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December 17, 2014

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

SUBJECT: REPLY TO A NOTICE OF NONCONFORMANCE  
NRC INSPECTION REPORT NO. 99901422/2014-201

By letter dated October 24, 2014, CB&I received NRC Inspection Report 99901422/2014-201. The NRC inspection report included a "Notice of Nonconformance" that identified two nonconformances stemming from the NRC inspection performed at the CB&I Power Charlotte office, September 9 – 12, 2014. The two nonconformances are identified as Nonconformance 99901422/2014-201-01 and 99901422/2014-201-02 in the NRC inspection report.

This letter provides the remaining reply to the notice of nonconformance. Attached to this letter is the CB&I Power response to Nonconformance 99901422/2014-201-01. The response to Nonconformance 99901422/2014-201-02 was previously provided by letter dated November 20, 2014. The extension of the allowed response time for Nonconformance 99901422/2014-201-01 was based on the additional time needed by CB&I Power to perform a root cause analysis of the conditions identified in that nonconformance.

The need for additional time was discussed in a telephone conversation between Curtis Castell, CB&I Power Licensing Manager, and Paul Prescott, the NRC Team Leader for this inspection, on November 17, 2014. Mr. Prescott concurred with the time extension for response to Nonconformance 99901422/2014-201-01, as provided by the NRC inspection report guidance, which states, "Where good cause is shown, the NRC will consider extending the response time." An NRC letter dated November 18, 2014, confirmed the 30-day response time extension.

If you have any questions pertaining to this information, please contact Curtis Castell at 980-321-8314.

Sincerely,

Michael Annacone  
Vice President Nuclear Safety

cc: Chief, Quality Assurance Vendor Inspection Branch, Division of Construction Inspection and Operational Programs, Office of New Reactors

Attachment

JE09  
MRO

**REPLY TO NONCONFORMANCE 99901422/2014-201-01**

This is the CB&I Power reply to the Notice of Nonconformance identified in NRC Inspection Report No. 99901422/2014-201, dated October 24, 2014.

**NONCONFORMANCE**

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Chicago Bridge & Iron Power (CB&I Power) facility in Charlotte, NC, during September 9, 2014, through September 12, 2014, certain activities were not conducted in accordance with NRC requirements contractually imposed on CB&I Power by its customers or NRC licensees:

- A. Criterion XVI, "Corrective Action," of Appendix B to Title 10 of the Code of Federal Regulations (10 CFR) Part 50 states: "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. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management."

Section 16, "Corrective Action," of CB&I Power's Standard Nuclear Quality Assurance Program, SWSQAP 1-74A, Revision B, dated June 1, 2009, paragraph 1.1, states, in part: "Major and recurring conditions adverse to quality, such as failures, deficiencies, defective material and equipment, unsats, and nonconformances shall be identified, the cause(s) determined, and corrective and preventive action taken to preclude repetition."

Section 6.1.8 of CB&I Nuclear Quality Standard (QS) 16.05, "Corrective Action Program," Revision 04.00, dated August 25, 2014, states, in part: "For Significant Conditions Adverse to Quality (SCAQ), Preventive Actions shall be applied to prevent recurrence of the identified Root Cause(s), and Corrective Action(s) shall be taken to address the significant adverse condition, and identified Contributing Cause(s)."

Contrary to the above, as of September 12, 2014, CB&I Power failed to adequately identify and evaluate a significant condition adverse to quality, the cause of the condition, and the preventive corrective action to preclude repetition. Specifically, CB&I Power had two missed opportunities (Vendor Audits V2013-36, conducted in June 2013, and V2013-33, conducted in October 2013) to identify during the implementation audits that one of their suppliers, Specialty Maintenance and Construction, Inc. (SMCI), failed to have a program in place that meets the requirements for identifying nonconforming materials, parts, or components, as documented in Inspection Report 99901439/2014-201, dated May 16, 2014. Furthermore, CB&I Power's corrective action report number 2014-0968 dated May 16, 2014 failed to adequately evaluate the significant condition adverse to quality, identify the cause, and perform an extent of condition evaluation, for the CB&I Power's failure to identify this potential significant programmatic weakness in SMCI's quality assurance program.

This issue has been identified as Nonconformance 99901422/2014-201-01.

