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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

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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 - QA BREAKDOWN - DEFICIENT FILLET WELDS - NCR'S 1188 AND 1203 - FIFTH INTERIM REPORT

On May 7, 1980, R. W. Wright, NRC-OIE Region II, was informed that nonconformance (NCR) 1188 was determined to be reportable in accordance with 10 CFR 50.55(e). Since that time, related NCR 1203 has been determined to be reportable in accordance with 10 CFR 50.55(e). This was followed by our interim reports dated June 6, September 19, and December 15, 1980, and March 6, 1981. Enclosed is our fifth interim report. We expect to submit our next report by August 27, 1981.

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
QA BREAKDOWN - DEFICIENT FILLET WELDS
NCR'S 1188 AND 1203*
FIFTH INTERIM REPORT

Description of Deficiency

Numerous fillet welds located in various safety-related systems do not meet ASME Code and/or G-29 requirements because of inadequate fillet leg size or theoretical throat dimensions. Deficient welds have been found in socket weld fitting, socket weld flange, and component support welds. This quality assurance problem is attributable in part to the procedure for fillet weld inspection because it did not accurately reflect the applicable ASME Code requirements. Additional problems with socket weld flanges arose because, at the time the procedures were written, G-29M requirements did not specify socket weld flange requirements. G-29M was revised on March 21, 1979, to include socket weld flange requirements. However, TVA failed to incorporate this change into its site quality control procedures. Fillet weld gauges not being available to assist the inspectors in determining the adequacy of a weld also contributed to the problem.

At present, 100 deficient socket weld fittings have been found out of 671 inspected, and 20 deficient socket weld flanges have been found out of 68 inspected. Also, 20 out of 24 socket weld flanges on schedule 160 pipe were found to be deficient and documented on Quality Control Inspection Report (QCIR) No. 3328.

Of the 1709 component support welds inspected, 477 were found to be deficient. Most of these are fillet welds, but some are butt welds and full penetration welds. Three hundred forty-five were rejected for insufficient fillet weld size. The rest were rejected for some other reason such as undercut, overlap, porosity, pinholes, slag, etc.

Interim Progress

NCR 1188 - Approximately 90 percent of the socket weld reinspection effort is complete. Rejectable welds are in the process of being reworked. Those socket welds that have been determined to be embedded in concrete or otherwise inaccessible for reinspection will be identified for disposition.

NCR 1203 - TVA's Division of Construction has now identified over 8500 hangers under the scope of this NCR by use of a weld history documentation system. Using the statistical sampling techniques of MIL-STD 105D, 200 randomly selected hangers representative of the total sampling space are being comprehensively evaluated with respect to weld acceptance criteria. Results of this evaluation will be used for a determination of the amount of rework necessary.

*NCR 1188 deals with socket weld fitting and socket weld flange welds and NCR 1203 deals with component support welds.