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

May11, 2012

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

SUBJECT: SOUTHERN NUCLEAR OPERATING COMPANY VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 - NRC INTEGRATED INSPECTION REPORTS 05200025/2012-002 AND 05200026/2012-002

Dear Mr. Ivey:

On March 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant (VEGP) Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed with Mr. Mark Rauckhorst, Mr. David Jones, and other members of your staff on March 29, 2012.

The inspection examined a sample of construction activities conducted under your Early Site Permit (ESP), Limited Work Authorization (LWA), and Combined License (COL) as it relates to safety and compliance with the Commission's rules and regulations and with the conditions of these documents. These activities included inspections of construction Inspections, Tests, Analysis, and Acceptance Criteria (ITAAC) and programmatic elements to include the Quality Assurance Program (QAP) as described in these documents for two Westinghouse Advanced Passive Pressurized Water Reactors (AP1000) designated VEGP Units 3 and 4. Within these areas, the inspection consisted of the selected examination of procedures and representative records, observations of activities, and interviews with personnel.

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

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

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

Sincerely,

/RA/

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

Docket Nos.: 05200025 and 05200026
Combined Licenses (COL) Nos: NPF-91 (Unit 3), NPF-92 (Unit 4)

Enclosure: NRC Inspection Report (IR) 05200025/2012-002 and 05200026/2012-002
w/attachment: Supplemental Information

cc: w/encls: (See next page)

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

Sincerely,

/RA/

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

Docket Nos.: 52-0500025 and 05200026
Combined Licenses (COL) Nos: NPF-91 (Unit 3), NPF-92 (Unit 4)

Enclosure: NRC Inspection Report (IR) 05200025/2012-002 and 05200026/2012-002
w/attachment: Supplemental Information

cc: w/encls: (See next page

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ADAMS: ■ Yes ACCESSION NUMBER:**ML12132A040** ■SUNSI REVIEW COMPLETE ■ FORM 665 ATTACHED

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SIGNATURE	G.Khour for	JXK	GK	BD for via email	MSF via email		
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DATE	5/10/12	5/10/12	5/10/12	5/10/10	5/10/12		
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

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Letter To B. L. Ivey from Micheal E. Ernstes dated May 11, 2012

SUBJECT: SOUTHERN NUCLEAR OPERATING COMPANY VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 - NRC INTEGRATED INSPECTION REPORTS 05200025/2012-002 AND 05200026/2012-002

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U.S. NUCLEAR REGULATORY COMMISSION
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Docket Nos.:	05200025 and 05200026
License Nos.:	NPF-91 (Unit 3), NPF-92 (Unit 4)
Report Nos.:	05200025/2012-002 and 05200026/2012-002
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	VEGP Units 3 and 4
Location:	Waynesboro, GA
Inspection Dates:	January 1 through March 31, 2012
Inspectors:	Coleman B. Abbott, Construction Resident Inspector, Region II Joe Brady, Sr. Construction Inspector, Region II Bradley J. Davis, Sr. Construction Inspector, Region II Justin D. Fuller, Senior (Sr.) Construction Resident Inspector, Region II George H. Gardner, Sr. Project Inspector, Region II (Retired) Patrick J. Heher, Project Inspector, Region II Jamie Heisserer, Sr. Construction Inspector, Region II Chad Huffman, Construction Resident Inspector, Region II Rahsean Jackson, Sr. Resident Inspector, Region II Robert Mathis III, Construction Inspector, Region II Eric Michel, Sr. Construction Inspector, Region II Eric Patterson, Construction Inspector, Region II Tony F. Ponko, Construction Inspector, Region II Stacy M. Smith, Reactor Operations Engineer, CEVB Steven Smith, Sr. Construction Inspector, Region II Denise Terry-Ward, Construction Inspector, Region II
Accompanying Personnel:	Scott Freeman, Branch Chief, DCI/CIB3, Region II
Approved by:	Michael E. Ernstes, Chief Construction Projects Branch 4, Division of Construction Projects

SUMMARY OF FINDINGS

Inspection Report 05200025/2012-002, IR 05200026/2012-002; 1/1/2012 through 3/31/2012; Vogtle Electric Generating Plant (VEGP) Units 3 and 4, routine integrated inspection report.

The report covered a three-month period of inspection by resident and regional inspectors and no findings of significance were identified.

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

REPORT DETAILS

1. CONSTRUCTION REACTOR SAFETY

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

2503 ITAAC-RELATED INSPECTIONS

.1 ITAAC No / Family: 2.2.01.02a / B06
ITAAC No / Family: 2.2.01.03a / B06

a. Inspection Scope

The inspectors performed a direct inspection of the installation of the Vogtle Unit 3 fuel transfer tube sleeve (Nozzle P11) in the Containment Vessel Bottom Head (CVBH) (Tag number CNS-MV-01), which was associated with ITAAC 2.2.01.02a and ITAAC 2.2.01.03a (described in Table 1 and 2, respectively):

Table 1. ITAAC 2.2.01.02a		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
2.a) The components identified in Table 2.2.1-1 as American Society of Mechanical Engineers (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.

Table 2. ITAAC 2.2.01.03a		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
3.a) Pressure boundary welds in components identified in Table 2.2.1-1 as ASME Code Section III meet ASME Code Section III requirements.	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 directly observed Chicago Bridge & Iron (CB&I) survey activities associated with the Unit 3 fuel transfer tube sleeve, to determine if the survey layout was performed in accordance with the following requirements:

- CMS-720-03-PR-17051, “Containment Vessel Dimensional Inspection Procedure for Bottom Head,” Revision (Rev.) 0
- 165766-000-CN-WI-00011, “Vogtle Project Penetration Layout CV Bottom Head Ground Assembly,” Rev. 1
- Drawing 19, Sheet 1, “Nozzle P11 – Field Details,” Rev. 1

The inspectors also reviewed completed containment vessel bottom head layout verification report number U3-BH3-C33, to determine if the location was in accordance with the approved drawing.

The inspectors observed the installation of the fuel transfer tube sleeve to determine if the welding of the sleeve to the containment vessel bottom head pressure boundary material was performed in accordance with the following:

- Article NE-4000, “Fabrication and Installation,” of 2001 edition of the ASME Code, Section III, Subsection NE, “Metal Containment,” including the 2002 Addenda
- APP-MV50-V1-017, “AP1000 Containment Vessel Fuel Transfer Sleeve,” Rev. 0
- Drawing 13, Sheet 1, “Field Edge Preps & Weld Details, Rev. 5
- Drawing 19, Sheet 1, “Nozzle P11 – Field Details,” Rev. 1
- Welding Procedure Specification (WPS) E911TG-H4, Rev. 4
- CMS-830-15-PR-45158, “Visual Inspection – Welds ASME Section III, Division 1 – Subsection NE,” Rev. 0

Specifically, the inspectors observed the in-process welding of the fuel transfer tube sleeve from the inside of the CVBH to determine if the welding was performed within the ranges allowed by the WPS and the requirements of ASME Section III, Article NE-4000. During the welding, the inspectors also observed CB&I’s process for maintaining the required preheat requirements established by section 7.2.2.5 of the CV design specification.

The inspectors also reviewed the welding records (Traveler Set U3-BH3-C33, “weld nozzle P11 to bottom head,” and repair traveler set U3-BH3-C33-R/T1, “weld repairs nozzle P11) associated with this weld to determine if:

- The welding activity was properly documented in the work traveler
- Records provided adequate traceability to all aspects of the welding activity
- The records 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, Nondestructive Examination (NDE) records
- The records were appropriately retained and stored in accordance with Quality Assurance (QA) program requirement
- Accepted, rejected, and repaired items were documented in written reports
- Records of receipt inspections were appropriately referenced

The inspectors performed an independent visual inspection of the completed weld to determine if the surface of final weld met the requirements of Subsection NE-4424, "Surfaces of Welds," of ASME Section III, Article NE-4000. Specifically, the inspectors observed the surface condition of the finished weld, measured the amount of reinforcement, and measured any locations of undercut to determine if the as-welded condition was acceptable per ASME Section III, Article NE-4000, subsection NE-4424 and CB&I visual inspection procedure CMS-830-15-PR-45158.

The inspectors reviewed the Radiographic Testing (RT) film for the completed fuel transfer tube sleeve to CVBH weld (Weld # BH3-A3-C33-P11) to determine if the completed weld met the acceptance standards specified by Subsection NE-5320, "Radiographic Acceptance Standards," of ASME Section III, Article NE-5000, "Examination." This included a review of the radiographs of repaired areas. For these repair areas, the inspectors reviewed the original film, and reviewed the final (acceptable) film for each of these areas to determine if the rejectable indications were adequately repaired. Specifically, the inspectors reviewed RT Report No U3-060 to determine if the weld and RT record met the requirements of CB&I RT procedure CMS-830-15-PR-45154, "Radiographic Examination ASME Section III, Division 1 – Subsection NE," Rev. 0.

The inspectors reviewed the welding and NDE records for the field welds associated with CVBH 3-plate assembly "E" to determine if the welding and NDE were performed in accordance with the following:

- Article NE-4000, "Fabrication and Installation," of 2001 edition of the ASME Code, Section III, Subsection NE, "Metal Containment," including the 2002 Addenda
- Article NE-5000, "Examination," of 2001 edition of the ASME Code, Section III, Subsection NE, "Metal Containment," including the 2002 Addenda
- Design Specification APP-MV50-Z0-001, "Containment Vessel," Rev. 7

Specifically, the inspectors reviewed the welding and NDE records, which were documented in traveler set number U3-BH2-2, for the two field welds which make-up the BH2, 3-plate assembly "E." These two welds were A3-B22 to A3-B18, and A3-B18 to A3-B17. The inspectors reviewed these records to determine the following:

- Whether CB&I has adequately documented that the fit-up and weld edge preparations were adequate
- Whether CB&I had achieved and maintained the minimum preheat temperature
- Whether the welder identification was properly recorded on the traveler
- Whether CB&I had adequately documented the acceptability of the seam fit-up (visual inspection performed by Quality Control (QC))
- Whether CB&I had adequately documented the welding of the joint
- Whether the completion of the final RT was recorded along with a reference to the RT report number (No).

