November 21, 2013

Mr. Ron Wessel, Principal Engineer
AP1000 COL Licensing Support
Westinghouse Electric Company
1000 Westinghouse Drive
Cranberry Township, PA 16066

SUBJECT: NUCLEAR REGULATORY COMMISSION WESTINGHOUSE - NEW STANTON VENDOR INSPECTION REPORT NO. 99901043/2013-201.

Dear Mr. Wessel:

On October 28 to October 31, 2013, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Westinghouse Electric Company (WEC) - New Stanton facility in New Stanton, PA. The purpose of the limited-scope 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."

During this inspection, the NRC staff looked at WEC's corrective actions associated with inspections, test, analyses, and acceptance criteria (ITAAC) from revision 19 of the approved AP1000 design certification document. Specifically, the activities associated with ITAAC 2.5.01.03d related to the diverse actuation system (DAS) equipment's capability to withstand electrical surges, electromagnetic interferences, radio frequency interferences, and electrostatic discharges. The NRC inspection team did not identify any findings associated with this ITAAC.

This inspection specifically evaluated the implementation of Westinghouse's process for corrective action, environmental qualification, design control, commercial grade dedication, and oversight of suppliers, for the AP1000. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute NRC endorsement of your overall quality assurance program.

Within the scope of this inspection, no violations or nonconformances were identified. No response is required.

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, if any, 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/

Richard A. Rasmussen, Chief
Electrical Vendor Inspection Branch
Division of Construction Inspection
and Operational Programs
Office of New Reactors

Docket No.: 99901043

Enclosure:
1. Inspection Report 99901043/2013-201

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/

Richard A. Rasmussen, Chief
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Docket No.: 99901043

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1. Inspection Report 99901043/2013-201

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NAME	TFrye	RRasmussen		
DATE	11/21/2013	11/21/2013		

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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.:	99901043
Report No.:	99901043/2013-201
Vendor:	Westinghouse Electric Company – New Stanton 1000 Westinghouse Drive New Stanton, PA 15672
Vendor Contact:	Mr. Ron Wessel, Principal Engineer WesselRP@westinghouse.com
Background:	Westinghouse Electric Company holds a design certificate for the AP1000 and is responsible for detailed design and testing for safety-related components to be used in AP1000 plants.
Inspection Dates:	October 28 – October 31, 2013
Inspectors:	Eugene Huang, NRO/DCIP/EVIB, Team Leader Laura Micewski, NRO/DCIP/MVIB Robert Mathis, RII
Approved by:	Richard A. Rasmussen, Chief Electrical Vendor Inspection Branch Division of Construction Inspection and Operational Programs Office of New Reactors

Enclosure

EXECUTIVE SUMMARY

Westinghouse Electric Company – New Stanton
99901043/2013-201

The U.S. Nuclear Regulatory Commission (NRC) conducted this vendor inspection to verify that Westinghouse Electric Company, (hereafter referred to as WEC), implemented an adequate quality assurance 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." This inspection specifically evaluated WEC's corrective actions in relation to NRC inspection report 99901043/2012-201. The inspectors reviewed the corrective action, dedication of testing services, and electromagnetic interference/radiofrequency interference EMI/RFI qualification process. The NRC conducted this inspection at WEC's facility in New Stanton, PA.

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

- Appendix B to 10 CFR Part 50

The inspectors used Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated July 15, 2013, and IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated April 25, 2011.

The results of the inspection are summarized below.

Design Control and Procurement Document Control Corrective Actions

The inspectors concluded that WEC's corrective actions in the areas of design control and procurement document control in response to the Notices of Nonconformance from inspection report 99901403/2012-201 were adequate. No findings of significance were identified.

ITAAC and Software Related Corrective Actions

The inspectors concluded that WEC's corrective actions in the areas of ITAAC and software in response to the Notices of Nonconformance from inspection report (IR) 99901403/2012-201 were adequate. The inspectors also determined that WEC's final documentation in relation to the unresolved item identified in IR 99901043/2012-201 did not result in a finding. No findings of significance were identified.

EMI/RFI Qualification

The inspectors concluded that WEC was adequately qualifying equipment to meet the requirements committed to in their design control document. No findings of significance were identified.

