

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

March 29, 1982

WBRD-50-391/82-09

U.S. Nuclear Regulatory Commission  
Region II  
Attn: Mr. James P. O'Reilly, Regional Administrator  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNIT 2 - DEFECTIVE 6.9 KV GE CIRCUIT  
BREAKER - WBRD-50-391/82-09 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector D. Quick on December 18, 1981 in accordance with 10 CFR 50.55(e) as NCR W-69-P. This was followed by our first interim report dated January 25, 1982. Enclosed is our final report.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

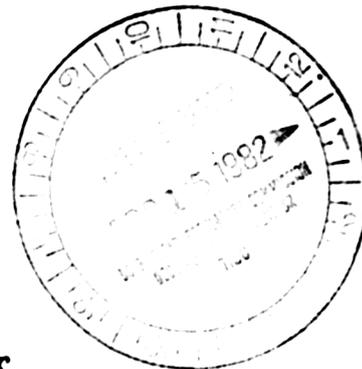
TENNESSEE VALLEY AUTHORITY



L. M. Mills, Manager  
Nuclear Regulation and Safety

Enclosure

cc: Mr. Richard C. DeYoung, 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 2  
DEFECTIVE 6.9 KV GE CIRCUIT BREAKER  
NCR W-69-P  
WBRD-50-391/82-09  
10 CFR 50.55(e)  
FINAL REPORT

Description of Deficiency

General Electric (Philadelphia, Pennsylvania) Magne Blast 3000-ampere Breaker, type AM 13.8-1000-4H, used on the 6.9-kV start board (non-Class IE) experienced an ML-13 operating mechanism failure that caused the breaker to remain in the closed position. The breaker could not be opened manually or electrically. The stop pin for the trip latch in the ML-13 operating mechanism was severely deformed and held the breaker in the closed position. This deficiency was discovered during maintenance of the breaker. The cause of this operating mechanism failure could not be determined. There are seven other 3000 ampere breakers of the same type installed at Watts Bar Nuclear Plant which have not experienced this type of failure. There are also several AM 7.2-5006HB type breakers which have ML-13 operating mechanisms of similar design installed at Watts Bar Nuclear Plant, but no other failures of this type have been identified.

Safety Implication

Had this condition remained uncorrected, failure of the subject circuit breaker would not have adversely affected the safe operation of the plant. However, circuit breakers with the same design are used on other safety-related systems which could adversely affect the safe operation of the plant if a failure of these circuit breakers occurred.

Corrective Action

The subject circuit breaker was shipped to General Electric, Philadelphia, Pennsylvania, on December 18, 1981, for investigation of this failure and repair of this breaker.

General Electric's investigation of this failure revealed that the breaker adjustments on the primary gap and opening springs as returned to their factory were out of tolerance. Normally the stop pin is lightly loaded when the ML-13 operating mechanism is at rest. If the primary gap is misadjusted to exceed the limits of 5-11/16 inches to 6-1/8 inches as required by the breaker instruction book (GEK 7347), the mechanism could go over toggle and instead of the linkage building up on the trip latch, it would be jammed into the stop pin.

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This out of tolerance adjustment of the primary gap was the cause of the stop pin bending. This is therefore not a generic problem with the ML-13 operating mechanism design. General Electric advises that this is the first reported instance of the stop pin bending. This is, therefore, an isolated incident attributed to the misadjustment of the primary gap on the subject circuit breaker.

The subject breaker will be repaired by General Electric and returned to the plant and the breaker will be reinstalled.

To prevent recurrence of the stop pin deformation, TVA's Division of Nuclear Power personnel at Watts Bar Nuclear Plant have been instructed to check the primary gap on all AM13.8 and AM7.2 breakers from General Electric to ensure that the primary gap is still within tolerance. All corrective actions will be completed by October 1, 1982.