

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

Report No. 99900086/80-02

Program No. 51300

Company: Hopkins Limited
Britannia Works
P.O. Box B27
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Inspection Conducted: October 20-24, 1980

Inspector: L. E. Ellershaw 12/4/80
L. E. Ellershaw, Contractor Inspector
Components Section II
Vendor Inspection Branch
Date

Approved by: I. Barnes 12/4/80
I. Barnes, Chief
Components Section II
Vendor Inspection Branch
Date

Summary

Inspection conducted October 20-24, 1980 (99900086/80-02)

Areas Inspected: Implementation of 10 CFR 50 Appendix B criteria and applicable codes and standards including: action on previous inspection findings; item requiring follow-up inspection; control of nonconformancies and corrective action; manufacturing process control, and follow-up of IE Circular 77-05. The inspection involved a total of 36 inspector hours on site by one NRC inspector.

Results: In the five areas inspected, three deviations from commitment were identified and two previous inspection findings remain open. There were no unresolved items.

Deviations: Item Requiring Followup Inspection - Manufacturing Orders did not provide required information with respect to use of a design concession (Notice of Deviation, Item A.1).

Control of Nonconformances and Corrective Action - certain nonconforming items were not tagged with a Hold Tag (Notice of Deviation, Item B.).

Manufacturing Process Control - A Manufacturing Order did not provide required information with respect to correct applicable drawing revision (Notice of Deviation, Item A.2.). A valve body was moved to an operation without the preceding operation being stamped/signed (Notice of Deviation, Item C.).

DETAILS SECTION

(Prepared by L. E. Ellershaw)

A. Persons Contacted

A. Barker - Quality Assurance Engineer
R. Barrow - QA Manager
J. K. Clayton - Sr. Designer
G. Dyson - Welding Foreman
R. G. Evans - QA Assistant
D. Fryer - Quality Assurance Engineer
R. A. Grimston - Chief, Design Manager
D. Haigh - Foreman, Standards Room
P. E. Holt - Quality Assurance Executive
H. Robinson - Chief, QC Inspector
S. Thomas - Welding Engineer

B. Action on Previous Inspection Findings

1. (Closed) Deviation (Item A, Notice of Deviation, Inspection Report No. 80-01): This item dealt with certain Manufacturing Orders not providing all of the information required to enable satisfactory control of shop floor production and testing.

Hopkinsons, Limited (HL) have implemented their committed corrective action in that all operation charts were reviewed and corrected where necessary, and a new procedure was generated and referenced on the Special Test Specifications.

2. (Closed) Deviation (Item B, Notice of Deviation, Inspection Report No. 80-01): This item dealt with a torque wrench not being identified, calibrated or controlled, and the procedure dealing with calibration of torque wrenches did not define the applicable check method or required accuracy.

HL have implemented their committed corrective action, in that the torque wrench was identified and calibrated. A procedure was generated, which specifies the method of checking and the standard of accuracy. In addition, all new measuring equipment is routed to the Standards Room for verification and recording.

3. (Closed) Deviation (Item C, Notice of Deviation, Inspection Report No. 80-01): This item dealt with radii being created by flange back facing operations, which were a function of tool size and were contrary to the radius requirement of the applicable Engineering drawings.

HL implemented the committed corrective actions in that a Design Concession had been generated by the Design Office. This established that the smaller radii than that specified would not result in unacceptable stress concentrations. All castings, subjected to flange machining operations, should now be inspected against the drawing or Design Concession.

However, the drawings or Manufacturing Orders do not reference or include the Design Concession. Therefore, a deviation from commitment has been identified.

(See Notice of Deviation, Item A.1. and Details Section, paragraph C.3.a.)

4. (Closed) Deviation (Item B, Notice of Deviation, Inspection Report No. 80-01): This item dealt with failing to maintain batch identity of electrodes in the same holding oven.

HL implemented their committed corrective action by removing and scrapping the unidentified electrodes. Observation of holding ovens showed that all electrodes were identified and separated.

5. (Closed) Deviation (Item E, Notice of Deviation, Inspection Report No. 80-01): This item dealt with Inspectors not being tested to Jaegar No. 1 letters during near distance acuity vision tests. HL, subsequently produced records which show that the Inspectors are tested to Jaegar No. 1 letters.

