ernstes dated August 6, 2012.

SUBJECT: SOUTH CAROLINA ELECTRIC AND GAS V.C. SUMMER NUCLEAR STATION UNITS 2 AND 3 - NRC INTEGRATED INSPECTION REPORTS 05200027/2012-003, 05200028/2012-003 AND NOTICE OF VIOLATION

Region II Regional Coordinator, OEDO (M. Kotzalas)
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T. Kozak, NRO
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R. Haag, RII
C. Ogle, RII
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PUBLIC

NOTICE OF VIOLATION

South Carolina Electric & Gas Company
V.C. Summer Units 2 and 3

Docket Nos.: 052-00027, 052-00028
License Nos.: NPF-93, NPF-94

During an NRC inspection conducted on May 14-18 one violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Criterion XVII, Quality Assurance Records, of 10 CFR Part 50, Appendix B, requires, in part, that sufficient records be maintained to furnish evidence of activities affecting quality.

Section 17.2 of the South Carolina Electric & Gas Co., V.C. Summer Units 2 and 3 Quality Assurance Program Description, Revision 2, states in part, that the licensee will manage the storage of QA Records in electronic media consistent with Nuclear Information and Records Management Association Guideline TG 11-1998.

Nuclear Information and Records Management Association Guideline TG11-1998, Authentication of Records and Media, Section 4.1, stated that records should be considered valid for storage only if properly authenticated by the organization initiating, reviewing, and/or completing the record. Definition 2.1 stated in part, that authentication is the process whereby a record is confirmed to be in complete and exact accordance with fact or reality.

Contrary to the above, on or before May 18, 2012, the licensee failed to adequately ensure that quality assurance records converted into electronic format were sufficient to furnish evidence of activities affecting quality. Specifically, procedure QSI-17.1, Quality Assurance Records Processing, Revision C, did not provide sufficient measures to ensure that all pages contained in document packages were exactly in accordance with the source document.

This violation is associated with a Green construction significance determination process finding and has been identified as Violation 05200027/2012-003-02, 05200028/2012-003-02.

Pursuant to the provisions of 10 CFR 2.201, South Carolina Electric and Gas Company is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region II, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and

should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response 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, it should not include any personal privacy, proprietary, or safeguards 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 delete such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (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.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 6th day of August, 2012

U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Nos.:	05200027; 05200028
License Nos.:	NPF-93 (Unit 2), NPF-94 (Unit 3)
Report Nos.:	05200027/2012-003; 05200028/2012-003
Licensee:	South Carolina Electric and Gas
Facility:	V.C. Summer Nuclear Station Units 2 and 3
Location:	Jenkinsville, SC
Inspection Dates:	April 1 through June 30, 2012
Inspectors:	R. Jackson, Sr. Construction Resident Inspector, CPB4 M. Magee, Resident Inspector, CPB4 P. Donnelly, Resident Inspector, CPB4 A. Artayet, Sr. Construction Inspector, CIB3 J. Bartleman, Sr. Construction Inspector, CIB3 S. Crane, Vendor Inspector, CMVB D. Failla, Construction Inspector, CIB3 D. Harmon, Construction Inspector, CIB3 C. Jones, Sr. Construction Inspector, CIB1 S. Lewis, Construction Project Inspector, CPB2 J. Lizardi, Construction Inspector, CIB2 A. Masters, Sr. Construction Inspector, CIB2 C. Oelstrom, Construction Inspector, CIB2 E. Patterson, Construction Inspector, CIB3 J. Seat, Construction Inspector, CIB2 S. Smith, Sr. Construction Inspector, CIB2 S. Smith, Reactor Operations Engineer, CEVB C. Welch, Sr. Reactor Operations Engineer, CITB
Approved by:	Michael Ernstes, Chief Construction Projects Branch 4 Division of Construction Projects

SUMMARY OF FINDINGS

Inspection Reports (IRs) 05200027/2012-003; 05200028/2012-003; 4/1/2012 – 6/30/2012; V.C. Summer Nuclear Station, Units 2 and 3; Quality Assurance Program Implementation During Construction and Pre-Construction Activities.

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. One Green finding associated with one notice of violation was identified consistent with the NRC Enforcement Policy, Section 2.3 and the temporary enforcement guidance outlined in enforcement guidance memorandum number EGM-11-006. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter (IMC) 2519P, "Construction Significance Determination Process". Construction Cross Cutting Aspects are determined using IMC 0613P, "Power Reactor Construction Inspection Reports - Pilot." The Nuclear Regulatory Commission's (NRC's) program for overseeing the construction of commercial nuclear power reactors is described in IMC 2506, "Construction Reactor Oversight Process General Guidance and Basis Document."

A. NRC and Self-Revealed Findings

Cornerstone: Construction/Installation

- (Green) The inspectors identified a Green programmatic finding and cited violation of 10 CFR Part 50, Appendix B, Criterion XVII, Quality Assurance Records, for failing to adequately assure that records established in electronic media were sufficient to furnish evidence of activities affecting quality. The licensee issued Condition Report 2012-0283 to address this issue and began a complete review of quality assurance records that have been converted into electronic format.

  This performance deficiency had greater than minor safety significance because the failure to adequately authenticate the content of quality assurance records, if uncorrected, could lead to loss of information that could render the quality of a construction activity unacceptable or indeterminate. As a result, the deficiency could preclude the licensee from being able to take appropriate action on safety-significant matters. The finding was associated with the construction/installation cornerstone and was evaluated under the construction significance determination process as outlined in Inspection Manual Chapter 2519P Appendix A. The finding was a non-technical programmatic finding associated with the quality assurance records program verification of a critical attribute related to accurately recording activities affecting quality. This finding is of very low safety significance (Green) because it is not a repetitive programmatic finding. The inspectors did not identify a cross-cutting aspect associated with this finding. (Section 4OA2.14)

REPORT DETAILS

1. CONSTRUCTION REACTOR SAFETY

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

2503 Construction Inspection Program: Inspections of Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Related Work

.1 ITAAC Numbers 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 V.C. Summer Unit 2 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 structural wall sub-modules for the proposed Unit 2 containment internals and radiologically controlled area of the auxiliary building: CA01_23, CA01_24, CA20_01, CA20_27, CA20_29, and CA20_72. Specifically, the inspectors measured the following sub-module components: 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 were 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 non-conformance 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 Plant-Specific Design Control Document (DCD), stated 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, the 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 required 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, the 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 the DCD.

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 DCD. 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 05200027/2012-003-01, Module Stud Spacing Requirements).

.2 ITAAC Numbers 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 V.C. Summer Unit 2 site. The inspectors performed independent measurements on the following sub-modules for the proposed Unit 2 containment internals and radiologically controlled area of the auxiliary building: CA01-23, CA01-24, CA20-01, CA20-27, and CA20-29.

Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

.3 ITAAC Number 760 / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 760 (3.3.00.02a.i.a) using the guidance in IPs 65001.01 and 65001.F. The

inspectors reviewed and observed activities associated with the CR-10 module of the nuclear island basemat, including, the following critical sections of the nuclear island basemat below the auxiliary building identified in Table 3.3-7 of the DCD:

- Bay between reference column lines 9.1 and 11, and K and L
- Bay between reference column lines 1 and 2 and K-2 and N

The inspectors reviewed the following documents related to reinforcing steel bars and splices, located in the area below the containment vessel, to ensure that work performed for the Unit 2 nuclear island basemat was in accordance with the following requirements:

- APP-CR01-Z0-011, Furnishing of Safety Related Reinforcing Steel;
- APP-CR01-Z0-010, Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel, Revision 6; and
- VS2-1010-CRW-002, Rebar Preassembly on CR10, Revision 0.

The inspectors observed construction activities associated with the installation of reinforcing steel bars and splices to verify the following:

- reinforcing steel installation was performed in accordance with the applicable specifications, codes, drawings, and procedures;
- craft who installed reinforcing steel splices were qualified;
- each splice was defined by location, crew, and type of splice; and
- inspections were performed during and after splicing by qualified inspection personnel.

To verify Quality Control (QC) receipt inspections were performed in accordance with their approved inspection plan, the inspectors reviewed the following QC receipt inspection reports for the following reinforcing steel splices:

- Shaw Quality Assurance Inspection Report Q445-11-0061, Rebar Couple Testing Threaded Bars; and
- Shaw Quality Assurance Inspection Report Q445-11-0048, Reinforcing Steel for the Nuclear Island Basement Bottom Layer 1.

The inspectors reviewed work package VS2-1010-CRW-002, to determine whether the appropriate steps, hold points, and QC inspections were identified for initial work related to the installation of the reinforcing steel bars and splices. The inspectors reviewed this work package, and the approved design changes to drawings, to determine whether the changes were implemented in the field and those applicable design changes were posted to the drawings maintained in the field. Specifically, the inspectors reviewed the implementation of the following Engineering and Design Coordination Reports (E&DCRs):

- APP-1010-GEF-002, Circumferential Bar Requirements for Lap Splices in Lieu of Mechanical Connectors;
- APP-1200-GEF-033, Addition of Vertical Bars to Wall N Below; and
- APP-1000-GEF-007, Additions to Nuclear Island Basemat Rebar.

Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

.4 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). The inspectors used the following 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, "Inspection of ITAAC-Related Installation of Mechanical Components," Sections 02.01, 02.02, and 02.05; and
- 65001.11, "Construction Inspection Program Inspection of ITAAC-Related Containment Integrity and Containment Penetrations," Sections 02.01, 02.02, 02.03, 02.05, and 02.11.

Procurement and Receipt Inspection

The inspectors reviewed 32 CMTRs on the following items from the material supplier to determine if chemical composition and mechanical properties (including impact testing) met the requirements of the American Society of Mechanical Engineers (ASME) Section III, Subsection NE code and the WEC containment vessel (CV) design specification:

- CV bottom head plates of the BH1, BH2, and BH3 sections;
- in-containment refueling water storage tank (IRWST) water treatment penetration P22 sleeve and insert plate;
- fuel transfer tube penetration P11 sleeve and insert plate;
- electrical penetration sleeves E27, E28 and E29; and
- B2-A2 shell plate.

Procedure Reviews

The inspectors reviewed implementing procedures for radiographic examination and solution film vacuum box testing of the containment vessel bottom head to determine if the procedures were approved in accordance with the Chicago Bridge and Iron (CB&I) Nuclear Quality Assurance Manual (NQAM) and met the requirements of ASME Section V and the WEC CV design specification.

The inspectors reviewed five CB&I welding procedure specifications (WPSs) for shielded metal arc welding, submerged arc welding, flux core arc welding, manual and automatic stud welding, and four material supplier WPSs for gas metal arc welding to determine if the procedures were qualified in accordance with the ASME Section IX.

Welder/Operator Qualifications

The inspectors reviewed 11 CB&I and 25 material supplier welder and welding operator qualification records and interviewed welders to determine if personnel were qualified to perform the prescribed welding activities and if those qualifications were maintained in accordance with ASME Section IX.

Production Controls

The inspectors observed CB&I in-process welding for the P11 penetration and BH2 to BH3 CV bottom head circumferential weld to determine if welding activities met the requirements of the WPS and used a weld traveler with established hold/witness points. The inspectors interviewed QC personnel and welders to ensure adequate checks were being performed on the weld joint prior to and during welding in accordance with the CB&I welding procedures and the requirements of ASME Section III, Subsection NE, including cleanliness and joint offset.

The inspectors observed welding activities to determine if preheat and interpass temperatures were monitored by welders and QC personnel in accordance with the WPS and the CB&I procedure for preheat and interpass temperature control. The inspectors interviewed QC personnel to determine if measurements were taken to ensure essential variables were monitored, recorded, reviewed, and within allowable ranges required by the WPS. The inspectors reviewed the welders summary report and BH2 Field Subassembly weld map to determine if individual portions of welds were linked to each welder's unique identifying number in accordance with ASME Section III, Subsection NE.

