



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

July 29, 2013

Mr. Ronald A. Jones
Vice President, New Nuclear Operations
South Carolina Electric and Gas
P.O. Box 88 (Mail Code P40)
Jenkinsville, SC 29065-0088

**SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3 - NRC
INTEGRATED INSPECTION REPORTS 05200027/2013003 and
05200028/2013003**

Dear Mr. Jones:

On June 30, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Virgil C. Summer Nuclear Station Units 2 and 3. The enclosed inspection report documents the inspection results which were discussed on July 18, 2013, with you and other members of your staff.

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 license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Two NRC-identified findings of very low safety significance (Green) were identified during this inspection. These findings were determined to involve violations of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as non-cited violations (NCVs) in accordance with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest these NCVs, 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 the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector office at the Virgil C. Summer Nuclear Station Units 2 & 3.

If you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector office at the Virgil C. Summer Nuclear Station Units 2 & 3.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the

NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

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

Docket Nos.: 05200027, 05200028

License Nos.: NPF-93, NPF-94

Enclosure: Inspection Report 05200027/2013003
and 05200028/2013003
w/Attachment: Supplemental Information

cc w/encl: (See page 2)

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Sincerely,

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Michael Ernstes, Chief
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ADAMS: Yes ACCESSION NUMBER: ML13210A327 SUNSI REVIEW COMPLETE FORM 665 ATTACHED

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DATE	07/24/2013	07/25/2013	07/25/2013	07/23/2013	07/28/2013	07/29/2013	
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Letter to R. Jones from Michael E. Ernstes dated July 29, 2013

SUBJECT: VIRGIL C. SUMER NUCLEAR STATION UNITS 2 AND 3 - NRC INTEGRATED
INSPECTION REPORTS 05200027/2013003 and 05200028/2013003

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

Docket Numbers: 05200027
05200028

License Numbers: NPF-93
NPF-94

Report Numbers: 05200027/2013003
05200028/2013003

Licensee: South Carolina Electric and Gas

Facility: Virgil C. Summer Nuclear Station Unit 2
Virgil C. Summer Nuclear Station Unit 3

Location: Jenkinsville, SC

Inspection Dates: April 1 through June 30, 2013

Inspectors: P. Donnelly, Resident Inspector, DCP
D. Failla, Resident Inspector, DCP
R. Jackson, Senior Resident Inspector, DCP
A. Lerch, Construction Project Inspector, DCP
C. Oelstrom, Construction Inspector, DCI
K. Steddenbenz, Construction Project Inspector, DCP

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

Enclosure

SUMMARY OF FINDINGS

Inspection Report 05200027/2013003, 05200028/2013003; 04/01/2013 through 06/30/2013; Virgil C. Summer Nuclear Station Unit 2, Virgil C. Summer Nuclear Station Unit 3, Quality Assurance Program Implementation During Construction and Pre-Construction Activities.

This report covers a three-month period of inspection by resident inspectors and announced Inspections, Tests, Analysis, and Inspection Criteria (ITAAC) inspections by both regional and resident inspectors. 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-Identified and Self Revealed Findings

Cornerstone: Construction Installation

- Green. The inspectors identified a technical finding and non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, for the licensee's failure to identify, evaluate, and correct nonconforming steel reinforcing bars in accordance with documented procedures. The licensee initiated condition report (CR) NND-13-00448 to document this finding in their corrective action program.

This performance deficiency had a greater than minor safety significance because it was similar to the "not minor if" statement of construction issue example 19 in Appendix E to IMC 0613P. The finding was a technical finding associated with the construction/installation cornerstone and was evaluated under the construction significance determination process as outlined in IMC 2519P, Appendix A. This finding was of very low safety significance (Green) because it was determined to be a construction finding and was dispositioned use-as-is. This finding was associated with the Procedural Compliance aspect in the Work Practices component of the construction cross-cutting area of Baseline Inspection. [A.4(b)] (Section 1P07)

- Green. The inspectors identified a technical finding and NCV of 10 CFR 50, Appendix B, Criterion XVI for the licensee's failure to ensure that conditions adverse to quality were corrected. The licensee initiated CR NND-13-00575 and nonconformance and disposition (N&D) report VS2-CE50-GNR-000016 to document this finding in their corrective action program.

This performance deficiency had greater than minor safety significance because the uncorrected conditions could render the quality of construction activities and installed items unacceptable or indeterminate. The finding was a technical finding associated with the construction/installation cornerstone and was evaluated under the construction significance determination process as outlined in IMC 2519P, Appendix A. This finding was of very low safety significance (Green) because the identified condition did not impair the design function of a system or structure listed in the construction significance determination process

risk importance table. This finding was associated with the Human Error Prevention Techniques aspect in the Work Practices component of the construction cross cutting area of Baseline Inspection. [A.4(a)] (Section 1P08.1)

B. Licensee-Identified Violations

No findings were identified.

REPORT DETAILS

Summary of Plant Construction Status

During this inspection period, the licensee placed the Unit 2 containment vessel bottom head in the nuclear island and began constructing concrete reinforcing bar in the Unit 3 nuclear island.

1. CONSTRUCTION REACTOR SAFETY

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

1A01 (Unit 2) ITAAC Number 91 / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with Unit 2 ITAAC 2.2.01.02a:

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
The components identified in Table 2.2.1-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the as-built components as documented in the ASME design reports.	The ASME Code Section III design reports exist for the as-built components identified in Table 2.2.1-1 as ASME Code Section III.

