December 4, 2014

Mr. Matthew Rohr
Quality Assurance Manager
Westinghouse Fuel Handling Equipment and Crane Manufacturing
899 Highway 96 West
Shoreview, MN 55350

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION OF WESTINGHOUSE FUEL HANDLING EQUIPMENT AND CRANE MANUFACTURING, REPORT NO. 99901452/2014-201, NOTICE OF VIOLATION AND NOTICE OF NONCONFORMANCE

Dear Mr. Rohr:

On October 20 - 24, 2014, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Westinghouse Fuel Handling Equipment and Crane Manufacturing (WFHE&CM) facilities in Shoreview and Hutchinson, MN. The purpose of this limited-scope routine inspection was to assess WFHE&CM's compliance with the provisions of selected portions of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," and 10 CFR Part 21, "Reporting of Defects and Noncompliance." This technically-focused inspection specifically evaluated WFHE&CM's implementation of quality activities associated with the fabrication and testing activities of the polar crane for the Westinghouse Electric Company AP1000 reactor design. The enclosed report presents the results of the inspection. During this inspection, the NRC staff looked at fabrication activities associated with inspections, tests, analyses and acceptance criteria (ITAAC) from revision 19 of the approved AP1000 design certification document. Specifically, these activities were associated with ITAAC 2.3.05.03a.i. The NRC inspection team did not identify any findings associated with the ITAAC contained in Section 4 of the attachment to this report. This NRC inspection report does not constitute NRC endorsement of WFHE&CM's overall quality assurance (QA) program.

Based on the results of this inspection, the NRC staff determined that a violation of NRC requirements occurred. The violation is cited in the enclosed Notice of Violation (NOV) and the circumstances surrounding it are described in detail in the subject inspection report. The violation is being cited in the NOV because WFHE&CM did not conduct an evaluation or provide notification of a commercial-grade dedication (CGD) deviation potentially associated with a substantial safety hazard identified in Corrective Action, Prevention, and Learning System (CAPAL) Issue ID 100000536, dated July 12, 2013, which was related to a cask crane trolley upgrade that was shipped to V.C. Summer Unit 1 in February, 2013. The NRC evaluated the violation in accordance with the agency's Enforcement Policy, which is available on the NRC's Web site at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html.

You are required to respond to this letter and should follow the instructions specified in the enclosed NOV when preparing your response. In your response to the enclosed NOV, WFHE&CM 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. If you have additional information that you believe the NRC should consider, you may provide it in your response to the NOV. The NRC's review of your response to the NOV will also determine if further enforcement action is necessary to ensure compliance with regulatory requirements.

During this inspection, NRC inspectors also found that the implementation of your QA program failed to meet certain NRC requirements imposed on you by your customers. Specifically, the NRC inspection team determined that WFHE&CM was not fully implementing its QA program in the areas of corrective actions and control of measuring and test equipment. The specific findings and references to the pertinent requirements are identified in the enclosures to this letter.

Please provide a written explanation or statement within 30 days of this letter in accordance with the instructions specified in the enclosed Notice of Nonconformance. 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 available electronically for public inspection a copy of this letter, its enclosure, and your response through the NRC 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 (and if applicable), your response should not include any personal privacy, proprietary, or Safeguards Information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, 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 de tail 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 Safeguards Information is necessary to

provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, “Protection of Safeguards Information: Performance Requirements.”

Sincerely,

/RA/

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

Docket No.: 99901452

Enclosures:
1. Notice of Violation
2. Notice of Nonconformance
3. Inspection Report No. 99901452/2014-201
   and Attachment

provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

Sincerely,

/RA/

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

Docket No.: 99901452

Enclosures:
1. Notice of Violation
2. Notice of Nonconformance
3. Inspection Report No. 99901452/2014-201 and Attachment

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DATE	12/3/2014	12/3/2014	12/3/2014	12/3/2014
OFFICE	NRO/DCIP/MVIB	NRO/DCIP/QVIB	NRO/DCIP	NRO/DCIP/MVIB
NAME	ABelen	VHuckabay	TFrye*	ERoach
DATE	12/3/2014	12/3/2014	12/3/2014	12/4/2014

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NOTICE OF VIOLATION

Westinghouse Fuel Handling Equipment
and Crane Manufacturing
899 Highway 96 West
Shoreview, MN 55126

Docket No. 99901452

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Westinghouse Fuel Handling Equipment and Crane Manufacturing (WFHE&CM) facilities in Shoreview and Hutchinson, MN, from October 20, 2014, through October 24, 2014, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21.21, "Notification of failure to comply or existence of a defect and its evaluation," Section (a)(1) requires "Each individual, corporation, partnership, dedicating entity, or other entity subject to the regulations in this part shall adopt appropriate procedures to evaluate deviations and failures to comply to identify defects and failures to comply associated with substantial safety hazards as soon as practicable, and, except as provided in paragraph (a)(2) of this section, in all cases within 60 days of discovery, in order to identify a reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected."

Section 21.21(a)(2) requires "Each individual, corporation, partnership, dedicating entity, or other entity subject to the regulations in this part shall adopt appropriate procedures to ensure that if an evaluation of an identified deviation or failure to comply potentially associated with a substantial safety hazard cannot be completed within 60 days of discovery of the deviation or failure to comply, an interim report is prepared and submitted to the Commission through a director or responsible officer or designated person as discussed in Section 21.21(d)(5). This interim report should describe the deviation or failure to comply that is being evaluated and should also state when the evaluation will be completed. This interim report must be submitted in writing within 60 days of discovery of the deviation or failure to comply.

Contrary to the above, as of October 24, 2014, WFHE&CM failed to evaluate a deviation potentially associated with a substantial safety hazard in accordance with 10 CFR 21.21(a)(1) or provide an interim report in accordance with 10 CFR 21.21(a)(2). Specifically, WFHE&CM did not conduct an evaluation or provide notification of a commercial-grade dedication (CGD) deviation potentially associated with a substantial safety hazard identified in Corrective Action, Prevention, and Learning System (CAPAL) Issue ID 100000536, dated July 12, 2013, which was related to a cask crane trolley upgrade that was shipped to V.C. Summer Unit 1 in February, 2013.

This issue has been identified as Violation 99901452-2014-201-01.

This is a Severity Level IV violation (Section 6.9.d of the NRC Enforcement Policy).

Pursuant to the provisions of 10 CFR 2.201, "Notice of Violation," WFHE&CM is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Chief, Mechanical Vendor Inspection Branch, Division of Construction Inspection and Operational Programs, Office of New Reactors, within 30 days of the date of the letter transmitting this notice of violation. This reply should be clearly marked as a "Reply to a Notice of Violation" and should include (1) the reason for the violation or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. Where good cause is shown, the NRC will consider extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

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

Dated this 4th day of December 2014.

NOTICE OF NONCONFORMANCE

Westinghouse Fuel Handling Equipment
and Crane Manufacturing
899 Highway 96 West
Shoreview, MN 55126

Docket No. 99901452

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Westinghouse Fuel Handling Equipment and Crane Manufacturing (WFHE&CM) facilities in Shoreview and Hutchinson, MN, from October 20, 2014, through October 24, 2014, certain activities were not conducted in accordance with NRC requirements that were contractually imposed on WFHE&CM by NRC licensees.

A. Criterion XVI, "Corrective Action," of Appendix B, "Quality Assurance Program Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," states, in part, that "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition."

   Section 5.5.1 of the Westinghouse Electric Company (WEC) Quality Management System (QMS), Revision 7, states, in part, that "Conditions adverse to the quality of items and services are identified, documented, analyzed, and corrected in accordance with established procedures."

   Section 5.5.3 of the WEC QMS, Revision 7, states, in part, that, "Quality data is analyzed for trends in items, services, processes, and systems that may require action to eliminate causes of potential conditions adverse to quality."

   Section 7.6.1 of WEC 16.2, "Westinghouse Corrective Action Program," Revision 7.0, states, in part, that "The following timeliness expectations apply to all Level 1 Significance Issues, as well as to all SCARs [Supplier Corrective Action Requests], Trends and Level 2, Level 3, and Level 4 Significance Issues that are defined in the corrective action program database as CAQs [Conditions Adverse to Quality], customer identified, or Quality or EHS [Environment, Health, and Safety] Controlled… Level 1 – Issue closure due date – 365 days from Issue origination; Level 2 – Issue closure due date – 180 days from Issue origination; Level 3 – Issue closure due date – 180 days from Issue origination; and Level 4 – Issue closure due date – 120 days from Issue origination."

Section 7.11.1 of WEC 16.2, Revision 7.0, states, "Issues documented in the corrective action database shall be analyzed at least quarterly to identify potential adverse trends and cross-cutting deficiencies that require corrective action."

