TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

September 28, 1981

RECEIVED
OCT 2 1981
U.S. NUCLEAR REGULATORY COMMISSION

WBRD-50-390/81-71
WBRD-50-391/81-67

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:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - QUALIFICATION OF EPOXY GROUT FOR SAFETY-RELATED APPLICATIONS - WBRD-50-390/81-71, WBRD-50-391/81-67- FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. V. Crlenjak on August 27, 1981, in accordance with 10 CFR 50.55(e) as NCR 3567R. Enclosed is our first interim report. We expect to submit our next report by December 15, 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, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

IE27
S
1/1

8110050188 810928
PDR ADOCK 05000390
S PDR

ENCLOSURE
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
QUALIFICATION OF EPOXY GROUT FOR SAFETY-RELATED APPLICATIONS
10 CFR 50.55(e)
WBRD-50-390/81-71, WBRD-50-391/81-67
FIRST INTERIM REPORT

Description of Deficiency

Epoxy grout was specified on design drawings at specific anchor bolt locations inside containment where temperatures may exceed 120°F. Epoxy grout may lose some of its load-carrying capabilities at temperatures above 120°F. Also, the epoxy grout has not been qualified to a radiation environment inside containment.

The apparent cause of this deficiency is that during design considerations, review of the technical specifications of the grout with respect to radiation and temperature, were not considered.

Interim Progress

TVA has identified all the supports inside containment for which epoxy grout was specified. To address the issue of elevated temperature effects, TVA has initiated a mathematical model analysis of the steam generator anchor bolts to develop the temperature profile which would be expected along the length of these anchor bolts. In addition, TVA is initiating tests at the Singleton Materials Engineering Laboratory on the use of epoxy grout under varying temperatures.

Research done on epoxy polymers of this type show no loss of strength due to radiation dose levels expected during the life of the plant. The radiation effects due to a LOCA are still being investigated. The effects of aging on this type of epoxy have not yet been determined.