April 24, 2015

Steve Hamilton, Senior Vice President
Quality, Environment, Health & Safety
Westinghouse Electric Company
1000 Westinghouse Drive, Suite 102
Cranberry Township, PA 16066

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION OF WESTINGHOUSE ELECTRIC COMPANY LLC, CRANBERRY TOWNSHIP, REPORT NO. 99900404/2015-202 and NOTICES OF NONCONFORMANCE

Dear Mr. Hamilton:

On January 26-30, 2015, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Westinghouse Electric Company (here-after referred to as WEC) facility in Cranberry Township, PA. The purpose of this limited-scope reactive inspection was to assess WEC'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."

On March 13, 2015, we held a telephone conference call to perform a second exit meeting to provide you and your staff the final inspection results.

This technically focused inspection specifically evaluated WEC's implementation of quality activities associated with oversight of suppliers; and resolution of technical issues such as the containment condensate return and management of hydrogen inside containment during accident conditions. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute NRC endorsement of WEC's overall quality assurance (QA) or 10 CFR Part 21 programs.

During this inspection, the NRC staff determined that the implementation of the WEC QA program failed to meet certain NRC requirements imposed on you by your customers. Specifically, the staff determined that WEC was not fully implementing its QA program in the areas of corrective actions, oversight of suppliers, and audits. Several WEC corrective actions were neither timely nor effective in correcting these deficiencies.

The NRC is concerned with the inspection findings based on this limited scope inspection. Although WEC had an NRC-approved QA program meeting the requirements of Appendix B to 10 CFR Part 50, NRC inspectors identified examples of WEC's inadequate implementation of the QA program in several areas. The examples indicate that WEC did not (1) adequately implement timely and appropriate corrective actions to address problems with the oversight of

suppliers and the use of the qualified supplier list, (2) ensure that suppliers had measures in place to assure that purchased material, equipment and services conformed to procurement documents. The enclosed Notices of Nonconformance (NON) cite these nonconformances, and the enclosed report describes the circumstances surrounding them.

Please provide a written statement or explanation within 30 days from the date of this letter in accordance with the instructions specified in the enclosed Notice of Nonconformance. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements. We request that in your response to the NONs, WEC documents the extent of condition on the implementation of your QA program and ensure all issues are identified and adequately addressed in your corrective action programs. The NRC will consider extending the response time if you show good cause to do so.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response, (if applicable), should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

Sincerely,

/RA/ (RMcIntyre for)

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

Docket No.: 99900404

Enclosures:
1. Notice of Nonconformance
2. Inspection Report No. 99900404/2015-202
and Attachment

suppliers and the use of the qualified supplier list, (2) ensure that suppliers had measures in place to assure that purchased material, equipment and services conformed to procurement documents. The enclosed Notices of Nonconformance (NON) cite these nonconformances, and the enclosed report describes the circumstances surrounding them.

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Enclosures:
1. Notice of Nonconformance
2. Inspection Report No. 99900404/2015-202 and Attachment

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OFC	NRO/DCIP/MVIB	NRO/DCIP/QVIB	NRO/DCIP/MVIB	NRO/DCIP/QVIB
NAME	JOrtega-Luciano	RLaura	BClarke	TKendzia
DATE	03/31/15	03/31/15	03/31/15	03/31/15
OFC	NRO/DCIP/QVIB	NRO/DCIP/QVIB	NRO/DSRA/SCVB	NRO/DSRA/SRSB
NAME	AThomas	VHuckabay*	AGrady*	CVanWert*
DATE	03/31/15	04/07/15	03/18/15	04/09/15
OFC	NRO/DCIP	NRO/DCIP/MVIB		
NAME	TFrye	ERoach		
DATE	03/31/15	04/24/15		

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Letter to Steve Hamilton from Edward Roach dated April 24, 2015

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION OF WESTINGHOUSE ELECTRIC COMPANY LLC, CRANBERRY TOWNSHIP, REPORT NO. 99900404/2015-202 and NOTICES OF NONCONFORMANCE

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NOTICE OF NONCONFORMANCE

Westinghouse Electric Company
Cranberry, PA

Docket No. 99900404

Based on the results of a Nuclear Regulatory Commission (NRC) inspection conducted at Westinghouse Electric Company (WEC) located in Cranberry Township, PA on January 26 through January 30, 2015, certain activities were not conducted in accordance with NRC requirements which were contractually imposed on WEC by NRC licensees.

A. Criterion I, "Organization," of Appendix B to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 states, in part, that "The quality assurance functions are those of (1) assuring that an appropriate quality assurance program is established and effectively executed; and (2) verifying, such as by checking, auditing, and inspecting, that activities affecting the safety-related functions have been correctly performed."

   Section 2.3.1, WEC Quality Management System (QMS), Revision 7, dated October 1, 2013, states, in part, that "Senior management establishes overall expectations for effective implementation of the QA program and is responsible for obtaining the desired end result." It further states that "The Senior Vice Presidents have overall responsibility and are accountable for the effective implementation of the QMS for applicable activities."

   Contrary to the above, as of January 30, 2015, WEC failed to ensure that portions of the QA program were effectively executed, and verify that activities affecting safety-related functions have been correctly performed. Specifically, WEC failed to take timely and effective corrective actions to address significant conditions adverse to quality. This included the oversight of suppliers and the proper use of the qualified supplier list. Additionally, WEC failed to verify that its suppliers had measures in place to assure that purchased material, equipment, and services conformed to the procurement documents. These examples occurred dating back to January, 2010, which indicated WEC did not effectively implement portions of their NRC-approved QA program.

These issues have been identified as Nonconformance 99900404/2015-202-01.

B. Criterion XVI, "Corrective Action," of Appendix B, to 10 CFR Part 50 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 WEC QMS, Revision 7, dated October 1, 2013, states that "Conditions adverse to quality of items and services are identified, documented, analyzed, and corrected in accordance with established procedures. For significant

conditions adverse to quality, these procedures provide for identification; assignment of responsibility for corrective action; documentation of the cause and corrective action taken, implementation, evaluation, and verification of corrective action to prevent recurrence; and reporting to the appropriate levels of management."

Section 7.5.1 of WEC Procedure 16.2, "Westinghouse Corrective Action Program," Revision 7.0, dated April 3, 2012, states, in part, that "A Corrective Action plan shall be developed for each issue commensurate with its consequences, complexity and Significance level, and in a manner that ensures all conditions adverse to quality are effectively addressed."

WEC Procedure 16.11, "Issue Review Committee," Revision 1.0, dated August 20, 2014, Appendix A, "Guidance For Classifying Conditions Adverse to Quality," includes the following example for significant condition adverse to quality (SCAQ), "A repetitive problem indicating a programmatic failure or a precursor of a major technical deficiency."

Contrary to the above, as of January 30, 2015, WEC failed to establish measures to assure that conditions adverse to quality were promptly corrected, and for significant conditions adverse to quality, corrective actions were taken to preclude repetition. Specific examples include:

1. WEC failed to promptly correct or prevent recurrence of a significant condition adverse to quality associated with safety-related purchase orders placed to suppliers not on the Qualified Supplier List (QSL) or without restrictions required by the QSL. Specifically, Corrective Action Process (CAPs) Issue Report 10-014-W012, issued in January 2010, "Purchase Requisition/Purchase Order Processing Violates Numerous WEC-7.5 Requirements," remained open for approximately 56 months, had been ineffective in resolving the significant condition adverse to quality, and was closed to Corrective Action, Prevention, and Learning System (CAPAL) Issue ID 100000472. CAPAL 100000472 documented that CAPs 10-014-W012 had not been effective and that from January 2011 to August 2013 there were over 50 CAPS issue reports, including four high level issues that documented problems with supplier control issues. CAPAL 100000472 was initiated in May 2013 and remains open as of January 30, 2015. The recurrent issue of significant condition adverse to quality associated with safety-related purchase orders placed to suppliers not on the QSL or without restrictions required by the QSL was documented in January 2010 and has not been resolved.

2. WEC failed to promptly correct or prevent recurrence of a significant condition adverse to quality associated with the root cause for CAPs 12-045-C037, "Root Cause Analysis for Nonconforming Fuel Assembly Shipped to Indian Point 2." Specifically, the root cause for CAPs 12-045-C037 was identified as management failed to reinforce established standards, which resulted in an incomplete supplier audit checklist, acceptance of finding responses without objective evidence and not issuing a Stop Work Order in compliance with WEC 15.5, "Stop Work," Revision 5.0 dated December 12, 2014. The corrective actions provided for retraining of the

Auditors, but did not specifically address the management aspect of enforcing established standards and program requirements. WEC identified in the final effectiveness review for the root cause that the corrective action was ineffective and similar problems continued to occur. WEC closed CAPs 12-045-C037 to CAPAL 100026711 to resolve the issues. The recurrent issue of the significant condition adverse to quality associated with management failing to reinforce established standards for supplier audits was identified in January 2013 in the root cause for CAPs 12-045-C037 and has not been resolved. WEC also failed to initiate CAPAL or document action to address why this root cause corrective action was not effective.

3. WEC failed to promptly correct and prevent recurrence of a SCAQ associated with the internal audit program. Specifically, WEC identified repetitive issues with significant weaknesses in the internal audit program, which indicate a programmatic failure that, in accordance with guidance in WEC 16.11, "Issue Review Committee," Revision 1.0 dated August 20, 2014, should have been classified as a SCAQ, to ensure that there was an adequate and effective corrective action. CAPAL 100016265 was issued on March 19, 2014, and identified concerns with the internal audit program, including planning, scheduling, coordinating, scope definition and depth. WEC did not consider these issues to be a SQAC and closed the CAPAL on August 26, 2014. On October 17, 2014, WEC initiated CAPAL 100052988 which identified significant weaknesses in the conduct of internal audits, missed audits, audit frequency mismatch, inadequate audit scope, inadequate audit objective evidence, and inadequate audit plan. WEC did not consider this CAPAL a SCAQ and corrective actions were still open. In addition, the programmatic failure in the WEC internal audit program resulted in a failure to identify and correct issues, with the consequence of WEC being in non-compliance with regulatory requirements. The 2013 internal audit of Newington, WEC 13-35: Westinghouse Newington, identified a procedural issue with commercial grade dedication, but did not identify any issues with implementation of commercial grade dedication at Newington. The 2013 internal audit of NuCrane, WEC 13-40: Westinghouse Par Nuclear - NuCrane, did not identify any issues related to measuring and test equipment (M&TE). However, the NRC inspections of Newington in October 2014, documented in Inspection Report No. 99901392/2014-201, and Westinghouse Fuel Handling Equipment and Crane Manufacturing (NuCrane Manufacturing) in October 2014, documented in Inspection Report No. 99901452/2014-201, resulted in the issuance of Notices of Nonconformance related to programmatic issues with inadequate commercial grade dedication and not implementing part of the M&TE program, respectively.