Contrary to the above, WFHE&CM failed to establish measures to assure that conditions adverse to quality were promptly identified and corrected, and for significant conditions adverse to quality, corrective actions were taken to preclude repetition. Specific examples include:

1) As of October 22, 2014, 177 of the 386 issues in the Corrective Action, Prevention, and Learning System (CAPAL) database for WFHE&CM were past their due dates. The NRC inspection team found no objective evidence of due date extension approvals for these CAPALs, as required by WEC 16.2. Examples include:

   a. CAPAL Issue ID 100000228 – a Level 1 CAPAL that was 362 days past due
   b. CAPAL Issue ID 100000508 – a Level 2 CAPAL that was 305 days past due
   c. CAPAL Issue ID 100010212 – a Level 4 CAPAL (with a potential Condition Adverse to Nuclear Safety) that was 53 days past due

2) Beginning with the first quarter of Fiscal Year 2014, WFHE&CM failed to analyze the corrective action database on at least a quarterly basis to identify potential adverse trends and cross-cutting deficiencies that require corrective action as required by Section 5.5.1 of the WEC QMS and Section 7.11.1 of WEC 16.2.

3) WFHE&CM failed to ensure that conditions adverse to quality related to commercial grade dedication were adequately corrected. CAPAL Issue ID 100000536, "Method 2 and Method 3 Dedication Noncompliances," was opened on July 12, 2013, with some corrective actions signed off as completed. However, as of October 24, 2014, those corrective actions were found to be inadequate because commercial grade surveys of the suppliers and evaluations of dedicated items were not being performed.

These issues have been identified as Nonconformance 99901452/2014-201-02.

B. Criterion XII of Appendix B to 10 CFR Part 50 states, "Measures shall be established to assure that tools, gages, instruments, and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits."

   WEC QMS commits to Regulatory Guide 1.28 which endorses American Society of Mechanical Engineers (ASME) NQA-1-2008 with 2009 Addenda. NQA-1 section 303.2, states, in part, that "When measuring and test equipment is lost, damaged, or found to be out-of calibration, the validity of previous measurement, inspection, or test results, and the acceptability of items previously inspected or tested shall be evaluated."

   WEC 12.1, "Control of Inspection, Measuring & Test Equipment," Revision 4, states in part, that "IM&TE found to be out of tolerance shall be reported and dispositioned in the organization's specified reporting system and/or WEC 16.2, "Westinghouse Corrective

Actions Process." The Inspection, Measuring and Test Equipment (IM&TE) shall be evaluated within 30 days to determine the impact on the validity of previous uses, and the results of the evaluation shall be documented."

Contrary to these requirements, as of October 24, 2014, WFHE&CM did not ensure that tools, gages, instruments, and other measuring and testing devices used in activities affecting quality were properly calibrated. Specifically, contrary to WEC 16.2, Revision 7.0, WFHE&CM failed to take corrective actions for 9 devices identified as out of calibration or broken during the last 2 years. These devices included a magnetic particle testing (MT) yoke, a thermometer, a surface probe, a gauss meter, inside diameter (ID) micrometers, a dynamometer, a torque tester and a crimper. Further, contrary to WEC QMS, Revision 7.0, WFHE&CM did not perform evaluations for the acceptability of previous measurement, inspection or test results.

This issue has been identified as Nonconformance 99901452/2014-201-03.

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

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

Dated this 4th day of December 2014.

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

Docket No.:	99901452
Report No.:	99901452/2014-201
Vendor:	Westinghouse Fuel Handling Equipment and Crane Manufacturing 899 Highway 96 West Shoreview, MN 55126
Vendor Contact:	Mr. Matthew Rohr Quality Assurance Manager E-mail: rohrmm@westinghouse.com Phone: 651-415-4363
Nuclear Industry Activity:	Westinghouse Fuel Handling Equipment and Crane Manufacturing located in Shoreview, MN (formerly PaR Nuclear) along with joint venture NuCrane Manufacturing located in Hutchinson, MN (hereafter referred to collectively as WFHE&CM), designs and fabricates cranes and handling equipment for new and operating nuclear power plants. WFHE&CM's is supplying the polar crane, cask crane, hatch hoists, fuel handling machines, and fuel transfer machines for the Westinghouse Electric Company AP1000 new reactor construction.
Inspection Dates:	October 20-24, 2014

Inspectors:		
	Brent Clarke	NRO/DCIP/MVIB
	Thomas Kendzia	NRO/DCIP/QVIB
	Victoria Huckabay	NRO/DCIP/QVIB
	Aixa Belén	NRO/DCIP/MVIB
	Pravin Patel	NRO/DE/SEB1
	Alain Artayet	RII/DCI/CIB3

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

EXECUTIVE SUMMARY

Westinghouse Fuel Handling Equipment and Crane Manufacturing
99901452/2014-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a vendor inspection at Westinghouse Fuel Handling Equipment and Crane Manufacturing in Shoreview, MN (formerly PaR Nuclear) and joint venture NuCrane Manufacturing in Hutchinson, MN (hereafter referred to collectively as WFHE&CM), to verify that WFHE&CM had implemented an adequate quality assurance (QA) program that complies with the requirements of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities." In addition, the NRC inspection also verified that WFHE&CM implemented a program under 10 CFR Part 21, "Reporting of Defects and Noncompliance," that met the NRC's regulatory requirements. The NRC inspection team conducted the inspection October 20 - 24, 2014.

This technically-focused inspection specifically evaluated WFHE&CM's implementation of quality activities associated with the fabrication and testing activities of the polar crane, cask crane, and hatch hoists for the Westinghouse Electric Company (WEC) AP1000 reactor design with a particular emphasis on the polar cranes for Vogtle Electric Generating Plant, Units 3 and 4, and Virgil C. Summer Generating Station, Units 2 and 3.

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

- Safety-related nondestructive testing (NDT) by a WesDyne Quality Control (QC) Inspector using the fluorescent magnetic particle testing (MT) method
- Safety-related gas metal arc welding performed by a NuCrane welder
- Calibration activities in conjunction with inspection

In addition to observing these activities, the NRC inspection team verified that measuring and test equipment (M&TE) was properly identified, marked, calibrated, and used within its calibrated range. The NRC inspection team also walked down WFHE&CM's Hutchinson, MN assembly floor and verified that nonconforming components were properly identified, marked, and segregated when practical, to ensure that they were not reintroduced into the manufacturing processes.

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

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

During the course of this inspection, the NRC inspection team implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated July 15, 2013, IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated November 29, 2013, and IP 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance," dated February 13, 2012.

This was the first NRC inspection of WFHE&CM.

With the exception of the violation and nonconformances described below, the NRC inspection team concluded that WFHE&CM's QA policies and procedures comply with the applicable requirements of Appendix B to 10 CFR Part 50 and that WFHE&CM's personnel are implementing these policies and procedures effectively. The results of this inspection are summarized below.

10 CFR Part 21

The NRC inspection team issued Violation 99901452/2014-201-01 in association with WFHE&CM's failure to implement the regulatory requirements of 10 CFR Part 21. Violation 99901452/2014-201-01cites WFHE&CM for failing to evaluate a deviation potentially associated with a substantial safety hazard in accordance with 10 CFR 21.21(a)(1) or provide an interim report in accordance with 10 CFR 21.21(a)(2). Specifically, WFHE&CM did not conduct an evaluation or provide notification of a commercial-grade dedication (CGD) deviation potentially associated with a substantial safety hazard identified in Corrective Action, Prevention, and Learning System (CAPAL) Issue ID 100000536, dated July 12, 2013, which was related to a cask crane trolley upgrade that was shipped to V.C. Summer Unit 1 in February, 2013.

Corrective Action

The NRC inspection team issued Nonconformance 99901452/2014-201-02 in association with WFHE&CM's failure to implement the regulatory requirements of Criterion XVI of Appendix B to 10 CFR Part 50. Nonconformance 99901452/2014-201-02 cites WFHE&CM for failing to complete corrective actions in a timely manner and failure to identify significant conditions adverse to quality and take corrective actions to preclude repetition.

Control of Measuring and Test Equipment (M&TE)

The NRC inspection team issued Nonconformance 99901452/2014-201-03 in association with WFHE&CM's failure to implement the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Specifically, WFHE&CM failed to enter out of calibration and inoperable M&TE into the corrective action process and failed to perform evaluations for the acceptability of previously inspected or tested items.

Commercial Grade Dedication (CGD)

Prior to the inspection, WFHE&CM issued a stop work order for all CGD activities based on the results of readiness reviews. The NRC inspection team observed similar deficiencies in the CGD program. The NRC inspection team concluded that WFHE&CM is taking corrective actions to implement its CGD programs in accordance with the regulatory requirements of Criterion III of Appendix B to 10 CFR Part 50. However, based on the limited sample of documents reviewed, the NRC inspection team identified that WFHE&CM failed to ensure that conditions adverse to quality related to CGD were adequately corrected. The NRC inspection team identified this issue as an example of Nonconformance 99901452/2014-201-02.

Other Inspection Areas

The NRC inspection team determined that WFHE&CM is implementing its programs for Design Control; Procurement Document Control; Control of Purchased Material, Equipment, and Services; Audits; Control of Special Processes; Nonconforming Materials, Parts, or Components; Instructions, Procedures, and Drawings; Identification and Control of Materials; Parts and Components; and Test Control in accordance with the applicable regulatory requirements of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed and activities observed, the NRC inspection team determined that WFHE&CM is implementing its policies and procedures associated with these programs. No findings of significance were identified.

