

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report No. 99900268/79-02

Program No. 51300

Company: Armco, Incorporated
Advanced Material Division
13835 Beaumont Highway
Houston, Texas 77028

Inspection Conducted: July 23-27, 1979

Inspector: R. E. Oller
R. E. Oller, Contractor Inspector
Components Section II
Vendor Inspection Branch

8/24/79
Date

Approved by: R. E. Oller for
D. M. Hunnicutt, Chief
Components Section II
Vendor Inspection Branch

8/24/79
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Summary

Inspection on July 23-27, 1979 (99900268/79-02)

Areas Inspected: Implementation of 10 CFR 50, Appendix B criteria, other NRC requirements and applicable codes and standards including; action on previous inspection findings; management meeting; review of vendor activities; nonconformances and corrective action; training, and testing of completed products. The inspection involved thirty-two (32) inspector-hours on site.

Results: In the six (6) areas inspected, no deviations were identified in two (2) areas. The following were identified in the remaining areas.

Deviations: Action on Previous Inspection Findings - Revision and requalification of WPS No. 10 (for automatic G.T.A.W) and WPS No. 11 (for manual tackwelding) by the production Welding Supervisor was contrary to the QA Manual paragraphs 8.2.1, 8.2.2 and 8.2.5 which require that these activities be performed by the Welding Engineer.

Nonconformities and Corrective Action - The final disposition and corrective action entered on nonconformance report NCR No. 197 was not signed and dated

1537 144

by all members of the Material Review Board to indicate acceptance, nor was it signed and dated by the ANI to indicate concurrence.

Training - The records of training for the last four (4) continuing training programs showed that the training was not arranged nor conducted on a monthly basis.

Testing of Completed Products - Observation of hydrostatic testing of pipes, verified that the calibration and recording requirements of Operating Procedure No. 35, Revision 2, were not being implemented.

Unresolved Items: Action on Previous Inspection Findings: Serial numbers etched on the welding gas flow meters were duplicated in two different cases. Three flowmeters for which records showed they were extensively out of calibration, were not tagged out of service.

1537 145

Details Section

A. Persons Contacted

*D. Bynum, Welding Supervisor
 *J. Fraysor, Chief Inspector
 *R. Moon, Plant Manager
 H. Riley, Maintenance Supervisor
 *R. Schultz, Quality Assurance Supervisor
 *S. Smith, General Manager
 K. Wood, Laboratory Technician

*Attended both the management meeting and the exit meeting.

B. Action on Previous Inspection Findings

1. (Closed) Deviation identified in US NRC letter dated March 22, 1979 (Report No. 79-01): Due to several ARMCO-AMD written corrective action commitments not being carried out, ARMCO-AMD was requested to provide a written statement within thirty (30) days of receipt of NRC letter dated March 22, 1979 covering, (1) a description of steps taken or planned to be taken, to assure that commitments on the part of management to implement corrective action will be accommodated, and (2) the date wherein such steps will be documented and effective. The inspector found that ARMCO-AMD's letters dated June 12, 1979, and July 18, 1979, satisfied the NRC request, also a management audit was performed on July 6, 1979, of all deviations and unresolved items identified during the February 5-9, 1979, NRC inspection. An audit follow-up on open items in the July 6, 1979, audit was also performed. Based on these actions all ten (10) items were closed by AMD management.
2. (Closed) Deviation A (Report No. 79-01): Failure to rewrite Procedure No. 12 to show that tack welding may be done with or without filler metal as committed to in ARMCO-AMD letter dated October 24, 1978.

The inspector found that in accordance with AMD's letter dated May 29, 1979, tack welding procedure No. 11 was rewritten and requalified to provide for tack welding without filler metal. Procedure No. 11 supersedes Procedure No. 12. This area was reviewed during a special audit on July 10, 1979, by the AMD QA Supervisor.

The above action closes this deviation. However, the revision and requalification of WPS No. 11 by the production welding supervisor, is contrary to the following QA Manual paragraphs: 8.2.1 which states, "All welding procedure specifications are developed by the Welding Engineer"; paragraph 8.2.2 which states, "Welding

and testing of procedure qualification test plates are carried out under the direction of the Welding Engineer . . .", and paragraph 8.2.5 which states that, "Revisions to a welding specification which require requalification shall be handled in the same manner as for evaluating new procedure specifications. See paragraph 8.2"

It should be noted that although the QA Manual paragraph 2.4.7 states, "Individuals having an assigned responsibility may delegate the required work to satisfy the requirement, to another individual, provided the individual so designated has the knowledge and training to properly satisfy the job function;" the position of welding engineer has been vacant since March, 1977, the time of the original NRC inspection of this plant. Thus, the responsibility could not have been delegated.