The inspectors used the following NRC inspection procedures to perform these inspections on the Unit 2 containment vessel feed and steam line insert plates:

- 65001.F-02.02; and
- 65001.F-02.03

The inspectors reviewed the weld traveler for the insert plates B2-B13 and B2-B14. The inspectors reviewed the weld travelers to identify welders performing work on these insert plates, and the types of weld rods that were used. The inspectors reviewed certified material test reports for the following materials to determine whether the materials used were in conformance with the applicable requirements of the American Society of Mechanical Engineers (ASME) Code Section II, ASME Code Section III, Subsection NE, and Westinghouse (WEC) design and material specifications:

- steam/feed line insert plates B2-B13 and B2-B14;
- penetration sleeves P23, P24, P25, P26, P44, P45; and
- weld rods.

The inspectors also reviewed the welder qualifications for the welders performing work on the insert plate B2-B14 to determine whether the welder was qualified to perform work according to the requirements in ASME Code Section IX.

b. Findings

No findings were identified.

1A02 (Unit 2) ITAAC Number 93 / Family 06Ba. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with Unit 2 ITAAC 2.2.01.03a:

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
Pressure boundary welds in components identified in Table 2.2.1-1 as ASME Code Section III meet ASME Code Section III requirements.	Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.	A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.

The inspectors observed field welding of the Unit 2 containment vessel insert plate containing the main feed and main steam penetrations, B2-B14. The inspectors determined whether weld travelers, welding procedure specification (WPS) variables, surface cleaning, preheat, and interpass temperature were in compliance and controlled in accordance with Chicago Bridge and Iron (CB&I) procedures and ASME Section III, Subsection NE. The inspectors examined field welds to determine whether weld surface finish and appearance, finish grinding of surface, and absence of surface defects were in compliance with procedures and ASME Section III, Subsection NE.

The inspectors reviewed the welder qualifications for the welders performing work on the insert plate B2-B14 to determine whether the welders were qualified to perform work according to the requirements in ASME Code Section IX.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 784 / Family 02Ca. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with Unit 3 ITAAC 3.3.00.05a:

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
Exterior walls and the basemat of the nuclear island have a water barrier up to site grade.	An inspection of the as-built water barrier will be performed during construction.	A report exists that confirms that a water barrier exists on the nuclear island exterior walls up to site grade.

The inspectors observed activities in the field related to the Unit 3 nuclear island lower mudmat application to determine if the coefficient of friction requirements were met. The inspectors reviewed project technical report VSG-AT01-A0R-800000, Revision 1, which specified that a course broom finish was required over 95% of the lower mudmat surface to meet the 0.7 coefficient of friction required by the Updated Final Safety Analysis (UFSAR). The inspectors observed the lower mudmat surface preparation and reviewed quality assurance inspection reports C114-13-0024 and C114-13-0025, Concrete Post Placement – Unit 3 Lower Mud Mat Broom Finish Percent, to determine if the requirements of drawing VS3-1000-X9-800005, VC Summer Unit 3 Nuclear Island Fill Concrete and Mudmat Plan Details and Notes, Revision 0, were met.

The inspectors observed activities in the field related to the Unit 3 nuclear island waterproof membrane installation to determine if ITAAC requirements were met. Specifically, the inspectors observed the lower mudmat surface to determine if it was free of loose foreign debris and of standing water in accordance with the requirements of drawing VS3-1000-X9-800005.

The inspectors observed prequalification testing, placement, seam welding, and post-placement seam testing of the high density polyethylene material used as the waterproof membrane to determine if the requirements of project specification VSG-AT01-Z0-800000, Waterproof Membrane Installation (Horizontal Application), Revision 3, were met. Specifically, the inspectors observed the welding of the test seams and the shear and peel strength tests performed on a calibrated tensiometer to determine if the weld parameters met strength requirements.

The inspectors observed the application of the waterproof membrane to verify the installation activities were being conducted per work package number VS3-1000-ATW-001-(i), "Nuclear Island Horizontal Waterproof Membrane Installation," Revision 0. The inspectors observed post-placement air pressure steam testing to determine if the seams were leak tight and performed a final visual inspection of the entire membrane prior to the upper mudmat pour. The inspectors reviewed surveillance report number S-132178-2013-029, "Installation Activities for the Unit 3 Waterproof Membrane," to verify that CB&I's Quality Assurance concluded installation and testing of the waterproof membrane were satisfactorily performed.

b. Findings

No findings were identified.

1A04 (Unit 2) ITAAC Number 761 / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 3.3.00.02a.i.b for the Unit 3 nuclear island basemat:

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

The inspectors observed the reinforcing steel and pedestal concrete placement for the concrete reinforcement module under the containment vessel bottom head (CR-10) within the shield building area of the basemat. The inspectors applied the guidance in Inspection Procedure (IP) IP 65001.02, "Inspection of ITAAC Related Installation of Structural Concrete."

The inspectors observed the reinforcing steel installation, reviewed the applicable design drawings and specifications, observed the pouring of the concrete pedestal and interviewed licensee personnel to verify construction activities were being conducted in accordance with design documents and applicable processes and procedures. Specifically, the inspectors verified that structural concrete design and installation was completed in accordance with American Concrete Institute (ACI) 349-01, Code Requirements for Nuclear Safety Related Concrete Structures, and WEC specification VS2-CC01-Z0-031, Safety Related Placing Concrete and Reinforcing Steel.

The inspectors reviewed applicable design specifications, Engineering and Design Coordination Reports (E&DCR's), non-conformance reports and corrective action documents associated with the CR-10 rebar installation to determine whether:

- 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.

b. Findings

No findings were identified.

1A05 (Unit 3) ITAAC Number 761 / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with Unit 3 ITAAC 3.3.00.02a.i.b.

