



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

February 26, 2020

Mr. Todd Wigley  
Product Assurance Manager  
Westinghouse Electric Company  
Columbia Fuel Fabrication Facility  
5801 Bluff Road  
Hopkins, SC 29061

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION REPORT OF WESTINGHOUSE ELECTRIC COMPANY'S COLUMBIA FUEL FABRICATION FACILITY NO. 99900005/2019-201 AND NOTICE OF NONCONFORMANCE

Dear Mr. Wigley:

From January 13 through January 16, 2020, the U.S. Nuclear Regulatory Commission (NRC) staff conducted a routine inspection at the Westinghouse Electric Company's Columbia Fuel Fabrication Facility (hereafter referred to as WEC-CFFF) in Hopkins, SC. The purpose of this limited-scope inspection was to assess WEC-CFFF'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 Program Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

This technically-focused inspection specifically evaluated WEC-CFFF's implementation of the quality activities associated with the design, fabrication, assembly, and testing of nuclear fuel assemblies and nuclear fuel assembly components being supplied to the U.S. nuclear power plants. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute NRC endorsement of your overall quality assurance (QA) or 10 CFR Part 21 programs.

Based on the results of this inspection, the NRC inspection team found that the implementation of your QA program did not meet certain regulatory requirements imposed on you by your customers or NRC licensees. Specifically, the NRC inspection team determined that WEC-CFFF was not fully implementing its QA program in the area of control of special processes. 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-CFFF 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 statement or explanation within 30 days of this letter in accordance with the instructions specified in the enclosed NON. We will consider extending the response time if you show good cause for us to do so.

In accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," the NRC will make electronically available for public inspection

a copy of this letter, its enclosure, and your response through the NRC's Public Document Room or from the NRC's Agencywide Documents Access and Management System, which is accessible at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response (and if applicable), should not include any personal privacy, proprietary, or Safeguards Information (SGI) 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, 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 be 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 would 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 SGI 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,

Kerri A. Kavanagh, Chief */RA/*  
Quality Assurance and Vendor Inspection Branch  
Division of Reactor Oversight  
Office of Nuclear Reactor Regulation

Docket No.: 99900005

EPID No.: I-2019-201-0076

Enclosures:

1. Notice of Nonconformance
2. Inspection Report No. 99900005/2019-201 and Attachment

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION REPORT OF WESTINGHOUSE ELECTRIC COMPANY'S COLUMBIA FUEL FABRICATION FACILITY NO. 99900005/2019-201 AND NOTICE OF NONCONFORMANCE  
Dated: February 26, 2020

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**NRR-106**

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<b>DATE</b>	02/13/2020	02/07/2020	02/04/2020	02/07/2020
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<b>DATE</b>	02/13/2020	02/04/2020	02/26/2020	

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## NOTICE OF NONCONFORMANCE

Westinghouse Electric Company  
Columbia Fuel Fabrication Facility  
5801 Bluff Road  
Hopkins, SC 29061

Docket No. 99900005  
Report No. 2019-201

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Westinghouse Electric Company's Columbia Fuel Fabrication Facility (hereafter referred to as WEC-CFFF) in Hopkins, SC, from January 13, 2020 through January 16, 2020, WEC-CFFF did not conduct certain activities in accordance with NRC requirements that were contractually imposed upon WEC-CFFF by its customers or NRC licensees:

- A. Criterion IX "Control of Special Processes," 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," states that "Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements."

Paragraph 4.5 of Westinghouse Electric Company's Quality Management System-A (QMS-A), "Quality Management System," Revision 7.1, dated December 18, 2019, states that "Procedures are established to specify the methods and extent of identification and traceability of items to ensure that only correct and acceptable items are installed or used in items and services." In addition, paragraph 4.5.2 of QMS-A states that "Identification of items is maintained, as necessary, to provide confidence that the correct items are used." Furthermore, paragraph 4.5.3 of QMS-A states that "When regulatory or customer requirements include traceability of items, procedures are established to provide identification, traceability, and records. Items including consumable materials and items identified as having limited calendar, shelf, or operating lives or cycles are traceable and controlled. The loss of identification on traceable items is documented and the items dispositioned in accordance with established procedures."

Section 4.2 of WEC-CFFF procedure No. QA-608, "Identification, Traceability and Control of Materials, Parts and Components," Revision 12, dated July 18, 2019, states that manufacturing/process/quality engineers shall "Establish procedures and/or routings to establish and verify that identification and control of product materials, parts, components, including final assemblies required by specifications, drawings and specific contract requirements is maintained on the item, and/or by records traceable to the item to preclude use of incorrect or nonconforming items." In addition, Section 4.3 of procedure No. QA-608 states that operations "are responsible to assure that materials, parts, components, and final assemblies are identified and traced throughout the manufacturing process as indicated in the instructions provided." Furthermore, Section 5.2 of procedure No. QA-608 states that "When regulatory or customer requirements include traceability of items, procedures are established to provide identification, traceability, and records." Finally, Section 5.3 of procedure No. QA-608 states that "Identification markings shall be applied using materials and methods that provide a clear and legible identification and do not degrade the function or usability of the item."

Contrary to the above, as of January 16, 2020, WEC-CFFF failed to assure that special processes were controlled and accomplished using qualified procedures in accordance with specifications and acceptance criteria. Specifically, while witnessing gas tungsten arc welding on the top nozzle pins for a 15x15 fuel assembly for Turkey Point Nuclear Generating Station Unit 3, the NRC inspection team noted that there was no shop procedure established for the control of weld filler material and the weld filler material was not being adequately controlled. The NRC inspection team observed weld filler material in two work stations with either no markings or illegible labels. On both work stations, the weld filler material was on a workshop table exposed to the environment. The NRC inspection team also noted that the weld filler material in the work stations was not marked with the heat or lot number and was not the same filler weld material. When asked for the requirements for handling the weld filler material, the welder and his supervisor were not aware of any specific procedure. Proper control of weld filler material is necessary to assure that each heat of material is documented in the associated traveler/routing as well as to avoid contamination and the introduction of detrimental material to the final product which could cause degradation (e.g., cracking) that could potentially result in the component not performing its intended safety function.

This issue has been identified as Nonconformance 99900005/2019-201-01.

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, Quality Assurance and Vendor Inspection Branch, Division of Reactor Oversight, Office of Nuclear Reactor Regulation, 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 and the results achieved; (3) the corrective steps that will be to avoid further noncompliance; and (4) the date when the corrective action will be completed. Where good cause is shown, the NRC will consider extending the response time.

In accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be made electronically available for public inspection in the NRC's Public Document Room or from the NRC's Agencywide Documents Access and Management System, which is accessible from the NRC's Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or Safeguards Information (SGI) so that the Agency can make it 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 be withheld, 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 would 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 SGI 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 XXth day of February 2020.

**U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
DIVISION OF REACTOR OVERSIGHT  
VENDOR INSPECTION REPORT**

Docket No.: 99900005

Report No.: 99900005/2019-201

Vendor: Westinghouse Electric Company  
Columbia Fuel Fabrication Facility  
5801 Bluff Road  
Hopkins, SC 29061

Vendor Contact: Mrs. Kathy A. Merritt  
Customer Support & Quality Programs Manager  
Email: merritka@westinghouse.com  
Phone: 803-647-3906

Nuclear Industry Activity: Westinghouse Electric Company's Columbia Fuel Fabrication Facility manufactures nuclear fuel assemblies and nuclear fuel assembly components for pressurized water reactors for U.S. nuclear power plants.

Inspection Dates: January 13 - 16, 2020

Inspectors: Yamir Diaz-Castillo NRR/DRO/IQVB Team Leader  
Andrea Keim NRR/DRO/IQVB  
Molly Keefe-Forsyth NRR/DRO/IRAB  
Diana Woodyatt NRR/DSS/SNSB  
John Honcharik NRR/DNRL/NPHP  
Jonathan Ruille Observer from the French Nuclear Safety Authority (ASN)  
Rafaello Amorosi Observer from ASN  
Brice Delime Observer from ASN

Approved by: Kerri A. Kavanagh, Chief  
Quality Assurance and Vendor Inspection Branch  
Division of Reactor Oversight  
Office of Nuclear Reactor Regulation

## EXECUTIVE SUMMARY

Westinghouse Electric Company's Columbia Fuel Fabrication Facility  
99900005/2019-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a routine vendor inspection at the Westinghouse Electric Company's Columbia Fuel Fabrication Facility (hereafter referred to as WEC-CFFF) facility in Hopkins, SC, 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," 10 CFR Part 21, "Reporting of Defects and Noncompliance," and with the applicable requirements of Section V, "Nondestructive Examination," "Section IX, "Welding and Brazing Qualification," of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, and of the American Society for Nondestructive Testing (ASNT) recommended practice SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing," 1980 Edition. This was the third NRC inspection of WEC-CFFF.

