



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

December 9, 2011

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

**SUBJECT: SOUTH CAROLINA ELECTRIC AND GAS V.C. SUMMER NUCLEAR STATION  
UNITS 2 AND 3 - NRC INSPECTION REPORTS 05200027/2011-001, AND  
05200028/2011-001**

Dear Mr. Clary:

On November 4, 2011, the U.S. Nuclear Regulatory Commission completed an inspection at your V.C. Summer Nuclear Station, Units 2 and 3. The enclosed inspection report documents the inspection results, which the inspectors discussed with you and other members of your staff on November 4, 2011.

The intent of this inspection was to conduct a pre-combined operating license programmatic review of the welding program being implemented by Chicago Bridge and Iron for the welding of the Units 2 and 3 containment vessels, and observe production welding activities as available. The inspection was conducted under the requirements of NRC Inspection Manual Chapter 2502.

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

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one for cases where a response is not required, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (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, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,

**/RA/**

M. Scott Freeman, Chief  
Construction Inspection Branch 3  
Division of Construction Inspection

Docket Nos.: 05200027, 05200028

Enclosure: NRC Inspection Report 05200027/2011-001; 05200028/2011-001

cc w/encl: (See page 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 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 (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, proprietary, or safeguards information so that it can be made available to the Public without redaction.

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cc w/encl: (See page 3)

PUBLICLY AVAILABLE       NON-PUBLICLY AVAILABLE       SENSITIVE       NON-SENSITIVE

ADAMS:  Yes      ACCESSION NUMBER: ML11343A643       SUNSI REVIEW COMPLETE  FORM665 ATTACHED

OFFICE	RII/DCI	RII/DCI	RII/DCP	RII/DCP			
SIGNATURE	ECM2	DFM1	RLJ3	MEE			
NAME	E. Michel	D. Failla	R. Jackson	M. Ernstes			
DATE	12/06/2011	12/08/2011	12/08/2011	12/09/2011	12/ /2011	12/ /2011	12/ /2011
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY      DOCUMENT NAME: G:\CC\DCI\CIB3\INSPECTION REPORTS - INPUTS\VC SUMMER\VC SUMMER CVBH WELDING UPDATED 2011001 .DOC

cc w/encl:

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Letter to Mr. Ron Clary from S. Freeman, dated December 9, 2011

SUBJECT: SOUTH CAROLINA ELECTRIC AND GAS V.C. SUMMER NUCLEAR STATION  
UNITS 2 AND 3 - NRC INSPECTION REPORTS 05200027/2011-001, AND 05200028/2011001

DISTRUBUTION w/encl:

C. Ogle, RII  
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S. Freeman, RII  
M. Ernstes, RII  
G. Khouri, RII  
R. Jackson, RII  
PUBLIC

**U.S. NUCLEAR REGULATORY COMMISSION**

**Region II**

Docket Numbers: 05200027, 05200028

License Number: None

Report Numbers: 05200027/2011-001, 05200028/2011-001

Licensee: South Carolina Electric and Gas (SCE&G)

Facility: V. C. Summer Nuclear Station, Units 2 & 3

Location: Jenkinsville, SC

Inspection Dates: October 31 – November 4, 2011

Inspectors: Eric Michel, Senior Construction Inspector, Region II  
Rahsean Jackson, Senior Construction Resident Inspector, Region II  
David Failla, Construction Inspector, Region II

Accompanying Personnel: Jimi Yerokun, Deputy Director Division of Construction Inspection, Region II

Approved by: Scott Freeman, Chief, Construction Inspection Branch 3, Region II

Enclosure

## **SUMMARY OF FINDINGS**

Inspection Report (IR) IR 05200027/2011-001, IR 05200028/2011-001; 10/31/2011 – 11/4/2011;  
VC Summer Units 2 and 3.

