

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

Report No. 99900268/80-02

Program No. 51300

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

Inspection
Conducted: September 9-12, 1980

Inspector: R. E. Oller 9-24-80
R. E. Oller, Contractor Inspector Date
Components Section II
Vendor Inspection Branch

Approved by: I. Barnes 9-24-80
I. Barnes, Chief Date
Components Section II
Vendor Inspection Branch

Summary

Inspection on September 9-12, 1980 (99900268/80-02)

Areas Inspected: Implementation of 10 CFR 50, Appendix B criteria, other NRC requirements and applicable codes and standards including: action on previous inspection findings, nonconformances and corrective action, manufacturing process control, welding control and radiographic examination. The inspection involved 26 inspector-hours on site.

Results: In the five (5) areas inspected, no deviations were identified in four (4) areas. The following were identified in the remaining areas.

Deviation: Welding Control - Failure to meet the requirements of procedure No. 10 and welding procedure specification No. 5, Revision 3, for the pipe ID seam weld edge bevel requirement of 5/16 inch depth. (See Notice of Deviations).

8010290 126

Unresolved Items

None

Other Findings - Comments: Manufacturing Process Control: The first AMD-QC Inspection Hold Point on the Mill Order Travelers is for inspection acceptance related to disbursement of the steel to production. However, the Inspection Hold Point is located on the Mill Order line opposite the beveling operation. The AMD management indicated the inspection hold point will be changed on new travelers to show inspection for steel disbursement. (See Details Section, paragraph D.3.c.)

DETAILS SECTIONA. Persons Contacted

- *L. Barrington, QA Supervisor
- D. Bynum, Welding Supervisor
- K. Fretty, Welding Operator
- *R. Moon, Plant Manager
- E. Moore, Radiographer
- A. Perkins, Beveler

*Attended the exit meeting.

B. Action on Previous Inspection Findings

1. (Closed) Deviation A (Report 79-02): Welding procedure specifications (WPS) No. WP-10 and No. WP-11 were revised and requalified by the production welding supervisor who was not authorized to perform these activities. The inspector found that the QA Manual was revised, approved by AMD, accepted by the Authorized Inspection Agency and issued on February 14, 1980. The QA Manual revisions included Section "Abbreviations and Definitions" and Section 8 "Welding Quality Assurance" which were revised to show the authority to prepare and/or revise and qualify WPS was reassigned to the Welding Supervisor.
2. (Closed) Deviation C (Report 79-02): Training programs were not being arranged on a monthly basis. A procedure to redefine training program frequencies was being written. Also, to provide preventive action, this area would be audited in February 1980. The inspector found that procedure No. O.P.-37 was written and approved on December 1, 1979. This procedure now provides for semi-annual training of supervisors and quarterly training for operating personnel (other than supervisors). Review of records verified that the area of "Orientation and Training" was audited on April 30, 1980.
3. (Closed) Deviation A (Report 80-01): Failure to perform audit follow-up activities as required by the QA Manual. The inspector found that in accordance with Armco-AMD response letter dated March 3, 1980, that the QC supervisor had provided corrective action for all seven (7) deficiencies in the two (2) March, 1979, internal audits. Review of records of the May 27, 1980, Management Audit verified that the resolution of the above deficiencies was reviewed and found to be satisfactory.

4. (Closed) Deviation B (Report 80-01): Failure to maintain records of annual eye examinations for AMD and subcontractor's nondestructive examination personnel. The inspector found that in accordance with Armco-AMD's response letter dated March 3, 1980, that current records of all AMD and the subcontractor's NDE personnel are now on file at AMD. Also, the QC supervisor now maintains a monthly calendar schedule to assure that all record keeping, examinations and training are performed. Review of records of the management audit performed in May 1980, verified that the above calendar schedule was audited.

(Closed) Deviation C (Report 80-01): Failure to include all required information on the postweld heat treatment furnace temperature charts. The inspector found that operating procedure No. 13A was revised on February 7, 1980, to provide for marking only the furnace charge number on the furnace chart and entering all other required information (i.e., Charge Number, Mill Order Number, Pipe Number, etc.) on the daily Furnace Log Sheets. Both of these two records are signed and dated by the Laboratory Technician, and the records are filed together. Review of records of Furnace Charts and related Furnace Log Sheets verified that the above revised procedure was being implemented.