It's important to note that the qualification of procedures and personnel for welding and non-destructive examination (NDE) is performed in accordance with Section V and Section IX of the ASME B&PV Code, and SNT-TC-1A, respectively. However, the performance of these welding and NDE activities in production are not required to meet ASME B&PV Code since the fuel assembly components are not considered to be pressure boundary.

This technically-focused inspection specifically evaluated WEC-CFFF's implementation of quality activities associated with the design, fabrication, assembly, and testing of nuclear fuel assemblies and nuclear fuel assembly components for U.S. nuclear power plants. Specific activities observed by the NRC inspection team included:

- furnace brazing of Zirlo grids
- corrosion testing of grid welds
- furnace age heat treatment of Zirlo grids
- Issue Review Committee and Daily Production meetings
- laser welding on the grid for a 15x15 upgraded fuel rod assembly
- welding of the end plug to the fuel rod girth weld and end plug seal weld on a 17x17 optimized fuel rod assembly
- ultrasonic examination, X-ray examination, and helium leak testing for the end plug to the fuel rod girth weld and end plug seal welds on a 17x17 optimized fuel rod assembly
- visual and dimensional inspections on a grid for a 15x15 fuel rod assembly performed by an optical scanner
- gas tungsten arc welding of the top nozzle pin on a 15x15 fuel assembly for Turkey Point Nuclear Generating Unit 3

These 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 NRC inspection team implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated January 27, 2017; IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated January 27, 2017; IP36100, "Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance," dated May 16, 2019; and IP 71152, "Problem Identification and Resolution," dated February 26, 2015.

With the exception of the minor issues and nonconformance described below, the NRC inspection team concluded that WEC-CFFF'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 WEC-CFFF's personnel are implementing these policies and procedures effectively. The results of this inspection are summarized below.

### Manufacturing Control

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its manufacturing control program to verify compliance with the regulatory requirements of Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50, and with the applicable requirements of Section V and Section IX of the ASME B&PV Code, and of SNT-TC-1A. The NRC inspection team identified one minor issue and one nonconformance associated with WEC-CFFF's implementation of its manufacturing control program.

During the review of the Level II and Level III NDE personnel training and qualification records, the NRC inspection team noted that some NDE personnel did not have up to date visual examinations for near-vision acuity and color contrast differentiation as required by SNT-TC-1A. In addition, there was no objective evidence of continued satisfactory performance of NDE activities or whether an employee had performed the NDE method for which he/she was certified within the past 6 months. WEC-CFFF initiated Corrective Action Process (CAP) Issue Report (IR) No. No. 2020-731 to address this issue.

The NRC inspection team issued Nonconformance 99900005/2019-201-01 in association with WEC-CFFF's failure to implement the regulatory requirements of Criterion IX of Appendix B to 10 CFR Part 50. Nonconformance 99900005/2019-201-01 cites WEC-CFFF for failing to assure that special processes were controlled and accomplished using qualified procedures in accordance with specifications and acceptance criteria. Specifically, the NRC inspection team noted that there was no shop procedure established for the control of weld filler material and the weld filler material was not being adequately controlled. The NRC inspection team observed weld filler material in at least two work stations in the workshop with either no markings or illegible labels. The weld filler material was on a workshop table exposed to the environment. The NRC inspection team also noted that the weld filler metal material in the work stations was not marked with the heat or lot number and were not the same weld filler material. When asked for the requirements for handling the weld filler metal material, the welder and his supervisor were not aware of any specific procedure. WEC-CFFF initiated CAP IR No. 2020-644 to address these issues.

### Design Control

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its design control program to verify compliance with the requirements of Criterion III, "Design Control," of Appendix B to 10 CFR Part 50. The NRC



inspection team verified that the design and procurement specifications were properly translated into WEC-CFFF's specification sheets, drawings, procedures, data sheets, analyses, and engineering calculations. The NRC inspection team focused their review on the implementation of WEC-CFFF's design control process as applied to the 15x15 Upgrade Zirlo Mid Grid Assembly. No findings of significance were identified.

### Commercial-Grade Dedication

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its commercial-grade dedication program to verify compliance with the requirements of Criterion III and Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed a sample of commercial-grade dedication packages to verify that the commercial-grade dedication process was being adequately implemented. The NRC inspection team also reviewed a sample of commercial-grade surveys and verified they contained the objective evidence necessary to demonstrate adequate control of the critical characteristics. The NRC inspection team identified one minor issue associated with WEC-CFFF's implementation of its commercial-grade dedication program.

During the review of the commercial dedication instruction (CDI) for the nickel alloy brazing paste, the NRC inspection team noted that WEC-CFFF identified "Special Tests and Inspections," and "Supplier/Item Performance Record," as the verification methods for two critical characteristics: fabrication practice and binder confirmation, and traceability and material control. For verification of both critical characteristics, WEC-CFFF was relying on: (1) the supplier's Certified Material Test Report; (2) a letter to file describing the supplier's manufacturing history and a Nuclear Industry Assessment Committee (NIAC) audit performed in 2012; and (3) whether the supplier's International Organization for Standardization 9001, "Quality Management Systems - Requirements," and ASC9100C, "Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations," quality programs are current. The NRC inspection team discovered that WEC-CFFF had not performed any on-site evaluation at the supplier's facility since 2012 to verify that was still adequately controlling the critical characteristics described above and WEC-CFFF had not verified whether the supplier had made any changes to the quality programs that were reviewed during the NIAC audit in 2012. WEC-CFFF initiated CAP IR No. 2020-647 to address this issue.

### Supplier Oversight

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its supplier oversight program to verify compliance with the requirements of Criterion IV, "Procurement Document Control," and Criterion VII of Appendix B to 10 CFR Part 50. The NRC inspection team also reviewed a sample of purchase orders (POs) and confirmed that the POs contained the applicable technical and regulatory requirements. In addition, the NRC inspection team reviewed a sample of supplier audit reports and confirmed that the supplier audits were performed by qualified individuals using checklists and/or procedures, the checklists and/or procedures included an audit plan, documented objective evidence, audit results, and a review of audit results by responsible management. The NRC inspection team identified one minor issue associated with WEC-CFFF's implementation of its supplier oversight program.

The NRC inspection team identified that as part of several supplier audits, WEC-CFFF was verifying the suppliers' implementation of their 10 CFR Part 21 programs. However, the audit

checklists did not provide sufficient objective evidence to support the conclusion that these suppliers had implemented an adequate 10 CFR Part 21 program. WEC-CFFF initiated CAP IR No. 2020-715 to address this issue.

### Test Control

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the test control program to verify compliance with the requirements of Criterion XI, "Test Control," of Appendix B to 10 CFR Part 50. The NRC inspection team observed corrosion testing of grid welds and confirmed the testing was performed in accordance with WEC-CFFF's test procedures by qualified test personnel using calibrated measuring and test equipment (M&TE), and that the test was independently verified by a Quality Control inspector. No findings of significance were identified.

### Control of Measuring and Test Equipment

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the control of 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 NRC inspection team observed that M&TE was calibrated, labeled, tagged, handled, stored, or otherwise controlled to indicate the calibration status and its traceability to nationally recognized standards. In addition, the NRC inspection team confirmed that when M&TE is found to be out of calibration, WEC-CFFF initiated an Electronic Problem Notice (EPN) (i.e., nonconformance report) and performed an evaluation to determine the extent of condition. No findings of significance were identified.

### Nonconforming Material, Parts, or Components and Corrective Action

The NRC inspection team reviewed WEC-CFFF's policies and procedures that govern the implementation of its nonconforming materials, parts or components and corrective action programs to verify compliance with the regulatory requirements of Criterion XV, "Nonconforming Materials, Parts or Components," and Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed a sample of EPNs and confirmed that they were adequately documented, reviewed, tracked, and dispositioned. The NRC inspection team also reviewed a sample of CAP IRs and confirmed that they were adequately reviewed, implemented, and approved by appropriate personnel in a timely manner. No findings of significance were identified.

In addition, the NRC inspection team reviewed the corrective actions taken by WEC-CFFF to address Notice of Violation (NOV) 99900005/2007-201-01 and Notice of Nonconformance (NON) 99900005/2007-201-02, documented in NRC's inspection report No. 99900005/2007-201, dated September 28, 2007 (Agencywide Documents Access and Management System Accession No. ML072710236). The NRC inspection team reviewed the documentation that provided the objective evidence that all corrective actions were completed and adequately implemented. Based on this review and interviews with WEC-CFFF's staff, the NRC inspection team closed NOV 99900005/2007-201-01 and NON 99900005/2007-201-02.

### 10 CFR Part 21 Program

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its 10 CFR Part 21 program to verify compliance with the

requirements of 10 CFR Part 21. The NRC inspection team: (1) reviewed the 10 CFR Part 21 postings; (2) reviewed a sample of POs; (3) verified that WEC-CFFF's nonconformance and corrective action programs provide a link to the 10 CFR Part 21 program; and (4) reviewed a sample of 10 CFR Part 21 evaluations. No findings of significance were identified.

