

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

FEB 05 1990

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

Gentlemen:

In the Matter of the Application of )  
Tennessee Valley Authority )

Docket Nos. 50-390  
50-391

WATTS BAR NUCLEAR PLANT (WBN) - NRC INSPECTION REPORT NOS. 50-390/89-12 AND  
50-391/89-12 ON DESIGN BASELINE VERIFICATION PROGRAM (DBVP) CORRECTIVE ACTION  
PROGRAM (CAP) PLAN

Enclosure 1 provides TVA's response to the items detailed in the summary of  
the referenced inspection report. Enclosure 2 provides a summary of new  
commitments made in this submittal.

Several delays in submittal of this response were discussed with Ken Barr  
between December 14, 1989 and January 31, 1990.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

  
Manager, Nuclear Licensing  
and Regulatory Affairs

Enclosures  
cc: See page 2

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U.S. Nuclear Regulatory Commission

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cc (Enclosures):

Ms. S. C. Black, Assistant Director  
for Projects  
TVA Projects Division  
U.S. Nuclear Regulatory Commission  
One White Flint, North  
11555 Rockville Pike  
Rockville, Maryland 20852

Mr. B. A. Wilson, Assistant Director  
for Inspection Programs  
TVA Projects Division  
U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

NRC Resident Inspector  
Watts Bar Nuclear Plant  
P.O. Box 700  
Spring City, Tennessee 37381

## ENCLOSURE 1

### ITEM 1

The Design Baseline Verification Program (DBVP) specifies that all safety-related calculations associated with problem areas are reviewed for technical adequacy. Other selected areas where problems have not been identified also will be reviewed on an as-needed basis. The NRC team finds this commitment needs to be clarified. A more precise description of what will or what will not be reviewed should be included in the DBVP.

### RESPONSE

The DBVP Corrective Action Program (CAP) Plan gives the specific details on the scope of the Electrical Calculation Program and the Hanger and Analysis Calculation Program. The scope of the Mechanical/Nuclear/Materials (MNM) Calculation Program and the Civil Structural Calculation Program are as follows:

#### MNM Calculation Program

The scope of the MNM Calculation Program for reviewing existing calculations includes all types of safety-related calculations performed within the discipline. Instead of performing a sampling effort as indicated in the DBVP CAP, MNM is reviewing the safety-related calculations performed before issuance of Nuclear Engineering Procedure (NEP)-3.1. In addition, the results of the technical adequacy reviews will be subject to a generic evaluation by calculation type. Each calculation type noted as having repeated and significant deficiencies will be examined for potential programmatic problems which may require review of calculations performed after the issuance of NEP-3.1.

The issuance date of NEP-3.1 was chosen to define the scope of those calculations subject to technical adequacy reviews. NEP-3.1 instituted additional controls on the technical adequacy of calculations and was accompanied by extensive training throughout engineering. NEP-3.1 includes specific requirements for performing an independent review of calculations enhancing the previous quality assurance checking and review requirements. The additional requirements of NEP-3.1 and the heightened awareness of calculation adequacy problems provide reasonable assurance that WBN calculations are technically adequate and correct.

### Civil Calculation Program

The scope of the Civil Calculation Program is to identify, confirm retrievability, confirm technical adequacy, and generate safety-related civil calculations essential to the licensing of Watts Bar Nuclear Plant. Ongoing CAPs other than DBVP will evaluate a substantial part of the civil calculations in the areas covered by the CAPs. These CAPs are as follows:

- Seismic Assessment
- Cable Tray
- Conduit and Conduit Supports
- HVAC Ducts and Supports
- Hanger Analysis and Update Program (HAAUP)
- Equipment Seismic

Civil engineering calculations not within these CAPs will be retrieved and technically reviewed. Calculations found to be technically inadequate or nonretrievable will be regenerated. Where the population of features/ calculations is considered small, a 100 percent review will be completed, although grouping and bounding may be utilized (e.g., where ten whip restraints have a similar design a single review may be used to verify all ten). Examples of this category include masonry walls, post tension concrete, geotechnical/geological, and design basis external flooding. However, where the population is relatively large, an engineering-guided sample will be used. This sample will be based, in general, on worst case attributes such as maximum loadings or maximum spans. Because of the reanalysis of large bore American Society of Mechanical Engineers (ASME) piping, it is planned to review the changes in loads resulting from that program and evaluate platforms and concrete features with significant load increases. Examples where engineering-guided samples will be selected are structural steel platforms, concrete floor slabs and walls, embedded plates, equipment foundations, pipe whip restraints, tornado missile barriers, and steel containment vessel penetrations and attachments.

ITEM 2

The DBVP specifies that the Nuclear Quality Assurance (NQA) organization will monitor activities through scheduled audits or surveillance, but it does not specify how many audits and surveillances will be performed and when those audits will be performed. This level of effort should be defined.

