

November 1, 2011

Juan D Peralta, Chief
Quality and Vendor Branch 1
Division of Construction Inspection
and Operational Programs
Office of New Reactors
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-001

RE: Reply to a Notice of Nonconformance
NRC Inspection Report No. 99901407/2011-201

Dear Mr. Peralta,

Attached is our response to the NRC inspection report for the inspection conducted at our Charlotte Reinforcing Steel facilities by the U.S. Nuclear Regulatory Commission (NRC) on August 1-August 4, 2011.

The Nonconformances are addressed on the following pages. Each Nonconformance reported includes: (1) the reason for noncompliance, or reason for disputing the noncompliance, (2) the corrective actions that have been taken and results achieved, (3) the corrective actions that will be taken to avoid noncompliance, and (4) the date that the corrective actions will be completed.

Gerdaus has not included any information in this response that is considered proprietary or confidential and may be released in its entirety. Objective evidence such as procedures, failure analysis and the actual corrective action forms initiated as a result of this inspection are considered confidential.

We want to thank you for the thorough inspection your team performed. Their professionalism and conduct during the inspection was appreciated by all employees contacted by the inspection team.

Sincerely,



Walter Lee Knox
Quality Assurance Manager

IE09

Nonconformance No. 1

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the GERDAU, Charlotte Reinforcing Steel (GERDAU), facility in Charlotte, NC, on August 1-August 4, 2011, certain activities were not conducted in accordance with NRC requirements that were contractually imposed on GERDAU:

A.

Criterion IV, "Procurement Document Control," in Appendix B, "Quality Assurance Program 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 "[m]easures shall be established to assure 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, whether purchased by the applicant or by its contractors or subcontractors. To the extent necessary, procurement documents shall require contractors or subcontractors to provide a quality assurance program consistent with the pertinent provisions of this appendix."

GERDAU Fabricated Products Group Quality Assurance Manual (FQAM), "Fabricated Products Group Quality Assurance/Control Program for the Fabrication of Steel Products," Revision 17, dated July 15, 2011, Section 4.2.1.2, "Pertinent Information," states, in part, that "Purchase Orders shall contain all pertinent information such as: end use (i.e., safety-related), date, certification requirements, records retention, vendor identification and quality, and technical specification requirements. Vendors shall have a Quality Assurance program which is applicable to the quality requirements stated in the Purchase Order and will be on GERDAU's approved supplier list."

Contrary to the above, as of August 4, 2011, GERDAU failed to establish procedural guidance for developing procurement documents to ensure adequate quality of safety-related material, equipment, and services. Specifically, GERDAU procurement documents failed to identify applicable inspection and testing records needed from ERICO for subsequent review by GERDAU and did not include any requirements for ERICO's reporting and dispositioning of nonconformance during fabrication.

This item is identified as Nonconformance 99901407/2011-201-01.

Reason for Nonconformance

No procedure was written for purchases from external suppliers at the time of the NRC inspection. Prior to the Shaw nuclear projects at Vogtle and V C Summer requirement for safety-related couplers, Gerdau has not procured any externally supplied safety-related material. These couplers had been ordered but had not been shipped at the time of the NRC inspection.

Actions Completed to Date

Corrective Action Requests (CAR) 2011-3 and 2011-5 were written to address Purchase Order Procedures and Receipt Inspection Procedures for third party purchases. GerdaU Corporate Procedures 1000138-RP-009 and 1000138-RP-010 for the control of purchased items and services and for the control of procurement documents have been created and approved.

These procedures have been used to initiate revised purchase orders for couplers and for the receipt inspections of the couplers for the V. C. Summer and Vogtle Projects.

Corrective Actions That Will Be Taken

CAR 2011-3 and 2011-5 written to address PO procedures and Receipt Inspection procedures for third party purchases must be closed out. Revise Corporate Quality Assurance Manual (CQAM), Mill Group Quality Assurance Manual (MQAM) and Fab Group Quality Assurance Manual (FQAM) to address procurement of safety-related materials and services from an external supplier and include reference to procedures 1000138-RP-009 and 1000138-RP-010 as applicable.

Date to Be Completed

December 30, 2011

Nonconformance No. 2

B.

Criterion VI, "Document Control," in Appendix B to 10 CFR Part 50, states, in part, that "[m]easures 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."

