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

Report No. 99900029/79-02 Program No. 51300

Company: Youngstown Welding and
Engineering Company
3700 Oakwood Avenue
Youngstown, Ohio 44509

Inspection
Conducted: September 18-21, 1979

Inspector: R. E. Oller 10-29-79
R. E. Oller, Contractor Inspector Date
Components Section II
Vendor Inspection Branch

Approved by: R. E. Oller 10-29-79
D. M. Hunnicutt, Chief Date
Components Section II
Vendor Inspection Branch

Summary

Inspection on September 18-21, 1979 (99900029/79-02)

Areas Inspected: Implementation of 10 CFR 50, Appendix B criteria, other NRC requirements, and applicable codes and standards including: action on previous inspection findings, review of vendor activities, material identification and control, welding control consisting of joint fitup and welding - weld heat treatment and visual examination of welds, and radiographic examination. The inspection involved twenty-five (25) inspector-hours on site.

Results: In the five (5) areas inspected, no deviations were identified. The following unresolved items were identified.

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Unresolved Items: Welding Control: (1) The Smith Mixer, used for percentage proportioning of helium and argon welding gases on the No. 7 automatic welding machine, was not calibrated. (2) Production postweld heat treatment tube metal temperature checks with a certified optical pyrometer, were not correllated with the furnace recorder strip chart temperature recording and documented to provide a furnace temperature survey. (See Details Section, paragraph D.3.b.)

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DETAILS SECTION

A. Persons Contacted

W. Dunnam, Welding Supervisor
*D. Lewis, QA Manager
G. Mitchell, Acting Receiver
F. Watson, President
*R. Yahn, Vice President of Sales

*Attended the exit meeting.

B. Action on Previous Inspection Findings

1. (Closed) Deviation A.1 (Report No. 78-02): Failure to provide corrective action by auditing five (5) areas of the QA Manual not previously audited, as committed to in Youngstown Welding & Engineering (YW&E) Company's letter dated June 16, 1978. The inspector found that in accordance with YW&E letter dated January 5, 1979, that the QA Manual was revised on August 10, 1978, which deleted three areas and left two (2) areas, i.e. Nonconforming Material, and Audits. Review of Checklist records of the audit performed on November 28, 1978, and December 15, 1978, for the above QA Manual areas, respectively, verified that corrective and preventive actions were implemented.

2. (Closed) Deviation A.2 (Report No. 78-02): Failure to provide preventive action to assure that the ANI reviews the monthly audit reports by inclusion of ANI in the audit checklist as committed to in YW&E letter dated June 16, 1978. The inspector found that the ANI Review was added to the Internal Audit Check List. In addition, the ANI had initialed off on the checklist for the months of December, 1978 and January through September, 1979, as evidence of his review of the monthly audit checklists.

3. (Closed) Deviation B (Report 78-02): Failure to provide preventive action to assure that the training and indoctrination outline is followed in conducting training sessions under the outline dated August 11, 1978, as committed to in YW&E letter June 16, 1978. The inspector found that in accordance with YW&E letter dated January 5, 1979, that the Training and Indoctrination program was revised August 11, 1978, to include a matrix of QA Manual subject material training requirements for personnel by classification. Other records included: certifications of employee qualifications, visual examination, heat treatment and hydrostatic testing along with the attendance lists for the training sessions.

4. (Closed) Deviation, (NRC Letters dated November 22, 1978 and January 31, 1979): Failure by YW&E to provide a description of any steps they have taken or plan to take, to assure that their management commitment to take corrective action will be accommodated in the future. The inspector found that in accordance with YW&E letter dated February 10, 1979, the QA Manager had the Senior Vice President review, sign and date the QA Manager's commitment letter dated February 10, 1979, to the NRC to provide assurance that management's commitments will be accommodated in the future.

C. General 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 commercial nuclear workload.

b. Review of Issue 3 of the QA Manual and the YW&E letter dated August 11, 1979 with the AIA Inspection Specialist acceptance sign off.

c. Review of the ASME NPT Certificate of Authorization No. N-1223, and the ASME Quality Systems Certificate (Materials) No. 2192 to verify that the certificates were still valid.

d. Verbal review by YW&E's QA Manager describing plant capabilities.

