



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

October 27, 2023

Ms. Camille Zozula, Interim Director
Quality Program and Regulatory Compliance
Westinghouse Electric Company, LLC
1000 Westinghouse Dr.
Cranberry Township, PA 16066

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION REPORT OF
WESTINGHOUSE ELECTRIC COMPANY, LLC NO. 99900404/2023-201

Dear Ms. Zozula:

On September 11 – 15, 2023, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Westinghouse Electric Company, LLC's (hereafter referred to as WEC) facility in Cranberry Township, PA. The purpose of this limited-scope routine inspection was to assess WEC's compliance with provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," 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," 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements," and 10 CFR 73.22, "Protection of Safeguards Information: Specific Requirements." The NRC inspection team also inspected a sample of service bulletins and a sample of WEC's initial design of the replacement steam generators for the Surry Power Station. The NRC inspection activities were observed by staff of the Poland National Atomic Energy Agency and the Poland Office of Technical Inspection.

This technically focused inspection specifically evaluated WEC's implementation of safety-related design and engineering services for U.S. nuclear power plants and the Safeguards Information (SGI) program to determine its effectiveness in protecting SGI. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute NRC's endorsement of WEC's overall quality assurance (QA), 10 CFR Part 21, or SGI programs.

Based on the results of this inspection, the NRC inspection team found the implementation of your QA program met the requirements imposed on you by your customers or NRC licensees. No findings of significance were identified.

In accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding" and the NRC's "Rule of Practice," a copy of this letter, its enclosure(s), and your response will be made available electronically for public inspection in the NRC's Public Document Room or from the NRC's document system (ADAMS), accessible at <http://www.nrc.gov/reading-rm/adams.html>.

C. Zozula

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Sincerely,



Zhang, Deanna signing on behalf
of Kavanagh, Kerri

op 10/27/23
Kerri A. Kavanagh, Chief
Quality Assurance and Vendor Inspection Branch
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

Docket No.: 99900404

EPID No.: I-2023-201-0048

Enclosures:
Inspection Report No. 99900404/2023-201
and Attachment

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DATE: October 27, 2023

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NRR-106

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NAME	OAyegbusi	KKavanagh (DZhang for)	
DATE	10/13/2023	10/ 27/2023	

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

Docket No.: 99900404

Report No.: 99900404/2023-201

Vendor: Westinghouse Electric Company, LLC
1000 Westinghouse Dr.
Cranberry Township, PA 16066

Vendor Contact: Ms. Camille Zozula
Interim Director, Quality Program and Regulatory Compliance
Phone: 412-374-2577
Email: zozulact@westinghouse.com

Nuclear Industry Activity: Westinghouse Electric Company, LLC's scope of supply includes design and engineering services for U.S. nuclear power plants.

Inspection Dates: September 11 – 15, 2023

Inspectors: Odunayo Ayegbusi NRR/DRO/IQVB Team Leader
Yamir Diaz-Castillo NRR/DRO/IQVB
Dong Park NRR/DRO/IQVB
Yiu Law NRR/DRO/IQVB Remote

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

EXECUTIVE SUMMARY

Westinghouse Electric Company, LLC
99900404/2023-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a limited-scope routine vendor inspection at the Westinghouse Electric Company, LLC's (hereafter referred to as WEC) facility in Cranberry Township, PA, to verify 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," and 10 CFR Part 21, "Reporting of Defects and Noncompliance," 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements," and 10 CFR 73.22, "Protection of Safeguards Information: Specific Requirements." The NRC inspection team conducted this inspection on-site from September 11 – 15, 2023. There have been various inspections at this facility in the past five years.

This technically-focused inspection specifically evaluated WEC's implementation of the quality activities associated with the design and engineering services being supplied to U.S. nuclear power plants.

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

- Appendix B to 10 CFR Part 50
- 10 CFR Part 21
- 10 CFR Part 73, Sections 21 & 22

During this inspection, the NRC inspection team implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated February 10, 2023; IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated February 10, 2023; IP 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance," dated February 10, 2023, and IP 81811, "Protection of Safeguards Information by Design Certification Applicants and Vendors," dated April 8, 2020.

The NRC inspection team observed the following specific activities:

- Walkdown of the Safeguards Information (SGI) cabinet inventory

The results of this inspection are summarized below.

Inspection Areas

The NRC inspection team determined that WEC established its programs for 10 CFR Part 21, nonconforming material, parts, or components, corrective action, design control, commercial-grade dedication, procurement document control, supplier oversight, internal audits, and SGI in accordance with the applicable regulatory requirements of Appendix B to 10 CFR Part 50, 10 CFR Part 21 and 10 CFR Part 73. Based on the limited sample of documents reviewed and activities observed, the NRC inspection team determined that WEC is implementing its policies and procedures associated with these programs. No findings of significance were identified in these areas.

