Ametek, Incorporated
Schutte & Koerting Division,
Bethayres Plant
Docket No. 99900059/81-01

NOTICE OF NONCONFORMANCE

Based on the results of an NRC inspection conducted on March 24-27, 1981, it appears that certain of your activities were not conducted in accordance with NRC requirements as indicated below:

Criterion V of Appendix B to 10 CFR Part 50 states: "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Nonconformances with these requirements are as follows:

A. Paragraph 3.1.14 in Section 3 of the QA Manual states in part, "QA at completion of all operations on a process will: 3.1.14.1 Review all Process Sheets for requirements of software, completed inspections, examinations and test . . . ."

Paragraph 9.2.2 in Section 9 of the QA Manual states, "Quality Control will utilize Process Sheets during manufacture as a checklist for inspection and material control listed in 9.2.1."

Paragraph 15.1.4.4 in Section 15 of the QA Manual states, "The Process Sheet will require Quality Control sign-off by the Inspector and the Authorized Inspector as per Section 9, that completed that particular inspection process. Process Sheets when completed will be forwarded to Q.A. as evidence of completed inspection operations."

Contrary to the above, certain shutdown heat exchangers were completed and shipped, without the applicable Process Sheets providing required evidence of: (1) completed inspection operations; (2) use of Process Sheets as an inspection checklist by Quality Control; or (3) review of Process Sheets by Quality Assurance for requirements of completed inspections and examinations. (See Details, C.3.a.(1)).

B. Paragraphs NC/ND-5521 (a) in Section III of the ASME Code state in part, ". . . For nondestructive examination methods not covered by SNT-TC-1A documents, personnel shall be qualified to comparable levels of competency by subjection to comparable examinations on the particular method involved . . . ."

Contrary to the above, personnel performing required visual examinations had not been qualified by being subjected to an examination of comparable standard to methods covered by SNT-TC-1A documents. (See Details, C.3.a.(2)).

C. Paragraph 9.1.6 in Section 9 of the QA Manual states, "Examination and test shall be listed on the Process Sheet by the Manufacturing Engineering Department by procedure and revision number."

Contrary to the above, a procedure providing ASME Section III Code weld acceptance criteria was not listed on Process Sheets by the Manufacturing Engineering Department for required visual examinations of welds. (See Details, C.3.a.(3)).

D. Paragraph NC-5272 in Section III of the ASME Code states, "Weld metal cladding shall be examined by the liquid penetrant method."

Paragraph 9.1.8 in Section 9 of the QA Manual states, "When Process Sheets are completed, they shall be signed in the space provided by Manufacturing Engineering and forwarded to Quality Assurance." Paragraph 9.2.1 states in part, "Quality Assurance will review Process Sheets for completeness . . . ."

Contrary to the above, Quality Assurance review of the Process Sheets for the Cherokee 2 Unit 1 shutdown heat exchanger (S.O. N77-40192) did not assure completeness, in that the approved Process Sheets did not require liquid penetrant examination of the weld metal cladding on the bottom radius (heel) of the inlet and outlet nozzles. (See Details, C.3.a.(4)).

E. Paragraph NC-4213 in Section III of the ASME Code states, "When impact testing is required by the Design Specifications, a procedure qualification test shall be conducted using specimens taken from materials of the same specification, grade or class, heat treatment and with similar impact properties, as required for the material in the component. These specimens shall be subjected to the equivalent forming or bending process and heat treatment as the material in the component. Applicable tests shall be conducted to determine that the required impact properties of NC-2300 are met after straining."

Contrary to the above, a procedure qualification test was not conducted (in regard to forming of shutdown heat exchanger shell courses) to determine that the required NC-2300 impact properties were met after straining, although impact testing was a requirement of the customer (Combustion Engineering, Inc.) Design Specifications. (See Details, C.3.a.(5)).

F. Paragraph 4.2.2.6.1 in Combustion Engineering, Inc. Project Specification No. 6473-PE-301, Revision 04, states in part, "Pressure retaining materials are required to meet the impact test requirements of Paragraph NC-2310 or ND-2310 of the Summer 1972 Addenda of Reference 3.2.1 . . . ." Reference 3.2.1 is the ASME Boiler and Pressure Vessel Code, Section III, Division 1, Nuclear Power Plant Components.

Paragraph NC-2310 (Summer 1972 Addenda) in Section III of the ASME Code states in part, "The Design Specifications . . . for each Class 2 component shall state whether or not impact testing is required for the pressure retaining materials of which the component is constructed . . . The test requirements and acceptance standards for vessels shall be the same as for piping, pumps and valves."

Paragraph NB-2332(a) in Section III of the ASME Code states in part, "Pressure-retaining materials (other than bolting) with nominal wall thickness 2½ inches and less for piping . . . and materials for pumps, valves and fittings with all pipe connections of nominal wall thickness 2½ inches and less shall be tested as follows:

1. Test three C_V specimens at a temperature lower than or equal to the lowest service temperature. All three specimens shall meet the requirements of Table NB-2332-1.

2. Apply the procedures of NB-2332(a)(1) above to (a) the base material; (b) the heat affected zone and weld metal from the weld procedure qualification tests of NB-4330; and (c) the weld metal of NB-2431 . . . ."

Contrary to the above requirements:

1. NB-2332(a)(1) Charpy V - notch impact testing was not performed for a NB-2431 submerged arc wire/flux combination, which had been used for pressure boundary welds in the Cherokee and WPPSS-WNP 3 shutdown heat exchangers.