The inspectors conducted a walk-down of the filler metal storage area and interviewed CB&I personnel to determine if shielded metal arc welding stored electrodes were in accordance with the CB&I NQAM. The inspectors reviewed the calibration record for the digital data logger that CB&I used to monitor and record temperatures of stationary storage ovens for welding electrodes to determine if the measuring and test equipment (M&TE) was in accordance with CB&I's calibration procedure.

The inspectors observed machine submerged arc welding to verify welding parameters, preheat, and implementation of the welding activities were in accordance with the CB&I NQAM and ASME Section III, Subsection NE. The inspectors also observed the preheat of the BH1 to BH1 weld using induction heating to determine that preheat was performed in accordance with the requirements of ASME Section III, Subsection NE.

The inspectors observed the in-process containment vessel bottom head (CVBH) horizontal girth welding of BH2 to BH1, around seam No. 14, to determine if the welding was performed within the ranges allowed by the WPS and the requirements of the ASME Code Section III, Article NE-4000. During the welding, the inspectors also observed use of the shielded metal arc welding process to finish the weld cover pass. The inspectors reviewed the welding records associated with this weld to determine whether the following were performed in accordance with the CB&I NQAM:

- the welding activity was properly documented in the work traveler;
- the record provided adequate traceability to all aspects of the welding activity;

- the record adequately documented the following attributes: reference to procedure and welder qualifications, inspector qualifications, weld material certifications and receipt inspection reports, weld data or process records (travelers), weld maps, weld inspection records, and nondestructive examination (NDE) records; and
- accepted, rejected, and repaired items were documented in written reports.

Inspections/Nondestructive Examination

The inspectors reviewed weld inspection records to determine if weld inspection activities were performed in accordance with the CB&I NQAM and 10 CFR Part 50, Appendix B. The inspectors reviewed weld travelers for the CV bottom head BH-3 to BH-2 horizontal weld, C-3 to C13 seam "K" weld, C-2 to C-21 seam "F" weld, and B-15 to B-23 seam "W" weld to determine if weld travelers are used in accordance with the CB&I NQAM. The inspectors reviewed qualification and certification for two NDE Level II personnel to determine if they were qualified in accordance with the CB&I written practice and ASME Section V, Article 1.

The inspectors evaluated the CB&I radiographic testing (RT) procedure to determine if the method and acceptance criteria met ASME Code Section V and QA requirements. The inspectors observed the daily calibration process to determine if the densitometer was calibrated in accordance with ASME Section V, Article 2.

The inspectors reviewed final weld RT films and records to determine if radiography was performed and accepted in accordance with ASME Section III, Subsection NE. In addition, the inspectors reviewed magnetic particle examination (MT) and ultrasonic examination (UT) reports for material supplier penetration sleeve welds for E-27, E-28, E-29, P-11, and P-22. The inspectors reviewed a sample of MT, RT, and UT reports and RT films of full penetration butt and corner joints for the following welds, including weld repairs for the BH3 seam "F" weld:

- BH3 plates C-3 to C-13, butt joint "K";
- BH3 plates C-2 to C-21, butt joint "F";
- BH2 plates B-15 to B-23, butt joint "W";
- P11 penetration sleeve longitudinal butt joint (3 samples for NDE-MT, RT, and UT);
- P22 mechanical penetration corner weld of sleeve to insert plate; and
- E27, E28, and E29 electrical penetration corner welds of sleeve to insert plate.

Records

The inspectors conducted interviews, reviewed procedures and QA records, and conducted walk-downs of record storage facilities to determine if the records, including NDE-RT film and vacuum box testing records, were reviewed, approved, and stored in accordance with the requirements of the purchase order and 10 CFR Part 50, Appendix B.

Problem Identification and Resolution

The inspectors reviewed four nonconformance reports (NCRs) and six corrective action reports (CARs) to determine if issues were being identified and documented in the CB&I corrective action program. In addition, the inspectors reviewed corrective actions

associated with the NDE purchase specification and the RT procedure to determine if the applicable code year and addenda were incorporated into CB&I's implementing documents.

Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

.5 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). 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 procurement specifications to determine if parts and materials met the requirements of the DCD, ASME Section III Subsection NE, and 10 CFR Part 50 Appendix B, as described above in Section 1.2503.4 for Procurement and Receipt Inspection.

The inspectors reviewed CMTRs to determine if plate and weld filler metal met the requirements of ASME Section III Subsection NE, as described above in Section 1.2503.4 for procurement and receipt inspection. The inspectors reviewed CMTRs for nonstructural electrical attachment plate 35-5, and ¾'' and 1'' diameter Nelson anchor studs to determine if chemical composition and mechanical properties met the requirements of American Society for Testing and Materials (ASTM) A108 Grade 1015. The inspectors reviewed a CMTR for blank holed nuts to determine if temporary attachments (used as fit-up tools) were welded to the CV bottom head in accordance with ASME Section III, Subsection NE.

The inspectors reviewed records of individuals to determine if personnel qualifications met the requirements of ASME Section III Subsection NE, as described above in Section 1.2503.4 for both welder/operator qualifications and for inspections/nondestructive examination. The inspectors reviewed CB&I performance qualification test records for two welding operators who welded butt joints to determine if they were qualified in accordance with ASME Section IX.

The inspectors reviewed a CB&I weld traveler that specified two stud welding procedures for 3/4" and 1" diameter studs to determine if welding procedures were qualified in accordance with the ASME Sections III, Subsection NE, and Section IX.

The inspectors reviewed a CB&I weld traveler, CMTRs for plate and weld material, and welder qualifications for welding column stub A2-C54 to the CV bottom head A2-C13 BH3 plate to determine if welding was in accordance with ASME Section III, Subsection

NE for a temporary attachment. The inspectors reviewed the CB&I magnetic particle examination report for final acceptance of the weld to determine if NDE was performed in accordance with ASME Section V, Article 7.

The inspectors reviewed a weld traveler, CMTR, and welder qualification record for the weld joining electrical attachment pad plate 35-5 to BH3 to determine if that welding was performed in accordance with ASME Section III, Subsection NE for a nonstructural attachment.

The inspectors reviewed a sample of nonconformance reports and corrective action reports to determine if issues were being identified and documented in accordance with CB&I's corrective action program.

The inspectors reviewed the following three design reports:

- ASME Form N-2 Data Report for the CVBH A2-C33 BH3 plate to the P11 mechanical penetration (S/N IN-4786);
- ASME Form N-2 Data Report for the CVBH A2-C36 BH3 plate to the P22 mechanical penetration (S/N IN-4789); and
- ASME Form N-2 Data Report for the first course of bottom ring B2-A2 shell plate to the E27 through E29 electrical penetrations.

Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

.6 ITAAC Number 95 / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 95 (2.2.01.04a.i). The inspectors used the following NRC IP to perform these inspections:

- 65001.C, "Inspection of the ITAAC-Related Construction Test Program," Sections 02.01, 02.03, and 02.04.

The inspectors reviewed the CB&I solution film vacuum box testing procedure to determine if it was in accordance with the requirements of the CB&I NQAM and ASME Section III, Subsection NE, and Section V, Article 10. The inspectors observed vacuum box test equipment, interviewed NDE personnel, and reviewed two NDE personnel records and solution film testing records for the C-3 to C-13 seam "K" weld and B-15 to B-23 seam "W" weld to determine if testing was performed in accordance with approved procedures, and the test results met the WEC design requirements and ITAAC.

Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

.7 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). The inspectors used the following NRC IP to perform these inspections:

- 65001.F, Section 02.03.

The inspectors reviewed 26 CMTRs for plate, sleeve, and weld filler metal to determine if impact testing (Charpy V-notch and drop weight testing, as applicable) of pressure retaining materials was in accordance with the fracture toughness requirements of the WEC CV design specification and ASME Section III, Subsection NE. The inspectors reviewed CMTRs for the following components:

- CV bottom head plates of the BH1, BH2, and BH3 sections with the dollar plate;
- IRWST water treatment penetration P22 sleeve and insert plate;
- fuel transfer tube penetration P11 sleeve and insert plate;
- three electrical penetrations E27, E28 and E29 sleeves and B2-A2 shell plate;
- six weld filler metals from the material supplier and four from CB&I; and,
- 3/4'' and 1'' diameter shear connector studs.

Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

2504 Construction Inspection Program – Inspection of Construction and Operational Programs

.1 Inspection of 10 CFR Part 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance (IP 36100)

a. Inspection Scope

The inspectors conducted a review of the licensee's and their contractor's implementation of the policies and implementing procedures that govern their program regarding 10 CFR Part 21 (Part 21), Reporting of Defects and Noncompliance, and 10 CFR 50.55, Conditions of Construction Permits, Early Site Permits, Combined Licenses, and Manufacturing Licenses, paragraph (e) (50.55(e)), to determine whether their policies and programs complied with the requirements of Part 21 and 50.55(e). Specifically, the inspectors reviewed the programs for SCE&G, WEC, Shaw, CB&I, and AMEC. In addition, the inspectors observed Part 21 postings for compliance with the requirements of 10 CFR 21.6, Posting Requirements. The inspectors also reviewed the procedures that governed the control and correction of nonconforming items and

conditions adverse to quality to determine whether there was an adequate link to the Part 21 process.

As described in Section 1.2504.13 of this report, the inspectors reviewed the events and circumstances related to CAR 2012-043. Because the licensee's corrective actions were not complete by the end of this inspection, the inspectors did not review implementation of the screening procedures.

Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

.2 Licensee Program for Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Management, Sections 01.01, 01.02 and 02.01 (IP 40600)

a. Inspection Scope

The purpose of this inspection was to verify that the licensee and contractors had established adequate procedures and programmatic controls to govern closure of the ITAAC, to verify their process for preparing and approving ITAAC closure notifications conformed to 10 CFR 50 Appendix B, and to determine if established ITAAC closure and records controls processes support creating accurate and verifiable ITAAC closure notifications.

The inspectors reviewed procedures and documents, interviewed personnel, observed meetings and an ITAAC training session provided to engineering staff. 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 I ITAAC closure notifications 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 deficiencies, reported via the various deficiency reporting mechanisms, that have a material effect on an ITAAC acceptance criteria;
- identify ITAAC requirements impacted by proposed/planned changes;
- conduct ITAAC closure activities under the quality assurance program using guidance provided in Nuclear Energy Institute standard 08-01 and NRC Regulatory Guide 1.215; and
- comply with the 10 CFR Part 52 reporting requirements for ITAAC completion schedule, completion notification, 225 day letter, all complete letter, and post closure notification in addition to the initial fuel load 270 day letter.

Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

.1 Appendix 1, Inspection of Criterion I – Organization

a. Inspection Scope

The inspectors reviewed the licensee's organizational structure, including the organizational interfaces with engineering, procurement, and construction consortium suppliers Shaw/Stone and Webster (Shaw) and WEC. The review examined provisions for delegation of responsibilities, to determine if any changes had occurred including changes in personnel authorities, responsibilities, and functions. The inspectors interviewed three personnel who performed specific QA functions to verify implementation of the organizational structures, responsibilities, and authorities. The inspectors also examined the organizational chart to determine if personnel that perform specific QA functions are sufficiently independent from the work being performed.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A1.03.01: 3 samples
- A1.03.02: 3 samples

b. Findings

No findings were identified.

.2 Appendix 2, Inspection of Criterion II – Quality Assurance Program

a. Inspection Scope

The inspectors reviewed the Quality Assurance Program Description (QAPD) and implementing procedures established by the licensee and their contractors to verify program requirements were accurately translated into the procedures. The inspectors reviewed the licensee's QAPD, Updated Final Safety Analysis Report (UFSAR) and appropriate implementing documents to ensure that policies had been developed to address requirements for revising and modifying the QAPD and for notifying the NRC in a timely manner of proposed and completed changes to the QAPD.

