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Mark O. Medford
Vice President, Nuclear Assurance, Licensing and Fuels

JAN 28 1991

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of the Application of)	Docket Nos. 50-390
Tennessee Valley Authority)	50-391

WATT'S BAR NUCLEAR PLANT (WBN) - NRC INSPECTION REPORT NO. 390, 391/90-20 -
REPLY TO NOTICE OF VIOLATION 390/90-20-01

In a letter to TVA dated December 11, 1990, NRC requested that TVA reevaluate its conclusions about the reason for the subject violation and provide a supplemental response to TVA's October 25, 1990 submittal. Accordingly, we have reevaluated the circumstances surrounding the violation and agree that the correct use of either procedure involved should have caused quality control rejection of the work. Therefore, the violation was caused by a quality control inspector not properly carrying out his inspection responsibilities. The revised response (Enclosure 1) discusses the details of our review and the corrective actions we have undertaken to address the violation. This revision replaces TVA's October 25, 1990 submittal. Enclosure 2 contains the commitments made in this submittal.

The NRC's letter goes beyond the specific NOV citation to identify broad concerns regarding the adequacy of TVA's quality control inspections. TVA acknowledges the broader issue identified in this letter. TVA and NRC management met in early October 1990 to discuss quality performance, to discuss immediate actions, and to describe longer term activities. In light of these and other recent events, TVA has since stopped construction work at WBN.

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U.S. Nuclear Regulatory Commission

TVA committed in the January 15, 1991 meeting with NRC senior management to identify and correct the underlying problems evidenced by work that failed to meet quality standards. TVA will provide follow-up information to NRC toward this end separate from this response.

If there are any questions, please telephone P. L. Pace at (615) 365-1824.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

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Enclosures

cc (Enclosures):

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ENCLOSURE 1

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-20-01DESCRIPTION OF VIOLATION

Part 50 of Title 10 of the Code of Federal Regulations, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," is implemented in part by the Nuclear Quality Assurance Plan (NQAP), paragraph 9.1.4, C, which endorses American National Standards Institute (ANSI) N45.2 and states that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings.

Contrary to the above, during this inspection period, the inspector observed concrete expansion anchor bolts installed in conduit supports 2-CSP-292-N1615 and -N1616 that failed to comply with Construction Process Instruction (CPI)-8.1.8-H-400 and CPI-8.1.8-C-501A because of inadequate thread engagement, but were documented as acceptable by a quality control (QC) inspector on February 16, 1990, in accordance with the referenced procedures.

ADMISSION OR DENIAL OF THE VIOLATION

TVA admits the violation occurred.

REASON FOR THE VIOLATION

The violation occurred due to a nuclear QC inspector not properly performing the inspection. The QC inspector failed to follow procedural requirements.

WBN-CPI-8.1.8-G-100, "Expansion, Grouted, and Undercut Anchors," in a subnote requires anchor bolts to be "completely through the nut" and the "start of the thread to be level with the outside face of the nut." The instruction also refers to WBN-CPI-8.1.8-C-501A, "Erection of Structural Steel," for final tightening. This instruction states that "all bolted connections, when properly tightened, shall exhibit visible evidence of complete threading through the nut . . . by a minimum of one thread exposed." Contrary to both instructions, the QC inspector accepted two anchor bolts which were not completely through the nuts.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

TVA reviewed the QC inspector's certification to perform this inspection and determined that the inspector met TVA's certification program requirements, (Quality Management Procedure (QMP)-102.5). Although this inspector is no longer employed at TVA, he has been made aware of the inadequate inspection and a notation has been placed on file regarding the quality of his work and the subject violation.

ENCLOSURE 1

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-20-01

TVA determined that this QC inspector inspected the two supports in which deficiencies were found (2-CSP-292-N1615 and N1616) as well as four additional supports, and that all six supports involving 24 anchor bolts were inspected during a single inspection. TVA reinspected all six supports and, with the exception of the two deficient anchor bolts (one on each above-mentioned support), thread engagement was found to be satisfactory. The two deficient anchor bolts have been reworked, reinspected, and dispositioned as satisfactory.

In order to determine if there were similar problems involving thread engagement of anchors at Watts Bar in general, TVA performed a search of condition adverse to quality reports (CAQRs) and problem reporting documents (PRDs) initiated from June 1989 (eight months prior to the improper inspection) through December 1990. No other instances of thread engagement problems were found.

To provide an additional degree of assurance about the adequacy of inspections performed, an anchor bolt sample will be conducted of thread engagement inspections by ten other QC inspectors. Six bolts which were inspected by each inspector will be reexamined.

WBN-CPI-8.1.8-G-100 and WBN-CPI-8.1.8-C-501A have been revised for clarity. Each now has an additional instruction in the subnote which provides the same method of verification of the bolt projection above the nut. The subnote states, "Completely through the nut for application is defined as any projection of the bolt outside the face of the nut. This can be confirmed by placing a straight edge on the nut and verifying that the bolt projects above the nut." TVA's QC organization has conducted inspector training in accordance with these revised inspection requirements.

TVA recognizes that it was the deficient installation of the support by TVA's nuclear construction organization which lead to the problem identified with the QC inspection. The above-mentioned revised procedures are being utilized by construction crafts as well as QC inspectors. In addition, Nuclear Construction has developed and is currently implementing a craft training certification program that requires a hands-on proficiency test to verify an individual's ability to correctly install expansion anchors to the revised procedures.

CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Continued implementation of the training and certification described above should prevent recurrence. Results of the anchor bolt sample program may, depending upon its outcome, require additional corrective actions. TVA will notify NRC if any further corrective actions are deemed necessary.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

The anchor bolt sample discussed above will be completed by March 22, 1991. All other actions have been completed.

ENCLOSURE 2

LIST OF COMMITMENTS

To provide an additional degree of assurance about the adequacy of inspections performed, an anchor bolt sample will be conducted of thread engagement inspections by ten other QC inspectors. Six bolts which were inspected by each inspector will be reexamined by March 22, 1991.