Dedication of Testing Services

The inspectors concluded that WEC's corrective actions in the area of dedication of testing services in response to the Notice of Nonconformance from inspection report

99901403/2012-201 and implementation of WEC's dedication of services program were adequate. No findings of significance were identified.

REPORT DETAILS

1. Design Control and Procurement Document Control Corrective Actions

a. Inspection Scope

The inspectors reviewed the implementation of Westinghouse Electric Company's, (hereafter referred to as WEC) follow-up actions in response to Nuclear Regulatory Commission (NRC) Notices of Nonconformance (NON) 99901403/2012-201-01 and 99901403/2012-201-02. The inspectors reviewed the associated WEC Corrective Action Program Issue Reports and the resultant commitments to implement specific corrective actions. The inspectors reviewed a sampling of procurement documents issued subsequent to implementation of the corrective actions to verify the issues resulting in the notices of nonconformance have not recurred. The inspectors also reviewed procurement documents issued prior to the NRC issuance of the Notices of Nonconformance, and verified that WEC's extent of condition review recognized, evaluated, and corrected all similar issues associated with procurement documents, in addition to the specific examples the NRC had identified. The inspectors reviewed procedural changes and training plans that WEC has established as a barrier to prevent recurrence. The attachment to this inspection report lists the documents reviewed by the inspectors.

b. Observations and Findings

No findings of significance were identified.

c. Conclusions

Based on the samples reviewed, the inspectors determined that WEC's corrective actions in response to the Notices of Nonconformance were adequate. No findings of significance were identified.

2. ITAAC and Software Related Corrective Actions

a. Inspection Scope

In Inspection Report (IR) 99901043/2012-201, NRC inspectors identified deficiencies, cited as NON, which may impact the ability to demonstrate that inspections, tests, analyses, and acceptance criteria (ITAAC) have been met. These deficiencies were in relation to the Electromagnetic Interference (EMI)/Radio-Frequency Interference (RFI) testing for the AP1000 Diverse Actuation System (DAS). The NRC inspection team interviewed responsible personnel and reviewed the implementation of corrective actions proposed in response to the NON's and follow-up Requests for Additional Information (RAI) to ensure that the identified deficiencies were adequately corrected and where applicable, a suitable extent of condition was performed. The NRC inspection team also reviewed additional information provided in relation to an unresolved item also documented in IR 99901043/2012-201 for test software verification and validation.

Specifically, the NRC inspection team interviewed responsible personnel and reviewed corrective actions associated with the AP1000 DAS EMI/RFI testing and test report compliance with Regulatory Guide (RG) 1.180 and corresponding standards. NRC

inspectors verified checklists generated from WEC's review of the applicable MIL and IEC standards to ensure data documentation requirements were properly captured. Written communication to technical specialists was also reviewed to ensure engineering personnel were made aware of the checklists to be used for the extent of condition evaluation. The results of the extent of condition conducted to identify test reports deficient of the required data was assessed to determine whether or not the scope of test reports evaluated was adequate. For the test reports identified as missing the required information, NRC inspectors reviewed the subsequent analysis and revisions to these test reports to verify compliance with the associated MIL and IEC standards referenced in RG 1.180. The NRC inspection team also reviewed conformance statements included in test report documentation to ensure engineering reviewed the test report for compliance to regulatory requirements.

The NRC inspection team reviewed the corrective actions for the evaluation and documentation of a test anomaly and configuration change for the AP1000 DAS Cabinet Hardware equipment qualification (EQ) test. NRC inspectors assessed the engineering evaluation for the observed anomaly and test configuration change to ensure that EQ test requirements were still being met. NRC inspectors also reviewed the EQ test logs to verify the inclusion of the observed anomaly, test configuration change, and the associated justification.

