

December 8, 2014

Ms. Lisa Plante, Quality Systems Supervisor  
Westinghouse Electric Company, LLC  
Newington Operations  
178 Shattuck Way  
Newington, NH 03801

SUBJECT: NUCLEAR REGULATORY COMMISSION INSPECTION REPORT  
WESTINGHOUSE ELECTRIC COMPANY LLC, NEWINGTON FACILITY NO.  
99901392/2014-201 AND NOTICE OF NONCONFORMANCE

Dear Ms. Plante:

On October 27-31, 2014, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Westinghouse Electric Company, Newington facility (hereafter referred to as WEC Newington Operations) located in Newington, NH. The purpose of this limited-scope reactive inspection was to assess WEC Newington Operations' compliance with selected portions 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."

This technically focused inspection specifically evaluated WEC Newington Operations' implementation of quality activities associated with the fabrication and inspection of control rod drive mechanisms (CRDM) and reactor vessel internals (RVI) for the WEC AP1000 reactor design. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute an NRC endorsement of WEC Newington Operations overall quality assurance (QA) or Part 21 programs. During this inspection, the NRC inspection team looked at fabrication and inspection activities associated with inspections, tests, analysis, and acceptance criteria (ITAAC) from Revision 19 of the approved certified AP1000 design control document. Specifically, these activities were associated with the future closure of ITAAC 2.1.03.03. The NRC inspection team did not identify any findings associated with the ITAAC contained in section 4 of the attachment to this report.

During this inspection, the NRC inspection team found that the implementation of WEC Newington Operations' QA program failed to meet certain NRC requirements imposed on you by your customers. Specifically, the NRC inspection team determined that WEC Newington Operations was not fully implementing its QA program in the area of corrective action. The specific finding and references to the pertinent requirements are identified in the enclosures to this letter. In response to the enclosed notice of nonconformance (NON), WEC Newington Operations should document the results of the extent of condition review for this finding and determine if there are any effects on other safety-related components.

Please provide a written explanation or statement within 30 days of this letter in accordance with the instructions specified in the enclosed NON. The agency will consider extending the response time if you show good cause for us to do so.

In accordance with 10 CFR 2.390, "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure(s), and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (Agencywide Documents Access and Management System), 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, "Protection of Safeguards Information: Performance Requirements."

Sincerely,

*/RA/*

Edward H. Roach, Chief  
Mechanical Vendor Inspection Branch  
Division of Construction Inspection  
and Operational Programs  
Office of New Reactors

Docket No.: 99901392

Enclosures:

1. Notice of Nonconformance
2. Inspection Report No. 99901392/2014-201  
and Attachment

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In accordance with 10 CFR 2.390, "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure(s), and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (Agencywide Documents Access and Management System), 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, "Protection of Safeguards Information: Performance Requirements."

Sincerely,

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Edward H. Roach, Chief  
Mechanical Vendor Inspection Branch  
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Docket No.: 99901392

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1. Notice of Nonconformance
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and Attachment

**DISTRIBUTION:**

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\*Concurred via email

NRO-002

OFC	NRO/DCIP/ MVIB	NRO/DCIP/ MVIB	NRO/DCI P/MVIB	NRO/DCI P/QVIB	RII/DCI/CIB 3	NRO/DCIP/ MVIB	NRO/DCIP	NRO/DCIP/ MVIB
NAME	YDiaz- Castillo	LMicewski*	RPatel	JHeath	EMichel*	JOrtega- Luciano	TFrye*	ERoach
DATE	12/2/14	12/3/14	12/3/14	12/2/14	11/20/14	12/3/14	12/8/14	12/8/14

**OFFICIAL RECORD COPY**

## NOTICE OF NONCONFORMANCE

Westinghouse Electric Company LLC  
Newington Operations  
178 Shattuck Way  
Newington, NH 03801

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Westinghouse Electric Company, Newington facility (hereafter referred to as WEC Newington Operations) located in Newington, NH, on October 27, 2014, through October 31, 2014, certain activities were not conducted in accordance with NRC requirements which were contractually imposed on WEC Newington Operations by its customers or NRC licensees:

- A. Criterion XVI, "Corrective Action," in Appendix B, "Quality Assurance Program 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," states, in part, that, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected."

Section 16, "Corrective Action," of WEC Quality Assurance Manual, Revision 11, dated September 24, 2012, states, in part, that "The purpose of the corrective action program is to establish measures to ensure that conditions adverse to quality are promptly identified, documented, and reported to appropriate levels of management."

Section 7.6, "Timeliness Expectations," of WEC Newington Operations Procedure 16.2, "Westinghouse Corrective Action Program," Revision 7.0, dated March 31, 2014, provides the timeliness expectations for closing corrective actions opened in response to conditions adverse to quality. The issue closure due date, for Level 4 corrective action request, is 120 days from issue origination.

Contrary to the above, as of October 31, 2014, WEC Newington Operations failed to ensure that conditions adverse to quality were promptly identified and corrected. Specifically, in official correspondence with the NRC dated June 2, 2014, WEC Newington Operations stated that it had initiated Corrective Action Request (CAR) No. 17039, "Commercial Grade Dedication of Heat Treatment Services," on May 14, 2014, to address the inadequate commercial-grade dedication of the heat treatment services for the reactor vessel internals, such as the core barrel, the core shroud, and the instrumentation grid assembly, performed by Team Industrial Services, a commercial supplier. However, the NRC inspection team identified that CAR No. 17039 did not identify any proposed corrective actions to address the inadequate commercial-grade dedication of the heat treatment services and that no action had been taken by WEC Newington Operations to correct this issue, 168 days after CAR No. 17039 was initiated.

This issue has been identified as Nonconformance 99901392/2014-201-01.

Please provide a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Chief, Mechanical Vendor Inspection Branch, Division of Construction and Operational Programs, Office of New Reactors, within 30 days of the date of the letter transmitting this notice of nonconformance. This reply should be clearly marked as a "Reply to a Notice of Nonconformance" and should include for each noncompliance: (1) the reason for the noncompliance, or if contested, the basis for disputing the noncompliance, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid noncompliance, and (4) the date when your corrective action will be completed. Where good cause is shown, consideration will be given to extending the response time.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (Agencywide Documents Access Management System), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or Safeguards Information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

Dated this 8th day of December 2014.

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

Docket No.: 99901392

Report No.: 99901392/2014-201

Vendor: Westinghouse Electric Company, LLC  
Newington Operations  
178 Shattuck Way  
Newington, NH 03801

Vendor Contact: Ms. Lisa Plante  
Quality Systems Supervisor  
Telephone: (603) 433-1064  
E-mail: plantelm@westinghouse.com

Nuclear Industry Activity: The Newington Operations facility of Westinghouse Electric Company (WEC) is a major supplier of safety-related control rod drive mechanisms and reactor vessel internals for the WEC AP1000 pressurized water reactor design.

Inspection Dates: October 27-31, 2014

Inspection Team Leader	Jonathan Ortega-Luciano	NRO/DCIP/MVIB
Inspection Team Members	Yamir Diaz-Castillo	NRO/DCIP/MVIB
	Laura Micewski	NRO/DCIP/MVIB
	Raju Patel	NRO/DCIP/MVIB
	Jermaine Heath	NRO/DCIP/QVIB
	Eric Michel	RII/DCI/CIB3

Approved by: Edward H. Roach, Chief  
Mechanical Vendor Inspection Branch  
Division of Construction Inspection  
and Operational Programs  
Office of New Reactors

## **EXECUTIVE SUMMARY**

Westinghouse Electric Company LLC, Newington Operations.  
99901392/2014-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a vendor inspection at the Westinghouse Electric Company LLC, Newington facility (hereafter referred to as WEC Newington Operations) to verify that it 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." The NRC inspection team conducted the inspection from October 27-31, 2014. This was the second NRC inspection at the WEC Newington Operations facility.

