PART 21 IDENTIFICATION NO. 81-424-000 COMPANY NAME TVA

DATE OF LETTER 5/7/81 DOCKET NO. 50-438/439

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ACTION:

PRELIMINARY EVALUATION OF THE ATTACHED REPORT INDICATES LEAD RESPONSIBILITY FOR FOLLOWUP AS SHOWN BELOW:

IE ☐ NRR ☐ NMSS ☐ OTHER ☐

EES

S

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REV. 8/1/80

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

81-424-000

May 7, 1981

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - BORG-WARNER 3" MOTOR OPERATED GATE VALVES - NCR'S 0020 AND BLN MEB 8005 - THIRD SUPPLEMENTAL REPORT

On March 17, 1980, R. W. Wright, NRC-OIE Region II, was informed that NCR 0020 was determined to be reportable in accordance with 10 CFR 50.55(e). This was followed by our final report dated April 16, 1980. As a result of new information received subsequent to the final report, related NCR BLN MEB 8005 was determined to be reportable in accordance with 10 CFR 50.55(e). This was followed by our supplemental reports dated November 6, 1980 and February 13, 1981. Enclosed is our third supplemental report. We consider 10 CFR Part 21 to be applicable to this deficiency. We expect to submit our next report by August 25, 1981.

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
U.S. Nuclear Regulatory Commission
Washington, DC 20555

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
BORG-WARNER 3" MOTOR OPERATED GATE VALVES
NCR'S 0020 AND BLN MEB 8005
10 CFR 50.55(e)
THIRD SUPPLEMENTAL REPORT

Description of Deficiency

During a test program conducted by Duke Power Company at Marshaltown Steam Station, Borg-Warner's standard 3", 1500-pound motor operating gate valve failed to fully close when actuated under operating conditions. The operating conditions were 2485 lb/in^2 at 650°F with a flow rate of 220,000 pounds per hour of steam, which is equivalent to a velocity of approximately 40 feet per second. Under these conditions, the valve closed to within 10 percent of full closure.

Through a number of subsequent tests, the problem was resolved to be a lack of proper guiding, combined with very high bearing stresses between the gates and the seats which caused binding just before full closure.

Similar valves are used at Bellefonte in the Component Cooling Water System, Reactor Coolant System, Makeup and Purification System, and Decay Heat Removal System.

Interim Progress

Borg-Warner has completed testing of the valve for flow interruption. The valve must now be seat leak tested. The results of both of these tests will them be forwarded to TVA for review.