GERDAU FQAM, Revision 17, Section 6.4.2.1, "Control," states, in part, that "Upon receipt, the Design Drawings will be forwarded to the Engineering Manager or Detailing Supervisor, who is responsible for control and distribution. The Engineering manager or Detailing Supervisor is responsible for verifying receipt of drawings as indicated on customer's letter of transmittal and for stamping the date of receipt on each drawing."

Contrary to the above, as of August 4, 2011, GERDAU failed to control the issuance of drawings. Specifically, GERDAU failed to stamp customer drawings received from Shaw Nuclear with the date of receipt.

This item is identified as Nonconformance 99901407/2011-201-02.

Reason for Nonconformance

Established procedure could not be followed due to absence of a process to address electronic drawing receipt.

Actions Completed to Date

Corrective Action 2011-6 was written to address electronic drawing receipt. Until proposed revisions to FQAM are complete and approved, transmittals accompanying electronic documents are now being printed, stamped and dated and then they are maintained in Engineering Log.

Corrective Actions That Will Be Taken

Corrective Action 2011-6 must be closed out. We will revise FQAM and Internal Work Procedures (IWP) to address electronic document control. Training of personnel involved with receiving customer drawings will be documented.

Date to Be Completed

December 30, 2011

Nonconformance No. 3

C.

Criterion XVI, "Corrective Action," in Appendix B to 10 CFR Part 50, states, in part, that "[m]easures 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."

GERDAU Corporate Quality Assurance Manual (QAM), "Quality Assurance/Control Program for the Manufacturing and Fabrication of Steel Products," Revision 26, dated

July 15, 2011, Article 16, "Corrective Action," Section 16.1.1, "Definition," states that "Corrective Actions and/or Failure Analysis are those actions necessary to identify and correct Conditions Adverse to Quality, or Significant Conditions Adverse to Quality. In the case of significant adverse conditions, the cause will be determined, a failure analysis shall be performed (when applicable) and corrective action taken to preclude repetition."

GERDAU QAM Section 16.1.2, "Responsibility," states that "It is the responsibility of those persons working to and with the Quality Assurance Programs to alert their immediate supervisor and/or Quality Control personnel of conditions adverse to or potential adverse to quality. It is the responsibility of the Quality Control personnel, or quality-related management personnel to initiate and distribute the Corrective Action Request. The department requiring corrective action is responsible for effecting the corrective action."

GERDAU FQAM Section 15.5, "Externally Shipped Nonconforming Material," and QAM Section 15.3, "Externally Shipped Nonconforming Material," direct the use of QAM Section 16.5, "Corrective Action - Externally Shipped Nonconformance (10 CFR Part 21)," for nonconforming externally shipped safety related material. QAM Section 16.5 states "In the event that nonconforming safety related material has been externally shipped, from a mill or fabricating location, corrective action shall be taken in accordance with procedure 1000138-RP-001-0 "10 CFR Part 21 - Reporting of Defects and Noncompliances"" and the need to do a 10 CFR Part 21 evaluation is documented only on the CAR form.

Contrary to the above, as of August 4, 2011, GERDAU failed to establish adequate procedural guidance to establish measures to ensure that all conditions adverse to quality were identified in the corrective action program (CAP) and to ensure that significant conditions adverse to quality are not recurring. Specifically, GERDAU failed to:

- (1) Provide adequate procedural guidance in the QAM, to require documentation if an issue is a repeat of a significant condition adverse to quality.
- (2) Provide adequate procedural guidance in the QAM to enter all conditions adverse to quality identified in internal audits into the CAP in accordance with QAM section 16.1.2.
- (3) Provide adequate procedural guidance in the QAM for external audit conditions adverse to quality to be entered into the CAP in accordance with QAM section 16.1.2.
- (4) Promptly (10 CFR 50 Appendix B requirement) enter nonconformance report Shaw 2011-8, for a externally shipped safety-related material, into the CAP in accordance FQAM section 15.5, and QAM section 15.3.
- (5) Identify repetitive deficiencies as a condition (trend) adverse to quality for deficiencies in meeting Society for Testing and Materials (ASTM) requirements at all the mills supplying safety-related rebar.

This item is identified as Nonconformance 99901407/2011-201-03.