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

A. NRC-Identified Findings and Licensee-Identified/Self-Revealing Violations Evaluated as Findings.

None

B. Licensee-Identified and Self-Revealing Violations Not Evaluated as Findings

None



## REPORT DETAILS

### **A. INSPECTIONS, TESTS, ANALYSIS and ACCEPTANCE CRITERIA (ITAAC)-RELATED INSPECTIONS**

None

### **B. NON-ITAAC-RELATED INSPECTIONS**

1. Inspection Procedure (IP) 35007, "Quality Assurance Program Implementation and Pre-Construction Activities" (IMC 2502-07.02, "Pre-Construction Activity Inspections")

- a. Inspection Scope

The inspectors performed an inspection of the Chicago Bridge and Iron (CB&I) welding program, including a sample of ongoing pre-construction activities that could affect the quality of Units 2 and 3 containment vessel bottom heads (CVBHs). The inspectors observed in-process activities, conducted interviews with responsible personnel, and reviewed construction records to determine whether the applicant, its contractor Westinghouse Electric Company (WEC), and subcontractor Chicago Bridge and Iron (CB&I) performed construction activities in accordance with the applicable requirements of 10 CFR 50, Appendix B.

Specifically, the inspectors evaluated whether the subcontractor, CB&I, performed safety-related welding activities associated with the Units 2 and 3 CVBHs in accordance with the combined license application (COLA), and the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section III, Subsection NE, 2001 edition through 2002 addenda.

The results of this inspection may be used to support future closure of the proposed ITAAC numbers shown below from the COLA for Units 2 and 3, as referenced in the AP1000 Design Control Document (DCD).

The inspectors used IP 35007, as informed by the IP 65001.XX procedures as described below.

ITAAC 2.2.01.02a (ITAAC family 6F):

- IP-65001.F for design and fabrication - sections 02.03 for on-site fabrication activities, and 02.04 for problem identification and resolution (PI&R).

ITAAC 2.2.01.03a (ITAAC family 6B):

- IP-65001.B for welding - sections 02.01 for program and procedures review, 02.02 for welding procedure qualification, 02.03 for welder qualification, 02.04 for production control, 02.05 for inspection, and 02.06 for records;

- IP-65001.6 for design and fabrication - sections 02.01 for general installation, 02.02 for component welding, and 02.05 for PI&R; and
- IP65001.11 for containment integrity - sections 02.01 for purchase of materials, 02.02 for storage of materials, 02.05 for review of nondestructive examination (NDE) records, and 02.11 for PI&R.

ITAAC 2.2.01.04a.ii (ITAAC family 6F):

- IP-65001.F for design and fabrication - sections 02.03 for on-site fabrication activities, and 02.04 for PI&R.

a1. IP 35007 – Appendix 2, “Inspection of Criterion II – Quality Assurance (QA) Program”

The inspectors reviewed the CB&I written practice for NDE personnel for compliance with ASME Section III, Subsection NE and SNT-TC-1A-1992. Specifically, the inspectors verified that the written practice contained provisions for education, training, experience, and examinations for radiographic testing (RT), liquid penetrant testing (PT) and magnetic particle testing (MT) personnel as recommended in SNT-TC-1A-1992.

This portion of the inspection may be used to support future closure of proposed ITAAC number 2.2.01.03a from the COLA for Units 2 and 3.

a2. IP 35007 – Appendix 4, “Inspection of Criterion IV – Procurement Document Control”

The inspectors reviewed the purchase specification submitted by CB&I to IHI Corporation for the purchase of SA-738, Grade B plates for Units 2 and 3 CVBHs to verify compliance with ASME Section III including conditions stated in ASME Section II, the “Final Safety Evaluation Report Related to Certification of the AP1000 Standard Plant Design Docket No. 52-006” (ML112091879), and the DCD specified in the COLA. Specifically the inspectors verified dimensions, chemistry requirements, and mechanical tests (including impact testing) were appropriately addressed.

This portion of the inspection may be used to support future closure of proposed ITAAC numbers 2.2.01.02a and 2.2.01.04a.ii from the COLA for Units 2 and 3.

a3. IP 35007 – Appendix 7, “Inspection of Criterion VII – Control of Purchased Material, Equipment, and Services”

The inspectors reviewed welding filler material certified material test reports (CMTRs) and certificates of compliance to determine whether the material was procured in accordance with the requirements of 10 CFR Part 50, Appendix B; and ASME Section III, Subsection NE. Specifically the inspectors verified chemistry requirements, mechanical tests (including impact testing), and moisture content.

