TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

October 14, 1980 00716 A 8:51

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 - REVISED RESPONSES TO INFRACTION 50-438, 439/80-12-01 - FAILURE TO FOLLOW PROCEDURE FOR STORAGE AND PRO-TECTION OF PERMANENT CONSTRUCTION MATERIAL; INFRACTION 50-438/80-12-02 -FAILURE TO FOLLOW FIT-UP PROCEDURE FOR THE CONTROL OF TEMPORARY ATTACHMENT WELDS; AND INFRACTION 50-439/80-12-02 - FAILURE TO PROPERLY PREPARE FOR AND CONDUCT LIQUID PENETRANT INSPECTION

In reponse to OIE comments on our August 27, 1980, response to inspection report RII:JLC 50-438/80-12, 50-439/80-12, TVA has revised its responses to the infractions. Enclosed is our revised response to these 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

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 REVISED 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 MD #PEFE, stored outside the auxiliary building, was uncapped and the pipe was in a deteriorated state both internally and externally.
- 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

- MEU-SOP-605, Rev. 1 specifies 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. The pipe was also inspected ultrasonically in accordance with BNP-QCP-7.10 to ascertain that in no case the wall thickness was less than the minimum allowable.
- 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 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. Parts of MEU-SOP-605 are being incorporated into a BNP-QCP to clarify our requirements for full compliance with General Construction Specification G-29M. Appropriate site employees will be trained in the requirements of the new procedures.
- 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

Bellefonte Nuclear Plant will be in full compliance with established requirements by November 14, 1980.

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

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.

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. With the distribution of the checklist, all inspectors were indoctrinated in the importance of following quality control procedures.

Steps Taken to Avoid Further Recurrence

The checklist will direct the inspector in a systematic, organized approach while performing a fit-up inspection and help preclude a bypassing or ommission of an important element of that inspection. The checklist will be included as a revision to BNP-QCP-7.9.

Date of Full Compliance

Bellefonte Nuclear Plant has been in full compliance with the established requirements since August 1, 1980. The change to BNP-QCP-7.9, adding the checklist, will be complete by October 15, 1980.

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNIT 2 FAILURE TO PROPERLY PREPARE FOR OR CONDUCT LIQUID PENETRANT INSPECTION REVISED 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 to determine what specifically caused the infraction.

After reviewing the sequence of events and subsequent investigation, it is evident that the PT inspection was in jeopardy. The NDE examiner did realize that the PT examination was not proceeding as it should and called for assistance from the group leader by use of a two-way radio. It must be realized that although a given NDE examiner is certified and qualified to perform specific NDE examinations, situations may develop which will tax their individual capability. In this case, the examiner recognized this and sought more experienced help.

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A background check of the NDE examiner's experience was made to determine possible causes. The examiner attended Training and Technology (TAT) at Oak Ridge and received training in NDE (nondestructive examination), and was employed by TVA at Bellefonte Nuclear Plant on February 14, 1978. Since the examiner did not have a mechanical background or welding inspection experience, the examiner immediately went into an on-the-job training program working with certified inspectors. After approximately two months, the examiner went to the Construction QA training facility and was tested in PT, passing with a composite score of 85.6. On return to the project, the examiner was assigned to the pipe hanger shop where appreciable experience was gained performing PT inspections on welds before being assigned to the plant proper. Concurrent with this work experience, the examiner has attended Welding Engineering Unit (WEU) training classes in G29M, G29C, visual weld examinations, D meter operations, shrink pass welding, welding symbols, typical weld defects, and specific classes associated with individual BNP-QCP's.

TVA believes that the examiner has the necessary qualifications, performed to the satisfaction of the Construction Level III NDE examiner, and demonstrated proper performance of NDE by both the PT and MT methods.

The Quality Control Inspection Group Supervisor within the WEU has frequently surveyed the work involved to help the examiner understand and comprehend more difficult tasks and assure that assigned tasks are properly performed.

The examiner in question has been given additional training by local NDE supervisors resulting in improved performance.

Steps Taken to Avoid Recurrence

All certified PT and MT employees will again be indoctrinated in the importance of maintaining copies in the their possession of the governing procedures/specifications when performing examination operations.

Date of Full Compliance

Bellefonte Nuclear Plant will be in full compliance with established requirements by November 1, 1980.