Reason for Nonconformance

The reason for nonconformance for items 1, 2, and 3 was inadequate direction in the CQAM for the Corrective Action Program.

Item 4 was from failure to follow established procedures and a lack of adequate direction on CAQ or SCAQ being entered into the CAP.

Item 5 was from failure to review audit results and identify repetitive deficiencies that indicate trends. Although these are examples where there were deficiencies in meeting either the ASTM or purchase order requirements, at no time was the material nonconforming. In most of these examples, the test result did not get reported properly on the Mill Test Report and this resulted in the deficiency. It is acknowledged that additional procedural guidance is needed to identify reoccurring conditions and trends. However, the root causes of these deficiencies are different and not a trend.

Actions Completed to Date

CAR 2011-8 was written to address audits that did not address some conditions adverse to quality. A review of recent audits was conducted to compare findings and observations to ensure that no conditions adverse to quality were overlooked and find trends.

Corrective Actions That Will Be Taken

CAR 2011-8 to be closed out. Set up an electronic system for tracking audit findings and observations in Corporate business software program (Sharepoint). Additionally, the same software will be used to create a database to track reported Conditions Adverse to Quality (CAQ) and Significant Conditions Adverse to Quality (SCAQ). Current Non-Conformance Report form will be revised to include Conditions Adverse to Quality. The CQAM will be revised to require any corrective action entered will be evaluated for trending of conditions adverse to quality..

Date to Be Completed

December 30, 2011

Nonconformance No. 4**D.**

Criterion XVIII, "Audits," in Appendix B to 10 CFR Part 50, states, in part, that "[a] comprehensive system of planned and periodic audits shall be carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The audits shall be performed in accordance with the written procedures or check lists by appropriately trained personnel not having direct responsibilities in the areas being audited."

GERDAU QAM Section 18.8.2.1, "Objective Evidence," states, in part, that "Checklists or procedures will be utilized when conducting a formal audit. The checklist should be preprepared, when feasible, to cover the major points of the area being inspected." GERDAU reinforcing steel manufacturing and fabrication processes are governed by ASTM and American Concrete Institute (ACI) requirements and these requirements are invoked by the purchase orders for nuclear work.

Contrary to the above, as of August 4, 2011, GERDAU failed to:

- (1) list or document necessary quality requirements for internal audits contained in applicable ASTM and ACI codes. Specifically, GERDAU internal audits did not list applicable ASTM and ACI codes in the audit checklist, as required by QAM Section 18.8.2.1, and
- (2) the audits conducted failed to identify that GERDAU Charlotte Mill failed to specify the test method on the Chemical and Physical Test Reports, as required by ASTM A751, "Standard Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products," Section 13, and Mill QAM Section 11.

This item is identified as Nonconformance 99901407/2011-201-04.

Reason for Nonconformance

Item (1) The ASTM and ACI codes missing from internal audit checklists was a lack of information in the scope of the audit due to misunderstanding the requirements of NQA-1 concerning information required in the scope of the audits.

Item (2) Gerdau takes exception to this part of the Nonconformance.

ASTM A706 Rebar specification defines in section 13 "Test Reports" what shall be reported on the Material Test Report. This includes the chemical analysis, carbon equivalent, tensile properties and bend test. There is no mention of test method. A706 does list A751 "Test Methods, Practices and Terminology for Chemical Analysis of Steel Products" as a Referenced Document. Section 13 of A751 is called "Records". This section says that test records shall contain "Test method(s) or unambiguous description of the nonstandard method(s) used." It does not say that test method should be reported on the Material Test Report. Gerdau contends that records and test reports are two different things. Gerdau's Material Test Report meets the requirements of A706 section 13. In addition, Gerdau can print on the Material Test

Report additional information contained in our records upon customer request. To date, none of our nuclear safety-related customers have requested that test method be shown on the CMTR.

Actions Completed to Date

CAR 2011-7 was written to address applicable ASTM and ACI requirements not shown on audit checklists and CAR 2011-4 written to address test method not shown on CMTR. Audits conducted after the NRC inspection have included specific ASTM specifications and ACI codes pertinent to those audits.

Corrective Actions That Will Be Taken

CAR 2011-4 and CAR 2011-7 must be closed out. Training of auditors on NQA-1 audit requirements will be conducted and documented.

Date to Be Completed

December 30, 2011