

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

REPORT OF VIB INSPECTION

Inspection Report No. 99900021/77-01 Docket No 99900021

Company Name: Puliman Kellogg Program No. 44020

Division of Pullman, Incorporated

Address: Power Piping Department, P.O. Box 1007

Williamsport, Pennsylvania 17701

Type of Inspection: Routine, Announced

Date(s) of Inspection March 28-April 1, 1977

Date(s) of Previous Insp. July 26-29, 1976

Lead Inspector: I Barnes Date: 4/18/77  
I. Barnes, Contractor Inspector, VI Branch

Accompanying Inspector(s): \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: D M Hunnicutt Date: 4/18/77  
D. M. Hunnicutt, Chief, Components Section II,  
Vendor Inspection Branch

## SUMMARY OF FINDINGS

### A. Inspection Basis and Scope

The basis of this inspection is the Pullman Kellogg, Williamsport Plant (PKPA) Quality Assurance Program as described in their ASME accepted Quality Assurance Manual, Issue #4, revision dated September 1, 1976.

The specific areas in the scope of this inspection were:

1. Outstanding items from the previous inspection. (Details Section, paragraph B.)
2. Procurement Control. (Details Section, paragraph C.)
3. Material Control. (Details Section, paragraph D.)
4. Document and Drawing Control. (Details Section, paragraph E.)

### B. Deviations From Commitment

1. Contrary to the QA Manual, Section IV, certain stock materials were not procured to the minimum requirements of the ASME Code, Section III, Class 2. (Details Section, paragraph C.3.a.)
2. Contrary to the QA Manual, Section VII, certain stock materials were approved for ASME Code, Section III applications, without verifying that purchase was from an Approved Vendor. (Details Section, paragraph C.3.b.)
3. Contrary to paragraph 8.4.4. of Engineering Specification, ES-202, the cooling rate used for Furnace Heat Number 6929 was above the maximum permissible rate. (Details Section, paragraph B.3.e.(2).)
4. Contrary to the QA Manual, Section IX, and QW-253 and QW-256 of the ASME Code, Section IX, a welding procedure specification was authorized and used for an assembly receiving postweld heat treatment, which had been qualified, for the combination of welding processes selected, only in the as welded condition. (Details Section, paragraph B.3.f.(2).)

### C. Action on Previously Identified Deviations

1. With regard to the deviation identified in Report Number 76-02, Details Section I, paragraph 4.c., pertaining to control of grinding wheels, it was found that the committed corrective actions had been implemented. This item is closed. (Details Section, paragraph B.3.a.)

2. With regard to the deviation identified in Report Number 76-02, Details Section II, paragraph 3.c.(1), pertaining to issuance and control of submerged arc fluxes, it was found that the committed corrective actions had been implemented. This item is closed. (Details Section, paragraph B.3.b.)
3. With regard to the deviation identified in Report Number 75-02, Details Section II, paragraph 3.c.(2), pertaining to welding process change without amendment of the welding procedure specification, it was found that the committed corrective actions had been implemented. This item is closed. (Details Section, paragraph B.3.c.)
4. With regard to the deviation identified in Report Number 76-02, Details Section II, paragraph 3.c.(3), pertaining to power source amperage settings, it was found that the committed corrective actions had been implemented. This item is closed. (Details Section, paragraph B.3.d.)
5. With regard to the deviation identified in Report Number 76-02, Details Section II, paragraph 4.c.(1), pertaining to use of thermocouples for control of postweld heat treatment, it was found that the committed corrective actions had been implemented. This item is closed. (Details Section, paragraph B.3.e.(1).)
6. With regard to the deviation identified in Report Number 76-02, Details Section II, paragraph 4.c.(2), pertaining to assuring the adequacy of accumulated postweld heat treatment time with respect to welding qualifications, it was found that the committed corrective actions had been implemented. This item is closed. (Details Section, paragraph B.3.f.(1).)

D. Other Significant Findings

1. General  
None
2. Unresolved Items This Inspection  
None
3. Status of Previously Reported Unresolved Items  
None outstanding

E. Management Interview

A meeting was conducted with management and Authorized Inspection Agency representatives at the conclusion of this inspection. Those in attendance were:

J. E. Bowes, Operations Manager  
R. N. Babcock, Manager, Purchasing  
T. Daniels, QA/QC Supervisor  
E. F. Gerwin, Chief Engineer  
J. A. Koch, Manager, Manufacturing Engineering  
W. J. Mitchell, Manager, QA/QC  
F. J. Richards, Welding Engineer  
R. T. Walter, Assistant Plant Manager  
H. J. Donlin, Assistant Regional Manager, Hartford Steam Boiler  
Inspection and Insurance Company  
J. H. Khandhar, Authorized Nuclear Inspector, Hartford Steam Boiler  
Inspection and Insurance Company

The following subjects were discussed:

1. The inspection scope as defined in A. above.
2. The deviations identified in B. above.
3. The status of previously identified deviations described in C. above.
4. Management comments were generally related to clarification of the above subjects.

