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Our ref: DCP_NRC_003219

July 2, 2012

Your ref: NRC Vendor Inspection Report Number 99900403/2012

Subject: REPLY TO NOTICE OF NONCONFORMANCES CITED IN NRC INSPECTION
REPORT NO. 99900403/2012-201 dated May 18, 2012

Westinghouse acknowledges receipt of NRC Inspection Report Number 99900403/2012-201, Notice of Nonconformance dated May 18, 2012 and the Notice of Non-Conformances: 99900403/2012-201-01, 99900403/2012-201-02, 99900403/2012-03 and 99900403/2012-201-04. Westinghouse takes any notice of nonconformance received from the NRC seriously and is taking appropriate actions to completely resolve these issues in a timely manner, and is committed to be in compliance with the provisions of Criterion III, "Design Control" of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocess 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."

Westinghouse also values the results from this thorough review of our Equipment Qualification program and type testing activities. In consideration of NRC comments made both during the inspection and in the exit meeting, Westinghouse immediately initiated corrective actions to resolve the specific items identified in the Notice of Non-Conformances.

As requested, details of corrective actions associated with these nonconformances are described in the attachment to this letter.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Richard A. DeLong', written over a horizontal line.

Richard A. DeLong
Acting Director, New Plant Licensing

IED9

cc: Richard A. Rasmussen - U.S. NRC
Jeffery Jacobson - U.S. NRC
George Lipscomb - U.S. NRC
Bruce Bavol - U.S. NRC
Laura Goossen - WEC
Gary Ament - WEC
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Stan Ritterbusch - WEC
Melita Osborne - WEC
Ronald Wessel - WEC

Nonconformance 99900403/2012-201-01

Criterion IV, "Procurement Document Control," 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," states, in part, that "measures shall be established to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in the documents for procurement of material, equipment, and services."

WEC 7.5, "Control of Purchased Items and Services," Revision 3, Section 6.2.3, requires that appropriate quality requirements, including applicable qualified suppliers list requirements, be included or specified in procurement packages.

Contrary to the above, as of April 13, 2012, Westinghouse failed to include required commercial-grade survey-specified quality restrictions in multiple purchase orders (POs) for Washington Laboratory, Ltd. (WLL) testing services as required by WEC 7.5. Specifically, Westinghouse failed to include the purchase requirement that WLL use the quality assurance (QA) program audited and approved by Westinghouse and notify Westinghouse of any changes to the WLL QA program in PO Nos. 4500423116, 4500428675, and 4500423138.

Response:

1) The reason for the noncompliance or, if contested, the basis for disputing the Noncompliance:

The Westinghouse representative that generated the purchase requisitions, the which are also used to generate the purchase orders inadvertently failed to include the supplier restrictions into the purchase requisition as required by Westinghouse procedure 7.5. The missing restrictions were also missed by the Quality approval of the requisitions.

2) The corrective steps that have been taken and the results achieved:

Westinghouse Supply Chain Management (SCM) reviewed Westinghouse Quality Procedure WEC 7.5 to ensure there is clarity on responsible parties for QA restrictions. Per WEC 7.5 Paragraph 6.1.3, QSL restrictions are the responsibility of the requisitioner, and are required to be approved by Quality (WEC 7.5 Paragraph 6.2.3). It is noted that for the purchase orders referenced above, the related requisitions did have a Quality release (requisition 1000411614 and 1000418192). SCM verified that the Quality requirements in the purchase order were not altered from the Quality requirements listed in the requisition.

3) The corrective steps that will be taken to avoid noncompliance:

A discussion with the applicable Supply Chain Management personnel was held on April 16, 2012 to make them aware of the issue and to request to monitor for additional occurrences, as these may denote a training need for the associated requisitioner.

4) The date when the corrective action will be completed.

Action Completed May 18, 2012.

Nonconformance 99900404/2012-201-02

Criterion III, "Design Control," of Appendix B to 10 CFR Part 50 states, in part, that:

- Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components.
- Where a test program is used to verify the adequacy of a specific design feature in lieu of other verifying or checking processes, it shall include suitable qualifications testing of a prototype unit under the most adverse design conditions.
- Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design, unless the applicant designates another responsible organization.

WEC 7.3, "Commercial Grade Surveys," Revision 1, Section 7.1.2.1, states, "for each critical characteristic identified, team members shall evaluate the supplier's controls through observation of work activities, review of acceptance criteria, interviews of supplier personnel, verification that procedures and instructions are in place that define the controls."

Section 7.2 also states, "A commercial grade survey shall be performed by quality personnel, supplemented by Engineering, Supply Management and/or other participants as necessary to conduct an effective evaluation."

