



CB&I  
3191 W. Lincoln Road  
Lake Charles, LA 70605  
Tel: +1 337 562 3536  
Fax: +1 337 562 3490  
[www.CBI.com](http://www.CBI.com)

February 13, 2015

L-CBILC-USNRC-000047

US Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: Reply to Unresolved Item 99901425/2014-202-02 and Request for Extension

In response to the referenced Nuclear Regulatory Commission (NRC) request for explanation documented in unresolved item (URI) 99901425/2014-202-02, CB&I Lake Charles (CB&I LC) herewith provide the attached explanation (Attachment 2). This reply addresses the attached URI (Attachment 1) as it relates the CB&I LC and CB&I Power process for discovery, evaluation and reporting pursuant to the requirements of 10 CFR 50.55(e).

CB&I LC is currently reviewing the reply to NON 99901425/2014-202-01. During this review, CB&I management concluded that additional opportunity exists to further evaluate the noncompliance to develop actions that will avoid further noncompliance and address the conditions identified. As such, CB&I LC hereby request a 30 day extension to ensure these adjustments are made for this response. The need for extension was discussed via telephone conversation between Ryan Whitford, CB&I LC Director of Quality, and Kerri Kavanagh, Chief of the NRC Quality Assurance Vendor Inspection Branch.

CB&I LC understands the feedback received in the above referenced inspection report. We take that feedback seriously and recognize that the utmost attention is required to ensure corrective actions are put in place to avoid further noncompliance.

Sincerely,

Chris Fordham  
General Manager  
CB&I Lake Charles

Cc:

Kerri Kavanagh, Chief, Quality Assurance Vendor Inspection Branch, Division of Construction Inspection and Operational Programs  
Ryan Whitford, CB&I LC Director of Quality  
Ryan Zurkuhlen, Director Module Operations, CB&I Fabrication and Manufacturing, CB&I LC Vice President  
Mike Annacone, Vice President, Nuclear Safety CB&I

Attachment #1 – Statement of Unresolved Item 99901425/2014-202-02

Attachment #2 – Reply to Unresolved Item 99901425/2014-202-02

LEO9  
NRO



CB&I  
3191 W. Lincoln Road  
Lake Charles, LA 70605  
Tel: +1 337 562 3536  
Fax: +1 337 562 3490  
[www.CBI.com](http://www.CBI.com)

## **Attachment 1 to Letter L-CBILC-USNRC-000047**

### **Statement of Unresolved Item 99901425/2014-202-02**

The NRC inspection team reviewed CB&I LC's and CB&I Power's actions to address the September 10, 2014, §50.55(e) notifications. The notifications from V.C. Summer and Vogtle identified a significant breakdown in CB&I LC's quality assurance (QA) program. The NRC inspection team discussed with CB&I LC and CB&I Power staff the timeline for discovery, evaluation and reporting of the September 10, 2014, §50.55(e) notifications.

CB&I LC's initial description of the problem was documented in CAR 2013-1641, dated December 13, 2013. CAR 2013-1641 identified that a welding procedure specification (WPS) was found to be non-compliant with the American Welding Society (AWS) code. As required by the regulations in §21.21(b), CB&I LC notified CB&I Power in a letter dated December 23, 2013 about the welding issue; a possible QA program breakdown and determined that further evaluation was necessary. CB&I LC documented the root causes and contributing causes in a root cause analysis (RCA) performed for CAR 2013-1641 that was completed in March 2014 and determined a significant QA program breakdown had occurred.

On July 9, 2014, CB&I LC initiated another §21.21(b) letter to CB&I Power again requesting that an evaluation be initiated to assess potential reportability to the NRC. Based on CB&I Power's guidance developed to assess a potential significant QA program breakdown, CB&I LC met the threshold for reporting.

CB&I Power staff stated that the process of further evaluation was not begun until the RCA for CAR 2013-1641 was complete. CB&I Power staff stated that the evaluation was initiated in late June 2014. However, CB&I Power initiated CAR 2014-1316 on July 9, 2014, to evaluate the potential QA program breakdown.

The NRC inspection team noted that CB&I LC completed the RCA in March 2014 and sent another §21.21(b) letter to CB&I Power on July 9, 2014. However the NRC was not notified until September 10, 2014. Also, CB&I Power did not sent to the NRC any interim notifications related to a significant QA program breakdown in this timeframe.