Inspections, Tests, Analysis, and Acceptance Criteria (ITAAC)

ITAAC 2.3.05.03a.i was reviewed during this inspection to support a conclusion that the AP1000 polar crane will be single failure proof. There were no findings related to this ITAAC.

REPORT DETAILS

1. 10 CFR Part 21 Program

   a. Inspection Scope

   The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern WFHE&CM's 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. In addition, the NRC inspection team evaluated the 10 CFR Part 21 postings to verify compliance with 10 CFR 21.6, "Posting Requirements," and a sample of 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 WFHE&CM's nonconformance and corrective action procedures provide a link to the 10 CFR Part 21 program.

   The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

   b. Observations and Findings

   The NRC inspection team identified that WFHE&CM conducted no evaluation, and provided no notification or interim report for CGD deficiencies associated with a cask crane trolley upgrade that was shipped to V.C. Summer Unit 1 in February 2013. These issues were identified in Corrective Action, Prevention, and Learning System (CAPAL) Issue ID 100000536, dated July 12, 2013, and contributed to a current work stoppage at WFHE&CM for all CGD activities. This is contrary to the requirements of 10 CFR 21.21(a)(1), which requires timely evaluation of deviations and failures to comply potentially associated with substantial safety hazards and 10 CFR 21.21(a)(2), which requires submission of an interim report if the evaluation cannot be completed within 60 days of discovery.

   c. Conclusion

   The NRC inspection team issued Violation 99901452/2014-201-01 in association with WFHE&CM's failure to implement the regulatory requirements of 10 CFR Part 21. Violation 99901452/2014-201-01 cites WFHE&CM for failing to evaluate a deviation potentially associated with a substantial safety hazard in accordance with 10 CFR 21.21(a)(1) or provide an interim report in accordance with 10 CFR 21.21(a)(2). Specifically, WFHE&CM did not conduct an evaluation or provide notification of a CGD deviation potentially associated with a substantial safety hazard identified in CAPAL Issue ID 100000536, dated July 12, 2013, which was related to a cask crane trolley upgrade that was shipped to V.C. Summer Unit 1 in February 2013.

2. Design Control

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern design control programs to verify their compliance with the regulatory requirements of Criterion III, "Design Control," of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed WFHE&CM's process for preparing fabrication drawings as described in Westinghouse Electric Company's (WEC's) "Quality Management System (QMS), Revision 7, dated October 1, 2013. For a sample of WFHE&CM drawings, the NRC inspection team verified that WEC design specifications, including technical and quality requirements, were adequately translated into the polar crane design documents.

The NRC inspection team reviewed the process for implementing design changes initiated by WFHE&CM, which are handled through an Engineering & Design Coordination Report (E&DCR). The NRC inspection team confirmed that WFHE&CM was using the most recently approved design drawings for fabrication, that the appropriate quality standards were specified and included in design documents, that sufficient coordination between WEC and WFHE&CM was taking place for the design and fabrication of the polar crane, and that design changes were effectively controlled and approved.

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 WFHE&CM 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 WFHE&CM is implementing its policies and procedures associated with the design control programs. No findings of significance were identified.

3. Commercial Grade Dedication

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern the CGD program to verify their compliance with the regulatory requirements of Criterion III, "Design Control," in Appendix B to 10 CFR Part 50. The NRC inspection team reviewed WEC 7.2, "Dedication of Commercial Grade Items" and FHE&CM 7.2, "WEC 7.2 Addendum: Dedication of Commercial Grade Items." These procedures

provide the methodology for dedicating commercial-grade items for use as basic components, including the technical evaluation to determine safety functions and identification of critical characteristics and acceptance criteria.

The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

On September 3, 2014, WFHE&CM issued a stop work order (FHE&CM-QAL-14-036) for all CGD activities when a WEC readiness review (internal audit) determined that the CGD process described in WEC 7.2 had been ineffectively executed. Consequently, WFHE&CM stopped all CGD activities related to AP1000, and was in the process of revising WFHE&CM Level III instructions for CGD and reviewing the extent of the condition as of the time of the NRC inspection.

The NRC inspection team reviewed CAPAL Issue ID 100000536, "Method 2 and Method 3 Dedication Noncompliances," dated July 12, 2013, which was initiated as a result of the readiness review. CAPAL Issue ID 100000536 was classified as Level 2 and described that for CGD instructions PAR-CDI-006 and PAR-CDI-004, WFHE&CM was using Method 2 commercial grade survey and Method 3 Source Verification inadequately. Per these procedures, dimensional critical characteristics were verified by the "Supplier's Inspection records with as-built dimensions stated," as described in the certificate of conformance. The auditors found that WFHE&CM did not perform commercial grade surveys to support the acceptability of the certificates of conformance. The NRC inspection team identified that CAPAL Issue ID 100000536 included the following corrective actions:

1. *Determine actions necessary to bring previously dedicated items utilizing the CDI-004 Rev 9 and CDI-006 Rev 3 or Rev 4 to compliance with WEC 7.2 and industry standards. Once this action is closed it is suggested to create a new action to implement the necessary changes.* Completed on October 23, 2013.

2. *Create commercial grade survey for suppliers impacted by PAR-CDI-004 and PAR-CDI-006 utilizing applicable template.* Completed February 3, 2014.

The NRC inspection team observed that CAPAL Issue ID 100000536 was past due, and did not meet the timeliness requirements (180 days) specified in Section 7.6.1 of WEC 16.2, Revision 7.0 for a Level 2 CAPAL. This timeliness issue was also identified in CAPAL Issue ID 100039716. The NRC inspection team also identified that corrective actions were reported as completed. However, as of October 24, 2014, those corrective actions were found to be inadequate because commercial grade surveys of the suppliers and evaluations of dedicated items were not being performed. The NRC inspection team identified this issue as an example of Nonconformance 99901452/2014-201-02 (referenced in Section 10) for WFHE&CM's failure to ensure that conditions adverse to quality related to CGD were adequately corrected.

c. Conclusion

The NRC inspection team concluded that WFHE&CM is taking corrective actions to implement its CGD programs in accordance with the regulatory requirements of Criterion III of Appendix B to 10 CFR Part 50. However, based on the limited sample of documents reviewed, the NRC inspection team identified that WFHE&CM failed to ensure that conditions adverse to quality related to CGD were adequately corrected. The NRC inspection team identified this issue as an example of Nonconformance 99901452/2014-201-02.

4. Oversight of Contracted Activities and Internal Audits

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern the implementation of its oversight of contracted activities program to verify compliance with the requirements of Criterion IV, "Procurement Document Control," 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 safety-related POs, material specifications, and certified material test reports (CMTRs), to verify that specific procurement requirements were met and documented correctly. The NRC inspection team also verified that the POs included, as applicable; scope of work, right of access to facilities and records for source inspections and audits, reporting and approving disposition of nonconformances, and references to specific drawings, codes, and specifications. In addition, the NRC inspection team confirmed that all reviewed safety-related POs invoked the requirements of 10 CFR Part 21 and required the supplier to conduct safety-related work under its approved QA program. The NRC inspection team also reviewed WFHE&CM's processes and management of the supplier database and its interfaces with generating supplier limitations and capabilities for the Qualified Supplier List (QSL).

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 WFHE&CM is implementing its oversight of contracted activities 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 WFHE&CM is implementing its policies and procedures associated with the oversight of contracted activities. No findings of significance were identified.

5. Manufacturing Control

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern fabrication and work control processes to verify compliance with the regulatory requirements of Criterion V, "Instructions, Procedures, and Drawings," Criterion VIII, "Identification and Control of Materials, Parts and Components," and Criterion XI, "Test Control," of Appendix B to 10 CFR Part 50, as well as, portions of ASME NOG-1 Code, 1998 Edition, "Rules for Construction of Overhead and Gantry Cranes," Section 7000, "Inspection and Testing." Specifically, the NRC inspection team reviewed the WEC QMS, WEC 2.6, "Training," FHE&CM 2.1.1, "FHE&CM Policies and Procedures," FHE&CM 2.1.3, "Level 3 Supplemental Manufacturing Instructions (SMI)," FHE&CM WI 2.2.1, "Quality Plan Procedure," and FHE&CM WI 9.1.1, "Control of Manufacturing and Assembly Operations."

The NRC inspection team walked down the shop fabrication area to verify proper identification and control of materials, parts and components specifically related to safety related activities. The NRC inspection team reviewed work packages to verify adherence to WFHE&CM work control policies and procedures. The NRC inspection team verified that work documents properly identified welding, nondestructive examination (NDE), and QC inspection requirements and hold points. The NRC inspection team observed safety-related gas metal arc welding performed by a NuCrane welder to assess compliance with the work package. The NRC inspection team observed in-process non-destructive testing (NDT) by a WesDyne QC Inspector using the fluorescent magnetic particle (MT) method to assess compliance with the work package. The NRC inspection team interviewed personnel to assess their understanding of WFHE&CM policies and procedures related to work control, identification of materials, parts and components, and problem resolution.

