TENNESSEE VALLEY AUTHORITY

CHATTANOOGA. TENNESSEE 37401

5N 157B Lookout Place

6 MMALA 1810 :- 50

BLRD-50-438/83-07 BLRD-50-439/83-04

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 - RELIEF VALVES VIOLATE ASME CODE -BLRD-50-438/83-07, BLRD-50-439/83-04 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector L. Watson on December 23, 1982 in accordance with 10 CFR 50.55(e) as NCR BLN BLP 8236. This was followed by our interim reports dated January 21, July 5, 1983 and November 1, 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

R. L. Gridley Manager of Licensing

Enclosure

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

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



ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 RELIEF VALVES VIOLATE ASME CODE BLRD-50-438/83-07 AND BLRD-50-439/83-04 NCR BLN BLP 8236 10 CFR 50.55(e) FINAL REPORT

Description of Deficiency

Relief valves 1KC- and 2KC-VRFC-154, -183, -194, and -205 violate ASHE Section III, Division 1, Section ND-3677.2, which prohibits the use of stop valves between a relief device and the equipment being protected. The design drawings on which these valves are depicted also disagree with the process and instrumentation diagram in the B&W system description (15-4041000001-04)for the component cooling water (KC) system. These relief valves protect the shell of the seal area cooler in the reactor pumps. This condition could have resulted in damage to the seal area coolers and KC piping.

The cause of this deficiency was a lack of knowledge of the applicable code on the part of the designer.

This deficiency could be generic; therefore, a generic review memorandum was initiated to alert the other TVA plant organizations to the concern.

Safety Implications

If the subject relief values are inadvertently isolated from the seal area coolers and the motor operated stop values upstream and downstream of the seal area cooler are closed, the KC system could be overpressurized due to a tube rupture in the seal area cooler or by the thermal expansion of the isolated shellside water in conjunction with tubeside flow. Overpressurization could cause a line break in the isolated portion of the KC piping or could damage the seal area cooler. Therefore, if this condition had remained uncorrected, the safe operation of the plant could have been adversely affected.

Corrective Action

Corrective action for this deficient condition consists of relocating the relief valves upstream of the stop valves, placing them on the appropriate drawings, and installing the change in the field.

The component cooling water system was reviewed to ensure the rest of the system is in compliance with ASME Code Section III, Division 1, ND-3677.2.