The inspectors verified a sample of CMTRs and ASME N-2s for the CVBH plate met the requirements of 10 CFR Part 50, Appendix B; ASME Section III, Subsection NE; and the “Final Safety Evaluation Report Related to Certification of the AP1000

Standard Plant Design Docket No. 52-006” (ML112091879), including tensile test results, grain size, chemical analysis, and heat treatment.

The inspectors reviewed records for receipt inspections performed on the CVBH plates by CB&I to verify those inspections were performed in accordance with the requirements of 10 CFR Part 50, Appendix B, and that the plates met design requirements stated in the Westinghouse ASME Containment Vessel Design Specification, APP-MV50-Z0-001, Rev 7.

This portion of the inspection may be used to support future closure of proposed ITAAC numbers 2.2.01.02a, 2.2.01.03a, and 2.2.01.04a.ii from the COLA for Units 2 and 3.

a4. IP 35007 – Appendix 8, “Inspection of Criterion VIII – Identification and Control of Materials, Parts, and Components”

The inspectors walked down the filler metal control room to determine whether welding material was clearly identified and stored in accordance with procedures and ASME, Section III, Subsection NE. The inspectors observed welding material storage attendant activities to determine whether material was distributed and documented in accordance with CB&I procedures.

This portion of the inspection may be used to support future closure of proposed ITAAC number 2.2.01.03a from the COLA for Units 2 and 3.

a5. IP 35007 – Appendix 9, “Inspection of Criterion IX – Control of Special Processes”

The inspectors reviewed CB&I’s welding program documents to determine whether general welding procedures were in compliance with 10 CFR Part 50, Appendix B and ASME Section III, Subsection NE. The inspectors reviewed welding procedure specifications (WPS’s) and supporting procedure qualification records (PQRs) to determine whether the qualification of submerged arc welding (SAW), flux cored arc welding (FCAW), and shielded metal arc welding (SMAW) were documented in accordance with ASME Section III, Subsection NE and the conditions of ASME Section IX. Specifically, the inspectors verified the quantity and type of qualification tests for the production weld thicknesses involved (i.e. 1.625” for the CVBH) were adequate; and ensured the essential variables required for each welding type were verified to meet the conditions in ASME Section IX.

The inspectors observed field welding of CVBH plates to determine whether weld travelers, WPS variables, surface cleaning, preheat, and interpass temperature were in compliance and controlled in accordance with 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 observed welding being conducted on the following CVBH plate field welds: BH2-J, and BH3-D (bottom head, courses 2 and 3, welds J and D).

The inspectors reviewed welder and weld operator qualification records for FCAW in multiple positions, and welder qualification records for SAW in multiple positions for

compliance with the requirements in ASME Section III, Subsection NE and conditions of ASME Section IX. Specifically, the inspectors ensured welders' qualification welds were being verified via RT, and confirmed welders were uniquely identified on fully documented qualification tests. The inspectors also reviewed welder continuity records to verify welders were maintaining proficiency in accordance with ASME Section IX.

The inspectors reviewed NDE qualification records for the two on-site CB&I level 2 NDE examiners to conduct RT, MT, and PT. The inspectors also reviewed the CB&I procedure for the qualification of NDE procedures, and the procedures for RT, MT and PT for compliance with ASME Section III, Subsection NE and the conditions in ASME Section V. The inspectors also observed RT conducted on one full penetration butt weld, including visually verifying the weld condition, for BH2-E.