C. 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 10 "Nonconforming Materials".
- b. Review of the approved operating procedure No. OP-25, Revision 0, "Procedure for Handling Nonconforming Materials".
- c. Review of four (4) nonconformance reports dealing with nonconforming material found at receiving inspection and nonconformances due to damages to materials during processing.
- d. Observation of portable chains and posts in the shop, which are used for segregating materials found to be nonconforming during in-process work.
- e. Observation of the shop receiving inspection segregated hold area for stainless steel plates for ASME Code work.
- f. Discussions with cognizant personnel.

3. Findings

Within this area of the inspection, no deviations or unresolved items were identified.

D. Manufacturing Process Control

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 manufacturing processes are controlled in accordance with applicable codes.
- b. Measures have been established and implemented to control the manufacturing processes by use of process sheets, travelers, checklists or procedures.

- c. The process sheets, travelers, checklists or shop procedures used included: the document numbers and revisions to which the processes, inspections or tests conformed; the results of completion of the specific operations; the signature, initials or stamp of the manufacturer's responsible representative and date were shown for operations completed, and the signature, initials or stamp of the authorized inspector and date, were shown for activities he witnessed.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the QA Manual Sections No. 6 "Process Control, Code Stamped Material (welded with Filler Metal)" and No. 7 "Process Control, Material Not Requiring Code Stamp (welded without Filler Metal)".
- b. Observation of the following materials in various stages of work in the shop and review of the accompanying controlling Mill Order (M.O.) travelers, as denoted.
- (1) Observed plate beveling and reviewed M.O. No. SNO-9462.
 - (2) Observed fitups and weld bevels on three 21 inch O.D. by 1 inch wall pipes, which had been formed, closed and tack welded, and reviewed the M.O. for pipe No. SN9-8351-6P.
 - (3) Observed one pipe being welded from the outside, and reviewed the related M.O. No. SN9-8362-6P.
 - (4) Observed three pieces of annealed pipe prior to hydrostatic testing, and reviewed the related M.O. No. SN9-8371-2P.
 - (5) Observed one pipe after it was hydrostatic tested and pickled, and reviewed the Hydrostatic Test Report.
- c. Reviewed completed M.O. travelers for the following shipped pipes, to determine completeness of M.O.s and of signoff, where required, by the AMD operator, AMD-QC, QC supervisor and Authorized Nuclear Inspector.
- (1) Pipe SN9-8351-1P
 - (2) Pipe SN9-8351-2P, and 2P2

- d. Review of the approved operating procedure No. 10 "Plate Beveling".
- e. Discussions with cognizant personnel.

3. Findings

a. Deviation From Commitments

None

b. Unresolved Items

None

c. Other Findings - Comment

- (1) Review of mill order travelers and discussions established that except for general instructions in the QA Manual, there was no separate procedure to control the QC in-process inspections identified on the traveler as: (1) Disbursing of Steel, (2) Weld ID and Testplate, and (3) Final Inspection. The QA supervisor indicated he was aware of this condition and that an appropriate procedure will be prepared and implemented.
- (2) The first AMD QC Inspection Hold Point on all Mill Order Travelers is located on the same line as the beveling operation which is identified by operating procedure O.P. No. 10. This AMD-QC inspection hold-point did not represent inspection of the plate bevel, but instead represented inspection acceptance of the plate material identification and release to production. This condition was discussed with AMD management who indicated that the mill order format would be changed to show that the QC inspection signoff represents acceptance of material for distribution to processing. In all instances this QC inspection hold-points on released mill orders were signed and dated.

E. Welding Control

- 1. The objectives of this area of the inspection were to verify that the following activities were controlled in accordance with applicable NRC and ASME Code requirements.
 - a. A system has been established to assure that welding is controlled in accordance with the applicable codes.
 - b. The weld joint fitup alignments meet requirements.