The inspectors observed portions of the installation of layers 1 and 2 reinforcing steel (rebar) associated with the Unit 3 nuclear island basemat below the shield building. The inspectors observed whether the licensee installed the rebar in accordance with applicable specifications, drawings, procedures and codes. The inspectors verified that the rebar was correctly secured in the right locations with proper clearances. During this inspection, the inspectors referenced the applicable code sections of ACI 349-01 as well as the following WEC design drawings:

- VS3-1000-CR-001, Revision 1, Nuclear Island Basemat Bottom Reinforcement;
- VS3-1000-CR-901, Revision 2, Nuclear Island Basemat Reinforcement Sections; and
- VS3-1000-CR-904, Revision 2, Nuclear Island Basemat Reinforcement Section Details

The inspectors observed these field activities to determine whether the rebar spacing, size, and count conformed to the above drawings. The inspectors also observed the installation of rebar couplers to determine if they were installed in accordance with applicable design requirements. The inspectors verified that the process and crews were qualified, that the crew was using a calibrated torque wrench, and that inspections were performed during and after the splicing by qualified personnel.

b. Findings

No findings were identified.

1A06 (Unit 2) ITAAC Number 93 / Family 06B

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 2.2.01.03a for the Unit 2 containment vessel.

The inspectors observed field welding of joint 'D', course S7 vertical weld, to determine whether the welding was performed in accordance with the design specification and ASME Code Section III, Subsection NE. Also, the inspectors observed tack welding and the root weld on ring 2 (B2) S6-S7 girth weld to determine whether the welding was performed in accordance with the design specification and ASME Code Section III, Subsection NE. During the weld observations, the inspectors reviewed the following:

- reviewed the associated weld data record to determine whether correct WPS were referenced, hold points were observed, and inspections were performed;
- weld root spacing was within the tolerances specified on the drawing;
- tack welds to be incorporated into the final weld were free of defects and met the requirements of ASME Code Section III;
- examined the weld filler material to determine whether the material was in accordance with the WPS;
- examined the welding gas to determine whether the gas was in accordance with the WPS;
- observed that the welder was welding within the WPS variables;
- the weld joint was protected from wind and rain in accordance with the general welding procedure specification for the flux cored arc welding process;
- preheat and interpass temperatures were monitored and controlled in accordance with the general welding procedure specification for the flux cored arc welding process and the specific WPS; and
- the weld was traceable to the welder

The inspectors reviewed CB&I nonconformance report VC-043, weld filler material not in compliance with weld material specification, to determine whether the flux cored arc welding material used for the containment vessel met ASME Code Section III, Subsection NE requirements.

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC Number 93 / Family 06B

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with Unit 3 ITAAC 2.2.01.03a.

The inspectors observed fit-up of joints BH3-4-AA and BH3-4-Z of the Unit 3 containment vessel bottom head to determine whether the fit-up, joint configuration, and inspection complied with applicable design specifications and drawings. Specifically, the inspectors observed measurement of joint gap and joint offset. The inspectors reviewed weld data records associated with the fit-up of the containment vessel bottom head BH3 plates to determine whether designated hold points were observed and signed off.

b. Findings

No findings were identified.

1A08 (Unit 2) ITAAC Number 760 / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 3.3.00.02a.i.a for the Unit 2 containment internal structure:

Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	A report exists which reconciles deviations during construction and concludes that the as-built containment internal structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.

The inspectors applied the guidance in IP 65001.02, "Inspection of ITAAC Related Installation of Structural Concrete." The inspectors observed the concrete reinforcing steel placement, reviewed documents and applicable design drawings and specifications, and interviewed licensee personnel to verify construction activities were being conducted in accordance with design documents and applicable procedures. Specifically, the inspectors verified:

- structural concrete work, design and installation was completed in accordance with applicable specifications, drawings, approved procedures and qualified personnel;
- key building critical dimensions, materials, and separation satisfied design specifications, requirements, and relevant ITAAC; and
- records reflected completed work meets design specifications and acceptance criteria

The inspectors performed independent measurements and observations on a sample of areas of the containment internal structures for the proposed Unit 2 nuclear island structures. Specifically, the inspectors observed the reinforcing steel placement for layers A, B, and C located in the containment vessel bottom head. In addition, the inspectors reviewed various documents within the work packages and design control documents for the reinforcing steel, to verify:

- reinforcing steel was controlled and placement performed in accordance with the applicable specifications, codes, drawings, and procedures;
- contractors used approved implementing procedures;
- reinforcing steel and embedment installation was controlled and performed in accordance with the applicable specifications, codes, drawings, and procedures;
- reinforcing steel and embedment plates were located properly in the structure, secured, free of concrete or excessive rust, and had proper clearances;
- procedures clearly prescribed acceptable methods of quality control inspection and included appropriate acceptance criteria; and
- reinforcing steel conformed to design drawings with no deviations.

The inspectors reviewed applicable design specifications, E&DCRs, non-conformance reports, and corrective action documents associated with the rebar installation to determine whether:

- 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.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed implementing documents to determine whether the licensee and its contractors had implemented processes to address the Quality Assurance Program Document (QAPD) requirements and UFSAR commitments for the review, approval, and process for controlling changes to design documents. The inspectors also reviewed implementing documents that govern the control of design interfaces between plant systems and among participating design organizations. The inspectors reviewed a sample of design changes and field changes to verify adequate review and implementation into all impacted documents. Specifically, the inspectors reviewed E&DCRs from both CB&I's site data center and work packages out in the field to verify proper implementation of procedures.

The inspectors also reviewed implementing documents to determine whether the licensee and its contractors had implemented processes for revision, modification, and/or supersession/cancellation of controlled documents. Specifically, the inspectors reviewed APP-GW-GAP-420, Section 9 "Voiding or Superseding an E&DCR," to determine adequacy and reviewed a sample of E&DCRs to verify proper implementation. The inspectors also held numerous discussions with licensee and consortium staff regarding the handling and processing of E&DCRs in accordance with the approved procedures.

b. Findings

Introduction: The inspectors identified an unresolved item (URI) related to inadequate superseding of E&DCRs in the CB&I site data center.