In addition, the inspectors reviewed procedures to verify requirements were established to provide quality assurance training for the general work force and qualification of QA auditors and inspection personnel. The inspectors reviewed training records to verify examinations were performed to demonstrate acceptable completion of training for auditors, lead auditors, and quality inspectors, and that the associated orientation and

training activities were completed within the specified period per procedures and quality assurance program requirements. The inspectors also verified personnel qualifications (e.g., education, experience, position description) for four individuals responsible for ITAAC activities.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A2.03.01: 10 samples
- A2.03.02.a: 1 sample
- A2.03.02.b: 3 samples
- A2.03.02.c: 18 samples

b. Findings

No findings were identified.

.3 Appendix 3, Inspection of Criterion III – Design Control

a. Inspection Scope

The inspectors reviewed implementing documents associated with design and design change control to verify conformance with the NRC-approved QAPD. In addition, the inspectors reviewed samples of completed design changes in order to verify conformance with implementing documents. Inspectors selected a sample of drawings, E&DCRs, test reports, and technical reports associated with installation and design of the waterproof membrane, and reinforcing bar changes in the nuclear island basemat, beneath the containment vessel. Specifically, the inspectors' review included the following documents:

- project technical report VSG-AT01-A0R-001, Analysis of Critical Characteristics for V.C. Summer Units 2 & 3 Waterproof Membrane Material
- project technical report VSG-AT01-A0R-800000, Final Summary Report for the Qualification, Dedication, and Procurement for V.C. Summer Units 2 & 3 Waterproof Membrane Material
- test report TR63594-12N, Final Qualification Report for Laboratory Testing of Various Membrane Systems1
- test report TR63594-12N-DED, Dedication Report for Waterproofing Membrane Material AGRU America Microspike
- APP-1010-GEF-002, Circumferential Bar Requirements for Lap Splices in Lieu of Mechanical Connectors
- APP-1200-GEF-033, Addition of Vertical Bars to Wall N Below
- APP-1000-GEF-007, Additions to Nuclear Island Basemat Rebar

The inspectors reviewed these documents to determine whether the design and design changes received the proper level of engineering review in accordance with licensee procedures. In addition, the inspectors reviewed the affected drawings and analyses to determine if the affected design documents remained applicable, with valid design assumptions.

The inspectors reviewed several critical characteristics of the waterproof membrane materials to determine if they were evaluated and appropriately documented in accordance with the applicable procedures. The inspectors reviewed the resulting design output documents in order to determine whether they were in accordance with the design requirements as specified in the UFSAR.

The inspectors reviewed implementing documents that governed the review, approval and process for controlling changes to design documents. These documents were also reviewed for the control of design interfaces between plant systems and consortium design organizations. The implementing documents were reviewed against the licensee's QAPD and UFSAR commitments for design control.

The inspectors reviewed report VSG-AT01-VVR-800000, "V.C. Summer Units 2 & 3 Nuclear Island Waterproof Membrane Summary of Supplemental Testing," and drawing VSG-AT01-VV-800000, "VC Summer Unit 2 & Unit 3 Waterproof Membrane Test Program Concrete Blocks & Membrane Samples," to determine if they were consistent with the UFSAR. In addition, the inspectors directly observed the pouring, finishing, curing, and cutting of concrete test blocks that were used for the waterproof membrane coefficient of friction testing.

The inspectors reviewed APP-GW-GAP-420, "Engineering and Design Coordination Report" for adequacy and verified proper implementation through the review of E&DCR APP-1200-GEF-033. The inspectors also verified that the associated drawings were appropriately updated and controlled pending the completion of supporting calculations.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A3.03.01: 5 samples
- A3.03.02: 5 design change samples

b. Findings

No findings were identified.

.4 Appendix 4, Inspection of Criterion IV – Procurement Document Control

a. Inspection Scope

The inspectors reviewed a sample of QA implementing documents for procurement document control to ensure conformance with the NRC-approved QAPD and commitments in the UFSAR. Inspectors also reviewed purchase orders issued by Shaw and WEC to determine whether measures were established to communicate technical and quality requirements, including the requirements of 10 CFR Part 50, Appendix B; 10 CFR Part 21; and the QAPD. The review of purchase orders was performed to determine whether:

- procurement documents were prepared in accordance with implementing documents;

- services were purchased from qualified contractors;
- procurement documents contained requirements for the contractor to provide appropriate documentation of quality; and
- procurement documents were maintained in a document control program.

Inspectors also conducted interviews with licensee and contractor personnel responsible for initiating and approving quality-related procurement documents in order to determine whether activities were performed in accordance with applicable procedures.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A4.03.01: 5 samples
- A4.03.02: 12 samples

b. Findings

No findings were identified.

.5 Appendix 5, Inspection of Criterion V – Instructions, Procedures, and Drawings

a. Inspection Scope

Inspectors reviewed implementing program documents for preparing and revising other implementing documents (such as procedures, work orders, specifications, erc.) that prescribed activities affecting quality to ensure consistency with the NRC-approved QAPD and commitments in the UFSAR.

The inspectors reviewed applicable sections of the licensee and contractor QAPDs and lower tier procedures related to document control, to determine whether the implementing documents established adequate measures to control procedures that prescribe activities affecting quality, and to determine whether these documents had established adequate provisions to control the revision, preparation, and issuance of documents (electronic and/or paper copy) that prescribe quality requirements or activities affecting quality.

The inspectors reviewed selected instructions, procedures, and drawings to determine if they were created, revised, and maintained using appropriate procedures, and whether the following requirements were addressed:

- documents are reviewed for adequacy, completeness, and correctness by designated personnel other than the preparer of the documents;
- documents are approved by designated personnel other than the preparer of the documents;
- documents are approved for release by authorized personnel;
- documents are issued with a unique identification and revision status and placed under document control by designated personnel; and
- current revisions of documents are made available where the prescribed activity is being performed to ensure staff uses the most recent controlled documents.

The inspectors also interviewed personnel to determine if they followed the proper procedures when initiating and changing instructions, processes, and drawings.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A5.03.01: 5 samples
- A5.03.02: 3 samples

b. Findings

No findings were identified.

.6 Appendix 6, Inspection of Criterion VI – Document Control

a. Inspection Scope

The inspectors reviewed applicable sections of the licensee and contractor QAPDs and lower tier procedures related to document control, to determine whether the implementing documents established adequate measures to control procedures that prescribe activities affecting quality and to determine whether these documents had established adequate measures to control the revision, preparation and issuance of documents (electronic and/or paper copy) that prescribe quality requirements or activities affecting quality.

The inspectors reviewed actual controlled documents and document review records to determine whether the licensee and its contractors had implemented processes and documents to address the review, approval, and revision of controlled documents. The inspectors verified documents were handled and processed in accordance with approved procedures. Documents and records reviewed are listed in the attachment.

The inspectors reviewed a selected sample of implementing documents to determine whether the following requirements were addressed:

- documents are reviewed for adequacy, completeness, and correctness by designated personnel other than the preparer of the documents;
- documents are approved by designated personnel other than the preparer of the documents;
- documents are approved for release by authorized personnel;
- documents are issued with a unique identification and revision status and placed under document control; and
- current revisions of documents are made available where the prescribed activity is being performed to ensure staff uses the most recent controlled documents.

The samples included electronic and/or paper drawings, and procedures, along with controlled paper inspection activity documents. The inspectors reviewed receipt inspection documents and the vendor supplied quality document package for the IRWST and containment recirculation screens – WEC AP1000 commodity code MY03.

The inspectors interviewed responsible Shaw and WEC staff concerning the document control system. The inspectors also performed direct observation on the use of implementing procedures for document control; which included the responsible staff accessing documents electronically at their controlled workstations and at workstations not designated for producing controlled documents.

The inspectors interviewed field personnel to determine whether personnel working on work packages had the most current controlled implementing documents that they need to conduct the activity to ensure consistency and technical adequacy.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A6.03.01: 3 samples
- A6.03.02.b: 4 samples
- A6.03.02.c: 1 sample
- A6.03.02.d: 1 sample
- A6.03.02.e: 2 samples

b. Findings

No findings were identified.

.7 Appendix 7, Inspection of Criterion VII – Control of Purchased Material, Equipment, and Services

a. Inspection Scope

The inspectors reviewed measures to evaluate and identify qualified suppliers and to determine acceptability of received items. Implementing procedures established by the licensee and Shaw were reviewed to verify controls for selection of suppliers of safety related and risk significant items and services addressed the requirements of the NRC-approved QAPD and commitments in the UFSAR. The inspection scope included a review of a supplier evaluation performed on behalf of Shaw by a third party.

Procedures for conducting receipt inspections were reviewed, receipt inspection personnel were interviewed, and records of completed receipt inspections were examined to determine adequacy of measures to verify purchased items delivered to the plant site met specified technical and quality requirements.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A7.03.01: 2 samples
- A7.03.02d: 1 sample

b. Findings

No findings were identified.

.8 Appendix 8, Inspection of Criterion VIII – Identification and Control of Materials, Parts and Components

a. Inspection Scope

The inspectors reviewed measures for the identification and control of safety related items. Implementing procedures established by Shaw were reviewed to verify controls for identification and control of materials addressed the requirements of the NRC-approved QAPD and commitments in the UFSAR.

The inspectors observed material control activities for a sample of components maintained in the Units 2 and 3 warehouse. The inspectors reviewed receipt inspection documentation of the IRWST Screens (PXS-MY-Y01A/Y01B/Y01C) and containment recirculation screens (PXS-MY-Y02A/Y02B) to verify conformance with WEC 7.5, Control of Purchased Items and Services.

The inspectors reviewed WEC purchase order 4500328473 - Items 1, 2, 5, and 11 between WEC and their vendor to supply IRWST & containment recirculation screens for the passive core cooling system. Because the licensee had only completed a limited receipt inspection by warehouse personnel at the time of this inspection, the inspectors reviewed the receipt inspection documents that were available as well as the vendor-supplied quality document package for these four line itmes to determine if they met the applicable UFSAR requirements.

The inspectors interviewed the QC inspection personnel and examined a sample of records to determine whether the QC personnel were appropriately qualified and authorized to conduct receipt inspections.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A8.03.01: 1 sample
- A8.03.02: 1 sample

b. Findings

No findings were identified.

.9 Appendix 10, Inspection of Criterion X – Inspection

a. Inspection Scope

The inspectors reviewed implementing documents to determine whether they were developed to address the QAPD requirements and UFSAR commitments for conducting inspections. Specifically, the inspectors reviewed work instructions and procedures to

determine whether the licensee's documents established adequate measures to provide for the following:

- examinations and measurements for each work operation, where necessary;
- methods/documents used to perform inspections and document results;
- frequency or point of inspections;
- sampling requirements; and
- hold points.

The following documents were reviewed to determine whether the licensee's documents established adequate measures as outlined in the previous paragraph:

- Shaw procedure QS-10.67, Inspection Planning System
- Shaw work package VS2-1000-CCW-003, Nuclear Island Backfill Concrete

The inspectors evaluated a sample of inspection documentation for safety related and risk significant non-safety related items that require inspection, and conducted the following:

- verified that inspections were performed by qualified individuals other than those who performed or directly supervised the work being inspected;
- confirmed the inspection of item was performed at required frequency for each work operation, as described in the implementing document;
- examined inspection documentation and confirmed that mandatory hold points were complied with and witnessed by the licensee's designated representative;
- verified that work did not proceed without written authorization of designated personnel by examining the dates of completion of work and subsequent inspection; and
- verified re-inspection of items that underwent modifications, repairs, or replacements subsequent to final inspection.

The following records were reviewed to determine whether inspections were properly conducted:

- Shaw Quality Assurance Inspection Report Q445-11-0061, Rebar Couple Testing Threaded Bars; and
- Shaw Quality Assurance Inspection Report Q445-11-0048, Reinforcing Steel for the Nuclear Island Basement Bottom Layer 1.

The inspectors observed receipt inspections of submodules CA20-02, CA20-04, and CA20-06 to determine if the licensee inspectors had the current implementing document and appropriate tools while conducting the inspection. The inspectors observed licensee personnel inspecting the following items per quality inspection plan F-Q445, Receipt Inspection – Modules – Structural, to determine if:

- items were manufactured as described by drawings and construction specifications; and
- items were marked accurately to reflect the inspection status.