3. Findings

a. Deviation From Commitment

None.

b. Unresolved Items

None.

c. Other Findings

(1) The QA Manager indicated that the contract for core support spools and guide tubes work was in-progress.

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(2) Review of the ASME authorizations provided the following:

(a) The NPT authorization authorizes use of the NPT Symbol for Class 1, 2, 3 and MC vessel parts and appurtenances; Class 1, 2 and 3 piping subassemblies and tubular products welded with filler metal and Class CS core support structures.

(b) The Quality Systems (Materials) authorizes manufacture of austenitic stainless steel, nickel base and copper base alloy tubular products welded without filler metal.

(c) Both of the authorizations expire September 9, 1981.

(3) The plant facilities have capabilities to manufacture the following: A-358 and SA-358, T-304 and T-316 and nickel alloy piping 6" to 30" in diameter with a wall thickness range of 1/8" through 1"; A-312 and SA-312 austenitic (welded without filler metal) pipe in 6" through 30" O.D. with a wall thickness range of 1/8" through 3/8". The core support structures in-process consist of SA-358 and SA-312 austenitic stainless steel pipe.

D. 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 welding procedure specifications (WPS) used in production welding are prepared, qualified and controlled in accordance with the QA program.

c. The weld joint fitup alignments meet requirements.

d. The requirements of essential variables and other procedure parameters are concurred with during welding.

e. The completed welds meet visual acceptance standards of the program.

f. The post weld heat treatment, specified by the welding procedures, is performed in accordance with an approved procedure, consistent with Code requirements.

2. Method of Accomplishment

The preceding objectives were accomplished by:

a. Review of the QA Manual Section IX, paragraph 9.5 "Welding, and 9.6 "Heat Treatment."

b. Review of the following production welding procedure specifications (WPS) and their related procedure qualification records:

(1) WPS 720, Revision 6 (GTAW Automatic) and supporting PQR No. PQT-199 dated May 17, 1972.

(2) WPS 750, Revision 4 (GTAW Automatic) and supporting PQR No. SD-453-3 dated January 31, 1979. Also, Welding Procedure 750 Supplement for Automatic Welder.

c. Examination of the new Helium/Argon welding gas Smith Mixer in use on Welder No. 7.

d. Discussions with the Welding Supervisor concerning SA-312 welded pipe ring sampling for ID/OD dual welding arc penetration check.

e. Review of in-process "Pipe Welding Record" for SA-358 supplied for core support 11" O.D. spools on YW&E Contract No. 1104.

f. Observation of in-process welding of a A-312, T-304, 8" schedule 10s, 20' R/L pipe for stock, using WPS-750 Revision 4 and supplement 140 AW.

g. Review of Tube Mill Shop Order travelers for:

(1) Item 1 of Contract No. 1104 covering 850 pieces of 10" schedule 10, SA-312, T-304 piping to ASME-Code Class NG, 100% radiographed.

(2) Item 2 of contract No. 1104 covering 850 pieces of 11" O.D. X 0.500" wall x 9 3/16" C/L SA-358, T-304 piping to ASME Code Class NG, 100% radiographed.

h. Observation of the new 3 zone continuous postweld heat treatment furnace installed by Industronics, Inc., and placed in service about March 1979. Also observation of the calibration status of the Honeywell controls and multipoint recorder on this furnace.

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i. Review of an Industronics' certificate of warranty covering the calibration of the Minneapolis Honeywell recorder Model C-15, S.N. F-8230108001, located on the furnace.

j. Review of approved procedure QCN-1023, Revision 5, "Heat Treat Procedure."

k. Review of entries in the furnace log for: postweld heat treatment during April, 1979 of five (5) SA-312, T-304 Guide tubes, and during May, 1979 of four (4) SA-358 11" O. D. x 0.500" wall pipes for spool pieces. Both materials were YW&E Contract 1104.

l. Review of YW&E Test Reports for Item 1 and 2 GE P.O. 334-6B815 (YW&E Contract 1104) certifying the pipes were annealed at 1900°F minimum (for 5 minutes) and water quenched.

m. Observation of the calibrated Optical Pyrometers SN R-22224 used during the April, 1979 heat treatment operations, and SN R-22117 used during the May, 1979 heat treatment operations.

n. Discussions with cognizant personnel.

