

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

FEB 11 1987

WBRD-50-390/87-03  
WBRD-50-391/87-03

10 CFR 50.55(e)

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Office of Nuclear Reactor Regulation  
Washington, D.C. 20555

Attention: Dr. J. Nelson Grace

WATTS BAR NUCLEAR (WBN) PLANT UNITS 1 AND 2 - POTENTIAL FOR VALVE FAILURE DUE  
TO KEY LOSS - WBRD-50-390/87-03, WBRD-50-391/87-03 - INTERIM REPORT

The subject deficiency was initially reported to NRC-Region II Inspector  
Gordon Hunege on January 12, 1987 in accordance with 10 CFR 50.55(e) as NCR  
WBN MEB 86101 AND 86102. Enclosed is our interim report. We expect to submit  
our next report on or about June 19, 1987. We consider 10 CFR Part 21  
applicable to this deficiency.

If there are any questions, please get in touch with R. D. Schulz at  
(615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



R. Gridley, Director  
Nuclear Safety and Licensing

Enclosure  
cc: See page 2

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U.S. Nuclear Regulatory Commission

cc (Enclosure):

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ENCLOSURE  
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
POTENTIAL FOR VALVE FAILURE DUE TO KEY LOSS  
SCRs WBN MEB 86101 AND 86102  
10 CFR 50.55(e)  
INTERIM REPORT

DESCRIPTION OF DEFICIENCY

A potential problem exists on certain quarter-turn valves fitted with actuators, in which the valve stem and actuator yoke may become disengaged when the valve is installed with the stem oriented at or below the horizontal axis. This disengagement would result from movement of the key between the stem and actuator yoke until it falls out, rendering the valve inoperative. Valves which are installed in safety-related systems at WBN may experience such disengagement. TVA was made aware of the problem through IE Information Notice No. 85-67, "Valve-Shaft-To-Actuator Key May Fall Out of Place When Mounted Below Horizontal Axis," and from a 10 CFR Part 21 letter from Henry Pratt Co. No actual failure has been reported at WBN.

SAFETY IMPLICATIONS

The implications of the noted failure range from improper seating and uncontrolled leakage to failure of the valve to operate (perform mechanical motion) due to disengagement of the actuator. All of these valves are safety related and are required to operate to accomplish their safety function during a design basis accident. Therefore, this deficiency could have affected the safety of operations of the plant.

INTERIM PROGRESS

In a review of all active valves, 128 were found to be quarter-turn valves. A total of 25 valves have been identified in the component cooling system (70) and the ventilation system (30) that may be of the affected design and are installed with the valve stem at or below horizontal. Of these, it has been determined that seven valves, manufactured by BIF Company, are designed such that the key will not fall out in any orientation. Of the 18 others, valve O-FCV-70-194, manufactured by Henry Pratt Co., requires repair such that key integrity is ensured. This repair is prescribed by Henry Pratt Co., in a 10 CFR Part 21 Notification Letter to TVA. This will be performed under a maintenance request. The remaining 17 are Posi Seal Company valves and will require inspection to determine whether or not a key retention device was included in the supplied valves. The inspection involves removing the actuator indicator plate and inspecting for a key retention device, consisting of a washer on the end of the stem held in place by a bolt threaded into the stem puller hole. The washer's outside diameter is designed to be less than the reduced stem diameter but large enough to cover part of the key slot. Should any affected Posi Seal valve be found to not have the retaining device, the device will be fabricated and installed by TVA.

In order to prevent future maintenance from invalidating the corrective action discussed above, TVA will evaluate the need to revise drawings and/or maintenance procedures to ensure correct installation of the keys.

TVA will provide a final report on this item to the NRC on or about June 19, 1987.