

October 21, 2016

Mr. Steven Riddell, Director of Quality Systems  
Paxton & Vierling Steel  
501 Avenue H  
Carter Lake, IA 50510

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION OF PAXTON  
& VIERLING STEEL REPORT NO. 99901472/2016-201

Dear Mr. Riddell,

On September 19-23, 2016, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Paxton & Vierling Steel (hereafter referred to as PVS) facility in Carter Lake, IA. The purpose of this limited-scope inspection was to assess PVS's compliance with provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," and selected portions of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." This inspection specifically evaluated PVS's implementation of quality activities associated with the fabrication and inspection of containment structural modules for the Westinghouse Electric Company AP1000 reactor design. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute NRC endorsement of your overall quality assurance or Part 21 programs.

Within the scope of this inspection, no violations or nonconformances 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 will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response, (if applicable), should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential

commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

*/RA/*

John Burke, Chief  
Quality Assurance Vendor Inspection Branch-2  
Division of Construction Inspection  
and Operational Programs  
Office of New Reactors

Docket No.: 99901472

Enclosure:  
Inspection Report No. 99901472/2016-201  
and Attachment

commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

**/RA/**

John Burke, Chief  
Quality Assurance Vendor Inspection Branch-2  
Division of Construction Inspection  
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<b>NAME</b>	RPatel	ABelen	YDiaz-Castillo
<b>DATE</b>	10/17/16	10/13/16	10/14/16
<b>OFC</b>	NRO/DCIP/QVIB-2	NRO/DCIP/QVIB-2	
<b>NAME</b>	LMicewski	JBurke	
<b>DATE</b>	10/18/16	10/19/16	

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**U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF NEW REACTORS  
DIVISION OF CONSTRUCTION INSPECTION AND OPERATIONAL PROGRAMS  
VENDOR INSPECTION REPORT**

Docket No.: 99901472

Report No.: 99901472/2016-201

Vendor: Paxton & Vierling Steel  
501 Avenue H  
Carter Lake, IA 50510

Vendor Contact: Mr. Steven Riddell, Director of Quality Systems  
E-mail: Sriddell@owenind.com  
Phone: (712) 347-4249

Nuclear Industry Activity: Paxton & Vierling Steel manufactures containment and auxiliary building structural components for the Westinghouse Electric Company AP1000 reactor design, as well as structural upgrades for operating nuclear reactors.

Inspection Dates: September 19-23, 2016

Inspectors: Laura Micewski NRO/DCIP/QVIB-2 Team Leader  
Aixa Belen NRO/DCIP/QVIB-2  
Yamir Diaz-Castillo NRO/DCIP/QVIB-2  
Raju Patel NRO/DCIP/QVIB-2  
Sarah Obadina NRO/DCIP/QVIB-2 Trainee

Approved by: John Burke, Chief  
Quality Assurance Vendor Inspection Branch-2  
Division of Construction Inspection  
and Operational Programs  
Office of New Reactors

Enclosure

## **EXECUTIVE SUMMARY**

Paxton & Vierling Steel  
99901472/2016-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a vendor inspection at the Paxton & Vierling Steel (hereafter referred to as PVS) facility. PVS is currently under contract with WECTEC, formally Chicago Bridge and Iron, to supply containment and auxiliary building components for the Vogtle Electric Generating Station (hereafter referred to as Vogtle) Units 3 and 4 and Virgil C. Summer Nuclear Station (hereafter referred to as V.C. Summer) Units 2 and 3 projects. The purpose of this technically-focused inspection was to verify that PVS had implemented an adequate quality assurance (QA) program that complies with the requirements of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities." In addition, the inspectors also verified that PVS had implemented a program under 10 CFR Part 21, "Reporting of Defects and Noncompliance," that met the NRC's regulatory requirements. The inspectors conducted the inspection from September 19-23, 2016. This was the first NRC vendor inspection at this facility.

Specific safety-related activities observed by the inspectors included:

- Material serialization transfer and cut-off operation of columns 6 x10-1/2"x19' long, traceable heat No. 63143438 A through D
- Dimensional inspection of plates, heat number (No.) B21T060060 A and D, undergoing dedication process, prior to laboratory testing
- Dimensional inspection and tack weld visual inspection of fitup for the AP1000 Safety-Related Standard Frame Structural Steel, Safety Class C, Seismic Category 1 for the Vogtle Unit 3, Job No. 132175-SS01.00, Weld Map 5A4001F1Z-1; as well as V.C. Summer Unit 3, Job No. 132178-SS01.00, Weld Map 4A4110P2-2; 4A4110P2-1 and 4A4110P4-1
- Welding of welds F1 and F2 for the AP1000 Safety-Related Containment Box Structure, Safety Class C, Seismic Category 1 for Vogtle Unit 4, Job No. 132176-SS01.00, Weld Map 8C04006B1-1; as well as welds F3, F4, F5 and F6 for the AP1000 Safety-Related Containment Box Structure, Safety Class C, Seismic Category 1 for Vogtle Unit 4, Job No. 132176-SS01.00, Weld Map 8C04014B1-1
- Ultrasonic testing for weld N-29 for the AP1000 Safety-Related Circular Trunks Room Structural Steel, Safety Class C, Seismic Category 1 for V.C. Summer Unit 3, Job No. 132178-SS01.00, Weld Map 8C03002B2-2; and also for weld N-4 for the AP1000 Safety-Related Standard Shop Beam Structural Steel, Safety Class C, Seismic Category 1 for Vogtle Unit 3, Job No. 132175-SS01.00, Weld Map 4C12001B1-1
- Magnetic particle testing for weld F-6 for the AP1000 Safety-Related Containment Structure, Safety Class C, Seismic Category 1 for Vogtle Unit 4, Job No. 132176-SS01.00, Weld Map 8C04015B1-1; for weld N-2 for the AP1000 Safety-Related Standard Shop Beam Structural Steel, Safety Class C, Seismic Category 1 for Summer Unit 2, Job No. 132177-SS01.00, Weld Map 6C51004B1Z-1; and for weld F-6 for the AP1000 Safety-Related Containment Box Structure, Safety Class C, Seismic Category 1 for Vogtle Unit 4, Job No. 132176-SS01.00, Weld Map 8C04005B2-1

- Observed cutting of beam for the AP1000 Safety-Related Standard Frame Structural Steel, Safety Class C, Seismic Category 1 for Vogtle Unit 3, Job No. 132175-SS01.00, part number M11768

The following regulations served as the bases for the NRC inspection:

- Appendix B to 10 CFR Part 50
- 10 CFR Part 21

During the course of this inspection, the inspectors implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors"; IP 43004, "Inspection of Commercial-Grade Dedication Programs"; and IP 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance."

The inspectors concluded that PVS's QA policies and procedures comply with the applicable requirements of Appendix B to 10 CFR Part 50 and 10 CFR Part 21, and that PVS's personnel are implementing these policies and procedures effectively. The results of the inspection are summarized below.

#### Inspection Areas

The inspectors determined that PVS is implementing its programs for design control, commercial-grade dedication, supplier oversight, manufacturing control, inspection, control of special processes, control of measuring and test equipment, nonconforming material parts, and components, and corrective action in accordance with the applicable regulatory requirements of Appendix B to 10 CFR Part 50. Also, PVS is implementing its 10 CFR Part 21 program in accordance with the regulatory requirements. Based on the limited sample of documents reviewed and activities observed, the inspectors also determined that PVS is implementing its policies and procedures associated with these programs and no findings of significance were identified.

