

March 27, 2017

Ms. Christina Braun, OPB Products
and Services Quality Manager
Westinghouse Waltz Mill Site
P.O. Box 158
Madison, PA 15663

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION OF
WESTINGHOUSE WALTZ MILL REPORT NO. 99901475/2017-201

Dear Ms. Braun:

On February 6-10, 2017, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Westinghouse Waltz Mill (hereafter referred to as WEC) facility in Madison, PA. The purpose of this limited-scope inspection was to assess WEC's compliance with provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," and selected portions of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." This inspection specifically evaluated WEC's implementation of quality activities associated with the design, qualification and rewinding of safety-related motors for the NRC licensees. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute NRC endorsement of your overall quality assurance or Part 21 programs.

Within the scope of this inspection, no violations or nonconformances were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, 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). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

/RA/

Terry W. Jackson, Chief
Quality Assurance Vendor Inspection Branch-1
Division of Construction Inspection
and Operational Programs
Office of New Reactors

Docket No.: 99901475

Enclosure:
Inspection Report No. 99901475/2017-201
and Attachment

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WESTINGHOUSE WALTZ MILL REPORT NO. 99901475/2017-201

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| DATE | 03/23/17 | 03/27/17 | |

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

Docket No.: 99901475

Report No.: 99901475/2017-201

Vendor: Westinghouse Waltz Mill Site
P.O. Box 158
76118 Madison, PA 15663

Vendor Contact: Christina Braun, OPB Products and Services Quality Manager
braunc@westinghouse.com
(412) 584-4304

Nuclear Industry Activity: Westinghouse Waltz Mill manufactures, tests and dedicates pumps and motors, parts and services for the AP1000 construction activities and components for operating nuclear power plants.

Inspection Dates: February 6-10, 2017

Inspectors: Aaron Armstrong NRO/DCIP/QVIB-1, Inspection Leader
Jeffrey Jacobson NRO/DCIP/QVIB-1
Phil Natividad NRO/DCIP/QVIB-1
Eugene Dipaolo R-I/DRS/EB2

Approved by: Terry W. Jackson, Chief
Quality Assurance Vendor Inspection Branch-1
Division of Construction Inspection
and Operational Programs
Office of New Reactors

Enclosure

EXECUTIVE SUMMARY

Westinghouse Waltz Mill
99901475/2017-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a vendor inspection at the Westinghouse Waltz Mill (hereafter referred to as WEC) facility. The purpose of this technically-focused inspection was to verify that WEC had implemented an adequate quality assurance (QA) program that complies with the requirements of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities." In addition, the inspectors also verified that WEC had implemented a program under 10 CFR Part 21, "Reporting of Defects and Noncompliance," that met the NRC's regulatory requirements. The inspectors conducted the inspection from February 6-10, 2017. This was the second NRC vendor inspection at this facility.

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

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

During the course of this inspection, the NRC inspectors implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors"; IP 43004, "Inspection of Commercial-Grade Dedication Programs"; and IP 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance."

The NRC inspectors concluded that WEC's QA policies and procedures comply with the applicable requirements of Appendix B to 10 CFR Part 50 and 10 CFR Part 21, and that WEC's personnel are implementing these policies and procedures effectively. The results of the inspection are summarized below.

Inspection Areas

The NRC inspectors determined that WEC is implementing its programs for design control, commercial-grade dedication, supplier oversight, control of measuring and test equipment, nonconforming material parts, and components, and corrective action in accordance with the applicable regulatory requirements of Appendix B to 10 CFR Part 50. Also, WEC is implementing its 10 CFR Part 21 program in accordance with the regulatory requirements. Based on the limited sample of documents reviewed and activities observed, the inspectors also determined that WEC is implementing its policies and procedures associated with these programs and no findings of significance were identified.