4. WEC failed to promptly initiate an issue report for a SCAQ that adversely impacted the AP1000 design containment condensate return portion of the Passive Core Cooling System needed to maintain the reactor in a safe shutdown condition. Specifically, an invalid design assumption was identified in 2010; and WEC did not initiate an issue report until July 9, 2012. Also, once initiated, CAPS Issue Report 12-191-M015 was not treated as a SCAQ. Additionally, WEC failed to

perform an adequate extent-of-condition review for other possible incorrect design assumptions because their evaluation only focused on potential process issues rather than sampling other similar design assumptions.

These issues have been identified as Nonconformance 99900404/2015-202-02.

C. Criterion VII, "Control of Purchased Material, Equipment, and Services" of Appendix B, to 10 CFR Part 50, states, in part, that "Measures shall be established to assure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents. These measures shall include provisions, as appropriate, for source evaluation and selection, objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products upon delivery. The effectiveness of the control of quality by contractors and subcontractors shall be assessed by the applicant or designee at intervals consistent with the importance, complexity, and quantity of the product or services."

Section 4.3.2, "Supplier Selection," of WEC QMS, Revision 7, dated October 1, 2013, states, in part, that "The purchasing organization is responsible for placing orders only with suppliers that have been found acceptable in accordance with established procedures." Section 4.3.2 further states that "Suppliers of safety-related items and services are evaluated and selected prior to their designation as a qualified supplier. These methods include one or more of the following: (a) evaluation of the supplier's history (including current CAPs ability) of providing the same or similar item in accordance with specified requirements; (b) review of the supplier's current quality records supported by documented qualitative and quantitative information which can be objectively evaluated; and/or (c) the supplier's technical and quality CAPs ability determined by a source evaluation of their facilities, personnel interviews, and the content and implementation of their quality program. Suppliers of safety-related items and services for nuclear power plants not subject to NRC regulations are evaluated and qualified in accordance with the requirements of the governing regulatory agency or customer contract."

Contrary to the above, as of January 30, 2015, WEC failed to verify that their suppliers had measures in place to assure that purchased material, equipment, and services conform to the procurement documents. Specific examples include:

1. WEC failed to perform an adequate evaluation of L&S Machine Company LLC (L&S) to verify L&S's qualifications to perform dedication and special processes such as welding, nondestructive examination (NDE), and heat treatment and plating, which was required for the procurement of reactor fuel assembly top and bottom nozzles, top nozzle spring clamps and spiders. The Supplier Audit Evaluation Summary (SAES) completed by WEC for L&S indicated that L&S was qualified to perform machining services. Purchase orders issued to L&S from WEC required L&S to perform dedication, welding, NDE, heat treatment and plating which is outside of the approved scope of work identified in the SAES. This discrepancy in qualification resulted in products manufactured by L&S being in an indeterminate status relative to quality standards.

2. WEC failed to perform an adequate evaluation of Peerless Manufacturing Company (PMC), prior to issuing a safety-related purchase order (PO) 4500429292. Also, after changing PMC's supplier status on the QSL to indicate that PMC was a supplier of non-safety related items and services, WEC failed to re-evaluate PMC's QA program, to verify that it was adequate for the existing procurement under PO 4500429292. Further, WEC failed to maintain the supplier in qualified status throughout the duration of the purchase order. As a result, products shipped from PMC are considered to be in an indeterminate status relative to quality standards.

These issues have been identified as Nonconformance 99900404/2015-202-03.

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 your corrective action will be completed. Where good cause is shown, consideration will be given to extending the response time.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (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.

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from 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 24th day of April 2015.

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

Docket No.:	99900404
Report No.:	99900404/2015-202
Vendor:	Westinghouse Electric Company Cranberry Township, PA
Vendor Contact:	Mr. Ronald Wessel wesselrp@westinghouse.com 412-374-4023
Nuclear Industry Activity:	Westinghouse Electric Company (WEC) holds a design certificate for the AP1000 and is responsible for detailed design and testing of safety-related components to be used in AP1000 plants. These qualification and functional tests are associated with and may directly affect closure of Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) from Revision 19 of the certified AP1000 design. Currently, these ITAAC are incorporated into the combined licenses of Vogtle Units 3 and 4 and V.C. Summer Units 2 and 3.
Inspection Dates:	January 26 - 30, 2015
Inspectors:	Jonathan Ortega-Luciano, Team Leader, NRO/DCIP/MVIB Richard Laura, Assistant Team Leader, NRO/DCIP/QVIB Brent Clarke, NRO/DCIP/MVIB Thomas Kendzia, NRO/DCIP/QVIB Ashley Thomas, NRO/DCIP/QVIB Victoria Huckabay, NRO/DCIP/QVIB Anne-Marie Grady, NRO/DSRA/SCVB Christopher Van Wert, NRO/DSRA/SRSB
Approved by:	Edward Roach, Branch Chief Mechanical Vendor Inspection Branch Division of Construction Inspection & Operational Programs Office of New Reactors

EXECUTIVE SUMMARY

Westinghouse Electric Company
Inspection Report No. 99900404/2015-202

The U.S. Nuclear Regulatory Commission (NRC) staff conducted an announced, reactive inspection at Westinghouse Electric Company (WEC), in Cranberry, Township, PA, from January 26-30, 2015. The purpose of the inspection was to review the implementation of the WEC Quality Assurance (QA) program pursuant to 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 WEC's implementation of quality activities associated with oversight of suppliers; and resolution of significant technical issues such as the containment condensate return and management of hydrogen inside containment during accident conditions.

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

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

During conduct of this reactive inspection, the NRC inspection team implemented inspection procedure (IP) 43003, "Reactive Inspections of Nuclear Vendors," supplemented by IP 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance, and IP 43004, "Inspection of Commercial-Grade Dedication Programs."

The NRC's last two vendor inspections at WEC in Cranberry Township, PA included inspection of safety related code and software (NRC Inspection Report No. 99900404/2013-202 dated June 6, 2013), and also inspection of design changes and root cause analyses (NRC Inspection Report No. 99900404/2013-201 dated March 27, 2013).

The NRC inspection team determined that, in general, WEC implemented the QA program providing oversight of safety related activities during the resolution of technical issues such as the AP1000 issue of managing hydrogen in containment. The NRC inspection team identified examples of WEC's inadequate implementation of the QA program in several areas. These examples indicate that WEC 1) did not provide adequate oversight of suppliers and properly maintain the qualified supplier list, 2) and did not take timely and effective corrective actions for significant conditions adverse to quality. This includes the containment condensate return issue, issues associated with the implementation of procurement program requirements, conducting effective audits, and the failure of management to reinforce established standards for supplier audits which was previously identified in January 2013 and has not been resolved.

The results of the inspection are summarized below:

Organization

The NRC inspection team determined that WEC did not adequately implement the requirements of Criterion I, "Organization," of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99900404/2015-202-01 in association with WEC's failure to ensure that an appropriate QA program was established and effectively executed; and verifying, such as by checking, auditing, and inspecting, that activities affecting safety-related functions were correctly performed. Specifically, WEC failed to take timely and effective corrective actions to address significant conditions adverse to quality. This includes the oversight of suppliers and the proper use of the qualified supplier list. Additionally, WEC failed to verify that its suppliers had measures in place to assure that purchased material, equipment, and services conformed to the procurement documents. These examples occurred dating back to January, 2010, which indicated WEC did not effectively implement portions of their NRC-approved QA program.

Corrective Action

The NRC inspection team determined that WEC did not adequately implement the requirements of Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99900404/2015-202-02 in association with WEC's failure to take appropriate measures to ensure that, for significant conditions adverse to quality, the cause of the condition was determined and the appropriate corrective actions were taken. Specifically, WEC failed to promptly correct the significant condition adverse to quality identified in Corrective Action, Prevention, and Learning System (CAPAL) Issue ID 100000472, which identified recurrent issues with Purchase Orders (POs) issued to suppliers not on the QSL or for orders placed incorrectly to suppliers with restrictions. WEC also failed to take adequate corrective action for the significant condition adverse to quality identified in CAPs Issue Report 12-045-C037, which identified as the root cause that management failed to reinforce the established standards for performing supplier audits.

Internal Audits

The NRC inspection team determined that WEC did not adequately implement the requirements of the internal audit program. WEC self-identified problems with performance of audits but did not consider the problems to be significant conditions adverse to quality. Subsequently, there were no apparent cause analyses or root cause analyses conducted for the CAPALs that documented issues with implementation of the internal audit program. The corrective actions for these CAPALs were still in progress and therefore were not evaluated for effectiveness by the NRC inspection team. The NRC inspection team identified the issues associated with the internal audit program as an example of Nonconformance 99900404/2015-202-02, which was issued for WEC's failure to promptly correct or prevent recurrence of significant conditions adverse to quality.

Oversight of Suppliers

The NRC inspection team determined that WEC did not adequately implement the requirements of Criterion VII, “Control of Purchased Material, Equipment, and Services” of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99900404/2015-202-03 for WEC’s failure to verify that their suppliers had measures in place to assure that purchased material, equipment, and services conformed to the procurement documents. Specifically, WEC failed to: (1) evaluate L&S Machine Company’s, LLC (L&S’s) qualifications to perform dedication and special processes such as nondestructive examination (NDE), welding, heat treatment and plating services, which were required for the procurement of top and bottom nozzles, and (2) provide objective evidence that an adequate evaluation of Peerless Manufacturing Company (PMC) was performed prior to issuing a safety-related purchase order. Also, after changing PMC’s supplier status on the QSL to indicate that PMC was a supplier of non-safety related items and services, WEC failed to reevaluate PMC’s QA program, to verify that it was adequate for the existing procurement under PO 4500429292. Further, WEC failed to maintain the supplier in a qualified status throughout the duration of the purchase order.

Design Control

Potential Hydrogen Generation and Management During Beyond Design Basis Accidents

The NRC inspection team reviewed the WEC methodology and analysis for implementing combustible gas control for the AP1000 design, including requests for pending design changes, for consistency with the requirements of 10 CFR 50.44 “Combustible gas control for nuclear power reactors” (c), “Requirements for future water cooled applicants and licensees.” Based on the limited sample of documents reviewed and personnel interviewed, the NRC inspection team determined that WEC is meeting the regulatory requirements of Criterion III, “Design Control,” for combustible gas control for the AP1000. No findings of significance were identified.

Containment Condensate Return

The NRC inspection team determined that WEC did not adequately implement the requirements of Criterion XVI, “Corrective Actions” of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99900404/2015-202-02 for WEC’s failure to take prompt and effective corrective actions associated with an incorrect design assumption for the containment condensate return which is necessary to maintain the reactor in a safe shutdown condition. The issue was not entered into the corrective action process in a timely manner, was not treated as a significant condition adverse to quality, and the extent-of-condition review was inadequate.

