

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA TENNESSEE 37401  
400 Chestnut Street Tower II

September 26, 1983

WBRD-50-390/82-19  
WBRD-50-391/82-18

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 - FAILURE OF LIMITORQUE MOTOR  
OPERATORS DURING VALVE CLOSURE - WBRD-50-390/82-19, WBRD-50-391/82-18 -  
SEVENTH INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. V. Crlenjak on January 26, 1982 in accordance with 10 CFR 50.55(e) as NCR 3793R1. Interim reports were submitted on February 25, April 22, July 21, and October 21, 1982 and January 27 and June 22, 1983. Enclosed is our seventh interim report. We expect to submit our next report on or about November 22, 1983. We consider 10 CFR Part 21 applicable to this deficiency.

If you have any questions, 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

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  
FAILURE OF LIMITORQUE MOTOR OPERATORS DURING VALVE CLOSURE  
NCR 3793R1  
10 CFR 50.55(e)  
SEVENTH INTERIM REPORT

Description of Deficiency

During operational testing of certain gate valves manufactured by Westinghouse Electromechanical Division (WEMD), Pittsburgh, Pennsylvania, three Limitorque motor operators failed and rendered the valves inoperable. These valves are supplied by Westinghouse under the Watts Bar NSSS contract. All of the operators which failed are Limitorque Model SB-00 units. The SB-00 design utilizes a floating drive sleeve restrained in the axial direction by Belleville springs which are enclosed in a cast housing. The housing, therefore, receives the motor torque after the springs have compressed. On each of the failed operators, the housing fractured during valve closure which could cause the gate valve to leak or prevent the operator from being able to open the valve.

Interim Progress

The failed motor operator top hats have been replaced. WEMD has notified TVA that Limitorque's position on the fractured compensator housing is that the failures have been caused by misoperation and possible misuse of the operators. Limitorque reached this position based on the following information:

1. The Limitorque service representative that replaced two of the housings found evidence of valve misoperation, such as the valve disk jammed into its backseat. This could be the result of setting the limit switches while the valve is cold rather than at its normal operating temperature; or, the limit switches could have been set improperly as discovered on other valves by an WEMD field engineer.
2. Limitorque successfully tested an operator with a cast iron housing of similar construction to the field housing from Watts Bar.
3. Limitorque has stall-tested every operator supplied to WEMD and has not experienced any failures.

WEMD has further notified TVA that they agree with Limitorque's position regarding the cause of the failures. However, WEMD is planning to run material tests on the test housing mentioned in (2) above. Their test results will be available by September 30, 1983.

TVA does not yet agree with WEMD or Limitorque that the failure of the affected valve operators was caused by misoperation or misuse. However, TVA is now investigating this possibility and will provide additional information in our next report.