

**TENNESSEE VALLEY AUTHORITY**

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

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March 15, 1984

WBRD-50-390/84-10  
WBRD-50-391/84-10

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:

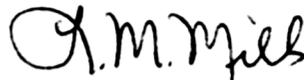
**WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - TARGET ROCK SOLENOID VALVES ON PASF DO NOT MEET BACKPRESSURE REQUIREMENTS - WBRD-50-390/84-10 AND WBRD-50-391/84-10 - FIRST INTERIM REPORT**

The subject deficiency was initially reported to NRC-OIE Inspector P. E. Fredrickson on February 15, 1984 in accordance with 10 CFR 50.55(e) as NCR WBN WBP 8410. Enclosed is our first interim report. We expect to submit our next report on or about April 23, 1984.

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, 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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1983-TVA 50<sup>TH</sup> ANNIVERSARY

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## ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
TARGET ROCK SOLENOID VALVES ON PASF  
DO NOT MEET BACKPRESSURE REQUIREMENTS  
NCR WBN WBP 8410  
WBRD-50-390/84-10, WBRD-50-391/84-10  
10 CFR 50.55(e)  
FIRST INTERIM REPORT

### Description of Deficiency

TVA purchased and installed Target Rock nuclear-grade process solenoid valves to serve a containment isolation (CI) function for the postaccident sampling facility (PASF). These valves are in the containment air sample and reactor coolant liquid sample return lines. This installation is shown on TVA drawing 47W610-4308 R4 with the valves in question identified as FSV-43-341, -342, -307, and -325. In this configuration, the valves must be capable of closing and remaining in that state with a 15 psid backpressure applied in order to successfully accomplish the required CI during the design basis accident (DBE) loss of coolant accident (LOCA).

During the negotiating phase of procuring additional valves for unit 2, the vendor recognized the desired valve model could not meet the leak rate specifications on the data sheet. More importantly, TVA learned in a February 2, 1984, telecon with the vendor that the valves previously supplied under the original contract (and described above) were not designed to function properly with a backpressure applied and would open with approximately 5 psid backpressure.

Based on information obtained in the above telecon, it is concluded that the subject valves are not designed to close and/or remain closed with a 15 psid backpressure applied and thus do not conform to requirements specified in design criteria WB-DC-40-34, "Containment Isolation System," Section 3.4.

The apparent cause of this deficiency is a failure of the TVA designers to properly specify to the vendor all design parameters associated with a system isolation valve which also serves a containment isolation function.

### Interim Progress

Engineering change notices (ECN) 4649 and 4650 are being issued to reorient the subject valves such that the vendor recommended valve flow direction will be opposite the system flow. This allows the inlet port of the valve to be connected to the downstream side of the process line. In this configuration, the postulated 15 psid maximum pressure caused by a DBE-LOCA will appear at the inlet port which is consistent with the valve design and will allow the valve to close and remain closed during containment isolation. This configuration will require backflow through the valve during normal operating modes, but TVA has determined this is functionally acceptable, and the vendor has stated that no harm or failure would be experienced by the valve in this "reversed" configuration.

TVA is investigating generic implications of this item as well as determining actions to prevent recurrence.