## DETAILS SECTION

### A. Additional Persons Contacted

In addition to those persons listed in the management interview section of this report, the following persons were contacted:

- T. Bartlett, QA Engineer
- R. Boyer, Welding Procedures Administrator
- J. Fornwall, QC Inspector
- H. Haines, Document Control Coordinator
- V. Messner, Code Engineer
- H. Sinclair, Project Engineer
- L. Waltz, Production Planning Senior Clerk

### B. Action on Previously Identified Deviations

References: Inspection Report Number 76-02 and Pullman Kellogg (PKPA) response letter of September 23, 1976.

#### 1. Objectives

The objectives in this area of the inspection were to verify that PKPA had implemented the corrective action measures identified in their response letter of September 23, 1976, to the USNRC, the corrective action measures were complete, and steps had been taken to preclude recurrence.

#### 2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of Inspection Report Number 76-02, dated August 16, 1976.
- b. Review of response letter to the USNRC, dated September 23, 1976.
- c. Review of training records relative to use of grinding wheels.
- d. Review of Procedure number X-11, "Visual Examination - General," dated September 1, 1976, for inclusion of color coding of grinding wheels.
- e. Observation of production operations for use of grinding wheels and review of QC audit records.

- f. Observation of submerged arc flux storage area, flux withdrawal system and shop flux hopper identification.
- g. Review of QC welding inspection personnel staffing.
- h. Observation of production welding operations with respect to the requirements of the applicable welding procedure specifications.
- i. Verification of installation of ammeters and voltmeters on welding machines.
- j. Review of QA Manual, Issue #4, Revision dated September 1, 1976, for incorporation of committed changes in heat treatment practice.
- k. Review of Procedure Number 1X-26, "Procedure for Review of Heat Treat Charts," dated October 1, 1976.
- l. Review of randomly selected heat treat charts and applicable Weld History Records.
- m. Interviews with cognizant technical and management personnel.

3. Findings

a. Inspection Report Number 76-02, Item 1 of Enclosure

It was verified that PKPA had implemented the actions as defined in their response letter dated September 23, 1976.

This item is closed.

b. Inspection Report Number 76-02, Item 2 of Enclosure

It was verified that PKPA had implemented the actions as defined in their response letter dated September 23, 1976.

This item is closed.

c. Inspection Report Number 76-02, Item 3 of Enclosure

It was verified that PKPA had implemented the actions as defined in their response letter dated September 23, 1976.

This item is closed.

d. Inspection Report Number 76-02, Item 4 of Enclosure

It was verified that PKPA had implemented the actions as defined in their response letter dated September 23, 1976.

This item is closed.

e. Inspection Report Number 76-02, Item 5 of Enclosure

- (1) It was verified that PKPA had revised the QA Manual to require attachment of thermocouples for control of heat treatment. It was further established that the revised practice had been implemented.

This item is closed.

- (2) During verification of implementation of corrective action commitments, the following additional deviation from commitment was identified and discussed with management:

Paragraph 8.4.4 of Engineering Specification ES-202, dated November 1, 1973, states in part, "Cooling from holding temperature shall be 500°F per hour or 500°F divided by the maximum metal thickness in inches, whichever is less . . ."

Contrary to the above, the inspector observed the following with respect to Heat Number 6929, which contained a nuclear assembly of 1 3/4 inch maximum metal thickness (i.e., maximum permitted cooling rate of 286°F per hour).

- (a) The furnace chart for Heat Number 6929 showed an actual maximum cooling rate of 340°F per hour from 1070°F to 730°F.
- (b) The furnace chart for Heat Number 6929 had been reviewed and accepted by both QA and the Authorized Nuclear Inspector.

f. Inspection Report Number 76-02, Item 6 of Enclosure

- (1) It was verified that PKPA had developed a procedure which provided a method for verifying that the heat treat requirements of NB/NC/ND - 4333 and NB/NC 2431.1(c) of ASME Section III are satisfied.

This item is closed.

- (2) During verification of implementation of corrective action commitments, the following additional deviation from commitment was identified and discussed with management:

Section IX of the QA Manual, paragraph 2.2, states in part, "All Welding Procedures are qualified in accordance with the requirements of ASME Section IX . . . ." Paragraph 3.1 further states in part, "Welding Procedure Specifications acceptable for use on the item being fabricated are indicated on the WHR which accompanies the traveler. The Welding Foreman will select the appropriate WPS from those indicated on the WHR and record the selected procedure . . . in the appropriate column. . . ."

