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

Report No. 99900355/80-01 Program No. 51300

Company: Hirata Valve Industry Co., Ltd.
15, Hisamoto, Takatsu-Ku,
Kawasaki-City, Kanagawa-Pref., Japan

Inspection Conducted: January 21-25, 1980

Inspectors: I. Barnes 2-20-80
I. Barnes, Contractor Inspector Date
Components Section II
Vendor Inspection Branch

Approved by: D M Hunnicutt 2/21/80
D. M. Hunnicutt, Chief Date
Components Section II
Vendor Inspection Branch

Summary:

Inspection on January 21-25, 1980 (99900355/80-01)

Areas Inspected: Implementation of 10 CFR 50, Appendix B, criteria and applicable codes and standards; including action on previous inspection findings, testing of completed products, equipment calibration, non-conformances and corrective action, and handling, storage and shipping. The inspection involved forty (40) inspector hours on site.

Results: In the five (5) areas inspected, no deviations or unresolved items were identified in one (1) area; with the following deviations and unresolved items identified in the remaining areas:

Deviations: Action on Previous Inspection Findings - Revised welding procedure specifications not submitted to customer for approval in accordance with corrective action date commitments (Notice of Deviation, Item A.).

Equipment Calibration - HV QA program is not in accordance with Criterion V of 10 CFR 50, Appendix B, and paragraph NCA-4134.12 in Section III of the ASME Code, with respect to assuring determination of required corrective action for items on which manufacturing tools had been used in an activity affecting quality, that were subsequently found to be discrepant during a calibration check (Notice of Deviation, Item B). The failures to

calibrate a certain device in accordance with applicable calibration method requirements and to request disposition for a device found to exceed the permitted tolerance are not in accordance with Criterion V of 10 CFR 50, Appendix B, and HV Procedure No. GNAF-37, Revision 1 (Notice of Deviation, Item C).

Handling, Storage and Shipping - Verification of required cleanliness level of a certain valve was not performed after hydrostatic pressure test in accordance with the requirements of Criterion V of 10 CFR 50, Appendix B, and HV Procedure No. NAF-21, Revision 1 (Notice of Deviation, Item D.). Examination and reinspection of certain valves with respect to required cleanliness level could not be verified as having been performed prior to packaging, as required by Criterion V of 10 CFR 50, Appendix B, Section 4 of the QA Manual and HV Specification No. NAF-33, Revision 2 (Notice of Deviation, Item E).

Unresolved Items: Nonconformances and Corrective Action - A review of nonconformance trend analysis reports could not be effectively made, owing to the documents being available only in the Japanese language (Details, E.3.b).

Handling, Storage and Shipping - Inability to verify the origin and composition of a grease film, which was present after hydrostatic test on the interior surfaces of an austenitic stainless steel gate valve, adjacent to the valve weld preparations. (Details, F.3.b).

DETAILS SECTION

A. Persons Contacted

*T. Hirata, President
*M. Hirata, Vice President (Marketing)
*Y. Hirata, Vice President (Kawasaki Division)
*S. Tanimoto, QA Manager
K. Shimizu, Operations Manager
*S. Iizuka, Key Person, Atomic Power Team
*T. Hatakeyama, Quality Engineering (Acting as Translator)
S. Hirano, Inspection Section Chief
H. Toyota, Manufacturing Section Chief
T. Sato, Inspection Section Group Foreman
R. Saito, Quality Engineering (Documentation)

*Denotes those persons attending exit meeting

B. Action on Previous Inspection Findings

1. (Closed) Deviation (Item A, Notice of Deviation, Inspection Report No. 79-02): Vendor request for correction of the WPS No. shown on a certain Weld Repair Record was not attached to the Weld Repair Record as committed by the Hirata Valve Industry Co. (HV) corrective action response letter of April 12, 1979.

   The inspector verfied that the vendor statement had been attached to the specific Weld Repair Record, committed training and indoctrination had been performed and that the committed use of Corrective Action Reports (for verification of implementation of corrective actions to audit findings) was in effect.

2. (Closed) Deviation (Item B, Notice of Deviation, Inspection Report No. 79-02): Current Welding Group Foreman checks did not assure welder compliance with the WPS and DWP, as evidenced by observation of travel speed and tungsten electrode extension values being used in production hard surfacing operations, that were in excess of those permitted by the applicable DWP.

