

400 Chestnut Street Tower II

June 18, 1981



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Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 300
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - ALMA ACTUATORS - MOV OPERATOR -
NCR'S 1200, 1256, AND 1455 - FINAL REPORT

Nonconformance report (NCR) 1200 was initially reported to NRC-OIE Inspector R. W. Wright on June 11, 1980, in accordance with 10 CFR 50.55(e). This was followed by our interim reports dated July 10 and August 20, 1980. Related NCR 1256 was determined to be reportable in accordance with 10 CFR 50.55(e). This was followed by our interim reports dated October 16, 1980, and January 14, 1981. After that time, NCR 1455 was also determined to be reportable. Enclosed is our final report. We consider 10 CFR Part 21 to be applicable to this nonconformance.

If you have any questions concerning this matter, please get in touch with D. L. Lambert at FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Jr., Director (Enclosure) ✓
Office of Inspection and Enforcement
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ENCLOSURE
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
AUMA ACTUATORS - MOV OPERATOR
NCR'S 1200, 1256, AND 1455
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

TVA has experienced numerous problems with motor-operated valve operators supplied by Auma Actuators, Incorporated. These operators are used to actuate Jamesbury valves located in the Essential Raw Cooling Water (ERCW) System. The discovery of these problems has resulted in the issuance of three significant NCR's as follows:

NCR 1200 - During routine tests, valves failed to operate in either the electrical or mechanical mode. Apparently, the valves were operated when the valve operator torque switch was improperly set resulting in the valve ball being jammed against the stops. This caused the valve to lock up.

NCR 1256 - Gears for open limit switch operation were stripped causing the open limit switch not to operate. The gear damage resulted from the thrust bolt not remaining disengaged properly after being depressed. When a TVA employee adjusted the limit switch, the thrust bolt slipped from the depressed position and engage the limit switch gears.

NCR 1455 - A valve operator failure resulted in a valve failure during testing. This failure was caused by improper crimping of motor lead terminals (lugs) by the manufacturer which resulted in loose electrical connections. TVA had required and requested different terminals than normally supplied by Auma. Auma made the requested change at Jamesbury's plant; however, motor leads were not crimped properly.

Safety Implications

These valves are used primarily in the Essential Raw Cooling Water (ERCW) System. Failure of the valves could have resulted in failure of the screen backwash with eventual clogging of the screen. This would reduce flow to ERCW pumps which could affect the ability to cool safety-related components thus affecting adversely the safety of operations of the plant.

Corrective Action

All crimped terminal connections have been inspected, and those found to be defective have been repaired. All actuators have been inspected, and defective or incorrectly set limit and torque switches have been replaced or repaired under the supervision of service representatives from Auma and Jamesbury. Auma provided TVA with a letter of certification stating that the replacement parts were made in full accordance with the original contract specifications.

In order to prevent recurrence, Auma has stated that they will ascertain that the proper crimping tool is always used and that checking for proper crimp is part of their QC program. In addition, Auma representatives instructed TVA employees in the proper techniques in setting the limit and torque switches and have submitted additional detailed procedures to TVA.

All actuators were verified operable and the deficiencies described in this report were corrected as of May 12, 1981.

No other TVA nuclear plants are affected.