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

Report No. 99900722/80-01 Program No. 51300

Company: Robertshaw Controls Company
Fulton Syphon Division
2318 Kingston Pike S.W.
Knoxville, TN 37901

Inspection Conducted: June 23-24, 1980

Inspector: Wm D Kelley 7/15/80
William D. Kelley, Contractor Inspector Date
Vendor Inspection Branch

Approved by: D E Whitesell 07/15/80
D. E. Whitesell, Chief Date
Components Section I
Vendor Inspection Branch

Summary:

Inspection on June 23-24, 1980 (99900722/80-01)

Areas Inspected: Implementation of 10 CFR 50, Appendix B and applicable codes and standards including, quality assurance program review, and manufacturing process control; also, reviewed vendor's activities and conducted an initial management meeting and an exit interview.

The inspection involved twelve (12) inspector-hours on site by one (1) NRC inspector.

Results: In the three (3) areas inspected, no deviations or unresolved items were identified in two (2) areas. The following were identified in the remaining area:

Deviation: Manufacturing Process Control - (Details - Paragraph D.3.) Contrary to Criterion V of Appendix B to 10 CFR 50, paragraph NCA-4134.5 of Section III to the ASME Code, and paragraph 5.4.2 of Section V to the ASME accepted Quality Assurance Manual the quality control department had developed Master Checklist complete with data and approval signatures and some of the data was revised using "white out," to conform with the data on Process and Cost Cards for new order without changing the revision designation and the revision reviewed and approved by the individual who performed the initial approval.

Unresolved Item: Manufacturing Process Control - (Details - Paragraph D.3.) Flanges for the 5"-150 pound ASME "N," Class 3, carbon steel regulating valve bodies, had been backfaced in accordance with RCC drawing N-20135-D1, Revision B, which did not specify a radius at the flange hub. Time did not permit a review of the design calculations to verify whether they meet ASME Section III requirements.

DETAILS

A. Persons Contacted

Robertshaw Controls Company, Fulton Syphon Division ((RCC)

*J. V. Giesler Jr, Quality Engineer
*T. T. Howell, Quality Manager
*I. O. Johnson, Vice President and General Manager
B. Lancaster, Engineer

*Denotes those persons who attended the exit interview (See Paragraph E).

B. Initial Management Meeting

1. Objectives

The objectives of this meeting were to accomplish the following:

a. To meet with the Robertshaw Controls Company (RCC) management and those persons responsible for the administration of the ASME accepted Quality Assurance Program, and to establish channels of communication.

b. To determine the extent of the company's involvement in the commerical nuclear business.

c. To explain NRC direct inspection program including the LCVIP organization, VIB inspection method and documentation.

2. Method of Accomplishment

The preceding objectives were accomplished by a meeting on June 24, 1980. The following is a summary of the meeting:

a. Attendees were:

J. V. Giesler Jr, Quality Engineer

T. T. Howell, Quality Manager

I. O. Johnson, Vice President and General Manager

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

c. The VIB function was described including the reasons for its establishment, its objectives, its implementation structure, and the more significant program changes.

d. The conduct of VIB inspections was described, and how the inspections results are documented and reported and what the responses to reports, should include. How proprietary information is handled, the Public Document Room, and the White Book, were also explained.

e. The company's contribution to the nuclear industry was discussed including current and projected activities, the status of the ASME certification of authorization, and the third party inspection services.

3. Results

Management acknowledged the NRC presentation as being understood by them, and provided the inspector with the following information concerning the company's activities and products.

a. The RCC holds valid ASME Certificates of Authorization numbers N-1214, and N-1215, for Class 1, 2, and 3 valves, valve parts and piping subassemblies. The certificates do not specify range of sizes, or pressure classes, and they expire on September 8, 1981.

b. The RCC is responding to invitations to bid on a selective basis and presently limit their responses to Class 3 valves.

c. The Authorized Inspection Agency is Travelers Indemnity Company, and the Authorized Nuclear Inspector provides inspection services on an itinerent basis.

d. RCC's contribution to the nuclear industry represents approximately one percent (1.0%) of its total workload.

C. QA Program Review

1. Objectives

The objectives of this inspection were to ascertain whether the QA Program has been documented in writing, and if properly implemented, will ensure that the specified quality of completed components has been achieved in compliance with NRC rules and regulations, code and contract requirments and the commitments in the Quality Assurance

Manual. Also, ascertain whether the program provides for the following:

a. Management's policy statements concerning QA.

b. Delineates how the QA organization is structured, to achieve appropriate independence from scheduling and costs, the freedom and independence to identify quality problems, initiate appropriate resolutions, and verify corrective action.

c. Whether the duties and authority of the QA staff is clearly delineated in writing, and that they have access to a level of management that can ensure effective implementation of the QA Program elements, and to enforce positive and timely corrective action.

d. Detailed written procedures are properly reviewed, approved, released, and issued to control quality activities, as appropriate.

e. A training and indoctrination program to improve or maintain the proficiency of personnel performing quality activities, and personnel verifying that quality activities have been correctly performed.

2. Method of Accomplishment

The preceding objectives were accomplished by:

a. Review of the ASME accepted Quality Assurance Manual.

b. Review of appropriate organization charts.

c. Review of the documents concerning the authority duties, independence and freedom of the Quality Assurance staff.

d. Review of Statement of Authority and Responsibility, dated August 1, 1978, signed by I. O. Johnson, Vice President and General Manager.

e. Review of documents to verify that they had been reviewed and approved by authorized personnel.

f. Review of the training and indoctrination program requirements and documentation.

g. Interviews with cognizant personnel.

h. Observation of work and test progress.