6. (Closed) Deviation (Item F, Notice of Deviation, Inspection Report No. 80-01): This item dealt with castings proceeding to the next operation without having the preceding operation signed-off. HL have implemented their committed corrective action in that the specific check-off lists were corrected, and a review of valve body castings and their respective documentation showed that all operations are being signed-off prior to moving castings to next operations.

7. (Open) Follow-up Inspection Item, Details Section I, paragraph D.3.b. (Inspection Report No. 80-01): Section 12 of the QA Manual discusses the mechanics and constitution of a Quality Corrective Action Committee. Review of the minutes of meetings of this committee shows little documented basis, however, to support a premise that an analytical evaluation is being made of quality trends or the reasons for non-conformances. This subject will be evaluated in greater depth at a future inspection.

8. (Resolved) Comment, Detail Section II, paragraph C.3.c. (Inspection Report No. 80-01):

This comment had to do with the HL practice of not using a lead letter B to check on back-scattered radiation.

A memo dated July 3, 1980, was issued requiring a documented check of back-scattered radiation every six months, traceable to a given film and casting. The inspector reviewed five films that were part of the check conducted on July 30, 1980, and there was no indication of back-scattered radiation.

9. (Closed) Deviation (Item B, Notice of Deviation, Inspection Report No. 79-02): This item had been left open because the inspector was unable to verify committed preventive action (use of a Check List).

HL have implemented their committed preventive action in that the Check List has been developed and is being used to ensure that documentation received, in conjunction with castings, is correct.

10. (Open) Follow-up Inspection Item, Details Section, paragraph D.3.c.(2), (Inspection Report No. 79-02): This item dealt with formalizing a system for monitoring foundry repair welding activities.

This item remains open, in that frequency of monitoring is not addressed. A review of documentation revealed that a considerable amount of repair welding was performed during the June through September, 1980 time period, and monitoring was performed just twice; i.e., August 29 and September 19, 1980. The welding engineer had been verbally instructed to monitor once a month. It is understood that the Quality Assurance Executive will revise procedure N6-1 "Welding Quality Assurance," to incorporate frequency.

C. Item Requiring Follow-up Inspection

1. Objective

The objective of this area of the inspection was to verify that HL had defined allowable radii or transition of sections on applicable Engineering drawings.

2. Method of Accomplishment

The preceding objective was accomplished by:

- a. Review of QA Manual, Section 2.0, "Sales Order, Drawing and Specification Control."
- b. Review of QC Procedure No. N2-2, "Drawing Office Procedure For ASME Nuclear Power Components," revision 6.
- c. Review of valve drawings for WPPSS 3 and 5.

- d. Review of Design Concession dated July 17, 1980.
- e. Review of Deviation Reports and Corrective Action Requests relative to certain drawings failing to specify radii.
- f. Discussion with cognizant personnel.

3. Findings

a. Deviation From Commitment

See Notice of Deviation, Item A.1.

During inspection 80-01, it was noted that certain section changes produced by machining, were not defined on applicable Engineering drawings with respect to allowable radii or transition of sections.

During the further inspection of this subject, the following actions were identified to have occurred subsequent to the last NRC inspection:

- (1) Deviation Reports 136 through 139 were written on July 3 and 4, 1980, in respect to undersized radii and drawings not specifying radii.
- (2) HL issued an internal memorandum entitled "Design Concession" on July 17, 1980, which states in part, ". . .Machined clean up of flats on lid and yoke/pillar, flanges shall have a minimum radii of 3/32" (2.5 mm) where the machining breaks into the cast surface, the depth of machining shall not exceed 1/4" (6 mm). See sketch below. Any deviations from the above should be reported to the undersigned.

"The above action has been necessary as some detailed drawings do not specify such radii. If a detailed drawing does specify a radius and the actual radius measures less than shown on the drawing, then the above statement shall be invoked and used as a design concession."
- (3) Corrective Action Requests were issued on July 21, 1980, to Production, Inspection and Design departments, in respect to the subject matter discussed in (1) above. Production and Inspection responded on August 8 and 5, 1980, respectively. Design responded on October 7, 1980, by stating, "Present components have been corrected by blending. All D.O. (Design Office) staff have been reminded of a 1972 instruction to incorporate these radii and drawings are being corrected where necessary."

