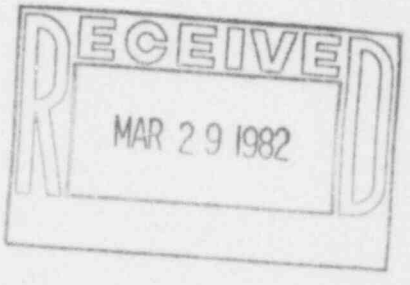
Bingham-Willamette Company

A Division of Guy F. Atkinson Company

March 19, 1982



U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Attention: Uldis Potapovs, Chief
Vendor Inspection Branch

Reference: Inspection Audit Dated November 16-19, 1981

Gentlemen:

Attached are our responses to the findings noted in your letter of January 6, 1982 from the inspection audit conducted at our plant November 16-19, 1981.

We are hopeful that our corrective actions will meet with the NRC's approval. Should you have any questions concerning this response, please do not hesitate to contact us.

Very truly yours,

BINGHAM-WILLAMETTE COMPANY

Dale F. Patty

Dale F. Patty
President & General Manager

8204300396

NONCONFORMANCE, ITEM B.1

Description of Finding

The materials list for Sales Order No. 14210471 (South Carolina Electric and Gas Company - U.C. Summer, Unit #1) was not prepared from the Design Specification and Code in regard to imposition of ASME III, Class 3 Code requirements for the turbine lube oil cooler.

Corrective Action

The heat exchanger has been replaced with a heat exchanger meeting the requirements of the ASME Code. The heat exchanger was supplied by Thermexchanger, Inc. on BWC P.O. 1-70193 to Terry Corporation as a result of P.O. Q284693 from South Carolina Electric & Gas Company.

An extensive review of BWC contracts is in process for the purpose of determining other contracts that may have a similar problem.

Steps to be Taken to Prevent Recurrence

Appropriate training sessions have been conducted within Pump Engineering to educate responsible engineering personnel with ASME Code requirements pertaining to this subject.

Date Corrective Action & Preventive Measures Were Completed

The heat exchanger was shipped to South Carolina Electric & Gas Company in early August, 1981. Additionally, the training sessions have been completed with necessary engineering personnel.

NONCONFORMANCE, ITEM B.2

Description of Finding

In regard to the misorientation of lube oil cooler heads on high pressure make-up injection pumps at WPPSS-1/4, a determination was not made whether similar deficiencies existed in equipment supplied to other locations.

Corrective Action

An extensive review of BWC contracts has been completed for the purpose of determining whether similar deficiencies exist in other locations. As a result of this review we have determined that there is a possibility that similar deficiencies do in fact exist. For those customers, an addendum to the instruction manual will be issued stating the problem and identifying the correct head orientation. BWC Field Service will follow-up with end users to verify proper orientation of heat exchanger cooler heads in the field.

Steps to be Taken to Prevent Recurrence

A training session will be conducted within Pump Engineering for the purpose of addressing design of heat exchangers. In addition, a letter will be issued to all heat exchanger manufactures that we procure like products from identifying the problem and recommending that they revise their design and take corrective action to eliminate any potential head misorientation.

Date Corrective Action & Preventive Measures Will Be Completed

Issuance of instruction manual addendums for contracts with like heat ex-exchangers is targeted for completion by April 15, 1982. Follow-up by Field Service is anticipated to be complete by July 30, 1982. Training sessions for responsible engineers regarding heat exchanger design was conducted on February 26, 1982. Correspondence to heat exchanger manufactures will be completed and mailed by March 31, 1982.

OTHER FINDINGS OR COMMENTS, ITEM D.1

Description of Finding

A reactor coolant pump (RCP) at Oconee, Unit 2, has apparent corroded closure studs as a result of a small amount of boric acid leakage from the pump closure gasket.

Corrective Action

The boric acid corrosion of the closure studs was first identified in 1977. As a result, a corrective action program was undertaken by Bingham-Willamette Company, Babcock & Wilcox, Flexitallic and Lehigh University. Lehigh University was commissioned to test two new gaskets; a 316 SS with flexicarb filler and Inconel X750 with flexicarb filler. The test results show the Inconel gasket to have improved leak vs. deflection characteristics. Our recommendation, therefore, is to change to the Inconel X750 with Flexicarb filler gasket. We will transmit our recommendation to Babcock & Wilcox, our original customer for the RCP pump at Oconee. Additionally, Bingham-Willamette Company will send a letter to Babcock & Wilcox identifying all other plants that use the old gasket with a recommendation to replace the old gasket with the new. This action and subsequent change out by the utilities to the new gasket will prevent gasket leakage and prevent stud wastage.

It should be noted that in our April 16, 1981 letter to Babcock & Wilcox we recommended the TVA Bellefonte Reactor Coolant Pumps have the original asbestos gaskets replaced with the flexicarb filler gasket. To our knowledge this has not taken place.

Steps to be Taken to Prevent Recurrence

BWC Engineering will modify the appropriate Parts/Inventory lists and issue the necessary P/I Bulletins to internal departments to insure that any future orders for spare parts are filled with the Inconel gasket.

Additionally, future orders received from customers will be screened to verify the new gasket material is required when specific reference is made to gasket metallurgy.