## REPORT DETAILS

### 1. Design Control

#### a. Inspection Scope

The inspectors reviewed PVS's policies and implementing procedures that govern the design control program to verify compliance with the regulatory requirements of Criterion III, "Design Control," of Appendix B to 10 CFR Part 50. Specifically, the inspectors evaluated the implementation of PVS's design control process associated with the AP1000 structural steel platforms for the auxiliary and containment buildings for the Vogtle Electric Generating Station (hereafter referred to as Vogtle) Units 3 and 4, and Virgil C. Summer Nuclear Station (hereafter referred to as V.C. Summer) Units 2 and 3 projects.

The inspectors reviewed (1) PVS's procedures for its process to control design changes and examples of their implementation, as well as a sample of engineering drawings, contract review, and the associated purchase orders (POs) for fabrication of auxiliary and containment building steel structural platforms; (2) Requests for Additional Information (RFIs) to WECTEC for clarification of design specifications, drawing changes and Engineering & Design Coordination Reports (E&DCRs); and (3) PVS incorporation of E&DCR changes into fabrication and assembly drawings.

The inspectors reviewed PVS's vendor design review for Job Number (No.) L-2175, "AP1000 SPL15," dated September 8, 2016, on WECTEC PO 132175-SS-001.01 and verified that PVS adequately addressed detail design changes specified in Westinghouse Electric Company (WEC) drawing APP-1132-SS-031, Revision 1, for Vogtle Units 3 & 4 site into fabrication and assembly drawings. The inspectors verified that technical and quality requirements from WECTEC POs, design specifications, and drawings were being adequately translated and documented on PVS fabrication and assembly drawings to meet the requirements of WECTEC's design specifications.

The inspectors interviewed PVS contract and engineering staff to verify that their review of contractual and design changes considered the original design of the safety-related structural components, and that an independent review was conducted prior to issuance of any change. The inspectors discussed the design control program with PVS's management and technical staff. The documents reviewed by the inspectors are included in the attachment to the inspection report.

#### b. Observations and Findings

No findings of significance were identified.

#### c. Conclusion

The inspectors determined that PVS established a program that adequately controls design in accordance with the regulatory requirements of Criterion III of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors determined that PVS is also effectively implementing its design control processes. No findings of significance were identified.

## 2. Commercial-Grade Dedication (CGD)

### a. Inspection Scope

The inspectors reviewed PVS's policies and implementing procedures that govern the CGD program to verify compliance with the regulatory requirements of Criterion III, "Design Control," and Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR Part 50.

The inspectors reviewed a sample of three dedication packages to assess the different elements of the CGD program which included dedication plan, POs, the technical evaluation process, receipt inspection reports, certificates of compliance, various design drawings, and technical information. The inspectors evaluated the criteria for the identification of the safety function(s) of an item, selection of critical characteristics and acceptance criteria, and the identification of verification methods to verify effective implementation of PVS's dedication process. The inspectors reviewed dedication packages of structural steel components used in the fabrication of AP1000 auxiliary building structural steel platform, AP1000 containment building structural steel platforms SPL20 and SPL28 for Vogtle Units 3 and 4 and V.C. Summer Units 2 and 3 projects.

Specifically, the inspectors verified implementation of CGD process during receipt inspection, material traceability transfer and cut-off operations of two structural steel columns of 6x10.5" x 19' length size, American Society for Testing and Materials (ASTM) A36, heat No. 59069949, traceable in PVS FabTrol database, for the fabrication of AP1000 Vogtle and V.C. Summer structural steel platforms. In addition, the inspectors observed PVS quality control (QC) inspector perform critical dimensional inspections of six sample plates being dedicated using special tests and inspections prior to use as a basic component for fabrication of the AP1000 structural steel platform SPL51.

The inspectors discussed the CGD program with PVS's staff. The documents reviewed by the inspectors are included in the attachment to the inspection report.

### b. Observations and Findings

No findings of significance were identified.

### c. Conclusion

The inspectors determined that PVS established a program that adequately controls design in accordance with the regulatory requirements of Criteria III and VII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors determined that PVS is also effectively implementing its design control processes. No findings of significance were identified.



### 3. Oversight of Contracted Activities

#### a. Inspection Scope

The inspectors reviewed PVS's policies and implementing procedures that govern the implementation of its oversight of contracted activities to verify compliance with the requirements of Criterion IV, "Procurement Document Control," Criterion VII, "Control of Purchased Material, Equipment, and Services," and Criterion XVIII, "Audits," of Appendix B to 10 CFR Part 50.

Specifically, the inspectors verified that applicable quality, technical, regulatory, and reporting requirements, were specified in the sample of procurement documents reviewed and extended to lower-tier suppliers when necessary. Additionally, the inspectors reviewed the procedures and implementation for the selection and qualification of vendors supplying basic components and services, through a sample of certified material test reports, certificate of calibration, audit reports, commercial-grade survey reports, and receiving inspections.

The inspectors reviewed PVS's nuclear approved suppliers list to ensure that qualified and approved suppliers were listed, that authorized personnel maintained, distributed, and periodically updated the list, and that any revisions to the list were implemented following the applicable procedures. The inspectors verified that, for the sample of six approved vendors selected, PVS performed supplier audits as required and that the corrective actions related to these audits were implemented and closed in audit reports in a timely manner. The inspectors also reviewed a sample of training and qualification records for PVS's lead auditors to verify that these individuals were trained and qualified in accordance with PVS's policies and procedures, as well as the regulatory standards set by the American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance (NQA-1) requirements, and that the qualification records were current.

The documents reviewed by the inspectors are included in the attachment to the inspection report.

#### b. Observations and Findings

No findings of significance were identified.

#### c. Conclusion

The inspectors concluded that PVS is implementing its oversight of contracted activities in accordance with the regulatory requirements of Criteria IV, VII, and XVIII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors also determined that PVS is implementing its policies and procedures associated with the oversight of contracted activities. No findings of significance were identified.

#### 4. Control of Special Processes

##### a. Inspection Scope

The inspectors reviewed PVS's policies and implementing procedures that govern the control of special processes to verify compliance with the regulatory requirements of Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50.

The inspectors witnessed welding on AP1000 Safety-Related Containment Box Structure, Safety Class C, and Seismic Category 1 for use in domestic AP1000 nuclear power plants to verify that welding was performed in accordance with the requirements of the American Welding Society (AWS) Code. Specifically, the inspectors verified that welding was performed above the minimum interpass temperature; the weld area was kept clean and protected from wind and moisture; the welder used proper techniques to achieve acceptable weld quality; surfaces being welded were clean and free of harmful contaminants; and the welding filler metal was properly labeled and traceable to a heat number.

The inspectors reviewed certified material test reports for the weld filler metal used to verify that the material specifications for chemical composition and mechanical properties meet AWS Code requirements. The inspectors performed a walk down of the weld filler metal storage area to verify filler metal was controlled to prevent degradation, inadvertent use, or loss of traceability in accordance with PVS approved procedures.

The inspectors reviewed the welding procedure specification (WPS) and associated procedure qualification record (PQR) to verify the procedure used was qualified in accordance with AWS Code requirements. The inspectors reviewed welder qualification records for the welder performing the weld. The inspectors verified the welder was qualified for the welding technique and material used, and the welder maintained continuity of qualifications in accordance with AWS Code requirements.