This portion of the inspection may be used to support future closure of proposed ITAAC numbers 2.2.01.02a and 2.2.01.03a from the COLA for Units 2 and 3.

a6. IP 35007 – Appendix 10, “Inspection of Criterion X – Inspection”

The inspectors observed in-process weld inspections by quality control (QC) personnel to determine whether the essential variables checked were in compliance with the applicable WPS and ASME Section III, Subsection NE. The inspectors reviewed weld travelers to determine whether hold points were established, methods used to perform inspections were specified, and hold points were inspected and dated in accordance with procedures. The inspectors also reviewed weld travelers to determine whether inspection criteria was established and reference documents used to determine acceptance were listed in accordance with procedures. The inspectors reviewed weld material exposure time logs to determine whether established QC verifications had been inspected and dated in accordance with procedures. The inspectors verified through measurements in the field that the appropriate root gap and fit up for seam BH3-U had been obtained prior to welding.

This portion of the inspection may be used to support future closure of proposed ITAAC number 2.2.01.03a from the COLA for Units 2 and 3.

a7. IP 35007 – Appendix 11, “Inspection of Criterion XI – Test Control”

The inspectors reviewed WPSs and supporting PQRs to determine whether impact testing for welding procedure qualifications was performed in accordance with ASME Section III, Subsection NE. Specifically the inspectors verified Charpy V-notch samples taken from the weld metal and heat affected zone of weld coupons met the impact requirements of ASME Section III, Subsection NE. The inspectors also reviewed weld material CMTRs to determine whether impact testing was tested in accordance with ASME Section III, Subsection NE. Specifically the inspectors verified Charpy V-notch samples taken from weld metal build-up pads met the impact requirements of ASME Section III, Subsection NE. The inspectors reviewed impact test reports for the following weld material heats and lots:

<u>Welding Process</u>	<u>Welding Material</u>	<u>Heat/Lot No.</u>
FCAW	Outershield 91K2-HSR	Lot no. 967Z
SAW	Solid Wire, ENi4 Flux, OK 10.72	Heat no. 093096 Lot no. 093096
SMAW	E9018M-H4-R	Heat no. M100024

The inspectors reviewed CMTRs for plate material for to verify impact testing was performed in accordance with the requirements of ASME Section III, Subsection NE. Specifically, the inspectors reviewed test temperatures, specimen location and orientation, and impact test results.

This portion of the inspection may be used to support future closure of proposed ITAAC number 2.2.01.04a.ii from the COLA for Units 2 and 3.

a8. IP 35007 – Appendix 13, “Inspection of Criteria XIII - Handling, Storage, and Shipping”

The inspectors reviewed the CB&I procedure for the storage of containment vessel material and conducted walkdowns to ensure the plate material was being stored in accordance with the requirements of 10 CFR Part 50, Appendix B and CB&I procedures.

This portion of the inspection may be used to support future closure of proposed ITAAC number 2.2.01.02a from the COLA for VC Summer Units 2 and 3.

a9. IP 35007 – Appendix 16, “Inspection of Criterion XVI – Corrective Action”

The inspectors evaluated the CB&I corrective action program for compliance with 10 CFR Part 50, Appendix B. The inspectors focused on the evaluation and disposition of corrective action requests (CARs) and nonconformance reports (NCRs) associated with safety related construction of the CV. Specifically, the inspectors reviewed relevant sections of the CB&I QA program manual related to corrective actions. The inspectors also evaluated the manner in which CB&I identified and corrected conditions adverse to quality. The inspectors reviewed the CB&I corrective action procedure, and verified adequate implementation through a review of numerous CARs and observation reports (ORs). Additionally, the inspectors reviewed CB&I’s nonconformance procedure and verified its implementation by reviewing a sample of NCRs.

This portion of the inspection may be used to support future closure of proposed ITAAC numbers 2.2.01.02a, 2.2.01.03a, and 2.2.01.04a.ii from the COLA for Units 2 and 3.

a10. IP 35007 – Appendix 17, “Inspection of Criterion XVII – Quality Assurance Records”

The inspectors evaluated the adequacy of QA records completed by CB&I to verify QA records were reviewed and stored in accordance with the requirements of 10 CFR Part 50, Appendix B; and the CB&I QA program and procedures. The inspectors focused on the QA record verification and storage processes. Specifically, the inspectors reviewed relevant sections of the CB&I QA program manual related to QA records storage and retention. The inspectors also reviewed

CB&I's General Procedure for Quality Assurance Records and verified adequate implementation through direct observation. The inspectors directly inspected the storage area for radiography records to confirm RT film was stored as specified by CB&I's procedure for Care and Storage of NDE Material.

