TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

JAN 21 1987

BLRD-50-438/84-17
BLRD-50-439/84-16

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Attention: Dr. J. Nelson Grace

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - MISINTERPRETATION OF PIPE MOVEMENT DATA FOR ITT GRINNELL DESIGNED PIPE SUPPORTS - BLRD-438/84-17, BLRD-439/84-16 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Ross Butcher on February 8, 1984 in accordance with 10 CFR 50.55(e) as NCR BLN BLP 8403.

This was followed by our interim reports dated March 6, 1984 and August 28, 1985. Enclosed is our final report. We consider 10 CFR Part 21 applicable to this deficiency.

If you have any questions concerning this matter, please get in touch with D. L. Terrill at (205) 574-8820.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Domer

for R. L. Gridley, Director
Nuclear Safety and Licensing

Enclosure
cc: See page 2

IE27
1/1

U.S. Nuclear Regulatory Commission

JAN 21 1987

cc (Enclosure):
Mr. G. G. Zech, Director
TVA Projects
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Bellefonte Resident Inspector
Bellefonte Nuclear Plant
P.O. Box 2000
Hollywood, Alabama 35752

Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

ENCLOSURE
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
MISINTERPRETATION OF PIPE MOVEMENT DATA FOR
ITT GRINNELL DESIGNED PIPE SUPPORTS
BLRD-50-438/84-17, 50-439/84-16
NCR BLN BLP 8403
10CFR50.55(e) FINAL REPORT

Description of Deficiency

ITT Grinnell (ITTG) Pipe Hanger Division (Providence, Rhode Island) designed pipe supports ORF-MPHG-0309 R3, 1VE-MPHG-2392 Sheet 1 R2, and 1VE-MPHG-2392 Sheet 2 R0 which are located on alternately analyzed safety-related plant systems have incorrect pipe movement data shown on the ITT Grinnell detail sheets. Some of the incorrect data was supplied by ITTG and some of it entered by ITTG at the direction of TVA designers due to confusion in terminology used with respect to pipe movements. This could result in a support design where friction loads were not properly evaluated or swing angles were not properly checked contributing possibly to unconservative pipe support designs.

The incorrect movement data shown on the pipe support detail sheets resulted from the misinterpretation of non numeric data in the pipe movement chart on the table of support loads for alternately analyzed systems (specifically where the movement charts had blanks or NAs).

The problem identified by this NCR is unique to Bellefonte alternately analyzed piping and does not apply to other TVA plants; thus no generic condition exists.

Safety Implications

Failure to properly consider friction loads or check swing angles when designing supports could lead to unconservative support designs for some design conditions. This could lead to a support failure or, at a minimum, reduce the margin of safety intended for support designs. Such unconservatively designed supports could be adverse to the safety of operations of the plant.

Corrective Action

The ITT Grinnell pipe support detail sheets were reviewed against the revised alternate analysis table of support loads to identify where incorrect movement data was used. Pipe support drawings identified as possessing incorrect movements will be revised in accordance with the current plant schedule. This work and any necessary corrections to installed pipe supports will be completed at least six months before fuel loading of the applicable unit.

The action required to prevent recurrence has been completed; that is, the pipe movement columns on the alternately analyzed table of support loads were revised to show numeric entries and a section policy issued to indicate that numeric entries must be used for pipe movements on alternately analyzed piping in the future.