The inspectors witnessed ultrasonic testing (UT) and magnetic particle testing (MT) nondestructive examinations (NDE) of different welds for AP1000 Containment Structural Steel, for use in domestic AP1000 nuclear power plants to verify that the examination was performed in accordance with approved NDE procedures. Specifically, the inspectors verified, cleanliness of the surface prior to examination, light requirements, calibration of equipment, and techniques used by the Level II examiner. The inspectors reviewed the UT and MT inspection reports to ensure the materials and examinations were properly documented and reviewed by qualified personnel.

The inspectors reviewed PVS's procedure for personnel qualification and certification in NDE processes to ensure it contained the requirements of ASME Boiler and Pressure Vessel (B&PV) Code and SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing." The inspectors reviewed a sample of qualification records for Level II and Level III MT and UT examiners to verify they completed required education, training courses, practical experience, tests, and examination continuity.

The inspectors discussed the special processes program with PVS's management and technical staff. The documents reviewed by the inspectors are included in the attachment to the inspection report.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The inspectors determined that PVS is implementing its manufacturing and special processes programs in accordance with the regulatory requirements of Criterion IX of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors also determined that PVS is implementing its policies and procedures associated with the control of special processes program. No findings of significance were identified.

5. Inspection

a. Inspection Scope

The inspectors reviewed PVS's policies and implementing procedures that govern the inspection program to verify compliance with the regulatory requirements of Criterion X, "Inspection," of Appendix B to 10 CFR Part 50.

The inspectors verified that PVS's procedures for inspection activities provided measures for the generation of inspection documents, such as travelers, instructions, checklists, or other appropriate means. For a sample of inspection documents, the inspectors verified that these documents included the appropriate information as required by PVS procedures such as the welder ID, weld wire traceability, weld number, inspection date, type of observation, results of examination and tests, and the initials of the QC inspector. The inspectors also verified that mandatory hold points were indicated and that work did not proceed without appropriate approval.

The inspectors reviewed a sample of material inspection reports and receipt inspections for material used for the fabrication of domestic AP1000 containment building structural components for V.C. Summer Units 2 and 3, and Vogtle Units 3 and 4. The inspectors verified the inspections were performed by qualified personnel and followed approved policies and procedures, and specific part numbers and heat numbers were traceable to the raw material purchased from the suppliers and maintained throughout the production order operation list.

The inspectors discussed the inspection program with PVS's management and technical staff. The documents reviewed by the inspectors are included in the attachment to the inspection report.

b. Observations and Findings

No findings of significance were identified.

c. Conclusions

The inspectors determined that PVS is implementing its inspection program in accordance with the regulatory requirements of Criterion X of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors

also determined that PVS is implementing its policies and procedures associated with the inspection program. No findings of significance were identified.

6. Control of Measuring and Test Equipment (M&TE)

a. Inspection Scope

The inspectors reviewed PVS policies and implementing procedures that govern the M&TE program to verify compliance with the requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50.

The inspectors performed a walkdown to ensure that equipment located in the M&TE storage area, QC hold area and fabrication shop were labeled, handled, and stored in a manner that indicated the calibration status of the instrument and ensured its traceability to calibration test data. The inspectors observed the use of M&TE associated with welding, NDE and dimensional inspections were marked with the calibration date, next calibration due date, identification number, and identification of the individual who calibrated it. The inspectors verified the welding machines were verified in accordance with procedures. The inspectors reviewed the calibration records to verify that the caliper, micrometers and radiometer were within the prescribed calibration interval and calibrated against nationally recognized standards.

For the sample of M&TE observed in the fabrication shop, testing area, and storage area, the inspectors determined that the M&TE had the appropriate calibration stickers and current calibration dates, including the calibration due date. The inspectors also verified that the M&TE had been calibrated, adjusted, and maintained at prescribed intervals prior to use. The inspectors reviewed the electronic records for M&TE to ensure no equipment that was out of calibration was in use, and for a selection of M&TE that was out of calibration, verified it was properly marked and segregated.

The inspectors discussed the M&TE program with PVS management, technical staff, and craft personnel. The documents reviewed by the inspectors are included in the attachment to the inspection report.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The inspectors determined that PVS has established a program for control of M&TE in accordance with the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors also determined that PVS is implementing its policies and procedures associated with the control of M&TE. No findings of significance were identified.

## 7. Nonconforming Materials, Parts, or Components

### a. Inspection Scope

The inspectors reviewed PVS's policies and implementing procedures that govern the control of nonconformances to verify compliance with the requirements of Criterion XV, "Nonconforming Materials, Parts, or Components," of Appendix B to 10 CFR Part 50. The inspectors reviewed PVS's Nonconformance Report (NCR) log and selected a sample of NCRs to verify that PVS had implemented a program to ensure that nonconforming items were properly identified, documented, segregated, evaluated and dispositioned. PVS's nonconformances are dispositioned either use-as-is, repair, re-work, scrap, return and replace, or other. The inspectors verified that the NCRs reviewed had the appropriate technical justification for the selected disposition. In addition, the inspectors interviewed PVS personnel and verified that there were designated areas to segregate and control nonconforming items.

The inspectors also discussed the nonconformance program with PVS management and technical staff. The documents reviewed by the inspectors are included in the attachment to the inspection report.

### b. Observations and Findings

No findings of significance were identified.

### c. Conclusion

The inspectors concluded that PVS has established a program for the control of nonconforming materials, parts, or components in accordance with the regulatory requirements of Criterion XV of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors also determined that PVS is implementing its policies and procedures associated with the control of nonconforming materials, parts, or components. No findings of significance were identified.

## 8. Corrective Action

### a. Inspection Scope

The inspectors reviewed PVS policies and implementing procedures that govern the control of corrective actions to verify compliance with the requirements of Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50.

The inspectors reviewed PVS's corrective actions log and selected a sample of corrective action reports (CARs) to verify that PVS had implemented an adequate program to ensure that significant conditions adverse to quality (SCAQ) and conditions adverse to quality (CAQ) were promptly identified and corrected. The inspectors verified that the CARs provide: (1) adequate documentation and description of the SCAQ or CAQ, as applicable; (2) an appropriate analysis of the cause of these conditions and the corrective actions taken to prevent recurrence; (3) direction for review and approval by the responsible authority; (4) a description of the current status of the corrective actions;

and (5) the follow-up actions taken to verify timely and effective implementation of the corrective actions. The inspectors also reviewed a sample of trend evaluations and root cause analyses.

The inspectors also discussed the corrective actions program with PVS management and technical staff. The documents reviewed by the inspectors are included in the attachment to the inspection report.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The inspectors concluded that PVS has established a program for the control of corrective actions in accordance with the regulatory requirements of Criterion XVI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors also determined that PVS is implementing its policies and procedures associated with the corrective actions program. No findings of significance were identified.

9. 10 CFR Part 21 Program

a. Inspection Scope

The inspectors reviewed the policies and implementing procedures of PVS that govern the facility's compliance with the requirements of 10 CFR Part 21, "Reporting of Defects and Noncompliance." In addition, the inspectors evaluated the 10 CFR Part 21 postings and a sample of PVS's POs for compliance with the requirements of 10 CFR 21.21, "Notification of Failure to Comply or Existence of a Defect and its Evaluation," and 10 CFR 21.31, "Procurement Documents." Furthermore, the inspectors discussed the 10 CFR Part 21 program with PVS's management and technical staff. The documents reviewed by the inspectors are included in the attachment to the inspection report.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The inspectors determined that PVS is implementing its 10 CFR Part 21 program in accordance with the regulatory requirements of 10 CFR Part 21. Based on the limited sample of documents reviewed, the inspectors also determined that PVS is implementing its policies and procedures associated with the 10 CFR Part 21 program. No findings of significance were identified.