This portion of the inspection may be used to support future closure of proposed ITAAC number 2.2.01.03a from the COLA for Units 2 and 3.

b. Findings

No findings of significance were identified.

**C. OTHER INSPECTION RESULTS**

None

**D. EXIT MEETING SUMMARY**

On November 4, 2011, the NRC inspectors presented the inspection results to Mr. Ron Clary, Vice President for New Nuclear Development, and other management representatives from SCG&E and the consortium. Based on additional information provided following the November 4, 2011 exit, a re-exit was held on November 15, 2011. The inspectors stated that no proprietary information would be included in the inspection report.

**KEY POINTS OF CONTACT**SCE&G and Contractor Personnel

R. Clary	SCE&G VP New Nuclear Development
A. Torres	SCE&G General Manager of Construction
F. Salter	SCE&G Licensing Engineer
R. Thompson	SCE&G Construction Supervisor
G. Cook	WEC Containment Vessel Site Project Engineer
L. Presley	CB&I Vice President of Nuclear Operations
M. Cusick	CB&I Director Nuclear Quality Assurance
P. Fleming	CB&I Project Manager
C. Egelsky	CB&I Welding Engineer
L. Laplante	CB&I Site Quality Engineer

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

<u>Item Number</u>	<u>Status</u>	<u>Description</u>
None	N/A	N/A

## LIST OF DOCUMENTS REVIEWED

### Procedures

#### *SCE&G*

V.C. Summer Units 2 and 3 Quality Assurance Program Description, Revision 2  
APP-GW-GAP-138, "Quality Oversight at US AP1000 Construction Sites" Revision 1

#### *CB&I*

CMS-720-03-PL-00010, "Nuclear Quality Assurance Manual (NQAM)," Revision 10  
CMS-720-03-PR-09301, "Care, Storage and Conditioning of Welding Materials," Revision 5  
CMS-164621-720-03-AD-009301, "Addenda to CMS-720-03-PR-09301 Project Specific Requirements for Welding Consumable Storage, Care and Conditioning," Revision 2  
CMS-164621-000-QA-WI-02000, "ESAB 10.72 OK Flux and Lincoln E91TG-H4 Exposure Limits," Revision 0.  
CMS-720-03-PR-09151, "Site Welding Material Distribution," Revision 5  
CMS-720-03-PR-10051, "Qualification of NDE Procedures," Rev 3  
CMS-830-15-PR-54158, "Visual Inspection – Welds ASME Section III, Division I – Subsection NE," Rev 0  
CMS-830-15-PR-45-154, "Radiographic Examination, ASME Section III, Division 1 - Subsection NE," Rev 0  
CMS-830-15-PR-45160, "Magnetic Particle Testing, Color Contrast, Dry Yoke, ASME Section III, Division 1 – Subsection NE," Rev 1  
CMS-830-15-PR-45162, "Liquid Penetrant Examination, Color Contrast, Solvent Removable, ASME Section III, Division 1 - Subsection NE," Rev 1  
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 7  
CMS-830-15-PR-18010, "General Repair Procedure Materials and Welds for Class 2 and Class MC Products," Rev 2  
CMS-164621-000-01-PR-000001, "Receipt and Storage of Containment Vessel Material for V.C. Summer Units #2 and #3," Rev 1  
CMS-720-03-PR-14001, "General Procedure for Quality Assurance Records" Revision 6  
CMS-830-15-WI-40001, "Care and Storage of NDE Material Nuclear" Revision 1

### Specifications:

#### *CB&I*

GWPS-164621-000-15-SP-015001, "General Welding Procedure Specification for the Shielded Metal Arc Welding Process," Rev. 0  
GWPS-164621-000-15-SP-015002, "General Welding Procedure Specification for the Submerged Arc Welding Process," Rev. 0  
GWPS-164621-000-15-SP-015003, "General Welding Procedure Specification for the Flux Cored Arc Welding Process," Rev. 0  
Welding Procedure Specification ENi4 / OK 10.72, Rev. 1  
Welding Procedure Specification E9018M H4 R, Rev. 1  
Welding Procedure Specification E91TG-H4, Rev. 1