#### Safety Conscious Work Environment

The NRC inspection team concluded that WEC-CFFF's Safety Conscious Work Environment program and implementation were consistent with NRC's guidance of IP 71152. Based on the focus groups and interviews conducted with random WEC-CFFF's staff within the WEC-CFFF organization, including Managers and Team Leaders, the NRC inspection team determined that WEC-CFFF's staff felt free to raise nuclear, radiological or industrial safety concerns to their supervisors and senior management. WEC-CFFF's staff believed management to be responsive to any concerns identified and that these concerns are adequately resolved. No findings of significance were identified.

## REPORT DETAILS

### 1. Manufacturing Control

#### a. Inspection Scope

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its manufacturing control program to verify compliance with the regulatory requirements of Criterion IX, "Control of Special Processes," 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," and with the applicable requirements of Section V, "Nondestructive Examination," and Section IX, "Welding and Brazing Qualification," of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, and of the American Society for Nondestructive Testing Recommended Practice SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing," 1980 Edition.

It's important to note that the qualification of procedures and personnel for welding and non-destructive examination (NDE) is performed in accordance with Section V and Section IX of the ASME B&PV Code, and SNT-TC-1A, respectively. However, the performance of these welding and NDE activities in production are not required to meet ASME B&PV Code since the fuel assembly components are not considered to be pressure boundary.

The NRC inspection team verified that weld procedure specifications (WPSs) used in welding activities were qualified in accordance with the requirements of Section IX of the ASME B&PV Code, and the applicable procedure qualification records (PQRs). The NRC inspection team also verified that the PQRs met the requirements of Section IX of the ASME B&PV Code. For a sample of completed welding activities, the NRC inspection team verified the routing/shop travelers, WPSs, supporting PQRs, Data Reports, and the calibration certificates of the welding equipment met the applicable technical requirements. The NRC inspection team also reviewed the processes for controlling weld filler material, heat treatment, and cleanliness of fuel rod components to applicable procedures and design specifications.

The NRC inspection team verified that the applicable welding data such as weld material and heat/lot number, WPS, inspection procedures used, and the final inspection results were documented in accordance with the applicable WEC-CFFF procedures and instructions. The welding procedures were documented on the associated traveler for each weld joint along with the applicable NDE results. It should be noted that in-process inspections are documented in the automated electronic version of the traveler and applicable Product Information forms. All applicable information, including drawings, procedures, instructions, and NDE test results are included in the electronic version of the traveler.

For the brazing and heat treatment of a grid assembly, the NRC inspection team verified that the brazing and heat treatment procedures for age hardening were qualified for the Zirlo material. The procedures included the time and temperature values for post weld heat treatment consistent with the grade of the material being heat treated and the thermocouple locations. The NRC inspection team verified that the chart recorder and

the thermocouples used were properly calibrated and that the process implemented the appropriate material traceability controls and identified the heat treatment start time and end time.

The NRC inspection team also discussed the manufacturing control program with WEC-CFFF's management and technical staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observation and Findings

While witnessing gas tungsten arc welding on the top nozzle pins for a 15x15 fuel assembly for Turkey Point Nuclear Generating Unit 3, the NRC inspection team observed weld filler material located on the work table in a small fixture that was open to the environment and not labeled. Upon further evaluation, a label was on the small fixture, but it was not legible. In addition, while walking through another workshop area, the NRC inspection team observed weld filler material on a work table in a small fixture that was not labeled. At this second work station, where the weld filler material is used for welding the spider assembly for the fuel rod assembly, the weld filler material was in a fixture on a workshop table with no markings or labels. The NRC inspection team also noted that the weld filler material in both work stations was not marked with the heat or lot number. Furthermore, because the weld filler material was being kept in an open area in the workshop, no objective evidence existed to determine the heat or lot number for the weld filler material stored in each of the different workstations.

The NRC inspection team noted that Section 5.2 of WEC-CFFF procedure No. QA-608, "Identification, Traceability and Control of Materials, Parts and Components," Revision 12, dated July 18, 2019, states that "When regulatory or customer requirements include traceability of items, procedures are established to provide identification, traceability, and records." Also, Section 5.3 of procedure No. QA-608 states that "Identification markings shall be applied using materials and methods that provide a clear and legible identification and do not degrade the function or usability of the item."

Proper control of weld filler material is necessary to assure that each heat of material is documented in the associated traveler/routing as well as to avoid contamination and the introduction of detrimental material to the final product which could cause degradation (e.g., cracking) that could potentially result in the component not performing its intended safety function.

The NRC inspection team proceeded to ask for the requirements for handling the weld filler material, however, the welder and his supervisor were not aware of any specific procedure. The NRC inspection team noted that Section 4.2 of procedure No. QA-608 states that manufacturing/process/quality engineers shall "Establish procedures and/or routings to establish and verify that identification and control of product materials, parts, components, including final assemblies required by specifications, drawings and specific contract requirements is maintained on the item, and/or by records traceable to the item to preclude use of incorrect or nonconforming items." In addition, Section 4.2 also states that the quality engineer shall "Assure correct identification of items is verified prior to their inspection and acceptance for fabrication, assembly, installation, or packing." Furthermore, Section 4.3 of procedure No. QA-608 states that operations "are responsible to assure that materials, parts, components, and final assemblies are

identified and traced throughout the manufacturing process as indicated in the instructions provided.”

Paragraph 4.5 of WEC’s Quality Management System-A (QMS-A), “Quality Management System,” Revision 7.1, dated December 18, 2019, states that “Procedures are established to specify the methods and extent of identification and traceability of items to ensure that only correct and acceptable items are installed or used in items and services.” In addition, paragraph 4.5.2 of QMS-A states that “Identification of items is maintained, as necessary, to provide confidence that the correct items are used.” Furthermore, paragraph 4.5.3 of QMS-A states that “When regulatory or customer requirements include traceability of items, procedures are established to provide identification, traceability, and records. Items including consumable materials and items identified as having limited calendar, shelf, or operating lives or cycles are traceable and controlled. The loss of identification on traceable items is documented and the items dispositioned in accordance with established procedures.”

Although both WEC QMS-A and WEC-CFFF’s procedure No. QA-608 require that procedures be established for the identification and traceability of material, the NRC inspection team determined that there was no procedure available for the welders and operators to use on the shop floor for handling and controlling weld filler material. WEC-CFFF has not established any procedures or instructions per QMS-A and procedure No. QA-608 for the welders and operators to use in order to establish a process for control filler metal, which includes traceability, cleanliness, and storage. As such, there are no requirements specified for the welders and operators to follow on how to control weld filler material, which could potentially lead to using incorrect or contaminated filler weld material and thereby affecting the quality and structural integrity of the weld.

The NRC inspection team identified these issues as Nonconformance 99900005/2019-201-01 for WEC-CFFF’s failure to assure that special processes were controlled and accomplished using qualified procedures in accordance with specifications and acceptance criteria. WEC-CFFF initiated CAP IR No. 2020-644 to address these issues. The NRC inspection team also brought to WEC-CFFF’s attention that a similar Notice of Nonconformance (NON) was issued to Westinghouse Electric Sweden AB for their failure to adequately control filler weld material. This NON is documented in inspection report No. 99901408/2018-201, dated December 3, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18324A427). While WEC-CFFF was aware of this NON, no action was taken by WEC-CFFF to incorporate this issue as a lessons learned.

During the review of the Level II and Level III NDE personnel training and qualification records, the NRC inspection team noted that some NDE personnel did not have up to date visual examinations for near-vision acuity and color contrast differentiation as required by paragraph No. 8.2 of SNT-TC-1A. Paragraph No. 8.2 states that “All Level II and Level III NDE personnel shall have annual examinations for near-vision acuity and a color contrast differentiation examination every three years to ensure personnel have ability to evaluate and differentiate between various flaws and defects. This includes, but not limited to evaluating ultrasonic scans and images as well as interpreting radiographic film.” Upon further discussions WEC-CFFF’s Level III, he indicated that he did not have up to date eye exams because he does not evaluate final inspection results.

With regards to the responsibilities of a Level III, SNT-TC-1A requires that they be “responsible for the NDT operations for which qualified and assigned and shall be capable of interpreting and evaluating results.” Therefore, the NDE Level III is responsible for the NDE program, including making final inspection evaluations, particularly if there are circumstances where NDE Level II personnel cannot make a determination of a particular flaw. WEC-CFFF procedure QA-008, “Nondestructive Test Certification,” Revision 19, dated October 13, 2019, specified that the visual acuity examination and color differentiation examination is required only for personnel making product acceptance decisions. However, it does not state who makes the final product acceptance, and the NDE qualification records or NDE qualification list does not distinguish which personnel have the ability to make product acceptance evaluations. It should be noted that the NDE Level III stated the automated NDE examination equipment makes the final product acceptance. The NRC inspection team noted that the machines must be calibrated and NDE Level II and Level III personnel must evaluate the test standards and determine if the automated NDE equipment are still properly evaluating the products for flaws and defects. As such, visual acuity is necessary for these evaluations and for interpreting radiographic film. In addition, there is no objective evidence of continuing satisfactory performance of NDE activities on whether an employee has performed the NDE method for which he/she is certified within the past 6 months. Procedure No. QA-008 also does not state how this objective evidence is to be established or maintained to validate that the NDE personnel are still qualified for each of the NDE methods.

