

TENNESSEE VALLEY AUTHORITY

5N 157B Lookout Place

APR 23  
April 18, 1986

WBRD-50-390/86-20  
WBRD-50-391/86-16

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

Dear Dr. Grace:

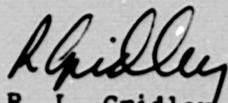
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - VENDOR DRAWINGS SHOW CONFLICTING VALVE  
WEIGHT DATA - WBRD-50-390/86-20, WBRD-50-391/86-16 - FINAL REPORT

The subject deficiency was initially reported to NRC-CIE Inspector  
Al Ignatonis on January 6, 1986 in accordance with 10 CFR 50.55(e) as SCRs WBN  
MEB 8555 and MEB 8556. Our interim report was submitted on February 12,  
1986. Enclosed is our final report.

If there are any questions, please get in touch with R. H. Shell at  
FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

  
R. L. Gridley  
Manager of Licensing

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

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
VENDOR DRAWINGS SHOW CONFLICTING VALVE WEIGHT DATA  
WBRD-50-390/86-20, WBRD-50-391/86-16  
SCR WBN MEB 8555 AND SCR WBN MEB 8556  
10 CFR 50.55(e)  
FINAL REPORT

### Description of Deficiency

Drawings C-3522 and C-3538 of TVA contract 74C38-83015 for Watts Bar Nuclear Plant (WBN) show motor-operated valves with identical TVA mark numbers as manufactured by Henry Pratt Company, Aurora, Illinois. These drawings were identical in all dimensions, materials, etc., except for the valve weight and center of gravity (CG) location. There was no indication as to which weight or CG was correct for the various affected valves. This condition was discovered during a reanalysis of WBN piping analysis problem N3-70-4R for documentation verification.

All of the affected valves, 83 total, are Henry Pratt Company Nuclear Mark II butterfly valves. The valves are installed in the essential raw cooling water (ERCW) system and the component cooling system (CCS) at WBN. A vendor review of this deficiency, per TVA problem identification report (PIR) WBN MEB 8526 resulted in increasing the valve weights and lengthening the CG moment arm for some of the valves. Additionally, the vendor review showed that this problem also existed on drawings C-3525 and C-3541.

TVA has been notified by Henry Pratt Company that the cause of this deficiency was an isolated breakdown in their checking and verification process. The erroneous valve weights and CG locations were calculated using a different valve bonnet configuration than that required by the drawings. Henry Pratt Company has reviewed this deficiency for TVA contracts for Browns Ferry, Sequoyah and Bellefonte Nuclear Plants. No other discrepancies of this nature have been identified.

### Safety Implications

Affected piping analysis problems could be invalidated if unconservative valve weights or CG locations were used. This could possibly result in a failure of the affected safety-related systems to function as designed during a design basis seismic event. As such, the subject deficiency potentially could adversely affect the safety of operations of the plant.

### Corrective Action

Henry Pratt Company has revised drawings C-3522 and C-3525 to reflect the correct valve weights and CG locations and to agree with drawings C-3538 and C-3541, respectively. The revised drawings have been received by TVA. Additionally, the vendor has reviewed other TVA contracts to determine if the subject deficiency occurred elsewhere. No other deficiencies were

identified. Affected WBN design drawings have been revised by TVA to reflect the corrected information from Henry Pratt Company. TVA is now performing a review of affected piping analysis problems to ensure that conservative valve weights and CG locations were used. This effort is approximately 80% complete, and no problems requiring reanalysis have been identified. As such, TVA does not anticipate that any reanalysis will be required to ensure the integrity of existing designs as a result of the subject deficiency. However, should reanalysis be required, the affected problems will be identified and tracked under separate PIRs or significant condition reports (SCRs).

Henry Pratt Company considers this deficiency to be an isolated occurrence and that no further action to prevent recurrence is required.

TVA will complete the review of affected piping analysis problems prior to initial fuel loading for WBN units 1 and 2, respectively.