2. (Closed) Deviation B (Report No. 79-01): Failure to revise Procedure QC-12 to include the Severn Gage in the calibration program; revise the QA Manual where necessary and audit this item for corrective action completion, as committed to in ARMCO AMD's letter dated October 24, 1978.

The inspector found that in accordance with AMD's letter dated May 29, 1979, calibration Procedure QC-12 was revised on February 16, 1979, to include the Severn Gage, and paragraph 11.1.2 of the QA Manual was revised to require that calibration frequencies, procedures and certifications requirements are to be performed in accordance with Procedure QC-12. Review of the QA program audit conducted on March 29, 1979, verified that the Severn Gage was audited.

3. (Closed) Deviation C (Report No. 79-01): Failure to revise Procedure QC-12 to delete the requirement that the Foxboro Recorder Model 40, located on the continuous hydrostatic tester, must have a dated instrument calibration label and a letter of certification on file, as committed to in ARMCO-AMD letter dated October 24, 1978.

The inspector found that in accordance with AMD's letter dated May 29, 1979 Procedure QC-12 was revised on February 16, 1979, and the above recorder has been deleted from the calibration program. Review of the record of the March 29, 1979, QA program audit verified that this area was reviewed during the audit.

4. (Open) Deviation D (Report No. 79-01): Failure to calibrate, identify, and include in calibration procedure No. QC-12, the Argon and

Helium welding gas flow percentage proportioning meters in use on the 6 inch and 8 inch continuous mills (automatic GTA welding machines).

The inspector found that in accordance with AMD's letter dated May 29, 1979, procedure No. QC-12 was revised to include the subject flow meters. Review of records verified that the master Argon flow meter and the master Helium flow meter were calibrated by a subcontracted source on June 13, 1979, and thirty-two (32) working meters were calibrated in the plant during the period of July 16, 1979-July 19, 1979. Observation of flowmeters verified that they were permanently serialized. The corrective action for the above items is closed. The preventive action commitment to audit this area within 30 days of the calibration date of the working flowmeters remains open.

The above action closes the corrective action for this deviation. However, the actions of serializing and calibrating the working flowmeters created the following unresolved items:

- (a) Two (2) flowmeters located on the No. 3 Continuous Mill (automatic welding machine) had the same serial number (WG-031), and the Argon flowmeter on the Batc's Mill and the Argon flowmeter on the Hun 4 welding machine had the same serial number (WG-017).
- (b) The record of calibrations for working flowmeters showed the flow readings at the calibrated flow settings of 100%, 50% and 10% for flowmeters WG-012, WG-016 and WG-017, were extensively out of calibration by as much as 20 CFH, in comparison with the reference calibrated flowmeters, without the above three (3) flowmeters having been tagged out-of-service.

ARMCO-AMD management indicated the serial numbers will be corrected and the out of calibration meters will be tagged out of service. These items remain unresolved pending AMD's actions and re-examination during a subsequent NRC inspection.

- 5. (Closed) Deviations E.1, 2 and 3 (Report No. 79-01): Failure to properly requalify and amend GTA welding procedure specification (WPS No. 10, Revision 1), used in welding of T-304, SA-312, ASME Code Class 2 piping, for changes in: (1) percentages of Argon/Helium welding gas mixture; (2) addition of the use of 100% Argon trailing shielding gas, and (3) position of the ID and OD torches when the procedure is used with the new 36" GTAW machine.

The inspector found that WPS No. 10 was revised on March 15, 1979, and requalified on March 30, 1979, and April 15, 1979, by the Welding Supervisor. The revision and requalification provided corrective action for the above conditions. The preventive action was provided as shown in the record of audits performed on March 29, 1979, and July 10, 1979, which indicated the above area was reviewed.

The above action closes this deviation. However, the revision and requalification of WPS No. 10 by the production welding Supervisor is contrary to the following QA Manual paragraphs: 8.2.1 which states, "All welding procedure specifications are developed by the Welding Engineer"; paragraph 8.2.2 which states, "Welding and testing of procedure qualification test plates are carried out under the direction of the Welding Engineer . . .", and paragraph 8.2.5 which states, "Revisions to a welding specification which require requalification shall be handled in the same manner as for evaluating new procedure specifications. See paragraph 8.2"

It should be noted that although the QA Manual paragraph 2.4.7 states, "Individuals having an assigned responsibility may delegate the required work to satisfy the requirement to another individual provided the individual so designated has the knowledge and training to properly satisfy the job function," the position of welding engineer has been vacant since March 1977, the time of the original NRC inspection of this plant. Thus, this responsibility could not have been delegated.

