

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

October 20, 1983

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BLRD-50-438/82-63, 50-439/82-56
WBRD-50-390/82-92, 50-391/82-88

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:

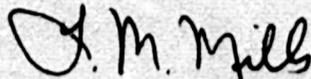
**BELLEFONTE AND WATTS BAR NUCLEAR PLANTS UNITS 1 AND 2 - SHEARFD MOTOR
PIFION KEYS IN LIMITORQUE MOTOR OPERATORS - SECOND REVISED FINAL REPORT**

The subject deficiency was initially reported to NRC-OIE Inspector D. Quick on August 30, 1982 in accordance with 10 CFR 50.55(e) as NCR GEN NEB 8209. This was followed by our interim reports dated September 28, and November 18, 1982, and May 25, 1983, our final report dated August 26, 1983 and our revised final report dated September 22, 1983. Enclosed is our second revised final report. We consider 10 CFR Part 21 applicable to this deficiency.

If you have any questions concerning this matter, 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 50TH ANNIVERSARY

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ENCLOSURE

BELLEFONTE AND WATTS BAR NUCLEAR PLANTS UNITS 1 AND 2 SHEARED MOTOR PINION KEYS IN LIMITORQUE MOTOR OPERATORS

NCR GEN NEB 8209

BLRD-50-438/82-63, BLRD-50-439/82-56, WBRD-50-390/82-92, WBRD-50-391/82-88

10 CFR 50.55(e)

SECOND REVISED FINAL REPORT

Description of Deficiency

Westinghouse has informed TVA by their letter WAT-D-5052, dated August 10, 1982, that six sheared motor pinion keys have been found in Limitorque Model SB-0-25 motor operators. These keys transmit torque from the motor shaft through the pinion gear and ultimately to the valve stem drive nut. The sheared keys were of a lower strength steel (1119 material) than is normally used (1018 material) in the size and type of motor operators which failed. Limitorque has no record of what type of pinion key is installed in any particular motor operator.

Westinghouse has further notified TVA by their Letter WAT-D-5608, dated July 21, 1983, that this problem is unique to Westinghouse Electro-Mechanical Division (EMD) manufactured valves. Westinghouse also stated, in their letter WAT-D-5608, that "The cause of the sheared key problem on Westinghouse Electro-Mechanical Division-manufactured valves equipped with Limitorque Model SB-0-25 motor operators is a breakdown of the vendor quality control procedures for the particular Westinghouse purchase order that procured several plants worth of motor operators."

Safety Implications

Since a sheared key can prevent the transmission of torque from the motor shaft to the valve stem drive nut, this condition could result in the failure of a valve to perform an intended safety function.

Corrective Action

TVA has determined that Watts Bar is the only TVA plant which has EMD valves. Therefore, this condition is no longer considered generic to other TVA plants.

TVA will replace the motor pinion keys, with ones made with the proper 1018 material, in all Limitorque model SB-0-25 motor operators at Watts Bar per Westinghouse field change notices (FCN) WATM-10646, WATM-10621A, WATM-10621B, WBTM-10601A, WBTM-10601B, and WBTM-10601C. This work has been completed for unit 1 and will be completed for unit 2 by February 1, 1984.

In order to preclude the potential for sheared pinion keys in SB-0 series Limitorque motor operators supplied with Westinghouse EMD valves, Westinghouse has initiated actions to ensure that the subject motor operators are equipped with pinion keys of the appropriate configuration and made of the appropriate material. This was accomplished by removal of all existing stock from Limitorque's shelves, and by ordering all new material to certified test reports. In addition, Westinghouse has recently reviewed the Limitorque quality assurance program to ensure that pinion key material is subjected to appropriate controls. This information was conveyed to the NRC-OIE's Richard C. DeYoung in Westinghouse letter NS-EPR-2728 dated March 16, 1983.