

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

1630 Chestnut Street Tower II

July 31, 1985

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BLRD-50-438/84-49

BLRD-50-439/84-45

U.S. Nuclear Regulatory Commission

Region II

Attn: Dr. J. Nelson Grace, Regional Administrator

101 Marietta Street, NW, Suite 2900

Atlanta, Georgia 30323

Dear Dr. Grace:

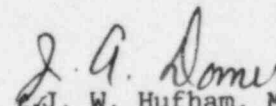
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - INCORRECT BOLT STRESS ALLOWABLES USED  
IN FLANGE QUALIFICATION - BLRD-50-438/84-49 AND BLRD-50-439/84-45 - SECOND  
INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
P. E. Fredrickson on September 7, 1984 in accordance with 10 CFR 50.55(e) as  
NCR BLN CEB 8414. Our first interim report was submitted on October 9, 1984.  
Since then a related nonconformance report (NCR) BLN CEB 8419 was issued. We  
intend to report on both NCR's simultaneously. Enclosed is our second interim  
report. We expect to submit our next report on or about November 4, 1985.

If you have any questions, please get in touch with R. H. Shell at FTS  
858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

  
J. W. Hufham, Manager  
Licensing and Risk Protection

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  
INCORRECT BOLT STRESS ALLOWABLES USED IN FLANGE QUALIFICATION  
BLRD-50-438/84-49, BLRD-50-439/84-45  
10 CFR 50.55(e)  
NCRs BLN CEB 8414 AND BLN CEB 8419  
SECOND INTERIM REPORT

Description of Deficiency

Nonconformance report (NCR) BLN CEB 8414 (CDRs BLRD-50-438/84-49, BLRD-50-439/84-45) documented a problem with piping flanges analyzed in problem N4-1KE-0 that were qualified using incorrect bolt allowables. The differences between the stress values used and the correct allowables are significant and range as high as 10,000 lb/in<sup>2</sup>. The analysis was based on preliminary information which was not verified by the subsequent controlling documentation (i.e., the bill of material). The bill of material did not specify high-strength bolts. This problem is potentially applicable to other Bellefonte Nuclear Plant (BLN) piping analysis problems but is not applicable to other TVA plants.

Subsequent to the first report on NCR BLN CEB 8414, a related NCR, BLN CEB 8419, was issued. This NCR pertains to incorrect assumptions made by the rigorous piping stress analyst as to the strength of flange bolting material. Some examples are: (1) flange bolts for orifice flange element IFE-957-A on mechanical drawing 1BW0453-KE-12 are not specified, yet the analyst assumed high-strength bolts. (2) Bill of material 3BM0416-N5-00 sheet 5 calls for ASTM SA193 grade B7, B8, or equal bolts. The allowables for these bolts are not equal and the analyst assumed the higher strength bolts were used. (3) The flange bolt material on bill of material 3BM0453-KE-05 sheet 8 is to be SA193 grade B7. This differs from SA307 which is specified on NAVCO drawing 15-86, contract No. 75K35-86162. The bolt material allowables differ by 18,000 lb/in<sup>2</sup>. The analysis, which used the erroneous assumptions, is not necessarily conservative.

Interim Progress

TVA has completed the piping analysis review required to scope the problem documented on NCR BLN CEB 8414. No reanalysis of problem N4-1KE-0 was required and the affected bills of material have been revised to specify high-strength bolts.

TVA is pursuing the disposition of NCR BLN CEB 8419. Further information will be provided when the appropriate corrective actions and actions required to prevent recurrence have been established.