REPORT DETAILS

1. 10 CFR Part 21 Program

   a. Inspection Scope

   The NRC inspection team reviewed the policies and implementing procedures that govern WEC's implementation of 10 CFR Part 21, "Reporting of Defects and Noncompliance" program. The NRC inspection team reviewed a sample of WEC's 10 CFR Part 21 evaluations from the last two years to verify compliance with the requirements of 10 CFR 21.21, "Notification of Failure to Comply or Existence of a Defect and its Evaluation." Additionally, the team reviewed a sample of Purchase Orders (POs) issued by WEC for the purchase of safety related materials, services and equipment to verify compliance with the requirements of 10 CFR 21.31, "Procurement Documents." The inspectors also reviewed WEC's procedures that govern corrective action and nonconforming conditions to verify adequate implementation of the regulatory requirements to identify and correct conditions adverse to quality.

   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. Conclusions

   Based on the review of WEC's 10 CFR Part 21 program, implementing procedures, and a sample of 10 CFR Part 21 evaluations, the NRC inspection team determined that WEC's process met regulatory requirements. No findings of significance were identified.

2. Design Control

   a. Inspection Scope

   Potential Hydrogen Generation and Management during Beyond Design Basis Accidents

   The NRC inspection team reviewed design basis documents associated with the potential generation and management of hydrogen during a beyond design basis event (hereafter called combustible gas control) for the AP1000 design, to verify that the design, including requests for pending design changes, is consistent with the requirements of 10 CFR Part 50.44 "Combustible Gas Control for Nuclear Power Reactors," Section (c), "Requirements for future water cooled applicants and licensees." The NRC inspection team reviewed the re-analysis for combustible gas control for the AP1000, focusing on the In-containment Refueling Water Storage Tank (IRWST), and the Core Makeup Tank (CMT) compartments. The NRC inspection team reviewed a

sample of associated WEC calculations, to ensure that they met the requirements of Criterion III, “Design Control” of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed a sample of design documents, including requests for pending design changes, for the AP1000 Containment Hydrogen Control System (VLS), IRWST, and the CMT compartments, to ensure that the VLS system would meet the Design Control Document (DCD) requirements. The NRC inspection team observed a demonstration of a WEC 3-D electronic model, focusing on the containment, the IRWST, and the CMT compartments. The NRC inspection team also reviewed a sample of corrective action documents associated with combustible gas control and the VLS to ensure that the regulatory requirements were met.

The NRC inspection team interviewed WEC employees to assess their understanding of the requirements for combustible gas control, and how the AP1000 design meets these requirements. The interviews included technical experts, and the questions focused on how the analysis was implemented by the design.

Containment Condensate Return

The NRC inspection team reviewed a sample of the design and corrective action documents related to the containment condensate return portion of the passive residual heat removal heat exchanger (PRHR-HX) which removes heat from the reactor during an event and transfers the heat to the IRWST. A significant technical and licensing issue was the resolution of an inadequate design input for containment condensate return. During licensing review activities in the United Kingdom in 2010, WEC received a Technical Question requesting a basis for the 90 percent condensate return rate used to support the Emergency Core Cooling System (ECCS) performance analysis. WEC formed a test team in spring 2011 to develop a basis for the previously unsubstantiated input assumption. Initial test results quickly indicated that the 90 percent return rate was inaccurate. Subsequent tests with various test conditions were completed by Summer 2012.

The attachments to the inspection report lists the individuals interviewed and documents reviewed.

b. Observations and Findings

No findings of significance were identified regarding potential hydrogen generation and management during beyond design basis accidents.

WEC initiated testing and various hardware modifications to increase the amount of condensate return flow. The initial return flow of 90 percent was not conservative and resulted in degraded performance of the PRHR-HX. The hardware modifications included: adding dams to the top of the polar crane girder, adding dams to control the flow of condensate on an equipment hatch near the gutters, plugging holes that could provide a loss path for the condensate, adding flow diverters, adding splash guards,

modifying the gutter for optimum performance, and placing restrictions to new attachments on the containment wall.

The NRC inspection team reviewed various corrective action documents on the condensate return issue dating back to 2012. Additionally, the NRC inspection team interviewed WEC personnel who identified the problem and were involved in developing corrective actions. A Part 21 evaluation was also performed which concluded that a substantial safety hazard did not exist because there was no total loss of the safety function. The NRC inspection team determined this Part 21 evaluation to be adequate.

The first corrective action item for this issue was CAPS Issue Report #12-191-M015, dated July 9, 2012, approximately one year after WEC determined that the 90 percent rate was not supported by test results. The suggested priority was "Medium" which was then confirmed by the WEC Issue Review Board. As a "Medium" level issue, an Apparent Cause Analysis (ACA) and Extent of Condition (EOC) were required per the WEC corrective action program, "WEC 16.2, "Westinghouse Corrective Action Program," Revision 7 dated March 31, 2014. The ACA identified four apparent causes including:

1. input design calculation was missing, causing invalid and insufficient inputs;
2. systems group made an assumption based on verbal conversation;
3. functional requirement was not properly captured and not communicated to the containment vessel group; and
4. containment vessel group did not question what specific requirements needed to be met.

The NRC inspection team determined that the apparent cause review and findings were adequate. However, the NRC inspection team identified three concerns related to the lack of prompt identification, evaluation, and implementation of corrective actions to prevent recurrence.

The NRC inspection team determined that the EOC was not adequate because it only referred to an ongoing commitment related to a different CAPAL item covering design interface communication deficiencies. This design interface communication improvement effort did not search for similar design inputs as the condensate return issue that involved the lack of a formal basis such as calculations and test results. The EOC performed only investigated the process related issues, which did not address all four of the identified apparent causes. Specifically, AC-1, "Input to design calculation is missing, causing invalid and insufficient inputs" was not adequately addressed by the stated EOC analysis. Additionally, prior to this inspection, the NRC staff identified this concern regarding the potential for additional unsupported input assumptions during a phone call in early December 2014. WEC opened a new CAPAL (#100068146) regarding the NRC staff concerns about the EOC evaluation.

The NRC inspection team also identified that CAPs Issue Report No. 12-191-M0-15 was not initiated until approximately two years after it was discovered that there was no technical basis for the 90 percent return rate assumption. This was several months after WEC testing proved that the 90 percent return rate assumption was incorrect. Lastly,

the NRC inspection team identified that CAPs Issue Report # 2-191-M0-15 should have been opened as a high level priority 1 or 2, to ensure that the issue was treated as a significant condition adverse to quality (SCAQ). Appendix A, "Additional Guidance for Conditions Adverse to Quality," of WEC 16.2, Revision 7, provides guidance on how to determine the significance for an identified condition adverse to quality. The NRC inspection team determined that the reduced condensate return rate for the Safe Shutdown Calculations should be considered a SCAQ since it potentially could affect the ECCS ability to maintain the reactor in a safe shutdown condition. Appendix A gives examples of SCAQs including "Deviations from performance specifications that require major evaluations, redesign, or repair to establish the adequacy of the structure, system, or component to perform its intended function."

Collectively, these concerns identified by the NRC inspection team represent an example of WEC's failure to implement Criterion XVI, "Corrective Actions," of Appendix B to 10 CFR Part 50. Specifically, for the inadequate design assumption of the containment condensate return issue, WEC failed to promptly initiate a corrective action document, the corrective action document was assigned the wrong significance level, and the extent of condition review was determined to be inadequate. The NRC inspection team was concerned that a proper extent of condition review had not been performed. These issues have been identified as an example of Nonconformance 99900404/2015-202-02.

c. Conclusions

The NRC inspection team reviewed the WEC methodology and analysis for implementing combustible gas control for the AP1000 design, including requests for pending design changes, for consistency with the requirements of 10 CFR 50.44 "Combustible gas control for nuclear power reactors" (c), "Requirements for future water cooled applicants and licensees." Based on the limited sample of documents reviewed and personnel interviewed the NRC inspection team also determined that WEC is meeting the regulatory requirements of Criterion III, "Design Control" and Criterion XVI, "Corrective Action," for combustible gas control for the AP1000. No findings of significance were identified.

The NRC inspection team determined that WEC did not adequately implement the requirements of Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99900404/2015-202-02 for WEC's failure to take prompt and effective corrective actions associated with an incorrect design assumption for the containment condensate return which is necessary to maintain the reactor in a safe shutdown condition. The issue was not entered into the corrective action process in a timely manner, was not treated as a significant condition adverse to quality, and the extent-of-condition review was inadequate.

3. Oversight of Suppliers

a. Inspection Scope

The NRC inspection team reviewed WEC's policies and implementing procedures that govern its oversight of contracted activities, to verify compliance with the requirements of 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 supplier (external) audits, surveillances, and assessments, to determine the adequacy of WEC's performance of supplier oversight activities. The NRC inspection team also reviewed the disposition of audit and surveillance findings for adequacy.

The NRC inspection team reviewed a sample of procurement documents issued by WEC for the purchase of safety-related and augmented quality items and services, to verify that the qualifications and restrictions identified on the WEC QSL were imposed in the applicable procurement documents. Also, the NRC inspection team verified that the implementation of WEC's Supplier Audit/Evaluation Summary (SAES), which was required to be updated with supplier qualification data per the results of each audit or assessment, was completed in accordance with WEC 7.1, "Supplier QA Program Qualification and Assessment." The SAES reflects the current qualifications and restrictions imposed on the supplier by the QSL. The NRC inspection team verified that the qualifications and restrictions identified in the SAES match the restrictions that WEC imposed in the applicable procurement documents.

The NRC inspection team discussed the control of purchased material, equipment, and services with WEC's management and technical staff. The attachment to this inspection report lists the documents reviewed by the NRC inspection team.

b. Observations and Findings

The NRC inspection team reviewed the audits of L&S Machine Company conducted by WEC over the last four years.