This technically-focused inspection specifically evaluated WEC Newington Operations' implementation of quality activities associated with the fabrication and inspection of control rod drive mechanisms (CRDM) and reactor vessel internals (RVI) for the WEC AP1000 reactor design. These CRDMs and RVI are being fabricated for the Vogtle Electric Generating Plant (VEGP), Units 3 and 4 and Virgil C. Summer (V.C. Summer) Generating Station, Units 2 and 3.

Some of the specific activities observed by the NRC inspection team included:

- Issue Review Committee meeting
- Heat treatment of instrumentation grid assembly for V.C. Summer Unit 2
- Receipt inspection of bar stock for use in AP1000 reactor vessel internals
- Commercial grade dedication of calibration service, machining service, and plating services
- Welding of VEGP Unit 4 core shroud
- Walk down of the welding material storage room, specifically verification of the rod room storage conditions
- Shift turnover meeting – machinists, 2nd shift
- Conduct of "free path" control rod guide tube test
- Inspection of the V.C. Summer Unit 2 upper core plate fuel alignment pin holes
- Final detail inspection following manufacturing machining of spacer plates for the V.C. Summer Unit 1 CRDM latch assembly
- Quality inspections of the VEGP Unit 4 upper core plate clevis insert modification

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

- Appendix B to 10 CFR Part 50

During the course of this inspection, the NRC inspection team implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," and IP 43003, "Reactive Inspections of Nuclear Vendors."

The information below summarizes the results of this inspection.

### Corrective Action

The NRC inspection team issued Nonconformance 99901392/2014-201-01 in association with WEC Newington Operations' failure to implement the regulatory requirements of Criterion XVI, "Corrective Actions," in Appendix B to 10 CFR Part 50. Nonconformance 99901392/2014-201-01 cites WEC Newington Operations for failing to ensure that conditions adverse to quality were promptly identified and corrected. Specifically, in official correspondence with the NRC, WEC Newington Operations stated that it had initiated Corrective Action Request (CAR) No. 17039, "Commercial Grade Dedication of Heat Treat Services," on May 14, 2014, to address the inadequate commercial-grade dedication of the heat treatment services for the reactor vessel internals performed by Team Industrial Services. However, the NRC inspection team identified that CAR No. 17039 did not identify any proposed corrective actions to address the inadequate commercial-grade dedication of the heat treatment services and that no action has been taken by WEC Newington Operations to correct this issue, 168 days after CAR No. 17039 was initiated.

### Other Inspection Areas

The NRC inspection team determined that WEC Newington Operations is implementing its programs for design control, procurement document control, inspection, external and internal audits, manufacturing control, control of special processes, control of measuring and test equipment, training, and nonconformance process in accordance with the applicable regulatory requirements of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed and activities observed, the NRC inspection team also determined that WEC Newington Operations is implementing its policies and procedures associated with these programs. No findings of significance were identified.



## **REPORT DETAILS**

### 1. Corrective Action

#### a. Inspection Scope

The U.S Nuclear Regulatory Commission (NRC) inspection team reviewed Westinghouse Electric Company LLC, Newington facility (hereafter referred to as WEC Newington Operations) policies and implementing procedures that govern the Corrective Action Program (CAP) to verify compliance with the requirements of Criterion XVI, "Corrective Action," 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."

The NRC inspection team observed an Issue Review Committee to determine whether WEC Newington Operations staff demonstrated sufficient knowledge of the CAP and whether the meeting provided an adequate review of the corrective action requests (CARs), including proposed categorization and appropriate screening for applicability of 10 CFR Part 21, "Reporting Defects and Noncompliance."

The NRC inspection team discussed the CAP with WEC Newington Operations management and technical staff. The attachment to this inspection report lists the documents reviewed by the inspection team.

#### b. Observations and Findings

During the review of a sample of CARs, the NRC inspection team noted that CAR No. 17039, "Commercial Grade Dedication of Heat Treat Services," opened on May 14, 2014, to address the inadequate commercial-grade dedication of the heat treatment services for the reactor vessel internals (RVI) performed by Team Industrial Services (TIS), did not identify any proposed corrective actions and no action had been taken by WEC Newington Operations to address this issue. The only information documented in the CAR No. 17039 was the problem statement. Upon further questioning, WEC Newington Operations staff stated that the resolution of CAR No. 14337, opened on November 16, 2013, in response to issues identified with WEC Newington Operations dedication procedure PP-07-01, "Dedication of Commercial Grade Items and Services," would address the issues identified in CAR No. 17039. Upon further review, the NRC inspection team determined that the actions being taken in response to CAR No. 14337 would not address the issues identified in CAR No. 17039. In addition, CAR No. 17039, identified as a Level 4, had been opened for 168 days. In accordance with WEC Newington Operations procedure 16.2, the closure due date for a Level 4 corrective actions request is 120 days, from its origination. The NRC inspection team identified this issue as Nonconformance 99901392/2014-201-01 for WEC Newington Operations failure to ensure that conditions adverse to quality were promptly identified and corrected.

c. Conclusion

The NRC inspection team issued Nonconformance 99901392/2014-201-01 in association with WEC Newington Operations' failure to implement the regulatory requirements of Criterion XVI in Appendix B to 10 CFR Part 50. Nonconformance 99901392/2014-201-01 cites WEC Newington Operations for failing to ensure that conditions adverse to quality were promptly identified and corrected. Specifically, in official correspondence with the NRC, WEC Newington Operations stated that it had CAR No. 17039, "Commercial Grade Dedication of Heat Treat Services," on May 14, 2014, to address the inadequate commercial-grade dedication of the heat treatment services for the RVI performed by TIS. However, the NRC inspection team identified that CAR No. 17039 did not identify any proposed corrective actions to address the inadequate commercial-grade dedication of the heat treatment services and that no action has been taken by WEC Newington Operations to correct this issue, 168 days after CAR No. 17039 was initiated.

2. Design Control

a. Inspection Scope

The NRC inspection team reviewed the WEC Newington Operations policies and implementing procedures that govern the design control program to verify their compliance with the regulatory requirements of Criterion III, "Design Control," in Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed the configuration control process, interviewed WEC Newington Operations personnel associated with design and configuration control activities for the RVI and Instrumentation Grid Assembly (IGA) for the Vogtle Electric Generating Plant (VEGP), Units 3 and 4 and Virgil C. Summer (V.C. Summer) Generating Station, Units 2 and 3 AP1000 projects.

The NRC inspection team verified that the purchase order (PO) requirements included the drawings and specifications necessary to fabricate the AP1000 control rod drive mechanisms (CRDM) and RVI components, as well as appropriate provisions for the purchase of materials and services related to the fabrication and manufacturing activities to be consistent with the design requirements.

The NRC inspection team also reviewed a sample of deviation notices and nonconformances related to the AP1000 RVIs for V.C. Summer Units 1 and 2 VEGP Units 3 and 4, and selected customer engineering change notices (including design change authorizations and engineering and departure change requests (E&DCRs)) related to the AP1000 CRDMs and RVIs.

In addition, the NRC inspection team reviewed WEC Newington Operations policies and implementing procedure that govern the commercial-grade dedication of items and services. The NRC inspection team reviewed WEC PP-07-01, "Dedication of Commercial Grade Items and Services," Revision 4, dated October 31, 2013, that prescribes the activities necessary to verify the acceptability of commercial-grade items

and services for safety-related applications. The NRC inspection team verified that PP-07-01 also provides guidance and reference documents necessary to use the different acceptance methods, including special tests and inspections, surveys, source verification, and acceptable performance. In addition, the NRC inspection team verified that this procedure provides standard commercial-grade dedication evaluations for certain services by defining the critical characteristics of the service and the methods for acceptance.

The NRC inspection team observed the dedication process of the heat treatment services performed by TIS on the IGA for V.C. Summer Unit 2. The NRC inspection team also reviewed dedication records for commercial-grade services such as machining, grinding, and plating performed on AP1000 safety-related guide tubes to verify that WEC Newington Operations properly developed and implemented a plan for commercial grade services for use during the fabrication of safety-related RVI and IGA. In addition, the NRC inspection team reviewed WEC Newington Operations dedication process for calibration services.