The NRC inspection team determined these issues to be minor because there were no issues identified with the quality and workmanship of the NDE reviewed. WEC-CFFF initiated CAP IR No. 2020-731 to address these issues.

c. Conclusion

The NRC inspection team issued Nonconformance 99900005/2019-201-01 in association with WEC-CFFF’s failure to implement the regulatory requirements of Criterion IX of Appendix B to 10 CFR Part 50. Nonconformance 99900005/2019-201-01 cites WEC-CFFF for failing to assure that special processes were controlled and accomplished using qualified procedures in accordance with specifications and acceptance criteria. Specifically, the NRC inspection team noted that there was no shop procedure established for the control of weld filler material and the weld filler material was not being adequately controlled.

2. Design Control

a. Inspection Scope

The NRC inspection team reviewed WEC-CFFF’s policies and implementing procedures that govern the implementation of its design control program to verify compliance with the regulatory requirements of Criterion III, “Design Control,” of Appendix B to 10 CFR Part 50. The NRC inspection team focused its review on the implementation of WEC-CFFF’s design control process as applied to the 15x15 Upgrade Zirlo Mid Grid Assembly.

The NRC inspection team reviewed manufacturing and quality plan No. PO-GRZR04, “Zirconium Alloy Grid MAQP Manufacturing and Quality Plan,” Revision 52, dated May

21, 2019, developed for the 15x15 Upgrade Zirlo Mid Grid Assembly for an Indian Point Nuclear Generating Unit 3 grid. PO-GRZ04 contains the step by step instructions used to build the grid and identifies the inspection steps followed by WEC-CFFF to ensure the grid is being manufactured to the design specifications. A manufacturing and quality plan exists for each individual component manufactured by WEC-CFFF. The component number, date and time stamp, and inspection results are documented by the operator who completed the inspection. Specifically, the NRC inspection team verified that the results of the laser weld inspection were adequately documented. The results are entered into a database, which interacts with WEC-CFFF's training and qualification database and only allows qualified staff to sign for an acceptable weld and to move to the next step in the process. The NRC inspection team verified that the results from the laser weld inspection met the requirements from the design specifications.

The NRC inspection team also discussed the design control process, including design changes, with WEC-CFFF staff. The NRC inspection team confirmed that (1) the appropriate technical requirements and quality standards were specified and included in design documents and drawings; (2) independent verifications and checks were integrated into the process and were being performed, and (3) design changes were being adequately controlled and implemented in accordance with WEC-CFFF's applicable procedures.

The NRC inspection team also discussed the design control program with WEC-CFFF's 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-CFFF was implementing its design control program 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 NRC inspection team also determined that WEC-CFFF was implementing its policies and procedures associated with the design control program. No findings of significance were identified.

3. Commercial-Grade Dedication

a. Inspection Scope

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its commercial-grade dedication program to verify compliance with the regulatory requirements of Criterion III and Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed a sample of commercial-grade dedication packages for safety-related fuel assembly components, testing services, and consumable calibration standards. The commercial-grade dedication packages contained purchase orders (POs), commercial-grade surveys, commercial-grade dedication instructions



(CDIs), receiving inspection records, inspection instructions, and certificates of quality. The NRC inspection team evaluated the criteria for the identification of item functions, credible failure mechanisms/modes, selection of critical characteristics and acceptance criteria, sampling plans, and the identification of verification methods to verify effective implementation of WEC-CFFF's commercial-grade dedication process. In addition, the NRC inspection team verified that commercial-grade surveys contained the objective evidence necessary to demonstrate adequate control of the critical characteristics. The NRC inspection team also discussed the commercial-grade dedication program with WEC-CFFF's management and technical staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

During the review of the CDI for the nickel allow brazing paste used as part of the manufacturing of the grid and spider assemblies, documented in CDI No. CDI-MFRD-14-11, Revision 1, dated May 24, 2016, the NRC inspection team noted that WEC-CFFF identified "Special Tests and Inspections," and "Supplier/Item Performance Record," as the verification methods for two critical characteristics: fabrication practice and binder confirmation, and traceability and material control.

For the verification of the fabrication practice and binder confirmation critical characteristic, WEC-CFFF's special tests and inspections consisted of a review of the commercial supplier's Certified Material Test Report (CMTR) during receipt inspection to confirm that the melting and atomization process used in the manufacturing of the powder and the binder met WEC-CFFF's technical requirements. In addition, WEC-CFFF's relied on a letter to file written on February 25, 2014, as the documented evidence used to support verification of the item's performance record. This letter briefly describes the supplier's manufacturing history and refers to an audit performed by the Nuclear Industry Assessment Committee (NIAC) in 2012, which concluded that the supplier's quality program was being adequately implemented with regards to the fabrication process.

For the verification of the traceability and material control critical characteristic, WEC-CFFF's special tests and inspection consisted of a review of the supplier's CMTR during receipt inspection to ensure that the supplier's International Organization for Standardization (ISO) 9001, "Quality Management Systems - Requirements," and ASC9100C, "Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations," were current. In addition, WEC-CFFF relied on the same letter described above, which also concluded that the supplier's quality program was being adequately implemented with regards to traceability and material control.

Upon further discussions with WEC-CFFF staff, the NRC inspection team learned that WEC-CFFF had not performed any on-site evaluation at the supplier's facility since 2012 to verify that it was still adequately controlling the critical characteristics described above as part of the fabrication process of the brazing paste. In addition, WEC-CFFF had not verified since 2012 whether the supplier had made any changes to the quality programs that were reviewed during the NIAC audit in 2012.

The NRC inspection team determined this issue to be minor because an investigation performed by WEC-CFFF revealed that there has been only one nonconformance identified with the brazing paste since 2014. This nonconformance had no effect on the

brazing paste and it was adequately dispositioned by WEC-CFFF at the time it was identified. WEC-CFFF initiated CAP IR No. 2020-647 to address this issue.

c. Conclusion

With the exception of the minor issue identified above, the NRC inspection team concluded that WEC-CFFF was implementing its commercial-grade dedication program in accordance with the regulatory requirements of Criterion III and Criterion VII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC-CFFF was implementing its policies and procedures associated with the commercial-grade dedication program. No findings of significance were identified.

4. Supplier Oversight

a. Inspection Scope

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its supplier oversight program to verify compliance with the requirements of Criterion IV, "Procurement Document Control," and Criterion VII of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed the qualified suppliers list (QSL), a sample of supplier audits, and the most recent POs for these suppliers. For the sample of POs reviewed, the NRC inspection team verified that the POs included, as appropriate: the scope of work, right of access to facilities, and extension of contractual requirements to sub-suppliers. The NRC inspection team also confirmed that the POs adequately invoked the applicable technical, regulatory, and quality requirements.

WEC-CFFF is a member of NIAC, which consists of companies who supply goods and services to the nuclear industry based on a quality program that meets the requirements of Appendix B to 10 CFR Part 50 or NQA-1, "Quality Assurance Requirements for Nuclear Facility Applications," and accept 10 CFR Part 21. NIAC develops and maintains procedures and processes necessary to plan, guide, and share supplier audits with its members. WEC-CFFF uses NIAC audits to support the qualification and maintenance of suppliers. Once a NIAC audit is received, WEC-CFFF's Quality Assurance (QA) Manager reviews the audit for completeness and adequacy, evaluates the audit report in accordance with WEC-CFFF's QA program and the appropriateness of the scope, and approves the audit report as the basis for including the vendor on the QSL.

For a sample of supplier audits reviewed, the NRC inspection team verified the audit reports included an audit plan, any findings identified, adequate documented objective evidence of compliance with the applicable requirements, and a review by WEC-CFFF's responsible management. In addition, the NRC inspection team also verified that the supplier audits were performed by a qualified auditor. Furthermore, the NRC inspection team reviewed a sample of training and qualification records of WEC-CFFF's lead auditors and confirmed that auditing personnel had completed all the required training and had maintained the applicable qualification and certification in accordance with WEC-CFFF's policies and procedures.