The NRC inspection team assessed the documentation provided in conjunction with the verification and validation of software used during the AP1000 DAS EMI/RFI type-testing, documented as an unresolved item, to verify that software used to demonstrate equipment qualification was properly verified and validated. NRC inspectors reviewed the verification package for the EQ test equipment, including Advanced Logic System (ALS) Test and Calibration Tool (ATCT) software and the Standard Input/Output Simulator (SIOS) software, to ensure that the software used to calibrate, measure, and record the data was providing valid test results.

b. Observations and Findings

No findings of significance were identified.

b. Conclusions

Based on the samples reviewed, the inspectors determined that WEC's corrective actions in response to the NON were adequate. The inspectors also determined that WEC's final documentation in relation to the unresolved item identified in IR 99901043/2012-201 did not result in a finding. No findings of significance were identified.

3. EMI/RFI Qualification

a. Inspection Scope

The inspectors reviewed a sample of equipment qualification and EMI reports to ensure that WEC was adequately implementing and testing to the requirements that they have committed to in their design control document. The inspectors verified that failed tests were reviewed and evaluated and changes to the design during testing were adequately controlled and tracked through completion. The inspectors also reviewed WEC's

evaluations for the usage of different testing revisions than specified in RG 1.180. Additionally, the inspectors reviewed WEC's reconciliation calculation documentation for the DAS cabinet which detailed WEC's evaluation of the DAS test configuration. The inspectors verified that WEC did an adequate evaluation of the different design configurations compared to the test configuration used and ensured that the test configuration enveloped the worse-case scenarios in each of the different equipment qualification tests. The attachment to this inspection report lists the documents reviewed by the inspectors.

b. Observations and Findings

No findings of significance were identified.

c. Conclusions

Based on the samples reviewed, the inspectors determined that WEC was adequately qualifying equipment to meet the requirements committed to in their design control document. No findings of significance were identified.

4. Dedication of Testing Services

a. Inspection Scope

The inspectors reviewed the implementation of WEC's follow-up actions in response to NRC NON 99901403/2012-201-01 and 99901403/2012-201-02. The inspectors reviewed the associated WEC Corrective Action Program Issue Reports and the resultant commitments to implement specific corrective actions. The inspectors reviewed procedural changes and training plans that WEC has established as a barrier to prevent recurrence. The inspectors also reviewed a sample of commercial dedication instructions, surveys, and audits on testing and calibration suppliers that WEC used to verify adequate implementation of WEC's dedication of services program. The attachment to this inspection report lists the documents reviewed by the inspectors.

b. Observations and Findings

No findings of significance were identified.

c. Conclusions

Based on the samples reviewed, the inspectors determined that WEC's corrective actions in response to the NON and implementation of WEC's dedication of services program were adequate. No findings of significance were identified.

5. Exit Meeting

On October 31, 2013, the inspectors presented the inspection scope and findings during an exit meeting with Mr. Ron Wessel, Principal Engineer, and other WEC personnel.

ATTACHMENT

1. ENTRANCE/EXIT MEETING ATTENDEES

Name	Title	Affiliation	Entrance	Exit	Interviewed
S. Channarasappa	Fellow Engineer	WEC	X	X	X
G. Ament	PM Licensing	WEC	X	X	
D. Behnke	Principal Engineer	WEC	X	X	
I. Bosnjak	Lead Quality Engineer, Supplier Quality Assessment	WEC	X		X
J. Carretta	Senior Engineer	WEC	X	X	X
J. Dudiak	Vice President O&P	WEC	X	X	
K. Durinsky	Senior Engineer	WEC	X		
B. Gaia	QO Mechanical Manager	WEC	X		
S. Greier	Senior Engineer	WEC	X	X	
L. Jesso	QO-I&C Manager	WEC	X	X	
J. Mallory	Principal Quality Engineer, Global Quality	WEC	X	X	X
L. Marple	Senior Engineer	WEC	X	X	X
J. Moon	Principal Engineer	WEC	X	X	
F. Patula	Senior Engineer	WEC	X	X	
M. Ryan	Principal Engineer	WEC	X	X	
P. Tyrpak	Licensing Manager	WEC	X	X	
R. Wessel	Principal Licensing Engineer	WEC	X	X	
S. Yacovich	Director New Plant Control Systems and Qualification Operations	WEC	X	X	
G. Roberts	Principal Engineer	WEC	X	X	
M. Stofko	Licensing Manager	WEC		X	
J. Zuemio	I&C Program Manager	WEC		X	
L. Erin	Director of Regulatory and Quality Excellence	WEC		X	
A. Zurbroski	Lead Quality Engineer, Supplier Quality Assessment	WEC			X