The NRC inspection team reviewed a sample of WFHE&CM sub-supplier Hutchinson Manufacturing Inc. (HMI) welding and inspection documents associated with the fabrication of the safety-related equalizer upper block for the polar crane to verify that welding and inspection were performed in accordance with the requirements of PaR Nuclear Drawing No. D-07451727-D.

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern the coating process for systems, structures, and components to be installed inside containment since these have the specific requirements of WEC Design Specification APP-GW-Z0-604, "Application of Protective Coatings to Systems, Structures and Components for the AP1000 Reactor Plant," and AP1000 Design Specification No. APP-G1-SX-001, "AP1000 Painting of Shop Fabrication Steel." Specifically, the NRC inspection team reviewed FHE&CM 2.12.1, "Qualification of Coating Application Personnel," FHE&CM WI 2.12.2, "Qualification & Certification of Coating Inspection Personnel," FHE&CM WI 9.1.14, "Single Coat Application of 2-Part Epoxy Protective Coatings," FHE&CM WI 9.1.15, "Application of 2-Part Epoxy Protective Coatings," and QCP-74-5, "Application of Protective Coatings for AP1000 Reactor

Plants." The NRC inspection team reviewed training records for the inspectors and applicators of coatings at WFHE&CM to verify that they were trained in accordance with the requirements. The NRC inspection team reviewed documentation to verify that HMI performed coating operations at their facility in accordance with the requirements of the WEC specifications.

The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance where identified.

c. Conclusion

The NRC inspection team concluded that WFHE&CM is implementing its manufacturing control in accordance with the regulatory requirements of Criterion V, Criterion VIII, and Criterion XI, of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed and work observed, the NRC inspection team also determined that WFHE&CM is implementing its policies and procedures associated with manufacturing control. No findings of significance were identified.

6. Inspection

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern the inspection program to verify compliance with the regulatory requirements of Criterion X, "Inspection," of Appendix B to 10 CFR Part 50. Specifically, the NRC inspection team reviewed the WEC QMS, FHE&CM 10.1.1 "Receipt Inspection," FHE&CM 10.1.2, "In-Process Inspection," and FHE&CM WI 10.1.3, "Final Assembly Inspection."

The NRC inspection team reviewed documentation for the receipt inspection of PO 416008473 Item 004, Project Activity PR-11-0310-U3.L420, Drawing No 07452593, Pinion; Main Hoist Drum, and the Quality Release & Certificate of Conformance for PO 4500636281, AP1000 Paint Only: Frame Hatch Hoist for VC Summer Unit 2. The NRC inspection team also reviewed a sample of HMI welding and inspection documents associated with the fabrication of the safety-related equalizer upper block for the polar crane to verify that welding and inspection were performed in accordance with the requirements of PaR Nuclear Drawing No. D-07451727-D. The NRC inspection team interviewed QC personnel to assess their understanding of the WFHE&CM policies and procedures related to inspection.

The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance where identified.

c. Conclusions

The NRC inspection team concluded that WFHE&CM is implementing its inspection program in accordance with the regulatory requirements of Criterion X of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WFHE&CM is implementing its policies and procedures associated with the inspection program. No findings of significance were identified.

7. Control of Measuring and Test Equipment

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern its Control of Measuring and Test Equipment (MT&E) program to verify compliance with the requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50. WFHE&CM refers to its program as Inspection, Measuring, and Test Equipment (IM&TE). The NRC inspection team reviewed the storage and control of IM&TE, including documentation in work packages and inspection reports, to ensure that policies and procedures were being followed. The NRC inspection team also reviewed a sample of IM&TE to ensure traceability to national standards. WFHE&CM uses a 10 CFR Part 50 Appendix B supplier for calibration services. The NRC inspection team reviewed the applicable purchase order and audit for the calibration service provider, to ensure that calibration of IM&TE was included in the approved scope of supply.

The NRC inspection team also reviewed the WFHE&CM requirements and their implementation for IM&TE equipment determined to be out of calibration or inoperable, to verify that WFHE&CM identified items inspected, measured, or tested since the last verification of calibration. The NRC inspection team observed a craft person checking the torque calibration of a torque wrench after use in accordance with FHE&CM WI 10.1.5.

The NRC inspection team interviewed QC personnel and craftsmen to assess their understanding of the requirements for IM&TE.

The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

The NRC inspection team verified that WFHE&CM craftsmen and QC personnel understood the requirements for use of IM&TE, including not using IM&TE that was past its calibration date, out of calibration, or inoperable. All personnel interviewed identified

that if an IM&TE item was past its calibration date, out of calibration or inoperable, they would report the IM&TE item to the QC technician in charge of IM&TE. The NRC inspection team determined that resolution for the out of calibration or inoperable condition was being performed by the QC technician. However, the NRC inspection team observed no objective evidence that corrective action reports or Nonconformance Reports (NCRs) were being initiated and the validity of previous use was not being documented or determined on a systematic basis.

The NRC inspection team reviewed two years of IM&TE found out of calibration or broken (11 devices) and determined WFHE&CM had not entered any of these occurrences into the corrective action or NCR processes nor had they performed the required evaluation to determine the impact on the validity of previous uses. These devices included a MT yoke, a thermometer, a surface probe, pi gages, a gauss meter, ID micrometers, a dynamometer, a torque tester and a crimper. The pi gages were determined to be out of calibration by the calibration service provider the previous week and were still in resolution. WFHE&CM determined they had been used for reference measurements and documented the out of calibration condition and uses in CAPAL ID 100053901 and CAPAL Issue ID 100053905. WFHE&CM documented the other nine out of calibration and broken IM&TE issues in CAPAL Issue ID 100054629.

c. Conclusion

The NRC inspection team issued Nonconformance 99901452/2014-201-03 in association with WFHE&CM's failure to implement the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Specifically, WFHE&CM failed to enter out of calibration and inoperable IM&TE into the corrective action process in accordance with WEC 12.1 and failed to perform evaluations for the acceptability of previously inspected or tested items in accordance with WEC QMS.

8. Control of Special Processes

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern the Control of Special Processes to verify compliance with the requirements of Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50. Specifically, the NRC inspection team reviewed the WEC QMS, WEC 2.6, "Training," WEC 2.9, "Qualification of Inspection, Examination and Testing Personnel," WEC 2.10, "Qualification, Training and Certification of Nondestructive Testing Personnel," WEC 2.13, "Visual Acuity Examination," and WFHE&CM procedure FHE&CM 10.1.4, "Liquid Penetrant Examination."

The NRC inspection team observed in-process NDT by a WesDyne QC Inspector using the fluorescent MT method to verify that the material surface inspection of safety-related parts M16759-09-01A and M16759-10-01A for the lower block frames of two hatch hoists for V.C. Summer Unit 3 were performed in accordance with the requirements of; ASME NOG-1 of 1998, "Rules for Construction of Overhead and Gantry Cranes," Section 7000, "Inspection and Testing," AWS D1.1, "Structural Welding Code – Steel,"

ASTM E709, “Guide for Magnetic Particle Inspection,” ASTM A654, “Special Requirements for Steel Forgings and Bars for Nuclear and Other Special Applications,” and WEC Design Specification, APP-MH01-Z0-101, “AP1000 Containment Polar Crane.”

The NRC inspection team reviewed the QC inspector’s Certificate of Qualifications with annual vision acuity and color contrast. The NRC inspection team also reviewed certificates of calibration for the gauss meter, contour probe, black light radiometer, and infrared thermometer. Additionally, the NRC inspection team reviewed a certificate of conformance for the MT fluorescent magnetic particle material. Finally, the NRC inspection team reviewed the WesDyne MT procedure used to disposition NCRs 18640 and 18642 by cutting the existing welds to gain access to all surfaces for NDT, retest of material surfaces, and reweld in compliance with drawing requirements.

The NRC inspection team observed in-process gas metal arc welding performed by a NuCrane Manufacturing welder to join a part (M16759-09-01A) to the lower block frame of a hatch hoist after back grinding to the root of the fillet weld in preparation for depositing the first layer of the single-bevel groove from the second side. Specifically, the inspectors reviewed AWS D1.1 Prequalified Welding Procedure Specification (WPS) -100, weld filler metal CMTR of Heat No. 386421 for chemical analysis and mechanical properties, and the welder performance qualification record.

The NRC inspection team reviewed a sample of HMI welding and inspection documents associated with the fabrication of the safety-related equalizer upper block for the polar crane to verify that welding and inspection were performed in accordance with the requirements of PaR Nuclear Drawing No. D-07451727-D, and ASME NOG-1 of 1998, AWS D1.1-2000, APP-MH01-Z0-101, and ASTM A435, “Standard Specification for Straight-Beam Ultrasonic Examination of Steel Plate.”

The NRC inspection team reviewed six material test reports, Safety-Related Weld Traceability Map M1154-09-01 (documenting proper fillet weld size, and traceable filler material lot number and welder ID), AWS D1.1 Qualified WPS 600-1, and visual inspection and ultrasonic examination reports.

The NRC inspection team interviewed the welder and NDE personnel to assess their qualifications, understanding of the regulatory requirements, and understanding of work procedures.