The inspectors observed the construction of sump/basins on the Unit 2 natural base rock foundation and the placement of dental and fill concrete to determine that the proper documentation was readily available to personnel performing the work activity and that proper materials were being used.

The inspectors reviewed work packages VS2-1000-CCW-003 “Nuclear Island Backfill Concrete,” and VS2-1000-CCW-004 “Placement of Nuclear Island Basemat Concrete,” related to the dental and fill concrete placement. The inspectors verified all the necessary E&DCRs, Nonconformance and Disposition Report (N&Ds), concrete pour cards, and requests for information were contained in these work packages. The inspectors also verified abandoned-in-place construction aides, such as rebar, mesh formwork, and wire were located and constructed as specified in work packages. The inspectors directly observed the following concrete placement activities:

- concrete slump test;
- concrete air content test;
- concrete temperature test;
- concrete density test;
- test cylinder pours;
- test cylinder curing box setup and monitoring;
- concrete curing methods; and
- concrete dropchute height.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A10.03.01: 3 samples
- A10.03.02: 4 completed inspection samples

b. Findings

No findings were identified.

.10 Appendix 12, Inspection of Criterion XII – Control of Measuring and Test Equipment

a. Inspection Scope

The inspectors reviewed implementing documents to determine whether they were developed to address the QAPD requirements and UFSAR commitments for the control of M&TE. Specifically, the inspectors reviewed work instructions and calibration procedures to determine whether the licensee’s documents established adequate measures to ensure the following:

- only calibrated M&TE was used;
- calibration was performed at prescribed intervals, or before use;
- calibration was performed when the accuracy of calibrated M&TE was suspect;
- M&TE was calibrated, adjusted, and maintained against reference calibration standards having traceability to nationally recognized standards;
- calibrated M&TE was labeled, tagged, suitably marked, or documented; and

- M&TE used was of the proper type, range, accuracy, and tolerance for the intended application.

The following documents were reviewed to determine whether the licensee's documents established adequate measures as outlined in the previous paragraph.

- Shaw quality standard 12.1, Shaw Nuclear Calibration Program;
- Nuclear construction and startup procedure 3-10-3, Measuring and Test Equipment Control; and
- Construction site instruction 3-30-0, Batch Plant and Delivery Equipment Testing, Calibration, and Certification.

The inspectors examined M&TE being used for waterproof membrane installation and testing fresh concrete, by licensee personnel, in order to determine whether it met the requirements of the implementing documents, including:

- M&TE was properly marked, including calibration due date;
- M&TE was calibrated within specified calibration interval;
- accuracy was within specified limits; and
- documentation and test/inspection results were traceable to M&TE being used.

The following records were reviewed to determine whether M&TE was properly calibrated:

- 15599-2, Scale;
- 54748-1, Digital Thermometer;
- 52188-4, Press-Aire-Meter;
- 52690 – Temperature Hi/Lo Indicator;
- 15605 – Slump Cone;
- 52187 – Pressure Pot;
- 52188 – Pressure Pot;
- 52232 – Scale;
- 54744 – Thermometer;
- Certificate # 0010677995, Infrared Thermometer, CW1044;
- Certificate # 0010678012, Field Tensiometer, PT7416; and
- Certificate # 0010677983, Pressure Gage.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A12.03.01: 3 general implementing document samples
- A12.03.02.a: 2 separate system samples
- A12.03.02.b: 6 samples
- A12.03.02.d: 2 sample
- A12.03.02.f: 8 samples

b. Findings

No findings were identified.

.11 Appendix 13, Inspection of Criterion XIII – Handling, Storage, and Shipping

a. Inspection Scope

The inspectors reviewed the licensee's implementing documents for handling, storage, and shipping of equipment, materials, and spare parts to verify consistency with the NRC-approved QAPD and ASME NQA-1-1994. The inspectors observed storage conditions and handling activities of selected safety related components and materials at the Units 2 and 3 warehouse.

The inspectors observed the storage conditions and handling activities for items associated with the following safety related components:

- IRWST Screens, PXS-MY-Y01A, PXS-MY-Y01B, and PXS-MY-Y01C;
- containment recirculation screens, PXS-MY-Y02A and PXS-MY-Y02B; and
- nuclear island waterproof membrane.

The inspectors also interviewed warehouse personnel and reviewed Shaw N&D and CAR documents addressing issues associated with the handling, storage, and shipping of the waterproof membrane material.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A13.03.01: 1 sample
- A13.03.02.a: 3 samples

b. Findings

No findings were identified.

.12 Appendix 15, Inspection of Criterion XV – Nonconforming Materials, Parts, and Components

a. Inspection Scope

The inspectors reviewed applicable sections of the licensee, WEC, and Shaw QAPDs related to nonconforming items to determine whether the implementing documents were consistent with the NRC-approved QAPD and established adequate measures to control nonconforming materials, parts, or components.

The inspectors observed components at the warehouse to verify implementation of measures to ensure control of nonconforming materials, parts, and components. The inspectors verified that nonconforming items were segregated to prevent their inadvertent use.

The inspectors reviewed a sample of N&D reports to confirm that identified hardware deficiencies were documented and properly dispositioned. Deficiencies with dispositions of "accept as-is" were reviewed to verify the dispositions were adequately supported by documented engineering justifications. The inspectors reviewed the N&D reports and Shaw procedure QS-15.1, Nonconformance & Disposition Report, to verify requirements were implemented for screening of conditions identified in N&Ds to identify any potential reportability under 10 CFR Part 21 or 10 CFR Part 50.55(e). The inspectors reviewed the N&D reports to verify that they were dispositioned in accordance with Section 15, "Nonconforming Materials, Parts, or Components," of the Shaw Nuclear Quality Assurance Program, SWSQAP 1-74A.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A15.03.01: 4 samples
- A15.03.02: 13 nonconforming items in storage samples

b. Findings

No findings were identified.

.13 Appendix 16, Inspection of Criterion XVI – Corrective Action

a. Inspection Scope

The inspectors reviewed applicable sections of the licensee's QAPD, UFSAR and the associated implementing documents concerning identification, evaluation and resolution of conditions adverse to quality. The inspectors reviewed licensee procedure NND-AP-0002, "Corrective Action and Trending," Shaw procedure QS-16.5, "Corrective Action System," and WEC procedure WEC-16.2, "Corrective Actions Process," to determine whether the licensee and its contractors had established adequate measures to assure that conditions adverse to quality were promptly identified and corrected.

On a routine basis, the inspectors reviewed a sample of issues entered into the licensee, Shaw, and WEC corrective action programs to determine if conditions adverse to quality were controlled in accordance with each company's quality assurance program and whether potential adverse trends were appropriately identified and corrected by the licensee or their contractors. Specifically, the inspectors: (1) attended weekly issue review committee meetings at the site; (2) reviewed a sample of licensee and contractor corrective action documents; and (3) interviewed licensee and contractor 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 if the handling of these issues were consistent with the applicable QAPD requirements; and 10 CFR Part 50, Appendix B. Specifically, the inspectors reviewed licensee condition reports (CRs), Shaw CARs, and WEC issue reports.

The inspectors reviewed the corrective action documents referenced above 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: (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 organization properly evaluated and reported the condition in accordance with 10 CFR 50.55(e) and 10 CFR Part 21.

Specific documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A16.03.02: 32 samples

b. Findings

No findings were identified.

.14 Appendix 17, Inspection of Criterion XVII – Quality Assurance Records

a. Inspection Scope

The inspectors reviewed implementing procedures established by the licensee and Shaw to provide uniform direction for general records creation, maintenance, storage, and disposition to determine if they addressed the requirements of the NRC-approved QAPD and commitments in the UFSAR.

The inspectors reviewed samples of records for internal quality assurance audits, supplier acceptance evaluations, corrective action issues, and receipt inspection results. The records were reviewed to verify information was authenticated, legible, accessible, controlled, and protected against degradation. Records maintained in electronic media were reviewed to verify adequate provisions had been established to maintain the quality of the records in accordance with committed standards identified in the licensee's QAPD. Inspectors also observed quality record storage activity at the licensee's temporary records storage facility in order to verify the facility provided adequate protection against fire and water damage.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A17.03.01: 2 samples
- A17.03.02.a: 37 samples

b. Findings

Introduction: The inspectors identified a Green programmatic finding and a cited violation (VIO) of 10 CFR 50, Appendix B, Criterion XVII, Quality Assurance Records, for failing to

adequately assure that records converted into electronic format were sufficient to furnish evidence of activities affecting quality.

Description: The inspectors identified that the record copy of receipt inspection report Q445-12-0276 did not contain the first page of a required certificate of conformance. The record of the receipt inspection activity was being maintained in electronic format and was established to document the bases for acceptance of quality category I steel reinforcing bars to be installed in the Nuclear Island. Interviews with responsible QC personnel identified that the procedure for converting records into electronic format (i.e. optical scanning) had not provided a positive method to assure all pages contained in document packages had been accurately captured. The missing information was subsequently located in an original paper document package that had been retained in the QC office. The licensee subsequently issued CAR 2012-0533 and implemented immediate actions to re-scan the complete record, authenticate the electronic file, and retransmit the record to replace the deficient electronic file maintained in records storage.

The licensee implemented Criterion XVII of 10 CFR Part 50, Appendix B through Section 17 of the licensee's QAPD. This section required that necessary measures and governing procedures to ensure that sufficient records of activities affecting quality be developed, reviewed, and approved to reflect completed work. Additionally, Section 17.2 of the licensee's QAPD required that the storage of QA Records to be managed in electronic media consistent with Nuclear Information and Records Management Association (NIRMA) Guideline TG 11-1998.

Section 4.1 of NIRMA TG11-1998, Authentication of Records and Media, stated that records should be considered valid for storage only if properly authenticated by the organization initiating, reviewing, and/or completing the record. Definition 2.1 stated in part, that authentication is the process whereby a record is confirmed to be in complete and exact accordance with fact or reality.

Shaw performed the conversion of quality assurance records into electronic format on behalf of the licensee. The requirements for the licensee-supplier relationship were addressed in 10 CFR Part 50, Appendix B, Criterion I, which stated in part that the licensee may delegate to others, such as contractors, agents, or consultants, the work of establishing and executing the quality assurance program, or any part thereof, but shall retain responsibility for the quality assurance program.

The inspectors determined the process for conversion of records into electronic format as performed under Shaw procedure QSI-17.1, Quality Assurance Records Processing, did not provide the necessary assurance that the resulting records would provide adequate evidence of activities related to quality because the procedure did not require a verification that all pages were captured after scanning original documents. The deficiency was determined to be reasonably within the licensee's ability to foresee and correct, and therefore should have been prevented. The inspectors determined that the failure to adequately authenticate the content of quality assurance records, if uncorrected, could lead to loss of information that could render the quality of a construction activity unacceptable or indeterminate. As a result, the deficiency could preclude the licensee from being able to take appropriate action on safety-significant matters. The inspectors also determined the deficiency is not a repetitive finding.

Analysis: The failure to establish adequate measures to accomplish the conversion of quality assurance records into the electronic file format was contrary to NIRMA TG 11-1998 and was a performance deficiency. This performance deficiency was determined to be greater than minor and a finding because the failure to adequately authenticate the content of quality assurance records, if uncorrected, could lead to loss of information that could render the quality of a construction activity unacceptable or indeterminate. As a result, the deficiency could preclude the licensee from being able to take appropriate action on safety-significant matters. The finding did not have a construction cross-cutting aspect that provided a significant contribution to the condition.

The finding was associated with the construction/installation cornerstone and was evaluated under the construction significance determination process as outlined in IMC 2519P, Appendix A. The finding was a non-technical programmatic finding associated with a quality assurance plan program critical attribute related to accurately recording activities affecting quality. This finding is of very low safety significance (Green) because it is not a repetitive programmatic finding.