3. Findings

a. Deviation from Commitment

None

b. Unresolved Item

(1) The Smith Mixer, used for percentage proportioning of the Helium and Argon Welding gases for the No. 7 automatic welding machine, was not calibrated. This device was put into service about August, 1979. YW&E will take action to have this device calibrated and entered in the calibration program.

(2) The production heat treating method in use at YW&E; did not provide for a separate formally documented temperature uniformity survey of the heat treating furnace. However, review of furnace log entries for SA-312, T-304 and SA-358, T-304 pipes on contract No. 1104 established that the temperature of each pipe, as it passed through

the furnace, was checked with a calibrated optical pyrometer and the temperatures were recorded by tube number and date, also the entries were initialed and dated.

The YW&E QA Manager indicated to the inspector by telephone on October 15, 1979, that YW&E will periodically correllate production tube metal temperatures taken with a certified optical pyrometer, with the furnace temperature recorder tracings and these checks will be documented.

These items remain unresolved pending YW&E's above action and review of it during a subsequent inspection.

E. Material Identification and 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 material identification and control is performed in accordance with applicable codes.

b. Documented measures have been used for identification and control of materials and items.

c. Identification is maintained either on the item or on records traceable to the item.

d. Permanent or temporary identification marks or numbers are legible and are not detrimental to the item quality or interfere with the function of the item.

2. Method of Accomplishment

The preceding objectives were accomplished by:

a. Review of the QA Manual Section VII "Control of Purchased Material and Services," and Section VIII, "Identification and Control of Materials."

b. Review of procedure QCN-1012, Revision 2, "Tube Mill-Identification Marking Instructions."

c. Observation of plate, sheet and piping identification and control activities in the following areas:

(1) Receiving area for sheet and plate.

(2) Outside storage yard for plate, sheet and pipe.

(3) Permanent stamping located at the press forming area.

(4) Cutoff Station.

(5) Final Inspection.

d. Review of the following identification and control records located at the above locations:

(1) Purchase Order PO-1567-1 for T-304 SA-240 plate in the receiving area.

(2) "Receiving Report" form and "Discrepancy in Material Received" form in the receiving area.

(3) Signed-off Receiving Report for 11 pieces of plate for Contract No. 1521.

(4) Tube Mill Order traveler for one (1) piece of SA-358, Class 1, T-316L pipe, containing instructions for permanent metal stamping 12" from one end of pipe.

(5) Cutoff Station Log record for YW&E contract No. 1104.

e. Observation in the final inspection area of vibro etched identification on SA-312 pipes for Contract No. 1104, and low stress metal stamping of SA-358 pipe spools for Contract No. 1104. The SA-358 pipe spool markings included the applied code symbol NPT-CS.

f. Discussions with cognizant personnel.

3. Findings

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

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 procedure meet the requirements of the ASME Code and is 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 X, paragraph 10.5, "Nondestructive Examination."

b. Review of approved procedure QCN-1000, Revision 7, "Radiography Procedure to 1974 Edition, ASME Code, Summer 1974 Addendum through Winter 1976 Addendum."

c. Review of five (5) Radiographic Reports dated February 26, 1979, March 13, 1979, and May 3, 1979, for longitudinal pipe welds in SA-358 piping on YW&E Contract No. 1104.

d. Examination of six (6) Radiographic films for SA-358 pipe Tube No. 38 on contract No. 1104, and review of the related radiographic report.

e. Discussions with cognizant personnel.

3. Findings

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

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G. Exit Interview

1. The inspector met with management representatives denoted in paragraph A at the conclusion of the inspection on September 21, 1979.

2. The following subjects were discussed:

   a. Areas inspected.

   b. Status of corrective and preventive action for the previously identified deviations.

   c. The unresolved items identified in this report.

3. The manufacturer's representatives questions related to clarifications of the findings.

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