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 three 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." The team reviewed a sample of purchase orders (POs) issued by WEC for of safety-related materials, services and equipment to verify compliance with the requirements of 10 CFR 21.31, "Procurement Documents." The team verified that WEC implemented the posting requirements of 10 CFR 21.6. The NRC inspection team 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 NRC inspection team also verified that WEC's nonconformance and corrective action procedures provide link to the 10 CFR Part 21 program. The attachment to this inspection report lists the documents reviewed by the NRC inspection team

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

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

2. Design Control

a. Inspection Scope

The NRC inspection team reviewed WEC's implementation of its policies and procedures governing design control in order to verify compliance with the requirements of Criterion III, "Design Control," of Appendix B to 10 CFR Part 50. In conjunction with a review of WEC Sales Order 98319 and also corrective action prevention and learning (CAPAL) 100010343, the NRC inspection team reviewed Drawing 1144E14, Revisions 6 and 8, and the associated documentation listed below. These documents describe a design change performed during refurbishment of a safety-related spent fuel assembly handling tool. Quality Releases QR-97304 and QR-15-1095 were reviewed documenting WEC's quality review and completion of the design change as a corrective action to address breakage of an anti-rotation steel dowel pin. Additionally, the NRC inspection team interviewed design engineering personnel associated with the corrective action and refurbishment activities. The NRC inspection team also reviewed the Apparent Cause Analysis performed as part of WEC's investigations, and determined that the design change and quality documentation adequately addressed this issue.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team determined that WEC's implementation of its policies and procedures associated with design control met the requirements of Criterion III, "Design Control," of Appendix B to 10 CFR Part 50 based on the limited sample reviewed.

3. Environmental Qualification of New and Rewound Motors

a. Inspection Scope

The NRC inspection team reviewed WEC's documents and discussed with WEC staff the methods utilized for maintaining environmental qualification of the motors being supplied from the Waltz Mill facility, including new replacement motors, new design motors, and motors that are rewind, both at WEC and subcontractor facilities. The NRC inspection team reviewed WCAP-8687, "Equipment Qualification Test Report Westinghouse LMD Motor Insulation (Environmental Testing)," Revision 2, dated March 1983, which provides the baseline qualification for the thermoelastic epoxy insulation system used in the stators for the 200-2000 horse power (hp) motors. The inspectors reviewed the thermal aging analysis included in WCAP-8687, including the appropriateness of the activation energy used for the insulation system. The NRC inspection team reviewed SE&PT EQ&T-3961, "Environmental Qualification of Westinghouse Motor Company Large Motor Insulation System," Revision 4, dated July 30, 2009, which provided an analysis and comparison of original materials utilized by Westinghouse Buffalo (the OEM for these motors) in the fabrication of the insulation system against those currently available and in use at WEC and TECO Westinghouse (TECO).

The NRC inspectors reviewed Commercial Grade Dedication Instruction (CDI) CDI-4762, Revision 1, dated October 6, 2016, which is utilized by WEC to dedicate the commercially procured varnish used in the manufacture of random wound motors at WEC.

The NRC inspection team reviewed Entergy Purchase Order (PO) #10398691, Revision 1, dated November 3, 2014, to WEC for the purchase of (1) 5 hp, squirrel cage induction motor and the associated safety-related PO #4500658518, Revision 2, dated March 23, 2015, from WEC to Baldor Electric. The inspectors verified that WEC appropriately passed down material specifications to Baldor sufficient to maintain the environmental qualification of the motors.

The NRC inspectors reviewed Arizona Public Service Company PO #500599140, dated December 4, 2015 to WEC for an 800 hp, 4 kilovolt (kV) induction motor and associated WEC PO #4500683174, Revision 2, September 23, 2016, from WEC to TECO.

b. Observations and Findings

No findings of safety significance were identified by the inspectors.

c. Conclusion

The NRC inspection team determined that WEC was properly controlling the materials utilized in rewinding the motors, sufficient to maintain their environmental qualification, both for the motors rewound at WEC and those rewound by their contractor TECO Westinghouse.