The NRC inspection team also discussed the supplier oversight program with WEC-CFFF's management and technical staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

During the review of a sample of supplier audit reports of safety-related components and services, the NRC inspection team noted that as part of the audits, WEC-CFFF was also verifying the suppliers' implementation of their 10 CFR Part 21 programs. However, the NRC inspection team noted that the audit checklists did not provide sufficient objective evidence to support the conclusion that these suppliers had implemented an adequate 10 CFR Part 21 program. The objective evidence provided in the checklists seemed to suggest that these suppliers would notify WEC-CFFF of any nonconformances and then WEC-CFFF would perform the required 10 CFR Part 21 evaluations and notifications, as applicable.

The NRC inspection team determined this issue to be minor because (1) by 10 CFR Part 21, WEC-CFFF is not required to verify the implementation of a supplier's 10 CFR Part 21 program, and (2) WEC-CFFF required the suppliers to notify them of any nonconformances. WEC-CFFF initiated CAP IR No. 2020-715 to address this issue.

c. Conclusion

With the exception of the minor issue identified above, the NRC inspection team concluded that WEC-CFFF was implementing its supplier oversight program in accordance with the regulatory requirements of Criterion IV and Criterion VII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC-CFFF was implementing its policies and procedures associated with the supplier oversight program. No findings of significance were identified.

5. Test Control

a. Inspection Scope

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its test control program to verify compliance with the requirements of Criterion XI, "Test Control," of Appendix B to 10 CFR Part 50.

The NRC inspection team observed corrosion testing of grid welds. This testing required grid weld specimens and control rod pieces to be bathed in an autoclave at high temperature and pressure for a pre-determined amount of time. The NRC inspection team observed the test technician prepare the specimens for insertion in the autoclave and observed the removal per test procedure No. QCI-108857, "Autoclave Operating Procedure for Aqueous Corrosion Testing," Revision 42, dated February 14, 2019. The NRC inspection team observed the visual inspection of the specimens and confirmed that the inspection was performed in accordance with QCI-108857. In addition, the NRC inspection team verified the results were documented in accordance No. procedure QCI-108819, "Corrosion Evaluation and Disposition Practices," Revision 88, dated October 20, 2016.

The NRC inspection team discussed the test control program with WEC-CFFF's 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-CFFF was implementing its test control program in accordance with the regulatory requirements of Criterion XI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC-CFFF was implementing its policies and procedures associated with the test control program. No findings of significance were identified.

6. Control of Measuring and Test Equipment

a. Inspection Scope

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its 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, the NRC inspection team determined that the M&TE had the appropriate calibration stickers 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 prior to use. In addition, the calibration records reviewed by the NRC inspection team indicated the as-found or as-left conditions, accuracy required, calibration results, calibration dates, 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. The NRC inspection team also verified that when M&TE equipment is found to be out of calibration, WEC-CFFF generates an Electronic Problem Notice (EPN) (i.e., nonconformance report) to identify items that have been accepted using this equipment since the last valid calibration date and to perform an extent of condition review.

The NRC inspection team also discussed the M&TE program with WEC-CFFF's 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-CFFF was 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-CFFF was implementing its policies and procedures associated with the M&TE program. No findings of significance were identified.

## 7. Nonconforming Materials, Parts, or Components and Corrective Action

### a. Inspection Scope

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its nonconforming materials, parts, or components and corrective action programs to verify compliance with the requirements of Criterion XV, "Nonconforming Materials, Parts, or Components," and Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50.

The NRC inspection team also reviewed a sample of EPNs to verify that WEC-CFFF: (1) dispositioned the EPNs in accordance with the applicable procedures; (2) documented an appropriate technical justification for various dispositions; and (3) took adequate corrective action with regard to the nonconforming items. For EPNs that were dispositioned as use as is, the NRC inspection team confirmed that the technical justifications were documented to verify the acceptability of the nonconforming item. In addition, the NRC inspection team performed a walk down of the segregation areas to verify that nonconforming materials were properly identified, marked, and segregated, when practical, to ensure that they were not reintroduced into the production processes. Furthermore, the NRC inspection team also verified that the EPN process provides a link to the 10 CFR Part 21, "Reporting of Defects and Noncompliance," program.

The NRC inspection team also reviewed a sample of CAP IRs to ensure that conditions adverse to quality were promptly identified and corrected. The NRC inspection team verified the CARs IRs provided: (1) adequate documentation and description of conditions adverse to quality, (2) an appropriate analysis of the cause of these conditions and the corrective actions taken to prevent recurrence, as applicable, (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. In addition, the NRC inspection team verified that WEC-CFFF's CAP IRs provide a link to the 10 CFR Part 21 program. The NRC inspection team observed an Issue Review Committee (IRC) meeting.

In addition, the NRC inspection team reviewed the implementation and closure of the corrective actions taken in response to the Notice of Violation (NOV) and NON documented in the NRC's inspection report No. 99900005/2007-201, dated September 28, 2007 (ADAMS Accession No. ML072710236).

The NRC inspection team also discussed the nonconforming materials, parts, or components and corrective action programs with WEC-CFFF's management and technical staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

### b. Observations and Findings

#### Corrective Action Associated with NOV 99900005/2007-201-01

Following the September 2007 inspection of WEC-CFFF, the NRC issued NOV 99900005/2007-201-01 for WEC-CFFF's failure to adopt adequate and consistent procedures to ensure that deviations were consistently identified and dispositioned in accordance with procedure WEC-21.0, "Identification and Reporting of Conditions Adverse to Safety." Specifically, WEC-CFFF allowed a procedural process gap that did not adequately review discrepancies related to design, fabrication, and purchasing documentation, to exist in its facility procedures regarding nonconforming issues that could prevent a 10 CFR Part 21 evaluation from being performed.

In its response dated October 19, 2007 (ADAMS Accession No. ML073040295), WEC-CFFF stated that procedure No. QA-617, "Processing an Electronic Problem Notice (EPN)," Revision 16, was revised to include additional criteria for when to create a CAP issue. The list of criteria includes deviations: (1) that are the result of an error in the details provided in a design document or require design engineering evaluation; (2) that are the result of an error in the details provided in a fabrication document; and (3) in the details of a purchasing document that results in non-conforming product.

The NRC inspection team reviewed the documentation that provided the objective evidence for the completion of the corrective actions. The NRC inspection team confirmed that procedure No. QA-617, which was up to Revision 40, was revised at that point in time to include the criteria listed above. Based on its review, the NRC inspection team closed NOV 99900005/2007-201-01.

No findings of significance were identified.

#### Corrective Action Associated with NON 99900005/2007-201-02

Following the September 2007 inspection of WEC-CFFF, the NRC issued NON 99900005/2007-201-02 for WEC-CFFF's failure to assure that the applicable regulatory and QA requirements were imposed on the supplier of the top nozzle leaf spring. Specifically, WEC-CFFF did not assure that procedure No. QCS-1/PF102, "Supplier Quality System Requirements, Level 1," dated October 18, 2007, referenced in procurement document No. SQAR-1013135, "Nuclear Fuel Supplier Quality Assurance Requirement Summary," Revision 2, delineated a specific QA program. The document failed to identify the correct year and addendum of the ASME standard NQA-1, Part 1 (i.e., not all versions of NQA-1 had been endorsed and/or approved by the NRC at that time).

In its response dated October 19, 2007 (ADAMS Accession No. ML073040295), WEC-CFFF stated that procedure QCS-1/PF102 was revised to incorporate Part 1 of the approved NQA-1994 Edition where reference is made to NQA-1.

The NRC inspection team reviewed the documentation that provided the objective evidence for the completion of the corrective actions. The NRC inspection team confirmed that procedure No. QCS-1/PF102 was revised at that point in time to incorporate Part 1 of the NQA-1994 Edition. However, the NRC inspection team learned that procedure QCS-1/PF-102 was revised in 2014 and is no longer used for procurement of nuclear safety-related components. Based on the review of a sample of POs, the NRC inspection team confirmed that WEC-CFFF is adequately imposing the

technical and quality requirements in POs. Based on its review, the NRC inspection team closed NON 99900005/2007-201-02. No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that WEC-CFFF was implementing its nonconforming materials, parts, or components and corrective action programs in accordance with the regulatory requirements of Criterion XV and Criterion XVI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC-CFFF was implementing its policies and procedures associated with the control of nonconforming materials, parts, or components and corrective action. No findings of significance were identified.

8. 10 CFR Part 21 Program

a. Inspection Scope

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its 10 CFR Part 21 program to verify compliance with the regulatory requirements. In addition, the NRC inspection team evaluated the 10 CFR Part 21 postings and a sample of WEC-CFFF'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." The NRC inspection team also verified that WEC-CFFF's nonconformance and corrective action procedures provide a link to the 10 CFR Part 21 program. Furthermore, for a sample of 10 CFR Part 21 evaluations performed by WEC-CFFF, the NRC inspection team verified that WEC-CFFF had effectively implemented the requirements for evaluating deviations and failures to comply.