REPORT DETAILS

1. 10 CFR Part 21 Program

a. Inspection Scope

The U.S. Nuclear Regulatory Commission (NRC) inspection team reviewed Westinghouse Electric Company, LLC's (hereafter referred to as WEC) policies and implementing procedures that govern the implementation of its Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," program to verify compliance with the regulatory requirements. The NRC inspection team evaluated the 10 CFR Part 21 postings and a sample of WEC's purchase orders (POs) to verify 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's nonconformance and corrective action procedures provide a link to its 10 CFR Part 21 program.

Furthermore, for a sample of 10 CFR Part 21 evaluations performed by WEC, the NRC inspection team verified that WEC had effectively implemented the requirements for evaluating deviations and failures to comply. The NRC inspection team verified that the notifications were performed in accordance with the requirements of 10 CFR 21.21, as applicable.

The NRC inspection team also discussed the 10 CFR Part 21 program with WEC's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

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

2. Nonconforming Materials, Parts, or Components and Corrective Action

a. Inspection Scope

The NRC inspection team reviewed WEC'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, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

The NRC inspection team verified that WEC's processes and procedures provide for the identification, documentation, segregation, evaluation, and disposition of nonconforming items. These processes also apply the principles of rework/repair, use-as-is, scrap/salvage, return to vendor, or no defect found.

The NRC inspection team reviewed a sample of Nonconformance Reports (NCRs) and verified that WEC: (1) dispositioned the NCRs in accordance with the applicable procedures; (2) documented an appropriate technical justification for the dispositions; and (3) took adequate corrective action regarding the nonconforming items to prevent recurrence, as appropriate.

The NRC inspection team also reviewed a sample of Corrective Action Reports (CARs) and verified that the CARs contain, as applicable: (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; (3) direction for review and approval by the responsible authority; (4) a description of the current status of the corrective actions; and (5) the actions taken to verify timely and effective implementation of the corrective actions.

The NRC inspection team discussed the nonconformance and corrective action programs with WEC's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that WEC is implementing its nonconformance 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 is implementing its policies and procedures associated with its nonconformance and corrective action programs. No findings of significance were identified.

3. Design Control

a. Inspection Scope

The NRC inspection team reviewed WEC's policies and 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.

WEC was awarded the contract for the supply of six Model 53F replacement steam generators (RSGs) for the Surry Power Station, Units 1 and 2. WEC is responsible for the design, manufacture, assembly, configuration, documentation, inspection, testing, information transfer and delivery of the RSGs. The NRC inspection team reviewed a sample of documents associated with the RSGs including: (1) a sample of POs; (2) technical and quality requirements; (3) the Equipment Supply Agreement; (4) the Project Quality Plan; (5) the Procurement Specifications; (6) the Design Specification; (7) a drawing for the tubesheet

forging; (8) the material specification for the forging; (9) and the overall Project Execution Plan. WEC is currently in the early stages of the design process of the lower assembly forgings. The NRC inspection team verified that WEC's design control process was being adequately implemented for the design and engineering of the RSGs and consistent with the applicable regulatory requirements. In addition, for the limited sample of documents reviewed, the NRC inspection team confirmed that WEC had correctly translated the design requirements, including technical and quality requirements, into the documents listed above.

The NRC inspection team also reviewed an evaluation performed by WEC of the Westinghouse steam generators' (SGs) design for susceptibility to flow-induced vibration, including the in-plane fluid elastic instability (FEI) mechanism. WEC performed this evaluation in response to the San Onofre Nuclear Generating Station (SONGS) Unit 3 SG tube degradation event that occurred in 2012. SONGS Unit 3 SGs had experienced excessive vibration of tubes in the U-bend region of the SGs to the extent that the tubes rubbed against each other (tube-to-tube interactions) causing excessive wear and loss of structural integrity. SONGS staff determined that the vibration was caused by the steam conditions in the U-bend region of the SGs due to in-plane FEI. Based on the performance of analyses and tests, as well as operating experience, the evaluation concluded that tube degradation resulting from tube vibration is not expected for the Westinghouse SGs.

The NRC inspection team reviewed WEC's processes for performing design reviews and design changes. WEC utilizes the Engineering and Design Coordination Reports (E&DCRs) process to issue changes to AP1000 design documents under configuration control (e.g., specifications, drawings, data sheet reports, calculations, etc.). The NRC inspection team reviewed a sample of E&DCRs associated with the revision of the discharge for the AP1000 Residual Heat Removal System and the addition of an isolation valve to the Chemical and Volume Control System. The NRC inspection team confirmed that the E&DCR process was conducted in accordance with WEC's implementing procedures, and the results of the design changes were adequately documented.

