TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

January 6, 1983

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WBRD-50-390/81-27
WBRD-50-391/81-26

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - INSUFFICIENT DOCUMENTATION FOR PROTECTIVE DEVICES - WBRD-50-390/81-27, WBRD-50-391/81-26 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. V. Crlenjak on March 13, 1981 in accordance with 10 CFR 50.55(e) as NCR 3001R R1. Interim reports were submitted on April 10, May 21, July 9, and August 6, 1981 and July 30, 1982. As specified in my letter to you dated September 24, 1981, a related nonconformance, NCR 3523R, would be handled in conjunction with NCR 3001R R1. Enclosed is our final report on both NCRs.

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, 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

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ENCLOSURE
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
INSUFFICIENT DOCUMENTATION FOR PROTECTIVE DEVICES
WBRD-50-390/81-27
WBRD-50-391/81-26
10 CFR 50.55(e)
NCRs 3001R R3 AND 3523R
FINAL REPORT

Description of Deficiency

TVA has recently discovered that there has been insufficient documentation on the installation and fabrication of all pipe whip and jet impingement protective devices (PDs). The PDs provide protection, as required, to safety system components (pipes, equipment, walls, etc.) from the effects of postulated high energy pipe breaks. The detailed description of the deficiency is as follows:

(a) No weld inspection documentation is available for PDs other than those in valve rooms and the feedwater system in the unit 1 reactor building.

(b) Where weld inspection documentation is available, it is incomplete because it cannot be determined whether an entire assembly was accepted or only part of it.

(c) No fitup documentation is available for any welded connections; i.e., there is no inprocess documentation available.

(d) Location acceptance is based upon plus or minus 1/2-inch tolerance on PDs whereas piping systems protected are given plus or minus 2-inch tolerance. Piping systems have not been, on an average, within PD tolerance.

(e) There is incomplete documentation on anchor bolts with regard to embedment or testing.

(f) No documentation is available for friction-type bolted connections.

The affected PDs are located in the following systems: Residual heat removal (RHR), safety injection (SIS), upper head injection (UHI), chemical and volume control (CVCS), reactor coolant (RCS), main steam (MS), feedwater (FW), auxiliary feedwater (AFW), and blowdown (BD) systems.

Safety Implications

Since there is insufficient documentation on the PDs, there could be PDs with faulty welds, fitups, and anchors. If a pipe were to break, a faulty PD could fail allowing the pipe to whip or a jet spray to impinge essential equipment. This could damage components in other essential safety-related systems necessary for a safe plant shutdown.

Corrective Action

TVA is reinspecting all PDs. Each PD will be evaluated and any drawings requiring revisions will be done by the field change request (FCR) procedure. TVA will maintain a log of all FCRs associated with this NCR.

TVA will also inspect and determine, when accessibility permits, if fitup gaps are within tolerances of the applicable weld joint designs of general Welding Procedure Specification G29-C. TVA will establish the location, verify the configuration and the clearances, and analyze all deviations on the PDs. Anchor bolts will be inspected, tested, and documented under the requirements of General Construction Specification G-32R6. In order to prevent recurrence of this condition, engineering and inspection personnel involved in the installation and fabrication of PDs have been instructed as to all requirements concerning inspection and documentation of PDs. Corrective action for unit 1 will be completed by March 31, 1983, and for unit 2 by December 31, 1983.