

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

84 DEC 10 P.L.
December 27 1984

BLRD-50-438/82-78

BLRD-50-439/82-72

U.S. Nuclear Regulatory Commission
Region II

Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Mr. O'Reilly:

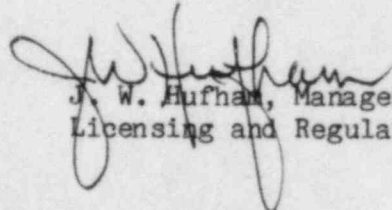
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - IMPROPER USE OF ALTERNATE ANALYSIS
ELBOLETS - BLRD-50-438/82-78, BLRD-50-439/82-72 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
P. E. Fredrickson on November 18, 1982 in accordance with 10 CFR 50.55(e)
as NCR BLN BLP 8231. This was followed by our interim reports dated
December 17, 1982, March 22 and December 14, 1983, and August 29, 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. W. Hufham, Manager
Licensing and Regulations

Enclosure

cc (Enclosure):

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

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

8501150469 841206
PDR ADOCK 05000438
S
PDR

OFFICIAL COPY

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
IMPROPER USE OF ALTERNATE ANALYSIS FOR ELBOLETS
NCR BLN BLP 8231
BLRD-50-438/82-78, BLRD-50-439/82-72
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

During design review, it was discovered that Bellefonte Nuclear Plant (BLN) alternate analysis calculation BLN-KC-D053-11, which concerns the component cooling system, contains an elbolet. The BLN "Alternate Criteria for Piping Analysis and Support" (CEB 76-11), which is the basis for this calculation, excludes any component from its scope which is not specifically listed in Appendix E, "Stress Intensification Factors." Elbolets are not listed.

The cause of this deficiency was a lack of awareness on the part of piping analysis personnel concerning the exclusion of elbolets from the scope of CEB 76-11.

Safety Implications

The failure to properly consider the high stress intensification factors associated with elbolets could cause the elbolets to be overstressed under some loading conditions. This in turn could cause a failure of the component cooling system piping which could adversely affect safe operation of the plant.

Corrective Action

TVA has completed its review of this problem and has identified five cases where piping containing an elbolet was qualified by design personnel. In each of these five cases, the piping has been rerouted to eliminate the elbolet, and the piping analysis was revised to reflect the new pipe route. Necessary field rework has been completed for unit 1 and will be completed for unit 2 by May 19, 1986.

To prevent recurrence of this problem, all persons who perform piping analysis using CEB 76-11 have been specifically instructed in the component exclusion provision of Appendix E of the criteria.