The NRC inspection team verified that WEC's design control process: (1) adequately translated technical and quality requirements into procedures and instructions, (2) applied materials conformed to the material specifications, (3) design activities were effectively controlled by documented instructions and procedures, and (4) design changes were accomplished in accordance with the approved procedures.

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

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that WEC is 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 is implementing its policies and procedures associated with the design control program. No findings of significance were identified.

4. Commercial-Grade Dedication

a. Inspection Scope

The NRC inspection team reviewed WEC's policies and implementing procedures that govern the implementation of its commercial-grade dedication (CGD) 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 CGD documents associated with the CGD of the following items: (1) rotary selector switches; (2) retaining rings; (3) secondary contact mounting assemblies; and (4) outer grafoil rings. The CGD documents reviewed included, as applicable: (1) CGD plans; (2) technical evaluations; (3) failure modes and effect analysis (FMEA); (4) receiving inspection reports; (5) Certificates of Conformance; (6) POs; and (7) commercial-grade surveys, as applicable.

The NRC inspection team evaluated the criteria for the identification of the safety functions, FMEA, selection of critical characteristics and acceptance criteria, selection of verification methods, and the justification provided for the of the sampling methodologies, as applicable, to verify effective implementation of WEC's CGD process. The NRC inspection team confirmed that WEC's CGD process provides reasonable assurance that the items and services being dedicated will perform their intended safety function.

The NRC inspection team also reviewed WEC's measures for using the International Laboratory Accreditation Cooperation accreditation process in lieu of performing commercial-grade surveys for the procurement of calibration and testing services as part of the CGD process. WEC currently implements this process as described in the Nuclear Energy Institute Document No. 14-05A, "Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services," Revision 1, dated September 2020, which was recognized for use by the NRC in a safety evaluation dated November 23, 2020 (Agencywide Documents Access Management System Accession (ADAMS) No. ML20322A019).

The NRC inspection team also discussed the CGD programs with WEC's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that WEC is implementing its CGD 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 determined that WEC is implementing its policies and procedures associated with the CGD program. No findings of significance were identified.

5. Procurement Document Control and Supplier Oversight

a. Inspection Scope

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

The NRC inspection team reviewed WEC's qualified supplier list (QSL), and a sample of POs and supplier audits. For the sample of POs reviewed, the NRC inspection team verified that the POs included, as appropriate: scope of work, right of access to the suppliers' facilities, and conditions and restrictions imposed to sub-suppliers. The NRC inspection team confirmed that the POs adequately invoked the applicable technical, regulatory, and quality requirements.

The NRC inspection team selected a sample of suppliers from the QSL to review the methodology for conducting and documenting audits to verify adequate evaluation of the suppliers' controls for meeting the applicable requirements of Appendix B to 10 CFR Part 50. For the sample of supplier audits reviewed, which included suppliers related to the RSGs for the Surry Power Station, the NRC inspection team verified the following: the audit reports included an audit plan; audits were performed according to established frequency; audit reports included adequate documented objective evidence of compliance with the applicable requirements; and audit documentation was reviewed by WEC's responsible management.

The NRC inspection team also discussed the procurement document control and supplier oversight programs with WEC's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that WEC is implementing its procurement document control and supplier oversight programs 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 determined that WEC is adequately implementing its policies and procedures associated with the procurement document control and supplier oversight programs. No findings of significance were identified.

6. Internal Audits

a. Inspection Scope

The NRC inspection team reviewed WEC's policies and implementing procedures that govern its internal audit program to verify compliance with the requirements of Criterion XVIII, "Audits," of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed WEC's internal audit plans, internal audit reports, and CARs generated during internal audits when applicable. The NRC inspection team verified that the audit documents reviewed were

adequately completed and that WEC adequately corrected the conditions identified in CARs generated during internal audits. The NRC inspection team verified that WEC's procedures described the scope and purpose of audits to be performed, the frequency, audit criteria, and corrective actions when required. The NRC inspection team verified that the audit teams were selected using qualified auditors and that they were not auditing their own work. The NRC inspection team verified that internal audits were performed using checklists.

The NRC inspection team discussed the internal audits program with WEC's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

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

7. Safeguards Information Program

a. Inspection Scope

The NRC inspection team reviewed WEC's policies and implementing procedures that govern the implementation of its safeguards information (SGI) program to verify compliance with the regulatory requirements of 10 CFR Part 73.21, "Protection of Safeguards Information: Performance Requirements," and 10 CFR Part 73.22, "Protection of Safeguards Information: Specific Requirements."