The NRC inspection team discussed the design control and commercial-grade dedication programs with WEC Newington Operations management and technical staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

Attachment 7.1, "Standard Commercial Grade Dedication Evaluations," (SCGDE) of PP-07-1, outlines the technical evaluation for dedication of commercial-grade services that include machining, plating, grinding, laboratory, heat-treatment, on-site heat treatment, and calibration. The NRC inspection team confirmed that WEC Newington Operations as part of their commercial grade dedication program implements the methods contained in the Electric Power Research Institute (EPRI) 5652, "Guideline for the Utilization of Commercial Grade Items in Nuclear Safety-Related Applications," issued June 1988, for dedication activities. EPRI 5652 provides four methods of accepting a commercial grade item (CGI) for use in safety-related applications: Method 1, "Special Tests and Inspection"; Method 2, "Commercial Grade Survey of Supplier"; Method 3, "Source Verification"; and Method 4, "Acceptable Supplier/Item Performance Record." The SCGDE for on-site heat treatment service performed by TIS specifies verification of critical characteristics that include measuring and test equipment and review heat treatment records by acceptance using Method 1 and WEC Newington Operations controlling the heat treatment process under its quality assurance (QA) program utilizing a production order.

WEC APP-GW-Z0-601, "Heat Treatment of Stainless Steel for Dimensional Stability," Paragraph 12, "Heat Treat Vendor," states, in part, that heat treating, if subcontracted, the vendor shall demonstrate expertise in this area through past experience. Appropriate review and assessment of the heat treatment vendor capabilities shall be performed prior to selection of the vendor."

During observation of the dimensional stabilization heat treatment (DSHT) of the V.C. Summer Unit 2 safety-related IGA, WEC Material ID No. V2-811-HT on Production Order No. 40510727 and Job No. 2404948, performed by TIS and dedicated by WEC Newington Operations, the NRC inspection team noted that the heat treatment process was monitored using ten WEC Newington Operations-dedicated thermocouple K-wires. The thermocouples were connected to the IGA and to a recorder. The recorder used during the heat treatment process was calibrated by TIS technicians. The data obtained by the recorder (temperature) is constantly monitored by a TIS heat treatment technician in accordance with WEC Newington Operations approved TIS procedure. The NRC inspection team interviewed the TIS heat treatment technician and WEC Newington Operations management and reviewed the production order.

Based on review of the production order No. 40510727 and personnel interviewed, the NRC inspection team determined that WEC Newington Operations did not identify and verify the relevant critical characteristics and acceptance methods. These critical characteristics once verified would provide reasonable assurance of the adequate commercial-grade dedication of the TIS heat treatment service. Specifically, WEC Newington Operations failed to:

- provide objective evidence that an appropriate review and assessment of the heat treatment service supplier capabilities was performed prior to selection of the supplier
- include in production order No. 40510727 a list of operational steps to verify that the equipment, property of TIS, is appropriate for heat treatment service
- verify that TIS heat treatment technician was qualified/certified or had adequate TIS program/procedure training to perform heat treatment operation
- conduct indoctrination and training of TIS heat treatment technician to WEC Newington Operations QA Program as required by its SCGDE
- verify that TIS had an adequate calibration program to assure the heat treatment equipment (data recorder) would provide a reasonable data. (TIS had calibrated its measuring and test equipment used during the heat treatment process using a standard that were calibrated by another commercial calibration service provider)
- verify TIS calibration program and staff performing the calibration was qualified to calibrate the test equipment used during the heat treatment
- verify how TIS selected the calibration services for the heat treatment equipment. (Instead WEC Newington Operations accepted the calibration certificates provided by TIS because the calibration lab is accredited by American Association for Laboratory Accreditation 'A2LA').

These issues were discussed with WEC Newington Operations management, who informed the NRC inspection team that CAR No.14337, dated November 16, 2013, addresses the inadequate commercial grade dedication of heat treatment service for the RVIs. The review and evaluation of WEC Newington Operations' CAR to address the inadequate commercial-grade dedication of heat treatment service is discussed in Section 1, "Corrective Action," of this report.

c. Conclusion

The NRC inspection team determined that WEC Newington Operations is implementing its design control and commercial-grade dedication programs in accordance with Criterion III of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC Newington Operations is implementing its policies and procedures associated with the design control and commercial-grade dedication programs with the exception of Nonconformance 99901392/2014-201-01 discussed in Section 1, "Corrective Action," of this report.

3. Oversight of Contracted Activities

a. Inspection Scope

The NRC inspection team reviewed the WEC Newington Operations 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," in Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed a sample of safety-related purchase orders (POs) issued in support of the AP1000 RVI and IGA fabrication for VEGP and V.C. Summer to verify that specific procurement requirements were met and documented correctly. The NRC inspection team verified that the POs included, as applicable, the scope of work, right of access to facilities and records for source inspections and audits, reporting and approving disposition of nonconformance, and references to specific drawings, codes, and specifications. In addition, the NRC inspection team confirmed that all of the safety-related POs reviewed included clauses that invoke the provisions of 10 CFR Part 21 and that required the supplier to conduct safety-related work under its approved QA program.

The NRC inspection team reviewed a sample of commercial-grade surveys (CGSs), annual evaluations, and source surveillance reports. The NRC inspection team confirmed that CGSs and source surveillance reports contained sufficient objective evidence of the review and verification of relevant critical characteristics of items and services controlled by the supplier and the invoked PO restrictions.

The NRC inspection team verified a sample of certified material test reports (CMTR's), and certificates of compliance (C of C) for equipment, items and services received associated with the AP1000 RVI and IGA for VEGP and V.C. Summer. The NRC inspection team also reviewed WEC Newington Operations processes and management of their supplier database and its interfaces with generating supplier limitations and capabilities on their Qualified Suppliers List (QSL) and POs.

The NRC inspection team discussed the oversight of contracted activities with WEC Newington Operations management and technical staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

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

4. Control of Measuring & Test Equipment (M&TE)

a. Inspection Scope

The NRC inspection team reviewed WEC Newington Operations 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.

For a sample of M&TE (e.g. intra-mike inside micrometer, torque wrench, caliper, etc.), the NRC inspection team determined that they had the appropriate calibration stickers with the respective calibration service and current calibration dates including the calibration due date. The NRC inspection team also verified that the M&TE had been calibrated, adjusted, and maintained at prescribed intervals. In addition, the NRC inspection team verified that the calibration records indicated the "as-found" or "as-left" conditions, accuracy required, calibration results, calibration dates, owner of the calibration services, and the due date for recalibration. The NRC inspection team also verified that the selected M&TE was calibrated using procedures traceable to known industry standards including those outsourced for calibration. All M&TE equipment was traceable with a unique WEC Newington Operations ID number. The ID number is traced and can be retrieved using an M&TE log which contains all of the information regarding the calibration of the item.

The NRC inspection team performed a walk down to ensure that equipment located in the M&TE storage area, the M&TE hold area, and the 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 NRC inspection team discussed the M&TE program with WEC Newington Operations management and technical staff. The attachment to this inspection report lists the documents reviewed by the inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team determined that WEC Newington Operations is implementing its M&TE program 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 NRC inspection team also determined that WEC Newington Operations is implementing its policies and procedures associated with the control of M&TE. No findings of significance were identified.

5. Manufacturing Control and Control of Special Processes

a. Inspection Scope

The NRC inspection team reviewed WEC Newington Operations 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 of 10 CFR Part 50; and the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Division I, Section III, Subsection NG as applicable.

For nondestructive examination (NDE) activities, the NRC inspection team reviewed the production order, Radiographic Testing (RT) procedure, RT reports and film, and the RT examiner certification for the weld joining the VEGP Unit 3 core barrel upper support flange to the upper support skirt. Additionally, the NRC inspection team reviewed production orders, the Penetrant Testing (PT) procedure, PT reports, consumable certifications, and PT examiner certifications for the weld joining the VEGP Unit 3 core barrel 90° nozzle to the upper core barrel. The NRC inspection team also reviewed radiography activities associated with the longitudinal seam weld associated with two rolled tubes supplied by an outside vendor to be used as the upper guide tubes for VEGP Unit 3.