4. Engineering Analysis for Extending Qualified Life

a. Inspection Scope

The NRC inspection team reviewed Duke Contract #00194321 to WEC, dated January 6, 2015, for performance of an engineering evaluation to extend the qualification of the Oconee High Pressure Injection Pump from 72 hours to 30 days. The inspectors reviewed the associated thermal aging analysis performed by WEC and contained in RRS/PMPS(NS)-02-008, "High Pressure Injection Pump Evaluation in High Temperature Environment," Revision 3, dated January 2015. The inspectors reviewed the basis for activation energy utilized in the thermal aging analysis. The inspectors verified that the thermal aging analysis was appropriately performed and that the activation energy utilized in the Arrhenius equations contained within the thermal aging analysis was acceptable. The inspectors noted that the WEC analysis was limited to thermal effects only as Duke did not indicate to WEC that there would be any change to the radiation requirements or other post-accident environmental conditions. These additional factors would have to be considered and evaluated separately, as applicable, in order actually extend the qualified life of these pumps/motors.

b. Observations and Findings

No findings of safety significance were identified by the inspectors.

c. Conclusion

The NRC inspection team determined that WEC is also effectively implementing its design control processes for engineering analysis associated with extending qualified life of motors.

5. Instructions, Procedures, and Drawings:

a. Inspection Scope

The NRC inspection team reviewed WEC's implementation of policies and procedures governing instructions, procedures, and drawings associated with Criterion V, "Instructions, Procedures, and Drawings," of Appendix B to 10 CFR Part 50. Specifically, the NRC inspection team reviewed samples of sales orders, corrective action prevention and learning CAPALs, cause analyses, and WEC's corporate-level (i.e., "Level 2") procedures for safety classification (W2-8.2-102) and Corrective Action Program (CAP) (W2-5.1-100). The NRC inspection team reviewed completion of a sampling of checklists, procedure data sheets, and associated quality documentation in order to verify the adequacy of both technical and regulatory compliance. Although the NRC inspection team noted instances of a closure-review checklist that appeared not to have been completed, upon review it was determined that the individual checklists appropriately made reference to technical justifications that were adequate and documented within the quality records packages. The

attachment to this inspection report lists the individuals interviewed and the documents reviewed by the NRC inspection team, including CAPALs initiated by WEC during the inspection.

b. Observations and Findings

No findings of significance were identified

c. Conclusion

The NRC inspection team determined that WEC's implementation of its policies and procedures associated with instructions, procedures, and drawings met the requirements of Criterion V, "Instructions, Procedures, and Drawings," of Appendix B to 10 CFR Part 50 based on the samples reviewed.

6. Control of Purchased Material, Equipment, and Services:

a. Inspection Scope

The NRC inspection team reviewed WEC's policies and procedures in compliance with Criterion VII, "Control of Purchased Material, Equipment, and Services", of Appendix B to 10 CFR Part 50. The NRC inspection team verified WEC implemented provisions in their dedication plans to verify the capabilities of their suppliers. Specifically, the NRC inspection team verified that applicable quality requirements, including technical and regulatory requirements, were specified in the procurement documents and these were reviewed and extended to lower-tier suppliers when necessary. The attachment to this inspection report lists the individuals interviewed and documents reviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team determined that WEC's implementation of its policies and procedures associated with the control of purchased material, equipment, and services met the requirements of Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR Part 50 based on the limited number of samples reviewed.

7. Commercial-Grade Dedication (CGD)

a. Inspection Scope

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

The NRC inspection team reviewed a sample of three dedication packages to assess the different elements of the CGD program which included dedication plan, POs, the technical evaluation process, receipt inspection reports, certificates of compliance, various design

drawings, and technical information. The NRC inspection team evaluated the criteria for the identification of the safety function(s) of an item, selection of critical characteristics and acceptance criteria, and the identification of verification methods to verify effective implementation of WEC's dedication process. The NRC inspection team reviewed dedication package CDI-4127, Revision 7, dated August 25, 2015, "CGD 93A, 93A-1 and 100, Westinghouse Seal Inserts." The inspection team also reviewed CDI-4379, Revision 0, dated November 11, 2011, "CGD Model 93, 93A-1 and Model 100 Westinghouse Wave Spring." The NRC inspection team discussed the CGD program with WEC's staff. The documents reviewed by the inspectors are included in the attachment to the inspection report.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team determined that WEC established a program that adequately controls design in accordance with the regulatory requirements of Criteria III and VII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors determined that WEC is also effectively implementing its design control processes.

