

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

May 31, 1984

BLRD-50-438/81-07

BLRD-50-439/81-07

U.S. Nuclear Regulatory Commission
Region II

Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - CORROSION OF CARBON STEEL PIPING -
BLRD-50-438/81-07, BLRD-50-439/81-07 - TENTH INTERIM REPORT

The subject nonconformance was initially reported to NRC-OIE Inspector F. S. Cantrell on December 30, 1980, in accordance with 10 CFR 50.55(e) as NCR BLN NEE 8010. This was followed by our interim reports dated January 29, May 22, September 23, November 12, and December 21, 1981, March 2 and August 11, 1982 and January 5 and October 20, 1983. Enclosed is our tenth interim report. This nonconformance has also been reported for Sequoyah and Watts Bar Nuclear Plants. We expect to submit our next report by July 18, 1984.

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

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

Records Center (Enclosure)
Institute of Nuclear Power Operations
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Atlanta, Georgia 30339

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ENCLOSURE
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
CORROSION OF CARBON STEEL PIPING
NCR BLN NEE 8010
BLRD-50-438/81-07, BLRD-50-439/81-07
10 CFR 50.55(e)
TENTH INTERIM REPORT

Description of Condition

It has been found that the original criteria for the use of carbon steel piping in raw water systems at TVA nuclear plants may not be adequate. Corrosion has been found to cause greater than predicted pressure drops when pipes are sized according to standard industry practice. In addition, the corrosion can cause a thinning of the pipe wall which may be in excess of the minimum wall thickness considered in the design of the systems. This condition could affect all raw water systems with carbon steel piping, such as the Essential Raw Cooling Water (ERCW) System, High Pressure Fire Protection System, and the pump room and oil coolers for the centrifugal charging pumps, the safety injection pumps, and the containment spray pumps. Also, most electrical board and room air-conditioning units use carbon steel piping. The High Pressure Fire Protection System is being handled separately under nonconformance report BLN MEB 8206 (BLRD-50-438/82-65, BLRD-50-439/82-58).

The problem of corrosion has been the subject of considerable study at TVA. A brief history of TVA's investigation of this matter was included in our first interim report.

Interim Progress

TVA has issued physical drawings and insulation and mode analysis drawings per engineering change notice (ECN) 1457. A review is now being conducted, per ECN 1457, of the rigorous piping analysis data involving the modified ERCW system piping.