TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
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May 7 1986

WBRD-50-390/85-62

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 - SLOTTED HEAD MACHINE SCREWS USED IN SUPPORTS - WBRD-50-390/85-62 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Al Ignatonis on November 18, 1985 in accordance with 10 CFR 50.55(e) as NCR WBN 6422. Interim reports were submitted on December 30, 1985 and April 1, 1986. Enclosed is our final report. We no longer consider 10 CFR 50.55(e) applicable to this deficiency.

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

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 1
SLOTTED HEAD MACHINE SCREWS USED IN SUPPORTS
WBRD-50-390/85-62
NCR WBN 6422
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

A condition was identified at Watts Bar Nuclear Plant (WBN) in which slotted-head machine screws were installed in support for instrumentation tubing subassemblies 1-062-L112B-01/4 and 1-062-L558-0001. These slotted-head machine screws were installed instead of hex-head cap screws which were furnished by Unistrut. TVA General Construction Specification G-53, revision 4, paragraph 1.1.1, states:

> This applies to all bolting materials used at all TVA projects. It defines certification, identification, nondestructive examination (NDE), and storage requirements for all bolting material (bolts, studs, and nuts) to be used in permanent features by the Office of Construction (OC) except as identified in section 1.2.

Section 1.2 states that slotted-head machine screws are not covered and are outside the scope of G-53. No design requirements have been identified which establish requirements in regard to the use of slotted-head machine screws.

Safety Implications

TVA performed a random sampling program of slotted-head machine screws in both units documenting various applications where machine screws were installed. A sample size of 80 machine screws used in clamp assemblies was randomly selected from the intake pumping station, fifth diesel generator building, auxiliary building, reactor building, and control building. All machine screws sampled were sent to TVA's Singleton Laboratory to evaluate the chemical and mechanical properties. Results of the testing indicated that the machine screws meet the chemical and mechanical requirements of ASTM A307. Based on an evaluation of these results by design personnel, it has been determined that the slotted-head machine screws are acceptable for use in their existing applications. Therefore, TVA no longer considers this deficiency to be reportable under the 10 CFR 50.55(e) criteria.