Name	Title	Affiliation	Entrance	Exit	Interviewed
E. Huang	Inspection Team Leader	NRC	X	X	
L. Micewski	Inspection Team Member	NRC	X	X	
R. Mathis	Inspection Team Member	NRC	X	X	

2. INSPECTION PROCEDURES USED:

Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated July 15, 2013
IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated April 25, 2011,

3. ITEMS OPENED, CLOSED, AND DISCUSSED:

Item Number	Status	Type	Description	Applicable ITAAC
99901043/2012-201-01	Closed	NON	Criterion IV	
99901043/2012-201-02	Closed	NON	Criterion III	
99901043/2012-201-03	Closed	NON	Criterion XI	ITAAC 2.5.01.03d
99901043/2012-201-04	Closed	NON	Criterion XI	ITAAC 2.5.01.03d
99901043/2012-201-05	Closed	URI		ITAAC 2.5.01.03d

4. INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA:

The U.S. Nuclear Regulatory Commission (NRC) inspectors identified the following inspections, tests, analyses, and acceptance criteria (ITAAC) related to components being tested by WEC. At the time of the inspection, WEC was involved in testing the diverse actuation system (DAS) for the AP1000 reactor design. For the ITAAC listed below, the NRC inspection team reviewed WEC's QA controls in the areas of corrective action. The ITAAC's design commitment referenced below are for future use by the NRC staff during the ITAAC closure process; the listing of these ITAAC design commitments does not constitute that they have been met and closed. The NRC inspection team did not identify any findings associated with the ITAAC identified below.

AP1000 Design Control Document, Tier 1, Revision 19	Table 2.5.1-4	ITAAC 3.d

5. LIST OF ACRONYMS USED:

ATCT	ALS test and calibration tool
ADAMS	Agencywide Documents Access and Management System
ALS	advanced logic system
CFR	Code of Federal Regulations
CGD	commercial grade dedication
DAS	diverse actuation system
EMI	electromagnetic interference
EQ	equipment qualification

IEC	International Electromechanical Commission
IP	inspection procedure
IR	inspection report
ITAAC	inspections, tests, analysis, and acceptance criteria
NON	Notice of Nonconformance
NRC	Nuclear Regulatory Commission
QA	quality assurance
RAI	requests for additional information
RFI	radiofrequency interference
RG	Regulatory Guide
SIOS	standard input/output simulator
WEC	Westinghouse Electric Company

6. DOCUMENTS REVIEWED:

WEC Procedures

- WEC 7.1, "Supplier QA Program Qualification and Assessment", Rev. 5
- WEC 7.2, "Dedication of Commercial Grade Items", Rev. 2
- WEC 7.3, "Commercial Grade Surveys", Rev. 0.2
- WEC 7.3, "Commercial Grade Surveys", Rev. 1.0

Issue Reports

- Issue Report # 12-101-M044, "Restrictions missing from P.O.", April 10, 2012
- Issue Report #12-102-M005, "Washington Laboratories' personnel qualification", April 11, 2012
- Issue Report # 12-102-M007, "Lack of verification of CDI critical characteristic", April 11, 2012
- Issue Report # 12-102-M015, "CGS restrictions not in QSL", April 11, 2012
- Issue Report # 12-103-M020, "NRC concerns with CGS process", April 12, 2012
- Issue Report # 12-241-M033, "Address NRC Notice of Nonconformance NON 99901403/2012-201-01", August 28, 2012
- Issue Report #12-241-M034, "Address NRC Notice of Nonconformance NON 99901403/2012-201-02 (EQ New Stanton Inspection)", August 28, 2012
- IR#12-100-M019, "AP1000 DAS EQ EMC Testing-Software Verification," dated April 9, 2012
- IR#12-102-M075, "AP1000 DAS EQ Cabinet Hardware Test (CHT) Test Log Discrepancy," dated April 11, 2012

- IR#12-104-M022, “Washington Lab Report EMC Report Content,” dated April 13, 2012

