Cives Steel Company
Southern Division

April 16, 2013

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

Copy:
Chief, Construction Mechanical Vendor Branch
Division of Construction Inspection and Operational Programs
Office of New Reactors

Cives Steel Company
NRC Docket Number: 99901419

Subject: Reply to NRC Inspection Report No. 99901419/2012-201, Notice of Violation, and Notice of Nonconformance

Reference: Letter from E. Roach (NRC) to G. Orff (Cives) NRC Inspection Report No.99901419/2012-201, Notice of Violation, and Notice of Nonconformance

Dear Mr. Roach:

In response to the NRC Notice of Violation and Notice of Nonconformance, Cives Steel Company, Southern Division (Cives) herewith provides the enclosed reply. The reply consists of eight attachments. Attachment 1 is the reply to the Notice of Violation and attachments 2 thru 8 are the replies to the Notices of Nonconformance.

Subsequent to the NRC inspection, Cives also received a customer audit and as a result of both the inspection and the audit, Cives became aware of multiple program deficiencies. Due to this awareness, Cives took multiple steps to rectify these deficiencies.

The first step was to perform an immediate separation of Quality Assurance from Quality Control. This separation allowed the QA Manager to focus more on the program and procedures and allow proper independence from cost and schedule. The next step was to retain the services of an external consulting group expert in the requirements of 10 CFR Part 50 Appendix B and 10 CFR Part 21 to assist in reviewing all the procedures and work practices. Cives, with the assistance of the consulting group, then performed a Root Cause Analysis covering the issues discovered during the NRC inspection and the customer audit.

The Root Cause Analysis was used to assist in the determination of the extent of condition regarding the nonconformances noted in the NRC Inspection Report. The resulting determination was there were inadequacies such as lack of procedural specificity and instructions to the 10 CFR Part 50 Appendix B and 10 CFR Part 21 requirements across most of the procedures and forms. These inadequacies led to major revisions of several procedures and to the corrective action program and forms to document the

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corrective actions. The review of all procedures and forms for similar instances of these issues will continue over the next few weeks.

While Cives feels progress has been made in improving the Quality Program, we also recognize additional advancements can be made. In addition to the steps noted above, Cives also had external Causal Analysis training performed for key individuals in the organization. This training can help management identify small issues before they become larger problems and when a problem does develop, will help establish measures to effectively correct the problem and prevent recurrence.

The services of the consulting group will be retained until such time as evidence can be shown that the program is sufficiently mature and there is appropriate understanding of the requirements of 10 CFR Part 50 Appendix B and 10 CFR Part 21 by Cives management.

The responses attached to this letter reference new or revised procedures, forms, work instructions, etc. These supporting documents are on file at Cives Steel Company, Southern Division and can be made available to the NRC upon request.

Sincerely,
CIVES STEEL COMPANY
Southern Division

Lyn B. Busby
Quality Assurance Manager

cc: Greg Orff – Cives Steel Company

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Attachment 1
Reply to Notice of Violation 99901419-2012-201-01

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at Cives Steel Company (hereafter referred to as Cives), Southern Division, in Thomasville, GA, from December 10–14, 2012, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below as follows:

Title 10 of the Code of Federal Regulations (10 CFR), Section 21.21,"Notification of failure to comply or existence of a defect and its evaluation," of paragraph 21.21(a)(2), states, in part, that "...if an evaluation of an identified deviation or failure to comply potentially associated with a substantial safety hazard cannot be completed within 60 days from discovery of the deviation or failure to comply, an interim report is prepared and submitted to the Commission through a director or responsible officer or designated person as discussed in § 21.21(d)(5). The interim report should describe the deviation or failure to comply that is being evaluated and should also state when the evaluation will be completed. This interim report must be submitted in writing within 60 days of discovery of the deviation or failure to
comply."

Paragraph 21.21(b), states that "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)."

10 CFR Section 21.51, "Maintenance and inspection of records" states, in part, that "Each individual, corporation, partnership, dedicating entity, or other entity subject to 10 CFR Part 21 shall prepare and maintain records necessary to accomplish the purpose of 10 CFR Part 21, specifically (1) retain evaluations of all deviations and failures to comply for a minimum of five years after the date of the evaluation; (2) retain any notifications sent to purchasers and affected licensees for a minimum of five years after the date of the notification; and (3) retain a record of the purchasers of basic components for 10 years after delivery of the basic component or service associated with a basic component.

Contrary to the above, as of December 14, 2012, Cives failed to adopt appropriate procedures to evaluate deviations and failures to comply associated with substantial safety hazards. Specifically, Cives's Quality Procedure 15-02, "Reporting of Defects and Noncompliance," Revision 2, dated September 19, 2012, (1) does not have controls in place to require the submittal of interim reports, (2) has incorrect reporting timelines, (3) does not require notification to all purchasers within 5 working days that a deviation exists when Cives does not have the capability to perform the evaluation to determine if a defect exists, and (4) has incorrect record retention requirements.

Reason for Violation:
Cives procedures QP 15-02 (Reporting of Defects and Noncompliance) and forms 15-01-1 (Nonconformance Report) and 16-01-1 (Corrective Action Request) were initially developed with the assistance of an outside consulting group and written by Cives at the Cives Corporate office. The procedure was then issued to Cives, Southern Division and the employees were trained to the requirements in the procedure and forms. Neither the training, the procedures nor the forms fully conveyed the requirements of 10 CFR Part 21 with respect to evaluations of deviations, notifications to the customer and NRC and interim reporting to the requirements of 10 CFR Part 21 nor did they include enough specificity to the examples noted in the notice of violation above to prompt the required actions by the personnel implementing the procedures.