During the review of WEC audit WES-2011-186, the NRC inspection team noted that Section 10 of the audit checklist pertaining to dedication and unqualified source material had not been evaluated by the auditor. The auditor, under the note comment section, included a statement that there had not been any evidence that L&S performed commercial grade dedication. Section 8 of the audit checklist contradicts the note comment from Section 10 stating that L&S performed commercial grade dedication for calibration services. Further, the NRC inspection team noted that the scope of the audit did not evaluate L&S's engineering capabilities to perform commercial grade dedication. During the review of a supplemental audit to WES-2011-186, the NRC inspection team noted that WEC issued Supplier Corrective Action Request (SCAR) 12-130-M042 for L&S's lack of any reference to a commercial-grade dedication process in their Quality Assurance Manual (QAM) and lack of details pursuant to the technical evaluation

required by engineering for identification of critical characteristics and acceptance methods in their procedure for commercial dedication of materials or services. This SCAR led to WEC adding a restriction to the L&S SAES, on May 17, 2012, to prohibit L&S from performing commercial grade dedication until the SCAR was evaluated and closed. WEC continued to issue POs that required L&S to perform commercial grade dedication services. On September 13, 2012, WEC determined that L&S's response to SCAR 12-130-M042 was adequate and closed the SCAR. The restriction on commercial grade dedication was removed from the L&S SAES. The NRC inspection team reviewed the L&S QAM, and noted that at the time of the inspection, L&S did not have an engineering function to perform commercial grade dedication. The NRC inspection team also reviewed L&S's response to SCAR 12-130-M042 and determined that the response was inadequate. The NRC inspection team concluded that WEC failed to adequately evaluate L&S to verify they had the capabilities to perform commercial grade dedication under their current QAM. Also, WEC issued POs that required L&S to perform commercial grade dedication which was an activity outside of the approved scope of work for L&S. These issues have been identified as an example of Nonconformance 99900404/2015-202-03.

Additionally, during the review of audit WES-2011-186, the NRC inspection team noted that L&S was performing special processes such as welding, non-destructive examination (NDE), heat treatment, and plating. The NRC inspection team reviewed the audit checklist and SAES corresponding to audit WES-2011-186 and noted that neither document provided objective evidence to demonstrate that the WEC audit team evaluated if L&S program had the necessary measures in place that qualified them to perform NDE qualifications, NDE tests, weld qualifications, or any of the special processes included in the procurement documents from WEC to L&S. Also, the NRC inspection team reviewed audits WES-2012-105, WES-2012-106, and WES-2013-065-R, to determine if WEC had evaluated L&S's welding procedures and qualifications. Audits WES-2012-105 and WES-2012-106 did not evaluate the performance of welding activities at L&S. Audit WES-2013-065-R stated that qualification of welders was performed in accordance with Section IX, "Welding and Brazing Qualifications," of the Association of Mechanical Engineers (ASME) Code. The NRC inspection team noted that the checklist from audits WES 2012-105, WES-2012-106, and WES-2013-065-R did not provide objective evidence that L&S had the necessary engineering function in place to have a welding program. Also, the L&S QAM did not include engineering roles and responsibilities to implement a welding program in accordance with ASME code. During the review of the QAM and audit reports, the NRC inspection team was unable to confirm how the L&S welders were qualified and how these qualifications were maintained. The NRC inspection team met with the WEC Supplier Quality Oversight team to discuss WEC's evaluation of L&S's welding capabilities. The WEC Supplier Quality Oversight team was unable to provide objective evidence that demonstrated that WEC approved L&S to perform welding activities. The NRC inspection team concluded that WEC failed to adequately evaluate L&S to verify they had the capabilities to perform welding activities under their current QAM. Also, WEC issued POs that required L&S to perform welding activities, which were outside of the approved scope of work of L&S. This issue has been identified as example of Nonconformance 99900404/2015-202-03.

The NRC inspection team reviewed three of the most recent POs issued by WEC to L&S, to ensure that material, equipment and services being purchased conformed to the procurement documents. POs 4500449276, 4500402277, and 4500601734 were issued for the procurement of top and bottom nozzle piece parts. During the review of the POs, the NRC inspection team found that additional restrictions and technical requirements were being imposed in the PO beyond what was imposed per the SAES. For example, PO 4500449276 included a statement prohibiting L&S from performing welding. Also, PO 4500601734 included non-destructive test results as a requirement for the QA hardware data package. In addition, PO 4500402277 invoked the requirements stated in Supplier Quality Assurance Requirements SQAR_1030 Revision 250. SQAR_1030 was issued for the procurement of top and bottom nozzles, top nozzle spring clamps, and spiders. SQAR_1030 states: "Any 'special process' by the supplier or their sub-supplier, the results of which are highly dependent on the control of the process or the skill of the operator or both, and in which the specified quality cannot be readily determined by inspection or test of the product shall be controlled by written procedures that have been approved by WEC. Special processes include, but are not limited to: welding, brazing, annealing, age hardening and nondestructive test method (radiography, ultrasonic, eddy current, etc.)."

The NRC inspection team noted that SQAR_1030 included the following submittals as the minimum requirements for top and bottom nozzles: (1) Heat treatment, weld procedure(s) and welder qualifications; (2) Chrome plating or other surfaces treatment procedures; and (3) Non-destructive testing procedures used in lieu of WEC procedures required in a specification or on a drawing. The NRC inspection team met with the WEC Supplier Quality Oversight team to discuss the flow of requirements from the SAES to the POs and those additional requirements listed in SQAR_1030. The WEC Supplier Quality Oversight team was unable to provide the origin or justification for the additional requirements included in the POs that were not identified in the SAES.

The NRC inspection team reviewed audits WES-2012-105, WES-2012-106, and WES-2013-065-R and their respective checklists and concluded that there was no objective evidence in those reports that qualified L&S to perform NDE and special process activities. The NRC inspection team concluded that WEC failed to adequately evaluate L&S, to verify if they had the capabilities to perform NDE and special processes under their current QAM. Also, WEC issued POs that referenced SQAR_1030 which required L&S to perform NDE and special processes which were activities outside of the approved scope of work of L&S. This issue has been identified as an example of Nonconformance 99900404/2015-202-03.

The NRC inspection team reviewed the audits and assessments of Peerless Manufacturing Company (PMC) that were conducted by WEC in the last four years.

The NRC inspection team reviewed Assessment Report WEC-2011-012 of PMC conducted in January of 2011. The Assessment Report stated that WEC-2011-012 was planned by WEC to be conducted as an audit, to verify compliance of PMC's QA program and its implementation in accordance with the requirements of Appendix B to 10 CFR Part 50 and 10 CFR Part 21. Assessment Report WEC-2011-012 further stated

that, “It was determined that the quality program did not meet the full requirements of a ‘Safety-Related’ quality program. As a result, the audit was terminated and an assessment was performed to document the controls that were in place at PMC.”

The NRC inspection team observed that Assessment Report WEC-2011-012 determined that PMC’s Audit, Training/Certification, and Records programs were unsatisfactory. In addition, the QA program element for Design was found to be unsatisfactory, although the implementation was determined by WEC to be satisfactory. The Assessment Report did not document any SCARs that were issued to PMC for those areas that were found to be unsatisfactory. The NRC inspection team also observed that Assessment Report WEC-2011-012 stated the following procurement restriction: “Westinghouse shall not issue any safety-related purchase orders to Peerless Manufacturing Company”; however, there were no other restrictions identified based on WEC’s determination that several areas were found to be unsatisfactory.

The NRC inspection team reviewed SAES ID 16782 dated September 9, 2011, for PMC. The SAES indicated that based on Assessment WES-2011-012, PMC was in the “qualified” status on the QSL, with QA program requirements meeting Appendix B to 10 CFR Part 50, and the following QA program elements marked as “Acceptable”: Organization; QA Program; Design Control; Instructions, Procedures, and Drawings; Document Control; and Quality Assurance Records. All other QA program elements were marked as “Not Applicable.” SAES 16782 also included a restriction stating: “The responsibility for 10 CFR Part 21 shall be retained by Westinghouse.” SAES 16782 did not include the procurement restriction identified in Assessment Report WES-2011-012.

The NRC inspection team further reviewed SAES ID 15693 dated March 8, 2012 for PMC. The NRC inspection team observed that SAES ID 15683 changed the QSL supplier status for PMC by deleting references to Appendix B from the “QA Program Requirements” field. However, the SAES further stated, “The supplier’s QA program is required to meet the requirements of 10 CFR Part 50 Appendix B as specified by the WEC purchase order. The supplier will be maintained on the Westinghouse QSL as a non-safety-related supplier.”

The NRC inspection team also reviewed SAES ID 17296 dated March 12, 2012, and SAES ID 17301 dated March 13, 2012. The changes documented in SAES IDs 17296 and 17301 were mostly administrative. SAES ID 17301 was issued to document the results of the Annual Evaluation that was performed to assess the continued capability of PMC to supply acceptable items and services. SAES ID 17301 noted a change in the PMC QA Manual revision, and all status indications for PMC as a WEC qualified supplier remained the same.

The NRC inspection team met with the WEC Supplier Quality Oversight personnel to discuss the changes made to the QSL supplier status for PMC and the bases for those changes, as documented in audits and assessments of PMC. They were unable to provide the origin or justification for the changes made to the QSL supplier status for PMC documented in the SAES.

The NRC inspection team reviewed WEC PO 4500429292 issued to PMC for design and analysis work of the secondary separator panels (steam dryer vane panels). Section 11, "References," of the PO stated, in part, "This item/service is nuclear safety-related; 10 CFR Part 21 applies" and Section 7, "Quality Assurance," of the PO stated, in part, "The Supplier is responsible for maintaining a Quality Assurance Program in compliance with 10 CFR Part 50 Appendix B requirements for the scope of work in this purchase order." Based on the review of Assessment WES- 2011-012 and SAES IDs 16782, 15683, 17296, and 17301, the NRC inspection team determined that as of March 16, 2012, PMC was not approved as a supplier of safety-related items and services to WEC, in accordance with the requirements of WEC 7.1. This issue has been identified as an example of Nonconformance 99900404/2015-202-03.

The NRC inspection team further determined that the QA requirements remained unchanged in PO 4500429292 Change Notice (CN) 1 and CN 2 issued to PMC on October 22, 2012; PO 4500429292 CN 3 issued on December 13, 2012; PO 4500429292 CN 4 issued on December 20, 2012; PO 4500429292 CN 5 issued on January 23, 2013; and PO 4500429292 CN 6 issued on February 8, 2013.

On October 30, 2012, after WEC issued PO 4500429292 CN 2 and prior to the issuance of PO 4500429292 CN 3 to PMC, WEC issued SAES ID 18340 which removed any references to Appendix B QA program requirements and stated that, "WEC Engineering will define, through WEC Purchase Order, the quality requirements to PMC." It further stated: "For WEC Annual Evaluations, the supplier QA program shall be evaluated to ensure that it complies with the applicable quality requirements invoked in the PO. However, WEC did not issue a CN to PO 4500429292, to revise the quality assurance requirements, immediately following the change in the QSL status for PMC. Further, WEC failed to re-evaluate PMC's QA program, to verify that it was adequate for the existing procurement under PO 4500429292. These issues have been identified as an example of Nonconformance 99900404/2015-202-03.