The inspectors performed an independent review of the RT film, and associated RT reports, for the two field welds (A3-B18 to A3-B22 [RT report No. U3-017] and A3-B18 to A3-B17 [RT report No. U3-016]) associated with 3-plate assembly "E" to

determine if the completed welds met the acceptance standards specified by Subsection NE-5320, “Radiographic Acceptance Standards,” of ASME Section III, Article NE-5000, “Examination.”

The inspectors observed in-process welding of the BH1 to BH1 outside weld and BH1 to BH2 inside weld on the CVBH (Tag number CNS-MV-01). Both welds were associated with ITAAC 2.2.01.02a.

Specifically, the inspectors observed the in-process welding of the BH1 to BH1 outside weld and BH1 to BH2 inside weld to determine if the welding was performed within the ranges allowed by the WPS and the requirements of ASME Section III, Article NE-4000. During the welding, the inspectors also observed CB&I’s process for maintaining the required preheat requirements established by section 7.2.2.5 of the CV design specification.

The inspectors observed the final visual examination for the P19 sleeve (RCS to RHR Pump Outlet Mechanical Penetration) weld in the CVBH (Tag number CNS-MV-01), which was associated with ITAAC 2.2.01.03a.

The inspectors observed the final visual examination for the P19 penetration sleeve weld in the CVBH to determine if this nondestructive examination was performed in accordance with the following:

- Article NE-5000, “Examination,” of 2001 edition of the ASME Code, Section III, Subsection NE, “Metal Containment,” including the 2002 Addenda
- CMS-830-15-PR-45158, “Visual Inspection – Welds ASME Section III, Division 1 – Subsection NE,” Rev. 0
- CMS-830-15-PR-45154, “Radiographic Examination ASME Section III, Division 1 – Subsection NE,” Rev. 0

The inspectors reviewed procurement specifications to determine if they were in conformance with the Design Control Document (DCD), ASME Section III Subsection NE, and 10 CFR Part 50 Appendix B. The inspectors reviewed two purchase orders for weld filler material. The inspectors reviewed seven Certified Material Test Reports (CMTRs) for CV base metal: the CV bottom head plate C-1, CV lower ring plates A-4, A-11, and A-12, three electrical penetration sleeves, and five weld material CMTRs. The reports were reviewed to determine if chemical composition and mechanical properties (including impact testing) met the requirements of the applicable portions of ASME Section II, ASME Section III Subsection NE, and the Design Specification. In addition, the inspectors reviewed the site receipt inspections for the C-1, A-4, A-11, and A-12 plates and weld filler metal to determine if they were in conformance with the applicable purchase orders.

The inspectors reviewed implementing procedures for the fabrication of the containment vessel to determine if they were approved in accordance with the CB&I QA program, and met fabrication specifications including the DCD, ASME Design Specification, and containment vessel purchase order. Procedures reviewed included those for quality control visual inspection, welding filler metal storage, CB&I’s NDE Written Practice, and the CB&I QA record storage procedures and weld travelers.

The inspectors reviewed two WPSs for semi-automatic Gas Metal Arc Welding (GMAW) welding from IHI Corporation (IHI) to determine if they were qualified in conformance with the ASME Section IX 2001 edition through 2002 addenda, and were available, current, and accurate. The inspectors reviewed the supporting Procedure Qualification Records (PQRs) to determine if they specified the applicable essential variables referenced in the ASME code.

The inspectors reviewed Measuring and Test Equipment (M&TE) to determine if the equipment and gauges used for process monitoring are calibrated, maintained, and periodic preventive maintenance is implemented for welding and test equipment. The inspectors reviewed records for the following M&TE:

- Wire Feeder Voltmeter LN10V-4
- Wire Feeder Voltmeter LN25V-19
- Wire Feeder Voltmeter LN25V-12
- Tractor Voltmeter SAWV-12
- Clamp Meter 101101307

The inspectors reviewed welder and operator qualification records to determine if welding personnel were qualified and had demonstrated and maintained their skill to perform the prescribed welding activities in accordance with ASME Section IX. The inspectors reviewed qualification records to determine if individuals performing quality-related welding activities were certified, where required according to the work performed. A sample of three welder qualification packages were viewed by the inspectors to determine if each welder was qualified to the specific WPS they used for welding activities associated with CV bottom head.

The inspectors observed in-process welding activities to determine if welding was within the parameters permitted by the associated WPS. The inspectors observed semiautomatic Flux Core Arc Welding (FCAW) activities on the CV bottom head BH-3 to BH-2 horizontal weld. The inspectors verified that welding activities were performed in accordance with a controlled weld traveler with appropriate references to procedures, drawings and QC hold points and that welding was performed under conditions suitable to welding and appropriate consideration was given to inclement conditions such as rain. The inspectors interviewed QC personnel to ensure adequate checks were being performed on the weld joint prior to welding and were in accordance with the CB&I procedures which met the requirements of ASME Section III, Subsection NE, including cleanliness and joint offset. The inspectors verified base metal preheat was checked prior to and during welding in accordance with the WPS. The inspectors conducted walkdowns of filler metal storage areas, conducted interviews with CB&I personnel, and reviewed storage procedures to ensure welding filler metals for FCAW and Shielded Metal Arc Welding (SMAW) were stored, issued and controlled in a manner consistent with vendor recommendations and the CB&I Quality Assurance Program Description (QAPD). The inspectors verified interpass temperatures were monitored by welders and QC personnel, and that temperatures were below those required by the WPS. The inspectors interviewed QC personnel and confirmed measurements taken to ensure essential variables such as heat input were monitored, recorded, reviewed and within allowable ranges as required by the WPS. The inspectors reviewed QA records which documented the locations of

welding and traced each portion of a weld back to the welder using a unique identifier.

The inspectors reviewed welding inspection records to determine if the welding activities were performed in accordance with the CB&I QAPD and 10 CFR Part 50, Appendix B. The inspectors reviewed the weld traveler for the CV bottom head BH-3 to BH-2 horizontal weld to determine if the appropriate inspections were included, in accordance with the applicable ASME Code and CB&I QAPD requirements. The inspectors reviewed qualification and certification for two RT Level II personnel to ensure they were qualified in accordance with the CB&I Written Practice and ASME Section III, Subsection NE 2001 edition through 2002 addenda.

The inspectors evaluated RT practices to determine if the method and acceptance criteria met ASME Code and QA requirements. The inspectors reviewed the procedures for calibration of the densitometer and step wedge, as well as the associated calibration records to determine if they had been calibrated and maintained.

The inspectors reviewed final RT film and records to determine if RT was performed and accepted in accordance with ASME Section III, Subsection NE 2001 edition through 2002 addenda. The inspectors reviewed RT records and films for the following welds:

- BH3 plates C7 to C10
- BH2 plates B18 to B17
- BH2 plates B5 to B3
- Knuckle plate C1
- Lower personnel airlock shell
- Insert plate (H03) to shell plate A4

Four samples were obtained for the CV bottom head and two samples were obtained for the CV lower ring.

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

The inspectors reviewed a sample of corrective actions reports to determine if issues were being identified and documented in the licensee and its contractors' corrective action programs as applicable.

b. Findings

No findings were identified

.2 ITAAC No / Family: 2.2.01.04a.i / C06

a. Inspection Scope

The inspectors performed procedure review for testing activities associated with ITAAC 2.2.01.04a.i (described in Table 3 below):

Table 3. ITAAC 2.2.01.04a.i		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
4.a) The components identified in Table 2.2.1-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.	i) A hydrostatic or pressure test will be performed on the components required by the ASME Code Section III to be tested.	iii) A report exists and concludes that the results of the pressure test of the components identified in TABLE 2.2.1-1 as ASME Code Section III conform with the requirements of the ASME Code Section III.

The inspectors interviewed CB&I personnel and reviewed relevant procedures related to the vacuum box testing to determine if the procedures adequately prescribed the applicable quality and technical requirements to accomplish the testing. Specifically, the inspectors reviewed CB&I procedure CMS-830-15-PR-45164, "Solution Film Testing Vacuum Box Technique ASME Section III, Division 1 – Subsection NE" to determine if the procedure addressed the following:

- Test objectives were clearly stated and are accomplished in the body of the procedure
- The acceptance criteria against which the test will be judged was clearly identified
- The procedure required comparison of the test results to the acceptance criteria and a provision was made for the evaluator to indicate whether test data was or was not acceptable
- Step-by-step instructions for the performance of the procedure were included to ensure that test objectives were met
- Provision was made for recording details of the conduct of the test, including any observed deficiencies, their resolution, and any necessary retesting
- The procedure provided for the identification of personnel conducting the test
- Test equipment range and accuracy were consistent with the application and complied with applicable ASME Section III code requirements

b. Findings

No findings were identified.

.3 ITAAC No / Family: 2.2.01.04a.ii / F06

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC 2.2.01.04a.ii (described in Table 4 below):

Table 4. ITAAC 2.2.01.04a.ii		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
4.a) The components identified in Table 2.2.1-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.	ii) 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.	ii) A report exists and concludes that the containment and pressure retaining penetration materials conform with fracture toughness requirements of the ASME Code Section III.