#### 10. Entrance and Exit Meetings

On September 19, 2016, the inspectors discussed the scope of the inspection with Mr. Tyler Owen, General Manager, Mr. Steven Riddell, Director of Quality Systems, and other members of PVS's management and technical staff. On September 23, 2016, the inspectors presented the inspection results and observations during an exit meeting with the Director of Quality Systems, Mr. Steven Riddell, and other members of PVS's management and technical staff. The attachment to this report lists the attendees of the entrance and exit meetings, as well as those individuals whom the inspectors interviewed.

## ATTACHMENT

### 1. ENTRANCE AND EXIT MEETING ATTENDEES

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>	<b>Entrance</b>	<b>Exit</b>	<b>Interviewed</b>
Laura Micewski	Team Leader	NRC/NRO	X	X	
Aixa Belen	Inspector	NRC/NRO	X	X	
Yamir Diaz-Castillo	Inspector	NRC/NRO	X	X	
Raju Patel	Inspector	NRC/NRO	X	X	
Sarah Obadina	Trainee	NRC/NRO	X	X	
Richard McIntyre	Branch Chief	NRC/NRO		X	
Curt Akeson	Lead Source Inspector	WECTEC	X	X	
Abdallah Alkhaleel	Production Manager	PVS	X	X	
Tony Aniello	Director of Projects	PVS	X	X	
Zachary Ashcroft	Sup Nuclear Construction	South Carolina Electric & Gas		X	
Nick Bristol	Plant Manager	PVS	X	X	X
Randy Driver	Chief Inspector	PVS	X		X
Gustavo Gallardo	Welder	PVS			X
Mark Holland	Chief Engineer	PVS	X	X	X
Kent Jordan	Contract Review	PVS			X
Richard Laforge	QC inspector	PVS			X
Mike Marian	Project Engineer	PVS	X	X	X
Kyle McCready	Welder	PVS			X
Will Mozingo	NDO	PVS	X	X	X
Keith Norton	Material Qualification Coord	PVS	X	X	X
Jo Owen	Vendor Database Manager	PVS			X
Tyler Owen	General Manager	PVS	X		
Steven Riddell	Director of Quality Systems	PVS	X	X	X
Dave Riggs	Foreman	PVS			X
Jhonny Servellon	QC paint inspector	PVS			X
Trent Stott	Welder	PVS			X
Chuck Strudl	Quality Control Inspector	PVS			X
Kurt Sunderman	Level II NDE inspector	PVS			X
Randy Sutton	Steel Detailers	PVS			X
Peter Thomopoulos	Project Manager	WECTEC		X	



## 2. INSPECTION PROCEDURES USED

Inspection Procedure (IP) 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance," dated February 13, 2012.

IP 43002, "Routine Inspections of Nuclear Vendors," dated July 15, 2013.

IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated November 29, 2013.

## DOCUMENTS REVIEWED

### Procedures:

Paxton & Vierling Steel Quality Assurance Manual for Nuclear Materials, 1<sup>st</sup> Edition, Revision 2, dated April 3, 2015

NQA-CGI-01-EPRI, "Commercial Grade Dedication," Revision 2.0, dated May 21, 2013

NQA-1-CGI-01, "Dedication of Commercial Grade Items," Revision 11.0, dated February 16, 2010

Quality System Procedure (QSP)-10 CFR Part 21/10 CFR 50.55(e), "Reporting of Defects and Noncompliance," Revision 4.0, dated April 11, 2013

QSP-110A, "Structural Fabrication Drawing & Detailing Control," Revision 4.0, dated June 1, 2010

QSP-113A, "Purchasing," Revision 8.0, dated March 26, 2010

QSP-126A, "Nonconforming Process and Product Control," Revision 6, dated September 22, 2010

QSP-127A, "Corrective and Preventive Action," Revision 5, dated July 8, 2013

QSP-131A, "Receiving, Handling, Processing and Packaging of Stainless Steel," Revision 2.0, dated August 13, 2010

QSP-200N, "Qualification and Certification of Inspection Personnel," Revision 1.0, dated March 5, 2007

QSP-NQA-1, "NQA-1 Projects-Purchasing, Receipt, Traceability and Processing of Material," Revision 5.0, dated April 1, 2014

QSP 301, "AWS D1.1 2000/MT," Revision 1, dated April 8, 2013

"PVS-Structural Fab Employee Concerns Program Procedure," dated August 22, 2016

Work Instruction (WI)-1, "Supplier Selection," Revision 7, dated August 23, 2012

WI-2, "Supplier Performance," Revision 9, dated November 30, 2012

WI-3, "Heat Number and Mill Certs Process," Revision 3.0, dated August 27, 2007

WI-4N, "Safety Related Structural Fabrication Fit, Inspect and Test Plan-Welding," Revision 1, dated December 12, 2012

WI-7, "Precision Tool & Standards Calibration," Revision 3, dated December 6, 2002

WI-8, "Calibration Instruction for Controlled Inspection Equipment," Revision 7, dated August 27, 2007

WI-9, "Issued Equipment Calibration," Revision 2, dated December 6, 2002

WI-10N, "Safety Related Structural Fabrication Fit, Inspect and Test Plan Shop Applied Coatings," Revision 1, dated December 12, 2012

WI-10N-CB&I, "CB&I Safety Related Structural Fabrication Fit, Inspect and Test Plan Shop Applied Coatings," Revision 1, dated June 27, 2014

WI-13, "Welder Qualification," Revision 3, dated April 17, 2013

WI-10N-CB&I, "CB&I Safety Related Structural Fabrication Fit, Inspect, And Test Plan Shop Applied Coatings," Revision 1.0, dated April 16, 2013

Corrective Action Reports:

854, "MFS York," dated June 24, 2013

868, "Heat Traceability," dated December 30, 2013

873, "UT Issue," dated February 25, 2014

879, "SAW PQR Issue," dated July 11, 2014

882, "CGD Definitions," dated August 19, 2014

891, "QSP-126A," dated December 2, 2014

898, "Welding Issues," dated May 15, 2015

900, "NCR Issues," dated September 17, 2015

904, "Weld Stud," dated October 16, 2015

912, "A500 Tube Issue CGD," dated March 30, 2016

914, "Weld Map Not Used As Required," dated July 14, 2016

919, "Reconciliation of N690-1994 to CUR," dated August 23, 2016

920, "Sampling Plan Justification," dated August 23, 2016

921, "Red Tag Issue NOUC 3165/317," dated September 14, 2016

Corrective Action Reports Generated During Inspection:

922, "Reg. Guide 1.28 REV 3," dated September 14, 2016

Nonconformance Reports

50042, "Material Traceability," dated December 30, 2013

50104, "Weld Issue-Undercut," dated March 26, 2014

50123, "Metallurgical Issue," dated June 24, 2014

50305, "Engineering/Detail," dated May 13, 2015

50322, "Fitter," dated May 29, 2015

50239, "Engineering/Detail," dated February 2, 2015

50266, "Welder," dated March 18, 2015

50597, "Engineering," dated March 1, 2016

50616, "Fitter," dated March 29, 2016

50630, "Coatings," dated April 6, 2016

50673, "Fitter," dated June 10, 2016

50805, "All Flare Bevel Groove Welds," dated September 14, 2016

Commercial-Grade Dedication Documents:

PVS CGD Plan SC-2, "Commercial Grade Dedication Plan for Raw Material/ Carbon Steel SC-2," Revision 2, approved April 13, 2016 for CB&I Job No. 777777, PO No. SS01.00