The NRC inspection team: (1) reviewed WEC's implementing procedures for controlling and protecting SGI; (2) interviewed WEC's SGI program personnel; (3) inspected the SGI secured location and locked SGI security containers; (4) reviewed a sample of SGI hardcopy materials for proper markings and storage; (5) verified labeling of electronic media such as SGI hard drives and laptops; and (6) reviewed a sample of logs, access lists, program self-assessments, and corrective actions. The NRC inspection team also reviewed a sample of personnel files regarding personnel conditions for access to SGI material.

The NRC inspection team also discussed the SGI program with WEC's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that WEC is implementing its SGI program in accordance with the regulatory requirements of 10 CFR Part 73.21 and 73.22. Based on the limited sample of documents reviewed and activities observed, the NRC inspection team determined that WEC is implementing its policies and procedures associated with the SGI program in accordance with the regulatory requirements of 10 CFR 73.21 and 10 CFR 73.22. No findings of significance were identified.

8. Entrance and Exit Meetings

On September 11, 2023, the NRC inspection team presented the inspection scope during an entrance meeting with Mr. Peter Chan, WEC's VP of Global Quality, and other members of WEC's management and technical staff. On September 15, 2023, the NRC inspection team presented the inspection results to Mr. Chan and other members of WEC'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

Name	Position	Affiliation	Entrance	Exit	Interviewed
Peter Chan	VP, Global Quality	Westinghouse Electric Company, LLC (WEC)	X	X	
Camille Zozula	Interim Director, Quality Program and Regulatory Compliance	WEC	X	X	
Quang Nguyen	Director, Control & Information Systems	WEC	X	X	
Ben Millar	Manager, Quality	WEC	X	X	
Brian Domitrovich	Manager, I&C Quality	WEC	X	X	
Lucas Smozski	Engineer	WEC	X	X	
Pavel Tyrpak	Director, QEHS Environmental & Engineering	WEC		X	
Venki Prabhu	Consulting Engineer	WEC	X	X	X
Rose Null	Lead Engineer	WEC	X		
Soeren Wiener	Snr. Director, Additive Manufacturing	WEC	X	X	
Keegan Foster	Principal Engineer	WEC	X		

Chris Kupper	Snr. Manager, Issue Resolution	WEC	X		
Matt Evans	Director, Electrical	WEC	X		
Kasey Corbin	Manager, Safety System S/W	WEC	X	X	
Chris Crefeld	Director, Safety & Reactor Sys.	WEC	X	X	
Ed Forrai	Manager, QEHS Management	WEC	X	X	X
Phillip Greco	Manager, Computer Aided Engineering and Digital Design	WEC			X
Pat Strauch	Principal Engineer	WEC			X
Edward Drake	Principal Engineer	WEC	X	X	
Zach Harper	Licensing Manager	WEC	X	X	
Ilana Schimmel	Licensing Engineer	WEC	X		
Greg Glenn	Principal Licensing Engineer	WEC	X	X	
Frank Colosimo	Licensing Engineer	WEC	X	X	
Angela Zubroski	Quality Engineer	WEC	X		
Stephen Packard	QA Manager	WEC	X	X	

Melanie Arnold	Director, Safety Analysis Risk Analysis	WEC	X		
Matt Shakun	Principal Licensing Engineer	WEC	X		
Mike Sleigh	Fellow Engineer	WEC	X	X	
Thomas Joseph	Fellow Engineer	WEC			X
Max Blankinship	ASME QA Manager	WEC	X		
Rebecca Parks	Manager, Electrical	WEC	X		
Michael J. Stefanik	Director, Global Supplier	WEC			X
Lynette S. Little	Manager, New Stanton Quality	WEC			X
Maria Blose	Quality Manager	WEC		X	
Steve Reed	Product Manager	WEC		X	
Chris Srock	Director, Global I&C	WEC		X	
Odunayo Ayegbusi	Inspection Team Leader	Nuclear Regulatory Commission (NRC)	X	X	
Dong Park	Inspector	NRC	X	X	
Yamir Diaz-Castillo	Inspector	NRC	X	X	

Yiu Law	Inspector	NRC	X	X	
Kerri Kavanagh	Branch Chief	NRC	X	X	
Daniel Clapa	Nuclear Regulatory Inspector Candidate	Poland National Atomic Energy Agency	X	X	
Sebastian Kosowski	Technical Inspector	Poland Office of Technical Inspection	X	X	

2. INSPECTION PROCEDURES USED:

- Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated February 10, 2023
- IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated February 10, 2023
- IP 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting of Defects and Noncompliance," dated February 10, 2023
- IP 81811, "Protection of Safeguards Information by Design Certification Applicants and Vendors," dated April 8, 2020

3. DOCUMENTS REVIEWED

Quality Assurance Procedures (QAP)