The inspectors reviewed the CMTRs for three BH2 containment vessel bottom head plates to determine if the pressure boundary material met the following requirements:

- Section 3.8.2, "Steel Containment," of the AP1000 Design Control Document, Rev. 19
- Section 3, "Functional Requirements," of Design Specification APP-MV50-Z0-001, "Containment Vessel," Rev. 7
- SA-738, "Specification for Pressure Vessel Plates, Heat-treated, Carbon-Manganese-Silicon Steel, for Moderate and Lower Temperature Service"
- APP-MV50-Z0-037, "AP1000 Containment Vessel: SA-738 Grade B Plates," Rev. 2
- Article NE-2000, "Material," of 2001 edition of the ASME Code, Section III, Subsection NE, "Metal Containment," including the 2002 Addenda
- CB&I Procedure: MS-SA-738B-2889, "Material Specification For SA 738 Grade B Steel Plate AP1000 Nuclear Containment Vessel," Rev. 4

Specifically the inspectors reviewed the CMTRs for the following plates:

- A3-B17: CMTR 5903-24, ID BCAY, Heat 4-8088/KF001 A
- A3-B18: CMTR 5903-15, ID BCAZ, Heat 4-8049/HG048 A
- A3-B22: CMTR 5903-19, ID BCBD, Heat 4-8049/HE191 A

The inspectors reviewed these CMTRs to determine the following:

- Whether the material met the minimum mechanical properties for tensile strength, yield strength, and impact strength
- Whether the material had the appropriate chemical composition, required grain size
- Whether the material met the maximum carbon equivalent

- Whether the material was subjected to the appropriate heat treatment

The inspectors reviewed 12 CMTRs to determine if pressure retaining materials conformed to the fracture toughness requirements of the CV Design Specification and ASME Section III, Subsection NE. The inspection included a review of CV bottom head and lower ring material plate reports for plates C-1, A-11, A-12 and A-4. In addition, the inspectors reviewed CMTRs for three lower ring penetrations and reports for flux core wire and weld filler metal materials for site and shop welds. The inspectors reviewed the reports to determine if the impact testing temperatures and average minimum absorbed energy acceptance criteria for Charpy V-notch testing specimens complied with the CV Design Specification, and ASME Section II and ASME Section III, Subsection NE requirements.

The inspectors also reviewed the Ultrasonic Testing (UT) inspection Records for these plates to determine if this UT examination was performed in accordance with Section 3.4, "Nondestructive Examination," of APP-MV50-Z0-037. Specifically, the inspectors reviewed the following UT reports: H21-213 (BCAY), H22-131 (BCAZ), H22-131 (BCBD).

The inspectors also reviewed CB&I's Receipt Inspection Records (RIRs) for these plates to determine if the receipt inspection activities were adequate to ensure that the material met the requirements of the purchase documents. Specifically, the inspectors reviewed the following RIR Report Nos.: U3-054 (A3-B17), U3-055 (A3-B18), and U3-059 (A3-B22).

The inspectors reviewed the qualification records for the CB&I inspectors who performed the receipt inspections of the CVBH plate material to determine if they had the proper training and certifications according to the CB&I training program.

The inspectors also reviewed the calibration records for the following M&TE to determine if the equipment was properly calibrated and approved for use during the receipt inspections referenced above:

- Visible light meter Serial Number (S/N) Q574892
- 1" – 2" Starrett micrometer S/N 11235326
- UT thickness gauge S/N 55717 with 093J probe
- Tipsy Step Block S/N 22423
- Fluke 62 mini infrared thermometer S/N 16600499

b. Findings

No findings were identified.

.4 ITAAC No / Family: 3.3.00.02a.i.c / F01
ITAAC No / Family: 3.3.00.02a.i.d / F01

a. Inspection Scope

The inspectors performed direct inspections of ITAAC 3.3.00.02a.i.c and 3.3.00.02a.i.d (described in Table 6 below):

Table 6. ITAACs 3.3.00.02a.i.c and 3.3.00.02a.i.d			
ITAAC Number	**Design Commitment**	**Inspections, Tests, Analyses**	**Acceptance Criteria**
3.3.00.02a.i.c	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i.c) A report exists which reconciles deviations during construction and concludes that the as-built structures in the non-radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.
3.3.00.02a.i.d	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i.d) A report exists which reconciles deviations during construction and concludes that the as-built structures in the radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.

The inspectors reviewed and observed activities associated with the Nuclear Island (NI) basemat, including, but not limited to, the critical sections identified in Table 3.3-7:

TABLE 3.3-7 (NUCLEAR ISLAND CRITICAL STRUCTURAL SECTIONS)
Nuclear Island Basemat Below Auxiliary Building
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 and reinforcing steel splices to ensure that work performed for the Unit 3 NI basemat was performed in accordance with the following specified requirements:

- APP-CC01-Z0-031, "Safety Related - Placing Concrete and Reinforcing Steel," Rev. 2
- APP-CR01-Z0-011, "Furnishing of Safety Related Reinforcing Steel," Rev. 4
- APP-CR01-Z0-010, "Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel," Rev. 6
- CSI-3-44-2, "Mechanical Splicing of Reinforcing Steel," Rev. 2
- Work Package SV3-1000-CRW-CV0295 "Unit 3 Nuclear Island Installation of Reinforcing Bar for Basemat," Rev. 3

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

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

The inspectors directly observed testing of reinforcing steel splices, used for the purpose of qualifying craft personnel, to determine if the testing was performed in accordance with APP-CR01-Z0-010, "Specification for Supply and Installation of Mechanical Splices for Reinforcing Steel," Rev. 6. The inspectors also reviewed QC personnel qualification records to determine if inspectors met the qualification requirements specified by section 12.14.3.6 of American Concrete Institute (ACI) 349-01, "Code Requirements for Nuclear Safety Related Concrete Structures," which stated in part that, "all mechanical splices shall be visually examined by a qualified inspector to assure that they are properly installed at the place of construction."

The inspectors reviewed QC Inspection Plan F-Q445-07, "Mechanical Splicing System Couplers," Rev. 0, to determine if the receipt inspection plan for reinforcing steel splices identified the appropriate inspections to be performed to identify any potential issues prior to installation. The inspectors also reviewed the following closed QC receipt inspection reports for the inspection of the reinforcing steel

splices, to determine if QC receipt inspections were performed in accordance with their approved inspection plan:

- Q445-11-0305
- Q445-12-0024

The inspectors reviewed work package SV3-1000-CRW-CV0295, "Unit 3 Nuclear Island Installation of Reinforcing Bar for Basemat," to determine if the appropriate steps, hold points, and QC inspections were identified for initial work related to the installation of the reinforcing bar steel splices. The inspectors reviewed this work package, and the approved design changes to drawings, to determine if 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):

- SV0-CR01-GEF-000020
- SV0-CR01-GEF-000057
- SV3-CR01-GEF-000008
- SV3-CR01-GEF-000010

During this field inspection, the inspectors also reviewed the above E&DCRs to determine if adequate licensing applicability screening was performed in accordance with APP-GW-GAP-420, "Engineering and Design Coordination Report," Rev. 5. Specifically, whether approved and implemented E&DCRs were appropriately reviewed to identify any impact to the applicable licensing basis documents and were in accordance with 10 CFR Part 52, Appendix D, "Design Certification Rule for the AP1000 Design."

During field installation activities, the inspectors observed material storage areas for both reinforcing steel and reinforcing steel splices to determine if material was being stored in accordance with ASME Nuclear Quality Assurance (NQA)-1-1994, Subpart 2.2 "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants." Specifically, the inspectors walked down the storage area to determine the following:

- Whether items were stored in an area marked and designated for storage
- Whether the designated storage area was well drained
- Whether the designated storage area was reasonably removed from the actual construction area and traffic
- Whether items were stored on cribbing or equivalent

During reinforcing steel and reinforcing steel splice installation in the Unit 3 NI, the inspectors observed the installation of cast-in-place anchor bolts and construction aids into the basemat to determine if appropriate measures were established and implemented to prevent damage to the installed waterproofing membrane. Specifically, the inspectors observed craft personnel install anchor bolts into the upper mud mat, and the controls to prevent these anchor bolts from traveling through the upper mud mat and into the installed waterproof membrane.

b. Findings

No findings were identified.

.5 ITAAC No / Family: E.2.5.04.05.05.02 / C01

a. Inspection Scope

The inspectors performed a direct inspection of the testing activities associated with ITAAC E.2.5.04.05.05.02 (described in Table 7 below):

Table 7. ITAAC E.2.5.04.05.05.02

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Backfill shear wave velocity is greater than or equal to 1,000 fps at the depth of the NI foundation and below.	Field shear wave velocity measurements will be performed when backfill placement is at the elevation of the bottom of the Nuclear Island foundation and at finish grade.	A report exists and documents that the as-built backfill shear wave velocity at the NI foundation depth and below is greater than or equal to 1,000 fps.

The inspectors observed both the Spectral Analysis Surface Waves (SASW) testing as well as the Cross hole Seismic Testing to determine if testing was performed in accordance with the following requirements:

- Deviation Request No.: VEGP-43, "Attachment 8, Shear Wave Velocity Testing Program"
- ESSOW 132175-E-C-011, "Nuclear Island Backfill Shear Wave Velocity Testing," Rev. (Rev.) 0
- American Society for Testing and Materials (ASTM) D4428/D4428M-07 "Standard Test Methods for Cross hole Seismic Testing"
- SV3-1000-VTW-CV0149, "Perform SASW Testing of Nuclear Island Area Backfill," Rev. 0
- SV4-1000-VTW-CV0150, "Perform SASW Testing of Nuclear Island Area Backfill," Rev. 0
- AMEC's Work Instruction Number 15, Effective Date 3/9/12, Rev. 3

Specifically, the inspectors observed the following:

- Whether construction testing activities were performed in accordance with programmatic requirements, approved procedures, and by qualified personnel
- Whether records reflected work accomplished consistent with the testing standards and approved procedures
- Whether AMEC's corrective action program evaluated and corrected previous identified problems involving construction testing activities

The inspectors reviewed AMEC's Nuclear Quality Assurance Procedure (NQAP) 19-01, "Software Quality Assurance for Commercial or Otherwise Acquired Software,"

Rev. 0, to determine if AMEC established adequate controls for the software used to record SASW testing inputs. Specifically, the inspectors reviewed records used to document software certification to determine if the record contained at a minimum the requirements specified in Supplement 11S-2 "Supplementary Requirements for Computer Testing Programs" of ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications." During this review, the inspectors reviewed AMEC's software configuration control records to determine if the same version that was documented in AMEC's configuration control program was the same version that was used during the onsite SASW testing.

