

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

83 SEP 19 P 1 13
September 13, 1983

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

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:

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 - FINAL REPORT FOR UNIT 1 AND EIGHTH INTERIM REPORT FOR UNIT 2

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. Interim reports were submitted on September 18 and December 16, 1981; February 11, April 17, June 3, and September 23, 1982; and May 26, 1983. Enclosed is our final report for unit 1 and eighth interim report for unit 2. We expect to submit our next report for unit 2 on or about November 23, 1983.

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
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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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
QUALIFICATION OF EPOXY GROUT FOR SAFETY-RELATED APPLICATIONS
NCR 3567R
WBRD-50-390/81-71, WRD-50-391/81-67
FINAL REPORT FOR UNIT 1 AND EIGHTH INTERIM REPORT FOR UNIT 2

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 have its load-carrying capabilities reduced 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 the technical specifications, "General Anchorage to Concrete," Civil Design Standard DS-C6.1, and General Construction Specification No. G-32, "Bolt Anchors Set in Hardened Concrete," did not include limitations on use of epoxy grout for grouting anchors in areas exposed to radiation or elevated temperatures.

Safety Implications

The subject condition, had it remained uncorrected, could have resulted in the failure of supports and subsequently led to the associated failure of the safety-related piping which would adversely affect the safe operation of the plant.

Corrective Action - Unit 1

All usage of epoxy grout has been halted on safety-related systems. Drawing revisions under engineering change notice (ECN) 3487 have been issued to TVA's Division of Construction so that support modifications or additional supports can be installed for the identified inadequate supports by November 7, 1983. TVA anticipates no problems with the remaining support anchors which utilized epoxy grout General Construction Specification G-32 entitled "Bolt Anchors Set in Hardened Concrete," which was revised on August 25, 1982, to preclude the use of epoxy-grouted anchors in safety-related applications. Additionally, Civil Design Specification DSC-1.7.1, formally DS-C6.1, was revised on May 31, 1983, to also preclude the use of epoxy-grouted anchors in safety-related applications.

Interim Progress - Unit 2

All drawings for unit 2 are being revised to reflect support modifications or additional supports. We expect to provide the next report for unit 2 by November 23, 1983.