

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

Report No. 99900390/79-01

Program 51300

Company: Irwin Steel Fabricators
1545 Whipple Road S. W.
Canton, Ohio 44708

Inspection
Conducted: October 4 and 5, 1979

Inspector:

Ross L. Brown

Ross L. Brown, Contractor Inspector
Components Section I
Vendor Inspection Branch

11/2/79
Date

Approved:

D. E. Whitesell

D. E. Whitesell, Chief
Components Section I
Vendor Inspection Branch

11/5/79
Date

Summary

Inspection on October 4 and 5, 1979 (99900390/79-01)

Areas Inspected: Initial management meeting and implementation of 10 CFR 50, Appendix B, including manufacturing process control and weld control as related to field reported deficiencies in airlocks designed by W. J. Woolley Company and fabricated by Irwin Steel Fabricators. The inspection involved fourteen (14) inspector hours on site by one (1) NRC inspector.

Results: In the three (3) areas inspected; no apparent deviations were identified in any of the areas, no unresolved items were identified in two (2) of the areas, and the following unresolved item was identified in the remaining area.

Unresolved Item: It does not appear that the responsible nondestructive examiner (technician) is filling in all the required information on the Certified Examination Report. (See Detail Section, Paragraph C.3.b)

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DETAIL SECTIONA. Persons Contacted

E. J. Jaquay, Quality Assurance Manager
G. Knierien, Quality Assurance Engineer
S. M. Hopkins, President - Industrial
Inspection Industries, Inc. (III, Inc.)

B. Initial Management Meeting1. Objectives

The objectives of this meeting were to accomplish the following:

- a. To meet with the Irwin Steel Fabricators (ISF) management and those persons responsible for administration of the QA program and to establish channels of communication.
- b. To determine the extent of the company's involvement in the commercial nuclear business.
- c. To explain the NRC inspection program including LCVIP organization, VIB inspection and documentation methods.
- d. To inform the vendor that the primary reason for this inspection is to determine the cause for the deficiencies reported to NRC Region II relative to airlocks for Shearon Harris, Unit 1 and to determine if there is generic possibility.
- e. To describe the NRC evaluation of the ASME inspection system.

2. Methods of Accomplishment

The preceding objectives were accomplished by a meeting on October 4, 1979. The following is a summary of that meeting:

a. Attendees:

J. G. McArdle, General Manager
E. J. Jacquay, Quality Assurance Manager

- b. The VIB organization was described and its relationship to NRC Region IV and NRC Headquarters component of the Office of Inspection and Enforcement.

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- c. The conduct of VIB inspections was described and how our inspections are documented including the report, responses to reports, how proprietary information is handled, the Public Document Room, and the White Book.
- d. The purpose, scope, and status of the NRC's program for evaluation of the ASME inspection system as an acceptable independent third party was discussed.
- e. The company's participation in commercial nuclear business was discussed including current and projected activities.
- f. The status of the ASME Certificate.

3. Results:

The inspector was provided with the following information:

- a. The company holds the following ASME Certificates:
 - (1) Number N-1112, "NPT" for Class 2, 3 and MC Vessel Parts and Appurtenances, Penetration Assemblies and Component Supports; Class 2 and 3 Storage Tank Parts and Appurtenances, Piping Subassemblies and Tubular Products Welded with Filler Metal; Class CC Concrete Containment Parts and Appurtenances (Metal Parts Only). Authorized on June 9, 1978, and expires on June 16, 1981.
 - (2) Number N-1113, "N" for Class 2, 3, and MC Vessels and Class 2 and 3 Piping Systems and Storage Tanks. Authorized on June 9, 1978, and expires on June 16, 1981.
 - (3) Number N-2126, "NA" for Shop Assembly of Stamped Class 2 and 3 Components, Appurtenances, Piping Subassemblies and Component Supports. Authorized on June 9, 1978, and expires on June 16, 1981.
 - (4) Number 5474, U. Pressure Vessel for ASME Code Pressure Vessels and Extended for Field Fabrication if Permitted by the Accepted Quality Control System. Authorized on November 9, 1976, and expires on February 28, 1980.
- b. ISF does not perform any design engineering activities.
- c. ISF has contracts running through 1982 to manufacture: Class MC Vessel parts, components supports, Class CC containment metal parts and four (4) Class 2 stainless steel vessels.

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- d. ISF contracts the nondestructive examination (NDE) Level III activities and radiograph examination of material thickness one inch and greater to Industrial Inspection Industries, Inc., (III, Inc).
- e. Irwin Steel Fabricators is a subsidiary of W. J. Woolley Company, River Forest, Illinois.
- f. The history of the Shearon Harris, Unit 1 airlock is as follows:
 - (1) The units were fabricated and inspected by ISF.
 - (2) The Ebasco representative (customer) inspected the component and gave ISF a quality release authorizing shipment.
 - (3) The unit was shipped to the construction site. It was rejected for weld spatter, slag and general appearance of the fillet weld area joining the anchor studs to the shell.
 - (4) The unit was returned to ISF for rework.
 - (5) The rework was accomplished by grinding and buffing.
 - (6) ISF inspected the unit (no record other than sign-off of the traveler).
 - (7) The Ebasco representative reinspected the unit and authorized shipment (no record or quality release issued).
 - (8) The unit was shipped to the site.
 - (9) The unit was rejected again, the utility company stated that 44 of the 300 plus fillet welds that joined the anchor studs to the shell were undersize. This apparently was caused by the grinding during the rework.
 - (10) The customer (Ebasco) resolved the discrepancy with the utility company. The details of the resolution are not known by the vendor.