The inspectors reviewed calibration records to determine if onsite equipment was calibrated to National Institute of Standards and Technology traceable equipment. The inspectors reviewed American Association for Laboratory Accreditation calibration certificates to determine if the accreditation status was current during the time of calibration. The inspectors also compared the serial numbers of the equipment used during the testing with the calibration records.

The inspectors also reviewed the following Work Orders (WOs) and Purchase Orders (POs) associated with both onsite testing and services provided by the University of Texas at Austin:

- AMEC WO No: 6153100051 16 (Cross hole Testing - Elevation 220')
- AMEC WO No: 6153100051 17 (Final Report)
- AMEC WO No: 6153100051 18 (SASW Testing - Elevation 220')
- AMEC PO No: 201113945 (University of Texas at Austin - Final Report)
- AMEC PO No: 201113946 (Cross hole Testing - Elevation 220')
- AMEC PO No: 201113947 (SASW Testing - Elevation 220')

b. Findings

No findings were identified.

2504 NON-ITAAC-RELATED INSPECTIONS

.1 Inspection Procedure (IP) 35007, "Quality Assurance Program Implementation and Pre-Construction Activities"

a. Inspection Scope

The inspectors performed a direct inspection of a sample of construction-related QAP activities to determine if Southern Nuclear Operating Company, Inc. (SNC), and where appropriate their contractors, had: (1) developed adequate procedures to implement the applicable project quality requirements, and (2) effectively implemented those procedures during the performance of construction activities authorized by the VEGP Units 3 and 4 COLs.

(1) Inspection Scope (IP 35007 – Appendix 2 "Inspection of Criterion II – Quality Assurance Program")

The Inspectors reviewed documentation to determine if QA auditors, inspection, and test personnel had undergone training that included company policies and specific QA implementing documents. The inspectors reviewed records to determine if examinations were performed for training requirements for those positions and that orientation and training were completed within the specified period per procedures and QAPD requirements. Specifically, the following records were reviewed to determine if training and associated documentation were appropriate:

- Training: ITM-445 "Receipt Inspection"
- Indoctrination Records: ITR-445 (4 samples)

(2) Inspection Scope (IP 35007 – Appendix 3, "Inspection of Criterion III – Design Control")

The Inspectors selected a sample of E&DCRs associated with the waterproofing membrane installation activities and erection specification SV0-AT01-Z0-800001, "Nuclear Island Waterproofing Membrane Installation," Rev. 1. Specifically, the inspectors reviewed the following E&DCRs:

- SV0-AT01-GEF-000006, Rev. 0
- SV0-AT01-GEF-000008, Rev. 0
- SV0-AT01-GEF-000011, Rev. 0
- SV0-AT01-GEF-000012, Rev. 0

The inspectors reviewed these E&DCRs to determine if the engineering changes received the proper level of engineering review in accordance with Shaw Stone and Webster, Inc. (Shaw) procedure APIP 5-18-1 (Westinghouse Electric Company LLC (WEC) Document No, APP-GW-GAP-420), "Engineering and Design Coordination Report," Rev. 4. The inspectors also reviewed these E&DCRs to determine if the affected installation specification was reviewed to ensure its continued applicability and that all design input assumptions remained valid.

The inspectors reviewed SNC's and its subcontractors' QA implementing documents for 10 CFR 50 Appendix B Criterion III, "Design Control" in order to determine if they were consistent with the NRC-approved QAPD, commitments in the Final Safety Analysis Report (FSAR), and the reference plant 1994 version of NQA-1. In addition, the inspectors reviewed samples of implementation of Criterion III, Design Control, in order to determine if the implementation was in accordance with the NRC-approved QAPD for SNC and its subcontractors.

The inspectors reviewed a sample of E&DCRs across multiple systems and organizations to determine if they were consistent with the requirements of NQA-1-1994, the licensee's/contractors' QA programs, and 10 CFR Part 50 Appendix B Criterion III, "Design Control". The inspectors also reviewed these changes to determine if they received the proper level of engineering review in accordance with licensee procedures. In addition, the inspectors reviewed any affected drawings and analyses to determine if they were properly identified and the effected design documents remained applicable with valid design assumptions and were not in conflict with the NRC-approved version of the Westinghouse AP1000 DCD, which is incorporated by reference in SNC's COL.

The inspectors reviewed the resulting engineering work products in order to determine if they were in accordance with the design requirements as specified in the FSAR and reviewed the adequacy of the design work. The inspectors also reviewed the relevant program implementing documents in order to determine if they were effectively implemented including those for the review and approval of design documents.

The inspectors reviewed the QA audit and surveillance reports for this area to determine if oversight was being provided by SNC, Westinghouse, and Shaw, and the extent of the oversight.

(3) Inspection Scope (IP35007 - Appendix 4, "Inspection of Criterion IV – Procurement Document Control")

The inspectors reviewed the following purchase documents for safety related items to determine if measures established in Shaw's Standard NQAP, Section 4, "Procurement Document Control," for the control of procurement documents were adequately implemented:

- PO number 132175-D220.07, Joseph Oat Corporation, "Nuclear Island Basemat Safety Related Embeds/Anchor- Units 3," Rev. 0
- PO number 132175-J400A-00, Gerdau Ameristeel US, Inc., "NQA-1 concrete reinforcing steel," Rev. 0

The inspectors reviewed purchased documents to determine if:

- procurement documents were prepared in accordance with implementing documents
- items were purchased from qualified contractors
- procurement documents contained requirements for the contractor to provide appropriate documentation of quality to assure adequate quality were suitably included or referenced in the documents for procurement of material
- procurement documents were maintained in a document control program
- specifications differing from the original design documents were reviewed and approved by qualified technical personnel.

The inspectors reviewed SNC's and its subcontractors' QA implementing documents that govern the control of procurement documents in order to determine if they were consistent with 10 CFR 50 Appendix B Criterion IV, "Procurement Document Control", the NRC-approved QAPD, commitments in the FSAR, and the reference plant 1994 version of NQA-1. In addition, the inspectors reviewed the licensee's/contractors' implementation of Criterion IV, "Procurement Document Control", in order to determine if they were consistent with their NRC-approved QAPDs.

The inspectors reviewed applicable sections of the licensee's QAPD and FSAR to determine if the appropriate implementing documents were developed to address the QAPD requirements and FSAR commitments for procurement document control for purchases of safety related and risk significant items and services. The inspectors reviewed the implementing documents to determine if they provided the following:

- Scope of work
- Technical, regulatory, administrative, and reporting requirements
- Specific identification or traceability of equipment, supplies, consumables or services purchased.
- Hold points and acceptance requirements.
- Special instructions for fabrication, packaging, shipping or storage.
- Access to the contractor's location and records for purposes of inspection or audit.
- Identification of the documentation, and date of submission, required to be provided for information, review, or approval.

The inspectors reviewed each purchase order to determine if each contained a requirement for the licensee's contractor to provide a QA program consistent with Appendix B to 10 CFR Part 50 and that there were requirements for reporting and approving disposition of non-conformances.

The inspectors reviewed the approval of changes to procurement documents in order to determine if they were completed by the same individual/organization that approved the original document, unless another qualified organization was formally designated.

The inspectors reviewed the QA audit and surveillance reports for this area to determine if oversight was being provided by SNC, Westinghouse, and Shaw, and the extent of the oversight.

(4) Inspection Scope (IP35007 - Appendix 6, "Inspection of Criterion VI – Document Control")

The inspectors reviewed applicable sections of SNC, WEC, Shaw, and CB&I quality assurance program documents and lower tier procedures related to document control to determine if the implementing documents established adequate measures to control procedures that prescribe activities affecting quality and if these documents had established adequate procedures 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 the selected sample of implementing documents to determine if 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.
- 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 reviewed a sample of five current controlled documents under electronic control, five current controlled documents under electronic control which have been revised and eleven controlled documents under paper copy control at various work locations. The samples were reviewed to determine if the access to documents, the records of review, and any paper copy documents were indicated as controlled document at the work location. The samples included electronic and/or paper drawings, procedures, and work packages along with master controlled lists of electronic and/or paper controlled documents. The inspectors performed this review to determine if:

- controlled documents were reviewed and approved by independent, authorized personnel.
- the reviews required by the implementing documents were conducted.
- documents were reviewed and approved by the same organization that originally reviewed and approved the documents unless otherwise noted.
- the controlled installation documents were made available promptly to construction personnel.
- all quality-affecting work was being conducted in accordance with current revisions of approved documents.

The inspectors interviewed responsible staff of Shaw on 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 also interviewed responsible staff at various work locations such as the CB&I administrative and field trailer's to determine if the responsible staff along with field personnel had access to the current controlled implementing documents. The inspectors compared a sample of CB&I's paper controlled procedures, which were maintained in controlled QA handbooks with assigned unique identification numbers, to the master list of controlled handbooks to determine if the personnel had the current procedure revisions. The inspectors also interviewed CB&I field personnel to determine if personnel working on traveler work packages had the most current controlled implementing documents that they need to conduct the activity to ensure consistency and technical adequacy.