The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance where identified.

c. Conclusion

The NRC inspection team concluded that WFHE&CM is implementing its Control of Special Processes program in accordance with the regulatory requirements of Criterion IX of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WFHE&CM is implementing its policies and procedures associated with the Control of Special Processes program. No findings of significance were identified.

9. Nonconforming Materials, Parts, or Components

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern nonconformances to verify compliance with the requirements of Criterion XV, "Nonconforming Materials, Parts, or Components," of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed a sample of nonconformance reports and verified that the disposition and control of nonconformances was in accordance with WFHE&CM procedures.

The NRC inspection team verified that WFHE&CM had a program and procedures in place for control of nonconforming materials, parts, or components, and that the program and procedures were consistent with regulatory requirements. The NRC inspection team reviewed WEC 15.1, "Deviation Notices," which provided the requirements for the identification, documentation, and disposition of nonconformances identified by suppliers. The NRC inspection team also reviewed PAR WI 15.1.2, "Control of Nonconforming Items," and WEC 15.2, "Use of Hold Tags," which provided the requirements for the identification, documentation, tagging, segregation, and disposition of nonconforming items identified by WFHE&CM during manufacturing, assembly, service, inspection, or testing. In addition, the NRC inspection team reviewed PAR WI 15.1.1, "Documentation Issue Report," which provides the requirements for the identification and documentation of inadequate supplier documentation issues identified during receipt inspections.

The NRC inspection team reviewed a sample of 23 NCRs, of which 21 were associated with safety-related parts used in the manufacturing of polar cranes, cask cranes, or hatch hoists for V.C. Summer Units 2 and 3 and Vogtle Units 3 and 4. The NRC inspection team reviewed closed NCRs, to ensure that sufficient objective evidence and appropriate technical justification were provided and that they were reviewed by qualified personnel. For a sample of nine open (in-process) NCRs and four Documentation Issue Reports (DIRs), the NRC inspection team verified that the corresponding nonconforming items were appropriately segregated and Hold Tags and copies of NCRs were affixed to the items, in accordance with WFHE&CM's procedures and regulatory requirements.

The NRC inspection team also observed a repair being performed on the hatch hoist lower block frame, in accordance with approved work instruction and disposition documented in the NCR report.

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

10. Corrective Action

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern the corrective action program to verify compliance with the requirements of Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed a sample of corrective action documents (Corrective Action Process documents, or CAPs, and/or Corrective Action, Prevention, and Learning System documents, or CAPALs), to verify that: (1) the disposition and control of CAPs/CAPALs (hereinafter collectively referred to as "CAPALs") provided adequate documentation and description of conditions adverse to quality, and (2) the CAPALs specified the cause of these conditions and the corrective actions to prevent recurrence.

The NRC inspection team verified that WFHE&CM had a program and procedures in place for the control of corrective actions, and that the program and procedures were consistent with regulatory requirements. The NRC inspection team reviewed WEC 16.2, "Westinghouse Corrective Action Program," In addition, the NRC inspection team reviewed supplemental corrective action program procedures that establish the requirements for conducting a Root Cause Analysis, Apparent Cause Analysis, Limited Cause Analysis, and Effectiveness Review. The NRC inspection team also reviewed WEC 21.0, "Identification and Reporting of Conditions Adverse to Nuclear Safety."

The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

The NRC inspection team reviewed a sample of 24 CAPALs primarily focused on WFHE&CM's fabrication and testing activities of the polar crane, cask crane, and hatch hoist for the AP1000 reactor design, as well as issues related to the V.C. Summer Unit 1 cask crane trolley upgrade. The sample included four CAPALs identifying issues that potentially represented Conditions Adverse to Nuclear Safety. Also included in the sample were two Level 1 CAPALs (Issues that were Significant Conditions Adverse to Quality, severe environmental, health and safety events, or resulted in excessive cost of poor quality); four Level 2 CAPALs (Issues that did not meet Level 1 criteria, but had very significant consequences); and one Level 3 CAPAL (Issue that did not meet Level 1 or Level 2 significance criteria, but had significant consequences). The NRC inspection team observed that at least five CAPALs in the sample were past due, and did not meet the timeliness requirements specified in Section 7.6.1 of WEC 16.2.

By reviewing the list of all issues entered in the CAPAL database as of October 22, 2014, the NRC inspection team identified that WFHE&CM had 386 issues entered in the database, of which 177 were past due, and did not meet the closure timeliness requirements. The NRC inspection team did not find objective evidence of extension approvals for these CAPALs, as required by Section 7.6.2 of WEC 16.2. Examples of past due CAPALs included:

- CAPAL Issue ID 100000228 – a Level 1 CAPAL 362 days past due, titled, "Lack of Design Engineering Rigor"
- CAPAL Issue ID 100000508 – a Level 2 CAPAL 305 days past due, titled, "Trolley Not Adjusted Properly after Reassembly"
- CAPAL Issue ID 100010212 – a Level 4 CAPAL (with a potential Condition Adverse to Nuclear Safety) 53 days past due, titled, "Spare or Replacement Parts Are Not Procured to QMS Requirements"

WFHE&CM documented the lack of timeliness in the corrective action program in CAPAL Issue ID 100052576.

The NRC inspection team determined through interviewing WFHE&CM responsible personnel that since transitioning from CAPs to CAPAL at the start of Fiscal Year 2014, WFHE&CM did not analyze corrective action data on at least quarterly basis, to identify potential adverse trends and cross-cutting deficiencies that require corrective action. Analysis and trending of corrective action data was required by WEC QMS, Section 5.5.3 and WEC 16.2, Section 7.11. The NRC inspection team noted that Westinghouse Engineering, Equipment Major Projects (EE&MP) Product Line initiated CAPAL Issue ID 100036914 on August 7, 2014, to document the lack of trending at the Product Line level. During this inspection, WFHE&CM also initiated CAPAL Issue ID 100054621, to document the lack of corrective action trending at WFHE&CM.

c. Conclusion

The NRC inspection team issued Nonconformance 99901452/2014-201-02 in association with WFHE&CM's failure to implement the regulatory requirements of

Criterion XVI of Appendix B to 10 CFR Part 50. Nonconformance 99901452/2014-201-02 cites WFHE&CM for failing to complete corrective actions in a timely manner and failure to identify significant conditions adverse to quality and take corrective actions to preclude repetition.

11. Internal Audits

a. Inspection Scope

The NRC inspection team reviewed WFHE&CM's policies and implementing procedures that govern the 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 a sample of internal audit reports, to verify implementation of the internal audit program. In addition, the NRC inspection team reviewed a sample of auditor training and qualification records, to verify that audits were performed by appropriately trained personnel not having direct responsibilities in the areas being audited.

The NRC inspection team verified that WFHE&CM had a program and procedures in place for conducting scheduled internal audits, and that the program and procedures were consistent with regulatory requirements. The NRC inspection team reviewed WEC 18.1, "Internal Audits." The NRC inspection team reviewed the internal audit schedules and verified that internal audits were scheduled and performed at the minimum frequency specified in WEC 18.1.

The NRC inspection team reviewed a sample of four internal audit reports of WFHE&CM by WEC Global Quality, to confirm that internal audits were performed using checklists and/or procedures and in accordance with WFHE&CM's procedures. The NRC inspection team verified that these internal audit reports included audit plans, documented objective evidence, audit results, and documented evidence of review by responsible management.

The NRC inspection team reviewed the training and qualification records of a sample of WEC auditors responsible for conducting internal audits at WFHE&CM, to confirm that all required training had been completed and maintained, and that qualifications and certification were in accordance with WEC's procedures. The NRC inspection team also reviewed WEC 2.8, "Qualification of Audit Personnel."

The NRC inspection team observed that management and implementation of the internal audit program is handled by WEC Global Quality, and not by WFHE&CM.

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 WFHE&CM is implementing its internal audit 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 also determined that WFHE&CM is implementing its policies and procedures associated with the internal audit program. No findings of significance were identified.