The NRC inspection team also discussed the 10 CFR Part 21 program with WEC-CFFF's 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-CFFF was 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 NRC inspection team also determined that WEC-CFFF was implementing its policies and procedures associated with the 10 CFR Part 21 program. No findings of significance were identified.

9. Safety Conscious Work Environment

a. Inspection Scope

The NRC inspection team reviewed WEC-CFFF's policies and implementing procedures that govern the implementation of its safety conscious work environment (SCWE) program. The NRC inspection team interviewed a total of 44 personnel, including 12 on second shift, and 18 managers and team leaders regarding the SCWE at WEC-CFFF. Across the board, all WEC-CFFF staff interviewed feel free to raise nuclear, radiological or industrial safety concerns through all avenues. WEC-CFFF's staff interviewed indicated that safety is always reinforced in all meetings, pre-job briefs, and all aspects of business at the WEC-CFFF site. In addition, none of the WEC-CFFF staff interviewed were aware of any situations which could make them hesitate to raise safety concerns to their supervisors or WEC-CFFF upper management. WEC-CFFF recently instated an Employee Concerns Program which is viewed very favorably by the entire organization. The Site Vice-President (VP) has integrated safety into the organization in many ways, including hiring a new management team who are aligned with his vision.

The NRC inspection team learned of some concerns with perceived production pressure from the Brookfield organization, who recently acquired Westinghouse Electric Company (WEC). Brookfield's acquisition of WEC has resulted in implementing a "lean manufacturing" concept of work processes and practices to alleviate financial strain. The NRC inspection team heard several concerns about the emphasis on becoming more "lean." Some of the WEC-CFFF staff interviewed were concerned with Brookfield's emphasis on decreasing the previous standard number of people on each shift, which might increase the frequency of risky work scenarios. However, while they did not feel that there has been an undue emphasis on production over safety, they do feel pressure to do work in a more streamlined manner, which they perceive can potentially put them in a riskier situation.

The NRC inspection team also discussed the SCWE program with WEC-CFFF's 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-CFFF's staff appear to be comfortable raising and pursuing issues with their supervisors and WEC-CFFF upper management. As such, the NRC inspection team determined that the SCWE at WEC-CFFF was adequate.

10. Entrance and Exit Meetings

On January 13, 2020, the NRC inspection team discussed the scope of the inspection with Mr. Michael Annacone, Plant Manager and Site VP, and other members of WEC-CFFF's management and technical staff. On January 16, 2020, the NRC inspection team presented the inspection results and observations during an exit meeting with Ms. Annette Pope, Director of Organizational Effectiveness, and other members of WEC-CFFF'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 NRC inspection team interviewed.



## ATTACHMENT

### 1. ENTRANCE/EXIT MEETING ATTENDEES

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>	<b>Entrance</b>	<b>Exit</b>	<b>Interviewed</b>
Michael Annacone	Site Vice-President & Plant Manager	Westinghouse Electric Company (WEC)	X		X
Annette Pope	Organizational Effectiveness Director	WEC	X	X	X
Edward L. Wills, Jr.	Global Quality, Environmental, Health & Safety Director	WEC		X	
Todd Wigley	Product Assurance Manager	WEC	X	X	X
H. Allen Pearce	Grid & Core Component Design Manager	WEC	X		X
Andrew Atwood	Materials & Fuel Rod Design Manager	WEC		X*	
Kathy A. Merritt	Customer Support & Quality Program Manager	WEC	X	X	X
Dave Neal	Regulatory Programs Manager	WEC	X		
Alex Chuler	Mechanical Operations Manager	WEC	X	X	X
Roy Stutts	Chemical Operations Manager	WEC	X		
Chris Waldraff	Mechanical Quality Control (QC) Manager	WEC	X		

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>	<b>Entrance</b>	<b>Exit</b>	<b>Interviewed</b>
Dave Hildebrandt	Non-Destructive (NDE) Level III Examination Engineering Manager	WEC	X	X	X
Chad Hasychak	Product Assurance Engineering Manager	WEC	X	X	
Sherry Jackson	Product Assurance Manager	WEC			X
Michael J. Stefanchik	Supplier Quality Director	WEC		X*	X
Watson Occilien	Senior Quality Engineer	WEC		X*	
Demetrice Chioholm	Team Manager	WEC			X
Caroline Janzen	Corrective Action Program Lead	WEC	X		
Diandre Spell	Lead Planner	WEC	X		
Darlene Giden	Team Coordinator	WEC			X
Watson Occilien	Supplier Quality Oversight	WEC	X		
Lucinda Pitts	Quality Program & Customer Support	WEC	X	X	
Stephanie Jeffcoat	Customer Support Specialist	WEC	X	X	X
Phil Hazlett	QHES Engineer	WEC	X	X	X
Robert Jackson	Product Assurance Engineer	WEC	X		

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>	<b>Entrance</b>	<b>Exit</b>	<b>Interviewed</b>
Tina Robertson	Product Assurance Engineer	WEC	X	X	X
Robert Maurer	Supplier Performance Engineer	WEC			X
Andrew Polatty	Grids Product Engineer	WEC			X
Brent Jeffcoat	Laboratory Engineer	WEC	X		
David Huegel	Design Engineer	WEC			X
Byron Frank	Software Control Engineer	WEC			X
Martin Roof	QC Inspector	WEC			X
Isaac Frierson	QC Inspector	WEC			X
Amber Woods	QC Inspector	WEC			X
Donald Soflay	QC Inspector	WEC			X
David Taylor	QC Inspector	WEC			X
Keith Padgett	QC Inspector	WEC			X
Jeff Smith	NDE Level II	WEC			X
Troy Golf	Welding Operator	WEC			X
Jackie Shiver	Welder	WEC			X
Rodrick Bethune	Brazer and Heat Treatment Operator	WEC			X
Yamir Diaz-Castillo	Inspection Team Leader	Nuclear Regulatory Commission (NRC)	X	X	
Andrea Keim	Inspector	NRC	X	X	
Molly Keefe-Forsyth	Inspector	NRC	X	X	
Diana Woodyatt	Inspector	NRC	X	X	

Name	Title	Affiliation	Entrance	Exit	Interviewed
John Honcharik	Inspector	NRC	X	X	
Kerri Kavanagh	Branch Chief	NRC		X	
Jonathan Ruille	Observer	French Nuclear Safety Authority (ASN)	X	X	
Rafaello Amorosi	Observer	ASN	X	X	
Brice Delime	Observer	ASN	X	X	

\*by phone

## 2. INSPECTION PROCEDURES USED

Inspection Procedure (IP) 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance," dated May 16, 2019.

IP 43002, "Routine Inspections of Nuclear Vendors," dated January 27, 2017.

IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated January 27, 2017.

IP 71152, "Problem Identification and Resolution," dated February 26, 2015.

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

Item Number	Status	Type	Description
99900005/2007-201-01	CLOSED	Notice of Violation	10 CFR Part 21
99900005/2007-201-02	CLOSED	Notice of Nonconformance (NON)	Criterion IV
99900005/2019-201-01	OPENED	NON	Criterion IX

## 4. DOCUMENTS REVIEWED

### Policies and Procedures

- Westinghouse Electric Company (WEC) Quality Management System-A, Revision 7.1, dated December 18, 2019
- Business Management System (BMS) - Employee Concerns Program (ECP) No. BMS-ECP-1, "Employee Concerns Program Procedure," Revision 0, dated June 30, 2019

- BMS-ECP-2, "Employee Concerns Board (ECB) Procedure," Revision 0, dated June 30, 2019
- BMS - Human Resources (HR) - 68, "Workplace Standards Policy," Revision 3.1, dated September 23, 2019
- BMS - Nuclear Safety Culture (NCS) -1, "Maintaining a Positive Nuclear Safety Culture (NSC) and Safety Conscious Work Environment (SCWE) Procedure," Revision 2, dated February 5, 2019
- BMS-NSC-2, "Nuclear Safety Culture (NSC) Monitoring Procedure," Revision 2.1, dated April 23, 2019
- BMS-NSC-3, "Nuclear Safety Culture Surveys and Assessments," Revision 4, dated February 11, 2019
- BMS - Legal - 92, "Ethics and Concerns Reporting and Investigations Policy," Revision 2, dated October 1, 2019
- CA-007, "Corrective and Preventive Action," Revision 43, dated April 18, 2019
- CA-204, "Deviation Disposition," Revision 27, dated December 5, 2019
- EP-404, "Fuel Engineering Procedure," Revision 42, dated September 27, 2019
- EP-409, "Documentation of Safety-Related Characteristics and Acceptance Methods for Procurement from Suppliers Not Meeting 10 CFR 50 Appendix B, and ASME NQA-1," Revision 1.5, dated September 27, 2010
- EPF-409-1, "Commercial Dedication Instruction Form," Revision 5 (no date available)
- NF 7.2.1, "Commercial Dedication in NF&CM," Revision 0, dated June 19, 2015
- MOP-710808, "Laser Weld Components," Revision 86, dated August 16, 2018
- MOP-730804, "Assemble Top Nozzle Springs and Clamps," Revision 140, dated August 22, 2019
- MOP-735004, "View and Inspect Grids," Revision 35, dated January 9, 2020
- QA-604, "Equipment and Process Qualifications and/or Verifications," Revision 43, dated December 19, 2019
- QA-006, "Computer Software Quality Assurance," Revision 48, dated December 19, 2019
- QA-008, "Nondestructive Test Certification," Revision 19, dated October 13, 2019