Cives has completed a Root Cause Analysis that determined the primary contributing cause of the procedure inadequacies identified in the NRC inspection was Cives personnel incorrectly assuming past nuclear industry success in operating plants is directly transferable to new plant construction – Cause Code A3B3C6, Human Performance, Underestimated the problem by using past events as basis.

Corrective Actions Taken:
Cives issued CARs 063 and 077 during the NRC inspection as a result of this issue. Post NRC inspection, Cives performed additional research of the requirements of 10 CFR Part 21. With this additional information, along with the input from the NRC inspection, Cives revised QP 15-02 to include more detail on the evaluating, notification, reporting and record retention requirements . In order to confirm the requirements were covered, Cives has retained the services of a consulting group expert in the requirements of 10 CFR Part 50 Appendix B (AppB) and 10 CFR Part 21 (10CFR21) to review these revisions. This review resulted in additional revisions to procedure QP 15-02, QP 16-01 (Corrective and Preventive Action) and forms 15-01-1 and 16-01-1 to ensure the

applicable requirements from AppB and 10CFR21 are addressed. Training of Cives personnel affected by these revisions was performed by the QA Manager.

Corrective Actions that will be taken:
Actions to update/rewrite procedures QP 15-02 and QP 16-01 are now complete. Cives will monitor the implementation of the revised procedures and forms to verify effectiveness. Additional training and mentoring by the expert consultant to aid in further understanding of 10 CFR Part 21 requirements will also be given to personnel involved in evaluations, notifications, and reporting addressed in procedures QP 15-02 and QP 16-01.

Date when full compliance will be achieved:
Although Cives feels the revisions to the procedures and forms, a better understanding of the requirements, along with the additional training will aid in full compliance to the 10 CFR Part 21 requirements, only implementation monitoring will give reasonable assurance that actual compliance has been achieved. A surveillance of Cives corrective actions and their effectiveness will be performed in June 2013 by Cives Quality Assurance, along with oversight and advice from the recently retained consultant. Any weaknesses or problems identified during the surveillance will be documented, evaluated, and resolved as required by QP 16-01, Corrective and Preventive Action.

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Attachment 2 4/16/2013
Reply to Notice of Nonconformance 99901419/2012-201-02

Based on the results of an unannounced U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Cives Steel Company (hereafter referred to as Cives), Southern Division, in Thomasville, GA, from December 10–14, 2012, it appears that certain activities were not conducted in accordance with NRC requirements that were contractually imposed on Cives by its customers or NRC licensees:

A. Criterion XVI, "Corrective Action," 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 that "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 5.16, "Corrective Action," of the "Cives Steel Company Quality Assurance Manual for the Fabrication of Structural Steel for Nuclear Facilities Meeting the Intent of NQA-1 and 10 CFR 50 Appendix B," Revision 3, dated September 17, 2012, (hereafter referred to as the QAM) states, in part, that, "Conditions adverse to quality shall be identified promptly and corrected as soon as practicable. In the case of a significant condition adverse to quality, the cause of the condition shall be determined and corrective action taken to preclude recurrence. The identification, cause, and corrective action for significant conditions adverse to quality shall be documented and reported to appropriate levels of management. Completion of corrective actions shall be verified."

   Paragraphs 3.4 and 3.5 of Section 3, "Requesting and Processing CARs (applies also to preventive actions)," of Cives's Quality Procedure (QP) 16-01, "Corrective and Preventive Action," Revision 1, dated February 1, 2010, states in, part, that, "Upon

receiving a request for corrective action, the responsible manager investigates the cause of the problem that initiated the request, proposes a corrective action to be taken, and indicates the date by which the corrective action will be fully implemented. The party authorizing the request (Quality Assurance or President/General Manager) reviews and approves the proposed corrective action...on, or immediately after, the due date for implementation of a corrective action, Quality Assurance or the President/General Manager follows up with an inquiry or an audit to determine if the corrective action has been implemented and if it is effective. When there is objective evidence that the corrective action is effective, the CAR can be closed out. If more work is needed to fully implement the action, a new follow-up date is agreed upon."

Contrary to the above, as of December 14, 2012, the NRC identified Cives failed to develop and maintain a corrective action program to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances were promptly identified and corrected to preclude repetition. Specifically, the NRC inspection team identified that Cives's corrective actions program failed to preclude repetition of findings that had been previously processed, corrected, and closed as addressed by Cives response to the findings in Shaw Nuclear Service Inc.'s Audits V2011-28 and V2012-22. The NRC inspection team identified repetitive findings related to the following:

- Lack of control of calibration of welding machines as discussed in Nonconformance 99901419/2012-201-04
- Procedures on the implementation of QAM requirements do not contain adequate details or acceptance criteria to ensure consistency in implementation by Cives's staff as discussed in Nonconformance 99901419/2012-201-06
- Lack of document control as discussed in Nonconformance 99901419/2012-201-08

These issues have been identified as NRC Nonconformance 99901419/2012-201-02.