For welding activities, the NRC inspection team walked down that portion of the shop floor where WEC Newington Operations was performing welding of the VEGP Unit 4 core shroud assembly ribs to rings. The NRC inspection team also walked down the rod room and arrangements for discarded rod disposal. Further, the NRC inspection team reviewed the detailed welding procedure, associated procedure qualification records, and the base metal and filler metal CMTRs.

For heat treatment activities, the NRC inspection team reviewed heat treatment procedures and reviewed the heat treatment performed on the IGA for V.C. Summer Unit 2.

In addition, the NRC inspection team observed activities associated with inspections, tests, analyses and acceptance criteria (ITAAC) 2.1.03.03, for VEGP Unit 3 (Tag No. RXS-MI-02), related to the design and fabrication of the reactor vessel internals in accordance with the requirements of Subsection NG, Division I, Section III of the ASME Code, 1998 Edition including the 2000 Addenda.

The NRC inspection team discussed the control of special processes program with WEC Newington Operations management and technical staff. The attachment to this inspection report lists the documents reviewed by the inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

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

6. Inspection

a. Inspection Scope

The NRC inspection team reviewed WEC Newington Operations' policies and implementing procedures that govern the inspection program to verify compliance with the requirements of Criterion X "Inspections," in Appendix B to 10 CFR Part 50.

The NRC inspection team conducted direct observations of WEC Newington Operations quality inspectors as they performed in-process and final inspections to verify conformance of items to specified requirements. The NRC inspection team observed the inspection of the V.C. Summer Unit 2 upper core plate fuel alignment pin holes, the final detail inspection following manufacturing machining of spacer plates for the V.C. Summer Unit 1 CRDM latch assembly, quality inspections of the VEGP Unit 2 upper core plate clevis insert modification, and performance of one control rod guide tube "free path" test, which is used to verify that the Rod Control Cluster Assemblies have adequate clearance and will not bind in the Guide Tubes. The NRC inspection team interviewed the quality inspection personnel and evaluated whether their inspections were implemented in accordance with WEC Newington Operations approved instructions. The NRC inspection team also reviewed that persons performing in-process and final inspections were qualified and the inspection results, including deviations, were properly documented.

The NRC inspection team discussed the inspection program with WEC Newington Operations management and technical staff. The attachment to this inspection report lists the documents reviewed by the inspection team.

b. Observations and Findings

No findings of significance were identified.



c. Conclusion

The NRC inspection team determined that the implementation of WEC Newington Operations program for inspection was consistent with the regulatory requirements of Criterion X of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC Newington Operations is implementing its policies and procedures associated with Inspection control. No findings of significance were identified.

7. Nonconforming Materials, Parts, or Components

a. Inspection Scope

The NRC inspection team reviewed WEC Newington Operations policies and implementing procedures that govern the control of nonconformances to verify compliance with the requirements of Criterion XV, "Nonconforming Materials, Parts, or Components," in Appendix B to 10 CFR Part 50.

For the sample of nonconformance reports (NCRs) reviewed, the NRC inspection team verified that WEC Newington Operations implemented an adequate program to assess and control nonconforming items, including appropriate identification, documentation, segregation, evaluation, and disposition of these items. This process properly applies the principles of acceptable, repair, rework, hold, scrap, or use-as-is, and it provides for the necessary technical justifications to be adequately supported and properly documented. The NRC inspection team also toured the shop floor to verify that there are designated areas to segregate and control the various classes of nonconforming materials. In addition, the NRC inspection team also verified that WEC Newington Operations nonconformance process provides a link to the 10 CFR Part 21 program.

The NRC inspection team discussed the nonconformance program with WEC Newington Operations management and technical staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that WEC Newington Operations is implementing its nonconforming materials, parts or components program in accordance with the regulatory requirements of Criterion XV in Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC Newington Operations is implementing its policies and procedures associated with the control of special processes program. No findings of significance were identified.

## 8. External and Internal Audits

### a. Inspection Scope

The NRC inspection team reviewed WEC Newington Operations policies and implementing procedures that govern the external and internal audits program to verify compliance with the requirements of Criterion VII, "Control of Purchased Material, Equipment, and Services," and Criterion XVIII, "Audits," in Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed a sample of external and internal audits and the qualifications of the lead auditors and auditors to verify the implementation of WEC Newington Operations audit program. The NRC inspection team also reviewed the disposition of audit findings for adequacy and timeliness. WEC Newington Operations audit program also includes the performance of annual evaluations of suppliers to ensure that they are effectively implementing their approved QA programs. For a sample of annual evaluations, the NRC inspection team verified that these were performed in accordance with WEC Newington Operations procedures and contained all the required information.

The NRC inspection team discussed the external and internal audits program with WEC Newington Operations management and technical staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

### b. Observations and Findings

No findings of significance were identified.

### c. Conclusion

The NRC inspection team concluded that WEC Newington Operations is implementing its external and internal audits program in accordance with the regulatory requirements of Criterion VII and Criterion XVIII, in Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC Newington Operations is implementing its policies and procedures associated with the external and internal audits program. No findings of significance were identified.

## 9. Training and Qualification of Personnel

### a. Inspection Scope

The NRC inspection team reviewed WEC Newington Operations' policies and implementing procedures that govern the training and qualification program to verify compliance with the requirements of Criterion II, "Quality Assurance Program," of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed WEC Newington Operations' long-range and short-range training plans and the system used to track training. The NRC inspection team reviewed the indoctrination, training, and qualification of lead auditors and auditors, nondestructive examination personnel, Quality Control (QC) personnel, and welding personnel to ensure that proficiency is achieved and maintained. The NRC inspection team verified that all personnel performing activities affecting quality had completed the required training and met all the specified requirements in accordance with WEC Newington Operations' policies and implementing procedures.

The NRC inspection team discussed the training and qualification program with WEC Newington Operations' staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team determined that WEC Newington Operations is implementing its training and qualification program in accordance with the regulatory requirements of Criterion II of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC Newington Operations is implementing its policies and procedures associated with the training and qualification program. No findings of significance were identified.

10. Entrance and Exit Meetings

On October 26, 2014, the NRC inspection team discussed the scope of the inspection with Mr. Ramon Serrano, Plant Manager Nuclear Components Manufacturing, and other members of WEC Newington Operations management and technical staff. On October 31, 2014, the NRC inspection team presented the inspection results and observations during an exit meeting with Nick Liparulo, Senior Vice President of Engineering, Equipment and Major Projects, and other members of WEC Newington Operations 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 NRC inspection team 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>
Jonathan Ortega-Luciano	Inspection Team Leader	NRC	X	X	
Yamir Diaz-Castillo	Inspector	NRC	X	X	
Raju Patel	Inspector	NRC	X	X	
Laura Micewski	Inspector	NRC	X	X	
Jermaine Heath	Inspector	NRC	X	X	
Eric Michel	Inspector	NRC	X	X	
James McShane	Quality Assurance Manager	Westinghouse Electric Company	X	X	X
Richard Nicolas	Fabrication Manager	WEC	X	X	
Ryan Russell	Quality Inspection Manager	WEC	X	X	X
Richard Roberg	Quality Assurance Engineer	WEC	X		
Joan Solak	Supply Chain Manager	WEC	X	X	X
Mark Coburn	APR 1400 RV\ICXDM Product Manager	WEC	X		
Paul Winslow	Quality Assurance Engineer	WEC	X		
Lisa Plante	Quality System Supervisor	WEC	X	X	X
Ramon Serrano	Plant Manager	WEC	X	X	
Mark Kachmar	Vice President Manufacturing Operations	WEC		X	
Nick Liparulo	Senior Vice President of Engineering, Equipment and Major Projects	WEC		X	
Davis DeSantis	Production Manager AP1000 Reactor Vessel Internals	WEC		X	
Ronnie Gardner*	Vice President Quality	WEC		X	
Tim Northcutt*	Manger of Global Corrective Action	WEC		X	
Paul Prescott*	Senior Reactor Operations Engineer	NRC		X	

