TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

JUN 17 1986

WBRD-50-390/86-16
WBRD-50-391/86-34

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:

WATTS BAR NUCLEAR PLANT UNIT 1 - EXTREME WEAR SHOWN ON THE WESTINGHOUSE SWITCHGEAR BREAKERS - WBRD-50-390/86-16, WBRD-50-391/86-34 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Bob Carroll on December 26, 1985 in accordance with 10 CFR 50.55(e) as NCR W-318-P. Interim reports were submitted on January 27 and April 10, 1986. A letter correcting the submittal date for this report was submitted on April 28, 1986. Enclosed is our final report.

Please note that the correct unit 2 CDR number for this item is WBRD-50-391/86-34. Our previous submittals had incorrectly given the number as -33.

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

Very truly yours,

TENNESSEE VALLEY 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

1/1 IE27

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 1
EXTREME WEAR SHOWN ON THE 480V WESTINGHOUSE SWITCHGEAR BREAKERS
WBRD-50-390/86-16, WBRD-50-391/86-34
NCR W-318-P
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

The Westinghouse 480V switchgear breakers (electrically operated) motor cutoff switch levers are showing extreme wear. Trending indicates the levers will fail at 2000 to 3000 breaker trips. Failure of the levers will render the automatic function of the breakers inoperable and could be critical during emergency load shedding if the breakers require reclosing.

The apparent cause of this deficiency has been determined to be (1) insufficient lubrication of the moving parts of the breaker in that the number of breaker operations was underestimated by TVA resulting in insufficient maintenance of the breakers and (2) the incorrect type of lubricant was used because Watts Bar Nuclear Plant (WBN) Maintenance Instructions were not within the requirements of the current vendor recommendations.

Safety Implications

Excessive wear could cause the motor cutoff switch levers to break or fail, thus preventing remote closure operation of the breakers. Failure of the breakers to energize to the closed position would subsequently prevent the pickup of class 1E loads. This condition could adversely affect the safe operation of the plant during emergency load shedding and shutdown conditions.

Corrective Action

TVA has changed the breaker lubricant from Molybedenum Disulfide to Moly Kote BR2 Plus, which is a Dow-Corning lubricant recommended in the manufacturer's instructions, I.B. 33-790-1F, effective October 1983, and the Maintenance Manual for DS416, Reactor Trip Circuit Breakers (MUHN-2051). TVA's last response on this subject to the NRC dated April 10, 1986, stated that as a result of using Moly Kote BR2 Plus in the performance of maintenance on the Westinghouse reactor trip breakers, it was determined that this lubricant would not flow to reach the surfaces for which it is intended without major disassembly of the breaker, not normally required for routine maintenance. Upon further review, TVA has determined that the Moly Kote BR2 Plus lubricant will perform acceptably in this application with routine maintenance.

The wear limit on existing worn cutoff switch levers is defined as the point at which the thinnest portion of the crescent-shaped worn spot is 50 percent of the original lever thickness. Westinghouse recommends that levers should be replaced at that point. TVA has determined that 29 breakers for both units (all located on the 480V shutdown boards with 2 of the 29 breakers not required until unit 2 fuel load) are safety-related as identified in our final report for nonconformance report (NCR) W-218-P. Inspections of these 29 class 1E breakers cutoff switch levers have been completed. Four of the 29 levers were replaced. Any necessary replacement of the remaining spring motor charging cutoff switch levers is addressed in the normal maintenance program through inclusion of periodic inspection and replacement requirements in Maintenance Instruction MI-57.2.

In order to prevent recurrence, TVA has revised maintenance instructions MI-57.2, revision 10, "Annual 480V Circuit Breaker Instructions," to require breaker lubrication every 500 breaker cycles, or annually, which-ever comes first and the use of Moly Kote BR2 Plus as recommended in the current manufacturer's instructions.