TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

October 14, 1981

WBRD-50-390/81-77
WBRD-50-391/81-73
YCRD-50-566/81-21
YCRD-50-567/81-17

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR AND YELLOW CREEK NUCLEAR PLANTS UNITS 1 AND 2 - BASEPLATE PROGRAM, VERSION ONE - WBRD-50-390/81-77, WBRD-50-391/81-73; YCRD-50-566/81-21, YCRD-50-567/81-17 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. V. Crlenjak on September 14, 1981 in accordance with 10 CFR 50.55(e) as NCR's WBN CEB 8111 and YCN CEB 8106. Enclosed is our final report. We consider 10 CFR 21 applicable to this deficiency.

If you have any questions, please get in touch with R. H. Shell at FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure
cc: Mr. Victor Stello, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

WATTS BAR AND YELLOW CREEK NUCLEAR PLANTS UNITS 1 AND 2
BASEPLATE PROGRAM, VERSION ONE
WBRD-50-390/81-77, WBRD-50-391/81-73; YCRD-50-566/81-21, YCRD-50-567/81-17
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

The program, BASEPLATE, version 1, provided by Control Data Corporation (CDC), Knoxville, Tennessee, has two conditions that can cause erroneous results to be output without an error message being generated. The first condition occurs when a negative angle is input for attachments in a rotated configuration. This refers to input parameters X angle and Y angle. The second condition occurs when using the postprocessing option of the program with multiple load cases. This condition only produces erroneous results when the number of elements in the baseplate model times the number of load cases exceeds 400.

Safety Implications

Erroneous results in the analysis of baseplates caused by the errors in the BASEPLATE program could have potentially jeopardized the safe operation of the plant if the baseplates designed using these results were unconservatively designed.

Corrective Action

According to CDC, the problem areas in the program will be corrected with the next released version, which is scheduled for October 31, 1981. To ensure that no analyses were performed in error, all TVA groups that have used the program were asked by internal TVA memorandum to respond as to whether or not either of the two subject conditions of this program were used. Response to this memorandum shows that no analyses have been performed in the Watts Bar or Yellow Creek design project groups using the two subject conditions.