Additionally, Section 7.4 states, "Commercial Grade Surveys shall be conducted at least triennially, and the supplier's performance shall be evaluated annually, in accordance with WEC 7.1."

Westinghouse Commercial Dedication Instruction (CDI)-3865, "Commercial Grade Dedication," Revision 1, Section E.2, specifies acceptance criteria for critical characteristic "Personal Qualification," which states, in part, "test lab personnel training to perform EMC [electromagnetic compatibility] testing to applicable military standards (MIL) and commercial standards shall be documented periodically. Test lab personnel training to use calibrated test equipment shall be documented periodically." Additionally, the acceptance criteria for critical characteristic "Performance Test" states, in part, "WLL test procedures are compliant with applicable and military standards for setup and testing [International Electrotechnical Commission] IEC 61000-2." Furthermore, the acceptance criteria for critical characteristic "Quality System" states, in part, "WLL ACLASS certificate for electrical testing will be evaluated as a recurring activity."

Contrary to the above, as of April 13, 2012:

- Westinghouse failed to conduct an effective technical evaluation of commercial grade survey WES2011-121, Revision 1. Specifically, Westinghouse did not designate a technical specialist to evaluate technical issues that affect critical characteristics. As a result, two examples were identified in which verification of critical characteristics was deficient according to acceptance criteria designated in CDI-3865. Specifically:
 - Westinghouse failed to properly verify the critical characteristic "Performance Test" by not ensuring that WLL test procedures were compliant with applicable military

- standards. Specifically, WLL procedure ETP01398 was not in compliance with standards.
- Westinghouse failed to properly verify critical characteristic "Test Report" through special inspection. Specifically, EMC Test Report #WILL 12274-01 was found to be missing design data requirements specified in EMC standard IEC 61000-4-3, including operating conditions of equipment under test (EUT), rate of sweep of frequency, dwell time, and frequency steps.
 - Westinghouse failed to provide adequate documentation for periodic evaluation of WLL's ACLASS certificate for electrical testing.
 - Westinghouse failed to properly verify critical characteristic "Personal Qualification" through commercial-grade survey WES-2011-121, which ensured that implementation of required training of personnel at WLL was acceptable.
 - Specifically, WLL personnel performing tests onsite were not adequately qualified and trained under applicable testing procedures.

Response:

1) The reason for the noncompliance or, if contested, the basis for disputing the Noncompliance:

The three (3) restrictions from Commercial Grade Survey Report WES-2011-121 were entered into the Westinghouse Qualified Suppliers List (QSL) following the completion of the survey.

This QSL is the source of restrictions to be included in procurement documents.

During the course of a later revision to the QSL data for this supplier a human error was made that caused one of the three restrictions to be replaced with a new restriction, rather than simply adding the new restriction.

2) The corrective steps that have been taken and the results achieved:

The QSL has been corrected to include all restrictions applicable to this supplier.

3) The corrective steps that will be taken to avoid noncompliance:

Personnel responsible for QSL data entry and maintenance have been advised of this occurrence and made aware of the potential for such human errors.

4) The date when the corrective action will be completed.

Action Completed June 25, 2012.

Nonconformance 99900403/2012-201-03

AP1000 Design Control Document, Tier 2, Revision 19, has a commitment to conform to Regulatory Guide (RG) 1.180, "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control [I&C] Systems," Revision 1, issued October 2003. RG 1.180 states, in part, that "Criterion III, 'Design Control,' Criterion XI, 'Test Control,' and Criterion XVII, 'Quality Assurance Records,' of Appendix B, 'Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants,' to 10 CFR Part 50 establish practices to confirm that a design fulfills its technical requirements."

In addition, RG 1.180 states, in part, "The practices endorsed in this regulatory guide apply to both safety-related I&C systems and non-safety-related I&C systems whose failures can affect safety functions." Criterion XI, "Test Control," states, in part, "Test results shall be documented and evaluated to assure that test requirements have been satisfied."

Contrary to the above, as of April 13, 2012, Westinghouse failed to document and evaluate a test anomaly to ensure that the design test configuration requirements were being met for the diverse actuation system. Specifically, Westinghouse failed to record in the test log that the test configuration was modified to satisfy the testing acceptance criteria. Additionally, there was no documented evidence detailing how the test configuration was modified and evaluated to ensure that the original design requirements were still being met.

Response:

1) The reason for the noncompliance or, if contested, the basis for disputing the Noncompliance:

The design engineer responsible for the design engineering test log and test datasheets did not adequately document a design test anomaly during the Cabinet Hardware Test - (CHT) to support DAS qualification. The test log did not provide enough detail to adequately disposition a value other than 0 VDC for Step 9,2,23,1. In addition, the measured values recorded in the test log and test datasheets do not match for this step.