12. Entrance and Exit Meetings

On October 20, 2014, the NRC inspection team discussed the scope of the inspection with Steve Hamilton, Senior Vice President and Chief Quality Officer at WEC and WFHE&CM personnel. On October 24, 2014, the NRC inspection team presented the inspection results and observations during an exit meeting with Mr. Hamilton and WFHE&CM personnel. 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	Title	Affiliation	Entrance	Exit	Interviewed
Brent Clarke	Inspection Team Leader	NRC	X	X	
Thomas Kendzia	Inspector	NRC	X	X	
Pravin Patel	Inspector	NRC	X		
Alain Artayet	Inspector	NRC	X	X	
Aixa Belen	Inspector	NRC	X	X	
Victoria Huckabay	Inspector	NRC	X	X	
Cameron Martin	Manager, Mechanical Engineering and Drafting	WFHE&CM	X	X	X
Maggie DiRocco	Quality Engineer	WFHE&CM	X	X	X
Matt Rohr	Quality Manager	WFHE&CM	X	X	X
Ron Fox	Senior Quality Engineer	WFHE&CM	X	X	X
John Kuidera	Manufacturing Manager	WFHE&CM	X	X	
Don Davis	AP1000 Program Manager	WFHE&CM	X	X	
Brian Hill	IS and Facilities Manager	WFHE&CM	X	X	
David Garcia	General Manager AP1000 Operations	WFHE&CM	X	X	
Tom Heinen	Product Manager	WFHE&CM		X	
Bill Irmen	Electrical Engineering Manager	WFHE&CM	X	X	X
Aaron Khenkel	Senior Quality Engineer	WFHE&CM		X	
Tammy Smith	Drafting Supervisor	WFHE&CM	X	X	
Momin Khan	Spares Supervisor	WFHE&CM	X	X	
David Skow	Corrective Action Manager	WFHE&CM	X	X	X
Ed Fogarty	Manager of Products	WFHE&CM	X	X	
Jon Kotnick	Acting QC Supervisor	WFHE&CM	X	X	
Chris Replogle	Electrical Engineer	WFHE&CM	X	X	X

Name	Title	Affiliation	Entrance	Exit	Interviewed
Peter Gohdes	Mechanical Engineer	WFHE&CM	X		
Troy Nelson	Welder/Fabrication Technician	WFHE&CM			X
Dana Turner	QC/Mechanical Inspector	WFHE&CM			X
Rich Bernhagen	Electrical Assembler Technician	WFHE&CM			X
David Grandey	QC/Mechanical Inspector	WFHE&CM			X
Scottie Ewald	Electro-Mechanical Assembler	WFHE&CM			X
Dave Held	Assembly Lead	WFHE&CM			X
Eduard Teisanu	Senior Engineer	WFHE&CM			X
Kenneth Weide	Supply Chain Manager	WFHE&CM	X		
Steve Mann	Manufacturing Manager	NuCrane		X	
Aaron Garfin	Welder	NuCrane			X
Carolyn Monaco	Director of Product Development	WEC	X	X	
Ronnie Gardner	Vice President of Global Quality Programs	WEC	X	X	
Steve Hamilton	Senior Vice President and Chief Quality Officer	WEC	X	X	
Sarah Meyer	Project Controls Manager	WEC		X	
Mark Kachmar	Vice President of Manufacturing Operations	WEC	X	X	
Sarah DiTommaso	Manager of AP1000 Instrument Controls	WEC		X	
Tom Geer	Vice President of Licensing and Regulatory Affairs	WEC		X	
Paul Russ	Director of U.S. Licensing	WEC		X	
Stan Dlugolenski	Principal Engineer	WEC	X	X	X
Ron Wessel	AP1000 Licensing Engineer	WEC	X	X	X
John Steele	Director of Projects	WEC	X		
Lori Lubic	Manager of Quality Programs	WEC			X
John Moffit	NDE Inspector- MT Level IIL	WesDyne			X

Name	Title	Affiliation	Entrance	Exit	Interviewed
John Delbusson	NDE Inspector Level III	WesDyne			X

2. INSPECTION PROCEDURES USED

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

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

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

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Status	Type	Description
99901452/2014-201-01	Opened	NOV	10 CFR Part 21
99901452/2014-201-02	Opened	NON	Criterion XVI
99901452/2014-201-03	Opened	NON	Criterion XII

4. INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA

The U.S. Nuclear Regulatory Commission (NRC) inspection team identified the following inspections, tests, analyses, and acceptance criteria (ITAAC) related to the polar cranes being designed and fabricated by WFHE&CM with some activities subcontracted to Hutchinson Manufacturing Incorporated (HMI). The NRC inspection team reviewed a sample package of HMI welding and inspection documents associated with the fabrication of the safety-related equalizer upper block for the polar crane to verify that welding and inspection were performed in accordance with:

- ASME NOG-1 of 1998, "Rules for Construction of Overhead and Gantry Cranes," Section 7000, "Inspection and Testing"
- AWS D1.1-2000, "Structural Welding Code – Steel"
- ASTM A435, "Standard Specification for Straight-Beam Ultrasonic Examination of Steel Plate"
- WEC Design Specification, APP-MH01-Z0-101, "AP1000 Containment Polar Crane"

Specifically, the NRC inspection team reviewed five certified material test reports, Safety-Related Weld Traceability Map M1154-09-01 (documenting proper fillet weld size, and

traceable filler material lot number and welder ID), AWS D1.1 Qualified Welding Procedure Specification (WPS) 600-1, and visual inspection and ultrasonic examination reports.

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

Appendix C from the Combined License for Vogtle Units 3 and 4 and V.C. Summer Units 2 and 3	No. 343	ITAAC 2.3.05.03a.i

5. DOCUMENTS REVIEWED

Policies and Procedures

1. WEC Quality Management System (QMS), Revision 7, dated October 1, 2013
2. WEC 2.8, "Qualification of Audit Personnel," Revision 1.0, dated July 31, 2013
3. WEC 2.10, "Qualification, Training and Certification of Nondestructive Testing Personnel," Revision 3.0, dated October 30, 2013
4. WEC 2.13, "Visual Acuity Examination," Revision 0, dated November 3, 2008
5. WEC 7.2, "Dedication of Commercial Grade Items," Revision 2.0, dated August 15, 2013
6. WEC 7.3, "Commercial Grade Surveys," Revision 1.0, dated December 16, 2013
7. WEC 7.5, "Control of Purchased Items and Services," Revision 6.0, dated August 29, 2014
8. WEC 12.1, "Control of Inspection, Measuring, & Test Equipment," Revision 4.0, dated January 16, 2013
9. WEC 15.1, "Deviation Notices," Revision 0.0, dated July 4, 2012
10. WEC 15.2, "Use of Hold Tags," Revision 0.1, dated March 7, 2014
11. WEC 16.2, "Westinghouse Corrective Action Program," Revision 7.0, dated March 31, 2014
12. WEC 16.3, "Corrective Action Review Board," Revision 4.0, dated March 31, 2014
13. WEC 16.4, "Root Cause Analysis," Revision 4.0, dated March 31, 2014
14. WEC 16.5, "Apparent Cause Analysis," Revision 3.0, dated March 31, 2014
15. WEC 16.10, "Common Cause Analysis (CCA)," Revision 0.0, dated March 31, 2014
16. WEC 16.11, "Issue Review Committee," Revision 1.0, dated August 20, 2014
17. WEC 16.12, "Limited Cause Analysis (LCA)," Revision 0.0, dated March 31, 2014
18. WEC 16.13, "Effectiveness Review," Revision 0.0, dated March 31, 2014
19. WEC 18.1, "Internal Audits," Revision 3.0, dated May 30, 2013
20. WEC 18.4, "Self Assessments," Revision 2.0, dated January 9, 2014
21. WEC 21.0, "Identification and Reporting of Conditions Adverse to Nuclear Safety," Revision 9.0, dated July 3, 2014
22. WEC 22.2, "Safety Standards for Items and Services," Revision 4.0, dated November 3, 2008
23. WEC OQA-PAR-SIP-1, "Quality Assurance Surveillance Plan for PaR," Revision 1.0, dated July 8, 2013
24. PAR WI 15.1.1, "Documentation issue Report," Revision 0.1, dated March 4, 2013
25. PAR WI 15.1.2, "Control of Nonconforming Items," Revision 1.0, dated March 7, 2013

26. PAR WI 15.1.3, “Manufacturing at Risk Releases,” Revision 0.0, dated March 7, 2013
27. PAR-CDI-004, “Machine, Welding, Forging, and Forming Services Associated with Build to Print Fabrication by Source Verification,” Revision 9, dated January 11, 2013
28. PAR-CDI-006, “Crane Hook and Hook Nut Forging and Machining Services Associated with Build to Print Fabrication, Rev. 0, dated March 30, 2012
29. PAR-CDI-006, “Crane Hook and Hook Nut Forging and Machining Services Associated with Build to Print Fabrication, Rev. 4, dated February 18, 2013
30. FHE&CM 2.1.1, “FHE&CM Policies and Procedures,” Revision 0.0, dated September 9, 2013
31. FHE&CM 2.1.3, “Level 3 Supplemental Manufacturing Instructions (SMI),” Revision 0.0, dated March 6, 2014
32. FHE&CM 2.12.1, “Qualification of Coating Personnel,” Revision 1.0, dated March 12, 2014
33. FHE&CM WI 2.2.1, “Quality Plan Procedure,” Revision 0.0, dated September 17, 2014
34. FHE&CM WI 2.12.2, “Qualification and Certification of Coating Inspection Personnel,” Revision 0.0, dated August 30, 2013
35. FHE&CM 7.2, “Addendum: Dedication of Commercial Grade Items,” Revision 0, dated January 26, 2014
36. FHE&CM WI 9.1.1, “Control of Manufacturing and Assembly Operations,” Revision 1.0, dated January 29, 2014
37. FHE&CM WI 9.1.14, “Single Coat Application of 2-Part Epoxy Protective Coatings,” Revision 0.0, dated September 17, 2013
38. FHE&CM WI 9.1.15, “Application of 2-Part Epoxy Protective Coatings,” Revision 0.0, dated July 11, 2014
39. FHE&CM WI 10.1.5, “Torque Wrench Verification Before/After Usage,” Revision 0.0, dated September 5, 2013
40. FHE&CM WI 10.1.1, “Receipt Inspection,” Revision 0.0, dated January 22, 2014
41. FHE&CM WI 10.1.2, “In-Process Inspection,” Revision 0.0, dated January 10, 2014
42. FHE&CE WI 10.1.3, “Final Assembly Inspection,” Revision 0.0, dated January 24, 2014
43. PAR WI 9.1.10, “Application of 2-Part Epoxy Protective Coatings,” Revision 1.2, dated March 19, 2014
44. PAR WI 9.1.10, “Application of 2-Part Epoxy Protective Coatings on AP1000 In-Containment Components,” Revision 1.2, dated March 19, 2014
45. PAR WI 10.1.8, “Visual Inspection of Weldments,” Revision 1.0, dated October 9, 2012
46. PAR Nuclear/NuCrane Mfg., AWS D1.1 Prequalified WPS-100, Revison 6, dated May 2, 2014
47. QCP-74-5, “Application of Protective Coatings for AP1000 Reactor Plants,” Revision 5, dated October 10, 2011
48. Wesdyne, WDI-STD-1101, “Magnetic Particle Examination Procedure,” Revision 0, dated November 22, 2011
49. HMI, AWS D1.1 Qualified Welding Procedure Specification WPS-No. 600-1, Revision 3, dated July 31, 2012