Inspector review of the above indicated that use of "Design Concessions" was not addressed by the documented QA program; and that the cited example was acting, in essence, as a generic drawing revision, without receiving the review and approval cycle necessary for design and drawing changes, and, without its applicability for use being identified on Manufacturing Orders. It was also established with respect to the Design Corrective Action Request response, that components had not been corrected by blending, the disposition of Deviation Reports 136 through 139 being use as is. Imperial drawings still did not specify all applicable radii and metric drawings had not been revised to reflect the reduced radius permitted by the Design Concession.

b. Unresolved Items

None.

D. Control of Nonconformances and Corrective Action

1. Objectives

The objectives of this area of the inspection were to verify that HL had implemented the requirements for controlling nonconformances and corrective action in accordance with the QA Manual and applicable NRC and ASME Code requirements.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of QA Manual Section 12.0, "Non-conformities and Corrective Action."
- b. Review of QC Procedure N12-2, "Nonconformities and Corrective Action," revision 2.
- c. Review of both open and closed Deviation Reports.
- d. Review of Corrective Action Requests
- e. Observation of nonconforming items segregated in a Hold Area.
- f. Discussions with cognizant personnel.

3. Findings

a. Deviation From Commitments

See Notice of Deviation, Item B.

Observation of five nonconforming items, as identified in the Non-conformity Register, revealed that two of the items were not tagged or physically identified as being nonconforming.

It should be noted however, that the MOs (not with the parts) did have the Deviation Report Nos. entered.

b. Unresolved Items

None.

E. Manufacturing Process Control

1. Objectives

The objectives of this area of the inspection were to verify that HL had implemented the requirements for control of manufacturing processes in accordance with the QA Manual and applicable NRC and ASME Code requirements.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of QA Manual Section 4.0, "Process Control."
- b. Observation of parts and review of associated documentation during in-process operations.
- c. Review of QA Manual Section 2.0, "Sales Order, Drawing and Specification Control."
- d. Discussions with cognizant personnel.

3. Findings

a. Deviation From Commitment

- (1) See Notice of Deviation, Item A.2.

The rework MO for Works Order 12/sm 5635 specified drawing L4273-261, Revision F. It was subsequently determined that the MO was incorrect and that revision G, which was in the package, was the correct revision.

- (2) See Notice of Deviation, Item C.

The preceding operation which had not been signed off, stated "Back seat valve - remove packing, dry valve in oven for 2 hours at 125° C. minimum temperature, then fit new packing.

b. Unresolved Items

None.

F. Follow-up of IE Circular 77-05

1. Objective

The objective of this part of this inspection was to ascertain whether or not seismic considerations were included, regarding the blow out connection piping used to satisfy the concerns expressed in IE Circular 77-05.

2. Method of Accomplishment

The preceding objective was accomplished by:

- a. Review of Ebasco specification 3240-41 for the WPPSS 3 and 5 contract.
- b. Review HL valve qualification data.
- c. Discussions with cognizant personnel.

3. Findings

a. Deviation From Commitment

None.

b. Unresolved Items

None.

c. Items Requiring Follow-up Inspection

Ebasco Specification 3240-41 Section 7, paragraph 7.07 h states, "All double, split or flexible disc designs shall be provided with a schedule 80, 3/4 inch nominal size pipe nipple approximately 6 inches long full penetration weld to the valve body between the main seats. The pipe nipple shall have a cap welded in place. The pipe nipple shall meet the requirements of ASME Boiler and Pressure Vessel Code Section III and its material shall be compatible with the valve material."

HL tested the piping to verify its ability to withstand design temperature and pressure, but it was not analyzed for seismic considerations.

The test report, included in the design report, had been accepted by Ebasco.

The position taken by HL is:

- (1) The piping requirement is part of the Ebasco specification therefore it becomes Ebasco's responsibility.
- (2) HL could not perform seismic analysis on this piping because they do not know what it is to be connected to.

G. Exit Meeting

The exit meeting was held on October 24, 1980, with the following management representatives:

R. Barrow - QA Manager
S. Brooke - Sr. Project Engineer
F. W. Caudwell - Manufacturing Director
D. Croft - Works Manager
R. A. Grimston - Chief Design Manager
P. E. Holt - QA Executive
D. Perkin - Export Manager
K. Pycroft - Foundries Manager
P. K. Thomas - Deputy Managing Director
E. Wainwright - Commercial Manager
R. Watson - Engineering Director

The inspector summarized the scope and findings of the inspection. Management acknowledged the statements with respect to the findings as presented to them.