2) The corrective steps that have been taken and the results achieved:

An analytically determined expected 0 voltage range cannot be easily determined, due to the complexity of determining parasitic capacitance levels. However, the procedure does verify that loads turn off and on as expected by changing the applicable breaker position.

Therefore, the breaker function is verified successfully.

Better acceptance criteria should have been defined by performing better procedure Dry-running. Seeing that the steady state voltages across the DC loads, with the circuit breakers open, are very small (< 0.2 VDC), + or - 1 VDC could have been arbitrarily chosen as acceptance criteria, since it is known that this voltage would not be sufficient to energize any DAS DC loads.

The datasheets have been corrected and the corrected test log will be included in the test report.

3) The corrective steps that will be taken to avoid noncompliance:

The Westinghouse manager met with the responsible employee to stress the importance of verbatim procedural compliance and proper disposition of all anomalies. The employee also performed retraining on the applicable Westinghouse Level 3 quality procedure.

4) The date when the corrective action will be completed.

Action completed May 11, 2012.

Nonconformance 99900404/2012-201-04

AP1000 Design Control Document, Tier 2, Revision 19, has a commitment to conform to RG 1.180, "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems," Revision 1, issued October 2003.

RG 1.180 states in part that, "Criterion III, 'Design Control,' Criterion XI, 'Test Control, and Criterion XVII, 'Quality Assurance Records,' of Appendix B, 'Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants,' to 10 CFR Part 50 establish practices to confirm that a design fulfills its technical requirements." In addition, RG 1.180 states, in part, "The practices endorsed in this regulatory guide apply to both safety-related I&C systems and non-safety-related I&C systems whose failures can affect safety functions."

Criterion XI, "Test Control," states, in part, "A test program shall be established to assure that all testing required to demonstrate that structures, systems and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents."

Contrary to the above, as of April 13, 2012, Westinghouse failed to ensure that the requirements of RG 1.180 were met during testing. Specifically, Westinghouse failed to: perform a separate analysis of the sensitive frequencies, document and ensure that the EUT was tested within its operating and climate conditions, and ensure that the cabling requirements specified for calibration were captured in the calibration procedure as required by International Electrotechnical Commission (IEC) 61000-4-3 as referenced in RG 1.180.

Response:

1) The reason for the noncompliance or, if contested, the basis for disputing the Noncompliance:

Frequencies: *Testing was still in progress at the time of the inspection and the relevant frequencies had not yet been evaluated.*

Operating and Climate Conditions: *Temperature and humidity information is typically included in design documentation rather than in qualification test procedures.*

Cabling for Calibration vs. Testing (4-3): *The test report developed by Washington Labs, LLC inadvertently left out the cables that were used in the uniform field calibration.*

2) The corrective steps that have been taken and the results achieved:

Frequencies: *The DAS design has been reviewed to determine if any sensitive frequencies are present in the design. This review determined that the following are the frequencies of interest in the DAS design: 12 MHz, 2.4 MHz, and 80 kHz.*

Note that the frequency range required for IEC 61000-4-3 to satisfy RG 1.180 is 26 MHz to 1 GHz. Since all of the frequencies in the DAS design are below the IEC 61000-4-3 frequency range, there is no need to perform any further analysis to satisfy IEC 61000-4-3 requirements.

Operating and Climate Conditions: *The temperature and humidity environmental conditions of the test area were recorded during testing of the DAS in accordance with IEC 61000-4-3. The*

conditions present during the test have been evaluated and found to be within the design range of the equipment.

Cabling for Calibration vs. Testing (4-3): Washington Laboratory, LLC procedure ETP01398 has been amended to provide guidance to verify that the EUT and associated EUT cables are included in the uniform field.

3) The corrective steps that will be taken to avoid noncompliance:

Frequencies: The relevant frequencies and a formal analysis of their impact on IEC 61000-4-3 will be documented in the EMC qualification report to be issued for DAS EMC testing.

Operating and Climate Conditions: The operating temperature and humidity ranges for the DAS will be documented in the EMC qualification report to be issued for DAS EMC testing, along with the conditions recorded during testing.

Cabling for Calibration vs. Testing (4-3): Action complete.

4) The date when the corrective action will be completed.

Frequencies: Action complete. Westinghouse is tracking implementation in the DAS EMC Report through our Corrective Action Program (CAP).

Operating and Climate Conditions: Action completed June 25, 2012. Westinghouse is tracking the implementation in the DAS EMC Report through our Corrective Action Program (CAP).

Cabling for Calibration vs. Testing (4-3): Action completed June 25, 2012.