The Weld History Record (WHR) for Assembly Mark Number IRD02K3-26, Job Number 7935, referenced PI-QB-Attachments -6G as the selected welding procedure specification (WPS) for welds "A" and "B", and that a gas tungsten arc (GTAW) and shielded metal arc (SMAW) combination of welding processes had been used.

QW-253 and QW-256 of ASME Code Section IX require qualification of the WPS for the SMAW and GTAW processes when a change in the specified postweld heat treatment temperature range is used.

Contrary to the above, the procedure qualification record for the GTAW and SMAW combination of processes had not been qualified in the post weld heat treatment temperature range as required by Section IX of the QA Manual and by QW-253 and QW-256 of the ASME Code Section IX, since the procedure qualification record for the GTAW and SMAW combination of processes, which was documented as page 8 of the WPS, had been qualified only in the as welded condition. Assembly Mark Number IRD02K3-26 which was welded with the specified WPS was subsequently postweld heat treated at  $1150^{\circ}\text{F} \pm 25^{\circ}\text{F}$ .

C. Procurement Control

1. Objectives

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



- a. Measures had been established to assure that all purchased material, items, and services conform to the requirements of applicable code and material specifications.
- b. The measures included requirements with respect to identification for traceability.
- c. Provisions had been made for required source evaluations, evidence of quality and source and receiving examinations.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of QA Manual, Section IV, dated September 1, 1976, "Procurement Document Control."
- b. Review QA Manual, Section VII, dated September 1, 1976, "Control of Purchased Material, Equipment and Services."
- c. Review of welding materials Purchasing Specifications IV-103, 105, 12.
- d. Review of purchase orders and inspection reports for randomly selected stock, contract and welding materials.
- e. Examination of Approved Vendors List.
- f. Review of Engineering Specifications ES-3 and ES-7.
- g. Observation of receiving inspection area.
- h. Interviews with cognizant personnel.

3. Findings

Within the scope of this inspection, the following two (2) deviations from commitments were identified and discussed with management:

- a. Section IV of the QA Manual, paragraph 2.9, states in part, "The Company maintains a stock of frequently used seamless carbon steel materials . . . A Policy has been established to procure these materials to . . . the minimum requirements of ASME Section III, Class 2. . . ."

Contrary to the above, stock materials ordered on Purchase Orders 17-01-00-75-41, 17-01-00-75-25, and 17-01-00-73-6,

were not procured to the minimum requirements of ASME Section III, Class 2.

- b. Section VII of the QA Manual, paragraph 7.5, states in part with respect to approval of stock materials for Section III applications, ". . . the Material Test Report Validator will . . . verify that purchase was from an Approved Vendor. . . ."

Contrary to the above, the Material Test Report Validator did not verify that purchase of stock materials was from Approved Vendors, as evidenced by the approval of Purchase Order 17-01-00-75-43, Item 351, and 17-01-00-73-6, Item B, stock materials for Section III application, which had been procured from vendors who were not on the Approved Vendor List.

D. Material Control

1. Objectives

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

- a. Measures had been established for the identification and control of materials, parts, and components during fabrication.
- b. The measures assured that identification was maintained either on the item or on records traceable to the item throughout manufacture.
- c. Provisions had been made to prevent the use of incorrect or defective items.
- d. The measures included review of materials with respect to material specification and purchase document requirements.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of QA Manual, Section VII, dated September 1, 1976, "Control of Purchased Material, Equipment and Services."
- b. Review of QA Manual, Section VIII, dated September 1, 1976, "Identification and Control of Material, Parts and Components."
- c. Examination of randomly selected materials in shop fabrication for material identity.

- d. Verification of identity with respect to supporting purchase orders, drawings and inspection records.
- e. Review of Certified Material Test Reports for the selected materials with respect to procurement requirements and evidence of QA approval and release.
- f. Interviews with cognizant personnel.

3. Findings

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

E. Document and Drawing Control

1. Objectives

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

- a. Measures had been established to control the issuance and disposition of documents and drawings, including changes thereto, which prescribe activities affecting quality.
- b. These measures assured review of documents, including changes, for adequacy and release by authorized personnel.
- c. Provisions were made for distribution and use of documents at the location where the prescribed activity is performed.

2. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the QA Manual, Section IV, dated September 1, 1976, "Procurement Document Control."
- b. Review of the QA Manual, Section V, dated September 1, 1976, "Instructions, Procedures and Drawings."
- c. Review of the QA Manual, Section VI, dated September 1, 1976, "Document Control."
- d. Selective review of shop drawing issuance, distribution and revision control for Job Numbers 7935, 8405, and 8251.
- e. Review of Project Procedure Manual issuance, distribution and control for Job Number 8251.

- f. Examination of randomly selected process sheets and purchase orders for review and approval by QA personnel.
- g. Interviews with cognizant personnel.

3. Findings

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