3. Findings

The evidence demonstrates that QA Program has been documented in writing and clearly defines the duties, authority, and organizational independence and freedom of the QA staff. Detailed written implementing documents are appropriately reviewed, approved, released, and issued by authorized personnel. The QA staff has access to a level of management to ensure effective implementation of the program and timely and positive corrective action of enforcement items. A viable training and indoctrination program has been provided for upgrading, and maintaining, the proficiencies of personnel involved in quality activities.

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 vendor's manufacturing processes were:

a. Performed under a controlled system which meets the NRC rules and regulations, and the vendor's commitments in his ASME accepted Quality Assurance Program.

b. 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, dated August 1, 1978.

(1) Section 6, "Document Control" (Within Production Control Department,")

(2) Section 9, "Control of Manufacturing Process," and

(3) Section 12, "Control of Measuring and Test Equipment;"

To verify that procedures had been established which prescribes a control system of the manufacturing processes.

b. Review of the sections of the ASME accepted Quality Assurance Manual reference in paragraph a. to verify that the control system requies shop travelers or process control check lists, to be prepared which identifies the document numbers and revisions to which the process must conform. Also to verify that all processes and tests are to be performed by qualified personnel using qualified procedures.

c. Review of the shop traveler, or process control check lists, to verify that spaces are provided for reporting the results of specific operations, or reference to other documents where the results are maintained. Also that it includes space for the signoff by the vendor, indicating the date on which the operation or test was performed, and space for signoff and date, by the authorized nuclear inspector, to document his acceptance of activities that he has selected as mandatory hold points.

d. Review of six (6) shop travelers to verify their compliance with the above referenced procedures, and the overall QA Program documentation requirements, including the establishment of mandatory hold points by the authorized nuclear inspector.

e. Interviews with personnel to verify they are knowledgeable in the procedures applicable to manufacturing process control.

3. Findings

a. The inspector verified that the vendor's manufacturing processes are performed under a controlled system which is consistent with the NRC rules and regulations and the vendor's commitments.

b. The inspector was informed by RCC that the ASME required nameplate are tack welded to the pressure containing wall of the 5"-150 pound, Section III "N," Class 3, carbon steel valve bodies after hydrostatic test at the request of the authorized nuclear inspector. RCC stated that the authorized nuclear inspector required that all of the valves be available for his visual inspection during the hydrostatic tests. The ASME required nameplates are tack welded to a raised boss on the valve bodies by a qualified welder in accordance with an approval and qualified procedure.

Paragraph NCA-8311 of Section III of the ASME Code states in part, ". . . the nameplate shall be attached by a method . . . that will not affect the structural integrity of the item. . . ." The ASME Code does not address the attachment of the nameplate by welding; however, after a discussion RCC stated that they would evaluate other means of attaching the nameplate to the valves in question.

c. The General Electric Company (GE), San Jose, California placed a Purchase Order Number 334-L9008, Revision 00 with RCC for two thousand (2000) air actuated scram valves to be delivered by December 1980. The valves are to be manufactured in accordance with ANSI B31.1.0, Power Piping Code and GE drawings 767E652P001, Revision 3 and 767E653P001, Revision 2, and shipped to GE, Wilmington, N.C. where they are to be installed in the Hydraulic Control Units. The Purchase Order states that 10 CFR Part 21, and GE Quality Control Plan A57, Revision 4, applies; however, none of the purchase documents specify a seismic requirement.

The NRC, IE RIV, Vendor Inspection Branch Program Evaluation Section will be informed of this finding to followed up at GE-San Jose.

d. Deviation

Paragraph 5.4.2 of the ASME accepted Quality Assurance Manual states, "When the Check list is revised, the revision designation shall be changed and the revision reviewed and approved by the individual who performed the initial approval."

The Quality Control Department is required by the ASME accepted Quality Assurance Manual to prepare a Checklist after each Process and Cost Card has been reviewed with the authorized nuclear inspector and his hold points established. Contrary to these requirements, the Quality Control Department had developed Master Checklist complete with data and approval signatures. Some of the data on the Master Checklist was changed using "white out" to conform with the Process and Cost Card for a new shop order and reproduced to produce an original Checklist. The original Checklist was stamped with "Nuclear" in red and assigned a serial number.

Prior to the exit interview the quality engineer issued an Interdepartmental Correspondance dated June 24, 1980, requiring the following:

1. The Master Checklist is not to be signed or approved.

2. A Submaster is to be reproduced from the Master, and after the variable data has been entered, the submaster shall be signed and approved by the individual who performed the initial approval.

3. If a change should be required on the Submaster, the change must be fully annotated, signed and dated.

4. Corrections to entries may be made only by drawing a single line through the error, entering the corrected information, and initialing and dating the correction.

The vendor's corrective and preventive actions were completed prior to the exit interview and the inspector had no comment: therefore, the deviation is closed and no response from the vendor is required.

e. Unresolved Item

The inspector observed that the flanges for the 5"-150 pound ASME "N," Class 3, carbon steel regulating valve bodies had been backfaced in accordance with RCC drawing N-20135-D1, Revision A, which did not specify a radius at the flange hub. The finding was discussed with the design engineer; however, time did not permit a review of the design calculations to verify whether they meet ASME Code requirements. The inspector will review the design calculation flange design for conformance to the requirements of the ASME Code, during a subsequent inspection.

F. Exit Interview

At the conclusion of the inspection on June 24, 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 findings were identified.

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