Reason for Nonconformance:

The Cives Nuclear Quality Assurance Manual included the requirements of identifying conditions adverse to quality, determination of cause, action to prevent recurrence and verification of effectiveness. These requirements, however, were not sufficiently flowed down to the implementing procedures and forms, including QP 16-01, Corrective and Preventive Action, to ensure adequate compliance by the personnel performing the activities.

As part of determining the extent of condition of the issues noted in the NRC inspection, Cives has completed a Root Cause Analysis that determined the primary contributing cause of the procedure inadequacies identified in the NRC inspection was Cives personnel incorrectly assuming past nuclear industry success in operating plants is directly transferable to new plant construction – Cause Code A3B3C6, Human Performance, Under-estimated the problem by using past events as basis.

Corrective Actions Taken:

Cives initiated CARs 082 and 089 as a result of this issue. As a result of Cives investigation and causal analysis, Procedure QP 16-01 (Corrective and Preventive Action) was reviewed and subject to a major revision to include definitions of problem levels (not significant, potentially significant and significant conditions) and provisions for corrective actions, determination of cause, action to prevent recurrence and verification of effectiveness based on the problem level determined.

Provisions for performing causal analysis for significant conditions adverse to quality were also included in the revision to QP 16-01. Cives form 16-01-1 (Corrective Action Request) (now Form 16-01-1, Action Request) was revised in its entirety to include methods for documenting requests for corrective actions, preventive actions, improvement opportunities, procedure changes, safety concerns and customer complaints/rejects/returns and, as part of Cives Safety Conscious Work Environment, Action Request initiation has now been made available to all employees. This form now also drives screening for problem levels, cause determination, investigations, proposed actions, action to prevent recurrence and methods to verify effectiveness of actions for potentially significant and significant conditions. Training of all managers to the revised procedure and form has been performed. Formal training on Root Cause Analysis has

been provided on-site to Cives employees that may be involved in future causal investigation of significant conditions adverse to quality.

Continuing Corrective Action and Verification:

Cives will monitor the revised procedure and form on an on-going basis for effectiveness. The Action Request process described in QP 16-01 will be used when expectations are not met or when improvements are identified. Cives QA(with assistance from the external expert consultant) will perform a surveillance in June 2013 to evaluate Cives corrective action and ensure the applicable requirements of 10 CFR Part 50 Appendix B are being met.

Date when full compliance will be achieved:

The results of the Cives QA surveillance in June 2013 and monitoring use of the current procedure and form should provide reasonable assurance the requirements are being met. The program for corrective actions will then be considered to be in compliance.

B. Criterion X, "Inspection," of Appendix B to 10 CFR Part 50, states, in part, that, "A Program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity... Examinations, measurements, or tests of material or products processed shall be performed for each work operation where necessary to assure quality."

Section 5.10, "Inspection," of the QAM states in part that, "Inspections that are required to verify conformance of an item or activities to specified requirements or continued acceptability of items in service shall be planned and executed."

Cives's Standard Operating Procedure (SOP) QA 10-02-1, "In-process Inspection," Revision 1, dated April 28, 2010, and SOP QA 10-03-2, "Visual Examination," Revision 1, dated April 28, 2010, require quality control (QC) inspectors to document all inspections, including in-process inspections before welding that verify material preparation to determine whether the material identification system is being maintained; whether the material meets the proper size and shape requirements of the cutting sheets and drawings; and whether the material meets variation tolerances of the American Welding Society, American Institute of Steel Construction, American Society for Testing and Materials, and job specifications.

Cives's QP 14-01, "Inspection, Test, and Operating Status," Revision 0, dated July 22, 2009, states, in part, that, "the authority to release finished items is [the] responsibility of the QC inspector who performs the final inspection. The sticker or tag indicating that the items have passed the final inspection provides the identification [that] the items are released for customer approval."

Contrary to the above, as of December 14, 2012, the NRC reported Cives failed to establish and implement a program for inspection of activities affecting quality to verify conformance with the documented instructions, procedures, and drawings. Specifically:

(1) Cives failed to adequately implement its inspection program to inspect stud welds on embedment APP-12S02-CE-PW908 for Vogtle Electric Generating Plant (Vogtle), Unit 3, which connects to stairs in Auxiliary Building Area 1, Wall P, west face, at an elevation of 66 feet 6 inches. Cives failed to identify a

stud that did not show a full 360-degree flash, as required by American Welding Society Code D1.1-2000, "Structural Welding Code–Steel," and Cives's SOP QA 05-01-5, "Stud Welding," Revision 2, dated December 10, 2011.

(2) Cives placed two embedments in the "complete status ready for shipment." However, the tags did not contain required identification of the QC inspector who approved the completion of the final inspection as required by procedure QP 14-01.

(3) Cives failed to perform and document in-process inspections before welding in accordance with the inspection fabrication plan for the Vogtle and Virgil C. Summer Nuclear Station (V.C. Summer) projects, as required by SOP QA 10-02-1 and SOP QA 10-03-2.

(4) Cives failed to test at least 1 out of every 100 studs welded by each operator as required by Westinghouse Specification APP-SS01-Z0-003, Revision 3, dated March 3, 2011, and the inspection plan entitled, "Inspection Fabrication Plan No. 5200-01 for Embeds, Items, and Anchor Bolts," Revision 1, dated December 14, 2011.

These issues have been identified as NRC Nonconformance 99901419/2012-201-03.