The NRC inspection team reviewed SAES ID 19158 for PMC, issued on June 13, 2013. SAES ID 19158 stated, "This Supplier's Quality program status is currently suspended and requires further evaluation. This supplier may not provide products or services to Westinghouse on the basis of its implemented quality program, and no product or items may be released or shipped from this supplier." The NRC inspection team determined that PMC remained in suspended status until July 30, 2014, when SAES ID 20579 documented placing PMC on the QSL in a qualified supplier status, based on the results of Commercial Grade Survey WES-2014-117. However, WEC continued to issue CNs to PO 4500429292, releasing manufacturing and allowing work to continue. This issue has been identified as an example of Nonconformance 99900404/2015-202-03.

c. Conclusions

The NRC inspection team determined that WEC is not effectively implementing its oversight of contracted activities in accordance with Criterion VII, "Control of Purchased Material, Equipment, and Services" of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99900404/2015-202-03 for WEC's failure to: (1) evaluate L&S's qualifications to perform dedication and special processes such as NDE, welding, heat treatment, and plating required for the procurement of top and bottom nozzles, and (2) failure to provide objective evidence that an adequate evaluation of PMC was performed prior to issuing a safety-related purchase order. Also, after changing PMC's supplier status on the QSL to indicate that PMC was a supplier of non-safety related items and services, WEC failed to re-evaluate PMC's QA program, to verify that it was adequate for the existing procurement under PO 4500429292. Further, WEC failed to maintain the supplier in qualified status throughout the duration of the purchase order.

4. Internal Audits

a. Inspection Scope

The NRC inspection team reviewed WEC'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 audit 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 WEC 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 internal audit reports of various Westinghouse facilities by WEC Global Quality, to confirm that internal audits were performed using checklists and/or procedures and in accordance with WEC'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, and that follow-up action was taken where indicated.

The NRC inspection team reviewed the training and qualification records of a sample of WEC auditors responsible for conducting internal audits at WEC, to confirm that all required training had been completed and maintained, and that qualifications and

certifications were in accordance with WEC's procedures. The NRC inspection team also reviewed WEC 2.8, "Qualification of Audit Personnel."

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 five internal audit reports of various Westinghouse facilities. The NRC inspection team observed multiple examples of internal audit report checklists not including adequate, sufficient, and/or clear objective evidence to support audit conclusions, and examples where checklist sections were not completed and areas of implementation not fully evaluated within defined scope. Examples include:

- Failure to examine and evaluate objective evidence of measures taken to control software quality (internal audit of Westinghouse in Cranberry Township, PA, report number WEC-12-19);
- Failure to document adequate objective evidence of implementation of procurement document control, sampling used during tests and inspections, control of measuring and test equipment, and control of documents (internal audit of Supplier Quality Engineering and Supplier Quality Oversight at Westinghouse in Cranberry Township, PA, report number WEC-12-50);
- Failure to examine and evaluate objective evidence of measures taken to control software quality and special processes and failure to document adequate objective evidence of implementation in the areas of inspection and test control, control of nonconforming items, and 10 CFR Part 21 (internal audit of WesDyne in Madison, PA and Windsor, CT, report number WEC-13-28);
- Failure to examine and evaluate objective evidence of implementation of the commercial grade dedication process (internal audit of Westinghouse Newington, report number WEC-13-35). Section 3 of the report stated that audit personnel "haven't examined any dedication files due to time limitations." No supplemental audits were conducted.
- Failure to examine and/or adequately document objective evidence of implementation of areas of procurement document control (internal audit of Global Supply Chain Management at Westinghouse in Cranberry, Township PA, report number WEC-13-48).

One of the internal audit reports that the NRC inspection team requested to review had not yet been issued and, as of January 30, 2015, was overdue. Section 8.18 of WEC 18.1, Revision 3.0 requires that internal audit reports be issued to the responsible management of the audited organization within 30 days of the post-audit conference. The NRC inspection team review of recent audits identified that there were six internal audit reports that had not yet been issued as of January 30, 2015, and were overdue. Examples of overdue internal audit reports overdue include:

- Internal audit report WEC-14-08 of Western Zirconium #2 – 55 days late;
- Internal audit report WEC-14-11 of Westinghouse Springfields Fuels (SPR14/088) – 26 days late;
- Internal audit report WEC-14-16, ASME Internal Audit – 28 days late;
- Internal audit report WEC-14-35 of Westinghouse Newington – 54 days late;
- Internal audit report WEC-14-46 of Westinghouse Waltz Mill – Rotating Equipment – 26 days late; and
- Internal audit report WEC-14-58 of Westinghouse Vogtle – Site Engineering – 19 days late.

The NRC inspection team discussed these issues with responsible WEC personnel and understood that similar issues with the implementation of the internal audit program have been previously identified by WEC and documented in a CAPAL. CAPAL 100016265, "Improvements to Internal Audit Program (WEC 18.1)," which was opened on March 19, 2014, and closed on August 26, 2014, identified issues with internal audit performance including issues similar to those observed by the NRC inspection team and discussed above. CAPAL 100052988, "#3 Internal Audit findings by NTD (WEC-14-123) (Internal Audits/Assessments)," which was opened on October 17, 2014, and as of January 30, 2015, remained open, described issues similar to those documented in CAPAL 100016265 and included issues similar to those identified by the NRC inspection team. CAPAL 100052325, "Trend Issue to Track/Determine Cause for Late Internal Audit Reports," which was opened on October 13, 2014, and as of January 30, 2015, remained open, identified the recurring problem with not issuing internal audit reports in accordance with timeliness requirements, over the last three years.

The NRC inspection team determined that none of the CAPALs were classified as a SCAQ. Subsequently, there were no apparent cause analyses or root cause analyses conducted for these CAPALs, to identify causes and develop corrective action plans that were commensurate with the consequences, complexity, and significance level of the identified issues, to ensure that all conditions adverse to quality were effectively addressed. The NRC inspection team's review of Appendix A, "Guidance for Classifying Conditions Adverse to Quality," of procedure WEC 16.11, "Issue Review Committee," determined that, because these issues were indicative of a programmatic failure in the WEC internal audit program, they should have been classified as significant conditions adverse to quality.

In addition, the programmatic failure in the WEC internal audit program resulted in a missed opportunity to identify and correct issues, with the consequence of WEC being in non-compliance with regulatory requirements. The 2013 internal audit of Newington identified a procedural issue with commercial grade dedication, but did not identify any issues with implementation of commercial grade dedication at Newington. The 2013 internal audit of NuCrane Manufacturing did not identify any issues related to measuring and test equipment (M&TE) at NuCrane. However, the NRC inspections of Newington in October 2014, documented in Inspection Report No. 99901392/2014-201, and Westinghouse Fuel Handling Equipment and Crane Manufacturing (NuCrane Manufacturing) in October 2014, documented in Inspection Report No. 99901452/2014-201, resulted in the issuance of notices of nonconformance related

to programmatic issues with inadequate commercial grade dedication and not implementing a portion of the M&TE program, respectively.

The NRC inspection team identified these issues as an example of Nonconformance 99900404/2015-202-02, for WEC's failure to promptly correct or prevent recurrence of significant condition adverse to quality associated with the internal audit program.

c. Conclusions

The NRC inspection team determined that WEC is not effectively implementing its corrective action process with regard to implementation of the internal audit program. The NRC inspection team determined that programmatic failures in the WEC internal audit program had been previously identified by WEC. However, WEC did not consider them to be significant conditions adverse to quality. Subsequently, there were no apparent cause analyses or root cause analyses conducted for the CAPALs that documented issues with implementation of the internal audit program. The corrective actions for these CAPALs were still in progress and therefore were not evaluated for effectiveness by the NRC inspection team. The NRC inspection team identified the issues associated with the internal audit program as an example of Nonconformance 99900404/2015-202-02, for WEC's failure to promptly correct or prevent recurrence of significant conditions adverse to quality.

5. Corrective Action

a. Inspection Scope

The NRC inspection team reviewed WEC 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. WEC's corrective action system changed from Corrective Action Process (CAPS) to CAPAL on April 1, 2014. The NRC inspection team reviewed a sample of CAPs/CAPALs (hereinafter collectively referred to as "CAPALs") related to the technical areas of the inspection, including control of combustible gas, condensate return, supplier oversight, procurement, and internal audits, to verify that: (1) conditions adverse to quality were promptly identified and corrected, and (2) for significant conditions adverse to quality, the CAPALs specified the cause of these conditions and corrective actions to prevent recurrence.

The NRC inspection team evaluated the adequacy of the corrective actions taken for control of combustible gas and condensate return, to ensure that the corrective action maintained the affected systems in accordance with the design basis. The NRC inspection team reviewed the documents to verify that findings from supplier and internal audits were properly entered into CAPALs. The NRC inspection team verified that when WEC identified a significant programmatic issue, corrective actions were developed and implemented. The NRC inspection team also verified that the CAPALs were screened for applicability of 10 CFR Part 21 and that a Part 21 evaluation was initiated when appropriate.

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

b. Observations and Findings

The NRC inspection team found that CAPALs documenting significant conditions adverse to quality related to the technical areas of the inspection for condensate return (discussed in Section 2, Containment Condensate Return subsection of this report), supplier oversight, and internal audits (discussed in Section 4 of this report) had examples where the identification of the significant condition adverse to quality was not prompt, and/or the corrective action was not timely, and/or was not effective.

The NRC inspection team reviewed CAPAL Issue ID 100000472, "Purchase Requisition/Purchase Order Processing Violates Numerous WEC-7.5 Requirements, Reference IR 10-014-W012," (formerly CAPSs Issue Report (IR) Number 13-151-M013), which was classified as a Level 1, Significant Condition Adverse to Quality CAPAL that has been open since May 22, 2013, and was still open, as of January 30, 2015. CAPAL Issue ID 100000472 documented recurrent issues with Purchase Orders issued to suppliers not on the QSL or for orders placed incorrectly to suppliers with restrictions. This CAPAL was issued after High Significant CAPs IR 10-014-W012, "Purchase Requisition / Purchase Order Processing Violates Numerous WEC-7.5 Requirements," which was initiated on January 14, 2010, remained open for approximately four years and eight months and had been ineffective in resolving the significant condition adverse to quality. There was no corrective action to address why CAPs IR10-014-W012 had been ineffective, and the implementation of the corrective action has not been timely from the time the issue was first identified.

CAPs IR 12-045-C037, "Root Cause Analysis for Nonconforming Fuel Assembly Shipped to Indian Point 2", Revision 1, dated January 31, 2013, identified that the root cause was management failing to reinforce established standards. There were no corrective actions that specifically addressed this root cause, and the last corrective action was completed June 12, 2013. The corrective action for the root cause was ineffective and similar problems continue to occur. WEC identified in their final effectiveness review for the root cause that the corrective action was ineffective. WEC is crediting an ongoing Strategic Quality Plan to resolve the issues with supplier oversight, but there is no action to address why CAPs 12-045-C037 had been ineffective, and the implementation of the corrective action has not been timely.