6. (Closed) Deviation F.1 and F.2 (Report No. 79-01): Failure to: (1) list on the ARMCO AMD's Approved Vendor List, the ARMCO Houston works which provided subcontractor ultrasonic examination services, and (2) maintain in the AMD file, the training and qualification records for the subcontractor's Level II and III ultrasonic examination personnel.

The inspector found that the ARMCO Houston Works was added to the Approved Vendor List and that the training and qualification records for Houston Work's Level II and III ultrasonic examination personnel are now on file at the AMD plant. The preventive action was provided by auditing both of the above items on March 29, 1979. This was shown by records of audit dated March 29, 1979.

7. (Closed) Deviation G (Report No. 79-01): Failure to maintain ultrasonic examination records which were properly reviewed by the QA Supervisor.

The inspector found that the three (3) ultrasonic test reports in question are now signed as approved, by the QA Supervisor. The records of audit dated March 29, 1979, showed that this area was reviewed. The above provides corrective and preventive action.

8. (Closed) Unresolved Item (Report No. 79-01): Failure to perform an internal audit of Mill Order travelers to assure that applicable procedure numbers are shown for operations. The corrective action

was identified as having been completed during the inspection on February 5-9, 1979. During this inspection the preventive action was verified as complete. This item was audited during the March 29, 1979, QA system audit.

9. (Closed) Unresolved Item (Report No. 79-01): Failure to revise the QA Manual to delete the requirement to put a special statement on purchase orders consisting of, "Materials are ordered to ASME code Section III requirements, and are subject to inspection before shipping."

The inspector found that paragraph 5.2.2 of the QA Manual was revised on July 1, 1979, to delete the above statement and replace it with the following, "Material orders shall be entered on a Purchase Order Form . . . , and shall contain a statement to the effect that the materials are ordered according to ASME Code, Section III requirements."

10. (Closed) Unresolved Item (Report No. 79-01) Failure to include provisions for hydrostatic testing in Section 7, "Process Control" in the QA Manual.

The inspector found that paragraph 7.8, "Hydrostatic Test," was added to Section 7 on July 1, 1979, to provide for hydrostatic testing of piping.

C. Management Meeting

1. Objectives

The objectives of the Management Meeting were to meet with new Plant Management to discuss the background, purpose, intent of the Vendor Inspection Branch (VIB) direct inspection program.

2. Method of Accomplishment

The preceding objectives were accomplished by the inspector's presentation and the resulting discussions covering the following:

- a. NRC policies and organization.
- b. VIB program objectives and how these objectives are to be accomplished.
- c. VIB organization.
- d. Inspection areas to be covered.
- e. Basic inspection techniques of the VIB.

- f. Enforcement procedures applicable to vendors, including Section 206 of the Energy Reorganization Act of 1974 and Part 21 of 10 CFR.
- h. The White Book.

3. Findings

- a. Within this area of the inspection no deviations or unresolved items were identified.
- b. Management's questions related to the above presentation.

D. Review of Vendor's Activities

1. Objective

The objective of this area of the inspection was to assess the vendor's activities and their impact on future NRC inspections.

2. Method of Accomplishment

The preceding objective was accomplished by:

- a. Discussions with cognizant personnel regarding the current work load and major customers.
- b. Review of the QA Manual including the recent revisions dated July 1, 1979.
- c. Review of HSB I&I Company's written acceptance of the QA Manual revisions dated July 1, 1979.
- d. Review of the ARMCO charts of organization for Executive Management, and for the Advanced Materials Division, General Administration, both dated January 1, 1979.

3. Findings

- a. Within this area of the inspection no deviations or unresolved items were identified.
- b. The QA Supervisor indicated the workload and major customers remained the same as during the prior NRC inspection. (See Report No. 99900268/79-01).
- c. Review of the organization charts and subsequent discussions, established that the AMD Houston, Texas, tube mill reports to

the General Manager, who reports to the AMD President. It appears that Houston AMD QA organization reports only to the Plant Manager.

E. Nonconformances and Corrective Action

1. Objectives

The objectives of this area of the inspection were to verify that the following items were controlled in accordance with applicable NRC and ASME requirements.