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>	<b>Entrance</b>	<b>Exit</b>	<b>Interviewed</b>
Richard McIntyre*	Senior Reactor Operations Engineer	NRC		X	
Edward Roach*	Chief of the Mechanical Vendor Inspection Branch	NRC		X	
Ronald Wessel	Principal Engineer AP1000 Licensing	WEC		X	
Duane Egan	Welder	WEC			X
Mark Stevens	Day Shift Quality Control Supervisor	WEC			X
Richard Callahan	Quality Control Inspector	WEC			X
John Bison	Quality Control Inspector	WEC			X
Chris Andrews	Quality Control Inspector	WEC			X
Steve Petri	Quality Control inspector	WEC			X
Ben Leblanc	Quality Control Inspector	WEC			X
Kimberly K. Sward	Corrective Action Manager	WEC			X
Daniel Labbe	Quality Assurance Engineer	WEC			X
Sam Elkadim	Sr. Quality Inspector Manager	WEC			X
Matthew Standley	Project Engineer	WEC			X
Victor Lapkowicz	Project Engineer	WEC			X
Alan Friend	RVI Project Team Lead	WEC	X		X
Mark Stanley	RVI Project Engineer	WEC			X
Osama Elkadin	Sr. Quality Materials Engineer-Group Lead	WEC			X
Barry Froulx	Level II Mechanical Inspector	WEC			X
Brandon Guman	Level II Mechanical Inspector	WEC			X
Christopher Andrews	QC Receipt Inspector	WEC			X
Benjamin LaBlanc	QC Receipt Inspector	WEC			X
Bill Bergbigler	Gas Combustion Lead Technician	Team Industrial Service (TIS)			X

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>	<b>Entrance</b>	<b>Exit</b>	<b>Interviewed</b>
Scott Highland	Gas Combustion Lead Technician	TIS			X
Daniel Bienvenue	Assistant Technician	TIS			X
George Wright	Heat Treatment Technician	TIS			X
Tim Struna	Principal Engineer	WEC			X
David Pratt	NDE Level III	WEC			X
Steve Russell	Weld Engineer	WEC			X
John Tromblury	Machine Shop Lead	WEC			X
Harris Hatfield	QC Inspector	WEC			X
Dennis McKenna	QC Inspector Supervisor	WEC			X

**\*Participated by teleconference**

**2. INSPECTION PROCEDURES USED**

- Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated July 15, 2013
- IP 43003, 'Reactive Inspections of Nuclear Vendors,' dated October 3, 2013

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

<b>Item Number</b>	<b>Status</b>	<b>Type</b>	<b>Description</b>
99901392/2014-201-01	OPEN	NON	Criterion XVI

**4. INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA**

The U.S. Nuclear Regulatory Commission (NRC) inspection team identified the following inspections, tests, analyses, and acceptance criteria (ITAAC) related to components being fabricated and inspected by WEC Newington Operations. At the time of the inspection, WEC Newington Operations was fabricating the core barrel for Vogtle Electric Generating Station Unit 3. For the ITAAC listed below, the NRC inspection team reviewed WEC Newington Operations quality assurance controls in the areas of special processes, inspection, nonconforming materials parts and components, and corrective actions.

The ITAAC's design commitments referenced below are for future use by the NRC staff during the ITAAC closure process; the listing of these ITAAC design commitments does not indicate that they have been met and closed. The NRC inspection team did not identify any findings associated with the ITAAC identified below.

Appendix C to the Combined License for Vogtle Electric Generating Plant Unit 3	No. 72	ITAAC 2.1.03.03
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## 5. DOCUMENTS REVIEWED

### Policies and Procedures

- Westinghouse Electric Company (WEC), “Newington Operations Quality Assurance Manual,” Revision 12, dated December 20, 2013
- WEC QAM, Section 3, “Design Control,” Revision 10, dated February 7, 2011
- WEC QAM, Section 7, “Control of Purchased Items and Services,” Revision 12, dated December 20, 2013
- WEC QAM, Section 10, “Inspection,” Revision 09
- WEC 2.8, “Qualification of Audit Personnel,” Revision 1, dated July 31, 2013
- WEC 7.1, “Supplier Qualification and Evaluation,” Revision 2, dated February 8, 2010
- WEC 7.1, “Supplier QA Program Qualification and Assessment,” Revision 7, dated May 22, 2014
- WEC 7.3, “Commercial Grade Surveys,” Revision 1, dated December 16, 2013
- WEC 16.2, “Westinghouse Corrective Action Program,” Revision 7, dated March 31, 2014
- WEC 16.3, “Corrective Action Board,” Revision 4, dated March 31, 2014
- WEC 16.4, “Root Cause Analysis,” Revision 4, dated March 31, 2014
- WEC 16.5, “Apparent Cause Analysis,” Revision 3, dated March 31, 2014
- WEC 16.8, “Customer Satisfaction,” Revision 0, dated November 11, 2008
- WEC 16.10, “Common Cause Analysis (CCA),” Revision 0, dated March 31, 2014
- WEC 16.11, “Issue Review Committee,” Revision 0, dated March 31, 2014
- WEC 16.12, “Limited Cause Analysis,” Revision 0, dated March 31, 2014
- WEC 16.13, “Effectiveness Review,” Revision 0, dated March 31, 2014

- WEC 18.1, "Internal Audits," Revision 3, dated May 30, 2013
- WEC 18.4, "Self Assessments," Revision 2, dated January 9, 2014
- WEC 18.5, "External Audits and Regulatory Inspections," Revision 2, dated October 16, 2014
- QA-7.14, "Annual Supplier Evaluation," Revision 1, dated January 31, 2014
- PP-02-03, "Written Procedure for the Certification of Inspection and Test Personnel," Revision 4, dated January 14, 2014
- PP-02-04, "Certification Training program for Mechanical and Optical Inspection Personnel," Revision 1, dated June 15, 2012
- PP-03-04, "Design Specifications," Revision 5
- PP-03-05, "Design Control," Revision 2
- PP-03-06, "Design Reports," Revision 3
- PP-03-07, "Validation of Computerized Data Evaluation Programs and Coordinate Measuring Machine Programs," Revision 2, dated March 22, 2010
- PP-04-01, "Procurement Document Control," Revision 13, dated April 21, 2013
- PP-04-02, "Control of Consumables," Revision 09, dated January 24, 2013
- PP-04-04, "Supplier Request for Approval (SRA)," Revision 04, dated August 15, 2012
- PP-07-01, "Dedication of Commercial Grade Items and Services," Revision 04, dated October 31, 2013
- PP-09-01, "Production Order," Revision 16
- PP-10-01, "Dimensional Inspection Report," Revision 5, dated August 28, 2012
- PP-12-01, "Measuring and Test Equipment Calibration and Issue," Revision 14, dated October 21, 2013
- PP-15-01, "Nonconformance Reports - In Process," Revision 9, dated September 12, 2013
- PP-15-02, "Supplier Deviation of Contract Requirements (SDCR)," Revision 3, dated December 15, 2010
- PP-15-03, "Quality Notifications - Incoming," Revision 5, dated May 4, 2012



