

400 Chestnut Street Tower II

July 15, 1981

WBRD-50-390/81-03

WBRD-50-391/81-03



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 - NONRANDOM TESTING OF EXPANSION  
ANCHOR BOLTS - WBRD-50-390/81-03, WBRD-50-391/81-03 - FOURTH INTERIM  
REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
M. Thomas on December 12, 1980, in accordance with 10 CFR 50.55(e) as  
NCR's 2803R and 2873R. Interim reports were submitted on January 12,  
March 23, and June 10, 1981. Enclosed is our fourth interim report.  
We expect to provide additional information by September 24, 1981.

If you have any questions, 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

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ENCLOSURE  
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
NONRANDOM TESTING OF EXPANSION ANCHOR BOLTS  
WBRD-50-390/81-03, WBRD-50-391/81-03  
10 CFR 50.55(e)  
FOURTH INTERIM REPORT

Description of Deficiency

As a result of a program implemented to resolve NCR 2019R, Seismic Pipe Supports, TVA has identified instances where previously performed and documented inspections of expansion anchors for seismic pipe supports have failed to comply with requirements specified in General Construction Specification G-32, "Bolt Anchors Set in Hardened Concrete." These instances are identified in NCR's 2803R and 2873R.

G-32 specifies that a specific number of expansion anchors will be randomly chosen and tested from within a lot after installation of the lot. A lot is defined as those expansion anchors installed by a specific crew either in a specific location in the plant or over a period of time not to exceed two weeks. Contrary to the above, NCR 2803R identified lots in which expansion anchors were not randomly chosen for testing and failed to meet the location or time requirements specified in G-32. In addition, NCR 2873R identified expansion anchors which were not included within a lot as required by G-32.

Interim Progress

TVA has completed an NRC-OIE Bulletin 79-02 (February 19, 1981) type inspection for NCR 2873R to determine if the violation of G-32 resulted in the installation of anchors that would not meet their maximum design loads. The inspection resulted in the evaluation of 281 anchors for NCR 2873R. The results of the evaluation (completed April 23, 1981) were that with a 99-percent confidence level less than 1.0 percent of the tested anchors would not meet the pull test requirements in G-32. The anchors that did not meet the G-32 pull test requirements were considered structurally unacceptable and replaced. The requirement of NRC-OIE Bulletin 79-02 is a 95-percent confidence level that less than 5 percent defective anchors are installed in any one Category I system. Since the failure rate for the anchors was less than required by the NRC bulletin, the anchors will be used as installed. As a result, TVA considers NCR 2873R resolved.

TVA has also completed an NRC-OIE 79-02 (February 19, 1981) type inspection for unit 1 common anchors associated with NCR 2803R to determine if the violation of G-32 resulted in the installation of anchors that would not meet their maximum design loads. The inspection resulted in the evaluation of 127 anchors. The results of the evaluation (completed April 23, 1981) was that with a 99-percent confidence level less than 2.0 percent of the tested anchors would not meet the pull test requirements in G-32. The anchors that did not meet the G-32 pull test requirements were considered structurally unacceptable and replaced. The requirement of NRC-OIE Bulletin 79-02 is a 95-percent confidence level that less than 5 percent defective anchors are installed in any one Category I system. Since the failure rate for the anchors was less than required by the NRC bulletin, the anchors will be used as installed. All of the unit 2 anchors included in NCR 2803R are currently being subjected to an NRC-OIE 79-02-type inspection and the results will be evaluated by TVA's Division of Engineering Design. As a result, NCR 2803R will remain open until completion of this evaluation.