TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
500C Chestnut Street Tower II

JAN 16 1979



Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NRC-OIE REGION II LETTER RII:EHG 50-390/78-31, 50-391/78-26 - INSPECTION REPORT RESPONSE TO INFRACTIONS

The subject letter dated December 22, 1978, cited TVA with two infractions. Enclosed is our response to those infractions.

If you have any questions concerning this matter, please get in touch with M. R. Wisenburg at FTS 854-2581.

Very truly yours,

for J. E. Gilleland
Assistant Manager of Power

Enclosures
cc: Mr. John G. Davis, Acting Director (Enclosures)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
RESPONSE TO INFRACTION 390/78-31-01 AND 391/78-26-01

Infraction

Criterion V of Appendix B to 10 CFR50, as implemented by the FSAR, paragraph 17.1A.5, requires in part that "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings . . . and shall be accomplished in accordance with these instructions, procedures, . . . ." Paragraph 3.1.10.1 of TVA process specification No. 4.M.1.1.(b) (12-20-73), "Material Fabrication and Handling Requirements, Austenitic Stainless Steel," requires that austenitic stainless steels be stored under cover with sufficient protection from the elements and that end caps for tubular products be maintained in place. TVA quality control procedure WBNP-QCP-1.6 R7, "Receipt, Inspection, Storage, Withdrawal, and Transfer of Permanent Material" (in paragraph 6.4) requires assignment of storage conditions by the responsible engineer.

Contrary to the requirements of 4.M.1.1.(b) noted above, the inspector observed the following examples.

1. Noncovered platform storage was assigned to ASME Section III Cl.1 pipe (by the Receiving Inspection Checklist) identified as Receiving Report 78-2846; contract 77K53-821594, item 5; Request for Delivery (RD) 595858.

2. A piece of the pipe described in item 1 was observed stored in the open, uncovered, on November 30, 1978. The storage location was B-5 in yard 1.

3. Adjacent to the pipe described in item 2, in open but covered storage, were many pieces of stainless steel pipe. Some of these were uncapped at one end.

Corrective Steps Which Have Been Taken

We have taken the following corrective action referenced to corresponding numbers in the description of the infraction.

1. The required storage on the inspection checklist has been revised to comply with paragraph 3.1.10.1 of process specification 4.M.1.1.(b), and receiving personnel have been reinstructed in its requirements.

2. The piece of pipe has been stored in accordance with requirements given in item 1 above.

3. The ends of piping involved have been capped. An inspection of stainless steel piping in open but covered storage has been performed to ensure that required pipe caps are in place.

Date When Full Compliance Will Be Achieved

Full compliance for item 1 was achieved on January 5, 1979.

Full compliance for items 2 and 3 was achieved on December 1, 1978.

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
RESPONSE TO INFRACTION 390/78-31-02

Infraction

Criterion V of Appendix B to 10 CFR50, as implemented by the FSAR, paragraph 17.1A.5, requires in part that "Activities affecting quality shall be prescribed by documented instructions, procedures or drawings . . . and shall be accomplished in accordance with these instructions, procedures, . . . ." Section 5.1 of the TVA OEDC Quality Assurance Manual for ASME Section III Nuclear Power Plant Components (NCM) requires that the welding engineering unit conduct periodic surveillance of each welder's job assignment and procedure conformance. TVA procedure WBNP-QCP-4.3 (Revision 5) requires welding surveillance to be performed daily and reported weekly.

Contrary to the above requirements, discussions with two welders and two fitters involved in preparing ASME Section III, Class 1 and 2 welds in Unit 1 revealed that no interpass temperature checks were being performed on welding in their areas. The welders and fitters questioned stated, in addition, that they had not been provided with any means to verify interpass temperature.

One of the welders was questioned further as to whether he had received any instruction regarding the control of interpass temperature. He stated that he had not. Specific welds identified as 1-62B-D034-5C. The welding procedures specification used was GT-8801R5 which specifies a maximum interpass temperature of 350 degrees Fahrenheit.

Corrective Steps Which Have Been Taken

Craft welders should be aware of weld interpass temperature control. Interpass temperature control is specified on the welding procedure assigned to the subject welds. Further, discussion of the control of interpass temperature is included in the normal QA training for all welders. This training is conducted semi-annually and reviews all essential variables of welding procedures. Attendance at this welder QA training is documented.

Normal surveillance of conformance to welding procedures by craft welders covers seventeen (17) items selected on a random basis. Therefore, it is possible that an individual welder would not be checked on a specific item. Interpass temperatures have been checked at Watts Bar Nuclear Plant on a periodic basis and have been found to be within requirements. In addition, we feel that the practical facts of the welding activity act as a built-in control of interpass temperature. This is demonstrated, we feel, by the test described below.

The following test was conducted to establish the most probable set of conditions that could result in violation of interpass temperature requirements.

Two (2) six-inch lengths of two-inch, schedule 40 S.S., type 304 pipe were butt welded in accordance with welding procedure GT-8801R5. These parameters were selected to result in the highest interpass temperature expected in welding pipe configurations. The welding of these two six-inch lengths of pipe was comprised of five passes. They were root, three fill passes, and a cover pass. Upon completion of each pass, the weld area was allowed to cool in still air to 350 degrees Fahrenheit (determined by temperature stick) and welding of the succeeding pass was started immediately. The maximum time to cool to 350 degrees Fahrenheit was 4 minutes 45 seconds, which occurred after the third fill pass. We believe that a production weld would take longer than this to complete; thus, the interpass temperature would have sufficient time to drop below 350 degrees Fahrenheit. At completion of this pass, the extreme end of the six-inch length of pipe was in excess of 250 degrees Fahrenheit, the temperature difference between the end of the six-inch pipe and the ambient air was 175 degrees Fahrenheit. Therefore, it is evident that this is a very conservative case because the six-inch length of pipe is not a realistic heat sink.

Future QA training for welders at Watts Bar Nuclear Plant will continue to discuss all essential variables of welding procedures which will include emphasis on the control of interpass temperatures.

Date When Full Compliance Will Be Achieved

We do not believe we were ever in noncompliance with our procedures. This was verified by our conservative test of interpass temperature conducted on December 16, 1978.