Reason for Nonconformance (Cause):

Below are apparent causes to the specific examples noted above:

1) Final inspection of piece marked APP-12S02-CE-PW908 was performed by an experienced inspector who although had been aware of procedural and D1.1 requirements and had performed this inspection task on numerous occasions without error, had a mental lapse while inspecting this piece and missed this deviation. Cause code A3B1C1, Incorrect performance due to mental lapse.

2) During the investigation into this issue, it was discovered that in the course of fabrication activities, if a tag (bar code label) was damaged or destroyed, a new label was printed and re-attached to the piece. This bar code label was typically re-printed by a production supervisor. There were inadequate documented

instructions to the supervisor to cover the situation and have the inspector's initials re-applied after a new label was printed to the bar code label signifying inspection had taken place. Cause code A5B2C8, Written communication, Incomplete/situation not covered.

3) Procedure SOP QA 10-02-1 (In-Process Inspection) was written to give instructions to QC inspectors for inspections that must be performed prior to welding. The intent of the procedure was to verify dimensional accuracy of fitted material (i.e., shear tabs, clip angles, base plates, etc. on structural material); weld symbols are properly notated on the piece, etc. Since the embeds do not have fitted material to be verified prior to welding (studs and DWAs are fitted and welded simultaneously), both in-process inspection and final inspection (Procedure SOP QA 10-03-1) were being performed at the same time, after welding and prior to coatings. Cives procedures lacked instructions specific to the task of inspections for embed material which do not have fitted material prior to welding. Cause code A5B2C8, Written communication, Incomplete/situation not covered.

4) Example 4 above from the NRC is stated incorrectly, Cives has not failed to test at least 1 stud out every 100. The Cives Project Manager, after the project specification review, failed to issue specific written instructions to production and QC for performing this test. The specification-required test was being performed and documented. Evidence (inspection reports) for the required tests are documented on the Detailed Inspection Report as "1 in 100" and "2 in Production" for the required test. These inspection reports are maintained and on-file at Cives. Although the 1 of 100 testing was consistently being performed and documented, the implementing procedure(s) did not reference the production testing requirements or how the testing was to be documented. Cause code A5B2C8, Written communication, Incomplete/situation not covered.

Corrective Actions Taken:

Three of the four instances referenced by the NRC include procedures not including specific information. Cives performed a Root Cause Analysis of the procedure-related problems identified by the NRC. This causal analysis identified a more widespread problem with procedures. The primary contributing cause of the procedure inadequacies

identified in the NRC inspection was Cives personnel incorrectly assuming past nuclear industry success in operating plants is directly transferable to new plant construction – Cause Code A3B3C6, Human Performance, Underestimated the problem by using past events as basis. Corrective action to the NRC inspection includes reviewing and revising all Cives procedures to ensure they contain adequate detail to implement 10 CFR 50 Appendix B and 10 CFR 21 requirements.

In addition to the overall actions taken to address Cives procedures, below are the specific corrective actions taken to the four examples noted above:

1) Piece APP-12S02-CE-PW908 was immediately removed from work flow. The product was Red Tagged (Red Tag #6914) and reworked. Rework included stud removed and new stud rewelded. The reworked stud was re-inspected and accepted by QC.

2) CAR No. 076 was initiated as a result of the replacement labeling issue. All personnel authorized to re-print bar code labels were instructed to verify inspections were performed and QC sign off on re-printed bar codes were re-applied by QC. Procedure/Work Instruction XX-XX has been revised to include specific instructions describing the process for tag replacement and QC verification.

3) CAR No. 078 was initiated as a result of this issue. Procedure QP 01-01 (Quality Planning) was revised to include instructions for the development of project specific inspection travelers. These travelers are attached to each piece during fabrication and are based on hold points established in the project specific inspection plan. The procedure revision requires travelers include sign off by QC for inspection activities prior to welding. The use of these travelers has now been implemented for all Cives NQA-1 work. All shop employees (QC and Production) have been trained for the correct usage of the travelers.

4) CAR No. 069 was initiated as a result of the lack of procedural requirements for performing and documenting production testing. Cives Project Management initiated Work Instruction No. 10-03-1-01 and had the instruction posted in the embed assembly area addressing the Westinghouse specification requirement for testing at least one stud of every one hundred and two of

production welded. All embed fabrication and QC personnel were trained to the requirements of the work instruction.

Corrective Actions that will be taken:

Below are the corrective actions that will be taken to the examples noted above:

1) Cives Quality Assurance will monitor NCRs and Action Requests (ARs) for any similar situations of inadequate visual inspections of embeds. If similar issues re-occur, Action Requests will be initiated and resolved as required by QP 16-01. If required, additional steps will be taken to either prohibit distractions during inspections or peer reviews and/or additional training will be implemented if the issue is determined to be stemming from a particular individual.

2) Cives Quality Assurance will perform surveillances to monitor bar codes on a periodic basis prior to shipping for QC sign off to determine effectiveness of training.

3) Cives Quality Assurance will perform surveillances to monitor the traveler system for correct usage and implement improvements, if needed, based on input from QC.

4) Cives QC will perform surveillances to monitor and verify 1/100 tests are performed and documented.

Cives QA will perform a surveillance in June 2013 to evaluate the effectiveness of corrective actions resulting from the NRC inspection report, including the actions specified above.