- QMS-A, Quality Management System, Revision 8.0, dated May 22, 2020
- QA-2.8, "Qualification of Audit Personnel," Revision 2.2, dated December 14, 2022
- W2-2.5-200, "Personal Qualification and Certification," Revision 1.1, dated January 29, 2020
- W2-4.2-101, "Internal Quality Assurance Audits," Revision 4.0, dated June 19, 2019
- W2-4.2-101.W01, "Internal Quality Assurance Audit Instructions," Revision 0.0, dated June 19, 2019
- W2-4.3-101, "Management Reviews," Revision 3.1, dated January 24, 2023
- W2-5.1-101, "Westinghouse Corrective Action Program Procedure," Revision 9.0, dated November 30, 2022
- W2-5.1-101.F01, "Corrective Action Program Issue," Revision 6.0, dated November 30, 2022
- W2-5.1-101-F04, "Request to Modify or Delete a Pending or Previously-Implemented Corrective Action to Prevent Recurrence (CAPR)," Revision 5.0, dated November 30, 2022
- W2-5.1-101-W01, "Corrective Action Program Issue Identification, Screening, and Classification," Revision 3.2, dated April 26, 2023
- W2-5.1-201, "Identification and Reporting of Conditions Adverse to Nuclear Safety,"

- Revision 2.2, dated November 9, 2022
- W2-5.1-201.F01, "Team Member 10CFR50.55(E) Review Checklist," Revision 0.0, dated May 10, 2019
- W2-5.1-201.J01, "Review for Significant Breakdown in a Quality Assurance Program under 10 CFR 50.55(e)," Revision 0.0, dated May 10, 2019
- W2-5.1-201.W01, "Nuclear Safety Review Staff Work Instruction," Revision 2.2, dated November 9, 2022
- W2-5.1-201.W02, "10 CFR 21 and CFR 50.55(e) Posting," Revision 0.0, dated October 6, 2021
- W2-9.4-101, "Control of Purchased Items and Services," Revisions 8.1, dated August 24, 2022
- W2-9.5-101, "Supplier QA Program Qualification and Assessment," Revision 3.0, dated November 11, 2020
- W2-9.5-104, "Supplier Oversight," Revision 2.0, dated June 5, 2018
- W2-9.5-105, "Control of Suppliers on the ASL and QSL," Revision 3.0, dated October 10, 2018
- QA-2.8, "Qualification of Audit Personnel," Revision 2.2, dated December 14, 2022
- QA-2.9, "Qualification of Inspection and Testing Personnel," Revision 4.0, dated June 24, 2021
- W2-1.3-102, "Management System Manuals, Quality Plans, and Interface Agreements," Revision 2.0, dated September 28, 2018
- W2-8.1-101, "Design and Development," Revision 3.2, dated March 16, 2023
- W2-8.1-102, "Engineering Peer Review," Revision 1.0, dated August 15, 2017
- W2-8.2-102, "Design Classification," Revision 1.0, dated July 18, 2017
- W2-8.3-101, "Design Analysis," Revision 3.0, dated June 12, 2018
- W2-8.3-102, "Failure Mode and Effects Analysis," Revision 1.0, dated August 15, 2016
- W2-8.4-101, "Design Review," Revision 3.0, dated October 17, 2017
- W2-8.4-102, "Design Document Verification," Revision 1.0, dated June 12, 2018
- W2-8.4-103, "Design Testing," Revision 1.0, dated November 6, 2018
- W2-8.5-100, "Design Change Control Process," Revision 0.0, dated August 15, 2016
- W2-8.5-106, "Design Change," Revision 0.1, dated August 15, 2017
- W2-9.5-101, "Supplier QA Program Qualification and Assessment," Revision 3.0, dated November 11, 2020
- W2-9.5-102-J02, "Guidance on the Evaluation and Acceptance of Commercial Grade Digital Equipment," Revision 0.0, dated January 8, 2016
- W2-9.5-102, "Commercial Dedication Process," Revision 2.0, dated June 22, 2022
- W2-9.5-102.W01, "Alternate Method for Dedication of Calibration and Testing Services," Revision 0.3, dated April 1, 2023
- WPB-9.7-100, "Westinghouse Parts Business Control of Production Shop Travelers," Revision 5.0, dated August 2, 2022
- WPB-9.8-131, "Westinghouse Parts Business Control of Inspection Stamps," Revision 2.0, dated July 28, 2022
- W2-9.14-100, "Control of Nonconforming Process Outputs, Products and Services," Revision 2.0, dated February 27, 2018
- W2-9.14-101, "Use of Hold Tags," Revision 1.0, dated February 27, 2018
- W2-9.14-101.F01, "Hold Tag," Revision 0, dated January 8, 2016
- W2-9.14-102, "Field Deviation Report," Revision 5.1, dated December 12, 2022
- W2-9.14-102-F01, "Field Deviation Report (FDR)," Revision 4.0, dated September 30, 2019