- PP-16-01, "Customer Satisfaction Survey," Revision 0, dated March 30, 2012
- WEC 16.2, "Westinghouse Corrective Action Program," Revision 7.0, dated March 31, 2014
- WEC Procedure No. TM-CL-029, "Intermediate and Final Cleaning of Carbon Steel, Nickel Alloys, and Carbon Steel Surfaces," Revision 17, dated July 25, 2014
- WEC Procedure No. TM-MSR-026, "Purchase Specification For Commercial Grade Dedication of Calibration Services," Revision 3, dated May 3, 2011
- WEC Procedure No. TM-INSP-001, "Inspection Sampling Plan," Revision 7, dated April 26, 2011
- WEC Calibration Procedure 13.01, "Calibration Procedure for Subcontracted Calibration Services," Revision 2, dated December 21, 2010
- WEC Procedure HT-014, "Stress Relief of Stainless Steel for Dimensional Stability on AP1000 Components," Revision 8, dated June 6, 2013
- WEC Procedure HT-016, "Stress Relief of Stainless Steel for Dimensional Stability on AP1000 IGA Guide Studs," Revision 0, dated July 19, 2013
- Team Industrial Services, Inc. Thermal Process Procedure 080313-01, "Dimensional Stability Heat Treatment of AP1000 Instrument Grid Assembly," Revision 03, dated September 08, 2014, approved by WEC on October 20, 2014
- Welding Procedure Qualification Record (PQR) -8.8-1G-10, "Gas Tungsten Arc Welding (GTAW), Amendment 01, dated January 27, 2014
- PQR -8.8-2G-3, GTAW, Amendment 04, dated January 28, 2014
- PQR -8.8-2G-3 Shielded Metal Arc Welding (SMAW), Amendment 04, dated January 17, 2014
- PQR 8.8-1G-4, SMAW, Amendment 01, dated January 2, 2014
- TM-TA-001, "Control of Temporary Attachments," Revision 1, dated September 2, 2014
- TM-RT-001, "Radiographic Examination," Revision 18, dated September 11, 2013
- TM-PT-001, "Liquid Penetrant Examination," Revision 19, dated September 10, 2014
- VI-35-8.8-22, "Detailed Welding Procedure," Revision 4
- WE-P-001, "General Welding and Fabrication," Revision 23

- WEC Procedure No.03.01, "Calibration of Inside Micrometer, Extensions, and End Rods," Revision 4, dated December 12, 2013
- WEC Procedure No. 09.05, "Calibration of Torque Wrenches," Revision 7 dated May 5, 2012
- WEC Procedure No. 09.06, "Calibration of Torque Testers," Revision 3 dated May 4, 2012
- WEC Procedure No. 11.11, "Calibration of Weld Material Baking and Holding Ovens," Revision 3, dated September 17, 2010

#### Specifications

- WEC Document No. APP-MI01-Z0-101, "Reactor Vessel Internals," Revision 7
- WEC Document No. APP-MI01-V2-141, Drawing, "AP1000 Reactor Internals Upper Core Barrel Assembly," Revision 7, dated May 13, 2011
- WEC Document No. APP-MI01-V2-520, Drawing, "AP1000 Reactor Internals Upper Skirt to Flange Weldment," Revision 4, dated October 19, 2011
- WEC Document No. APP-MI01-Z0-600, "AP1000 Reactor Vessel Internal Fabrication Requirements," Revision 2, dated September 10, 2012
- WEC Document No. APP-GW-Z0-601, "Heat Treatment of Stainless Steel for Dimensional Stability," Revision 4, dated December 14, 2012
- Document No. TM-MSR-026, "Purchase Specification for Commercial Grade Dedication of Calibration Services," Revision 3, dated May 3, 2011
- WEC Document No. APP-MV11-Z0M-002, "AP1000 CRDM Installation Requirements," Revision 1
- WEC Document No. APP-MV11-V08-001, "CRDM Installation CRDM model L106AP," Revision 2
- WEC Document No. APP-MV11-Z0-001, "AP1000 Control Rod Drive Mechanism (CRDM) Design," Revision 3
- WEC Document No. APP-MV11-Z0-030, "AP1000 CRDM Manufacturing Specification," Revision 0
- WEC Document No. APP-GW-VLR-010, "AP1000 CRDM Supplemental Fabrication and Inspection Requirements," Revision 0

- WEC Document No. APP- GW-GAP-420, “Engineering and Design Coordination Report,” Revision 7
- WEC Document No. APP- MI10-Z0-602, “Hard Surfacing with Cobalt Chromium Alloy,” Revision 1
- APP-M101-V6-530, “AP1000 Reactor Internals Upper Core Plate,” Revision 2
- Drawing 10000C38, “CRDM Spacer Model L106AC,” Revision 0
- Drawing 5348, “Hole Indentation Nos. – Sect. N-N, Upper Core plate Bottom View,” Revision 0 Revision 3, dated September 17, 2010

#### Purchase Orders (PO)

- WEC PO. No. 4500649861 to Omega Engineering Inc., dated September 5, 2014, for commercial thermocouple part No. RVI-DSHT wire HH-K-20
- PO No. 4500650818 to Exelon Power Labs LLC, dated September 18, 2014, for calibration of thermocouple WEC ID No. RVI-DSHT
- PO No. 4500609106 to Team Industrial Services, dated June 27, 2013, to perform on-site local stress relieve of the core barrel assembly joint 3 Girth Weld per APP-GW-Z0-601, Revision 4
- PO No. 4500646103, to Team Industrial Services, Change 3, dated October 24, 2014, for Local Stress Relieve of IGA, WEC Material No. V2-811-HT, Job No. 2404948, per APP-GW-Z0-601, Revision 4, and sketch SK-V2-811-HT-TL, Revision 1, with Team Industrial Services to provide plyometric equipment that have been calibrated by a calibration provider that has been accredited by A2LA, NAVLAP or other accredited bodies under the ILAC/MRA process
- PO No. 4500423208 to Allied Metal Finishing, dated January 30, 2012, for commercial grade chrome plating of 75 pieces of AP1000 safety-related guide tubes, WEC Material No. APP-MV11V6051 for Job No. 2404837
- PO No. 4500423221 to Duval Precision Grinding, dated January 30, 2012, for pre-and post-chrome plate commercial grinding services of 75 AP 1000 guide tubes, WEC Material No. APP-MV11V6051 for Job No. 2404837
- PO No. 4500441219, to American Tank & Fabrication Company, Revision 0, dated March 19, 2010, for procurement of V6-432-F, OSV form and weld enclosure pipe to supply pipe complete per sketch
- PO No. 4500420712, to KON-SULT Inc., dated January 10, 2012, for calibration services of mechanical measuring and test equipment under KON-SULT the scope and range ANSI/ISO/IEC certification

- PO No. 4500453859 to Quality Plus, Inc. for calibration service of granite plates, dated November 8, 2012
- PO No. 4500341219 for Upper Guides Tube, dated April 1, 2010
- PO No. 240837 SCANA Project VC Summer Unit 3 CRDM
- PO No. 240909, Vogtle Unit 4 AP1000 Reactor Vessel Internals
- PO No. 4500327586 change notice #16
- PO No. 240837, Engineering Design Report VC Summer Unit 2/VC Summer Unit 3 CRDMS
- PO No. 4500328263 Change Notice #6, VC Summer Unit 2/VC Summer Unit 3 CRDMS

Commercial Grade Survey Report/Annual Evaluation

- Commercial Grade Survey (CGS) Report No. WEC-2013-195, of Honematic Machine Corporation, dated December 17, 2013, approved for commercial machining service that includes deep hole drilling, honing, turning, boring, grinding, and milling operation
- CGS Report No. WEC-2013-010-R, dated February 4, 2013 of Allied Metal Finishing; approved for commercial chrome plating services to WEC approved procedure and specification
- WEC Supplier Audit/Evaluation Summary (SAES) ID: 19643, of Honematic Machine Corporation dated January 4, 2014, approved for commercial machining services including deep hole drilling, honing, turning, boring, grinding, and milling operation
- SAES ID No. 19843 of Allied Metal Finishing, dated January 2, 2014, approved for commercial grade chromium plating services to WEC approved procedure and specification
- SAES ID No. 18768, of Exelon Power Labs, dated January 31, 2014, approved for safety-related calibration services; with audit report No. WES-2012-049, dated March 28, 2012
- SAES ID No. 19069 of Quality Plus Inc., dated May 30, 2013, approved for commercial calibration services of dimensional and mechanical instruments within scope and range of approval of its A2LA Certificate No. 1254.01
- SAES ID No. 19561 of KON-SULT Inc., dated October 23, 2013, approved for commercial calibration services limited to the scope and range of approval of its A2LA Certificate No. AC-1243, valid to October 4, 2016