The NRC inspection team is requesting that CB&I LC and CB&I Power provide an explanation of its process for discovery, evaluation and reporting under the requirements of §50.55(e) related to the September 10, 2014, notifications of a QA program breakdown. The NRC inspection team considered the process for reporting timeliness of the September 10, 2014, §50.55(e) notifications to be Unresolved Item (URI) 99901425/2014-202-02.

The NRC inspection team determined that CB&I LC's processes and procedures complied with the requirements of 10 CFR Part 21. Based on the limited sample of documents reviewed, the NRC inspection team issued Unresolved Item 99901425/2014-202-02 to request that CB&I LC and CB&I Power provide an explanation of its process for discovery, evaluation and reporting under the requirements of §50.55(e) related to the timeliness for the September 10, 2014, notifications of a significant QA program breakdown.



CB&I  
3191 W. Lincoln Road  
Lake Charles, LA 70605  
Tel: +1 337 562 3536  
Fax: +1 337 562 3490  
[www.CBI.com](http://www.CBI.com)

**Attachment 2 to Letter L-CBILC-USNRC-000047**

**Reply to Unresolved Item 99901425/2014-202-02**

The following information is provided to describe the discovery, evaluation, and reporting of the identified issues:

**Discovery:**

The discovery of the WPS issue for CB&I Power is based on a letter from CB&I Lake Charles that invokes 10 CFR 21.21(b). That letter is dated December 23, 2013. Tracking number was assigned for this notification as Evaluation 14-305, with a due date of February 21, 2014. The evaluation process for CB&I Power is described in procedure QS 16.3, "Identifying and Reporting Defects and Failures to Comply Under 10CFR21 and 10CFR50.55(e)." This procedure requires that evaluations for issues associated with nuclear construction projects are performed in accordance with both 10 CFR 21 and 50.55(e).

**Evaluation:**

Interim report was submitted to the NRC by letter dated February 21, 2014. That interim report includes the following information:

"The discovery date of the deviation is December 23, 2013, based on the date information was received from CB&I Lake Charles regarding this deviation by letter on that date."

"A taskforce has been created at CB&I Lake Charles. This taskforce consists of personnel that have been tested and certified specifically for welding procedure specification (WPS) development by national or international organizations. This taskforce will review all of the WPSs issued for fabrication to determine code compliance. The essential variable parameters for the various versions of each WPS will be assessed and will be run to support the low and high ends of these WPSs when combined. Evaluation of the joint types and joint configurations used in fabrication will be conducted and it will be determined if additional PQRs are needed to supplied the WPS. This issue is identified in the CB&I Lake Charles corrective action program as a Level 1 Significant Condition Adverse to Quality. A Root Cause Analysis (RCA) team has been established and will perform a full analysis on the condition. It is currently expected that sufficient information will be available to complete the Part 21 reportability evaluation of these conditions by April 22, 2014."

An updated interim report was submitted to the NRC by letter dated April 22, 2014. That updated interim report includes the following information:

"A taskforce has been created at CB&I Lake Charles. This taskforce consists of personnel that have been tested and certified specifically for welding procedure specification (WPS) development by national or international organizations. This taskforce has reviewed WPSs issued for fabrication to determine code compliance. This issue is identified in the CB&I Lake Charles corrective action program as a Level 1 Significant Condition Adverse to Quality. A Root Cause Analysis (RCA) of the condition has been completed and actions are in progress to resolve the identified issues."

"Twelve (12) procedure qualification records (PQRs) were identified to be performed. Nine (9) of the 12 PQRs have been successfully completed, although review and approval by the purchaser (CB&I Power) is still required. It is currently expected the remaining three (3) PQRs will be completed and the 12 PQRs will be reviewed and



CB&I  
3191 W. Lincoln Road  
Lake Charles, LA 70605  
Tel: +1 337 562 3536  
Fax: +1 337 562 3490  
[www.CBI.com](http://www.CBI.com)

approved such that the Part 21 reportability evaluation of these conditions can be completed by June 22, 2014, or another updated interim report will be provided by that date.”

Another interim report was submitted to the NRC by letter dated May 2, 2014. That interim report includes the following information:

“No basic components have been determined to fail to comply or contain a defect. This is an interim report. The deviations that are being evaluated are associated welding of structural modules and sub-modules supplied for construction of V. C. Summer Unit 2 & 3 and Vogtle Unit 3 & 4 nuclear projects.