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C. Manufacturing Process Control

1. Objectives

The objectives of this area of the inspection were to:

- a. Verify that the manufacturer operates under a controlled system utilizing process sheets, shop procedures, check lists, travelers or equivalent.
- b. Verify that the manufacturing system requires all processes and tests to be performed by qualified personnel using qualified procedures.
- c. Verify that process control check lists are required to be prepared containing document numbers and revisions to which the process conforms, with space provided for reporting results of specific operations or references to other documents where operational results are maintained.
- d. Verify that check lists are required to be prepared including document numbers and revisions to which in-process and final examinations and tests must be performed.

2. Method of Accomplishment

The preceding objectives were accomplished by a review of the following documents:

- a. The ISF - Quality Assurance Manual (QAM) Section 7.0, Process Control, and Section 11.0, Nondestructive Examination.
- b. The III, Inc. NDE Quality Control Manual that provides the parameters and method used in NDE by III, Inc., relative to qualification of procedures and personnel engaged in RT, UT, MT and PT techniques.
- c. The qualification records for the III, Inc., Level III Examiner.
- d. The ISF - Standard Operating Procedure No. 13, that establishes and outlines a procedure to be followed for assurance that the examinations subcontracted by ISF from III, Inc., is in accordance with the contractual quality, technical and regulatory requirements.

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- e. One ISF Level II Examiner qualification records.
- f. Process Sheet - Shop Order (SO) 20105-N that establishes the manufacturing steps, inspections (including ANI hold points) procedures, etc. The Process Sheet also included signoff of the various operations.
- g. Radiographic Test Report No. RF-1.
- h. Two (2) Magnetic Particle Test Report, that stated all the welds including stud welds were examined.

3. Finding

a. Deviations

None were identified in this area of the inspection.

b. Unresolved Item

It does not appear that the qualified technician that performed the required nondestructive examination and documents the results on the appropriate examination form is including the approved procedure number and addenda that is required by QAM Section 11.0 - Paragraph 11.6. However, the report does include the procedure number that had been filled in by the QA Engineer, after his review of the process sheet and his discussing the report with the responsible technician.

The inspector reviewed applicable process sheets and verified it did include instructions to use an approved procedure and the inspection step had been signed and dated by the responsible qualified technician.

The inspector reviewed a revised report form and the report of a training session attended by the NDE personnel, these actions should prevent this omission in the future.

This area will be examined during a subsequent inspection.

D. Weld Control

1. Objectives

The objectives of this area of the inspection were:

- (a) To determine if the welding procedure specifications (WPS) used by manufacturer in production welding are being prepared, qualified and controlled in accordance with the manufacturer's QA program and applicable ASME Code requirements.

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- b. To determine if welding material purchase, acceptance, storage and handling is in accordance with the manufacturer's QA program and applicable ASME Code requirements.
- c. To determine if welders and welding operators are qualified in accordance with Section IX of the ASME Code and the manufacturer's QA program.
- d. To ascertain that the results of the above activities are properly documented, signed and dated.

2. Methods of Accomplishment

The preceding objectives were accomplished by a detailed review of the following documents:

- a. Welding Procedure No. 128 and the procedure qualification and verified that:
 - (1) The essential welding parameters were listed.
 - (2) All tests (nondestructive and mechanical) had been completed.
- b. Welder No. 84 qualification.
- c. Material Test Report No. 14 for weld material Lot 31816.
- d. Six (6) weld material withdrawal slips that included the S.O. number, weld number, weld material size and type, welder number, amount disbursed, amount returned and authorized signature.
- e. Process Sheet - S.O. 20105-N to determine the requirements for Weld No. 300.

3. Findings

No deviations or unresolved items were identified in this area of the inspection.

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E. Exit Meeting

The inspector conducted a meeting with the following management representatives at the conclusion of the inspection.

P. T. Irwin - President
E. J. Jaquay - Quality Assurance Manager
J. C. McArdle - General Manager
E. A. Harwart - QA Manager, W. J. Woolley Company

The following items were discussed:

1. Scope of the inspection.
2. Findings - Unresolved item identified in paragraph C.3.b.
3. The NRC inspection reporting method and distribution, including the company's opportunity to review the report for proprietary information and the placement of the inspection report and associated correspondence in the PDR.
4. White Book information and distribution.
5. The inspector stated that the reported deficiencies appear to be a result of poor workmanship and a lack of attention to details during the manufacturing, and no basis was identified to indicate that this was not an isolated core, and not a generic condition. The vendor management's comments were for clarification only.

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