The inspectors reviewed work package SV3-G100-XEW-CV0246, "Unit 3 Nuclear Island Horizontal and Vertical Waterproof Membrane," Rev. 0; and the following implementing documents, which Shaw utilized to prescribe the activities affecting the quality of the waterproofing membrane installation:

- installation specification, SV0-AT01-Z0-800001, "Nuclear Island Waterproofing Membrane Installation," Rev. 1
- SV0-G100-XE-016, "NI Waterproofing Membrane Plan," Rev.1
- SV0-G100-X9-800000, "NI Waterproofing Membrane Details Sheet 1," Rev. 0
- SV0-G100-X9-800001, "NI Waterproofing Membrane Details Sheet 2," Rev. 0

The inspectors performed this review to determine if:

- the controlling documents in the work package were adhered to by personnel performing activities affecting quality
- installation documents were made available promptly to construction personnel
- whether all quality-affecting work was being conducted in accordance with current revisions of approved documents.

The inspectors also interviewed field personnel performing waterproofing membrane activities to determine if they had access to the current controlled implementing documents. The inspectors compared a sample of their paper field controlled documents which were maintained in the work package to the master list of controlled documents in Shaw's electronic document management system to determine if the field personnel had the most current revisions. The inspectors also reviewed the work package to determine if the work control documents had appropriately included the QC hold points and whether the hold points were signed by qualified personnel that were independent from those who performed the activity.

(5) Inspection Scope (IP 35007 – Appendix 10 "Inspection of Criterion X – Inspection")

The inspectors observed receipt inspections of Submodules CA20-07A, CA20-07B and CA20-02 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 Rev. 4, "Receipt Inspection – Modules – Structural" to determine if:

- Items were installed or erected as described by drawings and construction specifications
- Items were marked accurately to reflect the inspection status
- Results were documented and complete

The inspectors independently measured a sample of sub-module dimensions to determine if the sub-module conformed to the applicable design drawings. Additionally, the inspectors reviewed the following documents to determine if Shaw had performed an adequate receipt inspection on the sub-modules:

- Shaw NQA Inspection Report – Type "A", Q445-12-0053
- Shaw NQA Inspection Report – Type "A", Q445-12-0055
- Shaw NQA Inspection Report – Type "A", Q445-12-0056

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

(6) Inspection Scope (IP 35007 – Appendix 12 "Control of Measuring and Test Equipment")

The Inspectors reviewed implementing documents to determine if they were developed to address the QAPD requirements and FSAR commitments for the control of M&TE. Specifically, the inspectors reviewed documentation related to the M&TE to be used to determine if the M&TE was of the proper type, range, accuracy, and tolerance for the intended application. The inspectors reviewed work instructions and calibration procedures to determine if 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
- If M&TE was used in a one-time-only application, then calibration was performed both before and after 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

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

- Construction Site Instruction 3-44-1, "Mechanical Splicing of Reinforcing Steel"
- Shaw Nuclear Calibration Manual, Rev. AI.
- Nuclear Construction and Startup Procedure 3-10-3, "Measuring and Test Equipment Control"
- Nuclear Quality Standard (QS) 12.1, "Shaw Nuclear Calibration Program", Rev. G
- NQA Directive 12.1, Rev. E, "Verification of Measured Data"
- NQA Directive 12.2, Rev. A, "Equipment, Tools, and Instruments Requiring Verification of Specific Characteristics"

The Inspectors examined M&TE in use for reinforcing bar installation by licensee personnel to determine if it met the requirements of the implementing documents, including:

- M&TE was calibrated within specified calibration interval
- Accuracy was within specified limits
- Documentation and test/inspection results were traceable to M&TE being verified

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

- Applied Technical Services Calibrations (Certificate # 968054, 968055, 968056, 968057, 968058, 968059)

(7) Inspection Scope (IP 35007 – Appendix 13 “Handling, Storage and Shipping”)

The Inspectors reviewed the following documents associated with the handling, storage, and shipping of quality-related items to determine if adequate measures were established to implement the applicable quality requirements of the SNC Nuclear Development Quality Assurance Manual (NDQAM), ASME NQA-1-1994, and 10 CFR Part 50, Appendix B, Criterion XIII, “Handling, Storage, and Shipping”:

- Nuclear QC 7.1, Rev. G, “Receiving Process”
- SMS Quality Procedure QP-WH-09, Rev. 00, “Packaging and Shipping”

The Inspectors observed a sample of quality related items that were received on site by Shaw including auxiliary building submodules, safety-related reinforcing bar, and mechanical couplers to determine if these items were inspected, stored, and controlled in accordance with the applicable storage and handling procedures. The inspectors also toured the on-site warehouse facilities to determine if the items were stored in accordance with the requirements of NQA-1-1994 Subpart 2.2,”Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants.” The inspectors also observed the special handling of the submodules because of the weight, size, and configuration.

(8) Inspection Scope (IP35007 – Appendix 15, “Inspection of Criterion XV – Nonconforming Materials, Parts, or Components”)

The inspectors reviewed a sample of Nonconformance and Disposition Reports (N&Ds) to determine if the conditions were adequately reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures. The inspectors compared these N&Ds to Section 15, “Nonconforming Materials, Parts, or Components,” of the Shaw Nuclear Quality Assurance Program (SWSQAP 1-74A) and S&W procedure QS 15.1, “Nonconformance & Disposition Report,” Rev. G.

The inspectors reviewed the following N&Ds:

- V-ND-11-0409
- V-ND-11-0414
- V-ND-11-0420
- V-ND-11-0430
- V-ND-11-0451

(9) Inspection Scope (IP 35007 - Appendix 16, “Inspection of Criterion XVI – Corrective Action”)

On a routine basis, the inspectors reviewed a sample of issues entered into the SNC, Shaw, and WEC corrective action programs to determine if conditions adverse to quality were controlled in accordance with each company’s QAP and whether potential adverse trends were appropriately identified and corrected by SNC or their contractors. Specifically, the inspectors: (1) attended weekly issue review committee meetings at the site; (2) reviewed a sample of SNC, Shaw, and WEC corrective action documents; and (3) held discussions with SNC and Shaw 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 QAP requirements; and 10 CFR Part 50, Appendix B.

Specifically, the inspectors reviewed the following SNC Condition Reports (CRs) and Shaw Corrective Action Report (CARs):

- CAR 2012-0247
- CAR 2012-0267
- CAR 2012-0298

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
- the organization properly evaluated and reported the condition (e.g., 10 CFR 50.55(e), 10 CFR Part 21)

(10) Inspection Scope (IP 35007 – Appendix 17 “Quality Assurance Records”)

The inspectors reviewed the following record control program implementing procedures to determine if they adequately prescribed the processes for general records creation, maintenance, storage, and disposition and were in compliance with the applicable quality requirements.

- Nuclear QC 17.1, “Quality Assurance Records System” , Rev. G
- Nuclear Construction and Startup Procedure 2-16-2, “Construction Documents, Records Management and Control”,
- PWR-RIM-001, “Records Management Program” , Rev 1
- PWR-RIM-002, “Records Management Disposition and Retention” , Rev. 1
- QA Directive 17.4, “Quality Assurance Records Management Plan” , Rev. H
- Power Records Information Management Procedure 00007, “Filing Criteria and System” , Rev. 0
- Power Records Information Management Procedure 00008, “Project Records Retention” , Rev. 0
- Power Records Information Management Procedure 00009, “Client Final Turnover Plan” , Rev. 0
- Power Records Information Management Procedure 00010, “Construction Site Document Control” , Rev. 0
- Power Records Information Management Procedure 00011, “Communication and Project Management Records” , Rev. 0
- Power Records Information Management Procedure 00012, “Procurement and Subcontract Commercial Records” , Rev. 0

- Power Records Information Management Procedure 00013, “Engineering Records” , Rev. 0
- Power Records Information Management Procedure 00014, “Project Closeout” , Rev. 0
- Power Records Information Management Procedure 00015, “Record Archival” , Rev. 0
- Power Records Information Management Procedure 00016, “Controlled Distribution of Manuals” , Rev. 0
- Power Records Information Management Procedure 00017, “Standard Reports” , Rev. 0
- Power Records Information Management Procedure 00018, “Nuclear Quality Assurance Records” , Rev. 1

The above procedures were reviewed to determine if they adequately addressed the following attributes:

- Methods to ensure that records were legible, complete, and traceable to the activity or item; authenticated by authorized personnel; and classified in accordance with regulatory requirements.
- Provisions for corrections to records were established.
- Records were maintained and stored in designated facilities:
    - to prevent deterioration, damage, and loss
    - to be accessible to designated organization
    - for a specified duration
- Were retrievable within a reasonable time frame
- Disposal of records was performed by authorized personnel.

The inspectors also reviewed the selected sample of implementing documents to determine if they included the creation of specific records to provide evidence of activity completion such as operating logs, work performance monitoring, materials analysis, drawings, procurement documents, corrective actions, and results from audits, inspections, and tests. The implementing documents were also reviewed to determine if organizations or personnel were designated to be responsible for creating and transmitting records to the storage facility. The inspectors also interviewed record control personnel to determine if they were cognizant of their roles and responsibilities related to the control of QA records.

The inspectors performed a walk-down of the long-term record storage facilities to determine if they met the applicable quality requirements for record storage facilities. The inspectors observed these facilities to determine if they met the following requirements of NQA-1-1994, Supplement 17S-1, “Supplementary Requirements for Quality Assurance Records,” and the applicable portions of the Shaw and SNC quality assurance program documents:

- Facility was accessible to designated organization or personnel
- Access to the facility by visitors was controlled
- Records were readily retrievable
- Records were protected from damage and theft
- Records temporarily removed from the storage facility were controlled

- Electronic media that included QA records were stored in accordance with designated requirements, such as humidity, light, temperature

The inspectors also toured the onsite document control storage facility and examined the facility to determine if the following requirements were being addressed:

- records were readily retrievable
- records were protected from damage and theft
- records temporarily removed from the storage facility were controlled

The inspectors reviewed applicable sections of SNC, Westinghouse, Shaw, and CB&I quality assurance program documents and lower tier procedures to determine if the appropriate implementing documents had been developed and implemented to address the quality requirements and commitments for creation, maintenance, storage, and disposition of quality assurance records.