Date Corrective Action & Preventive Measures Were Completed

Our recommendation to Babcock & Wilcox to change to the new gasket is contained in BWC letter of March 19, 1982. The P/I List and P/I Bulletins were revised and issued by March 15, 1982.

OTHER FINDINGS OR COMMENTS, ITEM D.2

Description of Finding

As the result of a review of the documentation record packages for eight reactor coolant pumps supplied to TVA by BWC, it was discovered that some of the pump shafts may lack a floating throttle keyway. Drawing No. Z7757, Revision L of June 4, 1975, removed the keyway to accomodate a new type of seal for test and Revision N of May 3, 1976, added the keyway back to the shaft. Consequently, shafts that were machined to Drawing No. Z7757, Revision L or M, would not have the required keyway.

Corrective Action

A review of records reveal that only one shaft had been machined to Drawing Revision L or M. That was shaft SN4, HT No. 535771-3 for reactor coolant pump 2P1A1 (S.O. 220506). The shaft was returned to BWC and the keyway machined on September 30, 1981 and the shaft returned to the customer.

Steps to be Taken to Prevent Recurrence

A training session will be held with all Quality Assurance Department personnel emphasizing the importance of reviewing revised drawings for impact of not only work in process but also delivered equipment. If changes impact delivered equipment they shall be brought to the attention of Quality Assurance Department management.

Date Corrective Action & Preventive Measures Will Be Completed

The keyway was remachined on September 30, 1981. The training session will be held with all Quality Assurance Department personnel by March 31, 1982.

OTHER FINDINGS OR COMMENTS, ITEM D.3

Description of Finding

A reactor coolant pump, 1PA2 (S.O. 220501), manufactured by BWC and supplied to TVA, Bellefonte, Unit 1, had an improper fit between the shaft and the impeller. A post test inspection report of August 26, 1975, required additional clearance due to expansion and the taper of the shaft was re-ground and inspected as required by Engineering Rider No. 112. The surface contact of the impeller to shaft was checked in accordance with Drawing No. D 15334 but Engineering failed to require a critical dimension of the spacer to be taken to assure seating of the impeller to shaft when the pump was assembled.

Corrective Action

The rotating element was returned to Portland, remachined to provide the necessary clearance (S.O. 11N40) and returned to the Bellefonte site.

Steps to be Taken to Prevent Recurrence

The impeller assembly instructions per Drawing D 29243 have been revised (Revision C) to instruct installation of the thermal sleeve prior to impeller installation.

Date Corrective Action & Preventive Measures Will Be Completed

The remachining was completed and the parts returned to the customer October 2, 1981. The drawing was revised March 1, 1982.

OTHER FINDINGS OR COMMENTS, ITEM D.4

Description of Finding

A turbine driven emergency feedwater pump lube oil cooler was not procured by BWC from their subvendor Terry Turbine Corporation to meet the design requirements of the ASME Code. This decision is a result of imput from BWC Contracts Department to the Engineering Department. Also, BWC has not reviewed documentation to assure that other turbines have not been purchased with similar design deficiencies. (See Nonconformance, Item B.1).

Corrective Action

As stated in our response to Nonconformance, Item B.1, the heat exchanger has been replaced with a heat exchanger meeting the requirements of the ASME Code. Also, an extensive review of BWC contracts is in process for the purpose of determining other contracts that may have a similiar problem.

Steps to be Taken to Prevent Recurrence

This deficiency occurred in 1977. Since this time all contracts personnel are subjected to an indoctrination and training program for the purpose of identifying the scope of their authority and responsibility. While it is apparent the Contract Administrator exceeded his authority the reason for his action will probably never be known as he is no longer with BWC. In any event through better understanding and completion of training programs we would not expect this deficiency to reoccur. Appropriate training sessions will also be conducted within Engineering to indoctrinate responsible Engineering personnel with ASME Code requirements pertaining to proper lube oil cooler selection.

Date Corrective Action & Preventive Measures Were or Will Be Completed

The replacement heat exchanger was shipped in early August, 1981. Also, the Engineering training session was completed by February 26, 1982. The contract review for similar problems will be complete by March 31, 1982.

OTHER FINDINGS OR COMMENTS, ITEM D.5

Description of Finding

In regards to the misorientation of the heads on lubricant oil coolers, despite information obtained externally, there has been no positive BWC actions towards resolution of the problem.

Corrective Action

BWC has initiated a corrective action program to resolve the cooler head misorientation problem per Interoffice Memo of December 2, 1981. A meeting was also held December 4, 1981 with internal BWC departments to discuss and reach a resolution to the problem. BWC is currently working towards total resolution of this deficiency.

Steps to be Taken to Prevent Recurrence

Through better interdepartmental communication and a more responsible attitude by key personnel in Engineering Field Service, Field Engineering, Contract Administration and Quality Assurance, similar problems of this nature should not occur.

Date Corrective Action & Preventive Measures Will Be Completed

The corrective action program in regards to cooler head misorientation problem was formally initiated December 2, 1981. Complete resolution of this deficiency as stated in our response to Item B.2 is targeted for July 30, 1982.

Improvements in interdepartmental communication is an ongoing effort and therefore a specific date for completion is not offered.