   This finding has been closed on the basis that the two WPS were revised, committed training and indoctrination had been performed, audits had been conducted by the Manufacturing Section Chief and there was documented evidence of ongoing welding surveillance by QC Inspection personnel. The failure to submit the revised welding procedure specifications by the committed date for approval, is reflected in a further deviation from commitment. (See Notice of Deviation, Item A).

3. (Closed) Deviation (Item C, Notice of Deviation, Inspection Report No. 79-02): Documentation of liquid penetrant practical examination administered to two Level II personnel did not contain either a description of the test specimen used, or the results with respect to percentage of known indications found.

   The inspector verfied that a new record form was in use and that the personnel had been re-examined to demonstrate compliance with the qualification requirements of SNT-TC-1A.

4. (Closed) Deviation (Item D, Notice of Deviation, Inspection Report No. 79-02): Approval of a vendor detail radiographic procedure that was not in accordance with the penetrameter selection and geometric unsharpness requirements of HV Procedure NAF-14.

   The inspector verified that the committed revisions to HV Procedure NAF-14 had been made, the revised procedure submitted for customer approval and the committed personnel training actions completed.

5. (Closed) Deviation (Item E, Notice of Deviation, Inspection Report No. 79-02): Acceptance of a vendor Certified Material Test Report, which demonstrated that the vendor had exceeded the postweld heat treatment qualification time of the welding procedure used for performing casting welding repairs.

   The inspector verfied that the vendor had been contacted and an additional procedure qualification performed with increased postweld heat treatment qualification item. This procedure qualification had been reviewed and accepted by HV as committed and the training actions completed.

6. (Closed) Deviation (Item F, Notice of Deviation, Inspection Report No. 79-02): Resurvey of a listed qualified vendor not performed to verify corrective action for identified QA program deficiencies and limitations on use of two vendors not identified in the Qualified Vendors List.

   The inspector verified, that resurvey had been performed of vendors with previously identified deficiencies, appropriate corrections of the Qualified Vendors List had been made to show limitations on vendor use, training had been given to Quality Engineering personnel and that a new form of resurvey report had been established.

7. (Open) Unresolved Item (Details, E. 3. b., Inspection Report No. 79-02): System used for accomplishment and control of changes in procurement requirements is not addressed by the QA program.

   This item remains unresolved, in that Revision 8 of the QA Manual had not been issued as of this inspection.

8. (Open) Unresolved Item (Details, F.3.b, Inspection Report No. 79-02): Latitude given by QA Manual, with respect to qualification without survey of vendors providing non-code items and services, is not in accordance with 10 CFR 50, Appendix B, relative to required procurement controls for non-pressure boundary safety related items.

   This item remains unresolved, in that formalized definition of valve safety significant items and applicable procurement controls had been made by HV as of this inspection.

C. Testing of Completed Products

1. Objectives

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

   a. A procedure had been prepared for the hydrotesting of valves, which was consistent with Code, contract and regulatory requirements.

   b. Hydrotesting was performed by trained personnel in accordance with procedure requirements.

2. Method of Accomplishment

   The preceding objectives were accomplished by:

   a. Review of Section 4, Revision 7, of the QA Manual, "Process Control, Handling, Storage, Preservation, and Shipping."

   b. Examination of HV Specification No. NAF-24, Revision 3, "Hydrostatic Pressure and Seat Leakage Tests," with respect to compliance with:

      (1) ASME Code requirements for hydrostatic testing.

(2) Customer technical requirements contained in Division 15 of Specification No. 9779-41 Quality Class 1.

c. Examination of HV Specification No. NRS-0002, Revision 3, "Torquing Procedure for Bolting," relative to valve assembly prior to test.

d. Observation of hydrostatic testing of a 2½ inch Class 2, SA 351 CF8 gate valve, ID No. N0182A, WPPSS Unit 4, with respect to:

(1) Availability of Specification No. NAF-24, Revision 3, at the test station and verification of approval status.

(2) Availability of the required Engineering drawing, No. NT 20043, Revision 3, at the test station.

(3) Verification that testing was performed in accordance with the acceptance pressure and time requirements of Specification No. NAF-24, Revision 3.

