

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

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November 2, 1983

BLRD-50-438/83-53  
BLRD-50-439/83-46

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 - SIZE OF LINES OF FLOW RESTRICTORS  
IS ABOVE THAT WHICH ENSURES A CONTROLLABLE COOLDOWN PER FSAR -  
- BLRD-50-438/83-53, BLRD-50-439/83-46 - FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
Linda Watson on October 6, 1983 in accordance with 10 CFR 50.55(e) as NCR  
BLN NEB 8311. Enclosed is our first interim report. We expect to submit  
our next report by May 16, 1984.

If you have any questions, 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  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

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## ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2  
SIZE OF LINES OF FLOW RESTRICTORS IS ABOVE THAT WHICH  
ENSURES A CONTROLLABLE COOLDOWN PER FSAR  
BLRD-50-438/83-53, BLRD-50-439/83-46  
NCR 8311  
10 CFR 50.55(e)  
FIRST INTERIM REPORT

### Description of Deficiency

There is a discrepancy between the FSAR stated break size that will ensure a controllable cooldown and that specified by the design criteria and the design drawings. FSAR sections 9.3.6.1 (page 9.3-41), 9.3.6.3 (1) (page 9.3-58) and 9.3.6.3 (2g) (page 9.3-60) specify an opening equivalent to a 3/4-inch schedule 160 pipe (0.614-inch inner diameter (ID)) as the break size which will ensure a controllable cooldown. However, Design Criteria for the Classification of Piping, Pumps, Valves, and Vessels, N4-50-D754 R0, specifies a 3/4-inch ID (section 3.7, page 8) for sensing, sampling, and radiation monitoring lines. This is based on the normal makeup capacity of the makeup and purification system and is intended to meet 10 CFR 50 Appendix A, General Design Criterion 33. It is also the basis for the flow restrictor that permits the classification change from ASME Section III class 1 to ASME Section III class 2 per 10 CFR 50.55 a(d), footnote 2. This also agrees with Babcock and Wilcox (B&W) letter D-2424 dated March 10, 1977, in which B&W stated that a break larger than 3/4-inch must be considered as a LOCA sized break. Likewise, the 3BW0422-NK series drawings for the reactor coolant drain and vent system have a number of flow restrictors larger than 0.614-inch ID, and drawings 3BW0422-NK-05 R9 (section B-B, detail A) and 3BW0422-NK-09 R8 (Section A-A) show 3/4" ID flow restrictors, all of which are in agreement with the design criteria.

It has been found that flow restrictor ASME classification specified by the design drawing does not agree with that specified by the design criteria diagram. Drawings 3BW0422-NK-07 R8 (Section E7-E7) and 3BW0422-NK-08 R10 (section F-F) show 1-inch x 3/4 inch schedule 80 reducers (0.742-inch ID) welded at the small diameter. The reducers are to ASME Section III class 2. However, the upstream reducer should be to ASME Section III class 1 per Design Criteria Drawing (DCD) 3BW0622-NK-01 R8. The deficiency of the ASME classification difference between reducers can be attributed to an error in the detailed piping design whereby the wrong mark numbers were assigned to the reducers.

### Interim Progress

TVA is evaluating and investigating the break size discrepancy, and has requested B&W, the RCS designer, to resolve this discrepancy.