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

a. Inspection Scope

The NRC inspection team reviewed WEC's policies and implementing procedures that govern the nonconformance program and CAP to verify compliance with the requirements of Criterion XV, "Nonconforming Materials, Parts, or Components," and Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed WEC's CAPAL and design evaluation/non-conformance (DENC) reports to verify that WEC implemented an adequate program to ensure that conditions adverse to quality and non-conforming items were promptly identified and corrected. The NRC inspection team reviewed a sample of CAPALs including their required level of root and apparent cause analyses as required by WEC's safety classification procedures. WEC appropriately requires causal analyses for consideration of corrective actions for significant conditions adverse to quality, associated with safety-related work (i.e., WEC Levels 1-3). The NRC inspection team verified that nonconforming components were properly identified, marked, and segregated when practical, to ensure they were not reintroduced into the manufacturing processes. In addition, the NRC inspection team verified that the WEC CAP and nonconformance program provided a connection to the 10 CFR Part 21 program.

The NRC inspection team reviewed CAPAL 100419890, "Seabrook PCCW Motor Failure," dated October 7, 2016 and the corrective actions taken and discussed these with WEC's staff. The Westinghouse Life Line D model HSDP 4 kV, 700 hp induction motors were manufactured in the 1977 timeframe. The NRC inspectors noted that Palo Verde currently has four motors, Hope Creek has two motors and Taiwan (Maanshan NPP) also have these motors, all which are still in service in their 1977 configuration and there have been no other known failures. The inspection team determined that there were no generic or QA programmatic issues identified for these induction motors.

The attachment to this inspection report lists the individuals interviewed and the documents reviewed by the NRC inspection team, with no findings of significance identified by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that WEC has established nonconformance and corrective action programs in accordance with the regulatory requirements of Criterion XV and Criterion XVI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that WEC was implementing its policies and procedures associated with its nonconformance and corrective action programs.

9. Entrance and Exit Meetings

On February 6, 2017 the NRC inspection team discussed the scope of the inspection with Ms. Christina Braun, OPB Products and Services Quality Manager, and other members of WEC's management and technical staff. On February 10, 2017, the NRC inspection team presented the inspection results and observations during an exit meeting with Christina Braun and other members of WEC's management and technical staff. The attachment to this report lists the attendees of the entrance and exit meetings, as well as those individuals whom the NRC inspection team interviewed.

ATTACHMENT

1. ENTRANCE AND EXIT MEETING ATTENDEES

| Name | Title | Affiliation | Entrance | Exit | Interviewed |
|-------------------|---|--------------------|-----------------|-------------|--------------------|
| Aaron Armstrong | Vendor inspector | NRC | X | X | |
| Jeffery Jacobson | Vendor inspector | NRC | X | X | |
| Phil Natividad | Vendor inspector | NRC | X | X | |
| Eugene Dipaolo | SR Resident Inspector | NRC | X | X | |
| Joshua Ceccherti | Design Engineer | WEC | | | X |
| Craig Deah | Manager PWR Tooling and Technology | WEC | | | X |
| Mark Hale | Quality Engineering | WEC | | X | X |
| David Howell | SVP Operating Plant | WEC | X | | |
| Steve Hamilton | SVP Chief Q Officer | WEC | X | X | |
| John Duke | RES QA Engineer | WEC | X | X | |
| Christian Braun | Product Services QA Manager | WEC | X | X | |
| Steve Ira | VP Operating Plant SVCS | WEC | X | | |
| Jonathan Golnoski | Directors Operation Plant Quality – Americas | WEC | X | X | |
| David Bigis | Wesdyne Operations Manager | WEC | X | X | |
| Hilary Neal | Manager OPB Performance Improvement | WEC | X | | |
| Tony Conant | Director OWM | WEC | X | X | |
| Jeffery Chaple | Director Technology and Innovation | WEC | X | X | |
| William C Brine | Ops Manager RES | WEC | X | X | |
| Angelica Zubroski | Principal Quality Engineer | WEC | X | X | |
| David R. Brady | Principal Motor Engineer | WEC | X | | |
| Jim Gresham | Manager Regulatory Compliance | WEC | X | X | |
| Kenneth J Klipa | Manager RES Products | WEC | X | X | |
| Kevin C Miller | Director RES | WEC | X | X | |
| Kurt Nestlerode | Global Nuclear Supply Chain | WEC | X | | |
| Tara Werner | Director, Quality Programs and Audits | WEC | X | | |
| Marie Blanc | Director, OPB Quality & Performance Improvement | WEC | X | | |
| Ronnie Gardner | VP, Global Quality Programs | WEC | X | X | |