- QA-609, "Control of Special Processes," Revision 12, dated January 4, 2007
- QA-011, "Inspection Systems Software Development Process," Revision 7, dated January 17, 2019
- QA-612, "Control of Inspection, Measuring, and Test Equipment," Revision 10, dated November 14, 2019
- QA-615, "Control of Nonconforming Product," Revision 29, dated January 10, 2019
- QA-617, "Processing an Electronic Problem Notice (EPN)," Revision 40, dated June 27, 2019
- QA-627, "Managing Visual Inspection Standards," Revision 4, dated June 1, 2017
- QA-629, "Procurement of Calibration Standards," Revision 3, dated April 4, 2019
- Quality Control Instructions (QCI)-000210, "Receiving Inspection," Revision 22, dated December 5, 2019
- QCI-108819, "Corrosion Evaluation and Disposition Practices," Revision 88, dated October 20, 2016
- QCI-108839, "Determination of Weight Gain of Corrosion Tested Coupons and Parts," Revision 34, dated November 25, 2015
- QCI-108557, "Autoclave Operating Procedure for Aqueous Corrosion Testing," Revision 42, dated February 14, 2019
- QCI-922102, "Fuel Rod Automated In-Line Helium Leak Test," Revision 55, dated March 16, 2017
- QCI-920103, "Ultrasonic Inspection of Fuel Rod Welds," Revision 96, dated December 30, 2018
- QCI-935054, "Laser Welded Grid - D&V Inspection," Revision 158, dated October 18, 2019
- QCI-938004, "15 x 15 Top Nozzle Assembly Inspection," Revision 144, dated September 21, 2017
- SCM-203, "Control of Purchased Items or Services," Revision 10, dated May 23, 2019
- W2-5.1-101, "Westinghouse Corrective Action Program Procedure," Revision 7, dated July 1, 2019
- W2-5.1-201, "Identification and Reporting of Conditions Adverse to Quality," Revision 1, dated May 10, 2019

- W2-5.1-101.F01, "Corrective Action Program Issue," Revision 4, dated July 1, 2019
- W2-5.1-101.J05, "Root Cause Analysis Handbook," Revision 0.1, dated November 22, 2019
- W2-5.1-201.W01, "Safety Review Committee Staff Work Instruction," Revision 1, dated May 10, 2019
- W2-5.1-101.W03, "Issue Review Committee Work Instruction," Revision 1, dated November 22, 2019
- W2-5.1-101.W08, "Corrective Action Review Board Work Instruction," Revision 1, dated November 22, 2019
- W2-8.4-100, "Verification and Validation Process," Revision 1, dated September 6, 2016
- W2-8.4-101, "Design Review," Revision 3, dated October 17, 2017
- W2-8.4-102, "Design Document Verification," Revision 1, dated June 12, 2018
- W2-8.4-103, "Design Testing," Revision 1, dated November 6, 2018
- W2-8.4-104, "Design Qualification," Revision 1, dated August 15, 2017
- W2-8.4-105, "Sign and Seal of Engineering Documents," Revision 1, dated April 17, 2018
- W2-8.5-100, "Design Change Control Process," Revision 0, dated August 15, 2016
- W2-8.5-101, "Design Configuration Control," Revision 1, dated December 5, 2017
- W2-8.5-105, "Customer Notification Made Via Nuclear Safety Advisory Letters, Technical Bulletins, and Infograms," Revision 0.2, dated May 16, 2017
- W2-9.5-102, "Commercial Dedication Process," Revision 1, dated October 17, 2016
- W2-9.5-106, "Supplier Corrective Action Request Process," Revision 0, dated September 30, 2016
- W2-9.7-102, "Special Processes," Revision 1, dated June 12, 2018
- W2-9.8-100, "Control of Inspection, Measuring & Test Equipment," Revision 1, dated December 13, 2016
- W2-9.14-100, "Control of Nonconforming Process Outputs, Products, and Services," Revision 2, dated February 27, 2018

### Design and Commercial-Grade Dedication Records

- Product Information Form (PIF)-0027, "Laser Welded Grids," Revision 0, dated February 11, 2010
- PIF-0271, "Laser Weld Grids 10043E68 PS-WELD-01 for 15x15 Upgrade," Revision 1, dated March 1, 2018
- PIF-0653, "Furnace Times and Temperature for Combined Braze and Age for Standard Westinghouse Grids," Revision 1 (no date available)
- Process Specification PO-GRZR04, "Zirconium Alloy Grid MAQP Laser Welding of Grid Sleeves," dated May 17, 2019
- Process Specification PO-NOZT00, "Top Nozzle Manufacturing and Quality Plan," Revision 29, dated April 29, 2010
- QAF-004-4, "Decision Checklist and Approval Form: Verification Report for Inspection Process View U (0070739U) (CFFF-PA-19-010)," Revision 4, dated July 15, 2010
- QAF-006-1-19-056, "Software Verification and Validation Decision," Revision 20, dated January 19, 2017
- Quality Control Product Information Form (QCPIF)-0649, "UT1 and 2 Standard Identification," Revision 4, dated September 11, 2019
- Sketch No. 730804-58, "Top Nozzle ASSY 10006E63-WIN 15 x 15," Revision 1, dated September 11, 2014
- Sketch 920109, "17x17 Optimized Fuel Rod Inspection Requirements for UT2," Revision 0, dated August 7, 2017
- Visual Quality Standard-0089, "Visual Quality Standard (VQS) for UT 1 and 2, 17OPT," Revision 0, dated May 14, 2019
- WEC Drawing No. 10043E68, "15x15 Upgrade Zirlo Mid Grid Assembly," Revision 3, dated November 11, 2019

### Calibration, Non-Destructive Examination, Welding, Inspection and Test Records

- Certificate of Calibration No. PTCT-GM1a for a thermocouple, dated September 30, 2019
- Certificate of Calibration No. TC4205 for a temperature controller, dated January 6, 2020
- Certificate of Calibration No. TVR4205 for a temperature/vacuum recorder, dated January 6, 2020



- Certificate of Calibration No. CM16580 for a moisture analyzer, dated April 12, 2020
- Certificate of Calibration No. QC28083 for a furnace profile, dated October 25, 2019
- Certificate of Calibration No. QC27952 for a Helium leak standard, dated November 14, 2019
- Certificate of Calibration No. QC11535 for the autoclave (no date available)
- Commercial Dedication Instruction (CDI)-Q&CI-14-018, "Dedication Data Sheet for Calibration Item - Standard Solution," dated November 12, 2018
- CDI-MFRD-14-11, "Commercial Dedication Instruction - Nickel Alloy Brazing Paste," Revision 1, dated May 24, 2016
- CDI-GCCD-14-55, "Commercial Dedication Instruction - Liquid Penetrant Testing," Revision 1, dated February 21, 2018
- CDI-MFRD-15-103, "Commercial Dedication Instruction - Laboratory Services," Revision 1, dated August 17, 2016
- CDI-MFRD-14-148, "Dedication Data Sheet - Integral Fuel Burnable Absorber Target," dated December 8, 2014
- MFRD-14-12, Letter to file for Qualification of Vendor to Produce Braze Paste, dated February 25, 2014
- PS-WELD01, "Automatic Autogenous Direct Current Gas Tungsten Arc Welding of Zirconium, Hafnium or Stainless Steel Alloys," Revision 24, dated May 9, 2006
- PQR No. 0047002, "Girth Weld Qualification Report for 17x17 STD/OPT Grooved End Plugs," Revision 3, dated December 15, 1994
- PQR 0070349C, "Qualification Report Laser Grids," Revision 4, dated June 22, 1995
- PQR 0070349C, "Laser 3 Thick Strap Grid Qualification Report," dated January 10, 1996
- PQR 0070349G, "Sleeve and Tab Welds Verification for Lasers," Revision 5, dated October 23, 1996
- PQR 0070349G, "Qualification of Laser Welding Grid C-14 Mid Grid Sleeve and Tab Welds 15x15 Upgrade Mid Grid," dated November 10, 1997
- PQR 0070349U, "Qualification of Laser Welding Grid Sleeve Notch Welds (0.022" inner strap thickness) 15 x 15 Upgrade Mid Grid," dated July 13, 2004