2. The compliance of submerged arc weld metal with Table NB-2332-1 could not be established for wire/flux combinations, which had been used in Yellow Creek 1 and Cherokee 2 shutdown heat exchangers; [illegible] the applicable Charpy-V specimen lateral expansion requirements contained in Table NB-2332-1 had neither been imposed on the vendor performing the testing, nor had the lateral expansion test results been supplied. (See Details, D.3.a.(1)).

G. Paragraph 10.4.1 in Section 10 the QA Manual states in part, ". . . Welding materials shall only be issued when a Welding Material Issuance and Weldment Record, Form Q.A. 38 . . . is properly signed by the Welding Foreman. The form Q.A. 38, shall contain the heat and/or lot number, size and amount issued . . . ."

Contrary to the above, the heat number of the strip, which was observed on March 24, 1981, being used for second layer operations on the WPPSS-WNP 3 Unit 1 (S.O. N80-45601) shutdown heat exchanger tube sheet, had not been entered in the applicable Form Q.A. 38 for the operation.

H. Operation No. 376-12 (Re-Overlay Face of Tube Sheet) in the Process Sheets for S.O. N80-45601 requires the use of strip cladding welding procedure specification (WPS) 79 WP-0001, Revision 1. WPS 79WP-0001, Revision 1 stipulates that 750-800 amperes be used for deposition of overlay cladding.

Contrary to the above, Operation No. 376-12 was observed on March 24, 1981, being performed with an actual amperage range of 700-740.

I. Paragraph NC-4335.2(b)(4) (1977 Edition) in Section III of the ASME Code states in part with respect to general requirements for welding procedure qualification tests, "For tests in accordance with NC-2331, the three Charpy-V notch heat affected zones and three Charpy-V notch unaffected base material specimens shall be tested at a temperature in accordance with NC-2331(a). The Charpy V-notch impact test of the unaffected base material shall meet the requirements of Table NC-2331-1 . . . ." Table NC-2331-1 requires minimum lateral expansion values in all three specimens of 20, 25, and 40 mils, respectively, for nominal wall thickness ranges of over 5/8 to 3/4 inches, over 3/4 to 1½ inches and over 1½ to 2½ inches.

Contrary to the above, the Charpy-V notch impact test of the unaffected base material in Procedure Qualification Record (PQR) No. 77WP-0019 (identified as the supporting PQR for WPS No. 77 WP-0018, Rev. 1) did not meet the requirements of Table NC-2331-1, in that the three recorded specimen lateral expansion values for the one inch test plate were 27, 24, and 23 mils.

J. Paragraph 6.4.1 in Section 6 of the QA Manual states, "The Buyer will be responsible for selecting vendors from the Approved Vendors List and prepare the Purchase Order." Paragraph 6.1.5 states, "In the event the Buyer elects to use a vendor not on the approved list for items or services falling within the jurisdiction of the Code, Quality Assurance must be verbally notified prior to issuance of a Purchase Order for compliance with Section 8 (Vendor Control) of the manual." Section 8 of the QA Manual requires that Quality Assurance perform a survey of all vendors, with the exception of those companies holding either an ASME Certificate of Authorization or Quality System Certificate (Material), that have been initially established to have a capability to comply with Code requirements. Paragraph 8.1.3 states, "All facility surveys conducted by Q.A. will be documented using Vendor Quality Survey (Exhibit 'B')."

Contrary to the above, Purchase Order 82090 was placed on August 28, 1978, with Ridgwood Bolt of Maspeth, New York for the supply of one inch SA-193 Grade B7 shell studs and one inch SA-194 Grade 2H nuts, although: (1) the vendor was not on the Approved Vendor List; (2) the vendor was not in possession of an appropriate ASME Certificate; or (3) a vendor survey was not performed by Q.A. as evidenced by the absence of any available Vendor Quality Survey documentation.

K. Paragraph NCA-4134.15 in Section III of the ASME Code states in part, ". . . Ultimate disposition of nonconforming items shall be documented."

Paragraph 16.3.3 in Section 16 of the QA Manual states, "The QC Supervisor will maintain a log in numerical sequence of all NCR's issued. The log shall provide for the issue date, brief description, shop order number, to whom submitted, date of disposition, and date action or rework completed."

Contrary to the above, NCR 17984 was shown by the QC Supervisor's NCR log as having the disposition action (vendor correction of documentation) completed on September 27, 1978. No documentation was made available to the NRC inspector, however, that would indicate either the stated disposition was, in fact, accomplished, or that an ultimate disposition was made to use the affected material without vendor action. (See Details, paragraph G.3.a.(3)).

L. Section III of the ASME Code, Subsection NCA, paragraph NCA-3561(a) states in part, "The N Certificate Holder shall be responsible for surveying, qualifying, and auditing suppliers of subcontracted services (NCA-3125) including nondestructive examination contractors, Material Suppliers, and Material Manufacturers . . . ."

Paragraph NCA-3853(d) states in part, ". . . The Certificate Holder's or Material Supplier's audit frequency shall be covered in this Program and shall be commensurate with the schedule of production or procurement but shall be at least once annually . . . ."

Contrary to the above, the Ametek Inc. Quality Assurance program did not require an audit of suppliers of subcontracted services at least once annually, as evidenced by:

1. Paragraph 8.4.2 in Section 8 of the QA Manual requires vendors to be surveyed every three years and evaluated at least annually.

2. Procedure No. 76-QC-0009, Revision 2, provides for evaluation by the Quality Control Supervisor's review of vendor Nonconformance Reports and does not require an audit of a vendor at least once annually (See Details, paragraph G.3.a.(1)).