TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

February 20, 1981

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 50-438,50-439/80-14-01 - REVISED RESPONSE

As discussed in the February 2, 1981, meeting between TVA and Region II and in the followup telephone conversation with L. D. Zajac of your staff on February 4, 1981, enclosed is our revised response to infraction 80-14-01.

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

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ENCLOSURE
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
REVISED RESPONSE TO NRC INFRACTION
VISUAL INSPECTION PROGRAM DOES NOT COMPLY WITH CODE REQUIREMENTS

Infraction 50-438,50-439/80-14-01

As required by 10CFR50, Appendix B, Criterion IX, and implemented by FSAR Paragraph 17.1A.9, "Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing are 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, the visual examination program does not comply with applicable code requirements as shown by the following examples.

(1) Visual examiners are not certified as specified by the ASME Code in that certification is not administered by a Level III examiner and the certification process does not include the required practical examination.

(2) Several examples of improper visual examination were noted by NRC inspectors during this inspection, e.g., 6-inch diameter pipe weld 2RK-00336 was accepted on final visual examinations without examining accessible inside surface; four weld joints between pipe and heavy wall fittings were accepted on final visual examination without the required 3:1 transition taper; fitup of weld joint INL-00232 was accepted (after visual examination with improper gauge) even though bevel did not meet procedure requirements.

(3) The licensee has identified several hundred piping socket and structural fillet welds which had been accepted by visual examination but did not meet acceptance criteria.

Corrective Steps Taken and Results Achieved

In reference to example (1) above, the Bellefonte site formalized the training and certification program by issuing on February 7, 1981, Welding Engineering Unit Standard Operating Procedure WEU-SOP-715, "Welding Inspector Training and Certification Program." This SOP formally documents the procedure to be used for the certification of new welding inspectors as well as identifying the qualifications required for individuals responsible for the certification of new welding inspectors.

Before February 7, 1981, all welding inspectors were trained to specific segments of G-29 and other appropriate specifications and were required to pass a written test administered by the Quality Control Unit supervisor. The individual then worked closely with an experienced welding inspector to gain experience in the application of criteria. The practical portion of the certification involved an evaluation of the "apprentice" inspector's abilities by the experienced inspector he was assigned to as well as the inspector's supervisor. When the supervisor considered the inspector competent to inspect welds independently, the inspector was assigned work with a degree of difficulty comparable to his experience. The inspector's

name was then added to the list of certified inspectors. The Quality Control Unit supervisor then evaluated the inspector's performance at least once every two years. Documentation of test scores and a list of qualified inspectors were maintained.

The training and certification program was not administered by an SNT-TC-1A Level III inspector, for the reasons stated in our letter dated January 13, 1981; however, TVA believes our program is equivalent to SNT-TC-1A with the exception that we do not assign Level II or Level III status to individuals.

Each of the items listed in example (2) are discussed below.

Item 1: G-29M Process Specification 3.M.5.1(d) will be revised to provide guidelines for determining when internal weld surfaces are considered accessible for inspection.

Item 2: The 3 to 1 slope referenced in G-29M and ASME Code paragraph NC-4232.1 defines the envelope before welding. In the Summer 1976 addenda, ASME clarified this area by adding Note (4) to the new Figure NC 4250-1, "Welding End Transitions - Maximum Envelope," which states ". . .The weld reinforcement permitted by NC-44.26 may lie outside the maximum envelope." No specific requirements exist in the ASME Code concerning weld reinforcement other than its height.

TVA has further defined criteria for evaluating the contour at the weld edge. The four cited welds were examined to and meet these criteria. TVA considers these welds to not display a notch which would be detrimental to the intended service of the component. G-29M will be revised to include these criteria for evaluation of future joints.

Item 3: Weld joint preparation INL-00232 had already been rejected by the welding inspector because it did not have a flat bevel within the tolerances permitted by TVA procedure. After rework, the bevel was accepted and the joint welded satisfactorily.

The welds identified in example (3) were reported by TVA earlier this year as nonconformance reports 1188 and 1203 (transmitted from L. M. Mills to J. P. O'Reilly on June 6 and September 19, 1980), and appropriate procedural changes as well as employee retraining have been completed to correct this problem. In addition, a standard operating procedure was written to monitor this program to make sure that these changes are effective. The completion of our corrective action on this matter will be described in our final report on these nonconformances.

Corrective Steps Taken to Avoid Further Noncompliance

The issuance of Welding Engineering Unit procedure WEU-SOP-715, the above mentioned revisions to G-29M, and instruction of the affected employees will ensure TVA compliance in the areas cited above.

Date When Full Compliance Will be Achieved

Full compliance will be attained following completion of our revisions to G-29M on March 20, 1981.