Description: APP-GW-GAP, Section 9.1.1 stated that, "if an approved E&DCR must be either voided or superseded prior to the incorporation of the E&DCR into any of the Impacted Documents," WEC must "revise the original E&DCR and void/supersede using F-APP-GW-GAP-420-3." This form replaced the E&DCR that was being superseded as a revision 1 document and identified the E&DCR that superseded it. Every form was required to be entered into both WEC and CB&I's site data centers.

Based on the requirements above, the inspectors identified an example where form F-APP-GW-GAP-420-3 for a superseded E&DCR failed to be entered into CB&I's site data center, meaning two valid designs existed in the system. Specifically, E&DCR APP-CB46-GEF-001W was superseded by APP-CBB46-GEF-003. However, E&DCR APP-CB46-GEF-001W was still in CB&I's site data center as revision 0 instead of revision 1, form F-APP-GW-GAP-420-3 identifying the new applicable E&DCR. The form was filled out but was not entered into the system.

WEC created issue report (IR) 13-148-M020 and performed an extent of condition to identify other instances where E&DCRs were not properly superseded in the applicable site data centers. WEC preliminarily identified 68 other examples and continued to perform their extent of condition review and evaluation of the results. This issue is unresolved pending the inspectors' review of the extent of the condition to determine if this issue of concern is more than minor. (URI 05200027/2013003-01, Duplicated E&DCRs).

1P02 Quality Assurance Implementation, Appendix 5, Inspection of Criterion V – Instructions, Procedures, and Drawings (35007)

a. Inspection Scope

The inspectors reviewed implementing documents to determine whether the documents addressed the QAPD, UFSAR and ASME NQA-1-1994 commitments for implementing documents for the mudmat construction beneath the Unit 3 nuclear island. Specifically, the inspectors reviewed construction requirements for the concrete construction of the upper and lower mudmats to determine whether the licensee's documents established adequate measures to provide for the following:

- adequate information that allows another person with similar training and qualification to recreate the specific activity;
- if another method is used instead of preparing an implementing document, then information is incorporated by reference in, or as attachment to, the implementing document;
- identification of appropriate equipment to use;
- prerequisites;
- quantitative and qualitative acceptance criteria for determining that activities have been satisfactorily accomplished; and
- person(s) responsible for implementing activities described in implementing document.

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

- CB&I (formerly Shaw) Work Package, VS3-1000-CCW-003, Revision 1, Unit 3 Nuclear Island Upper Mudmat
- CB&I (formerly Shaw) Work Package, VS3-1000-CCW-002, Revision 0, Unit 3 Nuclear Island Backfill Concrete

b. Findings

No findings were identified.

1P03 Quality Assurance Implementation, Appendix 9, Inspection of Criterion IX – Control of Special Processes (35007)

a. Inspection Scope

The inspectors reviewed subcontractor, Mistras's, nondestructive examination written practice to determine whether the procedure met the requirements of American Welding Society (AWS) D1.1-2000 and SNT-TC-1A 1992 edition. Specifically, the inspectors reviewed the written practice to determine whether the training and experience levels in SN-TC-1A 1992 edition were met. The inspectors reviewed Mistras's ultrasonic examination (UT) procedure, 100-UT-310, Revision 2, to determine whether the procedure met the requirements of AWS D1.1-2000. The inspectors reviewed the UT procedure to determine whether the procedure specified the correct qualification level for personnel to interpret the UT data. The inspectors reviewed the UT procedure to determine whether the specified equipment, calibrations requirements, scanning technique, and acceptance criteria met the requirements of AWS D1.1-2000.

b. Findings

No findings were identified.

1P04 Quality Assurance Implementation, Appendix 11, Inspection of Criterion XI – Test Control (35007)

a. Inspection Scope

The inspectors reviewed implementing documents to determine whether the documents addressed the QAPD, UFSAR, and ASME NQA-1-1994 commitments for control of testing for concrete constituents. Specifically, the inspectors reviewed testing and sampling requirements for the cement, admixtures, aggregate, and water to determine whether the licensee's documents established adequate measures to provide for the following:

- type of test to be performed;
- when testing is required and sequencing of tests within an activity;
- specified acceptance criteria; and
- identification of potential sources of uncertainty and error.

The following documents were reviewed to determine if the documents established adequate measures as outlined in the previous paragraph:

- WEC specification VS2-CC01-Z0-027, Safety Related Concrete Testing Services; and
- CB&I (formerly Shaw) procedure QSI 11.1, Testing of Reinforcing Bars, Mechanical Splices, and Sampling and Testing of Concrete, and Concrete Related Materials.

The inspectors evaluated a sample of test results for the concrete constituents to determine the following:

- type of test and/or method;
- item tested;
- test criteria used to determine acceptance;
- results; and
- evaluation of acceptability.

b. Findings

No findings were identified.

1P05 Quality Assurance Implementation, Appendix 12, Inspection of Criterion XII – Control of Measuring and Test Equipment (35007)

a. Inspection Scope

The inspectors performed direct observations to determine if the licensee had effectively implemented its quality assurance program implementing documents for the control of measuring and test equipment (M&TE). Specifically, the inspectors performed the following activities:

The inspectors inspected M&TE that was located at on site work facilities and was being used to conduct inspections, tests, and other activities. The inspectors selected M&TE 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 inspectors examined the following M&TE being used for the waterproof membrane installation and testing:

- field tensiometer, ID No. QC25110; and
- pressure gauge, ID No. QC25415.

The inspectors examined the following M&TE being used to test the concrete for the concrete pedestal pour:

- thermometer, ID No. 99683;
- thermometer, ID No. 99685;
- press-air-meter, ID No. 52189;
- press-air-meter, ID No. 15570; and
- scale, ID No. 52231.

b. Findings

No findings were identified.

