

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

November 10, 1982

50-438
USNRC REGION II
ATLANTA, GEORGIA
NOV 15 AID: 34

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:

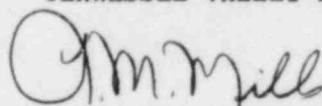
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - QA BREAKDOWN - DEFICIENT FILLET
WELDS - NCRs 1188, 1203, AND 1563 - TENTH INTERIM REPORT

On May 7, 1980, R. W. Wright, NRC-OIE Region II, was informed that nonconformance report (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 and June 10, 1981. Some of the affected welds are inaccessible for inspection; therefore, NCR 1563 has been written to disposition these welds. This was followed by our interim reports dated August 27 and December 11, 1981 and March 5 and May 18, 1982. Enclosed is our tenth interim report. We expect to submit our next report by August 23, 1983.

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
QA BREAKDOWN - DEFICIENT FILLET WELDS
NCRs 1188, 1203, AND 1563
10 CFR 50.55(e)
TENTH INTERIM REPORT

Description of Deficiency

Numerous fillet welds located in various safety-related systems do not meet ASME Code and/or TVA Construction Specification G-29 requirements because of inadequate fillet leg size or theoretical throat dimensions. Deficient welds have been found in socket weld fittings and socket weld flanges (NCR 1188), and in component support welds (NCR 1203). 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 procedure. Fillet weld gauges not being available to assist the inspectors in determining the adequacy of welds also contributed to the problem.

Interim Progress

NCR 1188

A total of 10,140 socket welds in 43 plant systems under the scope of NCR 1188 were identified. Of this amount, 9,451 were reinspected, 673 were embedded, and 16 more are inaccessible for inspection. NCR 1563 was written to disposition these embedded and inaccessible welds.

The total rejectable of those inspected was 668 welds equating to a total reject rate of 7.1 percent. Only 66 welds (0.7 percent) were undersized by more than 1/16". A breakdown on those welds found rejectable follows:

<u>Undersized Throat</u>	<u>Undersized Leg</u>	<u>Undersized Leg & Throat Together</u>
318	271	79

All rework on accessible welds has been completed. To prevent recurrence, guidelines for accepting various welds have been added to quality control procedures and inspectors have incorporated use of weld gauges. TVA has inspected 540 socket welds that were made sometime after completion of inspector training and implementation of the use of fillet weld gauges, and no rejectable welds were found.

NCR 1203

Two hundred randomly selected supports of the approximately 8,500 supports identified under the scope of this NCR were reinspected and data submitted for evaluation. TVA has determined all welds under the scope of this NCR should be reinspected. All rejected welds are being reworked or evaluated on a case-by-case basis to qualify existing welds. A total of 5,933 hangers have been reinspected as of September 17, 1982. This constitutes a total of 20,662 welds. Of the 20,662 welds reinspected, 7,554 have been rejected. This indicates a rejection rate of approximately 37 percent. Further progress will be noted in our next report.

NCR 1563

Nonconformance report 1563, resulting from NCR 1188, addresses a total of 689 socket welds categorized as "inaccessible." All welds which are not embedded can be made accessible for examination. All welds which are embedded and four pipe diameters (measured axially from the point at which the pipe penetrates the concrete surface) or more from the concrete surface are acceptable "as is." All welds which are less than four pipe diameters from the surface will require an anchor plate. ECN 1656 has been issued identifying the welds which require anchor plates.