PVS Commercial Grade Item Evaluation Form-WECTEC (Raw Material Only), Revision 3.0, approved on April 13, 2016, for CB&I Job No. 135470, PO No. SS01.00

PVS CGD Plan SC-2, "Commercial Grade Dedication Plan for Raw Material/Carbon Steel-SC-2," Revision 2, approved by CB&I on April 13, 2016, for Job No. 135470

PVS Fastener CGD Plan, Revision 5, dated November 12, 2015, for Job No. 135470 approved by CB&I

PVS Commercial Grade Item Evaluation Form- CB&I/Bar Grating (Raw Material Only), "Carbon Steel-Bar Grating," Revision 5, for Job No. 135470, approved by CB&I on December 21, 2015

PVS-BGCC-01, "Characteristics of Bar Grating for Surveillance and Inspection," Revision 6, for Job No. 135470, approved by CB&I on November 18, 2015

CGD document package for plates size 1-1/2"x 96"x240' Heat No. B6R4282A through B, ASTM A572-50 material specification on PO No. L-CBAI-00200, being CGD through receiving inspection, dimensional inspection and material traceability, test sample cut-off for material analysis to approved vendor

CGD document package for plates size 1-5/8"x96" x 20' length, heat No. 821T06060 serial Nos. A through D, ASTM A572-50 material specification received on PO No. L-CBAI-00198, undergoing receiving inspection, dimensional inspection, and material traceability, test sample cut-off for material analysis to approved vendor

CGD document package for angles size 6x6x5/8" ASTM A572-50, traceable to heat # 55043046, received on PO No. L-CBAI-00005 from LSS LLC tested for mechanical and chemical analysis meeting material specification

CGD document package for 45 angles size 6x6x5/8"x40' length, traceable to heat # 55043046/02, commercially procured from Gerdau Steel on PO No. L-CBAI-00146, dimensional inspected, and special chemical and physical tested by LSS LLC meeting material specification

CGD document package for structural steel plates and tubes used in fabrication of SPL-20, Project L-2177, V.C. Summer, dated September 8, 2016

CGD document package of structural steel plates and tubes used in fabrication of SPL-28, Project No. L-2177, for V.C. Summer Unit 2, dated February 3, 2016

CGD document packages of structural steel plates and tubes used in fabrication of Auxiliary building Project No. L-2175, for Vogtle Unit 3, dated March 28, 2016

Purchase Orders (POs):

WECTEC PO Number (No.) 132175-SS01.00, Revision 12, dated May 9, 2016, for safety related structural steel and steel decking, (Containment & Auxiliary buildings), Class C seismic category 1 for Vogtle EPC-Unit 3 & Site

WECTEC PO No. 132715-SS001.00, Revision 10, dated April 1, 2016, for safety related structural steel and steel decking (Containment & Auxiliary buildings) Class C seismic Category 1, for Vogtle EPC-Unit 4

WECTEC PO No. 132177-SS01.00 Revision 11, issued to PVS for safety-related structural steel and steel decking (Containment and Auxiliary Buildings), Class C seismic category 1 for V.C. Summer Unit 2

PVS Contract & Proposal Checklist CB&I Job L-2175, L-2176, L-2177, & L-2178 reviewed and approved by Director of Quality Systems and Chief Engineer, Sales Manager, CFO, and President on March 20, 2013, for Vogtle Unit-3 &4, V.C. Summer Unit 3 site

PVS Conditional to Contract (CTC) letter No.0001, dated February 6, 2013, conditional acceptance of WECTEC PO No. 132175-SS01.00, "Safety-Related Structural Steel & Deck," Job No. L-2175, for Vogtle Unit 3 & site

CTC-0011, conditional acceptance of WECTEC PO 132176-SS01.00, Revision 10, dated April 25, 2016, "Safety Related Structural Steel & Deck," PVS Job No. L-2176, for Vogtle Unit 4

CTC-0015, dated May 10, 2016, Conditional Acceptance of WECTEC Purchase Order No. 132177-SS01.00, Revision 11, for PVS Job No. L-2177, for V.C. Summer Unit 2

CTC-0202, dated May 10, 2016, conditional acceptance of WECTEC PO No. 132175-SS01.01.00, Revision 12, PVS Job No. L-2175, for Vogtle Unit 3

CTC-0024, dated April 5, 2013, conditional acceptance of WECTEC PO No. 132175-SS01.00, "Safety-related Steel Decking at Auxiliary and Containment Building, safety-related grating, ladders, stairs, stair landing and platforms," Revision 1, dated March 25, 2013, for Vogtle Unit 3

PVS PO No. L-CBAI-0090, dated March 12, 2015, issued to Lincoln Electric Company for procurement of safety-related 20040 pieces of 0.052" Metalshield MC-6 weld wire, to AWS A5.18/A5.18M-01 E70C-6M H4 specification, approved by contract manager and Quality director

PO No. L-CBAI-00008, dated May 13, 2013, issued to DBI Inc. for procurement of NDE testing services performed to PVS's fabricated materials for CB&I

PO No. L-CBAI-0043, dated April 17, 2014, issued to Nova Machine Products for procurement of 13000 pieces of safety-related washers size 3/4x8" to ASTM A108 material specification invoking POS-1

PO No. L-CBAI-00099, dated May 1, 2015, issued to Trust Manufacturing for procurement of 3/8"-16"x1/12" socket flat countersink head cap screws to ASTM A307A-12, cadmium plated

PO No. L-CBAI-00103, dated June 1, 2015, issued to LSS LLC., for procurement of 4 3/4x6" bolts to ASTM A325 specification, 4 3/4" flat washer to ASTM F436, 4 nuts to ASTM 563-DH, 4 3/4x6" plain bolts to ASTM A325, 4 3/4" flat washers to ASTM F436, 4 3/4"NC nuts to ASTM A563-DH, 16 1/2x1-3/4" plain bolts to ASTM A325, 3-2 1/2" flat washers to ASTM F436, and 16 1/2"NC plain nuts to ASTM A563-DH specification

PO No. L-5615-5-00012, dated September 12, 2016, issued to LTI Metrology for procurement of safety-related calibration services

PO No. L-CBAI-00067, dated April 1, 2015, issued to Sherwin Williams for procurement of safety-related paints - 50 gallons of Macropoxy 646N Part A, & B, and 10 gallons of Reducer/Thinner R7K15, invoking POS-1, Revision 0, dated February 20, 2015

PO No. L-CBAI-00120, dated July 30, 2015, issued to Carboline Company for procurement of safety-related paint – 200 gallons of each Carboguard 890N Part A & Part B and 40 gallons of Carboline #2 thinner, invoking POS-1 Revision 0, dated April 16, 2014

PO No. L-CBAI-00132, dated October 2, 2015, issued to Gerdau Ameristeel, for procurement of 208 pounds of flat plates 1/4x5-1/2"x 20' length to ASTM A36 material specification

PO No. L-CBAI-00146, dated December 23, 2015, issued to Gerdau Ameristeel for procurement of 45 angles of 6x6x5/8"x40' length to ASTM A572-50 material specification

PO No. 132175-5501.00 Exhibit B, "Vogtle Supplemental Terms and Conditions," Revision 3, dated October 5, 2011

PO No. 132177-5501.00 Exhibit B, "Supplemental Terms and Conditions V C Summer Project," revision 1, dated October 12, 2011

Training and Qualification Records:

Training Record for ID # 1167-Level III NDE inspector qualified for VT, PT, MT, UT and RT, dated October 31, 2015

Training Record for ID # 1840-Level II NDE inspector qualified for PT, MT, UT and RT, dated February 20, 2015

