

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

83 SEP 2 9:23 AM  
SEP 29 1983

WBRD-50-390/83-09

WBRD-50-391/83-08

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:

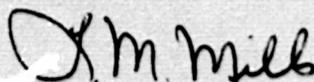
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - VALVE POSITION INDICATION PROBLEMS  
FOR EMD GATE VALVES - WBRD-50-390/83-09, WBRD-50-391/83-08- FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
L. Watson on February 3, 1983 in accordance with 10 CFR 50.55(e) as NCR  
WBN NEB 8302. Interim reports were submitted on March 4 and June 20, 1983.  
Enclosed is our final report. We consider 10 CFR Part 21 applicable to  
this deficiency.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY



L. M. Mills, Manager  
Nuclear Licensing

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 NUCLEAR PLANT UNITS 1 AND 2  
VALVE POSITION INDICATION PROBLEMS FOR EMD GATE VALVES  
NCR WBN NEB 8302  
WBRD-50-390/83-09, WBRD-50-391/83-08  
10 CFR 50.55(e)  
FINAL REPORT

### Description of Deficiency

Valve position indication for certain Westinghouse (Pittsburgh, Pennsylvania) manufactured (EMD) gate valves indicate "closed" before the valve disc fully isolating flow. Should the valve stall (or bind) following the premature indication being given, the operator would have an inaccurate indication of the true valve position.

A geared limit switch rotor is set to provide an electrical bypass of the "open" torque switch at the beginning of the opening stroke. As a result, it is likely that monitor and/or indicator lights also operated by that rotor will indicate valve closure slightly before the flow path is completely shut off. If the valve were to stop between this set point and the full shut off position, a flow path through the valve could exist even though a "closed" indication has been achieved. This deficiency occurred through a design error in which Westinghouse engineers changed the normal wiring to accommodate certain customer preferences. These changes were not reviewed with respect to overall system requirements.

### Safety Implications

An erroneous valve position indication on a valve of this type located in a safety-related system could lead to operator error and/or a degradation of the safety of operation of the plant.

### Corrective Action

Westinghouse has issued field change notices (FCNs) WATM-10657 and WBTM-10632 which provide a modification that eliminates the possibility of a "closed" valve indication before complete flow isolation by the valve. This modification is for all affected valves, both safety- and nonsafety-related. All affected TVA drawings are being revised under engineering change notices (ECNs) 3977 and 3978. These drawing revisions will be completed by October 31, 1983. All field modifications will be completed by January 29, 1984.

Westinghouse equipment engineers are now given instructions regarding the function of the valve with respect to overall system performance, particularly in the area of its safety function. This instruction and increased attention to the safety function of the valve during design review should prevent this type of deficiency from occurring in the future.