1P06 Quality Assurance Implementation, Appendix 13, Inspection of Criterion XIII – Handling, Storage and Shipping (35007)

a. Inspection Scope

During this inspection period, the resident inspectors reviewed the site specification APP-GW-VH-001, Revision 0, “AP1000 Site Receiving, Inspection and Storage Requirement for System Materials and Equipment,” to determine whether CB&I adequately implemented the requirements of ASME NQA-1-1994 and 10 CFR Part 50, Appendix B, Criterion 13 for storage. In addition, the inspectors observed the storage of safety related reinforcing steel and embed plates on site to determine if the requirements of APP-GW-VH-001 were being met.

b. Findings

No findings were identified.

1P07 Quality Assurance Implementation, Appendix 15, Inspection of Criterion XV - Nonconforming Materials, Parts, or Components

a. Inspection Scope

On a routine basis, the inspectors screened a sample of issues entered into the licensee and the Engineering, Procurement, and Construction (EPC) consortium’s corrective action programs to determine whether 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. The inspectors screened corrective action records associated with both Units 2 and 3. Specifically, the inspectors:

- attended weekly management review committee meetings at the site;
- reviewed a sample of licensee and EPC consortium corrective action documents; and
- held discussions with licensee and EPC consortium personnel responsible for the screening and correction of the issues.

b. Findings

Introduction: The inspectors identified a construction finding of very low safety significance (Green) and associated NCV of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the licensee’s failure to identify and correct nonconforming steel reinforcing bars in accordance with documented procedures. Specifically, the licensee failed to document and correct nonconforming steel reinforcing bar dowels during the preparation of the Unit 2 auxiliary building exterior wall construction.

Description: CB&I procedure, QS 15.1, Nonconformance and Disposition Report, Revision 2, Section 6.1.2, stated, “Individuals identifying non-conformances shall specifically identify, describe, and document the nonconformance.” While conducting a routine walk down of construction activities within the Unit 2 nuclear island, the inspectors observed what appeared to be abnormal chipping around multiple dowels

embedded in the nuclear island basemat. Subsequently, the licensee identified 95 dowels that did not meet the minimum splice length required by ACI 349. Of those 95, 70 locations had been brushed and/or chipped away at the base of the rebar to increase the exposed dowel length in the wall section.

Through interviews with the craft and field engineering staff, the inspectors learned that the licensee failed to document the identification, evaluation, and correction of the nonconformance. As a result, the corrective action to address the nonconformance (chipping the concrete around the dowels) was not performed in accordance with documented instructions appropriate to the circumstances.

The licensee subsequently documented the issue as N&D VS2-CR01-GNR-000047 to evaluate the issue for acceptance or repair. Specifically, chipping the concrete around the base of the dowels effectively reduced the top of concrete below the specified elevation which could have reduced the embedment length of the bars inside the (already poured) basemat. Because inadequate embedment and/or splice length of rebar could impact the critical characteristics associated with the basemat, the licensee performed a detailed engineering evaluation to determine if the chipping adversely impacted the ability of the basemat to perform its intended safety function. Based on the results of the evaluation, the licensee concluded that the nonconformance was acceptable "as is."

Analysis: The licensee's failure to identify, evaluate, and correct nonconforming steel reinforcing bars in accordance with documented procedures was a performance deficiency. The performance deficiency was considered more than minor in accordance with IMC 0613P because it was similar to the "not minor if" statement of construction issue example 19 in Appendix E, Examples of More-Than-Minor Construction Violations. Specifically: 1.) the licensee failed to document and evaluate the condition; and, 2.) the condition required a detailed engineering justification to demonstrate that the critical characteristics associated with the functionality of the nuclear island basemat were not impacted. The performance deficiency was associated with the Construction/Installation cornerstone.

The inspectors assessed the Construction finding in accordance with IMC 2519P, Appendix A and determined that the finding was of very low safety significance (Green) because it was dispositioned use-as-is.

The inspectors screened the finding for a possible construction cross-cutting component and aspect in accordance with Appendix F, "Construction Cross-Cutting Components and Aspects," of IMC 0613P. The inspectors determined this finding was associated with the Procedural Compliance aspect in the Work Practices component of the construction cross-cutting area of Baseline Inspection [A.4(b)]. The licensee did not define and effectively communicate expectations regarding procedural compliance such that personnel did not follow documented procedures to identify and evaluate nonconforming conditions.

Enforcement: 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

The licensee delegated overall project quality requirements for safety related activities to CB&I through Section 5.1, "Quality Assurance Program," of Article 5, "Quality Assurance," of the EPC Agreement. This agreement required, in part, that safety related activities be performed in accordance with the quality requirements of 10 CFR Part 50, Appendix B, Criterion V. CB&I procedure, QS 15.1, "Nonconformance and Disposition Report," Revision 2, Section 6.1.2, stated, "Individuals identifying nonconformances shall specifically identify, describe, and document the nonconformance."

Contrary to the above, on May 23, 2013, the licensee failed to accomplish activities affecting quality in accordance with documented instructions, procedures, or drawings. Specifically, the licensee failed to document and correct identified non-conformances associated with reinforcing bar dowels for the Unit 2 auxiliary building exterior walls in accordance with Section 6.1.2 of procedure QS 15.1. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as CR-NND-13-00448, this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200027/2013003-01, Failure to Document and Process a Nonconformance).

1P08 Quality Assurance Implementation, Appendix 16, Inspection of Criterion XVI – Corrective Actions (35007)

.1 Failure to Correct Conditions Adverse to Quality

a. Inspection Scope

The inspectors reviewed the licensee's corrective actions and commitments to correct violation number 05200027/2012004-004. This violation was associated with the licensee's failure to assure that received material conformed to the procurement documents. Specifically, some safety related embed plates contained studs that did not meet the requirements of design specification APP-SS01-Z0-003, Embedded and Miscellaneous Steel. APP SS01 Z0 003 required that concrete studs comply with Section 7.8.1 of AWS D1.1 2000 which required any stud that was repaired by welding shall be bent approximately 15 degrees from its original axis. The inspectors identified studs that were weld repaired but not bent. As part of the licensee's corrective actions for VIO 05200027/2012004-004, a 100 percent re-inspection of received embed plates on site was performed.