| Name | Title | Affiliation | Entrance | Exit | Interviewed |
|------------------|---|-------------|----------|------|-------------|
| Bruce Bevilacqua | Director, Global Field Services Products & Operations Integration | WEC | X | | |
| Mike Pribish | Director of US Ops | WEC | | X | |
| Thomas Becker | Res Eng. Mgr. | WEC | | X | |
| Ron Wessel | Licensing Engineer, U.S. Licensing & Regulatory Support | WEC | | X | |
| Amanda Miller | Licensing Engineer, US Licensing & Regulatory Support | WEC | | X | |
| Bill Catullo | Fellow Engineer, Regulatory Compliance | WEC | | X | |

2. INSPECTION PROCEDURES USED

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

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

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

LIST OF ACRONYMS USED:

| | |
|-------|---|
| CAPAL | Corrective Action, Prevention, and Learning |
| SFHT | Spent Fuel Handling Tool |
| WEC | Westinghouse Electric Corporation (Waltz Mills) |
| DENC | design evaluation/non-conformance |
| PO | purchase orders |
| hp | Horsepower |
| OEM | original Equipment Manufacture |
| CAP | Corrective Action Program |
| TECO | TECO-Westinghouse Motor Company |
| CDI | Commercial Grade Dedication Instruction |
| CGD | Commercial Grade Dedication |
| kV | Kilo Volts |

DOCUMENTS REVIEWED

Part 21 Documents

Potential Issue (PI) No. 14-018

CAPAL 100001536, "7000V Motor Lead Cable Process Issues," dated May 27, 2014
 LTR-SRC-14-70, "Opening Request for PI-14-18, Rockbestos SR Lead Cable 600 Volt and 7000 Volt Installation and Manufacturing Processing issues-CFC Motors," dated April 30, 2014

LTR-SRC-14-80, "Closeout Request for PI-14-18, Rockbestos SR 7000 Volt Lead Cable for Safety-Related Motors," dated June 5, 2014

PI No. 14-022

CAPAL 1000010322, "RCP Turning Cane Threaded Fastener," dated May 4, 2014

LTR-SRC-14-72, "Opening Request for PI-14-022, RCP Turning Vane Threaded Fasteners," Dated May 8, 2014

LTR-SRC-14-107, "Closeout Request for PI-14-22, RCP Turning Vane Threaded Fasteners", dated July 17, 2014

PI No. 15-007

CAPAL 1000068148, "Auxiliary Motor Stator Winding not in Accordance with Original Design," December 17, 2014

LTR-SRC-15-15, "Opening Request for PI-15-007, Auxiliary Motor Stator Winding Not in Accordance with Original Design," February 4, 2015

LTR-SRC-15-23, "Closeout Request for PI-15-007, Auxiliary Motor Stator Winding Not in Accordance with Original Design," dated February 25, 2015

PI No. 15-040

CAPAL 1003366837, "Residual Heat Removal Pump Motor Lower Bracket Weld Integrity," dated October 22, 2015

LTR-SRC-15-127, "Opening Request for PI-15-040, Residual Heat Removal Pump Motor Lower Bracket Weld Integrity," dated November 3, 2015