Date when full compliance will be achieved:

It is expected Cives will close CARs 069, 076, and 078 after completing the monitoring activities listed above and the June 2013 corrective action surveillance. These surveillances will provide evidence that problems have been resolved and demonstrate compliance to applicable sections of 10 CFR 50 Appendix B.

C. Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50, states that, "Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements."

Section 5.9.2.1, "Special Processes," of the QAM states, in part, that, "Special processes shall be controlled by instructions, procedures, drawings, checklist, or other appropriate means. Special process instructions shall include or reference procedure, personnel, and equipment qualification requirements. Conditions necessary for accomplishment of the process shall be included. These conditions shall include proper equipment, controlled parameters of the process, specified environment, and calibration requirements."

Paragraph 4.1 of Cives's SOP QA 05-01-2, "Standard Welding," Revision 3, dated January 4, 2012, states, in part, that, "All welding machines shall be calibrated in accordance with SOP QA 12-01-6, 'Certification of Welding Machines.'"

Paragraph 5.2.3 of Cives's SOP QA 12-01-6, "Certification of Welding Machines," Revision 1, dated April 28, 2010, states, in part, that, "A self-adhering sticker shall be placed on each piece of equipment and shall indicate the date of certification."

Contrary to the above, as of December 14, 2012, Cives failed to properly control welding equipment. Specifically:

(1) Cives failed to calibrate machines used for tack welding.

(2) Cives failed to establish guidance under SOP QA 12-01-6 to document the process used for the calibration of stud welding machines.

(3) Cives failed to indicate the calibration status of welding machines used for stud welding with a self-adhering sticker.

These issues have been identified as Nonconformance 99901419/2012-201-04.

Reason for Nonconformance:

Below are apparent causes to the specific examples noted above:

1) Although section 5.1.1 of Procedure SOP QA 12-01-6, "Certification of Welding Machines", provides the procedure for checking SMAW welding machines, section 2.0, of the same procedure states "This procedure will be used to verify accuracy of all welding machines used to perform production welding".
   Cives uses SMAW welding machines for tack welding only, not production welding, and as such, the Cives QC Manager incorrectly interpreted the procedure requirement of "All welding machines to be calibrated" stated in procedure SOP QA 05-01-2 "Standard Welding" to apply only to production welding machines (GMAW). The ambiguity in the procedure caused the misinterpretation of the procedural intent by the QC Manager.

2) When procedure SOP QA 12-01-6, "Certification of Welding Machines", was developed, stud welding was not a commonly used process at Cives. After the purchase order for the Vogtle and Summer projects was issued for supplying embeds, the stud welding machines were calibrated but the certification procedure was not updated to include this requirement. The failure of Cives Quality Assurance to provide proper oversight of the procedures to the actual work practices used caused this issue.

3) The failure of Cives QC personnel to apply the self-adhering sticker to the stud welding machines after certification was the result of an oversight by QC to the procedural requirements. Lack of internal oversight of the procedural requirements by Cives Quality Assurance contributed to this issue.

Corrective Actions Taken:

Two of the three instances referenced by the NRC include procedures not including specific information. Cives performed a Root Cause Analysis of the procedure-related problems identified by the NRC. This causal analysis identified a more widespread problem with procedures. The primary contributing cause of the procedure inadequacies identified in the NRC inspection was Cives personnel incorrectly assuming past nuclear industry success in operating plants is directly transferable to new plant construction –

Cause Code A3B3C6, Human Performance, Underestimated the problem by using past events as a basis. Corrective Action to the NRC inspection includes reviewing and revising all Cives procedures to ensure they contain adequate detail to implement 10 CFR 50 Appendix B and 10 CFR 21 requirements.

In addition to the overall actions taken to address Cives procedures, below are the specific corrective actions to the three examples noted above:

1) As a result of this example of the nonconformance, Cives took immediate corrective action and initiated CAR No. 073. Car 073 required certification of all SMAW welding machines per SOP QA 12-01-6 and retraining of QC personnel to the procedural requirements.

2) As a result of this example of the nonconformance, Cives took immediate corrective action and initiated CAR No. 068. Car 068 required inclusion of stud welding machine requirements for certification in SOP QA 12-01-6 and included requirements for the creation of form 12-01-6a to document this certification. The CAR also included the requirement for training of QC personnel to this procedural requirement.

3) As a result of this example of the nonconformance, Cives took immediate corrective action and initiated CAR No. 070. CAR 070 required the placement of the self-adhering sticker signifying calibration had been performed.

Corrective Actions that will be taken:

Below are the corrective actions that will be taken to the specific examples noted above:

1) Cives QA will review procedures SOP QA 05-01-2, "Standard Welding", and SOP QA 12-01-6, "Certification of Welding Machines", to ensure consistent direction for the certification of all welding machines requiring certification. Also Cives Quality Assurance will monitor QC for compliance to the procedural requirements for certification of welding machines.

2) Cives will develop additional work instructions for calibration procedures specific to stud welding machines. Quality Assurance will also monitor QC for compliance to procedure SOP QA 12-01-6 with respect to this issue.

3) Cives QA will monitor all welding machines for the placement of the calibration stickers for compliance to the procedures.

Date when full compliance will be achieved:

A surveillance of Cives corrective actions and their effectiveness will be performed in June 2013 by Cives Quality Assurance, along with oversight and advice from the recently retained consultant. Any weaknesses or problems identified during the surveillance will be documented, evaluated, and resolved as required by QP 16-01, Corrective and Preventive Action.