- IR#12-104-M026, “DAS EMC Qualification Documentation for ITAAC Closure,” dated April 13, 2012

- IR#12-241-M032, “Address NRC Notice of Nonconformance NON 99901403/2012/201/04 (EQ New Stanton Inspection),” dated August 28, 2012

Qualification Reports

- APP-OCS-VBR-007, “Equipment Qualification Summary Report for the Diverse Actuation System Panel for Use in the AP1000 Plant,” Revision 1, dated September 9, 2013

- APP-PMS-VBR-003, “Equipment Qualification Summary Report for PMS Cabinets and NIS Auxiliary Panels for Use in the AP1000 Plant,” Revision 1, dated September 10, 2013

- APP-OCS-VPR-017, “Environmental Test Report for the AP1000 Diverse Actuation System Panel for Use in the AP1000 Main Control Room,” Revision 0, dated June 8, 2013

- APP-OCS-VPR-022, “Electromagnetic Compatibility Report for the Diverse Actuation System Panel,” Revision 0, dated July 18, 2013

- APP-JY50-VBR-002, “Equipment Qualification Summary Report for the Reactor Trip Switchgear for Use in the AP1000 Plant,” Revision 2, dated September 5, 2013

- APP-DK01-VBR-001, “Equipment Qualification Summary Report for 250 VDC Motor Control Center for Use in the AP1000 Plant,” Revision 0, dated December 2011

- EQ-QR-101-APP, “250 VDC Motor Control Cabinet DK01 EMC Qualification Report,” Revision 1, October 2012

- 1107-020E, “DK01 EMI/EMC Test Report,” Revision A, dated November 2011

- APP-ES02-VBR-002, “AP1000 Reactor Coolant Pump Switchgear Qualification Testing Summery,” Revision 3, June 20, 2012

- APP-JE62-VBR-001, “Equipment Qualification Summary Report for Reactor Coolant Pump Speed,” Revision 0, November 2011

- APP-JE62-VPR-001, “AP1000 Reactor Coolant Pump Speed Sensor EMC Qualification Report,” Revision 0, dated March 30, 2011

- WLL Report #11645-01, “EMI/EMC Test Report for AP1000 RCP Speed Sensor,” Revision 2, October 26, 2010

- APP-JW03-VBR-001, “Equipment Qualification Summary Report for the Main Control Room (MCR)/Remote Shutdown Room(RSR) Transfer Panel for Use in the AP1000

Plant," Revision 2, dated August 28 2013

- EQ-EV-150-APP, "Reconciliation of the AP1000 Diverse Actuation System Qualification Test Configurations to the Production Cabinet Configurations," Revision 0, dated June 2013

Commercial Grade Dedication Documents

- CDI-4321, "Commercial Dedication Instruction for Calibration Services for Inspection, Measuring, and Test Equipment," Revision 00, dated May 8, 2013

- CDI-3865, "Commercial Dedication Instruction for Washington Laboratory, Limited (WLL) – EMC and Product Safety Test Services," Revision 03, dated July 10, 2013

- CDI-4064, "Commercial Dedication Instruction for Keystone Compliance, LLC – EMC and Product Safety Test Services," Revision 04, dated August 24, 2013

- WES-2012-365-P, "Westinghouse Commercial Grade Survey Plan," dated November 9, 2012

- WES-2012-365-R, "Keystone Compliance, LLC Commercial Grade Survey Report," dated January 24, 2013

- WES-2011-165, "Wisco Calibration Services Audit Package," dated August 25, 2011

- WES-2011-121, "Commercial Grade Survey Package for Washington Laboratories, Ltd.", July 13-14, 2011

Requisitions

- Number 1000418192, dated January 27, 2012

- Number 1000411614, dated April 10, 2012

- Number 1000415123, dated March 6, 2012

Purchase Orders

- PO # 4500423138, Purchase Order to Washington Laboratories, Ltd. for EMC Testing DCIS Dual Controller & Remote I/O, January 27, 2012

- PO # 4500423116, Purchase Order to Washington Laboratories, Ltd. for EMC Test for AP1000 DAS, January 27, 2012

- PO # 4500428675, Purchase Order to Washington Laboratories, Ltd. for EMC Test MCR Transfer Panel, March 13, 2012