- a. A written system has been established to assure that nonconformances are controlled and corrective action is taken.
- b. Documented procedures or instructions are implemented for identification, documentation, segregation and disposition of nonconforming materials, parts or components, and notification to affected organizations.
- c. Nonconforming items are reviewed and accepted, rejected, repaired or reworked in accordance with documented procedures.
- d. Conditions adverse to quality are promptly identified and corrected.
- e. The causes of significant conditions adverse to quality are determined and corrected to preclude repetition.
- f. The condition adverse to quality, the cause and the corrective action are documented and reported to appropriate levels of management.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the QA Manual, Section 6, "Nonconforming Materials."
- b. Observation of the following plant areas:
 - (1) Indoors Receiving Inspection area for plate material.
 - (2) Outdoor receiving and holding area for coil materials.
 - (3) Indoors "Nonconforming Material" Section III segregated area for in-process nonconforming pipe.

- c. Discussions with cognizant personnel.
- d. Review of the Nonconformance Report (NCR) for two (2) 16" O.D., T-304, SA-312 pipes No. SN8-6165, 2.P and 5.P, held in the above segregated area.
- e. Review of fifteen (15) in-process NCRs and the related Salvage Rework sheets covering both SA-358 pipe and SA-312, T-304, ASME Code Class 2 piping.
- f. Review of a file for "Vendor Raw Material Nonconformances" reports.
- g. Review of several completed nonconformance reports including, NCR No. 197 dated May 7, 1979 for Mill Order SN-5781, 6P, covering a T-304, SA-358 Class 1, ASME Section III, Class 2, 10 3/4" O.D. pipe. The nonconformance related to a Salvage Rework traveler covering inside surface pipe wall weld repairs in excess of 10% of the wall thickness.
- h. Discussions with cognizant personnel.

3. Findings

a. Deviations From Commitments

See Notice of Deviations, Item B.

b. Unresolved Items

None.

F. Training

1. Objectives

The objectives of this area of the inspection were to verify that the following items were controlled in accordance with applicable NRC and ASME Code requirements:

- a. A written system has been established to assure that indoctrination and training of personnel performing activities affecting quality is implemented in accordance with applicable codes.
- b. Appropriate written agenda are used.
- c. Records of training sessions agenda and attendance are maintained.

- d. The agenda includes subject matter adequate to provide an understanding of the general and detailed aspects of the QA program, codes, standards and applicable technical disciplines.
- e. The instructors are suitably qualified.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the QA Manual Section 17, "Orientation and Training Program."
- b. Review of the available records of training dated April 17, 1979, March 2, 1979, August 10, 1978, and December 5, 1978, for all types of inspectors and NDE personnel.
- c. Discussions with cognizant personnel.

3. Findings

a. Deviation From Commitment

See Notice of Deviation, Item C.

b. Unresolved Items

None.

G. Testing of Completed Products

1. Objectives

The objectives of this area of the inspection were to verify that the following items were controlled in accordance with the applicable NRC and ASME Code requirements.

- a. A written system has been established to assure that final pressure tests are controlled in accordance with applicable procedures.
- b. Final pressure tests are performed in accordance with approved procedures.
- c. The results of tests are documented and reviewed for acceptability.
- d. The test equipment is calibrated where required.
- e. The tests are performed by qualified personnel.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the QA Manual Section 7, paragraph 7.8, "Hydrostatic Test."
- b. Review of the approved Operating Procedure No. 20, Revision 2, "Hydrostatic Testing 10"-26" pipe (Batch Side Hydrostatic Tester)."
- c. Review of the approved Operating Procedure No. 35, Revision 2, "Hydrostatic Testing, Continuous Side."
- d. Observation of both the Batch Side and the Continuous Side hydrostatic testing facilities, including the calibration status of pressure gages.
- e. Observation of an in-process hydrostatic test of 8" O.D. T-304, A-312 piping, using the Continuous Side hydrostatic testing facilities.
- f. Review of records related to the use of the Foxboro Model 40 recorder located on the Continuous Side hydrostatic tester.
- g. Discussions with cognizant personnel.

3. Findings

a. Deviation From Commitment

See Notice of Deviations, Item D.

b. Unresolved Items

None.

H. Exit Interview

1. The inspector met with management representatives denoted in paragraph A at the conclusion of the inspection on July 27, 1979.
2. The following subjects were discussed:
 - a. Areas inspected.
 - b. Status of corrective and preventive action for the previously identified deviations and unresolved items.
 - c. Deviations and unresolved items identified in the report.

3. The manufacturer's representatives were asked to formulate their corrective action responses to deviations in accordance with the three (3) conditions identified in the inspection report cover letter.
4. The manufacturer's representatives had no questions.

1537 156