

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

Report No. 99900052/80-01

Program No. 51300

Company: Crosby Valve & Gage Company
43 Kendrick Street
Wrentham, Massachusetts 02093

Inspection Conducted: May 7-9, 1980

Inspectors: William D. Kelley
William D. Kelley, Contractor Inspector
Vendor Inspection Branch

5/20/80
Date

Approved by: D. E. Whitesell
D. E. Whitesell, Chief
Components Section 1
Vendor Inspection Branch

5/20/80
Date

Summary

Inspection on May 7-9, 1980 (99900052/80-01)

Areas Inspected: Implementation of 10 CFR 50, Appendix B and applicable codes and standards including, design and document control, procurement control - evaluation of suppliers performance, control of special processes - special welding applications, manufacturing process control - machining, inspection and testing - testing of completed products, and audits - internal management. Also, performed review of vendor's activities and conducted exit interview. The inspection involved twenty (20) inspector-hours on site by one (1) NRC inspector.

Results: In the seven (7) areas inspected, no deviations or unresolved items were identified in five (5) areas. The following were identified in the remaining two (2) areas.

Deviation: Procurement Control - Evaluation of Suppliers Performance (Details, Paragraph D) Contrary to Criterion V of Appendix B, paragraph NCA-4134.5 of Section III to the ASME Quality Assurance Manual and Paragraph 18.10 of the ASME accepted Quality Assurance Manual deficiencies were identified on the Suppliers Qualification Survey Forms without requiring corrective action.

Unresolved Item: Manufacturing Process Control - Machining (Details, Paragraph F). Four of the threaded stud holes appeared to have reduced ligaments on body serial number N-90490-55-0114.

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DETAILS SECTION

A. Persons ContactedCrosby Valve & Gage Company

- P. Chase, Quality Assurance Engineer
- A. Feinberg, Project Engineer
- R. Friend, Principle Engineer
- *J. Greene, Quality Assurance Manager
- A. Nesta, Quality Engineering Technician
- J. R. Zahorsky, Chief Engineer, Safety Valves

*Denotes those persons who attended the Exit Interview (See paragraph I)

B. General Review of Vendor's Activities

1. The inspector verified there had been no change in the status of the ASME Certificates of Authorization, the authorized inspection agency and its authorized nuclear inspector as reported in NRC IE Report 99900052/79-01.
2. CV's contribution to the nuclear industry represents approximately twenty percent (20%) of its total workload.

C. Design Document Control1. Objectives

The objectives of this area of the inspection were to ascertain whether procedures had been developed and properly implemented to control the review, approval, release and issuance, of design documents in a manner consistent with NRC rules and regulations, and the vendor's commitments in the ASME accepted Quality Assurance Program.

2. Method of Accomplishment

The objectives of this area of the inspection were accomplished by:

- a. Review of the ASME accepted Quality Assurance Manual, QC-110, Revision 4
 - (1) Section III, "Customer Inquiry and Order Control,"
 - (2) Section IV, "Design Engineering Control," and

(3) Section XVI, "Documentation,"

to verify that the vendor had established procedures to prescribe a system for design document control.

b. Reviewed these Departmental Operating Instructions

(1) GE-40-3001, Revision 3, "Design Engineering Control - Section III Valves," and

(2) GE-40-3002, Revision 7, "Document Status Record,"

to verify that they had been prepared by the designated authority, approved by management, and reviewed by QA.

c. Review of documents referenced in paragraphs a. and b., to verify that it provided for identification of personnel responsible for preparing, reviewing, approving, and issuing design documents; and that the review and approval of significant changes were performed by the same personnel. Also, to ascertain whether minor changes to design documents, that do not require review and approval, are identified.

d. Review of Departmental Operating Instruction GE-40-3002, to verify that the distribution lists are current and that the proper documents are identified, accessible, and are being used.

e. Interviewed personnel to verify whether they were knowledgeable in the procedures applicable to design document control.

3. Findings

a. The inspector verified that procedures had been developed and properly implemented to control the review, approval release and issuance of design documents in a manner consistent with NRC rules and regulations and the vendor's commitments in the ASME accepted Quality Assurance Manual.

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

D. Procurement Control - Evaluation of Supplier Performance

1. Objectives

The objectives of this area of the inspection were to verify that procedures had been prepared and approved by the vendor to prescribe a system for evaluation of suppliers performance which is consistent with NRC rules, and the vendor's commitments in the ASME accepted Quality Assurance Program. Also, to verify that the procedures for evaluation of suppliers performance were being properly and effectively implemented by the vendor.