- PO # 4500359912, Purchase Order to Washington Laboratories, Ltd. for AP1000 RCP SPEED SENSOR EMC ENG TEST SER, September 13, 2010

- PO # 4500364789, Purchase Order to Washington Laboratories, Ltd. for AP1000 DRPI testing support, October 21, 2011
- PO # 4500374342, Purchase Order to Washington Laboratories, Ltd. for EMC Testing - Reactor Trip Switchgear, January 19, 2011
- PO # 4500379195, Purchase Order to Washington Laboratories, Ltd. for EMC Testing for AP1000 Wall Panel, February 21, 2011
- PO # 4500408008, Purchase Order to Washington Laboratories, Ltd. for EMC Testing of EA01, September 16, 2011
- PO # 4500412212, Purchase Order to Washington Laboratories, Ltd. for AP1000 RCP Switchgear Relays, October 24, 2011
- PO # 4500414846, Purchase Order to Washington Laboratories, Ltd. for EMC Testing for AP1000 OCS, November 15, 2011
- PO # 4500451900, Purchase Order to Washington Laboratories, Ltd. for SDSP CONSOLE EMC, October 19, 2012
- PO # 4500438306, Purchase Order to Washington Laboratories, Ltd. for AP1000 RO Console EMC, June 12, 2012
- PO # 4500438861, Purchase Order to Washington Laboratories, Ltd. for AP1000 DDS EMC, June 18, 2012
- PO # 4500441715, Purchase Order to Washington Laboratories, Ltd. for PDSP CONSOLE EMC, July 13, 2012
- PO # 4500457197, Purchase Order to Washington Laboratories, Ltd. for RCP SWITCHGEAR EMC, December 11, 2012
- PO # 4500457664, Purchase Order to Washington Laboratories, Ltd. for EMC CHAMBER CALIBRATION, December 14, 2012
- PO # 4500458870, Purchase Order to Washington Laboratories, Ltd. for WLL DATED IEC STANDARD REVIEW, January 3, 2013
- PO # 4500465512, Purchase Order to Washington Laboratories, Ltd. for DAS EMC SUPPLEMENTAL TESTING, February 27, 2013
- PO # 4500442468, Purchase Order to Washington Laboratories, Ltd. for DCIS I/O Cable Testing, July 20, 2012
- PO# 45003513452, Purchase Order to Keystone Compliance for EMC Test Support for AP1000 SMS DIMS-DX and CBVMS EQ Cabinet, June 24, 2010

- PO# 4500406119, Purchase Order to Keystone Compliance, LLC for EMC Testing of DK01 DC MCC, August 31, 2011
- PO# 4500410624, Purchase Order to Keystone Compliance, LLC for AP1000 PMS, October 10, 2011
- PO# 4500404569, Purchase Order to Keystone Compliance, LLC for EMC Testing of DS01 DC Switchboard, August 18, 2011
- PO# 4500361769, Purchase Order to Keystone Compliance, LLC for EMC Engineering Services, September 28, 2010
- PO# 4500379176, Purchase Order to Keystone Compliance, LLC for DRCS testing, February 21, 2011
- PO# 4500442744, Purchase Order to Keystone Compliance, LLC for EMC – RCP SPEED SENSOR PREAMP, July 24, 2012
- PO# 4500458367, Purchase Order to Keystone Compliance, LLC for KC DATED IEC STANDARD REVIEW, December 20, 2012
- PO# 4500409353, Purchase Order to Keystone Compliance, LLC for EMC Re-testing of SMS Sensors, September 28, 2011
- PO# 4500458583, Purchase Order to Keystone Compliance, LLC for PMS Domestic EMC Testing, December 26, 2012
- PO# 4500386209, Purchase Order to Clark Dynamic Test Lab, Inc. for Vibration Aging of Speed Sensor, April 11, 2011
- PO# 4500386611, Purchase Order to Clark Dynamic Test Lab, Inc. for Seismic/ Environmental Testing RTS, April 14, 2011
- PO# 4500390205, Purchase Order to Clark Dynamic Test Lab, Inc. for DF03 Seismic Test, May 13, 2011
- PO# 4500390207, Purchase Order to Clark Dynamic Test Lab, Inc. for EA01 Seismic Test, May 13, 2011
- PO# 4500390209, Purchase Order to Clark Dynamic Test Lab, Inc. for Seismic/Environmental Testing of DC MCC, May 13, 2011
- PO# 4500426814, Purchase Order to Clark Dynamic Test Lab, Inc. for IEEE Qualification Program, February 27, 2012
- PO# 4500436303, Purchase Order to Clark Dynamic Test Lab, Inc. for Seismic Testing AP1000 PMS/NIS, May 22, 2012

