TENNESSEE VALLEY AUTHORITY
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AUG 17 1989

WBRD-50-390/87-21
WBRD-50-391/87-25

10 CFR 50.55(e)

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

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - LACK OF COMPLETE CONTROLLING DESIGN INPUT REQUIREMENTS - WBRD-50-390/87-21 AND WBRD-50-391/87-25 - REVISED FINAL REPORT

The subject deficiency was initially reported to NRC Region II Inspector Art Johnson on October 30, 1987, in accordance with 10 CFR 50.55(e) as Condition Adverse to Quality Report (CAQR) WBP 870443. An interim report was submitted on November 25, 1987.

Since our interim report, a corrective action program (CAP) plan has been submitted to NRC. The Design Baseline and Verification Program CAP was developed to ensure that the licensing basis and design basis for the plant are accurate and are maintained as such. A revision to this CAP was submitted for NRC review on June 29, 1989. The enclosure contains our revised final report on this item as agreed to in the July 28, 1989 teleconference between TVA and NRC. There are no new commitments made in this submittal.

If there are any questions, please telephone G. R. Ashley at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

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Enclosure
cc: See page 2

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
LACK OF COMPLETE CONTROLLING DESIGN INPUT REQUIREMENTS
WBRD-50-390/87-21 AND WBRD-50-391/87-25
CAQR WBP 870443
10 CFR 50.55(e)

REVISED FINAL REPORT

Description of Deficiency

Nuclear Engineering Procedure (NEP)-3.2 requires that design input for safety-related structures, systems, and components be identified, documented, and preserved. Additionally, it requires that changes to design input be evaluated and, where appropriate, be reflected in revisions to other affected design input documents. As stated in the corrective action program (CAP) plan submitted to the Nuclear Regulatory Commission (NRC) on October 20, 1988 (L44 881020 810), the Watts Bar Design Baseline and Verification Program (DBVP) includes development of a single source design basis document (DBD). This DBD was developed by updating existing design criteria and system descriptions, and by preparing new design criteria or system descriptions as needed to satisfy the requirements of NEP-3.2. The DBD contains:

1. Design input level commitments made in licensing documents.

2. Design input requirements contained in various other internal design documents.

In the process of developing the DBD, TVA determined that appropriate design input was lacking in several existing design input documents. The major categories of concerns with the documents which now make up the DBD and their respective root causes were:

1. Incomplete or missing design basis information caused by failure to update documents to incorporate commitment changes.

2. Discrepancies between DBDs caused by failure to incorporate design changes through to all affected documents.

3. Inconsistencies between DBDs and current NEPs, Watts Bar Engineering Procedures (WBEP), and engineering guidelines/requirements caused by failure to incorporate programmatic changes.

4. Insufficient identification of required supporting calculations caused by failure to include appropriate references.

Safety Implications

If this condition had remained uncorrected, portions of the plant design may not have been evaluated and performed in accordance with design commitments or requirements. The potential that the design output documents and the resulting constructed features do not reflect the design basis of the plant could have jeopardized the safe operation of the plant.

Corrective Actions

The DBVP includes development of a new Watts Bar DBD and the associated procedures to control this document. To accomplish this task, the licensing commitments made by TVA to regulatory agencies and in internal documents such as correspondence, specifications, job books, notes, manuals, and other miscellaneous records were compiled and sorted by engineering discipline. These documents were then reviewed by senior TVA engineers in each discipline and the design basis information in each document was identified.

The project lead discipline engineers identified the essential set of new and existing design criteria and system description documents necessary to effectively contain the WBN design basis. Existing design criteria and system descriptions were then revised, and new ones drafted to incorporate the information identified by the senior engineers. References were added to required supporting calculations. Draft design criteria and system description documents were reviewed by the affected engineering disciplines. Once all draft design criteria and system description documents were approved, the set was issued as the WBN DBD in August 1988. Licensing commitments originating between the initial review of the document set described above and the issue of the controlling procedure for the maintenance of the DBD were identified in the same manner as the initial review and were incorporated into the DBD in a general revision which was completed April 17, 1989.

Any information added, deleted, or changed from issued documents and any recommendation or unresolved technical issues, such as new requirements, etc., were identified as open items. Open items were assigned to the responsible organization and are tracked to resolution. Identification of design output which is determined to be inconsistent with the plant design basis requirements resulted in the initiation of three condition adverse to quality reports (CAQRs), WBP 871212, and WBP 890162 (unit 1) and WBP 890163 (unit 2). Open items which represent unacceptable and potentially unacceptable safety system design will be identified and resolved before fuel load through the conditions adverse to quality (CAQ) process.

In order to prevent recurrence of these concerns NEP-3.2, which governs the development of design input, was issued on July 1, 1986. WBEP-5.10 was issued August 2, 1988, and provides for the maintenance of the WBN DBD. This procedure ensures that this baseline set of input requirements is maintained consistent with plant design and regulatory requirements. Development of a specific set of interrelated procedures on design input is intended to prevent further inconsistencies due to programmatic changes.

The issuance of one DBD with a consistent set of controlling procedures for its maintenance fulfills the corrective actions outlined in prior reports.