- SAES ID No. 18354 of Electronic & Mechanical, dated October 15, 2014, approved for commercial calibration services under ISO/IEC 17025 ACLASS certificate No. AC-1242, valid due September 5, 2015
- SAES ID No. 19823 of MD Calibration, dated January 2, 2014, approved for commercial calibration services of in-house calibration of horizontal and vertical boring machines, and rotary tables within its scope and range of A2LA certificate No. 3335.01
- Surveillance Report of MD Calibration dated December 14, 2011

#### Production Orders

- WEC Production Order No. 400510727, "IGA Dimensional Stabilization (QN60065253)," for Material ID No. V2-811-HT, Revision 1, dated October 16, 2014
- Production Order No. 40519047 "OSV Calibrate Thermocouple Wire," Revision 0, Repair No. 01, dated October 17, 2014, for Job No. 2412522
- Production Order No. 40100866, "Upper Guide Tube Enclosure Long Seam RT (MT-23613)," dated October 22, 2013, for Material No. V6-432RT on Job No. 2404908
- Production Order No. 4003005, "Cleaning Procedure Effectiveness Test," dated July 28, 2009, for tempelstick crayons, Material ID No. 700342, S/N CS-2097, CS-2098 and CS-2099 for Job No. 2402101
- Production Order No. 40073151, "Final Pack and Ship RVI Seismic Test Unit Guide Tube Assembly," Repair 00
- Production Order No. 40073997, "Fit and Weld Nozzles to Upper Cylinder," Repair 00 for Job 2404908
- Production Order No. 40100866, "UGT Enclosure Long Seam RT (MT23613)," Repair 00
- Production Order No. 40510727 for heat treatment of Summer 2 IGA, Repair 01
- Production Order No. 40515983, "Assemble and Weld UGT," Repair 00
- Production Order No. 4500341219, "Enclosure Pipe," Repair 00
- Production Order No. 40504772, "Shroud ribs to rings welding," Repair 00
- Production Order No.40519674, "Upper Core Plate Clevis Inserts," for Job Order (JO) 2404908
- Production Order No. 405164, "Upper Core plate final machine," JO 240948, Revision 0

- Production Order No.40518736, “Spacer,” JO 2413823, Revision 0

Certificate of Conformance/Certified Material Reports

- WEC Certificate of Conformance (C of C) for Gage Identification (Id) No. A-088, Outside Micrometer, calibrated on June 23, 2014, due November 4, 2014
- WEC C of C for Gage Id No. E-698 - internal Diameter/Outside Diameter digital gage, calibrated on October 23, 2013 due November 10, 2014
- MD Calibration Services C of C No. MDC 255-13 for relative humidity/temperature data logger, WEC gage Id No. E-698, calibrated on October 22, 2013, to WEC PO No. 4500619518, notifying linear deviation
- Exelon Power Labs C of C No. 0010848429 for temperature/humidity data logger, WEC Gage Id No. E-649, calibrated on October 16, 2014, to WEC PO No. 4500630729, receipt accepted by WEC QC
- KON-SULT C of C No. 371744 for Browne and Sharpe 0.6-0.7” inside micrometer, WEC Gage ID No. A-289 calibrated on July 18, 2014 to WEC PO No. 4500612452 L-1
- Duval Precision Grinding Inc., C of C No. 12-981, dated December 26, 2012, for 30 AP1000 safety-related guide tubes, Material ID No. APP-MV11V6051 to PO No. 4500423221/ 0001
- Allegany Ludlum Certified Material Test Report (CMTR) dated November 29, 2010, for plate to ASME SA 240-A08 specification traceable to Heat No. 832287, and WEC PO No. 4500329645 Change No. 2
- WEC Material Certificate/Test Report (MC/TR) Cover Sheet Form F-08.01-03 for WEC ID No. 10-0084 dated February 18, 2010, for Consolidated Power & Supply CMTR No. 4417660 for 238.2’x3” Ø hot rolled, solution annealed stainless steel round bars to ASTM A479-06A Grade 304 material specification, traceable to heat No. 422891
- MC/TR Cover Sheet Form F08.01-03 for WEC ID No. 10-0084, dated January 4, 2013, for Duval Precision Grinding C of C No. 12-981 for pre-plating grinding operation of 76 AP1000 safety-related guide tubes, Material ID No. APPMV11V6051, serial Nos. B01-B76 for Job No. 2404837 to PO No. 4500423221
- MT/CR Cover Sheet Form F08.01-03 for WEC ID No. 10-0084, dated January 11, 2013, for Allied Metal Finishing Inc. C of C No. 40538 for chrome plating of 54 AP1000 safety-related guide tubes, Material ID No APPMV11V6051 to PO No. 4500423208
- Certificate of Calibration # 0010811490, from Exelon PowerLabs for calibration of Monarch Data chart 1250, S/N 5251888, dated March 20, 2014

- Certificate of Calibration # 0010793959, from Exelon PowerLabs for calibration of Cooper Load Cell LPM 530, S/N 380506, dated December 19, 2013
- Certificate of Calibration No. 371289
- Certificate of Calibration No. 346391
- Certificate of Calibration No. 356825
- Calibration Laboratory Certification No. 3335.01
- Certificate of Calibration 028423

#### Receiving Inspection Report

- Dimensional Inspection Report (DIR) No. APPMV11V60512, dated September 19, 2013, for Rod Travel Housing for Production Order No. 4500371454/0001, Change 02, Job No. 2404834
- WEC 103 Goods Receipt Slip (GRS) No. 5000771669/0001 for 3" Ø round bar to ASTM A479 Grade T304 specification, Material No. B03.000Q045 receipt from Consolidated Power & Supply on PO No. 4500325109/0001 for Job No. 2404838 CRDM
- 103 GRS No. 5001090235/0001 dated January 3, 2013, for 24 AP1000 safety-related guide tubes Material No. OVSGND APPMV11V6051, from Duval Precision Grinding on PO No. 4500423221/0001, with Sampling Plan Dimensional Inspection Report DIR No. APPMV11V6051, dated January 12, 2013
- 103 GRS No. 5000979769/0001 dated March 1, 2012, for AP1000 safety-related guide tubes, Material ID No. OVSGUN-APPMV11V6051 from Gover Gun drilling Inc., on PO No. 4500417947/0001
- 103 GRS No. 500110817/0001, dated March 11, 2013, for 24 AP1000 safety-related guide tubes, Material ID No. OSVGND-APPMV11V6051 for Job No. 2404837, from Duval Prevision Grinding Inc., on PO No. 45004232081
- 103 GRS No. 5001090748/0001, dated January 4, 2013 for 30 guide tubes Material No. OSGND APPMV11V6051, from Duval Prevision Grinding Inc., on PO No. 4500423221/0001
- 103 GRS No. 500108463/0001 dated December 11, 2012, for 30 OSVGND-APPMV11V6051 guide tubes receipt from Duval Prevision Grinding Inc., of PO No. 4500423221/0001
- SPIDR No. APPMV11V6051 on ISR No. 5121, dated January 11, 2013; for Duval Precision Grinding on PO No. 4500423221/0001 for Production Order No. 40060797

- WEC Final Radiograph Inspection Report No. NDE-029671, dated November 7, 2013, "UGT Enclosure Long Seam RT (MT23613)," on Production Order No. 40100866, Job No. 2404908

#### Training and Qualification Records

- Lead auditor training records for the following personnel: Lonnie Pygman, David Pratt, Lisa M. Plante, James Dunn, James D. McShane, Richard Roberg, and Paul R. Winslow
- 44-GA-018, Weld/Welding Operator Performance Qualification Record, Stamp #44, 2G, 3G and 4G positions, June 24, 2009
- NDE Certification Record, Stamp #51, PT Level 2, dated August 19, 2011
- NDE Certification Record, Stamp #67, PT Level 2, dated September 29, 2012
- NDE Certification Record, Stamp #116, RT Level 2, dated March 13, 2012

#### Nonconformance Reports

- 12958, 12859, 13093, 13097, 13111, 13129, 13281, 13407, 13436, 13465, 13476, 13485, 13504, 13534, 13632, 13656, 13697, 13766, 13794, 13795, 13800, 13821, 13987, 13935, 14022, 14029, 14069