The inspectors reviewed work package SV3-G100-XEW-CV0246, "Unit 3 Nuclear Island Horizontal and Vertical Waterproof Membrane," Rev. 0 to determine if the records in the work package provided objective evidence to ensure that the waterproofing membrane had been installed in accordance with applicable quality and technical requirements. Specifically, the inspectors reviewed installation specification SV0-AT01-Z0-800001, "Nuclear Island Waterproofing Membrane Installation," Rev. 1 and the associated work package to determine if:

- records were legible, complete, and traceable to the activity that they supported
- records were maintained in print as well as electronic media
- corrections to the records did not obscure original information on record

b. Findings

No findings were identified.

.2 IP 36100, "Inspection of 10 CFR Parts 21 and Programs for Reporting Defects and Noncompliance" and IP 36100.01, "Inspection of 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance During Construction"

a. Inspection Scope

The inspectors conducted a review of SNC and its subcontractors implementation of the policies and implementing procedures that govern their 10 CFR Part 21, "Reporting of Defects and Noncompliance" (Part 21) and 10 CFR 50.55, "Conditions of Construction Permits, Early Site Permits, Combined Licenses, and Manufacturing Licenses" (50.55(e)), to determine compliance with the requirements of Part 21 and 50.55(e). Specifically, the inspectors reviewed the following programs: SNC, WEC, Shaw, CB&I, and MISTRAS. In addition, the Inspectors observed Part 21 postings for compliance with the requirements of 10 CFR 21.6, "Posting Requirements," and 10 CFR 21.21, "Notification of Failure To Comply or Existence of a Defect and Its Evaluation," respectively. To determine if there was an adequate link to the Part 21

process, the inspectors also reviewed the procedures that govern the control and correction of nonconforming items and conditions adverse to quality.

Unresolved Item (URI) 05200025/2012002-01: Oversight of Subcontractors Part 21 and 50.55(e) Programs

a. Introduction

A URI was identified during a review of Shaw and WEC's nonconformance reports.

b. Description

The inspectors identified several examples where deviations were identified and not evaluated in accordance with Part 21 and 50.55(e) procedures. The inspectors reviewed the SNC established measures for the purchased safety-related services to determine if they complied with Part 21 and 50.55(e) as required by provision 4.2(b) of the Engineering, Procurement and Construction Agreement (EPC Agreement).

Example 1

The Inspectors reviewed Shaw QS procedure 15.1, "Nonconformance and Disposition Report," Rev. G, and found that it provided criteria and guidance to identify nonconformances that required further evaluation. Specifically, it stated that "evaluation of potentially significant deficiency to 10 CFR Part 21 is required. Follow up action to be in accordance with QS 16.3 [Identifying and Reporting Defects and Failures to Comply under 10 CFR Part 21] and 16.2 [Notifying Clients of Potentially Reportable Deficiencies under 10 CFR 50.55(e)]." However, the inspectors identified that the criteria stated above was being used to determine significance of the nonconformance. It was not used to identify if the condition needed evaluation in accordance QS 16.2 and QS 16.3 for determination of a defect associated with a Substantial Safety Hazard (SSH) existed.

Due to Shaw's process allowing for evaluation of significance without performing appropriate Part 21 and 50.55(e) evaluations in accordance with QS 16.2 and QS 16.3, the inspectors identified examples of deviations that required evaluations to determine if a defect with a SSH existed. For example, during a pre-installation inspection of tapered threaded #14 rebar for mechanical couplers, it was discovered that multiple threaded ends failed to meet the requirements for acceptable mechanical coupler installations. Shaw documented this in N&D report V-ND-12-0137, "Vendor Supplied Rebar w/Unsat Threaded Ends," dated March 15, 2012. V-ND-12-0137 noted that an evaluation was not required. However, the Inspectors determined that an evaluation should have been performed in accordance with QS 16.2 and QS 16.3 to identify if a defect or failure to comply, associated with a SSH, existed. Shaw initiated CAR 2012-0270 to enter this condition to be evaluated in accordance with QS 16.2 and/or QS 16.3.

The inspectors also noted that in Shaw procedure QS 16.5, "Corrective Action System," Rev. F, and observed that during a Vogtle corrective action screening committee meeting, that the potential existed to allow deviations to be evaluated for significance without entering the QS 16.2 and QS 16.3 to perform the Part 21 / 50.55(e) evaluation as required by these procedures. For example, during the corrective action report screening meetings, conditions would only be evaluated in accordance with QS 16.2 and QS 16.3 if it was determined to be, "a potential defect or failure to comply that could be associated with a substantial safety hazard" instead of identifying that a deviation existed that needed evaluation in accordance with appropriate Part 21 or 50.55(e) procedure.

Example 2

The inspectors reviewed WEC's APP-GW-GAP-428, "Control of Nonconforming Items for the AP1000 Program," Rev. 1, and found that a Field Deviation Report (FDR) is generated for reporting and screening nonconformances for Part 21 and 50.55(e) applicability. Specifically, it stated "Does this represent a potential, substantial safety hazard, significant deficiency or unreviewed safety question?" If yes, it refers to WEC 21.0, "Identification and Reporting of Conditions Adverse to Safety," Rev. 6, dated August 3, 2009.

The inspectors identified deviations identified in FDRs, but not evaluated in accordance with WEC 21.0. For example, it was identified that basemat embed plates had deficient welds in FDR SV-3-CA20-GNR-048. The FDR noted that the, "subject embeds are non-compliant with the specification for undercut acceptance, however, embeds are complaint for undercut criteria using AWS D1.1-2000, Table 6.1 for statically loaded nontubular connections." It was documented that this deviation did not need to be evaluated in accordance with Part 21 and 50.55(e). However this determination was made without entering WEC 21.0 and failed to address the reason Westinghouse could deviate from the requirements in a technical specification, despite the procedure stating potential conditions adverse to safety need to be appropriately evaluated in accordance with [WEC 21.0] procedures.

Shaw and WEC immediately entered these concerns into their respective corrective action programs as Shaw CAR 2012-0270, CAR 2012-0271, CAR 2012-279, CAR-2012-287, CAR 2012-0322 and Westinghouse Issue Report 12-082-M045 to review applicability for further evaluation in accordance with Part 21 and 50.55(e) procedures. The concerns identified by the inspectors will be further reviewed after evaluation(s) are completed to identify if potential defects and failures to comply associate with substantial safety hazards exist.

c. Findings

No findings of significance.

2. OTHER INSPECTION RESULTS

4OA6 Meetings

.1 Exit Meeting. On March 29, 2012, the NRC resident inspectors presented the inspection results to Mr. Mark Rauckhorst, Vogtle 3 & 4 Construction Vice President, and other management representatives for SNC and the consortium. The inspectors stated that no proprietary information would be included in the inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Southern Nuclear Operating Company (SNC) and Contractor Personnel

M. Rauckorst	Vogtle 3&4 Construction Vice President
R. Johnson	SNC Operational Rediness Vice President
J. Davis	SNC QA Manager
D. Jones	SNC Vogtle 3 & 4 Regulatory Affairs Vice President
T. O'Brien	SNC QC Supervisor
M. Sawyers	SNC QC
M. Yox	SNC Licensing Engineer
W. Crisler	Consortium Project QA Director
S. Hand	CB&I Quality Manager
J. Clement	CB&I Document Control Manager
R. Usher	Shaw Director of Construction Turnover and Performance Improvement
J. Beasley	Shaw QA Engineering Manager
A. Reynolds	Shaw Project QC Manager
A. Messerli	Shaw Records Information Manager
S. Huminsky	Shaw Vogtle Project Records Information Manager
A. Boyles	Shaw Document Control Manager
W. Poppell	Shaw Field Engineering Manager
D. Oliver	Shaw Project Field Procurement Manager
W. Robinson	Shaw Warehouse Procurement Manager
D. Johnson	Shaw Warehouse Procurement Supervisor
D. Shuford	Shaw Information Technology Manager
J. Rees	Shaw Deputy Field Engineering Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item No	Status	Description
URI 05200025/2012002-01	Open	Oversight of Subcontractors Part 21 and 50.55(e) Programs

Attachment

LIST OF DOCUMENTS REVIEWED

Procedures

SNC

ND-11-1709, NDQAM, Version 9.0
ND-DC-001, "Records Management", Rev. 3
ND-DC-007, "Document Control", Rev.2
ND-DC-008, "Procedure Preparation and Control, Version 3.0
ND-LI-001-F01, Evaluation of Reportability, Version 4.0
ND-LI-001-F02, Determination of Notification and Reporting Requirements, Version 4.0
ND-LI-001, 10 CFR Part 21 and 10 CFR 50.55(e) Evaluating and Reporting of Defects and Noncompliance for Nuclear Development, Version 7.0
ND-QA-001, "Quality Assurance Conduct of Operations", Rev. 6
ND-QA-013, "Quality Assurance Inspections," Version 2.0
NDQAM, "Nuclear Development Quality Assurance Manual," Version 9.3
SNC CR 2011100360