“As a result of root cause analysis investigations at CB&I Lake Charles, it was discovered that there were some welding procedure qualification records (PQRs) that had not been completed or have been completed incorrectly. After completion and acceptance of the necessary PQRs, the evaluation of these conditions under Part 21 can be completed. It is currently expected that the evaluation of these conditions will be completed by November 5, 2014.”

“The discovery dates of these deviations span back to December 23, 2013 (as documented in interim report letter dated April 22, 2014), and includes conditions as currently identified in nonconformance reports that were generated based on the root cause analysis investigations and subsequent corrective actions.”

“It is planned that PQRs will be completed that establish acceptability of the welds performed. This is expected to resolve these conditions as “not reportable.” After completion and acceptance of the PQRs, and other actions as needed to resolve the nonconformances, the evaluation of these conditions under Part 21 can be completed. It is currently expected that the evaluation of these conditions will be completed by November 5, 2014.”

During the on-going process of evaluating the identified conditions, CB&I Power personnel asked CB&I Lake Charles personnel regarding information pertaining to evaluation of the QA breakdown aspects of the identified conditions. By letter dated July 9, 2014, CB&I Lake Charles formally communicated to CB&I Power that a potential programmatic breakdown of the CB&I LC quality program may have occurred and that further evaluation per 10 CFR Part 50.55(e) may be required. This letter references the December 23, 2013, notification of CB&I power regarding the identified conditions. The conditions described in the July 9, 2014, letter are the same conditions identified in the December 23, 2013, CB&I Lake Charles letter. Therefore, the conditions identified in the CB&I Lake Charles letter dated July 9, 2014, are the same conditions identified in the interim reports provided to the NRC, as summarized previously.

Based on the procedure requirements of QS 16.3, CB&I Power initiated a corrective action report (2014-1316) pertaining to the CB&I Lake Charles letter dated July 9, 2014. As previously stated, CB&I Power was in the process of evaluating the identified conditions, as described in the applicable interim reports, with an identified completion date of November 5, 2014, based on the May 2, 2014, interim report letter. The ongoing testing and qualification of the PQRs in support of the WPSs was seen as relevant information for the completion of the identified evaluations under 10 CFR 21 and 50.55(e).

CB&I Power performed specific evaluation of the QA aspects, prior to completion of the applicable testing and qualification of the PQRs. This evaluation was completed on September 4, 2014. This is well within the committed completion date of November 5, 2014, as identified in the associated May 2, 2014, interim report letter. That evaluation conservatively concluded that the QA breakdown aspects of the identified conditions could be considered reportable. This conclusion is considered conservative because no substantial safety hazard had been found. The evaluation states, “Although it is noted that to date, based on completed Part 21 evaluations for deviations identified in delivered sub-modules, there have been no basic components supplied by CB&I Lake



Charles that were found to contain a defect or fail to comply with the Atomic Energy Act of 1954, as amended, or any applicable rule, regulation, order, or license of the Commission relating to substantial safety hazards.”

Additionally, it is noted that interim reports regarding the identified conditions explicitly stated that the conditions involved a “significant condition adverse to quality,” and that the root cause analysis had been completed.

#### Reporting:

Information was provided to the Combined Operating License holders for the AP1000® projects currently under construction. This information was in the form of the completed evaluation dated September 4, 2014, regarding the QA aspects of the issues identified for CB&I Lake Charles supplied components. The information provided to the license holders resulted in the identified September 10, 2014, notifications.

#### Summary:

10 CFR Part 21 and 10 CFR 50.55(e) includes regulatory requirements that have substantial overlap for nuclear construction. Both regulations state, “Evaluate deviations and failures to comply to identify defects and failures to comply associated with substantial safety hazards as soon as practicable, and, except as provided in paragraph (a)(2) [for 10 CFR 50.55 this is (e)(3)(ii)] of this section, in all cases within 60 days of discovery, in order to identify a reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected...” Both regulations require reporting of defects and failures to comply relating to a substantial safety hazard, although 10 CFR 50.55(e) includes an additional requirement pertaining to reporting, which states, “Undergoes any significant breakdown in any portion of the quality assurance program conducted under the requirements of appendix B to 10 CFR part 50 which could have produced a defect in a basic component. These breakdowns in the quality assurance program are reportable whether or not the breakdown actually resulted in a defect in a design approved and released for construction, installation, or manufacture.” It is noted that both sets of reporting regulations (10 CFR 21 and 10 CFR 50.55(e)) are based on the same requirements for what conditions are required to be evaluated. Those conditions are “deviations and failures to comply to identify defects and failures to comply associated with substantial safety hazards.”