- W2-9.14-103, "Stop Work," Revision 0.2, dated February 9, 2022
- W2-9.14-103.F01, "Stop Work Order," Revision 1, dated January 15, 2016
- W2-9.9-100, "Identification and Traceability," Revision 0.1, dated June 30, 2016

Design Control and Commercial-Grade Dedication

- APP-GW-GAP-341, "AP1000 Plant Program Design Change Control," Revision 11, dated August 29, 2023
- APP-GW-GAP-420, "Engineering and Design Coordination Report," Revision 22, dated September 3, 2022
- APP-DK01-VBR-001, "Equipment Qualification Summary Report for 250 VDC Motor Control Center (DK01) for Use in the AP1000 Plant," Revision 4, dated June 4, 2018
- Drawing No. VPAM-SG000-DW-CE-000001, "Surry Units 1 and 2 Model 53F Replacement Steam Generator Tubesheet Forging," Revision 0 (no date provided)
- LTR-CMDP-19-60, "Assessment of Susceptibility to In-Plane Fluidelastic Instability (IP FEI) for the Westinghouse Steam Generator Fleet," Revision 0, dated December 18, 2019
- LTR-EQ-23-1, "2023 EMC Lab Equipment Calibration," Revision 2, dated March 30, 2023
- Engineering and Design Coordination Report (E&DCR) No. APP-FSAR-GEF-230, "Revised Residual Heat Removal Discharge Class 1," Revision 0 (no date provided)
- E&DCR No. APP-FSAR-GEF-502, "Addition of Isolation Valve on CVS Line L018 - ESR 50167696," Revision 0 (no date provided)
- Project Execution Plan No. WPMR-PEP-2022-000008, "Surry Power Station Steam Generator Replacement Project," Revision 0, dated August 2023
- Quality Plan No. PQP-PES-23-002, "Quality Plan for the Engineering and Manufacture of the Surry Units 1 & 2 Replacement Steam Generators," Revision 0 (no date provided)
- U037-QSR-01, "Quality Assurance Requirements for ASME Code Class 1, 2, and 3 Material," Revision A, dated June 16, 2023
- VPAM-SG000-SP-CM-000001, "SA-508 Grade 3 Class 2, Forgings (Section III-NB)," Revision 0, dated June 9, 2023
- VPAM-SG000-SP-CD-000001, "Design Specification for Model 53F Replacement Steam Generators for Surry Power Station Units 1 and 2," Revision 0 (no date provided)
- Specification No. SU-SPEC-PS-MU-008, "Procurement Specification for Replacement Steam Generators for Surry Power Station Units 1 and 2," Revision 1 (no date provided)
- Equipment Supply Agreement Between Virginia Electric and Power Company and Westinghouse Electric Company LLC for the Steam Generator Replacement Project at the Surry Power Station (no date provided)
- Commercial Dedication Instruction (CDI) No. 4730, "Rotary Selector Switches, Electros witch," Revision 4, dated May 5, 2021
- CDI-4321, "Calibration Services for Inspection, Measuring, and Test Equipment," Revision 6, dated August 10, 2022
- CDI-Q&CI-14-010, "Commercial Dedication Instruction for Calibration Services provided to Westinghouse," Revision 4, dated March 11, 2022
- CDI-2597, "Retaining Ring," Revision 4, dated March 28, 2023
- CDI-5076, "Secondary Contact Mounting Assemblies, VCP-W Switchgear," Revision 00, dated October 5, 2020
- CDI-2691, "Outer Grafoil Ring," Revision 4, dated October 21, 2013
- CDI-2691, Dedication Data Sheet for P/N EQLOC-1650-0221 Y, dedicated on