Training Record for ID # 6930-Level II NDE inspector qualified for PT, MT, UT and RT, dated January 30, 2015

Training Records for T.Stott, G.Gallardo-Welders

John Salasky NQA-1 supplier Quality auditor of Axion Technical Services, annual evaluation by PVS on January 16, 2016, based on continuous performance

Jim Highland, qualified NQA-1 lead auditor of Management Analysis Inc., annual evaluation by PVS on January 18, 2016, based on continuous performance

Steven M. Riddell, qualified NQA-1 lead auditor annual evaluation by PVS on January 13, 2016, based on continuous performance

Drawings:

Drawing No. E4C2101, "AP1000 Standard Erection Drawing for SPL21 Steel Frame Platform," Revision 1, dated May 12, 2016

Drawing No. 4C21001A, "AP1000 Standard Frame Fabrication Drawing for Containment Structure," Revision 1, dated January 7, 2016

Drawing No. 4C21001B, "AP1000 Standard Frame Drawing for Containment Structure," Revision 2, dated June 7, 2016

Drawing No. 4C21001C, "AP1000 Standard Frame Fabrication Drawing for Containment Structure," Revision 2, dated June 7, 2016

Drawing No. 4C21003, "AP1000 Standard Brace Fabrication Drawing for Containment Structure," Revision 1, dated May 12, 2016

Drawing No. SPL21-01, "AP1000 Standard Shop Assembly Drawing for SPL21 Steel Frame Platform," Revision 1, dated May 12, 2016

Drawing No. SPL21-02, "AP1000 Standard Shop Assembly Drawing for SPL21 Steel Frame Platform," Revision 1, dated May 12, 2016

Drawing No. E4C2001, "AP1000 Standard Erection Drawing SPL20 Steel Frame Platform," Revision 0, dated March 17, 2016

Drawing No. 4C20001, "AP1000 Standard Frame Fabrication Drawing for Containment Structure," Revision 0, dated March 17, 2016, including Weld Inspection, NDE requirements, weld workmanship, shop applied coatings

Drawing No. 4C20002A, "AP1000 Standard Frame Fabrication Drawing for Containment Structure," Revision 1, dated July 18, 2016

Drawing No. 4C20002B, "AP1000 Standard Shop Frame Drawing for Containment Structure," Revision 1, dated July 18, 2016

Drawing No. 4C20003, "AP1000 Standard Frame Fabrication Drawing for Containment Structure," Revision 1, dated May 12, 2016

Drawing No. SPL20-01 "AP1000 Standard Shop Assembly Drawing for SPL20 Steel Frame Platform," Revision 2, dated July 18, 2016

Drawing No. SPL20-03, "AP1000 Standard Shop Assembly Drawing for SPL20 Steel Frame Platform," Revision 1, dated May 12, 2016

Drawing No. 5A4001, "AP1000 Standard Frame Fabrication Drawing," Revision 1, dated August 3, 2016

Drawing No. 4A4110, "AP1000 Auxiliary Building Standard Miscellaneous Seat Fabrication Drawing," Revision 0, dated June 29, 2016

Drawing No. 4C12001, "AP1000 Standard Shop Beam Fabrication Drawing," Revision 0, dated August 2, 2016

Drawing No. 8C04006, "AP1000 Standard Shop Assembly Drawing," Revision 2, dated June 16, 2015

Drawing No. 8C04014, "AP1000 Standard Shop Assembly Drawing," Revision 2, dated June 16, 2015

Drawing No. SPL24-01, "AP1000 Circular Trunks Room Assembly Drawing," Revision 3, dated June 29, 2016

Drawing No. 8C04015, "AP1000 Containment Structure Assembly Drawing," Revision 2, dated June 16, 2015

Drawing No. 8C04005, "AP1000 Containment Structure Standard Shop Assembly Drawing," Revision 3, dated March 18, 2016

Design Reports:

PVS "Vendor Design Review (VDR) for AP1000 SPL20, Job No. L-2175, updated on April 22, 2015

PVS VDR Sequence 1 for AP1000 SPL18 & SPL 51," Job No. L-2175, L-2176, L-2177, and L-2178, updated on July 20, 2016

VDR for AP1000 SPL15 with Note 19, Job No. L-2175, updated on September 18, 2016

PVS request for additional information (RFI) No. 472, "Weld Location Incorrect," on WEC drawing APP-1123-SS-001, Revision 1," for Job No. L-2175 for sequence SPL21, issued to WECTEC on January 7, 2015

RFI No. 474, "Proposed Weld Change on WEC drawing APP-1123-SS-002," Revision 1, for Job No. L-2175 for sequence SPL21, dated January 7, 2015, issued to WECTEC on January 7, 2015

RFI No. 663, Premier Technology RFI No. PT8350-18. "AP1000 IRWST Towers Pickling Scope Clarification," Project No. L-CBAI00051, on drawing No. APP-GW-59-106, Revision 2, issued to WECTEC on December 11, 2015

RFI No. 686, for Premier Technology RFI No. PTC8350-23, "AP1000 IRWST Towers clarification on traceability controls," Project No. L-CBA-00051, drawing No. APP-VW20-20.023, Revision 1, issued to WECTEC on January 29, 2016

RFI No. 695, for Premier Technology RFI No. PTC8350-24, "Pickling Process for IRWST Tower," Project No. L-CBA-00051, issued to WECTEC on February 17, 2016

RFI No. 696, for Premier Technology RFI No. PTC8350-25, "AP1000 IRWST Towers clarification on traceability controls," Project No. L-CBA-00051, drawing No. APP-VW20-20.023, Revision 1, issued to WECTEC on January 29, 2016

WECTEC response RFI No. APP-SS01-GF-851357, "SR RFI0474 SDI-5137-01- Proposed Weld Change," dated March 12, 2015

WECTEC response RFI APP-SS01-GF-851355, "SR RFI0472 SDI-5135-01- Weld location Incorrect," dated March 12, 2015

Westinghouse Electric Corporation (WEC) Engineering & Design Coordination Report (E&DCR) No. APP-1150-GEF-231, "E&DCR for Adding Optional Construction Aides to IRWST Tower," Revision 0, dated May 27, 2015

E&DCR No. APP-1132-GEF-049, "E&DCR for Various spl15 RFIs," Revision 0, dated April 22, 2016

E&DCR No. APP-1132-GEF-019, "Modification of SPL15 Grating for Cable Passage," Revision 0, dated January 29, 2016



E&DCR No. APP-SS01-GEF-850011, "Steel Fabrication/Erection Specification Revisions," Revision 0, dated January 24, 2014

E&DCR No. APP-1123-GEF-006, Revision 0, dated May 15, 2015, "Correction of SPL21 Drawings," to address PVS's request for additional information (RFI) No. 472

E&DCR No. APP-1120-GEF-069, "Clarification about Welding Form of SPL20, SPL21 Steel," Revision 0, dated July 29, 2014

E&DCR No. APP-1120-GEF-083, "Clarification of Toe Plates for SPL20 and SPL21 Drawings," Revision 0, dated October 28, 2014

E&DCR No. APP-1124-GEF-025, "Structural Changes to SPL20 and SPL21 Platforms," Revision 0, dated October 2, 2014

E&DCR No. APP-1124-GEF-026, "SPL20 Design Change," Revision 0, dated October 23, 2014

E&DCR No. APP-1124-GEF-032, "Correction of SPL20 Drawings," Revision 0, dated May 20, 2015

E&DCR No. APP-1124-GEF-036, "SPL20 Embedment Clarification," Revision 0, dated July 30, 2015