(4) Adequacy of method of measurement of seat leakage and verification that the results obtained were in compliance with Division 15 of Customer Specification 9779-41.

(5) Verification that the recorded temperature of the the hydrotest water was accurate and in accordance with Specification No. NAF-24, Revision 3.

(6) Review of demineralized water chemistry records for 1979, to verify compliance with QA program chemistry and frequency of test requirements.

(7) Use of pressure gages with ranges in accordance with ASME Code requirements, that had been calibrated prior to the current series of hydrotests.

(8) Verification that the QA program required a re-check of pressure gage accuracy on completion of the hydrotest series.

(9) Evidence that hydrotest personnel had received training relative to performance of hydrotesting.

(10) Verification that the test data was documented and that the QA program made provisions for review of test data.

e. Verification that hydrotesting was a mandatory Authorized Nuclear Inspector hold point for valves with inlet size over four (4) inch nominal pipe size.

3. Findings

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

D. Equipment Calibration

1. Objectives

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

a. A system had been established to assure that tools, gages, instruments and other measuring devices used in activities affecting quality are properly controlled, calibrated and adjusted at specified periods to maintain accuracy within required limits.

b. The system was adequately documented with approved procedures and that these procedures were being implemented.

2. Methods of Accomplishment

The preceding objectives were accomplished by:

a. Review of Section 8, Revision 7, of the QA Manual, "Measuring And Test Equipment Control."

b. Review of Section 3, Revision 7, of the QA Manual, "Procurement, Vendor Evaluation, Receiving Inspection and Material Control," in terms of applicable requirements for procurement of calibration services.

c. Review of Procedure No. GNAF-37, Revision 1, "Calibration Procedure."

d. Review of Procedure No. HSS-001, Revision 1, "Calibration Control Procedure for measuring devices used only for manufacturing purposes."

e. Examination of calibration status and records for the two (2) pressure gages observed in use for hydrostatic testing.

f. Examination of the calibration status and records for one (1) screw pitch gage, one (1) dial caliper, and one (1) thermometer.

g. Review of actions taken and reasons for scrapping six (6) pressure gages, one (1) vernier caliper and one (1) thermometer.

h. Examination of calibration controls applied to torque wrenches used in valve assembly by manufacturing personnel.

i. Review of system used to correlate identity of manufacturing items with gages used for inspection, to provide the capability of identifying items inspected with a gage subsequently found to be discrepant.

j. Review of calibration controls applicable to calibration services provided by other companies.

3. Findings

a. Deviations from Commitment

(1) The QA program calibration control procedure GNAF-37, Revision 1, references that measuring tools and instruments used in manufacturing processes, which are not used for inspection purposes, are controlled in accordance with the requirements specified in procedure HSS-001, Revision 1. This procedure is not, however, in full accordance with paragraph NCA-4134.12 in Section III of the ASME Code, in that it does not require any determination of corrective action for items on which tools were used by manufacturing personnel in an activity affecting quality, that were found during a subsequent calibration check to be discrepant.i.e., Paragraph 4.5 in procedure HSS-001, Revision 1, states, "For devices failed in calibration, the device control clerk shall further check the device for accuracy, and make

a recommendation to the Manufacturing Section Chief for disposal of those devices as scrap or information use only, depending on the accuracy condition. Upon receipt of approval from the Manufacturing Section Chief, the device control clerk shall either identify devices for information use with yellow marking, or attach a scrap tag to the device."

Tools such as torque wrenches are used by manufacturing personnel in an application not subject to verification or independent check of the activity by QC Inspection personnel. Detection of the use of incorrect torque valves for assembly bolting, resulting from discrepant tools, would thus not be expected (See Notice of Deviation, Item B).

(2) See Notice of Deviation, Item C.

b. Unresolved Items

None

c. Comments

The documented QA program requires clarification with respect to approval and control of vendors providing calibration services. The program permits use of Japanese Government institutions for calibration services without a survey being required, but is silent relative to the use of equipment manufacturers for similar services. Manufacturers are being used, however, to perform calibration of equipment produced by them, and in many cases without being identified as an approved vendor on the Approved Vendors List. It was additionally noted that calibration services were being procured from outside organizations without the use of a formal document such as a purchase order, and without clear evidence of the vendor's understanding that HV should be contacted if equipment was found to be outside of the specified tolerance on initial check.