Purchase Orders and Certificates of Compliance

1. Certificate of Compliance, Magnaflux, Magnaglo 14AM, fluorescent magnetic particle inspection material, Batch No. 14E12K, dated May 16, 2014
2. Weldstar, Certificate of Compliance 4500434070 CN1, for ESAB SFA/A-5.18, ER70S-6, 0.045" diameter spooled wire with Heat No. 386421, dated October 25, 2012
3. ESAB, CMTR for Spoolarc 86, Heat No. 386421 for 0.045" diameter spooled wire SFA/A-5.18, ER70S-6, dated June 11, 2012

Audit Reports

1. WEC Global Quality Programs Internal Audit Report, WEC-12-40, dated September 26, 2012
2. WEC Global Quality Programs Internal Audit Report, WEC-12-43, dated January 3, 2013
3. WEC Internal Audit Report, WEC-12-76, "Quality Programs and Assessments, Quality Programs and Supplier Quality Assessments – Cranberry," dated August 5, 2013
4. WEC Global Quality Programs Internal Audit Report, WEC-13-40, dated July 26, 2013
5. WEC Global Quality Programs Internal Audit Report, WEC-13-43, dated March 25, 2014
6. WEC Global Quality Programs Internal Audit Report, WEC-13-76, "Quality Programs and Assessments, Quality Programs and Supplier Quality Assessments – Cranberry," dated March 7, 2014
7. WEC Audit of Exelon PowerLabs - Coatsville, WES-2012-049/NAIC 17105, dated January 18, 2012
8. WEC Audit of Hutchinson Manufacturing Inc., WES-2013-012-R, dated March 22, 2013

Nonconformance Reports (NCRs) and Documentation Issue Reports (DIRs)

1. NCR # 13005, dated October 13, 2012
2. NCR # 14711, dated March 20, 2013
3. NCR # 14954, dated April 20, 2013
4. NCR # 14992, dated April 25, 2013
5. NCR # 15314, dated June 4, 2013
6. NCR # 17328, dated February 18, 2014
7. NCR # 17970, dated May 19, 2014
8. NCR # 17972, dated May 19, 2014
9. NCR # 18239, dated June 23, 2014
10. NCR # 18252, dated June 23, 2014
11. NCR # 18253, dated June 23, 2014
12. NCR # 18260, dated June 24, 2014
13. NCR # 18261, dated June 24, 2014
14. NCR # 18262, dated June 24, 2014
15. NCR # 18263, dated June 24, 2014
16. NCR # 18264, dated June 24, 2014
17. NCR # 18265, dated June 24, 2014
18. NCR # 18266, dated June 24, 2014
19. NCR # 18425, dated July 17, 2014
20. NCR # 18460, dated July 22, 2014
21. NCR # 18461, dated July 22, 2014

22. NCR # 18640, dated August 29, 2014
23. NCR # 18642, dated August 29, 2014
24. DIR # N2084, dated June 10, 2014
25. DIR # N2089, dated June 12, 2014
26. DIR # N2092, dated June 12, 2014
27. DIR # N2093, dated June 12, 2014

Corrective Action, Prevention, and Learning System (CAPALs) Issues, and Issue Reports

1. Issue Report # 13-108-M071, dated April 18, 2013
2. Issue Report # 13-172-M056, dated June 21, 2013
3. Issue Report # 13-182-M052, dated July 1, 2013
4. Issue Report # 13-182-M057, dated July 1, 2013
5. Issue Report # 13-207-M014, dated July 26, 2013
6. Issue Report # 13-214-M011, dated August 2, 2013
7. CAPAL Issue ID 100000228, "Lack of Design Engineering Rigor," dated October 25, 2012
8. CAPAL Issue ID 100000508, "Trolley Not Adjusted Properly after Reassembly," dated June 24, 2013
9. CAPAL Issue ID 100000536, "Method 2 and Method 3 Dedication Noncompliances," dated July 12, 2013
10. CAPAL Issue ID 100000951, "Paint Records – Improper Documentation of Paint Application Process," dated December 5, 2013
11. CAPAL Issue ID 100010212, "Spare or Replacement Parts Are Not Procured to QMS Requirements," dated May 2, 2014
12. CAPAL Issue ID 100016265, "Improvements to Internal Audit Program (WEC 18.1)," dated March 19, 2014
13. CAPAL Issue ID 100011079, "SR Part Built to Incorrect Revision," dated May 8, 2014
14. CAPAL Issue ID 100011923, "PaR Level 3 Work Instructions Do Not Reference Current Level 2 Document Control and Record Procedures," dated May 31, 2012
15. CAPAL Issue ID 100036914, "EE&MP Quarterly Trending Not Completed," dated August 7, 2014
16. CAPAL Issue ID 100039716, "Commercial Dedication CAPS/CAPAL Issues not Resolved," dated August 25, 2014
17. CAPAL Issue ID 100039718, "Material Characteristics for Commercial Items Not Specified or Do Not Link to Upper Level Requirements," dated August 25, 2014
18. CAPAL Issue ID 100039719, "Commercial Dedication Instruction Improvements," dated August 25, 2014
19. CAPAL Issue ID 100043018, "Stop Work Order – CGD," dated September 3, 2014
20. CAPAL Issue ID 100047532, "AP1000 Polar Crane Equalizer Cylinder," dated September 26, 2014
21. CAPAL Issue ID 100052576, "Corrective Action Has Not Been Effectively Implemented," dated October 15, 2014
22. CAPAL Issue ID 100054621, "FHE&CM Quarterly CAPAL Trending Not Completed," dated October 23, 2014
23. CAPAL Issue ID 100054812, "PAR WI 15.1.2 NCR Procedure – NCR vs DIR," dated October 23, 2014

24. CAPAL Issue ID 100054814, “Outdated References in Procedures,” dated October 23, 2014

Training and Qualification Records

1. Record of Lead Auditor Qualification for Lori D. Lubic, dated January 28, 2014
2. Record of Lead Auditor Qualification for John S. Papai, dated January 28, 2014
3. Record of Lead Auditor Qualification for Ed Michaels, dated January 28, 2014
4. Record of Lead Auditor Qualification for Linda S. Williams, dated January 28, 2014
5. Record of Lead Auditor Qualification for Douglas O. Henry, dated January 28, 2014
6. Record of QC Inspector Qualification for Dana Turner
7. Record of QC Inspector Qualification for Marc Hewitt
8. Record of QC Inspector Qualification for Kim Schuler
9. Record of QC Inspector Qualification for John Sogaard
10. Record of QC Inspector Qualification for David Grandey
11. Record of QC Inspector Qualification for John Kotnik
12. Record of MT Level 2L Qualification for John Moffit, WesDyne
13. Record of Coating Applicator Qualification for Rudy Turnbough
14. Record of Coating Applicator Qualification for Ryan Hartmann
15. Record of Coating Applicator Qualification for Scott Ewald
16. Record of Coating Applicator Qualification for David Lind
17. Record of Coating Applicator Qualification Lance McKay
18. Record of Coating Applicator Qualification Joe Henning
19. Record of Coating Applicator Qualification Scott Wacker
20. WesDyne Certificate of Qualification for QC Inspector 11107 including Level IIL for MT, expiration date January 11, 2017
21. WesDyne Individual Experience Summary Record for QC Inspector 11107
22. WesDyne Qualification and Certification Summary for QC Inspector 11107 for MT
23. WEC Vision Acuity Examination Record for QC Inspector 11107, far/near/color vision, dated July 30, 2014
24. PaR Nuclear/NuCrane Mfg. AWS D1.1 Welder/Welding Operator Qualification Record for Test-No. 44 and Welder ID-No. N11 using the pulsed gas metal arc welding process in the overhead (4G) test position, dated December 2, 2010
25. HMI, AWS D1.1 Welder Qualification Test Record No. 600-1-947 for FCAW, dated May 13, 2009
26. HMI, AWS D1.1 Welder Qualification Test Record No. 600-1-1013 for FCAW, dated May 13, 2009
27. Commercial Grade Dedication Training Presentation, “WEC 7.2 Revision 2.0 Dedication of Commercial Grade Items,” conducted at WFHE&CM, dated August 5, 2014
28. Commercial Grade Dedication Training Presentation, “I&C Commercial Dedication of Critical Characteristics,” conducted at WFHE&CM, dated August 7, 2014