- PO# 4500447017, Purchase Order to Clark Dynamic Test Lab, Inc. for Seismic Testing of AP1000 RCP Switchgear, September 4, 2012

- PO# 4500463803, Purchase Order to Clark Dynamic Test Lab, Inc. for H4BC Seismic Retest, February 13, 2013

- PO# 4500466510, Purchase Order to Clark Dynamic Test Lab, Inc. for Qualification Testing, March 8, 2013

- PO# 4500600380, Purchase Order to Clark Dynamic Test Lab, Inc. for Seismic Testing for Domestic AP1000 PMS , April 3, 2013

Miscellaneous Documents

- LTR-EQ-13-43, “Additional Information for Washington Laboratory EMC Test Reports,” Revision 0, dated March 7, 2013

- LTR-EQ-13-79, “EMC Laboratory Report Data Review – Washington Laboratories,” Revision 1, dated April 18, 2013

- LTR-EQ-13-80, “EMC Laboratory Report Data Review – Keystone Compliance,” dated April 17, 2013

- LTR-EQ-13-35, “Comparison of IEC 61000-4 Series Commercial Standards,” dated March 15, 2013

- 1212-030E, “Keystone compliance standards comparison document, “ Revision 1, January 25, 2013

- 12832-01, “Washington Laboratories, Ltd. IEC Test standards comparison,” Revision 0, January 23, 2013

- Letter dated October 30, 2013 from Washington Laboratories, Ltd. QA Manager to John C. Mallory, WEC Supplier Quality Engineering

- WEC training presentation, “Procedure Compliance Training: WEC 7.2 Dedication of Commercial Grade Items Revision 2”

- Westinghouse Level II Policies and Procedures, Qualification Operations Training Matrix, July 24, 2012

- WNA-VR-00359-WAPP, “Diverse Actuation System Equipment Qualification Test Equipment Verification,” Revision 0, dated May 2012

- WNA-VR-00320-GEN, “Standard Input/Output Simulator Software Validation,” Revision 2, dated September 2011

- WNA-TD-00833-WAPP, "Diverse Actuation System Equipment Qualification Unit Cabinet Hardware Test Data Record, Revision 1, dated November, 2012

- WLL Report # 12274-01, “EMI/EMC Test Report for the Westinghouse Electric Company – EA01 AC Distribution Panel,” Revision 1, dated December 2, 2011

- WLL Report # 12392-01, “EMI/EMC Test Report for the Westinghouse Electric Company - DAS (Diverse Actuation System),” Revision 2, dated May 30, 2013

- EQ-QR-131-APP, “AP1000 Plant Diverse Actuation System Electromagnetic Compatibility Qualification Report,” Revision 0, dated May 2013

- LTR-EQ-13-100, “Results of EMC Testing for Sensitive Frequencies for DAS Panel Meters,” dated May 17, 2013

- EQ-QR-90-APP/APP-ES02-VPR-001, “AP1000 EMC Qualification Functional Report and Installation Restrictions for the RCP Switchgear Digital Relays,” Revision 0

- 12392-01, “EMI/EMC Test Report for the Westinghouse Electric Company – DAS (Diverse Actuation System),” Revision 2, dated May 30, 2013

- 12806-01, “EMI/EMC Test Report for the Westinghouse Electric Company – RCP Switchgear Digital Relays and AC Distribution Panel (EA01) Digital Trip Unit,” Revision 0, dated January 31, 2013

- 12624-01, “EMI/EMC Test Report for the Westinghouse Electric Company –PDSP Console,” Revision 0, dated June 13, 2013

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