These issues have been identified as an example of Nonconformance 99900404/2015-202-02.

c. Conclusions

The NRC inspection team determined that WEC did not adequately implement the requirements of Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99900404/2015-202-02 in association with WEC's failure to take appropriate measures to ensure that for significant conditions adverse to quality, the cause of the condition was determined and the appropriate corrective actions were taken. Specifically, WEC failed to promptly correct the significant condition adverse to quality identified in CAPAL Issue ID 100000472, which identified recurrent issues with Purchase Orders issued to suppliers not on the QSL or for orders placed incorrectly to suppliers with restrictions. WEC also failed to take adequate corrective action for the significant condition adverse to quality identified in CAPs IR12-045-C037, which identified the root cause to be the management failure to reinforce established standards for performing internal audits.

6. Organization

a. Inspection Scope

The NRC inspection team evaluated implementation of WEC's Corrective Action program and verified the ability to address significant conditions adverse to quality. Additionally, the NRC inspection team evaluated WEC's use of their qualified supplier list and their oversight of suppliers.

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

b. Observations and Findings

The NRC inspection team evaluated the overall effect of uncorrected significant conditions adverse to quality in the supplier oversight and internal audit programs, and the ineffective use of the corrective action organization, program to resolve these issues. Criterion I, "Organization," of Appendix B, to 10 CFR Part 50 states, in part that "[t]he QA functions are those of (1) assuring that an appropriate QA program is established and effectively executed; and (2) verifying, such as by checking, auditing, and inspecting, that activities affecting the safety-related functions have been correctly performed." Section 2.3.1 of the WEC QMS states, "Senior management establishes overall expectations for effective implementation of the QA program and is responsible for obtaining the desired end result." It further states, "The Senior Vice Presidents have overall responsibility and are accountable for … the effective implementation of the QMS for applicable activities."

The NRC inspection team determined that WEC failed to effectively execute and verify by auditing that activities affecting safety-related functions had been correctly performed. Specifically, WEC failed to take timely and effective corrective actions to address significant conditions adverse to quality. This includes the oversight of suppliers and the proper use of the qualified supplier list. Additionally, WEC failed to verify suppliers had

measures in place to assure that purchased material, equipment, and services conformed to the procurement documents. These examples occurred dating back to January, 2010, which indicated WEC did not effectively implement portions of their NRC-approved QA program.

These issues have been identified as Nonconformance 99900404/2015-202-01.

c. Conclusions

The NRC inspection team determined that WEC did not adequately implement the requirements of Criterion I, "Organization," of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99900404/2015-202-01 in association with WEC's failure to ensure that the QA functions of assuring that an appropriate QA program is established and effectively executed; and verifying, such as by checking, auditing, and inspecting, that activities affecting the safety-related functions have been correctly performed. Specifically, WEC failed to take timely and effective corrective actions to address significant conditions adverse to quality. This includes the oversight of suppliers and the proper use of the qualified supplier list. Additionally, WEC failed to verify that its suppliers had measures in place to assure that purchased material, equipment, and services conform to the procurement documents. These examples occurred dating back to January, 2010, which indicated WEC did not effectively implement portions of their NRC-approved QA program.

7. Entrance and Exit Meeting

On January 26, 2015, the NRC inspection team presented the inspection scope during an entrance meeting with Mr. Steve Hamilton, Senior Vice President and WEC staff. On January 30, 2015, the NRC inspection team presented the inspection findings during an exit meeting with Mr. Steve Hamilton and staff. On March 13, 2015, a re-exit meeting was conducted via telephone conference with Mr. Steve Hamilton and WEC staff to present the final results of this inspection. At the re-exit meeting, Mr. Edward Roach, Branch Chief of Mechanical Vendor Inspection Branch, led the final exit meeting discussions. The attachment to this report lists the participants of the entrance, exit, and re-exit meeting attendees, and those personnel interviewed by the NRC inspection team.

ATTACHMENT

1. ENTRANCE/EXIT MEETING ATTENDEES AND KEY POINTS OF CONTACT

Name	Title	Affiliation	Entrance	Exit	Interviewed	Re-Exit March 13, 2015
Jonathan Ortega-Luciano	Inspection Team Leader	NRC	X	X		
Richard Laura	Assistant Inspection Team Leader	NRC	X	X		X
Brent Clarke	Inspector	NRC	X	X		
Victoria Huckabay	Inspector	NRC	X	X		
Thomas Kendzia	Inspector	NRC	X	X		
Ashley Thomas	Inspector	NRC	X	X		
Anne-Marie Grady	Technical Specialist	NRC	X	X		
Christopher Van Wert	Technical Specialist	NRC	X	X		
Andrew Pfister	Manager, AP1000 Plant & Analysis Integration	WEC	X	X	X	
James Scobel	Fellow Engineer	WEC	X		X	
John McInerney	Director, AP1000 Engineering Interface and Control	WEC	X	X	X	X
Steve Hamilton	Senior Vice President Quality, Environment, Health & Safety	WEC	X	X	X	X
Steven Woodyard	Principal Quality Engineer	WEC			X	
Russell Bastyr	Director of Supplier Quality Oversight	WEC	X	X	X	X
Earle Lockwood	Acting Supplier Quality Assessment Manager	WEC	X	X	X	X
Rachel Kelly Czuba	Quality Engineer	WEC	X		X	
Christopher Hartz	Director of Quality Programs	WEC			X	
Jeffrey Eaves	Acting Manager Supplier Quality & Manufacturing Oversight Americas	WEC	X	X	X	
Jared Redine	Senior Sourcing Specialist, Supply Chain Management	WEC			X	

Kurt Nestlerode	Compliance Lead for Supply Chain	WEC	X	X	X	
Doug Burget	Principal Engineer	WEC			X	
Eugene Frori	Lead Auditor	WEC			X	
Greg Rowse	Supplier Quality Engineer	WEC			X	
Cristina Braun	Quality Engineer	WEC			X	
Ronald P. Wessel	Principal Engineer AP1000 Licensing	WEC			X	X
John Colflesh	SQA Manager	QEHS				X
Edward Roach	Branch Chief	NRC				X
Richard McIntyre	Senior Operations Engineer	NRC				X
Donna Aiken	Global CAPS Strategy	QEHS				X
Bob Laubham	Manager, Energy/Lic. Interface	NPE				X
Sarah DiTommaso	Manager, ITAAC & Inspection	WEC				X
Zachary Kurtick	Quality Engineer	WEC			X	
Ben Holsopple	Principal Quality Engineer, Global Quality Programs	WEC	X	X	X	
David Arrigo	Manager, Supplier Quality Americas, Global Quality Programs & Supplier Quality	WEC	X	X	X	
Lori Lubic	Acting Manager, Quality Programs	WEC	X	X	X	X
Mark Marschar	Director of Primary Equipment, Supply Chain	WEC			X	
Kevin Kilmer	Director, Global Inventory Management and Buying Center, Global Supply Chain Management and Operations	WEC			X	X
David Evankovich	Director, Shared Service Center	WEC			X	
George Tasick	Nuclear Safety Culture Manager	WEC	X	X	X	X
Ruth Werne	Employee Concerns Program Manager	WEC			X	
Wally Trynock	Human Performance Manager	WEC	X		X	
Steve Leighty	Licensing Engineer	WEC			X	
Daniel J. Lewton	Principal Quality Engineer	WEC	X		X	
Jason	Safety Analysis Integration	WEC			X	

Eisenhauer	Lead					
Nicholas Powell	Engineer, Transient Analysis Group	WEC			X	
Peter Smith	Engineer Qualification Operations	WEC			X	
Uriel Bachrach	Principal Engineer, Containment/ Radiological Analysis	WEC			X	
Keith Bacco	Procurement and Management Engineering Manager	WEC	X		X	
Michele Gutman	Deputy General Counsel	WEC			X	

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

The following items were found during this inspection:

Item Number	Status	Type	Description
99900404/2015-202-01	Open	NON	Criterion I
99900404/2015-202-02	Open	NON	Criterion XVI
99900404/2015-202-03	Open	NON	Criterion VII

4. INSPECTION PROCEDURES USED

Inspection Procedure (IP) 36100, "Inspection of 10 CFR Part 21 Programs for Reporting Defects and Noncompliance"

IP 43003, "Reactive Inspections of Nuclear Vendors"

IP 43004, "Inspections of Commercial Grade Dedication Programs"

5. LIST OF DOCUMENTS REVIEWED

Issue Reports and Corrective Action Prevention and Learning Reports

1. Issue Report #13-113-M006, dated April 23, 2013
2. Issue Report #11-297-M024, dated April 12, 2012
3. Issue Report #12-130-M042, dated September 13, 2012
4. Issue Report #13-142-M059, dated August 16, 2013
5. Issue Report #13-142-M060, dated August 16, 2013
6. Issue Report #13-063-M031, dated August 17, 2013
7. Issue Report #13-142-M063, dated September 14, 2013
8. Issue Report #13-142-M057, dated November 29, 2013
9. Issue Report #13-129-M038, dated January 3, 2014
10. Issue Report #13-207-M019, dated January 10, 2014
11. Issue Report #13-303-M046, dated April 11, 2014
12. Issue Report # 13-049-M019, dated March 25, 2013
13. Issue Report #13-064-M038, dated March 27, 2013
14. Issue Report #11-206-M035, dated August 11, 2011
15. Issue Report #13-158-M057, dated February 6, 2014
16. Issue Report # 13-123-M045, "Safety Related PO Was Issued to a Supplier Not Qualified on the QSL," dated May 3, 2013
17. Issue Report # 13-129-W009, "Missing RIDA I ANSYS Error Impact Sheet Evaluations," dated May 9, 2013
18. Issue Report # 13-149-M024, "Supplier of Class D Pump Has Not Been Qualified for Class D Pumps," dated May 29, 2013
19. Issue Report # 13-149-M026, "Supplier of Class D Pump Has Not Been Qualified for Class D Pumps," dated May 29, 2013
20. Issue Report # 13-290-W004, "Internal Audit 2013," dated October 17, 2013