Enforcement: 10 CFR 50, Appendix B, Criterion XVII, Quality Assurance Records, states in part, that sufficient records be maintained to furnish evidence of activities affecting quality.

Section 17.2 of the licensee's QAPD states in part, that the licensee will manage the storage of QA Records in electronic media consistent with NIRMA Guideline TG 11-1998.

Contrary to the above, on or before May 18, 2012, the licensee failed to adequately assure that quality assurance records converted into electronic format were sufficient to furnish evidence of activities affecting quality. Specifically, Shaw procedure QSI-17.1, Revision C, did not provide sufficient measures to ensure that all pages contained in document packages were exactly in accordance with the source document and is therefore not in compliance with NIRMA Guideline TG 11-1998.

This is a violation which has been evaluated under the risk significance determination process as having very low safety significance (Green). Because the licensee's corrective action program has not yet been demonstrated to be effectively implemented, this violation is being cited in the enclosed Notice of Violation, consistent with the NRC Enforcement Policy (VIO 05200027/2012-003-02, 05200028/2012-003-02 Failure to Establish an Adequate Authentication Process for Records in Electronic Media)

The licensee initiated CR 2012-0283 to document this finding in their corrective action program, and Shaw initiated CAR 2012-0533. Immediate corrective actions were taken to require a complete review of QA records prior to shipping to the record storage archives. In addition, Shaw revised procedure QSI-17.1 to add requirements to verify all pages have been captured by electronic scanning process.

15 Appendix 18, Inspection of Criterion XVIII – Audits

a. Inspection Scope

The inspectors reviewed applicable sections of licensee documents related to the performance of audits to determine whether the implementing documents were consistent with the NRC-approved QAPD and commitments in the UFSAR.

The inspectors reviewed licensee and contractor internal and external audits. Specifically, a sample of audit reports were inspected to verify that they were performed within the scheduled time frame and that they were performed in accordance with approved procedures, the QAPD, the UFSAR, and ASME NQA-1. For the external audits, the inspectors verified that audit results were sufficient to ascertain the general status of the contractor's implemented QA activities as specified in the procurement documents. The inspectors selected a sample of lead auditors' and specialists' records to verify that the auditors' required training was maintained in accordance with the schedule, that they did not have direct responsibility in the areas that were audited, and that the audit support specialists received the required audit briefing prior to the start of the audit. The inspectors also reviewed the licensee's ITAAC program snapshot self assessment and the 12-month rolling audit schedule to determine if the licensee was performing audits at a frequency consistent with their commitments in the QAPD. The inspectors verified that the scheduled audits provided coverage of applicable aspects of activities affecting quality.

The inspectors reviewed the development of audit plans and the licensee's documentation of audit results. The inspectors verified the results of audits were documented and reviewed by management and that the identification and summary of deficiencies and nonconformances were documented in the corrective action program. The inspectors also verified that follow-up audits of areas of deficiency, nonconformance or weakness were conducted when determined to be necessary.

Documents reviewed are listed in the attachment.

The following inspection samples were completed:

- A.18.03.01: 6 samples
- A.18.03.02: 1 audit schedule; 6 internal audits; 3 external audits; 18 qualifications

b. Findings

No findings were identified.

4OA6 Exit Meeting Summary

On June 27, 2012, the inspectors presented the inspection results to Mr. R. Clary, Vice President - New Nuclear Deployment, along with other licensee 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

R. Clary	Vice President – New Nuclear Deployment, SCE&G
A. Torres	General Manager of Construction, SCE&G
R. Ward	OD&P Manager, SCE&G
A. Rice	Nuclear Licensing Supervisor, SCE&G
R. Thompson	Construction Supervisor, SCE&G
J. Ernst	Executive Vice President, SMS
R. Fay	QA Director, SMS
A. Khan	Project Engineering Manager, Shaw
M. Goyda	QC Engineering Manager, Shaw
E. Struble	Project Record Information Management Manager, Shaw
W. Wing	ITAAC Lead Field Engineer, Shaw
R. Aul	Senior Design Engineer, WEC
W. Carnes	Program Manager, WEC
R. Driscoll	Lead Site Quality Engineer, WEC
B. Bedford	ITAAC Program Lead, WEC
M. Cusick	Director Nuclear Quality Assurance, CB&I
W. Walsh	Quality Manager, CB&I

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05200027/2012-003-01	URI	Maximum and Minimum Stud Spacing Requirements (Section 1.2503.1)
05200027/2012-003-02, 05200028/2012-003-02	VIO	Failure to Establish an Adequate Authentication Process for Records in Electronic Media (Section 4OA2.14)

Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

ITAAC Numbers 760, 763, 764, and 767:

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

Work Packages:
(SMS) CA01-23
(SMS) CA01-24
(SMS) CA20-01
(SMS) CA20-27
(SMS) CA20-29-200
(SMS) CA20-72

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

CMTRs:
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:
(SCE&G) OL-12-0251
(SCE&G) OL-12-0252
(SCE&G) OL-12-0253
(SCE&G) OL-12-0254
(SCE&G) OL-12-0255
(SCE&G) OL-12-0256

(SCE&G) OL-12-0257
(SCE&G) OL-12-0258
(SMS) NCR 11-095
(SMS) NCR 12-480
(SMS) NCR 11-021
(SMS) NCR 11-029
(SMS) NCR 11-306
(SMS) NCR 12-499
(SMS) NCR 12-249
(SMS) NCR-12-232
(SMS) CR 2012-454
(SMS) CR 2012-458
(SMS) CR 2012-459
(SMS) CR 2012-464
(SMS) CR 2012-474
(SMS) CR 2012-475
(SMS) CR 2012-476
(SMS) CR 2012-477
(SMS) CR 2012-478
(SMS) CR 2012-479
(SMS) CR 2012-480
(SMS) CR 2012-481
(SMS) CR 2012-482
(SMS) CR 2012-483
(SMS) CR 2012-484
(SMS) CR 2012-485
(SMS) CR 2012-487
(SMS) CR 2012-491
(SMS) CR 2012-492
(WEC) Issue Report 12-118-M037
(WEC) Issue Report 12-123-M051
(WEC) Issue Report 12-124-M001

Miscellaneous:
APP-1100-SUC-003, General Design of Shear Studs for Structural Modules for Inside Containment and CA20, Revision 03
Request for Information APP-CA20-GF-659, dated March 12, 2012
Weld Procedure Specification Numbers: 1-1-39, 1-1-40, 1-1-41, 1-1-99, 1-10-98
Procedure Qualification Record Numbers: 1-1-37, 1-1-38, 1-1-118, 1-1-119, 1-1-120, 1-1-165, 1-1-166, 1-10-44, and 1-10-97

ITAAC Number 93:
Drawings:
IHI, Drawing No. 211A101 Revision 0 for Detail of Bottom Head A-A1, A2 (BH1 & Dollar plate)
IHI, Drawing No. 221A102 Revision 1 for Detail of Lower Ring B2/3-A2 Assemblies for electrical penetration E27, E28, and E29
IHI, Drawing No. 211A301 Revision 1 for Detail of Bottom Head A-C1~C32 (BH3)
IHI, Drawing No. 211A333 Revision 1 for Detail of Penetration Block A-C33 (P11)
CB&I, Drawing No. PCD2 Sheet 1, Revision 0 for Process Control of Bottom Head BH2 Field Sub-Assembly with the name of welders and legend of Control ID for weld filler metal
CB&I, Drawing No. PCD2 Sheets 6 and 6A through 6D, Revision 0

CB&I, Drawing No. 1-35, Revision 3
CB&I, Drawing No. 19 Sheet 1, Revision 1 for Nozzle P11 – Field Details

Procedures:
CMS-720-03-PR-07101, "Preparation and Use of the Traveler," Revision 2
CMS-720-03-FM-00503, "T/A Outside Sketch, A2-A1"
CMS-720-03-PR-03601, Procurement of Nondestructive Examination (NDE) Material, Revision 1
CMS-720-03-PR-06251, Site Receipt and Inspection, Revision 2
CMS-164621-720-03-AD-106251, Addendum to CMS-720-03-PR-06251 for Site Inspection and Release of Containment Vessel Material and Parts
CMS-720-03-PR-09001, Revision 2, Shop Weld Material Receipt, Inspection, Review and Release
CMS-720-03-PR-09051, Revision 7, Receipt, Inspection and Release of Site Welding Material
CMS-720-03-PR-09101, Revision 3, Shop Welding Material Distribution
CMS-720-03-PR-09301, Revision 5, Care, Storage and Conditioning of Welding Materials
CMS-720-03-PR-09401, Revision 5, Qualification of Welders and Welding Operators
CMS-720-03-PR-09601, Revision 1, Monitoring Welding Parameters
CMS-720-03-PR-09651, Revision 3, Preheat / Interpass Temperature Control
CMS-720-03-PR-09701, Revision 2, Welder I.D. Requirements
CMS-720-03-PR-10001, Revision 2, Use of NDE Forms
CMS-720-03-PR-10101, Revision 1, Shop or Site Demonstration of NDE Procedures
CMS-720-03-PR-10151, Revision 1, Status Indicators for NDE, Inspectors or Tests
CMS-830-15-PR-45145, Solution Film Testing Vacuum Box Technique, ASME Section III, Division 1 – Subsection NE, 10/8/2009
CMS-830-15-PR-45154, Radiographic Examination ASME Section III, Division 1 – Subsection NE, Rev.1
CB&I, 4500286170-477-A Procurement Advisory Release, Revise CMS-830-15-PR-45154 for ASME code revision, 3/26/2012
CMS-830-15-WI-81078, Calibration of Humidity and Temperature Recorders, Revision 0

CMTRs:
5918-1, Heat No. 4-0087 Lot No. KS362B, JFE Steel Corporation for SA-738 Grade B crown plate ID mark A2-A1-1 (BH1), 11/19/2009
5919-1, Heat No. 4-8087 Plate No. K3094A, JFE Steel Corporation for SA-738 Grade B insert plate for P11 penetration, 11/19/2010
5922-1, Heat No. 4-0087 Lot No. KS362A, JFE Steel Corporation for SA-738 Grade B crown plate ID mark A2-A2-1 (BH1), 11/20/2009
5923-1, Heat No. 4-0087 Lot No. KK253A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A1-2 (BH1), 11/20/2009
5923-2, Heat No. 4-0087 Lot No. KK249A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A1-3 (BH1), 11/20/2009
5923-3, Heat No. 4-0087 Lot No. KS363A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A2-2 (BH1), 11/20/2009
5923-4, Heat No. 4-0087 Lot No. KK252A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A2-3 (BH1), 11/20/2009
5950-4, Heat No. 6-3335 Plate No. LEO85A, B, JFE Steel Corporation for SA-738 plate Grad B ID mark C-13-1 (BH-3), 1/15/2012
5951-15, Heat No. 4-0096 Plate L6034A, JFE Steel Corporation for SA-738 Grade B plate ID mark B-15 (BH2), 1/21/2010