2. Method of Accomplishment

The objectives of this area of the inspection were accomplished by:

- a. Review of ASME accepted Quality Assurance Manual QC-110, Revision 4, Section XII, "Welding Control," and Department Operating Instruction QA-48-3004 Revision 1, "Supplier Surveys," to verify that the vendor had established procedures for evaluating suppliers, which is consistent with NRC rules and regulations and his commitments in the ASME accepted Quality Assurance Manual.
- b. Review of six (6) sets of documents applicable to three (3) suppliers to verify that the procedures, and necessary procurement documents, were available to the persons responsible for performing the quality affected activities, and that the procedures were properly implemented.
- c. Interviews with personnel to verify whether they were knowledgeable in the procedures applicable to evaluation of the supplier's performances.

3. Findings

- a. Deviation - See Enclosed Notice of Deviation
- b. Within this area of the inspection no unresolved items were identified

E. Control of Special Processes - Special Welding Applications

1. Objectives

The objectives of this area of the inspection were to verify that special welding specifications (cladding, hard surfacing, seal welding, and weld repair without postweld heat treatment) conform with the additional requirements established by ASME Code, Section III and IX, NRC rules and regulations, and the vendor's commitments.

2. Method of Accomplishment

The objectives of this area of the inspection were accomplished by:

- a. Review of the ASME accepted Quality Assurance Manual, QC-110, Revision 4

- (1) Section XII, "Welding Control," and

- (2) Section XV, "Heat Treating"

to verify that the vendor had established procedures to prescribe a system for the development and qualification of special welding specifications, and for qualifying welders and/or welding machine operators.

- b. Review of procedures HN-1240, Revision 4, "Hard Surfacing Procedure Specification" and W-13061, Revision 3, "Procedure Specification for Repair of Base Material by Welding," to verify the special requirements governing special welding application procedures and performance qualification imposed by ASME Code regarding test sample size, examination of test sample, and special essential variables are satisfied.

- c. Interviews with personnel to verify that they were knowledgeable in the procedures applicable to canopy welds.

3. Findings

- a. The inspector verified that special welding specifications for hard surfacing and weld repair without post weld heat treatment, conforms with the requirements established by ASME Codes, Section III and IX, NRC rules and regulations, and the vendor's commitments.
- b. The inspector verified that other special welds i.e. welding of bellows to valve parts, etc., are performed by subcontractors that have been surveyed, and approved, and placed on the approved vendors list in accordance with the ASME accepted Quality Assurance Program.
- c. Within this area of the inspection no deviations or unresolved items were identified.

F. Manufacturing Process Control - Machining

1. Objectives

The objectives of this area of the inspection were to verify that:

- a. The machining operations are performed under a controlled system of manufacturing, which is consistent with NRC rules and regulations, and the vendor's commitments in the ASME accepted Quality Assurance Program.
- b. The controlled system of manufacturing was effective in assuring product quality.

2. Method of Accomplishment

The objectives of this area of the inspection were accomplished by:

- a. Review of the ASME accepted Quality Assurance Manual, QC-110 Revision 4,

- (1) Section X, "Production Control," and

- (2) Section XI, "Process Control,"

to verify that procedures had been established to prescribe a system for the control of manufacturing operations.

- b. Review the following Departmental Operating Instructions:

- (1) PC-31-3002, Revision 1, "Processing of Valve Assembly and Test Instruction and the Factory Bill of Material"

- (2) PC-31-3004, Revision 2, "Processing of Manufacturing Route Sheets and Purchase Requisition Cards" and

- (3) PC-31-3005, Revision 0, "Manufacturing Route Sheet Control of Section III Orders;"

to verify that they had been prepared by the designated authority, approved by management, and reviewed by QA, and are consistent with NRC rules and regulations, and the vendor's commitments in the ASME accepted Quality Assurance Program.

- c. Review of the following documents for five (5) component parts;

- (1) Operation and routing sheets,

- (2) Drawings,

- (3) Receiving Logs, and

- (4) Certified Material Test Reports,

to verify that they provide drawing/document control in the shop, and also provides for part identification and traceability, in-process and final inspections, identification and segregation of defective items, the resolving of nonconforming items, and that the gages and measuring devices are under a controlled calibration system.

- d. Examine three (3) representative samples of finished machined parts to verify that they were properly identified and machined to conform to the drawings and specifications.
- e. Examined the documents for the following parts:
 - (1) Base-Shop Order N91199-35,
 - (2) Cylinder-Shop Order N92777-33, and
 - (3) Bonnet-Shop Order N90917-33

to verify compliance with applicable documentation requirements.