21. Issue Report # 13-290-W009, “NCM 2013 Internal Audit,” dated October 17, 2013
22. Issue Report # 13-317-M004, “WEC-13-35, “Westinghouse Newington: Insufficient Extent of Corrective Action,” dated November 13, 2013
23. Issue Report # 12-228-M008, “Failure to Follow WEC 7.5 and Inadequate Flowdown of Project Requirements in Procurement of Safety Related Item (E),” dated August 15, 2012
24. Issue Report # 12-222-M016, “WEC-12-35: Welder Did Not Use Calibrated Equipment to Verify Essential Variable,” dated August 9, 2012
25. Issue Report # 13-049-M019, Concern for Detonation of Containment Hydrogen from ADS-4 valves and in IRWST, Fred Rippee, April 24, 2013 DCP# GW-GEE-309, rev 0, January 1, 1996, IRWST Vent / Overflow Changes
26. CAPAL Issue ID 10018099, “Non dedicated fasteners shipped to WBT for safety related PAMS OM,” dated May 20, 2014
27. CAPAL Issue ID 100000112 Commitments 8000000006512-8000000006526, 8000000006532, 8000000006533, 8000000006589-8000000006591,8000000006588, and 8000000006585
28. CAPAL Issue ID: 100000639, Discrete Issue/Suggestion for Improvement: Failed Supplier Oversight Defenses dated August 22, 2013
29. CAPAL Issue ID 100000951, Discrete Issue/Suggestion for Improvement: Paint Records – Improper documentation of paint application process dated December 5, 2013
30. CAPAL Issue ID 100000638, Discrete Issue/Suggestion for Improvement: WEC’s qualification of R-V Industries dated August 22, 2013
31. CAPAL Issue ID 100000032, “Purchase Requisition / Purchase Order Processing Violates Numerous WEC-7.5 Requirements, Reference IR 10-014-W012,” dated January 20, 2010
32. CAPAL Issue ID 100000446, “Peerless Manufacturing Company Qualification Status,” dated May 1, 2013
33. CAPAL Issue ID 100000472, “Purchase Requisition / Purchase Order Processing Violates Numerous WEC-7.5 Requirements, Reference IR 10-014-W012,” dated May 31, 2013
34. CAPAL Issue ID 100014337, “WEC-13-35, Westinghouse Newington: Commercial Dedication Procedure Not Clearly Aligned with Current,” dated November 16, 2013
35. CAPAL Issue ID 100016265, “Improvements to Internal Audit Program (WEC 18.1),” dated March 19, 2014
36. CAPAL Issue ID 100052325, “Trend Issue to Track/Determine Cause for Late Internal Audit Reports,” dated October 13, 2014
37. CAPAL Issue ID 100052988, “#3 Internal Audit Findings by NTD (WEC-14-123) (Internal Audits/Assessments),” dated October 17, 2014
38. CAPAL Issue ID 100074332, “WEC-14-35 – Late Audit Report,” dated January 26, 2015
39. CAPAL Issue ID 100075362, “Program Provides Insufficient Guidance on Follow-up Audit – CRA-2014-111,” dated January 29, 2015
40. CAPAL Issue ID 100075368, “Deficiencies Found During an Internal Audit May Not Be Tracked by Quality – CRA-2014-111,” dated January 29, 2015
41. CAPAL Issue ID 100075385, “Insufficient Oversight of IA Corrective Actions to Ensure Accomplished as Scheduled – CRA-2014-111,” dated January 29, 2015

42. CAPAL Issue ID 100011865, Suggestion for Improvement, Inconsistent Safety Class, Steven Leighty, dated April 5, 2012
43. CAPAL Issue ID 100012056, Suggestion for Improvement, Hydrogen Igniter DCD Corrections dated August 3, 2012
44. CAPAL Issue ID 100013024, Suggestion for Improvement, Licensing Basis Requirements Discrepancy, Core Makeup Tank, Room 11206, and 19 ft. ITAAC Criteria
45. CAPAL Issue ID 100001197, Suggestion for Improvement, Containment Hydrogen Venting, room 11206, 19 ft. minimum requirement, ITAAC Table 2.3.09-03

Audits/Surveillances/Annual Evaluations

1. WES-2011-186, "Westinghouse Supplier Audit Report of L&S Machine Co (L&S)," dated October 17, 2011
2. WES-2012-105 (Supplement to WES 2011-186), "Westinghouse Supplier Quality Audit Report of L&S," dated May 8, 2012
3. WES-2012-106 (Supplement to WES 2011-186), Westinghouse Supplier Audit Report of L&S," dated May 10, 2012
4. WES-2013-065-R, "Westinghouse Supplier Quality Audit Report of L&S," dated May 24, 2013
5. WES-2013-019-P/NAIC #18104, "Westinghouse Quality Program Audit Plan NAIC Audit of Tyco Valves and Control" dated March 8, 2013
6. WES-2014-153-P, Westinghouse Quality Program Audit Plan, dated October 1, 2014
7. WES-2013-124-P, Westinghouse Quality Program Audit Plan, dated July 23, 2013
8. WES-2013-124-R, Audit Report for R-V Industries, dated August 21, 2013
9. WES-2014-153-R, Audit Report for R-V Industries, dated November 26, 2014
10. WES-2014-096-R, WEC Supplier Quality Audit Report, Penn State Tool & Die Corporation, dated December 18, 2014
11. WES-2014-096, WEC Quality Program Audit Plan, Penn State Tool & Die Corporation, dated October 13, 2014
12. WES-2013-141-R, WEC Supplier Quality Program Audit Report, Penn State Tool & Die Corporation, dated September 19, 2013
13. WES-2011-159, Audit Package, Penn State Tool & Die Corporation, dated November 13, 2011
14. SAES ID 16977, L&S, dated February 15, 2012
15. SAES ID 18329, L&S, dated October 25, 2012
16. SAES ID 18917, L&S, dated May 23, 2013
17. SAES ID 21176, L&S, dated April 3, 2014
18. SAES ID 17514, L&S, dated May 17, 2012
19. SAES ID 15411, L&S, dated November 23, 2010
20. SAES ID 18222, L&S, dated September 26, 2012
21. SAES ID 20169, L&S, dated April 3, 2014
22. SAES, Penn State Tool & Die Corporation, dated December 16, 2014
23. SAES, Penn State Tool & Die Corporation, dated January 16, 2012
24. SAES ID 21029, Pentair (formally Tyco Valves and Control), dated January 7, 2014
25. SAES ID 15515, Pentair (formally Tyco Valves and Control), dated December 30, 2010

26. SAES ID 19871, R-V Industries, dated January 9, 2014
27. SAES ID 22133, R-V Industries, dated November 25, 2014
28. SAES ID 19636, R-V Industries, dated November 13, 2013
29. SAES ID 16992, R-V Industries, dated November 21, 2011
30. SAES ID 17837, R-V Industries, dated July 10, 2012
31. SAES ID 18068, R-V Industries, dated September 14, 2012
32. SAES ID 19360, R-V Industries, dated August 21, 2013
33. SAES ID 19413, R-V Industries, dated September 5, 2013
34. SAES ID 19329, R-V Industries, dated August 20, 2013
35. SAES ID 19383, R-V Industries, dated August 28, 2013
36. SAES ID 19761, R-V Industries, dated December 5, 2013
37. SAES ID 16782, Peerless Manufacturing Company (Dallas, TX), dated September 9, 2011
38. SAES ID 15683, Peerless Manufacturing Company (Dallas, TX), dated March 8, 2012
39. SAES ID 17296, Peerless Manufacturing Company (Dallas, TX), dated March 12, 2012
40. SAES ID 17301, Peerless Manufacturing Company (Dallas, TX), dated March 13, 2012
41. SAES ID 18340, Peerless Manufacturing Company (Dallas, TX), dated October 30, 2012
42. SAES ID 19158, Peerless Manufacturing Company (Dallas, TX), dated June 13, 2013
43. SAES ID 20579, Peerless Manufacturing Company (Dallas, TX), dated July 30, 2014
44. SAES ID 21607, Peerless Manufacturing Company (Dallas, TX), dated September 15, 2014
45. SAES ID 21332, Hoosier Spring Company, South Bend, IN, dated July 17, 2014
46. SAES ID 22346, Hoosier Spring Company, South Bend, IN, dated December 10, 2014
47. Document Number WES-2011-012, Assessment Package, Peerless Manufacturing Company, January 18-19, 2011
48. Document Number WES-2014-117, "Commercial Grade Survey of Peerless Manufacturing Company," June 3-4, 2014

Internal Audit Reports

1. WEC Global Quality Programs Internal Audit Report WEC-12-19, "Nuclear Services – Primary System Design and Repair, Cranberry, PA," dated June 10, 2013
2. WEC Global Quality Programs Internal Audit Report WEC-12-50, "Supplier Quality Engineering and Supplier Quality Oversight, Cranberry Township, PA," dated May 15, 2013
3. WEC Global Quality Programs Internal Audit Report WEC-13-28, "WesDyne, Madison, PA and Windsor, CT," dated September 12, 2013
4. WEC Global Quality Programs Internal Audit Report WEC-13-35, "Westinghouse Newington," dated November 21, 2013
5. WEC Global Quality Programs Internal Audit Report WEC-13-48, "Global Supply Chain Management – US, Cranberry, PA", dated October 23, 2013

Root Cause Analysis (RCA)

1. CAPs-RCA-12-045-C037, “Nonconforming Fuel Assembly Shipped to Indian Point 2”, Revision 1 dated January 31, 2013
2. CAPs-RCA-13-234-M061, Root Cause Analysis: Failed Supplier Oversight Defenses, Revision 0 dated November 18, 2013
3. CAPs-RCA-13-339-M054, Root Cause Analysis: Improper documentation of paint application process, Revision 1 dated March 26, 2014
4. CAPs-RCA-10-014-W012, Root Cause Analysis “Purchase Requisition / Purchase Order Processing Violates Numerous WEC-7.5 Requirements,” Revision 0, dated December 2, 2010
5. CAPs RCA-13-151-M013, Root Cause Analysis “Implementation of Purchase Requisition/Purchase Order Process Frequently Results in Violation of Numerous WEC 7.5 requirements, Reference IR 10-014-W012,” revision 1, dated May 29, 2014

