

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

August 27, 1980 8 AIO: 11

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:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - INFRACTION 50-438, 439/80-12-01  
- FAILURE TO FOLLOW PROCEDURE FOR STORAGE AND PROTECTION OF PERMANENT  
CONSTRUCTION MATERIAL; INFRACTION 50-438/80-12-02 - FAILURE TO FOLLOW  
FIT-UP PROCEDURE FOR THE CONTROL OF TEMPORARY ATTACHMENT WELDS; DEFICIENCY  
50-438/80-12-03 - FAILURE TO FOLLOW PROCEDURE FOR REVISING WELD CUTOUT  
INSTRUCTIONS; AND INFRACTION 50-439/80-12-02 - FAILURE TO PROPERLY PREPARE  
FOR AND CONDUCT LIQUID PENETRANT INSPECTION

This is in response to C. E. Murphy's letter dated July 30, 1980, RII:JLC  
50-438/80-12, 50-439/80-12, concerning activities at the Bellefonte Nuclear  
Plant which appeared to have been in violation of NRC regulations.  
Enclosed is our response to the citations.

If you have any questions concerning this matter, please get in touch with  
D. L. Lambert at FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



L. M. Mills, Manager  
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Jr., Director (Enclosure)  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

## ENCLOSURE

### BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 FAILURE TO FOLLOW PROCEDURE FOR STORAGE AND PROTECTION OF PERMANENT CONSTRUCTION MATERIAL RESPONSE TO NRC INFRACTION

Infraction 50-438, 439/80-12-01

As required by Criterion V of Appendix B to 10 CFR 50 and implemented by FSAR, Paragraph 17.1A.5 activities affecting quality must be performed in accordance with established procedures. Procedure BNP-QCP 1.2 Rev. 6 Paragraph 7.2a requires covers, caps, plugs or seals to be in place and secured unless otherwise specified by manufacturer's or special instruction. In addition Paragraph 7.2.e states; "Temporary coatings and preservatives shall remain intact during storage."

Contrary to the above, on June 16, 1980, the following was observed:

1. 14" diameter safety related Essential Raw Cooling Water pipe MK #PEFE, stored outside the auxiliary building, was uncapped and the pipe was in a deteriorated state both internally and externally.
2. 85 lengths of NAVCO pipe, ASME Class 3 stainless steel, 12" diameter, MK #PKCV, 65 of which had been receipt inspected were uncapped and stored in receiving's uncovered storage.
3. Carbon steel pipe in the outside receiving warehouse storage were uncapped and in various stages of deterioration on both the internal and external surfaces.

#### Corrective Action Taken and Results Achieved

1. MEU-SOP-605, Rev. 1 specified that piping is to be inspected by MEU employees after mechanical cleaning and during assembly and installation to verify cleanliness is acceptable to the level specified for a particular system. The pipe in question was subsequently cleaned by grit blasting and accepted by MEU as meeting the requirements of MEU-SOP-605, Rev. 1.
2. All pipe listed in part 2 of this infraction has been capped in full compliance with General Construction Specification G-29M.
3. The intent of BNP-QCP-1.2, Rev. 6 is not to require that carbon steel pipe in warehouse storage be capped. It has been determined by TVA that there is no regulatory requirement to maintain caps on carbon steel pipe while in warehouse storage.

#### Steps Taken to Avoid Further Recurrence

1. Piping will continue to be inspected and cleaned in accordance with MEU-SOP-605.
2. Expediting the capping of stainless steel piping when it is received

onsite without caps has been emphasized to site employees.

3. BNP-QCP-1.2, "Storage and Maintenance," has been placed in the revision process to clarify the storage requirements for carbon steel pipe.

Date of Full Compliance

- 1&2. Bellefonte Nuclear Plant is now in full compliance with the established requirements.
3. BNP-QCP-1.2 will be revised by October 14, 1980.

ENCLOSURE  
BELLEFONTE NUCLEAR PLANT UNIT 1  
FAILURE TO FOLLOW FIT-UP PROCEDURE FOR THE CONTROL  
OF TEMPORARY ATTACHMENT WELDS

Infraction 50-438/80-12-02

As required by Criterion V of Appendix B to CFR 50 and implemented by FSAR, Paragraph 17.1A.5 activities affecting quality must be performed in accordance with established procedures. Procedure BNP-QCP-7.9 Rev. 7 Supplement C Paragraph 1 states: "When temporary attachments are used in making a weld joint fit-up by the craft, the WEU inspector will check that the immediate area around the temporary attachment(s) are marked with an approved marker so that after removal the area can be identified for subsequent required NDE and PWHT.