The inspectors reviewed corrective action document CR-NND-12-00583 to determine if adequate corrective actions were implemented to prevent nonconforming embeds plates from being accepted during receipt inspections. The inspectors walked down laydown yards that contained embed plates to determine whether embed plates that did not meet procurement specifications were available for construction.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," for the licensee's failure to ensure that conditions adverse to quality were corrected.

Description: The inspectors identified two safety-related embed plates that were released-for-use with studs repaired but not bent per AWS D1.1-2000. In response to

the inspectors questions, the licensee initiated CR-NND-13-00575 and N&D VS2-CE50-GNR-000016 to address the condition adverse to quality and later identified seven more nonconforming embed plates due to unbent weld-repaired studs. The licensee determined that these embed plates were included in the population of the 100 percent re-inspection performed as a corrective action to VIO 05200027/2012004-004, but failed to identify them due to human performance errors.

The licensee's failure to identify all nonconforming embed plates during their extent of condition review for VIO 05200027/2012004-004 led to the failure to correct the conditions adverse to quality identified during this inspection period.

Analysis: The failure to correct conditions adverse to quality was a performance deficiency. This performance deficiency was determined to be more than minor because uncorrected conditions could render the quality of construction activities and installed items unacceptable or indeterminate. Specifically, nine nonconforming embed plates could not be determined to meet the applicable structural design code without further testing to demonstrate compliance. The performance deficiency was associated with the Construction/Installation cornerstone.

The finding was evaluated under the construction significance determination process as outlined in IMC 2519, Construction Significance Determination Process – Pilot, Appendix A. The finding was a technical finding of very low safety significance (Green) because the identified condition was not associated with construction as defined in 10 CFR 50.2.

The inspectors screened the finding for a possible construction cross-cutting component and aspect in accordance with Appendix F of IMC 0613P. The inspectors determined this finding was associated with the Human Error Prevention Techniques aspect in the Work Practices component of the construction cross cutting area of Baseline Inspection [A.4(a)]. The licensee failed to communicate appropriate human error prevention techniques associated with the re-inspection of embed plates.

Enforcement: Criterion XVI of Appendix B to 10 CFR Part 50, requires, in part, that measures shall be established to assure that conditions adverse to quality, such as non-conformances, are promptly identified and corrected.

The licensee delegated overall project quality requirements for safety related activities to their contractors through Section 5.1, "Quality Assurance Program," of Article 5, "Quality Assurance," of the EPC Agreement. This agreement required, in part, that safety related activities be performed in accordance with the quality requirements of 10 CFR Part 50, Appendix B, Criterion XVI.

Contrary to the above, on June 14, 2013, the licensee failed to establish measures to ensure that conditions adverse to quality identified in CB&I nonconformance and disposition report VCS-ND-12-0419 were promptly identified and corrected.

Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as CR-NND-13-00575, this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200027/2013003-02, Failure to correct conditions adverse to quality).

.2 Routine Review of Items Entered into the Corrective Action Program

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," CB&I 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. 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 CRs, CB&I corrective action reports (CARs), CB&I N&Ds, and WEC issue IRs.

As part of the various inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during inspection activities and plant status reviews to verify they were being entered into the licensee's corrective action program at an appropriate threshold. The inspectors verified that adequate attention was being given to timely corrective actions and any adverse trends were identified and addressed. Attributes reviewed included: (1) identification of the problem was complete and accurate; (2) timeliness was commensurate with the safety significance; (3) evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and (4) the classification, prioritization, focus, and timeliness of corrective actions were commensurate with their safety significance and sufficient to prevent recurrence of the issue.

b. Findings

No findings were identified.

.3 Daily Corrective Action Program Reviews

a. Inspection Scope

The inspectors performed routine screenings of issues entered into the licensee's and the EPC consortium's corrective action programs (CAPs) to determine whether 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. The inspectors screened corrective action records associated with both Units 2 and 3. Specifically, the inspectors:

- attended weekly management review committee meetings at the site;
- reviewed a sample of licensee and EPC consortium corrective action documents; and
- held discussions with licensee and EPC consortium personnel responsible for the screening and correction of the issues.

The inspectors verified that the licensee and the EPC consortium:

- identified and implemented corrective actions commensurate with the significance of the issue; and
- were identifying equipment, human performance, and program issues at an appropriate threshold and entering them into their respective CAPs.

The inspectors selected a sample of the routine CAP issues to verify that the licensee appropriately classified the issues and had taken appropriate short-term corrective actions.

b. Findings

No findings were identified.

.4 Selected Issues for Follow-Up Inspection

a. Inspection Scope

The inspectors selected a sample of issues entered in the licensee's and the EPC consortium's corrective action programs to determine if the issues were dispositioned consistent with the applicable QAPD requirements and 10 CFR 50, Appendix B. The inspectors reviewed corrective action documents to determine if:

- conditions adverse to quality were promptly identified and corrected;
- classification and prioritization of the resolution of the problem was commensurate with its safety significance;
- for significant conditions adverse to quality: (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;
- the organization properly evaluated and reported the condition in accordance with 10 CFR 50.55(e) and 10 CFR 21;
- the identification and correction of design deficiencies were being adequately addressed;
- extent of condition was being adequately addressed; and
- appropriate corrective actions were developed and implemented.

