TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
1630 Chestnut Street Tower II

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February 27, 1985

BLRD-50-438/83-56
BLRD-50-439/83-49

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 - MASS OF HVAC SUPPORTS NOT INCLUDED IN FREQUENCY CALCULATIONS - BLRD-50-438/83-56, BLRD-50-439/83-49 - THIRD INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector P. E. Fredrickson on October 20, 1983 in accordance with 10 CFR 50.55(e) as NCR BLN BLP 8336. This was followed by our interim reports dated November 18, 1983 and May 15, 1984. Enclosed is our third interim report. We expect to submit our next report on or about July 29, 1985.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

D. L. Lambert, Jr.

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

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ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
MASS OF HEATING, VENTILATING, AND AIR-CONDITIONING SUPPORTS
NOT INCLUDED IN FREQUENCY CALCULATIONS
BLRD-50-438/83-56, BLRD-50-439/83-49
NCR BLN BLP 8336
10 CFR 50.55(e)
THIRD INTERIM REPORT

Description of Deficiency

Bellefonte Nuclear Plant (BLN) design criteria N4-50-D716, section 8.1 requires that the mass of a support be included in the evaluation of the natural frequency of that support in the restrained direction when the support's mass is greater than 50 percent of the supported mass. A review of heating, ventilating, and air-conditioning (HVAC) support calculations initiated to address generic concerns of the separately reported item, NCR WBN SWP 8254 (CDR 390/83-48 and 391/83-46), has revealed that some supports identified in the TVA design drawing series listed below were not designed to the design criteria requirements.

Affected drawing series:

4AW0867-X2	4AW0871-X2
4AW0868-X2	4AW0865-X2
4AW0869-X2	4AW0759-X2
4AW0870-X2	4AW0532-X2

TVA has determined that the cause of this deficiency was the ambiguous and misleading wording of section 8.1 of N4-50-D716. In the second paragraph of this section two methods of designing duct supports (the allowable stress limit and the static deflection limit methods) are listed while the following paragraph discusses considerations used in the static deflection limit method only. In this paragraph the statement, "the weight of the support need not be considered unless it is estimated to be 50 percent or more of the supported duct weights," appears. Since there was no mention of the weight of the support being included in calculations using the allowable stress limit, it was reasoned in some instances that such an inclusion was not required.

Interim Progress

TVA has reviewed calculations for duct supports in the reactor building and for duct supports in stage II of the Auxiliary Building. To date, no discrepancies have been found or drawing revisions required due to a misapplication of section 8.1 of N4-50-D716. TVA is continuing its investigation of duct supports in other category I structures.

TVA is also in the process of revising N4-50-D716 to clearly indicate that the mass of the support must be used in both the stress limit and the deflection limit methods of the design of duct supports in category I structures and has instructed duct support designers to the proper application of the N4-50-D716 currently in use.