D. Criterion I, "Organization," of Appendix B to 10 CFR Part 50 states, in part, that, "The authority and duties of persons and organizations performing activities affecting the safety-related functions of structures, systems, and components shall be clearly established and delineated in writing...The persons and organizations performing quality assurance functions shall have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions."

Section 5.1.2, "Structure and Responsibility," of the QAM states, in part, that, "The organizational structure and responsibility assignments shall be such that:...b) quality is achieved and maintained by those assigned responsibility for performing work; c) quality achievement [are] verified by those not directly responsible for performing the work. Those responsible for verifying quality shall have: a) sufficient authority, direct access to management, organizational freedom, and access to work to perform their function; b) authority to identify quality problems; to initiate, recommend or provide solutions; c) and to verify implementation of solutions." Further, the QAM states that, "Such persons and organizations performing quality assurance functions shall report to a management level such that this required authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety consideration, are provided."

Section IV, "Responsibilities," of Cives's QP 01-01, "Quality Planning," Revision 1, dated March 15, 2010, states, in part, that, "[the] Quality Assurance Manager reports directly to the Divisional President/General Manager, thereby insuring direct access to management and organizational freedom. He maintains and controls the documentation associated with the Quality Assurance Manual (Tier 1), the associated Quality Procedures (Tier 2), the Standard Operation Procedures (Tier 3), and the associated Forms (Tier 4) at the Divisional Level. He has the authority to identify quality problems; to initiate, recommend or provide solutions; and to verify implementation of solutions." Also, Section IV of the procedure further states that, "Quality Control inspectors report directly to the Quality Assurance Manager, maintaining a separation of Quality Assurance personnel and production personnel. They insure the desired quality through checking, inspecting and testing." Further, the procedure states that, "[the] Project Manager reports to the Divisional

President/General Manager. He is responsible for all commercial aspects, including the required quality, of the project."

Contrary to the above, as of December 14, 2012, Cives failed to adequately implement its process to ensure that the persons performing quality assurance functions have the authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations. Specifically, Cives management assigned the QA Manager to act as the QC Lead Inspector and approver of the inspection documents while also having ultimate responsibility for the QA functions associated with those inspection activities. Additionally, Cives used the Project Manager responsible for the nuclear projects to work as a temporary QA Manager to approve work performed by the QA Manager while this individual was still responsible for the cost and schedule of nuclear projects.

This issue has been identified as Nonconformance 99901419/2012-201-05.

Reason for Nonconformance:

Historically, Cives Steel Co. had included Quality Assurance and Quality Control responsibilities under the same manager and had not distinguished the procedural responsibilities for each. Both responsibilities were referred to the QA Manager in the Appendix B procedures. This resulted in a situation of one person trying to both assure compliance to the program and perform supervision of QC activities.

In the case of Cives Steel Co., Southern Division, both the QA Manager and the Project Manager for nuclear projects received the same program and 10 CFR 50 Appendix B training (Lead Auditor and Commercial Grade Dedication training) and participated in the same vendor audits. Also, both individuals participated in the early stages of the Nuclear Quality Assurance Program development. This training and past involvements essentially gave both personnel the same experience with the Nuclear Quality Assurance program. When the QA Manager became overwhelmed trying to cover both QA and QC responsibilities, the Project Manager started assisting in assuring program compliance and taking the lead on customer audits.

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Corrective Actions Taken:

As a result of this NRC nonconformance, Cives took the immediate corrective action of initiating CAR No. 080. CAR 080 required the separation of responsibilities and duties of Quality Assurance and Quality Control. Procedure QP 01-01, "Quality Planning", was revised to accomplish this and procedure QP 01-01a, "Quality Planning Supplement", was created as a supplement delineating further specific procedural distinctions between the positions. Other actions taken as a result of CAR 080 was revising the organization chart listed in the NQAM separating the positions and training of all department managers to the revision to the structure of the quality system.

Corrective Actions that will be taken:

Cives, with the assistance of the external consulting group, will continue to review all procedures and forms to ensure the instructions listed conform to either the Quality Assurance Manager or Quality Control Manager responsibilities as applicable.

Date when full compliance will be achieved:

A surveillance of Cives corrective actions and their effectiveness will be performed in June 2013 by Cives Quality Assurance, along with oversight and advice from the recently retained consultant. Any weaknesses or problems identified during the surveillance will be documented, evaluated, and resolved as required by QP 16-01, Corrective and Preventive Action.

E. Criterion V, "Instructions, Procedures, and Drawings," of Appendix B to 10 CFR Part 50 states, in part, that, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

Section 5.5, "Instructions, Procedures, and Drawings," of the QAM states, in part, that, "Activities affecting quality shall be prescribed by and performed in accordance with documented instructions, procedures, or drawings."

Cives QP 05-01, "Work Instructions," Revision 0, dated July 22, 2009, states, in part, that, "Work instructions are required for special processes, i.e. those processes the results of which cannot be fully verified by subsequent nondestructive inspections (such as welding, blasting, painting, bolting, cleaning, etc.)...for processes that are critical to the safety, fit, and function of the service...[and for] processes where various process parameters must be setup and/or maintained at specific levels; where operators are required to program process equipment; where tool changes are involved; or where, for any other reason, operation of the process is fairly complex and requires specific process setup instructions and/or operating data."