The inspectors reviewed corrective action documents to determine if evaluations for reportability of conditions adverse to quality were adequate and timely. The inspectors particularly reviewed an evaluated deviation that did not result in the identification of a defect or failure to comply to verify that (1) the item was identified for evaluation consistent with established procedures, (2) the information and data used in the evaluation were clearly documented and complete, and (3) the finding that a substantial safety hazard does not exist was a logical conclusion of the evaluation.

Specifically, the inspectors reviewed the following corrective action documents:

- CAR 2013-0843
- CAR 2013-0936
- CAR 2013-1079
- CAR 2013-1080
- IR 13-148-M020
- IR 13-161-M039
- CR-NND-12-00531
- CR-NND-13-00483
- IR 12-230-M004
- APP-CA20-GEF-990

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA3 Follow-up of Licensee Reports and NOV's

.1 (Closed) VIO 05200027/2012004-03, 05200028/2012004-03, Failure to Transfer Containment Coating Testing Requirements into Specifications

As described in Section 1P03.2 of NRC Inspection Report 05200027/2013002, the inspectors previously reviewed the licensee and the EPC consortium's activities to address VIO 05200027/2012004-03, 05200028/2012004-03, Failure to Transfer Containment Coating Testing Requirements into Specifications. The inspectors reviewed implementing documents to determine if they were developed to address the QAPD requirements and UFSAR commitments for conducting testing and inspections of the Unit 2 containment vessel bottom head coating cure. The inspectors determined that the licensee took adequate corrective actions to address this violation. No additional findings were identified. VIO 05200027/2012004-03, 05200028/2012004-03 is closed.

.2 (Closed) VIO 05200027/2012004-04, Failure to Assure Safety Related Materials Conformed to the Procurement Documents

As described in Section 1P08.1 of this inspection report, the inspectors reviewed the licensee and the EPC consortium's activities to address VIO 05200027/2012004-04, Failure to Assure Safety Related Materials Conformed to the Procurement Documents. The inspectors reviewed implementing documents to determine if they were developed to address the QAPD requirements and UFSAR commitments to assure that purchased material and equipment (embed plates), purchased through contractors and subcontractors, conformed to procurement documents.

The inspectors reviewed CR 0-L-2012-0583, which was written to address this violation. Because the licensee determined it was a significant condition adverse to quality, the inspectors verified corrective actions were implemented to address the cause of the violation and to prevent recurrence. Although the inspectors identified a violation related

to these embed plates as described in Section 1P08.1 of this report, the inspectors determined that the causes of this new violation were unrelated to the causes of VIO 05200027/2012004-04.

The inspectors concluded that the corrective actions implemented to address VIO 05200027/2012004-04 have been effective to prevent recurrence of the issue. Consequently, the inspectors determined that this new violation was not indicative of ineffective corrective actions to address VIO 05200027/2012004-04, and that the licensee took adequate corrective actions to address this violation. No additional findings were identified. VIO 05200027/2012004-04 is closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

On July 18, 2013, the inspectors presented the inspection results to Mr. R. Jones, Vice President - New Nuclear Operations, along with other licensee and consortium staff members. The inspectors stated that no proprietary information would be included in the inspection report.

KEY POINTS OF CONTACT

Licensee and Contractor Personnel

J. Ashe, CB&I QC Supervisor
C. Baucom, CB&I Licensing Engineer
M. Burley, WEC Quality Oversight
E. Elam, CB&I Project Controls Manager
R. Helmandollar, SCE&G Vendor Oversight
J. Hjelseth, WEC Acting VP, VC Summer Project
W. Hutchins, WEC Licensing Manager
J. Johnson, CB&I Quality Assurance Manager
R. Jones, SCE&G VP New Nuclear Deployment
D. Lavigne, SCE&G Operational Readiness
F. Lemieux, CB&I Quality Director
B. McIntyre, WEC Director, Site Project Licensing & Regulatory Support
A. Rice, SCE&G Licensing Engineer
F. Salter, SCE&G Licensing Engineer
G. Sanders, SCE&G Licensing Engineer
B. Stokes, SCE&G General Manager of Engineering
A. Torres, SCE&G General Manager of Construction
B. Wood, CB&I Site Director

NRC Personnel

M. Ernstes, Chief, Construction Projects Branch 4, Division of Construction Projects

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05200027/2013003-01	URI	Duplicated E&DCRs (Section 1P01)
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Opened and Closed

05200027/2013003-01	NCV	Failure to Document and Process a Nonconformance (Section 1P07)
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05200027/2013003-02	NCV	Failure to correct conditions adverse to quality (Section 1P08.1)
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Closed

05200027/2012004-03, 05200028/2012004-03	VIO	Failure to Transfer Containment Coating Testing Requirements into Specifications (Section 4OA3.1)
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05200027/2012004-04	VIO	Failure to Assure Safety Related Materials Conformed to the Procurement Documents (Section 4OA3.2)
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Discussed

None.

DOCUMENTS REVIEWED

Section 1A01:

CMTRs:

CMTR 5920-1, Heat 4-8087, Plate K3089A, JFE Steel Corporation, for Penetration Sleeves P23, P24, dated 2009-11-19
 CMTR 5921-1, Heat 4-8087, Plate K3089B, JFE Steel Corporation, for Penetration Sleeves P25, P26, dated 2009-11-19
 CMTR 6055-1, Heat 6-8563, Plate HS105A, JFE Steel Corporation, for Insert Plate B2-B14, dated 2010-10-28
 CMTR 6055-2, Heat 6-8563, Plate HP308A, JFE Steel Corporation, for Insert Plate B2-B13, dated 2010-11-05
 CMTR G23719-045CM, for Penetration Sleeve P44, SEO Koatsu Kogyo Co., dated 2011-10-18
 CMTR G23719-046CM, for Penetration Sleeve P45, SEO Koatsu Kogyo Co., dated 2011-10-18
 CMTR 2-50359-00-0-A, Lot 2K019T02, E9018M-H4R, ESAB, for 1/8" diameter rods, dated 2011-11-03
 CMTR 2-50360-00-0-A, Lot 2K018P03, E9018M-H4R, ESAB, for 5/32" diameter rods, dated 2011-11-03