- PQR No. 00411109, "Verification Report for TIG Fuel Rod Girth Welding Of OPT Zirlo," dated February 8, 2007
- PQR NPPD-AP-04-051, "Qualification of Laser Welding of Grid Sleeve Notch Welds," dated July 13, 2004
- PQR NPPD-AP-04-052, "Qualification of Laser Welding of Grid Butt Welds," dated July 13, 2004
- PQR NPPD-AP-04-053, "Qualification of Laser Welding of Grid Intersect Welds," dated July 12, 2004
- Weld Program, "Laser weld QRTN PS-WELD-00," and associated PQR Nos. 0070361, 0070349D, 0070349E, and 0070349N
- Weld Procedure PS-WELD04, "QTRN Nozzle Assembly welds and associated PQR No. 0080165, "TIG Weld Process and Welder Qualification Record" (no date available)

Purchase Orders, Audit Reports, and Commercial-Grade Surveys

- WEC Qualified Suppliers List
- Audit Report No. WES-2018-051, dated April 30, 2018
- Audit Report No. WES-2017-097, dated August 26, 2017
- Audit Report No. WES-2019-058, dated May 20, 2019
- Audit Report No. WES-2017-154, dated January 2, 2018
- Audit Report No. WES-2018-047, dated September 11, 2018
- Audit Report No. WES-2018-113/NIAC 22023, dated July 24, 2018
- Audit Report No. WES-2018-031, dated March 14, 2018
- Purchase Order (PO) No. 4600002636 for enriched boron products, Revision 7, dated January 10, 2020
- PO No. 4160156019 for enriched boron products, Revision 0, dated January 7, 2020
- PO No. 4500166100 for nickel alloy springs, Revision 69, dated December 16, 2019
- PO No. 4500180938 for machining services, Revision 74, dated June 7, 2019
- PO No. 4500402277 for machining services, Revision 106, dated January 9, 2020

- PO No. 4500403145 for stainless steel tubing, Revision 46, dated November 11, 2019
- PO No. 4500403154 for brazing paste, Revision 42, dated November 11, 2019
- PO No. 4500404735 for lock tubes and insert end plugs, Revision 54, dated November 11, 2019
- PO No. 4500414997 for stamping, cutting, and manufacture of die parts, Revision 46, dated October 7, 2019
- PO No. 4500433492 for tubing and gray rod absorber sub-assemblies, Revision 43, dated August 27, 2019
- PO No. 4500663358 for chemical analysis testing, Revision 23, dated October 17, 2019
- PO No. 4500784782 for chemical analysis testing, Revision 0, dated October 15, 2019
- PO No. 4500788688, for non-destructive testing, Revision 0, dated December 9, 2019
- Scheduling Agreement (SA) No. 5500003769 for lock tubes and inserts, Revision 0, dated June 14, 2018
- SA No. 5500003839 for tubing and inserts, Revision 1, dated November 28, 2018
- SA No. 5500003956 for machining services, Revision 1, dated August 5, 2019
- SA No. 5500004007 for tube and lock, Revision 1, dated September 18, 2019
- SA No. 5500004023 for machining services, Revision 0, dated October 7, 2019
- SA No. 5500004029 for brazing paste, Revision 0, dated October 8, 2019
- SA No. 5500004133 for stamping, Revision 0, dated November 14, 2019
- SA No. 5500004199 for springs, Revision 0, dated December 16, 2019
- Supplier Audit/Evaluation Summary (SAES) No. 45798, "Laboratory Services," dated September 10, 2019
- SAES-47639, "Boron Products," dated January 8, 2020
- WES-2018-026, "Commercial Grade Survey Report - Boron Products," dated March 1, 2018

#### 10 CFR Part 21

- Corrective Action Process (CAP) Issue Report (IR) No. 2016-18503, "Fuel Alignment Pin Malcomized Surface Degradation," dated February 10, 2016

- CAP IR No. 2017-16253, “CIF: Nonconforming Weld Wire for Top Nozzles,” dated January 17, 2017
- CAP IR No. 2018-6999, “Legacy Software Bug in ChAMPS,” dated March 8, 2018
- CAPAL Issue ID No. 100366201, “Concerns for Delivered CEAs due to Open Audit Findings,” dated March 4, 2016
- CAPAL Issue ID No. 100360411, “Fuel Alignment Pin Malcomized Surface Degradation,” dated February 10, 2016
- CAPAL Issue ID No. 100443038, “CIF: Nonconforming Weld Wire for Top Nozzles,” dated January 17, 2017
- LTR-SRC-16-41, “Opening Request for PI-16-13, “Control Element Assemblies - Weld Wire Chemistry,”” dated March 21, 2016
- LTR-SRC-16-45, “Opening Request for PI-16-012, “Fuel Alignment Pin Malcomized Surface Degradation,”” dated March 18, 2016
- LTR-SRC-16-56, “Closeout Request for PI-16-13, “Control Element Assemblies - Weld Wire Chemistry,”” dated April 18, 2016
- LTR-SRC-16-58, “Closeout Request for PI-16-012, “Fuel Alignment Pin Malcomized Surface Degradation,”” dated April 19, 2016
- LTR-SRC-17-10, “Opening Request for PI-17-3, “Nonconforming Weld Wire for EdF Top Nozzles,”” dated January 26, 2017
- LTR-SRC-17-20, “Closeout Request for PI-17-3, “Nonconforming Weld Wire for EdF Top Nozzles,”” dated March 7, 2017
- LTR-SRC-18-42, “Opening Request for PI-18-10, “Legacy Software Bug in ChAMPS,”” dated April 11, 2018
- LTR-SRC-18-60, “Closeout Request for PI-18-10, “Legacy Software Bug in ChAMPS,”” dated June 6, 2018

#### Nonconformance Reports

- Electronic Problem Notice (EPN) Nos. 0136156A, 0136186A, 0136266A, 0136272A, 0136284A, 0136291A, 0137889A, 0137979A, 0138019A, 0138020A, 0138021A, 0138096A, 0138100A, 0138113A, 0138119A, 0138141A, 0138142A, 0138305A, 0138330A, 0138076B 0138099B, 01318146A

### Corrective Action Program Issue Reports

- 2018-11689, 2018-15912, 2018-16198, 2018-16275, 2018-16398, 2018-16612, 2018-17338, 2018-17478, 2018-17613, 2018-17755, 2019-1444, 2019-4748, 2019-16137, 2019-16237, 2019-16370, 2019-16376, 2019-16382, 2019-16435, 2019-16709, 2019-16743, 2019-16743, 2019-16989, 2019-17245, 2019-17281, 2019-17387, and 2019-18214

### Corrective Action Program Issue Reports Opened During the NRC Inspection

- 2020-642, "Maintenance Calibration Sticker Error," dated January 15, 2020
- 2020-644, "Nozzle Assembly and Spider Assembly Weld Wire Identification and Control Observations," dated January 15, 2020
- 2020-647, "MFRD-14-12," dated January 15, 2020
- 2020-683, "QCI-920103 Contains Outdated Information Concerning UT Standard IDs," dated January 15, 2020
- 2020-686, "Meeting Requirements for NSCMP not Satisfied," dated January 15, 2020
- 2020-715, "Discrepancies in Suppliers' 10 CFR Part 21 Implementing Procedures," dated January 16, 2020
- 2020-731, "QA-008 Changes," dated January 16, 2020
- 2020-756, "CAP Entre Awareness," dated January 16, 2020
- 2020-757, "SCWE Awareness," dated January 16, 2020

### Training and Qualification Records

- Non-Destructive Examination qualification records for Jamie Pittman for radiographic testing (RT) Level II; Taylor Hinson for ultrasonic testing (UT) Level II; D.E. Pittman for penetrant testing (PT), RT, and UT; Jeff Smith for UT Level II; and David Hildebrandt for UT, PT, RT, and leak testing Level III
- Lead Auditor Qualification Package for Ronald Avrich, dated January 10, 2019
- Lead Auditor Qualification Package for Michael Cox, dated January 25, 2017
- Lead Auditor Qualification Package for Eugene Frioni, dated January 9, 2020
- Lead Auditor Qualification Package for Glennis McNeish, dated January 9, 2020

## Safety Culture and Safety Conscious Work Environment

- Columbia Fuel Fabrication Facility (CFFF) 18-02, "Nuclear Safety Culture Monitoring Panel (NSCMP) Charter," Revision 3, dated February 5, 2018
- CFFF NSC Survey Report, dated October 2018
- CFFF NSC Survey Report, dated October 2019
- CAP IR No. 2018-17942, "CFFF Nuclear Safety Culture (NSC) Survey Recommendations and Action Plan," Revision 0, dated October 22, 2018
- CAP IR No. 2019-16772, "CFFF Nuclear Safety Culture (NSC) Survey Identifies Recommendations for Site Action Plan Development," Revision 0, dated November 11, 2019
- NSCMP Minutes and Report, dated August 10, 2018 and July 30, 2019
- WEC NSC and Human Performance Peer Group Meeting Agenda, dated November 20, 2019