Contrary to the above, as of December 14, 2012, Cives failed to prescribe and perform activities affecting quality in accordance with documented instructions, procedures, or drawings. Specifically:

(1) Cives failed to establish procedures for performing plasma cutting that require various process parameters to be set up and maintained.

(2) Cives failed to establish procedures for creating 'cut sheets' to maintain material traceability between the material and the specific purchase orders that were used in its requisition, its heat, and the parts in which it was used.

(3) Cives failed to establish procedures for the electronic production software used to document the completion of key processes and inspections.

(4) Cives failed to establish procedures to comply with Westinghouse Specification APP-G1-SX-001, "AP1000 Painting of Shop Fabricated Steel," Revision 4, dated April 8, 2011. Examples include the preparation and handling of blasted surfaces, the preparation and handling of any surfaces that have "turned" (oxidized) or that have become wet or stained after an initial blasting, and the verification of blast media and compressed air for contaminants.

These issues have been identified as Nonconformance 99901419/2012-201-06.

Reason for Nonconformance:

In the past Cives has relied on experience, on the job training, and "skill of craft" of personnel to correctly perform certain activities affecting quality such as machine operator, fitter, shipper, etc. This reliance on these methods coupled with a good Quality Control staff was deemed sufficient to achieve a consistent quality product. For other activities deemed to require more technical expertise such as drafting, quality control, welding and painting, Cives developed procedures to assist the personnel in achieving compliance. The failure of Cives to recognize the need and to follow the NQAM requirement for developing procedures for all activities affecting quality was the primary reason for this nonconformance.

Corrective Actions Taken:

Although Cives took immediate action to address the examples noted above, Cives also recognized its lack of understanding and experience in implementing the requirements of 10 CFR 50 Appendix B. In addition to addressing the specific issues above, Cives retained the services of an external expert consultant to assist in reviewing all procedures and work practices and also to assist with a Root Cause Analysis on all the currently recognized issues. The outcome of the RCA determined the primary contributing cause of the procedure inadequacies identified in the NRC inspection was Cives personnel incorrectly assuming past nuclear industry success in operating plants is directly transferable to new plant construction – Cause Code A3B3C6, Human Performance, Underestimated the problem by using past events as basis.

In addition to the overall actions taken to address Cives procedures, below are the specific corrective actions to the three examples noted above:

1) Cives initiated CAR 072 which resulted in the development of specific work instructions and training of machine operators to the work instructions for operations affecting quality including the plasma burning table. The work instructions were then posted in the applicable work areas.

2) Cives initiated CAR 072 which resulted in the development of specific work instructions and training of production personnel to the work instructions for operations affecting quality including the creation of cut sheets.

3) Although Cives CAR 072 addressed the creation of work instructions/ procedures for processes affecting quality, the new procedures do not integrate all aspects and uses of the production software. This integration of these instructions into the procedures/ work instructions is an ongoing process with substantial completion expected by May 17, 2013.

4) Cives initiated CAR 067 to address the lack of a procedure for checking air and blast media as it relates to the coating process and CAR 074 to address the lack of instructions with respect to blasting, cleaning and painting per Westinghouse specification APP-G1-SX-001 section 7.0 requirements.

   Addressing CAR 067 resulted in a revision of procedure SOP QA 05-01-3, "General Painting", listing the method for checking air and blast media as well the creation of form 05-01-3a, "Air and Abrasives Cleanliness Record", to document these checks. Training of personnel responsible for insuring these checks are completed was performed.

   Addressing CAR 074 resulted in the creation of Work Instruction 05-01-3-01, "AP1000 Supplemental Paint Requirements". Training of all personnel affected by this work instruction was performed.

Corrective Actions that will be taken:

Although training and posting of the new work instructions associated with the four examples noted above was performed, a portion of the training consisted of the QA Manager requesting assistance from the personnel performing the activities to give input

as the work instructions are followed to ensure consistency and accuracy of the instructions. Updates to the work instructions as more input is gained, will remain on-going.

Date when full compliance will be achieved:

This input from the personnel regarding the consistency and accuracy of the work instructions/ procedures, along with possible modifications to the work instructions/ procedures as a result, and monitoring of compliance to the instructions will be performed over the next few weeks followed by a formal surveillance scheduled for June 2013. Upon completion of the surveillance with satisfactory result, this Nonconformance will be considered to be in compliance.

F. Criterion II, "Quality Assurance Program," of Appendix B to 10 CFR Part 50 states, in part, that, "The program shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained."

Section 5.2.2, "Indoctrination and Training," of the QAM states, in part, that, "The need for a formal training program for personnel performing or managing activities affecting quality shall be determined. Training shall be provided, if needed, to achieve initial proficiency, maintain proficiency, and adapt to changes in technology, methods, or job responsibilities."

Paragraph 1.3, of Cives's QP 02-02, "Indoctrination and Training," Revision 1, dated February 1, 2012, states, in part, that, "Departmental Managers are responsible for identifying training needs in their departments and for establishing departmental training programs." Paragraph 1.4, further states that, "The Quality Assurance department is responsible for identifying company-wide training needs concerning the quality system. These needs will be coordinated with the departmental managers to efficiently train personnel to the quality system."

