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

February 15, 1983

BLRD-50-438/82-70
BLRD-50-439/82-64

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - INSTALLATION OF MISCELLANEOUS STRUCTURAL STEEL - BLRD-50-438/82-70, BLRD-50-439/82-64 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. V. Crlenjak on October 8, 1982 in accordance with 10 CFR 50.55(e) as Construction QA Audit BN-C-82-04, Deficiency #2. This was followed by our first interim report dated November 5, 1982. Enclosed is our final report.

If you have any questions concerning this matter, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Enclosure
cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
INSTALLATION OF MISCELLANEOUS STRUCTURAL STEEL
CONSTRUCTION QA AUDIT BN-C-82-04, DEFICIENCY #2
BLRD-50-438/82-70, BLRD-50-439/82-64
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

The subject deficiency deals with the inadequate fabrication/installation of miscellaneous structural steel. The examples cited in the audit are typical of work performed in earlier stages of the project. These deficiencies have come to light based on recent QC inspection of these installations. Earlier QC inspections were not performed because the installations were not complete. During the period of time that most of this structural steel was incorrectly fabricated/installed, indications are that appropriate procedures were not followed in obtaining TVA's Division of Engineering Design (EN DES) approval to deviate from the design drawings. Several reasons could be cited for the causes of this inadequate fabrication/installation. These include:

1. Lack of craft training emphasizing fabrication/installation in accordance with approved drawings.

2. Lack of craft training emphasizing appropriate steps to be taken when deviations from design drawings are required.

3. Lack of commitment for a quality fabrication/installation.

4. Lack of follow-through by the QC inspectors (field engineer) to coordinate necessary changes with EN DES after discussion of problems with the fabricating/installing craft.

It should also be noted that the majority of the miscellaneous steel has not been inspected and approved by QC inspectors. All of the cited examples were documented by QCIRs that QC inspectors initiated after finding the deficiency during their inspection.

Safety Implications

There is a possibility that miscellaneous steel could be accepted that does not conform to the design drawings. Consequently, the ability of the affected miscellaneous steel structures to perform their intended safety-related functions would be indeterminate. Therefore, this condition could jeopardize the safe operation of the plant.

Corrective Action

Several specific items have changed within approximately the past three years to minimize future occurrences of this problem:

1. An extensive craft training program has been developed and implemented.

2. The field engineering section of the Civil Engineering Unit (CEU) has been separated from the QC section.

3. Greater emphasis in following quality control procedures and approved design documents has been placed on Craft and Engineering personnel.

In order to correct the existing problems, the following program has been initiated:

1. The CEU Supervisor and the Ironworker's Superintendent are jointly identifying areas of the plant in order to emphasize completion of all miscellaneous steel in these areas within a specific time frame. This work will also include identification by CEU of all miscellaneous steel in the area to be reworked/worked.

2. Ironworker personnel will review/work/rework the identified features to make sure that they are installed per the design drawings.

3. Inspection of old work, rework, and new items by QC personnel will follow and all additional deficiencies will be documented.

4. A trend analysis is being maintained by CEU personnel to keep track of trends that could be adverse to quality.

All corrective action necessary to resolve the audit deficiency will be complete by June 1, 1984.