Drawings

1. APP-MH01-V1-010, “AP1000 Polar Bridge Crane General Arrangement 330 Ton/25 Ton Single Failure Proof,” Revision 5, dated March 7, 2014
2. APP-MH01-V2-021, “ AP1000 Containment Polar Crane Runway Rail Assembly,” Revision 6, dated January 28, 2014

3. PaR Nuclear Drawing No. A-07445806-D, “Assembly, Bridge Structure,” Revision 2, dated February 7, 2014
4. PaR Nuclear Drawing No. D-07452346-D, “Lower Block Frame Hatch Hoist (item f), Sheet 1 of 2,” Revision 6, dated July 14, 2010
5. PaR Nuclear Drawing No. D-07451727-D, “(SR) Equalizer Upper Block, Sheet 1 of 1,” Revison 3, dated July 23, 2009
6. Westinghouse PAR Nuclear Drawing No D-07452593-C, “Pinion; Main Hoist Drum,” Revision 0, dated March 3, 2011

Commercial Grade Dedication Packages

1. WES-2011-191, “Commercial Grade Survey Package of Braun Intertec Corp,” dated November 16, 2011
2. Commercial Grade Dedication Packages for PO 4160066812, Part Numbers 07452385 and 07463153, dated November 29, 2012

Calibration, NDE, and Inspection Reports

1. WesDyne, Certificate of Calibration for the R.B. Annis, Gauss Meter, Model 20-0-20, S/N 90-884, instrument tracking SAP-No. 101578, expiration date of August 5, 2015
2. Exelon Powerlabs, Certificate of Calibration 0010784703 for the Parker contour probe, Model DA 400, S/N 21942, instrument tracking SAP-No. 30012103, expiration date of October 22, 2014
3. Exelon Powerlabs, Certificate of Calibration 0010840090 for the Spectroline radiometer and photometer to measure black light greater than 1000 microwatts/cm^2 and visible light less than one footcandle, respectively, Model DIX-555A, S/N 1612745, instrument tracking SAP-No. 105277, expiration date of September 29, 2015
4. Exelon Powerlabs, Certificate of Calibration 0010795278 for the Fluke infrared thermometer, Model 62 MINI, S/N 18750492, instrument tracking SAP-No. 30003980, expiration date of December 16, 2014
5. NuCrane, Weld Repair Data Card, PR-11-0070-U3.K260, Revision 1
6. Stork Herron Testing Laboratories, Material Testing and Nondestructive Testing Report HUT001-10-07-05299-4, 1 3/8” thick ASTM A516-70 plate with Heat-No. 864710, chemical analysis, tensile test, and Charpy V-notch impact testing, dated July 19, 2010
7. Stork Herron Testing Laboratories, Material Testing and Nondestructive Testing Report HUT001-10-06-03392-5, 2 1/2” thick ASTM A516-70 plate with Heat-No. 339562, chemical analysis, tensile test, and Charpy V-notch impact testing, dated July 19, 2010
8. SSAB, Test Certificate 841145184, ½” thick ASTM A36 plate, with Heat-No. A2F161, chemical analysis and tensile test, dated August 16, 2012
9. ESAB, Certificate of Analysis for Dual Shield II 70 Ultra, Lot No. 92695 for 0.045” diameter, SFA/A-5.20, E71T-1M/T-12M, dated September 19, 2012
10. ESAB, CMTR for Dual Shield II 70 Ultra, Lot No. 92278 for 0.045” diameter, SFA/A-5.20, E71T-1M/T-12M, dated June 6, 2011
11. Safety-Related Weld Traceability Map M1154-09-01, dated November 28, 2012
12. HMI, AWS D1.1 Procedure Qualification Record PQR-No. 600 (with Charpy V-notch impact testing), dated June 28, 2007
13. Braun Intertec, Report of Testing Services for acceptable visual weld inspection by CWI# 92110151, dated November 29, 2012

14. Braun Intertec, Ultrasonic Examination Sheet, PR-10-0250-U3.N740 (M1154 line item 9) for two 2 ½" thick plates HT# 339562 in accordance with ASTM A435, dated November 23, 2012
15. PP-PAR-13-032, Domestic AP1000 Hatch Hoist NOG-1 Type I Non-commercial PO Requirements, dated September 26, 2013
16. Receiving Inspection Report, PO 416008473 Item 004, Project Activity PR-11-0310-U3.L420, Drawing No 07452593, Pinion; Main Hoist Drum, Revision 0.0, dated October 21, 2014
17. Deviation Notice # 4160084793-2, dated February 14, 2013
18. Deviation Notice # 4160084793-5, May 3, 2013
19. Certified Test Report, Ellwood Quality Steels Company, Job PR-11-0310, Part Number 07452593, dated December 29, 2011
20. Purchase Order, Scot Forge, PO #060768, Material Certification #740852 Y3090R0, dated April 26, 2012
21. SSPC: The Society for Protective Coatings, Coating Applications Standard No. 2, "Procedure for Determining Conformance to Dry Coating Thickness Requirements"
22. Product Data Sheet for Carboguard 890
23. APP-G1-SX-001, AP1000 Design Specification, "AP1000 Painting of Shop Fabrication Steel," Revision 5, dated October 27, 2011
24. APP-GW-Z0-604, Design Specification, "Application of Protective Coatings to Systems, Structures and Components for the AP1000 Reactor Plant," Revision 5, dated April 4, 2011
25. Quality Release & Certification of Conformance for PO 4500636281, AP1000 Paint Only: Frame Hatch Hoist for VC Summer 2
26. APP-MH01-Z0-101, "Design Specifications," Revision 3, dated March 1, 2010

Calculations

1. APP-MH01-Z0C-001, "Polar Crane Uplift Analysis," Revision 0, dated September 16, 2009
2. APP-MH01-S2C-006, "Polar Crane Structural Qualification and Bridge Crane Wheel Forces," Revision 1, dated December, 4, 2012

Correspondence

1. WEC LTR-SRC-14-101, "PD-1226 Closeout – Spare or replacement parts are not procured to QMS requirements," dated July 9, 2014
2. WEC LTR-SRC-12-24, "PD-886 Closeout – BWR refueling bridge drive coupling failure," dated March 16, 2012
3. WEC LTR-SRC-12-40, "PD-898 Closeout – PaR subvendors welding code specified in purchase order was not followed," April 25, 2012
4. WEC LTR-SRC-12-56, "PD-918 Closeout – UT testing requirements for crane nut and hook applications," dated May 23, 2012
5. WEC LTR-SRC-12-62, "PD-922 Closeout – PR-08-5040 UT test of 106 ton hook – potential nuclear reportability," dated June 4, 2012

Other

1. Memorandum to File, “Reconciliation of Westinghouse QMS Revision 7 to NQA-1-1994 and NQA-1-2008 including the NQA-1a-2009 Addenda,” dated October 18, 2013
2. DR-PAR-13-008, “Domestic AP1000 Polar Crane Safety-Related Components Re-classification Crossover Matrix,” Revision 3.0, Alternate Document Number 70591106, Project Number PR-10-0250 and PR-10-0260
3. List of Safety Related Parts for AP1000 Polar Crane, Cask Crane, and Hatch Hoist
4. WEC 2010 Internal Audit Schedule
5. WEC 2011 Internal Audit Schedule
6. WEC 2012 Internal Audit Schedule
7. WEC 2013 Internal Audit Schedule
8. WEC 2014 Internal Audit Schedule
9. Apparent Cause Analysis Commitment # 13-193-M020.01, “Method 2 and Method 3 Dedication Noncompliances (# 13-193-M020), dated September 6, 2013
10. Root Cause Analysis, “Unexpected Commissioning, Malfunctioning, and/or Performance Issues; Ginna Nuclear Power Station – Fall, 2012 Outage,” Document Number RCA 12-299 M073.01, Revision 1, dated March 8, 2013
11. Root Cause Analysis, “Improper Documentation of Paint Application Process,” Document Number CAPs-RCA-13-339-M054, Revision 1, dated March 26, 2014
12. List of “Medium” Significance Issues from CAPS, Year 2013, Status “Closed” (Shoreview, MN and Hutchinson, MN locations only)
13. List of all “Level 2” Significance Issues from CAPAL (Shoreview, MN and Hutchinson, MN locations only)
14. List of all Issues in CAPAL, sorted by issue age, in descending order (Shoreview, MN and Hutchinson, MN locations only), printed on October 22, 2014