TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

AUG 1 9 1986

86 AUG 20 P2:23

Te 27

BLRD-50-438/86-08 BLRD-50-439/86-07

U.S. Nuclear Regulatory Commission Region II Attention: Dr. J. Nelson Grace, Regional Administrator 101 Marietta Street, NW, Suite 2900 Atlanta, Georgia 30323

Dear Dr. Grace:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - CLOSING ASSIST SPRING FAILURE ON ATWOOD AND MORRILL VALVES - BLRD-50-438/86-08, BLRD-50-439/86-07 - INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Chief Reactor Projects i-B Floyd Cantrell on July 21, 1986 in accordance with 10 CFR 50.55(e) as SCR BLN 4921. Enclosed is our interim report. We expect to submit our final report on or about one year before fuel load. We consider 10 CFR Part 21 applicable to this deficiency.

If there are any questions, please get in touch with D. L. Terrill at FTS 858-2682.

Very truly yours,

TENNESSEE YALLEY AUTHORITY

R. L. Gridley, Director Nuclear Safety and Licensing

Enclosure

cc: Mr. James Taylor, 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

8609030295 860819 PDR ADOCK 05000438 S PDR

An Equal Opportunity Employer

ENCLOSURE BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 CLOSING ASSIST SPRING FAILURE ON ATWOOD AND MORRILL VALVES BLRD-50-438/86-08, BLRD-50-429/86-07 10 CFR 50.55(e) FIRST INTERIM REPORT SCR BLN 4921

DESCRIPTION OF DEFICIENCY

-

A potential problem exists with all Atwood and Morrill (A&M) main steam isolation valves (MSIV) due to the possibility of external spring failure. After four external closing assist springs failed on A&M MSIVs at Detroit Edison's Enrico Fermi Plant Unit 2, A&M notified TVA/Bellefonte Nuclear Plant under the requirements of 10 CFR Part 21.

There are four A&M MSIVs per unit with each valve having four external closing assist springs. The Fermi valves have a different spring configuration requiring 16 springs per valve.

Metallurgical examination of the broken springs at Fermi has confirmed that the failure was caused by quench cracks developed during the manufacturing process. A&M has stated that the springs for the Bellefonte valves were not manufactured in the same batch as those for the Fermi valves.

SAFETY IMPLICATIONS

Failure of the external closure assist springs on the MSIVs would result in a slower closing speed when the steam flow is in the forward direction. Forward steam flow provides internal closure assistance. During reverse steam flow conditions, complete closure of the valve could be affected since the springs provide the only external closure assistance. Internal closure assistance is provided by the pilot poppet design and is not decreased by external spring failure.

Failure of the MSIVs to close within the specified time requirement would not affect normal operation, however, in steam line break situations the increased closure time could allow dumping of excessive amounts of steam into the reactor building or the release of containment atmosphere. Incomplete MSIV closure could occur in reverse flow situations resulting in incomplete isolation of the main steam line or release of containment atmosphere. This condition would be temporary until the downstream lines are depressurized. Both conditions could be adverse to the safe shutdown of the plant.

INTERIM PROGRESS

TVA is investigating the combined use of analytical procedures, compression testing, and visual inspection to provide assurance that the existing springs are sound. Heat and lot numbers are being traced back to the spring manufacturer to verify metallurgical processes.

Submittal of the final report will be upon completion but no later than one year before fuel load of units 1 and 2, respectively.