Contrary to the above, as of December 14, 2012, Cives failed to develop and implement a formal indoctrination and training program for personnel performing activities affecting quality. Specifically, Cives's departmental managers did not develop and implement a program to identify training needs to meet the requirements of the QA program. Also, Cives QA Manager failed to coordinate with the departmental managers to identify additional training specific to their department to ensure that personnel performing activities affecting quality achieved and maintained suitable proficiency.

This issue has been identified as Nonconformance 99901419/2012-201-07.

Reason for Nonconformance:

This nonconformance was due to the failure of Cives Management to recognize the need to establish formal training procedures for all activities affecting quality. This

requirement of Appendix B, Criterion II was incorrectly interpreted by Cives during the development of the Nuclear Quality Procedures to include only welding, painting, and QC/NDE personnel. Personnel performing other activities in the past were generally trained by on the job training to an extent of proficiency as deemed by the direct supervisor, this training however, was not formally documented and on-going proficiency was not verified.

Corrective Actions Taken:

The issue noted by the NRC above includes procedures not including information for the purposes of developing and implementing training requirements for all positions affecting quality. Cives performed a Root Cause Analysis of the procedure-related problems identified by the NRC. This causal analysis identified a more widespread problem with procedures. The primary contributing cause of the procedure inadequacies identified in the NRC inspection was Cives personnel incorrectly assuming past nuclear industry success in operating plants is directly transferable to new plant construction – Cause Code A3B3C6, Human Performance, Underestimated the problem by using past events as a basis. Corrective Action to the NRC inspection includes reviewing and revising all Cives procedures to ensure they contain adequate detail to implement 10 CFR 50 Appendix B and 10 CFR 21 requirements.

In addition to the overall actions taken to address Cives procedures, below is the specific corrective action to the issue noted above:

Cives initiated CAR 071 to address this issue. CAR 071 resulted in the creation of training procedures and forms to document training for all positions with activities affecting quality, specifically, receiving, machine operators, fitters, shippers, drafting, document control and production. The training for painters, welders and QC/NDE personnel although previously in effect, were revised to include documentation on controlled forms. Cives also created a training matrix, "Table 02-02-1A", specific to all personnel listing the required training for each position in order to track training performed.

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Corrective Actions that will be taken:

Cives Quality Assurance will monitor the records of all Department Managers for required training records of individuals in their respective departments. Verification by QA of the maintenance of the training matrix will also be performed.

Date when full compliance will be achieved:

Cives has set a deadline for all training to be performed and documented prior to the Annual Management Review currently scheduled for April 25, 2013. Upon review of the documentation at this time, if deemed acceptable, Cives will have determined to be in compliance of this nonconformance.

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G. Criterion VI, "Document Control," of Appendix B to 10 CFR Part 50, states, in part, that, "Measures shall be established to control the issuance of documents, such as instructions, procedures, and drawings, including changes thereto, which prescribe all activities affecting quality. These measures shall assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed."

Section 5.6, "Document Control," of the QAM states, in part, that, "Measures shall be established to control the issuance of documents, such as instructions, procedures, and drawings, including changes thereto, which prescribe all activities affecting quality. These measures shall assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and are distributed and used at the location where the prescribed activity is performed."

Contrary to the above, as of December 14, 2012, Cives failed to control the issuance of documents that prescribe activities affecting quality and failed to ensure that those documents were distributed to and used at the location at which the prescribed activity is performed. Specifically, Cives revised its QAM and six quality procedures in September 2012, but failed to incorporate them into the controlled copies and distribute them to the locations where the prescribed activities were performed.

This issue has been identified as Nonconformance 99901419/2012-201-08.

Reason for Nonconformance:

The previous NQAM organization structure of including the position of Quality Assurance Manager and Quality Control Manager under a single individual led to overwhelming duties and responsibilities for that position. While an oversight by the QA Manager was the governing cause of this issue, Cives procedure SOP QA 06-01-1, "Controlled Documents", also did not address the timely issuance of accepted revisions to controlled documents.

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Corrective Actions Taken:

The issue noted by the NRC above includes procedures not including adequate information for the purposes of timely issuance of revisions to controlled documents. Cives performed a Root Cause Analysis of the procedure-related problems identified by the NRC. This causal analysis identified a more widespread problem with procedures. The primary contributing cause of the procedure inadequacies identified in the NRC inspection was Cives personnel incorrectly assuming past nuclear industry success in operating plants is directly transferable to new plant construction – Cause Code A3B3C6, Human Performance, Underestimated the problem by using past events as a basis. Corrective Action to the NRC inspection includes reviewing and revising all Cives procedures to ensure they contain adequate detail to implement 10 CFR 50 Appendix B and 10 CFR 21 requirements.

Cives took immediate action of initiating CAR 060 to address the specific issue noted above. The actions to address CAR 060 included revising procedure SOP QA 06-01-1 to include the requirement of issuing controlled documents to affected parties within a reasonable time after acceptance of revisions. Training of applicable Department Managers was also performed by the QA Manager.

Corrective Actions that will be taken:

Monitoring of the procedural requirements for the timely issuance of revisions to controlled documents will be performed by Quality Assurance.

Date when full compliance will be achieved:

A surveillance of the recently implemented procedural revisions is scheduled for June 2013. Upon completion of the surveillance with satisfactory result, this nonconformance will be considered to be in compliance.