LTR-SRC-15-140, "Closeout Request for PI-15-040, Residual Heat Removal Pump Motor Lower Bracket Weld Integrity," dated December 15, 2015

PI No. 16-007

CAPAL 100355851, "Reactor Containment Fan Cooler Motor Design Change," dated January 22, 2016

LTR-SRC-16-22, "Opening Request for PI-16-007, Reactor Containment Fan Cooler Motor Design Change," February 24, 2016

LTR-SRC-16-49, "Closeout Request for PI-16-007, Reactor Containment Fan Cooler Motor Design Change," March 30, 2016

PI No. 16-016

CAPAL 100372419, "RCP Model 93A Casing Foot Inelastic Analysis Error," dated March 30, 2016

LTR-SRC-16-51, "Opening Request for PI-16-016, "Model 93A Reactor Coolant Pump Support Feet Qualification," April 12, 2016

LTR-SRC-16-75, "Closing Request for PI-16-016, "Model 93A Reactor Coolant Pump Support Feet Qualification," May 24, 2016

PI No. 16-031

CAPAL 100397930, "Model 93A RCP Casing at Support Feet," dated July 18, 2016

LTR-SRC-16-100, "Opening Request for PI-16-31, Model 93A Reactor Coolant Pump – Casing Analysis," dated August 2, 2016

LTR-SRC-16-117, "Closeout Request for PI-16-31, Model 93A Reactor Coolant Pump – Casing Analysis," dated September 29, 2017

Procedures:

W2-8.2-102, "Safety Classification", Revision 0.1, dated July 29, 2016
Nuclear Master Work Instruction EWI-04-1E-02-6, "AC Stator Insulating Materials—HIMD-ER-85-011," Revision 5, dated 7/16/1999.
W2-9.14-100, "Control of Nonconforming Process Outputs, Products and Services," Revision 1.0, dated April 29, 2016
W2-9.14-101, "Use of Hold Tags," Revision 0.0, dated January 8, 2016
W2-9.14-102, "Field Deviation Report," Revision 0.0, dated January 8, 2016
W2-9.14-103, "Stop Work," Revision 0.1, dated January 15, 2016
W2-9.14-200, "Counterfeit, Fraudulent, and Suspect Items," Revision 0.0, dated January 8, 2016
W2-5.1-100, "Westinghouse Corrective Action Program," Revision 0.0, dated January 8, 2016
W2-5.1-101, "Westinghouse Corrective Action Program Procedure," Revision 2.0, dated January 18, 2017
W2-5.1-102, "Issue Review Committee," Revision 2.1, dated January 18, 2017
W2-5.1-103, "Root Cause Analysis," Revision 0.0, dated January 18, 2017
W2-5.1-104, "Apparent Cause Analysis," Revision 0.0, dated January 8, 2016
W2-5.1-105, "Limited Cause Analysis," Revision 0.0, dated January 8, 2016
W2-5.1-106, "Common Cause Analysis," Revision 0.0, dated January 8, 2016
W2-5.1-107, "Corrective Action Review Board," Revision 0.0, dated January 8, 2016
W2-5.1-108, "Effectiveness Review," Revision 0.0, dated January 8, 2016
W2-5.1-201, "Identification and Reporting of Conditions Adverse to Nuclear Safety," Revision 0.1, dated September 19, 2016
PAP-RES-15.1, "Design Evaluations and Non-Conformances," Revision 5.0, dated October 6, 2016
PAP-RES-15.1, "Design Evaluations and Non-Conformances," Revision 6.0, dated February 3, 2016

Corrective Action Reports:

CAPAL 100010343, Significance Level 2, and Apparent Cause Analysis 100010343
CAPAL 100308642, Level 2, and Apparent Cause Analysis 100308642
CAPAL 100003075, Level 3
CAPAL 100043234, Level 2
CAPAL 100299235, Level 4
CAPAL 100426743, Level 4
CAPAL 100049109, Level 4
CAPAL 100010322, "Model 93A RCP Dimensional Review and TB-94-06 Inconsistent," dated May 4, 2014
CAPAL 100001196, "Bulged/Ruptured Rockbestos Firewall SR 7000V Motor Lead Cable," dated February 14, 2014
CAPAL 100001238, "Incorrect Oil Levels," dated February 21, 2014
CAPAL 100054076, "MRS-DFD-RES-2646 Actuator Assembly Procedure," dated October 21, 2014
CAPAL 100308642, "Rewound Stator Failure during Acceptance HiPot Testing," dated June 23, 2015
CAPAL 100336837, "77F14105 Lower Bracket Weld Integrity," dated October 22, 2015
CAPAL 100372419, "RCP Model 93A Casing Foot Inelastic Analysis Error," dated March 30, 2016

CAPAL 100018804, SFPIS Issues Observed at Waltz Mill," dated May 22, 2014
CAPAL 100068206, Zonicbook Calibration Expiration/Use with Red Tag," dated December 17, 2014
CAPAL 100077698, "Disposition of DENC Changed," dated February 3, 2015
CAPAL 100080058, "Customer NCR on Material Traceability Related to 2009-0381B," dated February 18, 2015
CAPAL 100084615, "WEC 15-44 Quality Program Management-CAPAL Timeliness," dated March 1, 2015
CAPAL 100299278, "Inadequate Surveillance on Strategic Product Refurbishment," dated May 8, 2015
CAPAL 100329193, "Seabrook RTDs-Wrong RTDs Installed within the New Seabrook," dated September 25, 2015
CAPAL 100397595, "Fort Calhoun Uncaptured Bearing Non-Conformance," dated July 19, 2016
CAPAL 100011208, "CDI Inconsistencies," dated May 9, 2014
CAPAL 100030975, "Oil Cooler Pressure Test Failure on Motor 68F20803," dated July 14, 2014
CAPAL 100049109, "Vibration Equipment SAP#30011124/ZONICBOOK," dated September 30, 2014
CAPAL 100054784, "Palo Verde RCP Rotor not Balanced Correct," dated October 23, 2014
CAPAL 100068197, "Segregation of Nonconforming Components," dated December 14, 2014
CAPAL 100074700, "Lack of Compliance with CAP Requirements," dated January 27, 2015
CAPAL 100170484, "Calibration of Out-of-Tolerance Notification," dated March 25, 2015
CAPAL 100170968, "L2 &L3 Issues not Compliant with WEC 16.2," dated March 26, 2015
CAPAL 100221961, "Calibration Out-of-Tolerance Notification," dated April 18, 2015
CAPAL 100317266, "Inadequate M&TE Controls for XRF Analyzer," dated August 5, 2015
CAPAL 100338484, "Configuration Control," dated October 28, 2015
CAPAL 10041093, "Failed ASME Code Heat Exchanger for Catawba RHR Motor," dated September 2, 2016
CAPAL 100419890, "Seabrook PCCW Motor Failure," dated October 7, 2016

Corrective Action Reports Generated During Inspection:

CAPAL 100449272, "Independent Apparent Cause Analyst Reviewer Completion," dated February 9, 2017
CAPAL 100449282, "Insufficient Documentation for Activity Closure," dated February 9, 2017
CAPAL 100449305, "Extent of Condition for Reactor Coolant Pump 93A Feet," dated February 9, 2017

Nonconformance Reports

Design Evaluation/Non-Conformance (DENC) Report DENC-RES-2014087, "High Pressure Injection Pump Motor Leads," dated March 19, 2014
DENC-RES-2014137, "Broken Welds on Air Filter Box," dated May 23, 2014
DENC-RES-2016084, "Reactor Coolant Pump Oil Leak," dated April 28, 2016
DENC-RES-2016211, "Reactor Coolant Pump Flywheel Gap," dated November, 9, 2016
DENC-RES-2014029, "Motor Bracket-to-Stator Mounting Hole," dated January 20, 2014
DENC-RES-2014093, "Residual Heat Removal Pump Motor Leads," March 24, 2014