E&DCR No. APP-1124-GEF-039, "SPL20 Inaccessible Weld," Revision 0, dated February 29, 2016

E&DCR No. APP-1124-GEF-040, "E&DCR for clarifying Detail 8 on SPL20," Revision 0, dated March 14, 2016

E&DCR No. APP-1124-GEF-041, "SPL20 Inaccessible Weld," Revision 0, dated May 27, 2016

E&DCR No. 1124-GEF-042, "SPL20 Detail 1 Modification," Revision 0, dated July 6, 2016

External Audits/Supplier Surveys:

PVS audit report of Arcelor Mittal USA- Coatesville TX performed on July 28-29, 2015, approved for supplier of safety-related ferrous & non-ferrous plates

Audit of Sherwin Williams performed on April 10-11, 2013, approved for supplier of nuclear protective coatings

PVS audit report (NIAC Audit # 20145) of OFI Custom Metal Fabrication performed on June 22, 2015, approved for safety-related ferrous and non-ferrous materials to NPT certificate

Audit report of Premier Technology Inc., performed on September 17, 2014, approved for safety-related custom fabrication and mechanical systems

Audit report of Trust Manufacturing LLC performed on January 28-29, 2014, approved for safety-related ferrous and non-ferrous materials

Audit report of Lincoln Structural Solutions, an ASME QSC certificate holder, performed on April 5, 2016, approved as a material organization supplier of ferrous and non-ferrous materials fasteners as well as mechanical and chemical testing services

Audit report of AirGas Inc., audited by James Highland on February 10, 2015, to NQA-1, and RG 1.28, reviewed and approved for supplier of ferrous and nonferrous weld wire and electrodes

Audit report of Lincoln Electric dated January 23, 2015, approved for ferrous and non-ferrous weld materials, approved by QA Director on January 14, 2016 – No annual performance performed for 2015

Audit report of Energy Northwest Standards Laboratory dated March 16, 2014, conducted by James Highland, approved for mechanical, pressure and electrical calibration services.

Audit report of Carboline –St Louis facility, performed on October 10, 2013, and audit of Lake Charles, LA facility on October 17, 2013, approved for safety-related protection coatings

Annual supplier performance of Energy Northwest Standards Laboratory dated March 2, 2016, approved for testing services

Commercial grade survey (CGS) report of Gerdau Long Steel NA- Midlothian Mill, Texas facility performed on March 20, 2016, approved for billet heat/lot traceability of materials

CGS report of Gerdau Calvert City Mill, Kentucky facility, performed on June 1 & 2, 2016, approved for billet heat/lot traceability of materials

Weld Wires, and steel Traceability for PVS Job numbers L-2175, L-2176, L-2177, L-2178

The Lincoln Electric Company Certified Mill Test Report CMTR-7687422, for Customer PO # L-CBAI-00147 and Lot 1275S, dated March 11, 2016

The Lincoln Electric Company Certified Mill Test Report CMTR-7916968, for Customer PO # L-CBAI-00169 and Lot 1291T, dated June 14, 2016

LSS Certified Test Report Certification # L07615DS-0, for Customer PO# L-CBAI-00005 and Lot 58024345A-G, Description W14" X 48" Beam, dated June 28, 2016

LSS Certified Test Report Certification # L07613DS-0, for Customer PO# L-CBAI-00005 and Lot 61342032A-E, Description L3" X 3" X 3/8" Angle, dated June 28, 2016

LSS Certified Test Report Certification # L06758DS-0, for Customer PO L-CBAI-00005 and Lot 55039673A-B, Description 8 X 11.5 A36 Angle, dated July 2, 2015

## Weld maps

Weld Map 5A4001F1Z-1, AP1000 Safety Related Standard Frame Structural Steel, Safety Class C, Seismic Category 1 for Vogtle Unit 3, Job No. 132175-SS01.00

Weld Map 4A4110P2-2, AP1000 Safety Related Standard Miscellaneous Seat Structural Steel, Safety Class C, Seismic Category 1 for V.C. Summer Unit 3, Job No. 132178-SS01.00

Weld Map 4A4110P2-1, AP1000 Safety Related Standard Miscellaneous Seat Structural Steel, Safety Class C, Seismic Category 1 for V.C. Summer Unit 3, Job No. 132178-SS01.00

Weld Map 4A4110P4-1, AP1000 Safety Related Standard Miscellaneous Seat Structural Steel, Safety Class C, Seismic Category 1 for V.C. Summer Unit 3, Job No. 132178-SS01.00

Weld Map 4C12001B1-1, AP1000 Safety Related Standard Shop Beam Structural Steel, Safety Class C, Seismic Category 1 for Vogtle Unit 3, Job No. 132175-SS01.00

Weld Map 8C04006B1-1, AP1000 Safety Related Containment Box Structure, Safety Class C, Seismic Category 1 for Vogtle Unit 4, Job No. 132176-SS01.00

Weld Map 8C04014B1-1, AP1000 Safety Related Containment Box Structure, Safety Class C, Seismic Category 1 for Vogtle Unit 4, Job No. 132176-SS01.00

Weld Map 8C03002B2-2, AP1000 Safety Related Circular Trunks Room Structural Steel, Safety Class C, Seismic Category 1 for V.C. Summer Unit 3, Job No. 132178-SS01.00

Weld Map 8C04015B1-1, AP1000 Safety Related Containment Structure, Safety Class C, Seismic Category 1 for Vogtle Unit 4, Job No. 132176-SS01.00

Weld Map 6C51004B1Z-1, AP1000 Safety Related Standard Shop Beam Structural Steel, Safety Class C, Seismic Category 1 for V.C. Summer Unit 2, Job No. 132177-SS01.00

Weld Map 8C04005B2-1, AP1000 Safety Related Containment Box Structure, Safety Class C, Seismic Category 1 for Vogtle Unit 4, Job No. 132176-SS01.00

Weld Map 5A2003F1Z-1, AP1000 Safety Related Standard Frame Structural Steel, Safety Class C, Seismic Category 1 for Vogtle Unit 4, Job No. 132176-SS01.00

Part number m11768, AP1000 Safety Related Standard Frame Structural Steel, Safety Class C, Seismic Category 1 for Vogtle Unit 3, Job No. 132175-SS01.00

### Calibration Records

Weld Machines Verification and Calibration Record, dated September 22, 2016

Certification Magnaflux for Sonotrace 30, Batch # 16E032, dated May 10, 2016

Calibrations Certificate from LTI Metrology OII011-16-09-33015-2, Outside micrometer (1-2 inches) PV2-2, dated September 14, 2016

Calibrations Certificate from LTI Metrology OII011-16-09-33015-3, Outside micrometer (2-3 inches) PV1-3, dated September 14, 2016

Calibrations Certificate from LTI Metrology OII011-16-09-33015-4, Outside micrometer (3-4 inches) PV1-4, dated September 14, 2016

Calibrations Certificate from LTI Metrology OII011-16-09-33015-5, Outside micrometer (4-5 inches) PV1-5, dated September 14, 2016

Calibrations Certificate from LTI Metrology OII011-16-09-33015-6, Dial Caliper Instrument # 60070081, dated September 14, 2016

Calibrations Certificate from LTI Metrology OII011-16-02-04060-1, Contour Probe Instrument # 60054892, dated February 9, 2016

Calibrations Certificate from LTI Metrology OII011-15-11-43659-1, Digital Radiometer with 2 Sensors # 60059779, dated November 25, 2015

### Miscellaneous documents:

AP1000 Design Specification APP-SS01-Z0-001, "Shop Fabrication of Structural Steel, Westinghouse Safety Class C, Seismic Category I," Revision 5, dated November 11, 2013