Shaw

APIP 5-18-1 (APP-GW-GAP-420), "Engineering and Design Coordination Report," Rev. 4
Construction Site Instruction 3-44-1, "Mechanical Splicing of Reinforcing Steel"
CSI 2-11-14, "Work Package Planning, Development, Approval and Closure" 03/09/2012
CSI-3-44-2, "Mechanical Splicing of Reinforcing Steel," Rev. 2
DAPP 2-1-1, Preparation and Control of Domestic Ap1000 Projects Procedures, May 26, 2009
DAPP 5-1-1, "Project Document Control", effective date May 2, 2011
DAPP 7-1, QA Records Management, Rev. 1
ESSOW 132175-E-C-011, "Nuclear Island Backfill Shear Wave Velocity Testing," Rev. 0
Inspection Plan F-Q445-07, "Mechanical Splicing System Couplers," Rev. 0,
Inspection Report Q445-11-0305
Inspection Report Q445-12-0024
IT-DS11-001, Remote Server Backup, Rev. 1
IT-DS11-001, Server Backup, Rev. 3
NEPP 4-6-3, "Drawing and Diagrams", 10/21/2011
NPP 10-01-00, "Material Receipt, Storage, and Control," Rev. 0
Nuclear Construction and Startup Procedure 2-16-2, "Construction Documents, Records Management and Control"
Nuclear Construction and Startup Procedure 3-10-3, "M&TE Control"
Nuclear QS 12.1, "Shaw Nuclear Calibration Program", Rev. G
Nuclear QS 17.1, "Quality Assurance Records System", Rev. G
NQA Directive 12.1, "Verification of Measured Data", Rev. E
NQA Directive 12.2, "Equipment, Tools, and Instruments Requiring Verification of Specific Characteristics", Rev. A
Nuclear QC 7.1, "Receiving Process", Rev. G
Power Records Information Management Procedure 00007, "Filing Criteria and System", Rev. 0
Power Records Information Management Procedure 00008, "Project Records Retention", Rev. 0
Power Records Information Management Procedure 00009, "Client Final Turnover Plan", Rev. 0
Power Records Information Management Procedure 00010, "Construction Site Document Control", Rev. 0

Power Records Information Management Procedure 00011, “Communication and Project Management Records”, Rev. 0
Power Records Information Management Procedure 00012, “Procurement and Subcontract Commercial Records”, Rev. 0
Power Records Information Management Procedure 00013, “Engineering Records”, Rev. 0
Power Records Information Management Procedure 00014, “Project Closeout”, Rev. 0
Power Records Information Management Procedure 00015, “Record Archival”, Rev. 0
Power Records Information Management Procedure 00016, “Controlled Distribution of Manuals”, Rev. 0
Power Records Information Management Procedure 00017, “Standard Reports”, Rev. 0
Power Records Information Management Procedure 00018, “Nuclear Quality Assurance Records”, Rev 1
PRIMP-00008, Project Records Retention Plan, Rev. 0
PRIMP-00010, “Construction Site Document Control”, Rev. 00
PRIMP-00018, Nuclear Quality Assurance Records, Rev. 1
PWR-RIM-001, Records Management Program, Rev. 1
PWR-RIM-002, Records Management Disposition and Retention, Rev. 1
QAD 14.1, “Inspection Report System Type “A” Inspection Report,” Rev. A
QAD 17.4, QA Records Management Plan, Rev. H
QS 5.1, QC Procedural System, Rev. M
QS 6.1, “Shaw’s Nuclear Quality Standard, Document Control”, Rev. J
QS 14.2, “Inspection Report System,” Rev. J
QS 15.1, “Nonconformance and Disposition Report,” Rev. G
QS 16.2, Notifying Clients of Potentially Reportable Deficiencies Under 10 CFR 50.55(e), Rev. C
QS 16.3, Identifying and Reporting Defects and Failures to Comply Under 10 CFR 21, Rev. M
QS 16.5, “Corrective Action System,” Rev. E
QS 16.5, Corrective Action System, Rev. F
QS 17.1, QA Records System, Rev. G
QSI 10.1, “Quality Site Instructions, Inspection Planning and Reporting”, Rev. A
Quality Inspection Plan F-Q445, “Receipt Inspection – Modules – Structural”, Rev. 4
Shaw Nuclear Calibration Manual, Rev. AI.
Shaw NQA Inspection Report – Type “A”, Q445-12-0053
Shaw NQA Inspection Report – Type “A”, Q445-12-0055
Shaw NQA Inspection Report – Type “A”, Q445-12-0056
SMS Quality Procedure QP-WH-09, “Packaging and Shipping”, Rev. 00
Standard Nuclear Quality Assurance Program, SWSQAP 1-74A, Rev. B
SWSQAP 1-74A, Shaw Standard Nuclear Quality Assurance Program, Rev. B
Work Package SV3-1000-CRW-CV0295 “Unit 3 Nuclear Island Installation of Reinforcing Bar for Basemat,” Rev. 3
Work Package SV3-1000-VTW-CV0149, “Perform SASW Testing of Nuclear Island Area Backfill,” Rev. 0
Work Package SV4-1000-VTW-CV0150, “Perform SASW Testing of Nuclear Island Area Backfill,” Rev. 0

CB&I

165766-000-CN-WI-00011, “Vogtle Project Penetration Layout CV Bottom Head Ground Assembly,” Rev. 1
APP-MV50-V1-017, “AP1000 Containment Vessel Fuel Transfer Sleeve,” Rev. 0
CMS-720-03-PL-00010, CB&I Nuclear Quality Assurance Manual (NQAM), Rev. 11

CMS-720-03-PR-03151, “Preparation, Review, Approval and Release of Detailed Drawings”, Rev. 5
CMS-720-03-PR-04101, “Distribution and Control of Contract QA Handbooks”, Rev.4
CMS-720-03-PR-04151, “Distribution and Control of Technical Procedures”, Rev. 3
Addendum to CMS-720-03-PR-09301, Project Specific Requirements for Welding Consumable Storage, Care and Conditioning, Rev 3
CMS-720-03-PR-11001, Control of Nonconforming Items, Rev. 5
CMS-720-03-PR-11051, Handling of Conditions Adverse to Quality and Corrective Action, Rev. 8
CMS-720-03-PR-11151, 10 CFR Reporting, Rev. 4
CMS-720-03-PR-14001, General Procedure for QA Records, Rev. 4
CMS-720-03-PR-14001, General Procedure for QA Records, Rev. 6
CMS-720-03-PR-17051, “CV Dimensional Inspection Procedure for Bottom Head,” Rev. 0
CMS-830-15-PR-45154, “Radiographic Examination ASME Section III, Division 1 – Subsection NE,” Rev. 0
CMS-830-15-PR-45158, “Visual Inspection – Welds ASME Section III, Division 1 – Subsection NE,” Rev. 0
CMS-830-15-WI-81004, Calibration and Verification Check of Step Wedge Calibration and Comparison Films, 9/28/2009
CMS-830-15-WI-81005, Calibration of Radiographic Transmission Densitometers, 9/29/2008
Drawing 13, Sheet 1, “Field Edge Preps & Weld Details, Rev. 5
Drawing 19, Sheet 1, “Nozzle P11 – Field Details,” Rev. 1
ITM-445 “Receipt Inspection”, Training
ITR-445, Indoctrination Records
WPS E911TG-H4, Rev. 4

WEC

APP-GW- GAH-010, “Project Quality Assurance Program Interface Plan for Domestic AP1000 Projects”, Rev. 4
APP-GW-GAP-106, Corrective Action Interface, Rev. 2
APP-GW-GAP-108, “Receiving Activities for U. S. AP1000 Projects”, Rev. 0
APP-GW-GAP-113, “Consortium AP1000 Receiving Interface”, Rev. 1
APP-GW-GAP-117, Implementation and Control of Inspections, Tests, Analysis, and Acceptance Criteria, Rev. 2
APP-GW-GAP-138, “Quality Oversight at US AP1000 Construction Sites,” Rev. 0
APP-GW-GAP-420, “Engineering and Design Coordination Report,” Rev. 5
APP-GW-GAP-428, Control of Nonconforming Items for the AP1000 Program, Rev. 1
APP-GW-GDP-010, “AP1000 Consortium Document Control Procedure”, Rev. 1
ES 21.1, WEC 21.0 Level 3 Implementation Procedure, Rev. 1
NSNP 3.3.3, “Design Verification by Independent Review or Alternate Calculations”, Rev. 4
NSNP 3.4.1, “Change Control for the AP1000 Program”, Rev. 4
PP4-1-15, “Management Plan for Project Quality, Oct 31, 2011
WCAP-14530, “Westinghouse Electric Company Information and Records Management Program”, Rev. 7
WEC 3.4.6, “Field Change Notice”, Rev. 0
WEC 6.1, “Document Control”, Rev. 4
WEC 16.2, Westinghouse Corrective Actions Process, Rev. 3
WEC 17.1, Records, Rev. 3
WEC 17.2, Electronic Approval, Rev. 3
WEC 17.3, Electronic Document Management, Rev. 1

WEC 21.0, Identification and Reporting of Conditions Adverse to Safety, Rev. 6
WEC Field Deviation Report SV3-CA20-GNR-048, Rev. 0
WEC Issue Report, 12-082-M045

AMEC

AMEC PO No: 201113945 (University of Texas at Austin - Final Report)
AMEC PO No: 201113946 (Cross hole Testing - Elevation 220')
AMEC PO No: 201113947 (SASW Testing - Elevation 220')
AMEC WO No: 6153100051 16 (Cross hole Testing - Elevation 220')
AMEC WO No: 6153100051 17 (Final Report)
AMEC WO No: 6153100051 18 (SASW Testing - Elevation 220')
Deviation Request No.: VEGP-43, "Attachment 8, Shear Wave Velocity Testing Program"
NQAP 19-01, "Software Quality Assurance for Commercial or Otherwise Acquired Software," Rev. 0
Work Instruction Number 15, Effective Date 3/9/12, Rev. 3

MISTRAS

100-QC-017 Control of Nonconforming Items, Rev. 2
100-QC-017.1, Reporting of Defects and Noncompliance in Accordance with 10 CFR Part 21, Rev. 1