In this case, the deviation/failure to comply was originally identified in a corrective action report initiated at CB&I Lake Charles facility on December 13, 2013. The issue was transferred to the purchaser (CB&I Power), in accordance 10 CFR 21.21(b). The purchaser (CB&I Power) issued interim reports that extended the commitment date for completion of the evaluations to November 5, 2014. The evaluation of the QA breakdown elements was completed on September 4, 2014, and reported within the regulatory time limits by the License holders.

Both regulations (10 CFR 21 and 10 CFR 50.55(e)) include allowance for coordination of potentially duplicate reporting. 10 CFR 50.55(e)(8) states, “Coordination with 10 CFR part 21. The requirements of § 50.55(e) are satisfied when the defect or failure to comply associated with a substantial safety hazard has been previously reported under part 21 of this chapter, under § 73.71 of this chapter, or under §§ 50.55(e) or 50.73.” 10 CFR 21.2(b) states, “For persons licensed to construct a facility under either a construction permit issued under § 50.23 of this chapter or a combined license under part 52 of this chapter (for the period of construction until the date that the Commission makes the finding under § 52.103(g) of this chapter), or to manufacture a facility under part 52 of this chapter, evaluation of potential defects and failures to comply and reporting of defects and failures to comply under § 50.55(e) of this chapter satisfies each person’s evaluation, notification, and reporting obligation to report defects and failures to comply under this part and the responsibility of individual directors and responsible officers of these licensees to report defects under Section 206 of the Energy Reorganization Act of 1974.”

Therefore, compliance with the applicable regulations was maintained by submittal of interim reports and the performance of the applicable evaluations, as required.



CB&I  
3191 W. Lincoln Road  
Lake Charles, LA 70605  
Tel: +1 337 562 3536  
Fax: +1 337 562 3490  
[www.CBI.com](http://www.CBI.com)

During the review of this issue, it was noted that 10 CFR 50.55(e) does not provide guidance for supplier communication regarding potentially reportable conditions. Specific guidance is provided in 10 CFR Part 21, but 10 CFR 50.55(e) does not include similar guidance. 10 CFR 21.21(b) states, "If the deviation or failure to comply is discovered by a supplier of basic components, or services associated with basic components, and the supplier determines that it does not have the capability to perform the evaluation to determine if a defect exists, then the supplier must inform the purchasers or affected licensees within five working days of this determination so that the purchasers or affected licensees may evaluate the deviation or failure to comply, pursuant to § 21.21(a)." There is no analogous requirement in 10 CFR 50.55(e).

As previously stated, both 10 CFR 21 and 50.55(e) require evaluation of deviations and failures to comply. The additional requirement to evaluate for reportability associated with the potential QA breakdowns under 10 CFR 50.55(e) is a complicating factor for suppliers that provide basic components for facilities that are under Part 50 construction permit or Part 52 combined license.

The identification of a significant condition adverse to quality (SCAQ) in accordance with the requirements of 10 CFR 50, Appendix B, Criterion XVI associated with any supplier is highly relevant to identification of potentially significant QA breakdowns. Therefore, CB&I Power has initiated a corrective action report (CAR 2015-0335) to establish and track to closure actions to ensure that safety-related procurements include requirements for any supplier of basic components that identifies an SCAQ to notify CB&I Power within five (5) days. That notification will also be required to include the status of any evaluations of the identified conditions under 10 CFR Part 21 and 50.55(e). Additionally, subsequent notification of CB&I Power will be required within five (5) days of completion of the applicable causal analysis performed for any SCAQ. Again, this notification will be required to include status of any evaluations being performed by the supplier in accordance with 10 CFR Part 21 and 50.55(e) for conditions and causes identified. It is currently expected that this action will be implemented into the CB&I Power safety-related procurement process by April 29, 2015, and implementation will be tracked and managed via the CB&I Power corrective action program.