3. Findings

- a. The inspector verified that: The machining operations were performed under a controlled system of manufacturing which is consistent with NRC rules and regulations, and the vendor's commitments in the ASME accepted Quality Assurance Program.
- b. Within this area of the inspection no deviations were identified.
- c. Unresolved Item

The inspector reviewed the documentation of two 6" x 6" - 1500# x 600# 316 s/s Valve Bodies, S. O. Number N90490-55, and made the following observation:

- (1) The applicable Drawing (C-N90490-C) stated the drawing was supplemented by General Sheet Drawing Number GS-4.
- (2) Three (3) of the twelve (12) 1 3/8" - 8 UN - 3B and one (1) of the eight (8) 1" - 8UN - 3B threaded stud holes of Body Serial Number N-90490-55-0114 had what appeared to be reduce ligaments size on the outside flange diameter of the body.
- (3) General Sheet Drawing Number GS-4 was not available at the workstation or in the Chief Engineer office.

The inspector expressed his concern to management and they concurred that an engineering evaluation of the reduced

ligaments would have to be made and a "Hold" tag was placed on the valve bodies. Time did not permit the engineering evaluation to be completed prior to the exit interview. General Sheet Drawing Number GS-4 and Drawing C-N90490-C will be reviewed with the engineering evaluation on a subsequent inspection.

G. Testing of Completed Products

1. Objectives

The objectives of this area of the inspection was to verify that products are assembled in accordance with approved procedures and drawings, all material complied with the specifications, and the functional test of the products were performed.

2. Method of Accomplishment

The objectives of this area of the inspection was accomplished by:

a. Review of test documentation to verify:

- (1) test procedures and/or instructions were available at the test station and had been approved by engineering and quality assurance.
- (2) The test had been performed in accordance with the procedures and/or instructions.
- (3) Changes made to test procedure had been approved by engineering and quality assurance and they had been followed.
- (4) The test data was documented and dispositioned in accordance with the procedure and/or instructions.
- (5) The limits of acceptability of test results had been established and were being used for rejection or acceptance of the product.

b. Review of test instrumentation used to verify they are as specified by the procedure and/or instruction and were in calibration.

3. Findings

- a. The inspector verified that products are assembled in accordance with approved procedures and drawings, and that all materials complied with the specifications, and that the functional test of the products had been performed as required.

b. Followup Item

Only one "NV" stamped safety valve was observed being tested during the inspection of this area of the inspection. The inspector will reinspect the testing of completed products on a subsequent inspection after the vendor has completed the installation, and functional testing of his new high capacity safety relief valve test facility, and has commenced production testing.

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

H. Audits - Internal Management

1. Objectives

The objectives of this area of the inspection were to verify that:

- a. Procedures had been prepared and approved by the vendor to prescribe a system for auditing - internal management which is consistent with NRC rules and regulation, and the vendor's commitments in the ASME accepted Quality Assurance Program.
- b. The audit procedures are being properly and effectively implemented by the vendor.

2. Method of Accomplishment

The objectives of this area of the inspection were accomplished by:

- a. Review of the ASME accepted Quality Assurance Manual, QC-110, Revision 4,
- (1) Section I, "Organization and Responsibility for the Quality Assurance Program," and
- (2) Section XIX, "Quality Assurance Audits,"

to verify the vendor had established procedures which prescribed a system for internal management audits.

- b. Review of the following documents:

- (1) Department Operating Instructions QA-48-3003, "Quality Assurance System Audits," and

- (2) Internal Training Program Procedure ITP-13, Revision 2, "Training Program for Auditors Performing Internal QA Audits"

to verify that they had been prepared by the designated authority, approved by responsible management, and reviewed by the quality assurance function.

- c. Review of the following documents referenced in paragraph a. and b. to verify that they identify the organization responsible for auditing, establishes the audit personnel qualifications, provides for training and indoctrination of audit personnel, establishes the essential elements of the audit system, provides for audit schedules to assure coverage of all elements of the quality assurance program, and requires reporting to and follow-up corrective action by both the audited and the auditing organizations.
- d. Review of twelve (12) audit reports to verify whether the procedures and the necessary audit system documents, are available to the auditing personnel; and whether the procedures are being properly and effectively implemented.
- e. Review of Approved Suppliers List

3. Findings

- a. The inspector verified that:
- (1) Procedure had been prepared and approved by the vendor which prescribes a system for auditing consistent with NRC rules and regulations, and the vendor's commitments in the ASME accepted Quality Assurance Program.
 - (2) The audit procedures are being properly and effectively implemented by the vendor.
- b. Within this area of the inspection no deviation or unresolved items were identified.

I. Exit Interview

At the conclusion of the inspection on May 9, 1980 the inspector met with the company's management, identified in paragraph A, for the purpose of informing them as to the results of the inspection. During this meeting the identified deviation was discussed and the evidence which supported the finding was identified.

The company's management acknowledged the findings and supporting evidence as being understood, but had no additional comments.