September 25, 2022

- CDI-4730, Dedication Data Sheet for Westinghouse Electric Company (WEC) Part No. 10076D75H19Y, Manufacturer's P/N 74202AFB, dedicated on July 25, 2023
- CDI-2597, Dedication Data Sheet for WEC Part No. 5100118HY, Manufacturer's P/N 5100118H, dedicated on March 30, 2023
- CDI-5076, Dedication Data Sheet for WEC P/N 691C573G01 and 691C573G02, Manufacturer's P/N 691C573G01 and 691C573G02, dedicated on January 4, 2023
- CDI-4321, Dedication Data Sheet for WEC ID No. SAP 40002091, dedicated on March 20, 2023
- CDI-4321, Dedication Data Sheet for WEC ID No. SAP 800924, dedicated on March 20, 2023
- CDI-4321, Dedication Data Sheet for WEC ID No. SAP 40002447, dedicated on March 20, 2023
- CDI-4321, Dedication Data Sheet for WEC ID No. SAP 800921, dedicated on March 20, 2023
- WEC Certificate of Conformance for Customer a Retaining Ring, Order No. SNG10300138, WEC Sales Order No. 174482, Project SV3, dated March 31, 2023
- WEC Certificate of Conformance for a Secondary Slider with Guide Rails, Customer Order No. SNG56499-0972, WEC Sales Order No. 173149, Project SV3, dated January 9, 2023
- WEC Certificate of Conformance for a key lockable rotary selector switch, Customer Order No. SNG10290752, WEC Sales Order No. 170991, Project SV3, dated July 28, 2023
- WEC Certificate of Conformance for an outer grafoil ring, Customer Order No. SNG56499-0958, WEC Sales Order No. 172600, Project SV3, dated January 25, 2023
- PPP-GW-GL-201, "Poland AP1000 Units FEED Project: Compliance Assessment of the AP1000 Plant for the Poland Regulation on the Scope of the Preliminary Safety Analysis Report," Revision B, dated January 19, 2022
- PPP-GW-GL-203, "Poland AP1000 Units FEED Project: Compliance Assessment of the AP1000 Plant for the Poland Regulation on Nuclear Safety and Radiological Protection Requirements for Nuclear Facility Design," Revision B, dated January 19, 2022
- APP-GW-GEE-2409, "Adoption of IEC Standards for 50 Hz Electrical Design," Revision 22, dated September 3, 2022
- APP-GW-GEE-1386, "AP1000 Costal Site Hardening of Turbine Building Equipment," Revision 0, dated August 11, 2010
- APP-GW-GEE-1942, "Increase in the Exhaust Vent Stack Height to meet UK Regulations," Revision 0, dated December 23, 2010
- APP-GW-GEE-5573, "AP1000 CA05 Module Optimization," Revision 0, dated January 2, 2020
- APP-GW-GEE-5574, "CA03 Optimization," Revision 0, dated December 20, 2019
- APP-GW-GEE-5575, "Shield Building Optimization," Revision 0, dated December 17, 2020
- APP-GW-GEE-5576, "AP1000 CH02 Optimization," Revision 0, dated December 17, 2020
- APP-GW-GEE-5577, "AP1000 Plant Design Changes to Support Load Regulation/Frequency Control Operations," Revision 0, dated February 4, 2021
- APP-GW-GEE-5579, "Incorporation of ASME Code Case N-841 into future AP1000 Units Containment Vessel Design," Revision 0, dated April 5, 2022

Audit/Survey

- WES-2023-11, Audit of Supplier, dated November 17, 2022
- WES-2022-265, Audit of Supplier, dated June 27, 2023
- Commercial Grade Survey Plan No. WES-2021-075, dated June 23, 2021
- Commercial Grade Survey Report No. WES-2021-075, dated July 14, 2021

Purchase Orders (PO)

- PO No. 4500882842, "Replacement Steam Generators," dated June 8, 2023
- PO No. 4500870233, "EVINCI NTR Heat Pipe Tubes," dated December 19, 2022
- PO No. 4500860430 for a key lockable rotary selector switch, Part Number (P/N) 74202AFB, Revision 0, dated August 9, 2022
- PO No. 4500875011 for stainless steel retaining rings, Revision 0, dated February 24, 2023
- PO No. 4500866953 for secondary sliders with guide rails, Revision 0, dated November 7, 2022
- PO No. 4500865553 for outer grafoil rings, Revision 0, dated October 19, 2022
- PO No. 202300163 for the supply of forgings for the replacement steam generators for the Surry Power Station, Revision 0, dated June 26, 2023
- PO No. 4500882842 for the supply of 6 replacement steam generators, Revision 0, dated June 8, 2023
- PO No. 4500869331 for calibration services, Revision 0, dated December 8, 2022
- PO No. 4500866762 for calibration services, Revision 0, dated November 3, 2022
- Attachment 2 to PO No. 4500882842, "Additional Technical and Quality Requirements for Replacement Steam Generators at Surry Units 1 and 2," Revision 0

Measuring and Test Equipment

- Certificate of Calibration No. 221110-110907-86dee1 for a directional coupler, calibrated on November 30, 2022
- Certificate of Calibration No. 221110-110904-cb6178 for an EFT attenuator, calibrated on December 1, 2022
- Certificate of Calibration No. 221110-110804-e4b32d for a power meter, calibrated on November 30, 2022
- Certificate of Calibration No. 221110-110812-9ffe29 for a directional coupler, calibrated on November 29, 2022

Nonconformance Reports

- APP-PV31-GNR-015, Revision 0
- SV0-JE02-GNR-000002, Revision 0
- SV0-PV00-GNR-000001, Revision 0
- SV0-PV16-GNR-000007, Revision 0
- SV0-PV72-GNR-000001, Revision 0
- SV3-1040-GNR-000001, Revision 1
- SV3-1121-GNR-000014, Revision 0
- SV3-1152-GNR-000015, Revision 0
- SV3-1254-GNR-000008, Revision 0