- c. The requirements of essential variables and other procedure parameters are concurred with during welding.
- d. The completed welds meet visual acceptance standards of the program.
- e. The welders are qualified in accordance with the ASME code.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the QA Manual Section 8, "Welding Quality Assurance."
- b. Review of welding procedure specification (WPS) No. WP-5 Revision 3 and Welding Detail Sheet (Use for outside Submerged Arc Welding (SAW) of SA-358, Class I ASME Code Class 1 piping), and the supporting procedure qualification record (PQR) No. 74-852.
- c. Observation of the outside second pass Submerged Arc Welding, using WPS No. WP-5, including welding wire type and size, amperage, voltage, and travel speed, for an SA-358 Class 1 ASME Class 1 pipe.
- d. Review of the performance qualification for the welding operator, Symbol Q, who performed the above outside SAW welding.
- e. Review of the controlling Mill Order Traveler for the above pipe No. SN9-8362-6P., which was observed being welded.
- f. Review of a Salvage Rework Sheet written and approved to repair a burn through while performing the welding in above paragraph c.
- g. Observation of gas tungsten arc welding (G.T.A.W.) repair of the seam weld in SA-312, T-304 pipe on mill order No. SN0-8992, using WPS No. WP-2
- h. Review of WPS No. WP-2 used in the above repair welding, and the supporting PQR No. 74-789.
- i. Review of the performance qualification record for welding operator, Symbol S, who performed the above repair welding.
- j. Review of the Salvage Rework Sheet written and approved for the above weld seam repair on SA-312 pipe No. SN0=8992.
- k. Observations of finished seam welds in the as-welded condition in SA-358 pipe and SA-312 pipe.

1. Measurement of the ID weld edge bevels and observation of the fitup for root pass welds on formed, closed and tack welded pipe over one half inch in wall thickness.

Discussions with the beveling machine operator concerning the use of the beveling machine and bevel requirements of procedure No. O.P.-10.

- n. Review of ID weld bevel requirements in WPS No. WP-5 and procedure No.O.P.-10.

3. Findings

a. Deviations From Commitments

See Notice of Deviation

b. Unresolved Items

None

F. Radiographic Examination

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 radiographic examination (RT) is performed in accordance with applicable codes.
- b. Final acceptance RT is performed in accordance with detailed written instructions or procedures which delineate requirements and acceptance standards.
- c. The RT procedures meet the requirements of the ASME Code and are qualified.
- d. The RT is performed and the results interpreted by certified personnel.
- e. Test results are documented and evaluated to assure that the component or material examined contain no rejectable defects.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the QA Manual Section 9, paragraph 9.3, "Nondestructive Examination (NDE)".
- b. Review of approved QC Procedure No. 4, Revision No. 12, "Procedure for Complete Radiographic Examination of Longitudinal Butt Welds."
- c. Observation of the radiographic setup for three x-ray film interval retake exposures on the longitudinal weld seam in a SA-358-1 ASME Class 2 pipe, to verify that procedure No. 12 was being followed.
- d. Review of Mill Order No. SNO-9301-4P to verify that above RT operation was properly identified.
- e. Observation of the radiographic equipment and facilities.
- f. Review of the examination and certification record for the Level I RT technician who performs the work in above paragraph c.
- g. Review of the RT related records consisting of Mill Orders, Radiographic Reports and NM-1 Code Data Reports, for SA-358-1, ASME Section III Class 1 and Class 2 piping on the following completed Mill Orders.
 - (1) M.O. SN9-8211-1P.
 - (2) M.O. SNO-8375-1P1, 1P2, 1P3, and 1P4.
 - (3) M.O. SNO-9209-1P.
- h. Observation of six RT films and the RT Report for the pipe seam weld on M.O. No. SN9-8365-4P
- i. Discussions with cognizant personnel

3. Findings

Within this area of the inspection, no deviations or unresolved items were identified.

G. Exit Interview

1. The NRC inspector met with management representatives, denoted in paragraph A, at the conclusion of the inspection on September 12, 1980.
2. The following subjects were discussed:

- a. Areas Inspected
 - b. Status of corrective and preventive action for the previously identified inspection findings
 - c. Findings identified in this report.
3. The manufacturer's representatives were asked to formulate their corrective action responses to the deviation in accordance with the three (3) conditions identified in the inspection report cover letter.
 4. The manufacturer representatives' questions related to the inspection findings.