DENC-RES-2015002, "Residual Heat Removal Motor Shaft Indication," dated January 7, 2015
DENC-RES-2015075, "High Pressure Injection Motor Stator Bars Loose," dated March 30, 2015
DENC-RES-2015128, "High Pressure Injection Coupling Run-Out," dated June 19, 2015
DENC-RES-2015203, "Final Vibration Test Acceptance Criteria," dated October 10, 2016
DENC-RES-2016096, "Motor Cooler Discrepancies," dated May 13, 2016
DENC-RES-2016187, "Motor Bracket Inboard Lab Seal Bore Oversized," dated September 16, 2016
DENC-RES-2016223, "Bushing Insulating Material Contains Cracks," dated November 28, 2016
DENC-RES-2016228, "Unsatisfactory Foreign Material Inspection," dated December 1, 2016
DENC-RES-2016235, "Motor Oil Darker than Normal," dated December 13, 2016

Commercial-Grade Dedication Documents:

Commercial Grade Dedication Instruction CDI-4762, Revision 1, dated 10/6/2016
Commercial Dedication Instruction CDI-2409, Revision 10, dated October 10, 2014
Commercial Dedication CDI-4500663704-04152015: CDI-4129, Revision 4
Commercial Dedication CDI-4500647255-08012014: CDI-2729, Revision 5
Commercial Dedication CDI-4500655263-11182014: CDI-2729, Revision 5
Commercial Dedication CDI-4500655643-11252014: CDI-2729, Revision 5

Purchase Orders (POs):

98319, Spent Fuel Handling Tool Refurb SP13
105769, 2013-0033 Base Scope & Upgrades [RCP]
115940, SFHT Maintenance FA15
109119 2011-0022 DB RCP Motor Added Scope
119288, Fuel Services and Reactor Technology
120334, Vogtle RCP Motor Offsite Repair
10398691, Entergy Purchase Order, Revision 1
500599140, Arizona Public Service Company Purchase Order
00194321, Duke Contract to Westinghouse

Drawings:

DWG 1144E14, "17x17 Spent Fuel Assembly Modified Handling Tool General Assembly", Revision 6
DWG 1144E14, "17x17 Spent Fuel Assembly Modified Handling Tool General Assembly", Revision 8

Miscellaneous documents:

LTR-RES-13-131530, "Beaver Valley seal shield shutdown seal (SDS) failed to actuate during post services test," dated July 17, 2013
LTR-RES-13-052, "Notification of the potential existence of a defect pursuant to 10 CFR Part 21," dated July 26, 2013
LTR-RES-13-145, "Closure request for PI-13-29, Beaver Valley seal shield shutdown seal (SDS) failed to actuate during post services test," dated August 6, 2013

LTR-RES-16-230, "Westinghouse response to Seabrook Primary Component Cooling Water Motors," dated November 11, 2016
LTR-RES-16-204, "Primary stator winding failure assessment of Seabrook primary component cooling water (PCCW) pump motor – including post burnout inspection," dated September 29, 2016
Inspector Certification of Qualification, Identity No. 44749, dated June 18, 2013
Inspector Vision Acuity Examination Record, Identity No. 44749, dated October 3, 2012
Quality Release & Certification of Conformance QR-97304, Revision 0, dated June 25, 2013
Quality Release & Certification of Conformance QR-15-1095, Revision 0, dated April 10, 2015
WCAP-8687, "Equipment Qualification Test Report Westinghouse LMD Motor Insulation (Environmental Testing)," Revision 2, dated March 1983
SE&PT EQ&T-3961, "Environmental Qualification of Westinghouse Motor Company Large Motor Insulation System," Revision 4, dated 7/30/2009
RRS/PMPS (NS)-02-008, "High Pressure Injection Pump Evaluation in High Temperature Environment," Revision 3, dated January 2015
PO 4500454031, CDI-4127 CGD for 93A, 93a-1 and 100 Westinghouse seal insert, Revisions 7, dated August 25, 2015
Certificate of Calibration #0010946903 for PO 4500677997, dated March 9, 2016