- SV3-CC01-GNR-000639, Revision 0

Corrective Action Reports (CARs) Reviewed During the NRC Inspection

- CAP IR-2019-2765
- CAP IR-2019-3067
- CAP IR-2019-3711
- CAP IR-2019-3938
- CAP-IR-2021-1030
- CAP-IR-2021-520
- CAP-IR-2021-645
- CAP-IR-2021-7737
- CAP-IR-2022-416
- CAP-IR-2022-792
- CAP-IR-2022-1003
- CAP-IR-2022-9013
- CAP-IR-2022-10045
- CAP-IR-2022-8235
- CAP-IR-2022-8737
- CAP-IR-2022-9013
- CAP-IR-2022-9415
- CAP-IR-2023-100
- CAP-IR-2023-421
- CAP-IR-2023-1973
- CAP-IR-2023-2509
- CAP-IR-2023-5164
- CAP-IR-2023-5195
- CAP-IR-2023-5551
- CAP-IR-2023-6978
- OE-2022-80

10 CFR Part 21 Records

- LTR-SRC-21-5
- LTR-SRC-21-7
- LTR-SRC-21-15
- LTR-NIS-22-003
- LTR-SRC-22-10
- LTR-SRC-22-25
- LTR-SRC-23-5
- LTR-SRC-23-8
- LTR-SRC-23-13
- LTR-EQ-23-32

Training Records

- Lead Auditor Training and Qualification Records for Ronald Wessel, Monika Thiede, Merissa Arnold, and Arthur J. Trozzi

- Inspection and Test Personnel Certification of Qualification Records for Alexander W. Impink, Timothy P. Ruane, Todd Zonna, and John T. Filson, Jr.
- Training Record for Zachary Harper
- Training Record for Richard Klimek
- Training Record for Brian Deppe
- Training Record for Sean Halfhill
- Training Record for James Velardi
- Training Record for Camille Zozula

Safeguards Documents

- APP-GW-GAP-300, "AP1000 Nuclear Plant Project Control of Safeguards Information," Revision 15, dated March 2, 2021
- APP-GW-GAP-300, "AP1000 Nuclear Plant Project Control of Safeguards Information," Revision 14, dated August 9, 2019
- APP-GW-GAP-300, "AP1000 Nuclear Plant Project Control of Safeguards Information," Revision 13, dated April 25, 2016
- WSA-APD-22-001, Westinghouse 2022 Self-Assessment of SGI Program," dated December 21, 2022
- WEC-SIAAP 2006, "Access Authorization Plan for Access to Safeguards Information," Revision 2, dated February 22, 2019
- "AP1000 Safeguards Information Access List," Revision 88, dated August 29, 2023
- SGI Inventory Listing, inspected on September 12, 2023
- Letter from Zachary Harper, Licensing Engineering Manager, to Keith Everly, Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, "Information Related to the Preliminary Safeguards Determination of AP1000 Documentation," dated December 19, 2020

Internal Audits

- WEC 2021-16, Internal Audit Report, dated August 26, 2021
- WEC 2022-7, Internal Audit Report, dated July 29, 2022
- WEC 2023-11, Internal Audit Report, dated March 31, 2023

Service Bulletins

- NSAL-20-1, "Reactor Vessel Head Control Rod Drive Mechanism Penetration Thermal Sleeve Cross-Sectional Failure," Revision 1, dated September 23, 2021
- TB-19-5, "Thermal Shield Flexures and Support Block Cap Screws," Revision 2, dated September 7, 2022
- TB-21-2, "Fuel Handling Equipment," Revision 0, dated August 23, 2021

Miscellaneous

- QSL Data Report (SR and CGD Vendors), Revision 0, dated September 12, 2023
- APP-MI01-Z0-101, "AP1000 Reactor Vessel Internals Design Specification," Revision 10
- APP-WWS-GEF-500, "APP-WWS-M3C-010 Diesel Generator Sump Assumption CAP 2022-9415," Revision 0
- ALAM-RV010-TM-CA-000001, "CAP-IR 2021-645 Evaluation of Nuclear Safety Impact,"

dated June 21, 2021

- SV0-MI01-N2C-002, “AP1000 Reactor Internals Neutron Shield Panel Replacement Capscrew Evaluation,” Revision 1
- SV3-MI01-GEF-003, “Expansion of Neutron Shield Panel Replacement,” Revision 0
- SV3-MI01-GEF-004, “Expansion of Neutron Shield Panel Replacement Capscrew Contingency – Category T,” Revision 0