Procedure Qualification Records 12674; 12690; 12691; 12723; 12757; 12676; 12677; 12749; 12750

QARP-004-003, "IHI Quality Assurance Data Package, SCANA VC Summer 2&3 CV, Project 164621," N-2s for bottom head assemblies A2-C8, A2-C9, A2-C13, A2-C15, A2-C19, and A2-C20

QARP-004-003, "IHI Quality Assurance Data Package, SCANA VC Summer 2&3 CV, Project 164621," Dimensional Examination Records, Depth Testing following forming, parts A2-C2-1, A2-C2-2, A2-C3-1, and A2-C4-1

WEC

APP-MV50-Z0-001, "Containment Vessel Design Specification," Rev. 7

**Certified Material Test Reports:**

The Lincoln Electric Company CMTR 4484978, 1.2mm Outershield 91K2-HSR 15KG SP, Lot 967Z, revised 3/15/2011

ESAB, CMTR for order no. 770386, Spoolarc ENi4, Heat 093096

ESAB, CMTR for order no. 770386, OK 10.72 Flux, Lot ME022012 and Spoolarc ENi4, Heat 093096

Stork material Technology, test report no. LTE001-10-08-06889-1, ENi4, Heat 093096

Stork material Technology, test report no. LTE001-10-08-06886-1, ENi4, Heat 093096

ESAB, CMTR for order no. 776877, OK 10.72 Flux, Lot ME022012

ESAB, CMTR for order no. 740466, Atom Arc 9018, 3/16" x 14", Heat M100024, Lot 2K016F07, rev. 3

JFE Steel Corp, Report of Material Test, CMTR No. 5951-20

**Corrective Action / Nonconformance Records:**

CB&I PN-VCS-2011-020

CB&I OB-VC-2011-023

CB&I OB-VC-2011-024

CB&I OB-VC-2011-016

CB&I OB-VC-2011-015

CB&I OB-VC-2011-022

CB&I OB-VC-2011-021

CB&I OB-VC-2011-020

VC Summer PIP 0-L-11-0321

VC Summer PIP 0-L-11-0312

**Miscellaneous:**

CB&I, "Nondestructive Examination Personnel Training, Qualification and Certification Program," Issue 5, Rev 2

CB&I Receiving Inspection Report (Plate) for plates A2-C2/A2-C2 (IN 4675), A2-C3/A2-C3 (IN 4676), and A2-C16-1/A2-C16-2 (IN 4689)

CB&I Letter, dated 9 November 2011, from Michael Cusick (CB&I) to Gregory Drake (WEC), regarding NRC questions related to Observation Reports

## LIST OF ACRONYMS

ADAMS	Agency-wide Documents Access & Management System
AP1000	Westinghouse Advanced Passive Pressurized Water Reactor
ASME	American Society of Mechanical Engineers
CB&I	Chicago Bridge and Iron
COLA	Combined License Application
CMTR	Certified Material Test Report
CVBH	Containment Vessel Bottom Head
DCD	Design Control Document
FCAW	Flux Core Arc Welding
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
ITAAC	Inspection, Test, Analysis and Acceptance Criteria
MT	Magnetic Particle Testing
NCR	Nonconformance Report
NDE	Nondestructive Examination
NQAM	Nuclear Quality Assurance Manual
NRC	Nuclear Regulatory Commission
OR	Observation Report
PI&R	Problem Identification and Resolution
PQR	Procedure Qualification Record
PT	Liquid Penetrant Testing
QA	Quality Assurance
QC	Quality Control
Rev.	Revision
RT	Radiographic Testing
SAW	Submerged Arc Welding
SCE&G	South Carolina Electric and Gas
SMAW	Shielded Metal Arc Welding
WEC	Westinghouse Electric Company LLC
WPS	Welding Procedure Specification
10 CFR	Title 10 of the <i>Code of Federal Regulations</i>