

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
1630 Chestnut Street Tower II

June 13, 1985

BLRD-50-438/82-14  
BLRD-50-439/82-14

U.S. Nuclear Regulatory Commission  
Region II  
Attn: Dr. J. Nelson Grace, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

05 JUN 17 12:33

Dear Dr. Grace:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - IMPROPER USE OF FOAM PLASTIC  
INSULATION ON STAINLESS STEEL PIPE - BLRD-50-438/82-14, BLRD-50-439/82-14 -  
FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
R. V. Crlenjak on February 3, 1982 in accordance with 10 CFR 50.55(e) as  
NCR BLN BLP 8203. This was followed by our interim reports dated  
March 5, June 1, September 7 and December 10, 1982 and March 21 and  
September 15, 1983 and October 22, 1984. 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

*J. A. Dome*  
J. W. Hufham, Manager  
Licensing and Regulations

Enclosure

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

Records Center (Enclosure)  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

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## ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2  
IMPROPER USE OF FOAM PLASTIC INSULATION ON STAINLESS STEEL PIPE  
NCR BLN BLP 8203  
BLRD-50-438/82-14, BLRD-50-439/82-14  
10 CFR 50.55(e)  
FINAL REPORT

### Description of Deficiency

During the process of a design review, a deficiency was discovered in the use of foam plastic insulation on stainless steel pipe. Foam plastic insulation cannot be purchased to meet the requirements for chloride and fluoride content for use on stainless steel pipe as defined in Regulatory Guide 1.36.

The deficiency resulted from the use of two instructional documents by designers which specify foam plastic insulation to be used on cold water piping without regard for potential adverse effects on stainless steel. The designers used these documents in preparing pipe insulation drawings, seismic analysis modes, and pipe insulation procurement drawings. Accordingly, some drawings were released which incorrectly specified the foam plastic insulation on stainless steel pipe. Nonconformance report (NCR) WBN MEB 8436 (WBRD-50-390/84-46 and WBRD-50-391/84-41) has been written documenting a similar condition at Watts Bar Nuclear Plant (WBN) and is being separately reported to the NRC under 10 CFR 50.55(e).

### Safety Implications

Use of the foam plastic insulation on safety-related stainless steel piping could result in leaching of chloride and fluorides onto the piping and subsequent stress corrosion cracking, thereby adversely affecting the safe operation of the plant.

### Corrective Action

TVA has removed all foam plastic insulation from stainless steel pipe at Bellefonte Nuclear Plant (BLN). As noted in our previous reports, TVA's instructional memorandum denoting the types of insulation compatible with Regulatory Guide 1.36 has been revised to preclude future specification of foam plastic insulation on stainless steel pipe; a similar revision to DG-M18.9.1 has also been issued.

The seismic analyses and support data sheets necessary to reflect the change in type of insulation have also been revised and reissued. No support changes were required; consequently, all design and construction activities required to disposition this nonconformance are complete.