

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

July 16, 1984

BLRD-50-438/84-30

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 UNIT 1 - CONTAMINATED MAKEUP AND PURIFICATION  
PIPING - BLRD-50-438/84-30 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
D. M. Verrelli on April 5, 1984 in accordance with 10 CFR 50.55(e)  
as NCR 2991. This was followed by our interim report dated May 3, 1984.  
Enclosed is our final report.

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 UNIT 1  
CONTAMINATED MAKEUP AND PURIFICATION PIPING  
BLRD-50-438/84-30  
NCR 2991  
10 CFR 50.55(e)  
FINAL REPORT

### Description of Deficiency

Visual examination has determined that a portion of the makeup and purification (NV) system piping certified to class B cleanliness has been contaminated. An investigation into the incident by Bellefonte's Division of Construction (BLN CONST) has determined that the NV system contamination occurred during the NBF1 flushing operation on the chemical addition and boron recovery (NB) system when water was flushed into the Auxiliary Building 2-inch diameter equipment drain piping system. The water backed up into the NV system through an open drain valve, which also connects to the same drain system. A 3-inch diameter pipe section (approximately 10 inches long) in the NV system had also been removed by approved procedure (sequence control chart) at the time. The water from the Auxiliary Building drain system exited the NV system at this opening.

### Safety Implications

Had this condition remained uncorrected, it is possible that valves in this safety-related system could fail to seat or piping could clog due to the contamination materials, which would subsequently adversely affect the safe operation of this system and the plant.

### Corrective Action

The contaminated portion of the NV system piping will be reflushed to class "B" cleanliness level during the NDFE flush on the decay heat removal (ND) system. This contaminated portion of the NV system has been determined to be approximately 200 feet of 3-inch diameter stainless steel piping that physically connects to the ND system and will be reflushed as an additional flush path during the forthcoming NDFE flush activity. To prevent recurrence of this action, BLN CONST Test Procedure (CTP) BNP-CTP-6.1, "Cleaning and Flushing of Systems," will be revised to include requirements to control flushed/cleaned systems boundaries to maintain cleanliness levels. Boundary valves of systems flushed in the future will be identified with tags warning against alteration of the boundary valve physical configuration. BLN Flushing Engineering Unit (FEU) will issue, track and remove tags as necessary to maintain the boundaries.

All actions will be completed by September 12, 1984.