5951-23, Heat No. 4-0096 Plate No. L6035A, JFE Steel Corporation for SA-738 Grade B plate ID mark B-23 (BH2), 1/21/2010
5954-3, Heat No. 6-3334 Plate No. LE090A, B, C, JFE Steel Corporation for SA-738 Grade B plate ID mark A2-C4-1 (BH-3), 2/10/2010
5956-3, Heat No. 4-0087 Plate No. LY081A, B, JFE Steel Corporation for SA-738 Grade B plate ID mark C-3-1 (BH3), 2/19/2010
5956-4, Heat No. 6-3335 Plate No. AG1101A, JFE Steel Corporation for SA-738 Grade B plate ID mark C-3-1 (BH3), 2/19/2010
5957-2, Heat No. 6-3334 Plate No. ML286B, JFE Steel Corporation for SA-738 Grade B plate ID mark A2-C4-2 (BH3), 2/10/2010
5957-3, Heat No. 6-3334 Plate No. ML286C, JFE Steel Corporation for SA-738 Grade B plate ID mark C-3-2 (BH3), 2/10/2010
5959-1, Heat No. 4-8088 Plate No. MS118A, B, C, D, JFE Steel Corporation for SA-738 Grade B plate ID mark A2-C54, 2/26/2010
6054-1, Heat No. 6-8563 Plate No. HC073A, JFE Steel Corporation for SA-738 Grade B insert plate for P22 penetration, 10/28/2010
6057-7, Heat No. 5-5154, JFE Steel Corporation for SA-738 plate ID mark B2-A2, 10/28/2010
G23719-024CM, Heat No. JOK9456, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-27, 10/18/2011
G23719-025CM, Heat No. JOK9456, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-28, 10/18/2011
G23719-026CM, Heat No. JOK9456, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-29, 10/18/2011
G23719-026CM, Heat No. JOL4527, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve P-22, 10/18/2011
RINJQ-225-5-1, Heat No. 9M7501, Nippon Steel & Sumikin Welding Company ER80S-G, 9/28/2010
RINJQ-229-1-1, Heat No. 9D7894, Nippon Steel & Sumikin Welding Company ER80S-G, 1/15/2010
RINJQ-229-1-2, Heat No. 9E7904, Nippon Steel & Sumikin Welding Company ER80S-G, 3/5/2010
RINJQ-229-1-3, Heat No. 9L7977, Nippon Steel & Sumikin Welding Company ER80S-G, 9/8/2010
RINJQ-229-2-1, Heat No. 9L7978, Nippon Steel & Sumikin Welding Company ER80S-G, 9/28/2010
RINJQ-229-2-8, Heat No. 0Q7529, Nippon Steel & Sumikin Welding Company ER80S-G, 1/4/2011
1498, Lincoln Electric Lot No. 967Z for Outershield 91K2-HSR with AWS Class. E91TG-H4 of SFA-5.29, 3/15/2011
770386, ESAB Heat No. 093101 for Spoolarc ENi4 with AWS Class. F9A3-Eni4-Ni4 of SFA-5.23, 6/9/2011
776877, ESAB Lot No. ME022012 for neutral Flux OK 10.72, 6/14/2011
740466, ESAB Lot No. 2K019T02 for Atom Arc 9018 with AWS Class. E9018-H4R electrodes of SFA-5.5, 11/02/2011

Welding Procedures:
IHI WPS I-11R2G, Revision 3 with supporting PQR I-11Q6G
IHI WPS I-11R3G, Revision 3 with supporting PQR I-11Q7G
IHI WPS I-11R8G, Revision 2 with supporting PQR I-11Q9G
IHI WPS IT-1120G, Revision 2 with supporting PQRs I-11W9G and T-11R3G

CB&I WPS E9018-H4R, Revision 4 dated 02/21/2012 with supporting PQR 12676, 12677, 12749, and 12750
CB&I WPS E91TG-H4, Revision 4 dated 02/21/2012 with supporting PQR 12690, 12691, 12723, and 12757
CB&I WPS ENi4/OK 10.72, Revision 3 dated 01/09/2012 with supporting 12674

Welder/Operator Qualification Records:
CB&I, Welder Qualification Records for Welder ID-No. 232338, 233007, 3201351, 3294041, 63009171, 63011097, 63012726, 63011838, 63012628, and 626898
IHI Welder Qualification Records, 0397, 0430, 1536, 1782, 1831, 1881, 1963, 1967, 1968, 1972, 2001, 2002, 2006, 2047, 2050, 2322, 2431, 2435, 2458, 2553, 2555, 2559, 2586, 2595, and 2705
CB&I Welder or Welding Operator Performance Qualification (WPQ) submerged arc welding 2G W/ LT7, 3/8/2012

Nondestructive Examination Records:
CB&I NDE-MT, RT, and Solution Film Testing Certifications of Qualification for Level II, 2042693
CB&I Education and Visual Examination Record of 02/2012 for Level II, 2042693
CB&I NDE-MT, RT, and Solution Film Testing Certifications of Qualification for Level II, 728683
CB&I Education and Visual Examination Record of 01/2012 for Level II, 728683
CB&I, VCS-U2-2011-MT-019, Magnetic Particle Examination Report, Column Stub A2-C54 to A2-C13 BH3 plate
CB&I, RT-VCS-U2-2011-RT-006, Radiographic Examination Report, Plate B-15 to B-23, Weld Seam “W” of BH2, 1/12/2012 and associated RT film interval number 10-11.
CB&I, RT-VCS-U2-2011-RT-009, Radiographic Examination Report, Plate C-2 to C-21, Weld Seam “F” of BH3, 12/7/2011 and associated RT film interval numbers 2-3, 3-4, 4-5, 20-21, 20-21 R1, 20-21 R2
CB&I, RT-VCS-U2-2011-RT-030, Radiographic Examination Report, Plate C-3 to C-13, Weld Seam “K” of BH3, 3/8/2012 and associated RT film interval number 1-2
VCS-U2-2012-SFT-027, Vacuum Box Leak Test Report, BH3 Seam “K”, 3/20/2012
VCS-U2-2012-SFT-010, Vacuum Box Leak Test Report, BH2 Seam “W”, 1/30/2012
IHI, Magnetic Particle Examination Procedure 026R205, Revision 3 dated 3/2/2011
IHI, MT-004-AP-WA2-P22-N, Magnetic Particle Examination Record after PWHT of corner weld for P-22 Penetration, 4/6/2011
IHI, RT-004-WA2-P11-L, Radiographic Examination Record of longitudinal seam of the sleeve for P-11 Penetration, 1/13/2011
IHI, MT-004-AP-WA2-P11-N, Magnetic Particle Examination Record after PWHT of corner weld for P-11 Penetration, 4/6/2011
IHI, MT-004-EP-WB2-E27~E29-N, Magnetic Particle Examination Record after PWHT of corner weld for E27 thru E29 Penetrations to B2-A2, 4/6/2011
IHI, RT-004-WA2-C3-1, Radiographic Examination Record, Knuckle Plate A2-C3, 8/27/2010
IHI, Radiographic Examination Report for Dollar and Knuckle Plates Parts/Joint No. (WA2-A1, 2-1, 2), 6/21/2010
JFE, H21-207 , Ultrasonic Testing Report by JFE Steel Corporation for P11 insert plate JFE Plate No. and Heat No. K3094A, 11/19/09
JFE, H22-218 , Ultrasonic Testing Report by JFE Steel Corporation for P11 insert plate JFE Plate No. and Heat No. HC073A, 10/28/10

CB&I Corrective Action / Nonconformance Records:
Nonconformance Control List – Nuclear for VC-001 thru VC-029

VC-004, CB&I, NDE material not procured through nuclear procurement process, 3/23/2011
VC-012, CB&I, NDE purchase material did not meet certificate of conformance, 7/5/2011
VC-018, CB&I, Preheat not maintained for Weld Seam "V", 11/7/2011
VC-019, CB&I, Volume of weld metal exceeded in BH-3 vertical "E" seam weld, 11/8/2011
Observation Report/Problem Notice Log – Nuclear for OB-VC-2011-001 thru -034 and PN-VCS-2011-001 thru -023; and OB-VC-2012-601 thru -618 and PN-VCS-2012-601, 608, 610, 613, 615, 617, and 619
OB-VC-2012-605, CB&I, 1.5 hours span of data missing in data logger for electrode holding oven, 1/18/2012
OB-VC-2012-606, CB&I, Volume of weld metal exceeded in BH-3 vertical "N" seam weld, 1/21/2012
OB-VCS-2012-612, CB&I, NDE visual exam with ortho-rater, 2/23/2012
OB-VCS-2012-617, CB&I, Permanent Plant Records Storage, 3/15/2012
PN-VCS-2011-021, NRC identified, CB&I, use of 2008 Addenda in NDE-RT procedure in lieu of 2002 Addenda, 11/3/2011
PN-VCS-2012-619, NRC identified, CB&I, Quality Assurance Manual update to match CMS-720-03-PR-9401 for welder qualifications, 4/4/2012

Miscellaneous:
CB&I Nuclear Quality Assurance Manual (NQAM), Revision 11
CB&I Receipt Inspection Report – Nuclear No. U2-P-001 for P-11 penetration dated 3/24/12
CB&I Receipt Inspection Report – Nuclear No. U2-S1-002 for E27 thru E29 electrical penetrations dated 2/23/12
CB&I Daily Welding Material Distribution Log of 4/3/12
CB&I Traveler for U2-BH1-BH2, BH1 plates To BH2 plates, Circumferential Seams, 4/12/12
CB&I Traveler for U2-BH2-1-B2-W, Plate C-3 to C-13, Weld Seam "W", 12/9/2011
CB&I Traveler for U2-BH2-BH3, BH2 plates to BH3 Plates circumferential weld, 1/16/2012
CB&I Traveler for U2-BH3-5-B3-F, Plate C-2 to C-21, Weld Seam "F", 10/4/2011
CB&I Traveler for U2-BH3-5-B3-K, Plate C-3 to C-13, Weld Seam "K", 1/9/2012
CB&I Traveler for U2-BH3-6-P11 for Weld Nozzle P11 insert plate Assembly into BH3 plate
CB&I Welders Summary Report (with RT Report No.) for BH3 and BH2 butt joints linked to each Welder ID 097, 171, 338, 351, 467, 585, and 838 for a total of 4 pages printed on 04/02/2012
IHI Dimensional Examination Record No. DT004-A2-C33 for P11 penetration, 7/14/11
IHI Dimensional Examination Record Nos. G23719-024D, -025D, and -026D for electrical penetrations E27 thru E29
IHI Weld Checklist WC-004-U2-LR-001 page 3 of 10 for Electrical Penetrations E27 thru E29
IHI Weld Checklist WC-004-U2-PN-001 page 2 of 5 for P11 Penetration
JFE Manufacturing Specification of SA-738 Grade B Plates Document No. B-W9N15 Revision G dated 2/9/2012
Transcat Certificate of Calibration 2-BE693-2-1 for Datalogger Serial Number B3200419 dated May 23, 2011
Transcat Supplemental Report for BE693-2-1 for set points and tolerances with as-found data for humidity and temperature measurements

ITAAC Number 91:
Drawings:
IHI, Drawing No. 221A102 Revision 1 for Detail of Lower Ring B2/3-A2 Assemblies for electrical penetration E27, E28, and E29
IHI, Drawing No. 211A301 Revision 1 for Detail of Bottom Head A-C1~C32 (BH3)
IHI, Drawing No. 211A333 Revision 1 for Detail of Penetration Block A-C33 (P11)

IHI, Drawing No. 211A401 Revision 0 for Detail of Column Stubs C41 thru C56
CB&I, Drawing No. PCD2 Sheet 6, Revision 0
CB&I, Drawing No. 1-35, Revision 3
CB&I, Drawing No. FS5001, Revision 1 for In-Process Stud Layout
CB&I, Drawing No. 19 Sheet 1, Revision 1 for Nozzle P11 – Field Details
CB&I, Drawing No. 35 Sheet 1, Revision 2 for Bottom Head Attachment Plates (Electric Pad 35-5 to BH3-C4 plate)