### **REASON FOR THE NONCOMPLIANCE**

The condition described in this nonconformance has been documented in Corrective Action Report (CAR) 2014-2228. A root cause analysis (RCA) has been conducted for this condition. The RCA has determined the root cause for this noncompliance to be the failure to effectively use available resources, such as Industry Operating Experiences, Lessons Learned, NRC Vendor Branch Inspections, CB&I Vendor Audit Results, and Corrective Action Program. Technical information was available to predict, prevent, or correct deficiencies at CB&I suppliers before they were identified by NRC; however, CB&I failed to effectively use this information to identify and correct significant conditions adverse to quality.

As noted in the NRC inspection report, CB&I CAR 2014-0968 had previously identified this issue, although during the processing of that CAR, CB&I did not include sufficient causal analysis and extent of condition review. This is attributable to one of the contributing causes for this noncompliance, as determined in the RCA for CAR 2014-2228. That contributing cause has been determined to be the failure to recognize the significance of external findings during the CAR screening process, such that significant conditions identified by external sources did not require an Apparent Cause Analysis, Root Cause Analysis, or "Extent of Condition" review.

### **CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND RESULTS ACHIEVED**

The CB&I CAR for this condition (CAR 2014-2228) was screened as a significant condition adverse to quality, which resulted in the performance of a root cause analysis (RCA). Additionally, "extent of condition" and "extent of cause" reviews were performed during the analysis of the identified conditions. Performance of the RCA, and the "extent of condition" and "extent of cause" reviews, have corrected the identified noncompliance conditions associated with CAR 2014-0968. This has further resulted in a more thorough analysis of the conditions and development of preventive and corrective actions that are expected to improve the CB&I processes for reviewing adequacy of suppliers in accordance with 10 CFR 50, Appendix B.

Additionally, a Quality Assurance Surveillance (VS-2014-68) was conducted at SMCI, November 3 – 6, 2014. This surveillance was used to ascertain the status of SMCI corrective actions for the identified significant conditions adverse to quality and potential hardware impacts of the identified issues. The surveillance included assessment of findings associated with the SMCI 10 CFR 50, Appendix B, Criterion XV, "Nonconforming Materials, Parts, or Components," process. Based on the results of this surveillance, SMCI remains under CB&I Power Quality Ratings List (QRL) restrictions until such time that corrective actions are determined to be adequate for the identified findings.

Further, the corrective actions for CAR 2014-0968 included documenting the lessons learned from this CAR (2014-0968) in the Quality Assurance (QA) Audit group's Lessons-Learned database. Also, a presentation of lessons learned from module suppliers was developed, which included the issues identified in CAR 2014-0968, and was presented in auditor refresher training, conducted November 24 – 25, 2014. These actions have enhanced the CB&I QA auditors' awareness of these issues.

## **CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER NONCOMPLIANCE**

The following actions are intended to address the root cause of the identified condition to avoid further noncompliance:

- Quality Standard (QS) Procedure QS 18.01, Quality Assurance Directive (QAD) Procedure QAD 18.01, and QAD 18.13 that govern audit and surveillance planning will be revised with the following direction. During the audit and surveillance planning process each checklist will be customized to include OE/LL [Operating Experience/Lessons Learned] from the industry especially NRC inspections and each checklist will include any previous area determined to be “indeterminate” during any prior audit or surveillance. The Nuclear Audit Manager will review and approve each checklist before implementation.
- Revise QS 18.1 with the guidance to staff future audit and surveillance teams with subject matter experts. This staffing will be reflective of areas of QA Program weakness established from past audits or surveillances/feedback from industry information, such as NRC inspections and areas of programmatic weakness they list in their inspection reports. Audit and surveillance staffing will be approved by the Nuclear Audit Manager.

The following action is intended to address the contributing cause pertaining to the CB&I Corrective Action Program screening process:

- Revise the CB&I Corrective Action Program screening process to recognize the significance of external findings, such that Significant Conditions Adverse to Quality identified by external sources are evaluated for Root Cause, Apparent Cause, or Extent of Condition. NRC Findings must have a Root Cause or Apparent Cause, and Extent of Condition. These findings must also be entered into the Lessons-Learned database.

## **DATE WHEN CORRECTIVE ACTION WILL BE COMPLETED**

The identified corrective actions will be completed by March 2, 2015.