Weld Travelers:

CB&I Weld Traveler for B2-B13 Insert Plate
 CB&I Weld Traveler for B2-B14 Insert Plate

Welder Qualifications:

Welder qualifications for CB&I Welder 511
 Welder qualifications for CB&I Welder 838

Westinghouse Specifications:

APP-MV50-Z0-037, Rev. 2, WEC Containment Vessel SA-738 Grade B Plates Material Specifications
 APP-MV50-Z0-001, Rev. 8, WEC Containment Vessel Design Specification

Section 1A02:

Procedures:

CMS-830-15-PR-54158, "Visual Inspection – Welds ASME Section III, Division I – Subsection NE," Rev 0
 GWPS-164621-000-15-SP-015003, "General Welding Procedure Specification for the Flux Cored Arc Welding Process," Rev. 0

Welder Qualifications:

Welder qualifications for CB&I Welder 511
 Welder qualifications for CB&I Welder 838

Weld Travelers:

CB&I Weld Traveler for insert plate B2-B13
 CB&I Weld Traveler for insert plate B2-B14

Section 1A03:

VSG-AT01-Z0-800000, Nuclear Island Waterproof Membrane Installation (Horizontal Application), Rev. 3
 VSG-AT01-A0R-800000, Final Summary Report for the Qualification, Dedication, and Procurement for VC Summer Units 2 & 3 Waterproof Membrane Material, Rev. 1
 VS3-1000-X9-800005, VC Summer Unit 3 Nuclear Island Fill Concrete and Mudmat Plan Details and Notes, Rev. 0
 VS3-1000-ATW-001-(i), Nuclear Island Horizontal Waterproof Membrane Installation, Rev. 0
 VS3-1000-XE-800000, Unit 3 Nuclear Island – Waterproof Membrane Installation Plan, Rev. 0
 Shaw Nuclear Quality Assurance Inspection Report – Type “A,” No. C114-13-0024, Concrete Post Placement – Unit 3 Lower Mud Mat Broom Finish %, 4/08/2013
 Shaw Nuclear Quality Assurance Inspection Report – Type “A,” No. C114-13-0025, Concrete Post Placement – Unit 3 Lower Mud Mat Broom Finish %, 4/10/2013
 Surveillance Report No. S-132178-2013-029, Installation Activities for the Unit 3 Waterproof Membrane, 4/29/2013

Section 1A04:CB&I Procedures:

NCSP 3-42-1, Reinforcing Steel Installation

Drawings:

APP-0000-C9-001, Rev. 7, AP1000 Concrete General Notes
 APP-0000-C9-002, Rev. 4, AP1000 Concrete General Notes
 APP-1010-CR-103, Rev. 4, Nuclear Island Basemat Reinforcement Area Below Containment Vessel Section A-A
 APP-1010-CR-104, Rev. 4, Nuclear Island Basemat Reinforcement Area Below Containment Vessel Stud Pattern and Details
 APP-1010-CR-106, Rev. 3, Nuclear Island Basemat Reinforcement Area Below Containment Vessel Details

Westinghouse Miscellaneous:

APP-1010-GEF-032, Nuclear Island Basemat Concrete Reinforcement Area Below Containment Vessel Concrete Blockouts
 APP-1010-GEF-064, Rev. 0, Requirements for Circumferential and Radial Bar Splices
 VS2-CC01-Z0-031, Rev. 3, Safety Related Placing Concrete and Reinforcing Steel

Section 1A05:Drawings:

VS3-1000-CR-001, Revision 1, Nuclear Island Basemat Bottom Reinforcement
 VS3-1000-CR-901, Revision 2, Nuclear Island Basemat Reinforcement Sections
 VS3-1000-CR-904, Revision 2, Nuclear Island Basemat Reinforcement Section Details

Specifications:

VS3-CC01-Z0-031, Revision 4, Safety Related Placing Concrete Reinforcing Steel

Section 1A06:Procedures:

164621-000-15-SP-015003, General Welding Procedure Specification for the Flux Cored Arc Welding Process, Rev. 0
WPS E91TG-H4, Rev. 8

Specifications:

APP-MV50-Z0-001, Containment Vessel, Rev. 8
CMS-830-15-SP-12049, Welding Material Specification for Low-Alloy Steel Flux Cored Electrode (Outershield 91Ks-HSR), Rev. 3

Drawings:

164621, Shell Stretch-out S5 thru S8, DWG 10, SHT1, Rev. 1
164621, Field Edge Preps & Weld Details, DWG 13, SHT1, Rev. 4

Corrective Action Documents:

NCR VC-043, weld filler material not in compliance with weld material specification, Rev. 1
Observation Report, OB-VES-2013-264, Lincoln Shielding Gas, April 10, 2013

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ACRONYMS USED

ACI	American Concrete Institute
ASME	American Society of Mechanical Engineers
AWS	American Welding Society
CAP	Corrective Action Program
CAR	Corrective Action Report
CB&I	Chicago Bridge and Iron
CFR	Code of Federal Regulations
CR	Condition Report
E&DCR	Engineering and Design Coordination Reports
EPC	Engineering, Procurement, and Construction
IMC	Inspection Manual Chapter
IR	Issue Report
ITAAC	Inspection, Tests, Analyses, and Acceptance Criteria
M&TE	Measuring and Test Equipment
N&D	Nonconformance and Disposition
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
QAPD	Quality Assurance Program Description
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
UT	Ultrasonic Examination
WEC	Westinghouse Electric Company, LLC
WPS	Welding Procedure Specification