#### Corrective Action Reports

- 10000053, 100000608, 100000696, 100000767, 100000872, 100001056, 100014334, 100014337, 100014464, 100014618, 100017039, 100003390, 100024461, 100043755

#### Corrective Action Reports Generated during the NRC Inspection

- 100056256, 100056977, 100057021, 100057502, 100058236, 60049689, 60059013, 60061778, 60063616, 60062577, 60064364, 60064685

#### Miscellaneous

- QSL-NCM-01, "Quality Suppliers List Newington Operations," Revision 30
- 2012 & 2013 Internal Audits of the WEC Newington Operations Quality Management System
- 2012 Triennial audit report of AT&F Nuclear, dated October 10, 2012
- 2012 Triennial audit report of Carboline Company (LA & MO), dated April 14, 2012
- 2012 Triennial audit report of Dubose National Energy Services, dated June 8, 2012



- 2013 Triennial audit report of Forge Monchieri S.p.A, dated July 30, 2013
- 2013 Triennial audit report of Laboratory Testing Inc., dated December 18, 2013
- 2012 Triennial audit report of Metaltek International Centrifugal Division, dated February 26, 2012
- 2014 Triennial audit report of Sheffield Forgemasters International, dated August 7, 2014
- 2014 Annual Evaluation of Metaltek International Centrifugal Division
- 2014 Annual Evaluation of Forge Monchieri S.p.A.
- 2014 Annual Evaluation of Carboline Company – LA
- 2014 Annual Evaluation of AT&F Nuclear, Inc.
- 10 CFR Part 21 Evaluation, “Upper Support Columns Potential Escape to Customer,” dated August 8, 2013
- Root Cause Analysis, “Upper Support Columns Potential Escape to Customer,” dated August 23, 2013
- Effectiveness Review Report, “Upper Support Columns Potential Escape to Customer,” dated February 13, 2014
- Apparent Cause Analysis (ACA), “Lack of Effective LOTO Procedures for all Machines and Equipment Repairs,” dated September 20, 2013;
- ACA, “52M Weld Material Heat NX76W6TK 0.45,” dated November 12, 2013;
- ACA, “Calibration of Weld Material Baking and Holding Ovens,” dated November 28, 2013
- ACA, “Fuel Pin Installation into the Upper Core Plate,” dated December 20, 2013
- ACA, “Thrust Bearing Oil Type Design Change Results,” dated February 14, 2014
- Limited Cause Analysis (LCA) Report, “Missed NDE,” dated, June 1, 2014
- LCA, “Mixed Stainless Steel SMAW Weld Electrodes,” dated June 14, 2014
- Deviation Notice 4500327586-113, “V6-503 IGA Guide Stud Assembly,” dated September 25, 2014
- WEC Document No. VS2-MI01-GNR-047, “Instrumentation Grid Assembly Dimensional Stabilization Heat Treatment Deviation,” Revision 0, dated May 15, 2014

- WEC Procurement Advisory Release (PAR) VSG-M101-25-001-315A dated October 23, 2014, approval of Team Industrial Service Procedure 080313-01, Revision 3, dated September 8, 2014
- Team Industrial Service (TIS) Contingency Plan, "Dimensional Stability Heat Treatment (DSHT) of Nuclear Reactor Components via Temporary Gas-fired, Combustion Heated Furnace Actions in Response to a Power Loss or Equipment Failure during DSHT," dated October 21, 2014
- WEC Supplier Request for Approval (SRA) dated September 30, 2014, for TIS calibration records for IGA Recorder serial No. T4172JA831, Recorder serial No. T4179JA165 and Calibrator serial No. 1594065, and Instrument Calibration Solutions thermocouple calibrator serial No. 1615039
- WEC Quality Plan QP-2404908-06, "Integrated Manufacturing and Quality Plan for Vogtle Unit 3 AP1000 Center/Lower Core Barrel & Assembled to Upper Assembly," Revision 6, dated March 5, 2014
- WEC Deviation Notification (DN) No. VS2-M101-GNR-047, "Instrumentation Grid Assembly Dimensional Stabilization Heat Treatment for V.C. Summer 2, AP1000 Safety Class D," dated October 13, 2014
- WEC Nonconformance Report No. 13632 dated October 26, 2013, for operation No. 0700 "OSV Local Stress Relieve," of V.C. Summer Unit 2 IGA, material ID No. V2-138-HT, on Job No. 2404908 performed by Team Industrial Services on PO No. 4500609106
- WEC Quality Notification (QN) No. 60065584, dated October 28, 2014, for six lock nuts, Material ID No. V6-860 for V.C. Summer 3 IGA Job No. 2404949 were rejected for inadequate material identification received from B&G Manufacturing CO Inc. on PO No. 4500445420
- 20070701-223, Deviation Notice, dated December 13, 2012
- Final Radiographic Inspection Report for Production Order 40100866, Assemblies B-187 and B-189
- Heat 213891, "Lincoln Electric certificate of conformance (CoC) and certificate of material test report (CMTR)," dated February 29, 2012
- Heat 831373, "ATI Allegheny Ludlum CMTR," Sid: AA, AB, AC, AD, AE, AF
- LTR-NRC-14-27, Westinghouse letter to NRC, dated June 2, 2014
- Material Certification, Acetone, Batch 316215, PO No. 4500370067, dated October 17, 2012

- Material Certification, DP-40, Batch 95-B1, PO No. 4500185283, dated June 5, 2009
- Material Certification, DR-60, Batch 125-J4, PO No. 4500355745, dated February 1, 2012
- Material Certification, D-100, Batch 113-B6, PO No. 4500355745, dated September 13, 2011
- Material Certification, Acetone, Batch 287910, PO No. 4500370067, dated May 8, 2011
- Material Certification, DP-40, Batch 820-E1, PO No. 4500261042, dated October 10, 2008
- Material Certification, D-100, Batch 817-D6, PO No. 4500261042, dated October 10, 2008
- Material Certification, DR-60, Batch 99-F4, PO No. 4500261042, August 27, 2009
- Magnetic particle testing (MT) 23074, Request for Material Transfer, dated March 16, 2012
- MT 23613, Request for Material Transfer, dated September 24, 2013
- Nondestructive examination (NDE)-023158, Liquid Penetrant Exam Report, dated October 16, 2012
- NDE-023185, Liquid Penetrant Exam Report, dated October 17, 2012
- NDE-024550, Radiographic testing (RT) Report, Production Order 40078273, Repair 02, Revision 1, dated January 29, 2013
- RT Film, Part V2-520, Job No. 2404908, Production Order 40078273, "Support Skirt Joint 2,": 0-1, 1-2, 2-3, 4-5, 11-12, 13-14, 20-21, 22-23, 23-24, 24-25, 25-26
- Weld Joint Log Summary Report, Job No. 2404909, Production Order 40504772, Repair 00, Material V2-203-2F, "Fit and Weld Ring Segments of C/S Assembly," Reference Weld Map WM-2404909-02, Revision 3, Joint 17
- WM-2404908-01, Weld Map, Revision 00
- WM-2404909-02, Weld Map, Revision 00
- Quality Notification (QN) 60065399 to address open Supplier Deviation of Contract Requirements
- Supplier Deviation of Contract Requirements 10836, 10784, and 10845;

- TM-INSP-001, Inspection Sampling Plan, Revision 7
- WEC M&TE Deviation Report No. 028423 dated November 11, 2013, for Gage Id No. E-698 with deviation reported by MD Calibration
- M&TE Discrepancy Report No. 028013
- M&TE Discrepancy Report # 029308
- M&TE Discrepancy Report # 029310
- M&TE Discrepancy Report # 031227
- M&TE Discrepancy Report # 031229
- Request for Information # APP-MI01-GF-003, Revision 0, dated October 29, 2014, "Clarification of 10CFR21 applicability to Guide Tube Profile Inspection"
- M&TE Usage Log for E-016
- M&TE Usage Log for E-220
- M&TE Usage Log for E-698