Design Drawings

APP-1220-CC-912, "Auxiliary Building Concrete Outline Area 2 EL 82'-6" Section E & F" (Seismic Category 1), Rev.5
APP-1220-CC-914, "Auxiliary Building Concrete Outline Area 1 EL 82'-6" Section I & J", Rev.4
APP-1220-CC-915, "Auxiliary Building Concrete Outline Area 2 EL 82'-6" Section A & L", Rev.6
APP-1212-SH-E302, Auxiliary Building Area 2 EL 66'-6" Cable Tray Supports Plan (3), Rev.0
SV0-G100-XE-016, "NI Waterproofing Membrane Plan", Rev.1
SV0-G100-X9-800000, "NI Waterproofing Membrane Details Sheet 1", Rev. 0
SV0-G100-X9-800001, "NI Waterproofing Membrane Details Sheet 2", Rev. 0
SV3-CA20-S4-626, "Auxiliary Building Areas 5 & 6 CA20 Module Embedded Pipe Details Wall 3", Rev. 0
SV3-CA20-S4-627, "Auxiliary Building Areas 5 & 6 CA20 Module Embedded Pipe Details Wall 4", Rev. 0
SV3-CA20-S4-628, "Auxiliary Building Areas 5 & 6 CA20 Module Embedded Pipe Details Wall J2", Rev. 0
SV3-CA20-S4-629, "Auxiliary Building Areas 5 & 6 CA20 Module Embedded Pipe Details Wall K2 (Sheet 1 of 2)", Rev. 0
SV3-CA20-S4-630, "Auxiliary Building Areas 5 & 6 CA20 Module Embedded Pipe Details Wall K2 (Sheet 2 of 2)", Rev. 0
SV3-CA20-S4-631, "Auxiliary Building Areas 5 & 6 CA20 Module Embedded Pipe Details Wall L2", Rev. 0
SV3-CA20-S4-632, "Auxiliary Building Areas 5 & 6 CA20 Module Embedded Pipe Details Wall N and Wall L2", Rev. 0
SV3-CA20-S4-634, "Auxiliary Building Areas 5 & 6 CA20 Module Embedded Pipe Details Wall 4", Rev. 0
SV3-CA20-S4X-600, "Auxiliary Building Areas 5 & 6 CA20 Module Embedded Pipe & Conduit Index", Rev. 0

SV3-CA20-S5Y-00200, “Auxiliary Building Areas 5 & 6 CA20 Standard Welding Details”, Rev. 0
SV3-CA20-S5Y-00205, “Auxiliary Building Areas 5 & 6 CA20 Standard Welding Details”, Rev. 0
WEC Cable Tray Supports – Auxiliary Building, APP-1212-SH-E302, Rev. 0

E&DCRs

SV0-CR01-GEF-000020
SV0-CR01-GEF-000057
SV3-CR01-GEF-000008
SV3-CR01-GEF-000010
SVO-CA01-GEF-000001, “CA01 Leak Chase Testing”, Rev. 0
SVO-CA04-GEF-000001, “CA04 Top Flange PWHT Issue”, Rev. 0
SVO-CA20-GEF-000002, “CA20 Leak Chase SWD Change”, Rev. 0
SVO-CA20-GEF-000016, “Module NDE Clarification”, Rev. 0
SVO-CA20-GEF-000021, “10% Module NDE Clarification”, Rev. 0
SVO-CA20-GEF-000022, “CA20 Leak Chase Clarification”, Rev. 0
SVO-CA20-GEF-000030, “CA20 Liner Plate SWD Clarification”, Rev. 0
SVO-CE01-GEF-000003, “CA20 Embed Plate Designations”, Rev. 0
SVO-CE01-GEF-000006, “CA20 basemat embed tag numbers”, Rev. 0
SVO-CR01-GEF-000050, “Installation Sequence Inside CVBH”, Rev. 0
SVO-PH02-GEF-001, “Module Welding Code Jurisdiction”, Rev. 0
SVO-PL03-GEF-000009, “CA20 Iso Package Conditioning”, Rev. 0

N&Ds

V-ND-11-0409
V-ND-11-0414
V-ND-11-0420
V-ND-11-0430
V-ND-11-0451

Corrective Action and Nonconformance Documents

CAR 2011-309
CAR-2012-001, CB&I CAR, Surveillance Report SVO-CBI-CV-0034, 1/10/2012
CAR 2012-0247
CAR 2012-0267
CAR 2012-0298
CR 325352
CR 343334
CR 343576
CR-371197, SNC CR, Permanent Plant records stored in gun safe, 11/8/2011
CR 425164 – associated with APP-GW-GAP-420, Engineering and Design Coordination Report, R5
OB-VES-2012-248, CB&I OB, NDE visual exam with ortho-rater, 2/15/2012
OB-VES-2012-249, CB&I OB, Incorrect lettering for CMS-720-03-PR-09301, 2/16/2012
OB-VES-2012-263, Records Storage Procedure CMS-720-03-PR-14001
Shaw Condition Report CAR 2011-0735
Shaw Condition Report CAR 2012-0181
Shaw Condition Report CAR 2012-0227
Shaw Condition Report CAR 2012-0270

Shaw Condition Report CAR 2012-0271
Shaw Condition Report CAR 2012-0279
Shaw Condition Report CAR 2012-0287
Shaw Condition Report CAR 2012-0322
Shaw Nonconformance and Disposition Report V-ND-12-0004
Shaw Nonconformance and Disposition Report V-ND-12-0035
Shaw Nonconformance and Disposition Report V-ND-12-0055
Shaw Nonconformance and Disposition Report V-ND-12-0137
SR-409635, SNC SR, Preliminary NRC NOV – Criterion XVI Corrective Actions (CBI RT Film Storage), 2/17/2012
TE-302451, SNC TE, Permanent Plant Records stored in gun safe, 11/8/2011
V-ND-11-0175
V-ND-11-0226
V-ND-11-0246
V-ND-11-0257
V-ND-11-0258
V-ND-11-0261
V-ND-11-0285
V-ND-11-0286
V-ND-11-0288
Westinghouse IR 12-076-M043, Associated with CR 425164

CMTRs

CMTR 1462, Lincoln Electric of lot number 958E Lincoln Outer shield 91K2-HSR of ASME Section II, Part C, SFA-5.29 and AWS Classification E91TG-H4 FCAW weld filler material, 8/5/2010
CMTR 5914-1 and 5915-1, JFE Steel Corporation for SA-738 plate ID mark C-1, 11/20/2009
CMTR 5994-4, JFE Steel Corporation for SA-738 plate ID mark A-12, 7/30/2010
CMTR 5994-5, JFE Steel Corporation for SA-738 plate ID mark A-11, 7/30/2010
CMTR 5997-1, JFE Steel Corporation for SA-738 plate ID mark A-4, 7/30/2010
CMTR 653283, ESAB Welding and Cutting Products ESAB OK 10.72 Flux in 55 lbs. bags, Lot No. ME02212, 1/21/11
CMTR G20818-014CM, SEO Koatsu Kogyo Company, for SA-350 Electrical Penetration Sleeve 3-E17-S, 8/10/2011
CMTR G20818-015CM, SEO Koatsu Kogyo Company, SA-350 Electrical Penetration Sleeve 3-E18-S, 8/10/2011
CMTR G20818-016CM, SEO Koatsu Kogyo Company, SA-350 Electrical Penetration Sleeve 3-E19-S, 8/10/2011
CMTR RINJQ-225-3-1, Heat No. 8U7724, Nippon Steel & Sumikin Welding Company ER80S-G, 10/2/2009
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ACI	American Concrete Institute
ADAMS	Agency-wide Documents Access & Management System
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
CFR	Code of Federal Regulations
CMTR	Certified Material Test Report
COL	Combined License
CR	Condition Report
CV	Containment Vessel
CVBH	Containment Vessel Bottom Head
DCD	Design Control Document
E&DCR	Engineering and Design Coordination Report
EPC	Engineering, Procurement and Construction
ESP	Early Site Permit
FCAW	Flux Core Arc Welding
FDR	Field Deviation Report
FSAR	Final Safety Analysis Report
GMAW	Gas Metal Arc Welding
IHI	IHI Corporation
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
ITAAC	Inspection, Test, Analysis and Acceptance Criteria
LWA	Limited Work Authorization
M&TE	Measuring and Test Equipment
MSE	Mechanically Stabilized Earth
N&D	Nonconformance and Disposition Report
NDE	Nondestructive Examination
NDQAM	Nuclear Development Quality Assurance Manual
NI	Nuclear Island
No.	Number
NPP	Nuclear Procurement Procedure
NQA	Nuclear Quality Assurance
NQAP	Nuclear Quality Assurance Procedure
NRC	Nuclear Regulatory Commission
NTS	National Technical Systems
PO	Purchase Order
PQR	Procedure Qualification Record
QA	Quality Assurance
QAD	Quality Assurance Directive
QAP	Quality Assurance Program
QAPD	Quality Assurance Program Description
QC	Quality Control
QS	Quality Standard

Rev.	Revision
RIR	Receipt Inspection Records
RT	Radiographic Testing
SASW	Spectral Analysis Surface Waves
Shaw	Shaw Stone and Webster, Inc.
S/N	Serial Number
SMAW	Shielded Metal Arc Welding
SNC	Southern Nuclear Operating Company, Inc (Licensee)
Sr.	Senior
SR	Service Request
SSH	Substantial Safety Hazard
SWSQAP 1-74A	Shaw Standard Nuclear Quality Assurance Program
TE	Technical Evaluation
UT	Ultrasonic Testing
VEGP	Vogtle Electric Generating Plant
WEC	Westinghouse Electric Company LLC
WO	Work Order
WPS	Welding Procedure Specification
10 CFR	Title 10 of the *Code of Federal Regulations*