AP1000 Nonconformance & Disposition (N&D) Report No. APP-SS-01-GNR-850177, "Incorrectly Specified Weld Size," Revision 0, dated August 17, 2016

N&D Report No. APP-SS01-GNR-850147, "Misdrilled Holes: 3A2029B1M1," Revision 0, dated March 31, 2016

N&D Report No. APP-SS01-GNR-85153, "Non Class "A" Slip Resistant Paint: SPL30, SPL31," Revision 0, dated May 9, 2016

N&D Report No. APP-SS01-GNR-850170, "Tack Weld Wire Traceability," Revision 0, dated July 22, 2016

N&D Report No. APP-SS01-GNR-85178, "Dimensions Out of Tolerance," Revision 0, dated August 19, 2016

N&D Report No. VSG-SS01-GNR-000006, "Material shipped to the jobsite with a paint procedure implementation discrepancy," dated October 22, 2015

Owen Industries, Quality System Review Committee Meeting Minutes, meeting date February 26, 2016

Owen Industries, Weekly Production Meeting Minutes, meeting date March 28, 2016

Owen Industries, Weekly Production Meeting Minutes, meeting date April 25, 2016

Owen Industries, Weekly Production Meeting Minutes, meeting date April 29, 2016

WEC Design Specification APP-G1-SX-001, "AP1000 Painting of Shop Fabricated Steel," Revision 6, dated June 12, 2012

WEC Design Specification Document No. APP-GW-Z0-602, "AP1000 Cleaning and Cleanliness Requirements of Equipment for Use in Nuclear Supply and Associated Systems," Revision 3, dated February 18, 2013

WEC Design Specification Document No. APP-SS01-Z0-001, "Shop Fabrication of Structural Steel, Westinghouse Safety Class C, Seismic Category 1 Nuclear Safety Related," Revision 5, dated November 11, 2013

WEC Design Specification Document No. APP-SS01-Z0-001-ADD-01, "Shop Fabrication of Structural Steel, Westinghouse Safety Class C Addendum No.: APP-SS01-Z0-001-ADD-01, Rev. 2," Revision 5, dated July 18, 2015

WEC Design Specification Document No. APP-SS01-Z0-001-ADD-02, "Shop Fabrication of Structural Steel, Westinghouse Safety Class D," Revision 1, dated May 29, 2013

WEC Design Specification Document No. APP-SS01-Z0-002, "Erection of Structural Steel Westinghouse Safety Class C, Seismic Category 1, Nuclear Safety Related," Revision 5, dated November 23, 2015

WEC Design Specification Document No. APP-SS01-Z0-003, "Embedment and Miscellaneous Steel, Westinghouse Safety Class C," Revision 4, dated May 16, 2014

WEC Document No. APP-SS01-Z0-003-ADD, "Addendum to Embeds and Miscellaneous Steel Specification," Revision 3, dated July 15, 2016

WEC Document No. APP-VL52-Z0-023, "Material Specification for ASTM A240, UNS S32101, Duplex Stainless Steel Plate," Revision 2, dated March 9, 2012

WEC Document No. APP-VW20-Z0-023, "Welding Specification for ASTM A240 UNS S32101 Duplex Steel Plate," Revision 3, dated February 11, 2011

PVS Purchase Order Specification (POS)-1, Revision 10, dated October 1, 2014, issued to Lincoln Electric Company, invoking technical, quality, regulatory and customer requirements

POS-1, "Purchase Order Specification for Lincoln Structural Solutions," Revision 8, dated August 26, 2016

Dimensional inspection report September 20, 2016, for two sample plates 3x19x1-1/2", Heat# B6R4282A & B, to ASTM A572-50 material specification performed and accepted by PVS QC inspector using outside micrometer serial no. PV2-2

Dimensional inspection report dated September 20, 2016, of two plates Heat # B21T060060A and D, size 3x19x1-5/8" to ASTM A572-50 specification, performed and accepted by PVS QC inspector using outside micrometer serial no. PV2-2

Receipt inspection report dated June 24, 2015, for bolts, flat washers, nuts tested by LSS LLC on PO No. L-CBAI-00103

Receipt inspection report dated November 11, 2015, for review and acceptance of LSS LLC certified test report No. L07157DS-0, for 1/2x5-1/2" flat bar to meet ASTM A36 material specification

Receipt inspection report dated June 1, 2015, for acceptance of 13000 pieces of Nelson studs 3/4"x8-3/16" s to ASTM A108 specification procured from NOVA Machine on PO No. L-CBAI-00043

Receipt inspection report dated July 16, 2015, for acceptance of 220 pieces of 3/8"-16 x 1-1/2" socket flat countersunk head cap screws to ASTM A307-12 specification procured from Trust Manufacturing on PO No. L-CBAI-00099

Receipt inspection report dated April 14, 2016, for acceptance of 1 piece of angle 6x6x5/8" ASTM A572-50 material specification to PO No. L-CBAI-00146 traceable to Gerdau Cartersville heat# 55043046

Coating receipt inspection form (CRIF-1 Revision 1), dated September 17, 2015, for 200 gallons of Carboguard 890N Part A traceable to batch# 15HN8115L, 93 gallons of Carboguard 890N Part B traceable to batch# 15HN8113L, & 107 gallons traceable to batch # 15HN8113L, and 40 gallons of thinner 2 traceable to batch # 15FD22395

Coating receipt inspection form CRIF-1 Revision 1, dated September 13, 2016, for 50 gallons of Macropoxy 646N Part A traceable to batch # XM2855MG, and 50 gallons of Macropoxy 646N Part B, traceable batch # XM3415UT expiration date December 6, 2018

PVS Nuclear Approved Vendor List "Q," NVL-1, dated September 14, 2016

LSS LLC Certified Test Report (CTR) for 16 pieces of HS 1/2x1-3/4" plain bolts traceable to Heat No. 1403-52645, tested to PO No. L-CBAI-00033 and ASTM A325 material specification

LSS LLC CTR for 4 pieces of 3/4" NC Nuts plain traceable to heat# 17810-497463, tested to PO No. L-CBAI-00103 and ASTM A563-DH specification, reviewed and accepted by PVS QA on October 28, 2015

NOVA Machine Certified Material Test Report (CMTR) for 13000 pieces of 3/4"x8-3/16" Nelson studs to ASTM A108, heat# 5173547/ Lot #50426977, on PO No. L-CBAI-00043, reviewed and accepted by PVS QA on July 22, 2014

Trust Manufacturing CMTR for 220 pieces of 3/8"-16 x 1-1/2" socket flat countersunk head cap screws to ASTM A307-12 specification traceable to heat# 52067229, on PVS PO No. L-CBAI-00099, certificate reviewed and approved PVS QA on July 16, 2015

Carboline Company Certificate of Conformance dated August 13, 2015, for 200 gallons of Carboguard 890N grey batch# N8904701902D and Carboguard 890N Part A-Grey, batch # 15HN8115L 200 gallons and Carboguard 890N Part B-0908, batch# 15HN8113L, on PO No. L-CBAI-00120 requirements, certificate reviewed and accepted by PVS QA on September 11, 2015

Sherwin Williams Product Identity Certificate dated September 8, 2016, for 50 gallons of Macropoxy 646N Part A traceable to batch# XM2855MG expires on October 11, 2018, and 50 gallons of Macropoxy 646N Part B, traceable batch# XM3415UT, on PVS PO No. L-CBAI-00067, certificate reviewed and approved by PVS QA on September 13, 2016