Paragraph 2 states: "All temporary attachment welds to ASME components require a penetrant examination of the affected base material area after removal. At fit-up inspection, the WEU inspector will circle the visual checkoff on the Operation Checklist Card signifying that temporary attachment(s) has been used in making fit-up."

Contrary to the above, areas where temporary attachments had been welded and removed were not marked on the pipe adjacent to weld joint #1ND00290A. In addition the visual was not circled on the operation checklist card for this weld joint nor were the visual checkoffs circled on the operation checklist card for weld joints #1NL00004 and 1NL00005. The attachments were on 14" diameter ASME Class 1 pipe fittings and components.

Corrective Action Taken and Results Achieved

General Construction Specification G-29M, process specification 1.M.1.2(b), paragraph 14.4 requires that areas where temporary attachments have been removed shall be dressed smooth and the area examined by a liquid penetrant or magnetic particle method. Even though ASME III requires this only for Class 1 and 2 components, TVA has elected to impose this requirement upon all welds made to G-29M, even nonsafety ones such as ANSI B31.1.

In order to meet G-29M and ASME III Code requirements for use of temporary attachments and their removal, Bellefonte has structured its procedure for fit-up inspection, BNP-QCP-7.9, so that areas where temporary attachments are used are identified for purposes of subsequent NDE. This is accomplished by having the inspector verify that the area surrounding the temporary attachment(s) is marked at fit-up inspection. Secondly, the inspector at fit-up inspection is required to circle the visual hold point on the operation checklist (process control) document to alert the inspector performing a subsequent visual inspection after completion of welding that a liquid penetrant or magnetic particle examination of the marked areas needs to be performed.

Process control records were changed to comply with BNP-QCP-7.9, Rev. 7 requirements with regards to circling the visual hold point for temporary attachments.

Spot checks have been made for evidence of similar instances. Results show that temporary attachments and their removal are being handled according to procedure.

Steps Taken to Avoid Further Recurrence

A fit-up examination checklist highlighting the major aspects of a proper fit-up examination has been provided to all weld inspection employees. Temporary attachment inspection is one item on that checklist.

Date of Full Compliance

Bellefonte Nuclear Plant has been in full compliance with the established requirements since August 1, 1980.

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNIT 1  
FAILURE TO FOLLOW PROCEDURE FOR REVISING WELD CUTOUT INSTRUCTIONS  
RESPONSE TO NRC DEFICIENCY

Deficiency 50-438/80-12-03

As required by Criterion V of Appendix B to 10 CFR 50 and implemented by FSAR, Paragraph 17.1A.5 activities affecting quality must be performed in accordance with established procedures, instructions. Bellefonte's cutout procedure SCC No. IND-86 Paragraph 1 states, "Before cutting welds obtain 14" pipe and mark as follows "BNP MK# \_\_\_\_\_ Mat'l Spec \_\_\_\_\_ Mat'l Class \_\_\_\_\_ HT# \_\_\_\_\_." TVA's Procedure MEU-SOP-602 Rev. 5 Paragraph 6.4.1 states: "A minor change to an SCC such as, correcting drawing numbers, etc., need only be approved by the Responsible Mechanical Engineer. Documentation of these changes will be accomplished by a note and adjacent initialing and dating by the engineer making the change." Paragraph 6.4.2 states: "A major change to an SCC will be submitted to the MEU Supervisor for review and approval, and on Code related activities, to the ANI."

Contrary to the above, weld joint #1ND00021B and 1ND00021A had been cutout and the spool piece with the data plate removed prior to receiving the replacement pipe.

Corrective Action Taken and Results Achieved

The original intent of paragraph 1 of SCC 1ND-86 was to: (a) locate a suitable piece of pipe of the required material, and (b) transfer the BNP mark number, material specification, material class, and heat number on to the desired length of pipe to be cut for use. This was to provide required material traceability in accordance with BNP-QCP-10.9, Rev. 7, "Material Identification and Marking." It was not specifically intended to have the replacement section of pipe physically located in the area before cutting out welds 1ND00021A and 1ND00021B. It is agreed that paragraph 1 of SCC 1ND-86, as written, is ambiguous and does not specifically relate the above instructions.

