

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37403  
800 Chestnut Street, Tower 11

September 23, 1983

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WBBD-50-390/83-55  
WBBD-50-391/83-52  
BLRD-50-438/83-46  
BLRD-50-439/83-41

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:

WATTS BAR AND BELLEFONTE NUCLEAR PLANTS UNITS 1 AND 2 - CALCULATION OF SUPPORT  
DESIGN LOADS IN TPIPE - WBBD-50-390/83-55, WBBD-50-391/83-52, BLRD-50-438/83-46,  
BLRD-50-439/83-41 - FIRST INTERIM REPORT

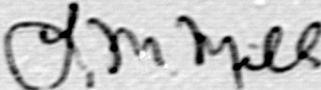
The subject deficiency was initially reported to NRC-OIE Inspector  
P. E. Fredrickson on July 14, 1983 in accordance with 10 CFR 50.55(e) as  
NCR GEN CEB 8304. Enclosed is our first interim report. We expect to  
submit our next report on or about December 20, 1983.

NRC-OIE Inspector P. E. Fredrickson was notified on July 14, 1983 concerning the  
submittal date for the subject deficiency. Initially this deficiency was  
intended to be combined with NCR GEN CEB 8303 (BLRD-50-438,439/83-33,29 and  
WBBD-50-390,391/83-29). We are now submitting a separate report for this  
deficiency.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY



L. M. Mills, Manager  
Nuclear Licensing

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PDR ADOCK 05000390  
S PDR

Enclosure

cc: Mr. Richard C. DeYoung, 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  
WATTS BAR AND BELLISPORT NUCLEAR PLANTS UNITS 1 AND 2  
CALCULATION OF SUPPORT DESIGN LOADS IN TPIPE  
WR GEN CES 8304  
WNSD-50-300/83-05, WNSD-50-301/83-02  
SLND-50-338/83-06, SLND-50-339/83-01  
10 CFR 50.55(e)  
FIRST INTERIM REPORT -

Description of Deficiency

TPIPE does not calculate support design loads correctly in the special ps II-processor when more than one primary sustained load case (load group 1) is used in the normal condition. More than one primary sustained load is considered when the analysis requires evaluation of preloading of springs, bellows pressure loading and/or cold springing. The TPIPE special post-processor was not designed to process more than one primary stress load case in the normal condition. It will, however, incorrectly process more than one primary load case in the normal condition. Loads incorrectly processed as two or more normal primary stress load cases will correctly compute stresses, but support loads are not combined correctly. Special analyses such as cold spring, bellows loads, and preloaded springs were incorrectly combined with dead loads as normal condition primary stress load cases. Pipe stresses were calculated correctly. However, support loads may have been combined unconservatively.

Interim Progress

A procedure has been developed which will allow the analyst to recompute by hand the design loads for supports near localized phenomena such as cold spring, preload, and bellows load. Loads will be extracted from previously analyzed problems and recombined by the analyst. Analysts will be provided with written instruction for handling specialized load cases such as bellows loads, preloading of springs, and/or cold springing.