Procedures

1. QA-7.9, “Quality Assurance Level 3 Policy/Procedure,” Revision 0, dated May 30, 2014
2. WEC 21.0, “Identification and Reporting of Conditions Adverse to Nuclear Safety,” Revision 9.0, dated July 3, 2014
3. WEC 7.1, “Supplier QA Program Qualification and Assessment,” Revision 7.1 dated September 25, 2014
4. WEC QMS, Revision 7, dated October 1, 2013
5. Westinghouse Policy/Procedure “Table of Contents, Westinghouse Level 2 Policies and Procedures,” dated December 16, 2014
6. Westinghouse Quality Assurance Level 3 Policy Procedure “Table of Contents (QA Procedures),” dated December 31, 2014
7. WEC 2.8, “Qualification of Audit Personnel,” Revision 1.0, dated July 31, 2013
8. WEC 16.2, “Westinghouse Corrective Action Program,” Revision 7.0, dated March 31, 2014
9. WEC 16.11, “Issue Review Committee,” Revision 1.0, dated August 20, 2014
10. WEC 18.1, “Internal Audits,” Revision 3.0, dated May 30, 2013
11. WEC 21.0, “Identification and Reporting of Conditions Adverse to Nuclear Safety,” Revision 9.0, dated July 3, 2014
12. WEC 16.2 Westinghouse Corrective Action Program, Revision 7.0, dated March 31, 2014
13. WEC 16.5, “Apparent Cause Analysis,” Revision 3.0, dated March 31, 2014
14. QA-18.2, “Data Driven Internal Audit Process,” Revision 0, dated February 15, 2012
15. APP-FSAR-GLN-120, Revision B4, AP1000 Licensing Applicability Determination and 10 CFR 50.59 / 10 CFR Part 52 Appendix D Section VIII Screening: APP-GW-GEE-2948, Revision 0, DP-415, 2014
16. APP-GW-GL-025, Revision 0, AP1000 Phenomenological Evaluation Summaries (1), This document is issued to document those portions of AP600 WCAPS-13388 that are valid for AP1000. They are for the following evaluations only. RPV failure mechanism discussed in FAI/92-13 “Phenomenological evaluation summary on high pressure melt ejection and direct containment heating in support of the AP600 risk

analysis. Direct initiation of detonations discussed in FAI/92-18 "Phenomenological evaluation summary on the probability and consequences of deflagration and detonation of hydrogen in support of the AP600 risk analysis." May 29, 2002
17. APP-GW-GL-082, Revision 0, AP1000 Severe Accident Phenomenology Roadmap, September 2012, Information Only Status
18. APP-SSAR-GSC-117, Revision 0, AP1000 Revised MAAP4 Parameter File and Hydrogen Mixing/Combustion Analysis, 9 Aug 2010
19. APP-VLS-M3-001, Revision 4, Containment Hydrogen Control System: System Specification, 2014
20. APP-VLS-M3C-007, Revision 0,_draft, Thermal Analysis for Hydrogen Venting and Burning from PXS-A Compartment, 2015
21. APP-PXS-M3C-020, Revision 3, PRHR HX Sizing / Performance, 2013
22. APP-PRA-GSC-401, Revision 0, AP1000 Debris Coolability and MCCI Evaluation, alternate document number: FAI/12/0283
23. APP-GW-GJP-512, Revision A, Reduce Containment Hydrogen, 2011, alternate document number SAG-7
24. APP-GW-GJR-512, Revision A, Background Information for SAG-7, Reduce Containment Hydrogen, 2011
25. APP-GW-GJP-520, Revision A, Hydrogen Flammability in Containment, 2011, alternate document number CA-3
26. APP-GW-GJR-520, Revision A, Background Information for CA-3, Hydrogen Flammability in Containment, 2011
27. APP-GW-GEE-2948, Design Change Proposal, Adding two hydrogen igniters above the IRWST vents in the upper containment along the Steam Generator doghouse wall
28. APP-GW-GEE-4786, Design Change Proposal, Re-institution of vent path removed from room 11206,
29. APP-GW-GEE-4793, Design Change Proposal, Revise the licensing basis into agreement with the calculations for the VLS
30. APP-GW-GEE-309, Design Change Proposal, IRWST Vent / Overflow Changes

Training Records and Associated Documents

1. Record of Lead Auditor Qualification for Lori D. Lubic, dated January 20, 2015
2. Record of Lead Auditor Qualification for John S. Papai, dated January 21, 2015
3. Record of Lead Auditor Qualification for Ed Michaels, dated January 19, 2015
4. Record of Lead Auditor Qualification for Richard Caruso, dated January 21, 2015
5. Record of Lead Auditor Qualification for Bruce Allbee, dated January 22, 2015

Procurement Documents

1. PO No. 4500601734, Westinghouse Electric to L&S dated April 16, 2013
2. Change to PO No. 450601734, Westinghouse Electric to L&S dated August 6, 2013
3. PO No. 4500402277, Westinghouse Electric to L&S dated July 29, 2011
4. Change Notice 57 to PO 4500402277 issued to L&S dated October 31, 2014
5. PO No. 4500449276, Westinghouse Electric to L&S dated September 25, 2012

6. PO. No. 4500450948 (with Change Notice 1) Westinghouse Electric to Penn State Tool & Die Corporation, dated October 11, 2012
7. WEC Requisition No. 1000444157, “Stiffening Ring for Ice Basket,” dated October 8, 2012
8. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, dated March 16, 2012
9. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 2 dated October 22, 2012
10. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 3 dated December 13, 2012
11. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 4 dated December 20, 2012
12. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 5 dated January 23, 2013
13. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 6 dated February 8, 2013
14. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 7 dated April 16, 2013
15. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 8 dated June 23, 2013
16. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 9 dated August 22, 2013
17. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 10 dated September 6, 2013
18. Westinghouse Purchase Order Number 4500429292 to Peerless Manufacturing Company, Change Notice 11 dated September 24, 2013

Correspondence

1. LTR-SRS-14-100; PI-14-29, Closeout Request for PI-14-29 “Non-Dedicated Fasteners Shipped to Watts Bar Unit 2 for Safety Related PAMS OM Application” July 1, 2014
2. LTR-SRC-14-90; PI-14-29 “Opening Request for PI-14-029, “Non Dedicated Fasteners Shipped to Watts Bar Unit 2 for Safety Related PAMS OM Application” June 11,2014
3. LTR-SRC-13-126, “Opening Request for PI-13-26 “SPX SWO APP-GQ-GAR-015 Rev 0” , July 2, 2013
4. LTR-SRC-13-157 , “Interim Report of a 10CFR505.55(e)(3)(iii)(C) Evaluation of a Significant Breakdown in a Portion of a Quality Assurance Program
5. LTR-SRC-13-129 , “Closure of a 10CFR505.55(e)(3)(iii)(C) Interim Report Evaluation of a Significant Breakdown in a Portion of a Quality Assurance Program
6. LTR-SRC-12-34, PD-893 Closeout, “L&S Top Nozzle Nonconformance,” dated April 12, 2012LTR-ECP-14-1, Review of Ad Hoc Panel Response (LTR-DPO-14-1) and Product Line Response (DCP_DCP_006148) to DPO-13-217-C001 Dissent Paper by Fred Rippee, August 12, 2014
7. LTR-DPO-14-1, DPO 13-217-C001 – Ad Hoc Panel Final Report, January 20, 2014
8. LTR-SRC-13-37, PD-1040 Closeout, “Concern for Detonation of Containment

Hydrogen From ADS-4 Valves and in the IRWST", March 15, 2013
9. Email form Jeffery Eaves to Russ Lion, subject NRC Request dated January 19, 2015
10. Email from Nestlerode, Kurt to Holsopple, Ben D. and Evankovich, David P., Subject "FW: Update on POs Placed with Suppliers not on QSL," dated January 29, 2015
11. Email from Nestlerode, Kurt to Holsopple, Ben D. and Evankovich, David P., Subject "FW: Message to Management: Procurement Process Interim Compensatory Actions," dated January 29, 2015
12. EPRI Letter to WEC, Evaluation of Hydrogen Siting Criteria for AP600, EPR/FOK0010

Other

1. L&S_QAM_001, L&S Quality Assurance Manual, Revision 6 dated August 14, 2012
2. L&S_QAM_001, L&S Quality Assurance Manual, Revision 7 dated April 24, 2013
3. SFAD-12-57, "Product Design Assessment of Nonconformance of 15x15 Top Nozzle Lifting Tool Surface Depth (QC Characteristic AW) for Indian Point Unit 2 dated April 12, 2012
4. SQAR_1030, L&S Machining SQAR machined Parts – Top & Bottom Nozzles, Top Nozzles Springs, Spring Clamps and Spiders, Revision 250
5. GQGQ_14-059, Revision 1 – Limited Stop Work Order for Steam Dryers Restricted Access Welding for Peach Bottom Unit 3, dated November 3, 2014
6. SWO-RVI-14-001, "Stop Work Order for R-V Industries, Revision 1 dated November 3, 2014
7. SWO-13-234-M028,"Stop Work Order for R-V Industries," Revision 6 dated August 26, 2013
8. Certificate of Conformance, Westinghouse Nuclear Parts Operations to American Electric Power Material Center, Stiffening Ring for Ice Basket, dated April 5, 2013
9. Certificate of Compliance, Penn State Tool and Die Corporation, for PO. No. 4500450948 with Change Notice 1, dated April 2, 2013
10. WEC Qualified Suppliers List dated October 1, 2014
11. List of Internal Audits Conducted FY13 and FY14 (April 1, 2013–December 21, 2014)
12. Internal Audit Schedule for Audits Conducted in 2014, printed on January 28, 2015
13. Internal Audit Schedule 2015
14. Apparent Cause Analysis Commitment # 13-123-M045.01
15. DCP_DCP_006148, Response to the DPO-13-217-C001 Dissent Paper by Fred Rippee, August 5, 2014
16. DCP_DCP_005751, Significant Safety Hazard Evaluation for PI-14-013, CAPS IR 14-045-M037 / CAPAL Issue 100001197, dated May 14, 2014
17. WCAPS-13388, AP600 Phenomenological Evaluations Summaries, (AP600 Doc. # GW GL 025), August 7, 1992
18. PRA-GSR-004, rev 1, Assessment of the Potential Impact of Diffusions Flames on the AP600 Containment Wall and Penetrations, 1997
19. Westinghouse "Commercial Dedication Instruction for Computational Fluid Dynamics Analysis Work Performed by Peerless Manufacturing Company," CDI Number CDI-BWR-ENG-14-001, Revision 1, dated June 2, 2014

20. Westinghouse Document Number LTR-US-BWR-13-20, “Verification Plan for the Computational Fluid Dynamics Analysis performed by Peerless Manufacturing Company for the Replacement Steam Dryer Vane Panels for Peach Bottom 2 and 3

6. CAPALS GENERATED DUE TO NRC INSPECTION

1. CAPAL Issue ID 100077431 “Inadequate Corrective Action”
2. CAPAL Issue ID 100075345 ”EOC Review Process”
3. CAPAL Issue ID 100075338 “OE for Significance Level on C-R Issue”
4. CAPAL Issue ID 100075313 “OE for Extent of Condition for C-R Issue”
5. CAPAL Issue ID 100073951 ”Condensate Return - IRWST steaming rate discrepancy”
6. CAPAL Issue ID 100075308 “Condensate Return EOC”
7. CAPAL Issue ID 100077746 “Inadequate Oversight of Suppliers”
8. CAPAL Issue ID 100079919 ”Document Nonconformance Not Discovered on Initial Shipment of Components”
9. CAPAL Issue ID 100075362 ”Program Provides Insufficient Guidance on Follow-Up Audits”
10. CAPAL Issue ID 100075368 ”Deficiencies Found During an Internal Audit may not be Tracked by Quality”
11. CAPAL Issue ID 100075385 “Insufficient Oversight of IA Corrective Actions to Ensure Accomplished as Scheduled”
12. CAPAL Issue ID 100079130 “Hydrogen Vent Opening Analysis”
13. CAPAL Issue ID 100078137 ”Safety Culture Concern (Schedule Over Safety)”
14. CAPAL Issue ID 100080095 ”Lack of Communication and Working Relationship Between Supplier Quality Functions”
15. CAPAL Issue ID 100075622 “Management of SCAR Aging”