Procedures:
CMS-720-03-PR-03601, Procurement of Nondestructive Examination (NDE) Material, Revision 1
CMS-720-03-PR-06251, Site Receipt and Inspection, Revision 2
CMS-164621-720-03-AD-106251, Addendum to CMS-720-03-PR-06251 for Site Inspection and Release of Containment Vessel Material and Parts
CMS-720-03-PR-09001 Revision 2, Shop Weld Material Receipt, Inspection, Review and Release
CMS-720-03-PR-09051 Revision 7, Receipt, Inspection and Release of Site Welding Material
CMS-720-03-PR-09101 Revision 3, Shop Welding Material Distribution
CMS-720-03-PR-09301 Revision 5, Care, Storage and Conditioning of Welding Materials
CMS-720-03-PR-09401 Revision 5, Qualification of Welders and Welding Operators
CMS-720-03-PR-09601 Revision 1, Monitoring Welding Parameters
CMS-720-03-PR-09651 Revision 3, Preheat / Interpass Temperature Control
CMS-720-03-PR-09701 Revision 2, Welder I.D. Requirements
CMS-720-03-PR-10001 Revision 2, Use of NDE Forms
CMS-720-03-PR-10101 Revision 1, Shop or Site Demonstration of NDE Procedures
CMS-720-03-PR-10151 Revision 1, Status Indicators for NDE, Inspectors or Tests
CMS-830-15-PR-45154, Radiographic Examination ASME Section III, Division 1 – Subsection NE, Revision 1
CB&I, 4500286170-477-A Procurement Advisory Release, Revise CMS-830-15-PR-45154 for ASME code revision, 3/26/2012
CMS-830-15-WI-81078, Calibration of Humidity and Temperature Recorders, Revision 0

CMTRs:
5918-1, Heat No. 4-0087 Lot No. KS362B, JFE Steel Corporation for SA-738 Grade B crown plate ID mark A2-A1-1 (BH1), 11/19/2009
5919-1, Heat No. 4-8087 Plate No. K3094A, JFE Steel Corporation for SA-738 Grade B insert plate for P11 penetration, 11/19/2010
5922-1, Heat No. 4-0087 Lot No. KS362A, JFE Steel Corporation for SA-738 Grade B crown plate ID mark A2-A2-1 (BH1), 11/20/2009
5923-1, Heat No. 4-0087 Lot No. KK253A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A1-2 (BH1), 11/20/2009
5923-2, Heat No. 4-0087 Lot No. KK249A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A1-3 (BH1), 11/20/2009
5923-3, Heat No. 4-0087 Lot No. KS363A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A2-2 (BH1), 11/20/2009
5923-4, Heat No. 4-0087 Lot No. KK252A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A2-3 (BH1), 11/20/2009
5950-4, Heat No. 6-3335 Plate No. LEO85A, B, JFE Steel Corporation for SA-738 plate Grad B ID mark C-13-1 (BH-3), 1/15/2012
5951-15, Heat No. 4-0096 Plate L6034A, JFE Steel Corporation for SA-738 Grade B plate ID mark B-15 (BH2), 1/21/2010

5951-23, Heat No. 4-0096 Plate No. L6035A, JFE Steel Corporation for SA-738 Grade B plate ID mark B-23 (BH2), 1/21/2010
5954-3, Heat No. 6-3334 Plate No. LE090A, B, C, JFE Steel Corporation for SA-738 Grade B plate ID mark A2-C4-1 (BH-3), 2/10/2010
5956-3, Heat No. 4-0087 Plate No. LY081A, B, JFE Steel Corporation for SA-738 Grade B plate ID mark C-3-1 (BH3), 2/19/2010
5956-4, Heat No. 6-3335 Plate No. AG1101A, JFE Steel Corporation for SA-738 Grade B plate ID mark C-3-1 (BH3), 2/19/2010
5957-2, Heat No. 6-3334 Plate No. ML286B, JFE Steel Corporation for SA-738 Grade B plate ID mark A2-C4-2 (BH3), 2/10/2010
5957-3, Heat No. 6-3334 Plate No. ML286C, JFE Steel Corporation for SA-738 Grade B plate ID mark C-3-2 (BH3), 2/10/2010
5959-1, Heat No. 4-8088 Plate No. MS118A, B, C, D, JFE Steel Corporation for SA-738 Grade B plate ID mark A2-C54, 2/26/2010
6054-1, Heat No. 6-8563 Plate No. HC073A, JFE Steel Corporation for SA-738 Grade B insert plate for P22 penetration, 10/28/2010
6057-7, Heat No. 5-5154, JFE Steel Corporation for SA-738 plate ID mark B2-A2, 10/28/2010
G23719-024CM, Heat No. JOK9456, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-27, 10/18/2011
G23719-025CM, Heat No. JOK9456, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-28, 10/18/2011
G23719-026CM, Heat No. JOK9456, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve E-29, 10/18/2011
G23719-026CM, Heat No. JOL4527, SEO Koatsu Kogyo Company, SA-350 Gr. LF2 Cl. 1 Penetration Sleeve P-22, 10/18/2011
RINJQ-225-5-1, Heat No. 9M7501, Nippon Steel & Sumikin Welding Company ER80S-G, 9/28/2010
RINJQ-229-1-1, Heat No. 9D7894, Nippon Steel & Sumikin Welding Company ER80S-G, 1/15/2010
RINJQ-229-1-2, Heat No. 9E7904, Nippon Steel & Sumikin Welding Company ER80S-G, 3/5/2010
RINJQ-229-1-3, Heat No. 9L7977, Nippon Steel & Sumikin Welding Company ER80S-G, 9/8/2010
RINJQ-229-2-1, Heat No. 9L7978, Nippon Steel & Sumikin Welding Company ER80S-G, 9/28/2010
RINJQ-229-2-8, Heat No. 0Q7529, Nippon Steel & Sumikin Welding Company ER80S-G, 1/4/2011
733281, Lincoln Structural Solutions for Heat No. A9B083 Piece ID No. 0198 for SA-36 Electrical Pad 35-5, 01/12/2012
43136, Heat No. 110126 Alton Steel Test Laboratory for ASTM A576 Grade G10200 (SAE 1020) blank nut Piece Mark No. 2A17
1498, Lincoln Electric Lot No. 967Z for Outershield 91K2-HSR with AWS Class. E91TG-H4 of SFA-5.29, 3/15/2011
740466, ESAB Lot No. 2K019T02 for Atom Arc 9018 with AWS Class. E9018-H4R electrodes of SFA-5.5, 11/02/2011

Welding Procedures:
IHI WPS I-11R2G, Revision 3 with supporting PQR I-11Q6G
IHI WPS I-11R3G, Revision 3 with supporting PQR I-11Q7G
IHI WPS I-11R8G, Revision 2 with supporting PQR I-11Q9G
IHI WPS IT-1120G, Revision 2 with supporting PQRs I-11W9G and T-11R3G

CB&I WPS Stud – Manual (with SMAW for 1" diameter studs), Revision 3 dated 01/12/2012 with supporting PQR 12718F
CB&I WPS Stud – Machine (for ¾" diameter studs), Revision 1 dated 01/26/2011 with supporting PQR 12707S and 12708S
CB&I WPS E9018-H4R, Revision 4 dated 02/21/2012 with supporting PQR 12676, 12677, 12749, and 12750
CB&I WPS E91TG-H4, Revision 4 dated 02/21/2012 with supporting PQR 12690, 12691, 12723, and 12757
CB&I WPS ENi4/OK 10.72, Revision 3 dated 01/09/2012 with supporting 12674

Welder/Operator Qualification Records:
CB&I, Welder Qualification Records for Welder ID-No. 232338, 233007, 3201351, 3294041, 63009171, 63011097, 63012726, 63011838, 63012628, and 626898
CB&I, Stud Welding Operator (automatic) Performance Qualification Test Records for Operator ID-No. 727 and 921
IHI Welder Qualification Records, 0397, 0430, 1536, 1782, 1831, 1881, 1963, 1967, 1968, 1972, 2001, 2002, 2006, 2047, 2050, 2322, 2431, 2435, 2458, 2553, 2555, 2559, 2586, 2595, and 2705

Nondestructive Examination Records:
CB&I NDE-MT and RT Certifications of Qualification for Level II, 2042693
CB&I Education and Visual Examination Record of 02/2012 for Level II, 2042693
CB&I NDE-MT and RT Certifications of Qualification for Level II, 728683
CB&I Education and Visual Examination Record of 01/2012 for Level II, 728683
CB&I, VCS-U2-2011-MT-019, Magnetic Particle Examination Report, Column Stub A2-C54 to A2-C13 BH3 plate
CB&I, RT-VCS-U2-2011-RT-006, Radiographic Examination Report, Plate B-15 to B-23, Weld Seam "W" of BH2, 1/12/2012 and associated RT film interval number 10-11.
CB&I, RT-VCS-U2-2011-RT-009, Radiographic Examination Report, Plate C-2 to C-21, Weld Seam "F" of BH3, 12/7/2011 and associated RT film interval numbers 2-3, 3-4, 4-5, 20-21, 20-21 R1, 20-21 R2
CB&I, RT-VCS-U2-2011-RT-030, Radiographic Examination Report, Plate C-3 to C-13, Weld Seam "K" of BH3, 3/8/2012 and associated RT film interval number 1-2
VCS-U2-2012-SFT-027, Vacuum Box Leak Test Report, BH3 Seam "K", 3/20/2012
VCS-U2-2012-SFT-010, Vacuum Box Leak Test Report, BH2 Seam "W", 1/30/2012
IHI, Magnetic Particle Examination Procedure 026R205, Revision 3 dated 3/2/2011
IHI, MT-004-AP-WA2-P22-N, Magnetic Particle Examination Record after PWHT of corner weld for P-22 Penetration, 4/6/2011
JFE, H22-218 , Ultrasonic Testing Report by JFE Steel Corporation for P11 insert plate JFE Plate No. and Heat No. HC073A, 10/28/10
IHI, MT-004-AP-WA2-P11-N, Magnetic Particle Examination Record after PWHT of corner weld for P-11 Penetration, 4/6/2011
IHI, MT-004-EP-WB2-E27~E29-N, Magnetic Particle Examination Record after PWHT of corner weld for E27 thru E29 Penetrations to B2-A2, 4/6/2011
IHI, RT-004-WA2-P11-L, Radiographic Examination Record of longitudinal seam of the sleeve for P-11 Penetration, 1/13/2011
IHI, RT-004-WA2-C3-1, Radiographic Examination Record, Knuckle Plate A2-C3, 8/27/2010
IHI, Radiographic Examination Report for Dollar and Knuckle Plates Parts/Joint No. (WA2-A1, 2-1, 2), 6/21/2010
JFE, H21-207 , Ultrasonic Testing Report by JFE Steel Corporation for P11 insert plate JFE Plate No. and Heat No. K3094A, 11/19/09

JFE, H22-218 , Ultrasonic Testing Report by JFE Steel Corporation for P11 insert plate JFE Plate No. and Heat No. HC073A, 10/28/10

Corrective Action / Nonconformance Records:

Nonconformance Control List – Nuclear for VC-001 thru VC-029
VC-004, CB&I, NDE material not procured through nuclear procurement process, 3/23/2011
VC-012, CB&I, NDE purchase material did not meet certificate of conformance, 7/5/2011
VC-018, CB&I, Preheat not maintained for Weld Seam "V", 11/7/2011
VC-019, CB&I, Volume of weld metal exceeded in BH-3 vertical "E" seam weld, 11/8/2011
Observation Report/Problem Notice Log – Nuclear for OB-VC-2011-001 thru -034 and PN-VCS-2011-001 thru -023; and OB-VC-2012-601 thru -618 and PN-VCS-2012-601, 608, 610, 613, 615, 617, and 619
OB-VC-2012-605, CB&I, 1.5 hours span of data missing in data logger for electrode holding oven, 1/18/2012
OB-VC-2012-606, CB&I, Volume of weld metal exceeded in BH-3 vertical "N" seam weld, 1/21/2012
OB-VCS-2012-612, CB&I, NDE visual exam with ortho-rater, 2/23/2012
OB-VCS-2012-617, CB&I, Permanent Plant Records Storage, 3/15/2012
PN-VCS-2011-021, NRC identified, CB&I, use of 2008 Addenda in NDE-RT procedure in lieu of 2002 Addenda, 11/3/2011
PN-VCS-2012-619, NRC identified, CB&I, Quality Assurance Manual update to match CMS-720-03-PR-9401 for welder qualifications, 4/4/2012

Design Reports:

