

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

April 12, 1983
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BLRD-50-438/82-41, -439/82-27
HTRD-50-518/82-20, -520/82-20
YCRD-50-566/82-17, -567/82-17

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE, HARTSVILLE, AND YELLOW CREEK NUCLEAR PLANTS UNITS 1 AND 2 -
NONCONSERVATIVE CALCULATION METHOD FOR GENERAL CONSTRUCTION SPECIFICATION
G-32 VIOLATIONS - THIRD INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector D. Quick on May 28, 1982 in accordance with 10 CFR 50.55(e) as NCR WBN SWP 8208. Related NCR GEN CEB 8205 was also determined to be reportable under 10 CFR 50.55(e). This was followed by our interim reports dated July 2 and October 12, 1982. TVA has elected to defer construction activities on Yellow Creek and Hartsville. Deferral does not mean that the project will be cancelled but that TVA is minimizing its expenditures and construction efforts until such time that TVA has sufficient information to indicate whether the project should be completed or cancelled. Therefore, we will not be submitting further information on Yellow Creek or Hartsville until a final decision is made regarding these projects. We expect to submit our next report by November 18, 1983. Enclosed is our third interim report. For disposition purposes, a separate (final) report is being submitted for Watts Bar. A final report on NCR WBN SWP 8208 was submitted separately to you on March 31, 1983.

If you have any questions concerning this matter, 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

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PDR ADDCK 05J00438
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Enclosure

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

cc: Continued on page 2

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U.S. Nuclear Regulatory Commission

April 12, 1983

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

ENCLOSURE
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
NONCONSERVATIVE CALCULATION METHOD FOR GENERAL CONSTRUCTION
SPECIFICATION G-32 SPACING VIOLATIONS
NCR GEN CEB 8205
BLRD-50-438/82-41, -439/82-37
10 CFR 50.55(e)
THIRD INTERIM REPORT

Description of Deficiency

This deficiency concerns too closely spaced stud anchors on strip plates which could fail because of pulling out a section of concrete rather than failure of the studs themselves if overloaded. Per TVA's Design Standard, DS-C6.1, if a steel failure (stud failure) cannot be assured because of inadequate embedment of stud spacing and the failure mechanism is concrete, then a safety factor of 4 is required. However, computations for strip plates using closely spaced Nelson studs on Watts Bar Nuclear Plant indicate that in some cases design loads for each stud were compared to the ultimate concrete capacity when checking attachments, whereas close spacing of the studs results in a reduction of the load carrying capability of each stud because of the interaction of the forces within the concrete. This could indicate that some safety-related supports could have a factor of safety as low as one instead of the required minimum of four. The failure of the designers to apply the correct factor of safety was due to ambiguous instructions in DS-C6.1.

Interim Progress

The Design Standard is being revised to clarify the use of the factors of safety given in DS-C6.1 and to prevent a recurrence of this problem at Bellefonte. The Design Standard will be reissued as DS-C1.7.1 by April 30, 1983.

A sampling program at Bellefonte is being scheduled and we will provide additional information after the evaluation is complete.