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

85 FEB 12 February 21, 1984

BLRD-50-438/84-50
BLRD-50-439/84-46

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Mr. Grace:

BELLEFONTE NUCLEAR PLANTS UNITS 1 AND 2 - UNAUTHORIZED SUBSTITUTION OF UNISTRUT ATTACHMENTS FOR SSDs - BLRD-50-438/84-50, BLRD-50-439/84-46 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector P. E. Fredrickson on September 17, 1984 in accordance with 10 CFR 50.55(e) as NCR 3436. Our first interim report was submitted on October 12, 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

J. W. Hufham, Manager
Licensing and Regulations

Enclosure
cc: Mr. James Taylor, 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
UNAUTHORIZED SUBSTITUTION OF UNISTRUT ATTACHMENTS FOR SSDs
BLRD-50-438/84-50, BLRD-50-439/84-46
NCR 3436
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

TVA drawing 3GA0059-00-16 R5 allows the substitution of unistrut attachments for 1/2-inch expansion shell anchors (SSD) in three specific base plate designs. All other substitutions must be approved on a case-by-case basis. The Bellefonte (BLN) Construction project has been indiscriminately substituting unistrut attachments for 1/2-inch expansion shell anchors. The problem is limited to BLN drawings and procedures and does not apply to earlier plants.

The apparent cause of this deficiency was that the requirement for anchor substitution has been revised several times during the project life, consequently causing some confusion. TVA's Office of Construction (OC) personnel have been under the false impression that a unistrut attachment was superior to a 1/2-inch expansion shell anchor. This led OC personnel to instruct engineering, inspection, and craftsmen to accept the substitution. OC "Seismic Support Installation/Inspection" training program formally endorsed this misconception.

Safety Implications

Since unistrut allowables are less than SSD allowables in the longitudinal direction, some substitutions of unistrut attachments for SSD could result in failure of the attachment under design loads. This could adversely affect safety-related piping supoorts and, consequently, the safety of operations of the plant.

Corrective Action

As indicated in our first report on this deficiency, the subject anchor substitutions were referred to TVA's Office of Engineering (OE) for evaluation on a case-by-case basis. This evaluation has been completed for all the anchor substitutions and OE has determined that each of the substituted anchors is acceptable for use as-is. However, it should be noted that the support designs included in the scope of the NCR were ITT-Grinnell designs. Due to the design procedure employed by ITT-Grinnell, acceptance of the subject anchor substitutions was possible. TVA's current design procedures will not allow anchor substitution in as large a number of baseplate configurations as was possible with ITT-Grinnell designs. Consequently, TVA will revise drawing 3GA0059-00-17 by February 17, 1985, to more clearly delineate the baseplate configurations that allow substitutions of unistrut attachments for SSDs. (Note: This is the same drawing as the one referenced above, except that the numbering was changed and the drawing revised.) BLN OC personnel have revised the "Seismic Support Installations/ Inspection" training module to alert the affected OC personnel to permissible support substitutions.