RESPONSE

Below is the overall plan being implemented by NQA in the oversight of the WBN DBVP. It also identifies each element of the DBVP requiring evaluation and indicates the audits/surveillances completed, audits scheduled, and the elements addressed by each audit/surveillance.

For audits yet to be performed, the scheduled dates shown are tentative. The intent is to evaluate, where practical, an element of the DBVP when approximately 20-30 percent of the product (e.g., calculations) is complete. Therefore, audit dates may be adjusted to meet this approach. This approach allows for sufficient representative material to be included in the audit sample and provides for relatively timely detection of any potential problems.

WATTS BAR DESIGN BASELINE AND VERIFICATION PROGRAM

NQA OVERSIGHT PLAN

<u>DBVP ELEMENTS</u>	<u>AUDITS/SURVEILLANCES COMPLETED TO DATE</u>	<u>AUDITS SCHEDULED</u>
◦ C/R Data Base	Sept 87	
◦ Licensing Verification	April 88, April 89	
◦ Design Criteria/DBDs	April 88, April 89	
◦ System Boundary Calculations	Aug 89	
◦ Walkdowns	April 88, April 89, Aug 89	
◦ Essential Calculations	Aug 89, Dec 89	Feb 90
◦ Test Scoping Documents	Aug 89	
◦ Design Change Process	Aug 89	
◦ System Evaluations		Feb 90
◦ Open Item Resolution		Feb 90
◦ CCD Development		Feb 90

ITEM 3

The DBVP interfaces with various other ongoing programs, but it does not contain a logic or flow diagram to show how those programs communicate with each other. These activities need to be defined.

RESPONSE

DBVP is a broad-based program which has interfaces with a large number of other CAPs and special programs. The overall program direction is managed by the DBVP program manager. However, the technical work is performed under the direction of the discipline lead engineers. For example, the electrical calculations performed as part of DBVP are done within the same technical discipline organization as calculations performed as part of the Electrical Issues CAP.

The DBVP program manager ensures that appropriate consideration of DBVP is included in procedures. The procedures which define these requirements are shown in the attachment to this enclosure. This concept precludes the need for a documented interface review by the DBVP program manager for this type of program output.

ITEM 4

The Raw Service Water (RSW) System and Fuel Handling and Storage System have not been included in the DBVP CAP Plan. These two systems shall be included in the DBVP.

RESPONSE

This item was identified with regard to Attachment 2 to the DBVP CAP Plan, "WBN Systems Within the Scope of the DBVP Configuration Control Activity." The functional requirements calculation, which defines the systems required to mitigate design basis events (DBE), has been reviewed to ensure the referenced systems are an appropriate part of the DBVP configuration control activity. The RSW system has been determined to be outside the scope of the DBVP system list, since RSW has no attributes for mitigating a DBE which require functional verification in accordance with the DBVP CAP. The functional requirements calculation will be revised to delete raw service water. The DBVP CAP will be revised to include the Fuel Handling and Storage System on the DBVP systems list by July 31, 1990.

ITEM 5

The NRC Team review revealed that commitment/requirement (C/R) unit (B43 860902 902) involved a response to NRC Circular 79-02. TVA's response to NRC Circular 79-02 is inaccurate. TVA needs to review the information contained in the circular and revise its response.

RESPONSE

TVA will revise its response to NRC Circular 79-02. This revised response will be incorporated in Chapter 7 of the Final Safety Analysis Report (FSAR) in accordance with the FSAR upgrade program currently in process.

## ENCLOSURE 2

### LIST OF COMMITMENTS

1. Mechanical/Nuclear/Materials (MNM) is reviewing the safety-related calculations performed before issuance of Nuclear Engineering Procedure (NEP)-3.1. The results of the MNM technical adequacy reviews will be subject to a generic evaluation by calculation type. Each calculation type category noted as having repeated and significant deficiencies will be examined for potential programmatic problems which may require review of calculations performed after the issuance of NEP-3.1.
2. Civil engineering calculations not within other corrective action program (CAP) plans will be retrieved and technically reviewed. Calculations found to be technically inadequate or nonretrievable will be regenerated.
3. For audits yet to be performed, the intent is to evaluate, where practical, an element of the Design Baseline Verification Program (DBVP) when approximately 20-30 percent of the product (e.g., calculations) is complete.
4. The functional requirements calculation will be revised to delete raw service water.
5. The DBVP CAP will be revised to include the Fuel Handling and Storage System on the DBVP systems list by July 31, 1990.
6. TVA will revise its response to NRC Circular 79-02. This revised response will be incorporated in Chapter 7 of the Final Safety Analysis Report (FSAR) in accordance with the FSAR upgrade program currently in process.