IHI ASME Data Report Form N-2 dated 12/16/2011 for nuclear part A2-C33 (S/N IN-4786), includes mechanical penetration P11
IHI ASME Data Report Form N-2 dated 12/16/2011 for nuclear part A2-C36 (S/N IN-4789), includes mechanical penetration P22
IHI ASME Data Report Form N-2 dated 12/6/2011 for nuclear part B2-A2 (S/N IN-4817), includes electrical penetrations E27 thru E29

Miscellaneous:

CB&I Nuclear Quality Assurance Manual (NQAM), Revision 11
CB&I Receipt Inspection Report – Nuclear No. U2-P-001 for P-11 penetration dated 3/24/12
CB&I Receipt Inspection Report – Nuclear No. U2-S1-002 for E27 thru E29 electrical penetrations dated 2/23/12
CB&I Daily Welding Material Distribution Log of 4/3/12
CB&I Traveler for U2-BH-3-1P, Column Stub A2-C54 to BH3 A2-C13 plate
CB&I Traveler for U2-BH3-2N for welding anchor studs 18-1 to BH3 A2-C13 plate with Stud Welding Spreadsheet Sequence 3 thru 7
CB&I Traveler for U2-BH3-A2-C13 Anchor Studs, 8/8/2011
CB&I Traveler for U2-BH2-1-B2-W, Plate C-3 to C-13, Weld Seam "W", 12/9/2011
CB&I Traveler for U2-BH2-BH3, BH2 plates to BH3 Plates circumferential weld, 1/16/2012
CB&I Traveler for U2-BH3-5-B3-F, Plate C-2 to C-21, Weld Seam "F", 10/4/2011
CB&I Traveler for U2-BH3-5-B3-K, Plate C-3 to C-13, Weld Seam "K", 1/9/2012
CB&I Traveler for U2-BH3-6-P11 for Weld Nozzle P11 insert plate Assembly into BH3 plate
CB&I Traveler for U2-BH3-11-35-5, Weld Electrical Attachment Plate 35-5 to BH3-C4 Plate, 2/23/2012
CB&I Welders Summary Report (with RT Report No.) for BH3 and BH2 butt joints linked to each Welder ID 097, 171, 338, 351, 467, 585, and 838 for a total of 4 pages printed on 04/02/2012

IHI Dimensional Examination Record No. DT004-A2-C33 for P11 penetration, 7/14/11
IHI Dimensional Examination Record Nos. G23719-024D, -025D, and -026D for electrical penetrations E27 thru E29
IHI Weld Checklist WC-004-U2-LR-001 page 3 of 10 for Electrical Penetrations E27 thru E29
IHI Weld Checklist WC-004-U2-PN-001 page 2 of 5 for P11 Penetration
JFE Manufacturing Specification of SA-738 Grade B Plates Document No. B-W9N15 Revision G dated 2/9/2012
Transcat Certificate of Calibration 2-BE693-2-1 for Datalogger Serial Number B3200419 dated May 23, 2011
Transcat Supplemental Report for BE693-2-1 for set points and tolerances with as-found data for humidity and temperature measurements

ITAAC Number 95:

Miscellaneous:

CMS-830-15-PR-45145, Solution Film Testing Vacuum Box Technique, ASME Section III, Division 1 – Subsection NE, 10/8/2009
CB&I NDE-SFT Certification of Qualification for Level II, 728683
CB&I Education and Visual Examination Record of 01/2012 for Level II, 728683
CB&I NDE-SFT Certification of Qualification for Level II, 2042693
CB&I Education and Visual Examination Record of 02/2012 for Level II, 2042693
CB&I Traveler for U2-BH3-5-B3-K, Plate C-3 to C-13, Weld Seam “K”, 1/9/2012
CB&I Traveler for U2-BH2-1-B2-W, Plate C-3 to C-13, Weld Seam “W”, 12/9/2011
VCS-U2-2012-SFT-027, Vacuum Box Leak Test Report, BH3 Seam “K”, 3/20/2012
VCS-U2-2012-SFT-010, Vacuum Box Leak Test Report, BH2 Seam “W”, 1/30/2012

ITAAC Number 96:

CMTRs:

5918-1, Heat No. 4-0087 Lot No. KS362B, JFE Steel Corporation for SA-738 Grade B crown plate ID mark A2-A1-1 (BH1), 11/19/2009
5919-1, Heat No. 4-8087 Plate No. K3094A, JFE Steel Corporation for SA-738 Grade B insert plate for P11 penetration, 11/19/2010
5922-1, Heat No. 4-0087 Lot No. KS362A, JFE Steel Corporation for SA-738 Grade B crown plate ID mark A2-A2-1 (BH1), 11/20/2009
5923-1, Heat No. 4-0087 Lot No. KK253A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A1-2 (BH1), 11/20/2009
5923-2, Heat No. 4-0087 Lot No. KK249A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A1-3 (BH1), 11/20/2009
5923-3, Heat No. 4-0087 Lot No. KS363A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A2-2 (BH1), 11/20/2009
5923-4, Heat No. 4-0087 Lot No. KK252A, JFE Steel Corporation for SA-738 Grade B knuckle plate ID mark A2-A2-3 (BH1), 11/20/2009
5950-4, Heat No. 6-3335 Plate No. LEO85A, B, JFE Steel Corporation for SA-738 plate Grad B ID mark C-13-1 (BH-3), 1/15/2012
CMTRs 5951-15, Heat No. 4-0096 Plate L6034A, JFE Steel Corporation for SA-738 Grade B plate ID mark B-15 (BH2), 1/21/2010
5951-23, Heat No. 4-0096 Plate No. L6035A, JFE Steel Corporation for SA-738 Grade B plate ID mark B-23 (BH2), 1/21/2010
5954-3, Heat No. 6-3334 Plate No. LE090A, B, C, JFE Steel Corporation for SA-738 Grade B plate ID mark A2-C4-1 (BH-3), 2/10/2010
5956-3, Heat No. 4-0087 Plate No. LY081A, B, JFE Steel Corporation for SA-738 Grade B plate ID mark C-3-1 (BH3), 2/19/2010

5956-4, Heat No. 6-3335 Plate No. AG1101A, JFE Steel Corporation for SA-738 Grade B plate ID mark C-3-1 (BH3), 2/19/2010
5957-2, Heat No. 6-3334 Plate No. ML286B, JFE Steel Corporation for SA-738 Grade B plate ID mark A2-C4-2 (BH3), 2/10/2010
5957-3, Heat No. 6-3334 Plate No. ML286C, JFE Steel Corporation for SA-738 Grade B plate ID mark C-3-2 (BH3), 2/10/2010
5959-1, Heat No. 4-8088 Plate No. MS118A, B, C, D, JFE Steel Corporation for SA-738 Grade B plate ID mark A2-C54, 2/26/2010
6054-1, Heat No. 6-8563 Plate No. HC073A, JFE Steel Corporation for SA-738 Grade B insert plate for P22 penetration, 10/28/2010
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(WEC) PO 4500430413, Mirion Technologies, dated 3/27/2012

Training Records for Auditors:
(SCE&G) K. Guyton
(SCE&G) J. Pharr
(Shaw) A. Jud Mills
(Shaw) M. Goyda
(Shaw) A. Pawling
(Shaw) C. Fisher
(Shaw) P. Hooks
(Shaw) J. Taylor
(Shaw) K. Snyder
(Shaw) J. Stewart
(Shaw) K. Dunbar
(WEC) C. Lizotte
(WEC) L. Kamenicky
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(SCE&G) J. Bouknight
(SCE&G) J. Ezell
(SCE&G) M. Fanguy
(SCE&G) R. Thompson

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No. 0003, Austenitic Stainless Steel Tubing - Seamless, ASME Section II, Part A, SA 213 / SA-312, Revision 3, 09/22/2009
No. 0004, Austenitic Stainless Steel Plates & Coils - Unperf., ASME Section II, Part A, SA-240, Revision 3, 03/17/2011
No. 0005, Austenitic Stainless Steel Sheets - Perf., ASME Section II, Part A, SA-240, Revision 2, 04/08/2009
No. 0006, Austenitic Stainless Steel Bar And Shapes, ASME Section II, Part A, SA-479, Revision 2, 02/13/2009
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(WEC) APP-1010-GEF-002, Circumferential Bar Requirements for Lap Splices in Lieu of (WEC) Mechanical Connectors, Revision 0
(WEC) APP-1200-GEF-033, Addition of Vertical Bars to Wall N Below, Revision 0
APP-MY03-Z0-001, Quality Release & Certificate of Conformance (Quality Documentaton Package) for IRWST & Containment Recirculation Screens for Passive Core Cooling System, Westinghouse PO 4500328473 - Items 1, 2, 5, and 11, 02/15/2012
APP-MY03-VMM-001, AP1000 MY03 PXS Containment Recirc. and IRWST Screens Vendor Manual, Revision 0
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Shaw Quality Assurance Inspection Report Q445-11-0048, Reinforcing Steel for the Nuclear Island Basement Bottom Layer 1
Planning and Documentation Package, Standard Plant ITAAC 3.3.00.05a
Planning and Documentation Package, Standard Plant ITAAC 2.2.02.07a.iii
Planning and Documentation Package, Standard Plant ITAAC 2.2.03.08b.02
Planning and Documentation Package, Standard Plant ITAAC 2.2.04.07a.i
Planning and Documentation Package, Standard Plant ITAAC 2.3.06.09b.iv

LIST OF ACRONYMS

10 CFR	Title 10 of the Code of Federal Regulations
ADAMS	Agency-wide Documents Access & Management System
AISC	American Institute of Steel Construction
AP1000	Westinghouse Advanced Passive Pressurized Water Reactor
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
CAR	Corrective Action Report
CB&I	Chicago Bridge & Iron
CMTR	Certified Material Test Report
CR	Condition Report
CV	Containment Vessel
CVBH	Containment Vessel Bottom Head
DCD	Plant Specific Design Control Document
E&DCR	Engineering and Design Coordination Report
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IRWST	In-Containment Refueling Water Storage Tank
ITAAC	Inspections, Tests, Analysis and Acceptance Criteria
M&TE	Measuring and Test Equipment
MT	Magnetic Particle Examination
N&D	Nonconformance and Disposition Report
NCR	Nonconformance Report
NDE	Nondestructive Examination
NIRMA	Nuclear Information and Records Management Association
NQAM	Nuclear Quality Assurance Manual
NRC	Nuclear Regulatory Commission
NTS	National Technical Systems
PQR	Procedure Qualification Record
QA	Quality Assurance
QAPD	Quality Assurance Program Description
QC	Quality Control
RT	Radiographic Examination
SCE&G	South Carolina Electric and Gas Company
Shaw	Shaw Stone and Webster, Inc
SMS	Shaw Modular Solutions
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
UT	Ultrasonic Examination
VIO	Violation
WEC	Westinghouse Electric Company, LLC
WPS	Welding Procedure Specification

ITAAC INSPECTED

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

ITAAC Number	ITAAC	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[1], 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[1], 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[1], 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 containment internal structures as-built concrete thicknesses conform to the building sections defined in Table 3.3-1[1].

ITAAC Number	ITAAC	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
767	3.3.00.02a.ii.d	The nuclear island structures, including the critical sections listed in Table 3.3-7[1], 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[1].
93	2.2.01.03a	Pressure boundary welds in components identified in Table 2.2.1-1[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 nondestructive examination of pressure boundary welds.
91	2.2.01.02a	The components identified in Table 2.2.1-1[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[1] as ASME Code Section III.
95	2.2.01.04a.i	The components identified in Table 2.2.1-1[1] as ASME Code Section III retain their pressure boundary integrity at their design pressure.	A hydrostatic or pressure test will be performed on the components required by the ASME Code Section III to be tested.	A report exists and concludes that the results of the pressure test of the components identified in Table 2.2.1-1[1] as ASME Code Section III conform with the requirements of the ASME Code Section III.
96	2.2.01.04a.ii	The components identified in Table 2.2.1-1[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.

[1]Refer to the Plant-Specific DCD for the contents of this table.