QCIR 4053 was written to record the noted deficiency. Based on the QCIR disposition, SCC 1ND-86 was revised to verify ASME and quality compliance, and associated records have been corrected.

Steps Taken to Avoid Recurrence

MEU employees involved in the preparation, review, monitoring, and acceptance of SCC's have been reinstructed in the necessity of preparing concise instructions and ensuring that these instructions are followed within the requirements of MEU-SOP-602.

Date of Full Compliance

Bellefonte Nuclear Plant was in full compliance with the established requirements as of August 13, 1980.

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNIT 2  
FAILURE TO PROPERLY PREPARE FOR OR CONDUCT LIQUID PENETRANT INSPECTION  
RESPONSE TO NRC INFRACTION

Infraction 50-439/80-12-02

As required by Criterion IX of Appendix B to 10 CFR 50 and implemented by FSAR, Paragraph 17.1A.9 "Measures shall be established to ensure that special processes including welding heat treating, and nondestructive testing as controlled, and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements.

Contrary to the above, on June 18, 1980, the inspector witnessed a liquid penetrant inspection of the clad area on welded joint No. 2NC 0009A and noted the following:

1. When questioned the NDE examiner did not know the acceptance criteria for the weld being inspected.
2. The examiner did not have a procedure on the job.
3. The examiner did not bring enough rags to clean the weld.
4. The examiner did not bring a brush to apply the dye.
5. The examiner did not shutoff the ventilation prior to spraying the penetrant.
6. The examiner failed to adequately cover the weld with penetrant, however started timing the dwell time.
7. The examiner tried to cover too large of an area in one inspection.

Corrective Action Taken and Results Achieved

TVA has reviewed the circumstances surrounding the June 18, 1980, liquid penetrant inspection of weld joint 2NC00009A clad as witnessed by the NRC inspector and finds there was no noncompliance with NRC or TVA requirements. TVA's justification is that upon request to inspect a weld, the weld inspector is required to proceed to the job to perform the inspection. The weld inspector follows the appropriate procedure for performing the test (in this case BNP-QCP-7.4), and evaluates and notes any discontinuities. Once the inspector has completed the required test, the results are then compared with the acceptance criteria. This comparison may be performed at a location different than that at which the test was performed. Following is TVA's response to the seven specific items noted above.

1. Welding inspectors are not required to memorize the acceptance criteria.

2. There is no requirement for a welding inspector to have a written procedure at the inspection site when the inspector has satisfactorily demonstrated knowledge of the methodology specified by that procedure and has proven the ability to perform the inspection.
3. When the welding inspector arrived at the weld and noticed that the size of the weld area dictated the use of more rags for cleanup than had been brought, the group leader was asked to get some more. Since the welding inspector had no first-hand knowledge of the weld's size beforehand, it is not unreasonable that an adequate supply would not be brought.
4. The welding inspector applied the dye by the use of a procedure-approved aerosol type spray, and therefore, the use of a brush was not applicable.
5. An exhaust fan in operation in the pipe picked up the spray and distributed it in such a manner as to make application of dye by this method impractical. The welding inspector recognized this problem and asked the group leader for assistance. The group leader arrived, agreed that a problem did exist, and directed the welding inspector to clean the penetrant from the pipe and weld surface. Since it was approaching shift change and the welding inspector was not scheduled to work overtime, the group leader chose to perform the required examination on second shift with a different welding inspector. It was determined that it would have been better to apply the dye with a brush instead of by spray, but the welding inspector had no idea of the force of the draft in the pipe until a spray application attempt was made.
6. The weld was inadequately covered because of the dispersion of the spray by the exhaust fan. The welding inspector had not started the dwell time but had recognized a problem with the application of the spray and called the group leader for assistance.
7. If the ventilation had been properly secured, then the entire weld could have been adequately covered and examined in one inspection.

Since the welding inspector recognized the adverse conditions and had them corrected then, no procedural violation or improper inspection technique existed. Moreover, there is nothing to indicate that the welding inspector was unqualified. There is nothing that occurred in this instance that would affect or relate in any way to the future safe operation of Bellefonte Nuclear Plant. Since a noncompliance is believed not to exist, no corrective action was taken.

#### Steps Taken to Avoid Further Recurrence

Not applicable.

#### Date of Full Compliance

A date of full compliance is not applicable.