TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
830 Power Building

CENTRAL FILES

January 3, 1978

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 1217
230 Peachtree Street, NW.
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNIT 1 - REPORTABLE DEFICIENCY - MAIN STEAM ISOLATION VALVES - POSSIBLE SCORING OF VALVE BODY BORE - NCR 302-1

The subject deficiency was initially reported to NRC-OIE Inspector L. E. Foster on December 2, 1977. Enclosed is our first interim report on this deficiency.

We anticipate that our final report will be transmitted by April 3, 1978.

Very truly yours,

for J. E. Gilleland
Assistant Manager of Power

Enclosure
cc: Dr. Ernst Volgenau, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 1
REPORTABLE DEFICIENCY
MAIN STEAM ISOLATION VALVES
POSSIBLE SCORING OF VALVE BODY BORE - NCR-302-1

FIRST INTERIM REPORT

Description of Condition

Scoring was first discovered by Atwood and Morrill (A&M) on Valve Serial No. 6-13827 (Bellefonte unit 2) which was disassembled to replace a seal ring that had not passed the seat leakage test conducted at their plant. Valve Serial No. 5-13827 was also inspected and it too had scoring in the body cylinder bore. The scoring consisted of a vertical groove approximately 1/16" to 1/8" wide and 15-20 mils deep running the full length of the valve stroke. Both valves were reworked and retested.

For the TVA valves the seal blowdown (leakage) test and the valve operational tests, which are conducted using dry nitrogen, were run before the hydrostatic tests which use water. This means that the valves were cycled 10 to 15 times without benefit of lubrication (water). The reason for this was that A&M wanted an early indication of whether the seal ring would pass the stringent TVA leakage requirements. All other customer valves are tested with the operational and seal blowdown tests coming after the hydrostatic tests. Based on this information we believe that we have determined the cause of the scoring. Therefore, all future valves will have hydrostatic tests first, followed by the operational and blowdown tests.

Corrective Action

A&M disassembled and inspected five other PWR MSIV's of similar design: three for South Carolina Gas & Electric and two for Westinghouse. None of these valves have shown evidence of scoring on the body bore area.

A&M has requested that MSIV 1-13824, 2-13824, 3-13824, and 4-13824 be returned to their Salem, Massachusetts, plant for disassembly, inspection, and subsequent repair and retest as required.