E. Nonconformances and Corrective Action

1. Objectives

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

a. A system had been established for the control of nonconformances and for assuring effective corrective actions.

b. The system was implemented.

2. Method of Accomplishment

The preceding objectives were accomplished by:

a. Review of Section 10, Revision 7, of the QA Manual, "Nonconformity Control."

b. Review of Section 12, Revision 6, of the QA Manual, "Corrective Action And Trend Analysis."

c. Review of procedure No. GNAF-69, Revision 0, "Trend Analysis Procedure."

d. Examination of thirty (30) Disposition Orders with respect to:

(1) Identification of item.

(2) Discription of nonconformance and identify of reporting party.

(3) Identification of party responsible for the nonconformance and party responsible for resolution.

(4) Verification that proposed dispositions were subject to QA program required reviews and that the dispositions were in accordance with ASME Code requirements.

(5) Evidence of Authorized Nuclear Inspector cognizance of nonconforming conditions.

(6) Performance of corrective action measures in accordance with approved dispositions.

e. Review of trend information for 1977, 1978 and the first six months in 1979.

f. Verification of management participation in nonconformance report and corrective action review.

3. Findings

a. Deviation From Commitment

None

b. Unresolved Items

An effective review of trend analysis reports could not be made relative to QA program commitments and the criteria and methods used for analysis and reporting, owing to the documents being available only in Japanese. This item is considered unresolved pending availability of an English language translation.

F. Handling, Storage and Shipping

1. Objectives

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

a. Procedures had been established for handling, interim storage, packaging and shipment of parts and components and that the procedures were consistent with applicable regulatory, code and contract requirements.

b. The procedures were effectively implemented.

2. Method of Accomplishment

The preceding objectives were accomplished by:

a. Review of Section 4, Revision 7, of the QA Manual, "Process Control, Handling, Storage, Preservation, And Shipping."

b. Review of Specification No. NAF-33, Revision 2, "Handling, Storage And Shipping Procedure On Nuclear Valves For WPPSS Nuclear Projects No. 1 And 4."

c. Review of procedure No. NAF-21, Revision 1, "Cleaning Procedure."

d. Observation of storage practices prior to packing for shipment.

e. Observation of surface cleanliness and dryness of valves that had been subjected to hydrostatic test.

f. Review of Manufacturing Order (MO) No. N0215-AS, Revision 1, which was applicable to eight (8) SA 216, Grade WCB, Class 3 4 inch 150 lb. gate valves that had been packed for shipment.

g. Review of MO No. N0184-AS, Revision 0, which was applicable to Valve I.D. No. N0184A, that was a 3 inch 2500 lb. Class 2 SA 351 CF8 gate valve observed in the group referenced in e. above.

h. Review of hoist inspection and handling controls.

i. Verification of use of correct desiccants and tapes in preparation operations for shipment.

3. Findings

a. Deviations From Commitment

(1) See Notice of Deviation, Item D.

(2) After requesting to see records of the result of QE examination of Valve I.D. Nos. N0215 A-H, the inspector was presented with a HV Niigata factory record (where painting operations were performed), showing that the valves had been inspected for dryness. The record, however, had been prepared by manufacturing personnel and not by QE personnel and did not indicate an examination had been performed relative to a required Class C cleanliness. No other record was made available to the inspector, which would confirm that these valves had been inspected with respect to required cleanliness requirements, prior to capping, sealing and placing in a shipping case. (See Notice of Deviation, Item E).

b. Unresolved Items

In response to questions concerning the origin and identify of the grease film present on valve interior surfaces subsequent to hydrostatic pressure test, the inspector was informed that it was most probably a silicone grease that was used for sealing purposes in the hydrostatic pressure test. No records could be located during the time remaining in the inspection, that would identify the chemical composition of this material. This item is considered unresolved pending verification of the origin of the contaminant and establishment of its specific composition.

G. Exit Meeting

A post inspection [illegible] was held on January 25, 1980, with the management represe[illegible]denoted in paragraph A. above. The inspector summarized the scope and findings of the inspection, with particular emphasis being placed on the failure to comply with a corrective action commitment and the programmatic aspects of observed deficiencies in verification of required cleanliness levels. Management had no questions with respect to the findings as presented to them and stated their commitment to and support of the QA program.