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February 12, 1997

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

Gentlemen:

In the Matter of	)	Docket Nos.	<del>50-259</del>	50-327
Tennessee Valley Authority	)		50-260	50-328
			50-296	50-390
				50-391

**RESPONSE TO REQUEST FOR INFORMATION REGARDING ADEQUACY, AVAILABILITY, AND CONTROL OF DESIGN BASES INFORMATION**

This letter responds to the NRC's October 9, 1996, 10 CFR 50.54(f) request for information regarding the adequacy, availability, and control of design bases information for TVA's Sequoyah (SQN), Browns Ferry (BFN), and Watts Bar (WBN) Nuclear Plants.<sup>1</sup>

**BACKGROUND**

As described in this letter and its enclosures, TVA has adequate documentation defining the design and licensing bases for these plants, along with processes and controls designed to ensure that these bases and changes made to these bases are appropriately evaluated and incorporated into procedures and plant physical and functional characteristics. TVA also has programs and procedures to ensure that systems, structures, and components (SSCs) are operated and maintained consistent with the design and licensing bases. These programs, processes, and controls are not static, but rather are continually being improved and enhanced in light of ongoing industry and regulatory developments and TVA's own internal assessments. When

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<sup>1</sup> This NRC request was received by TVA on October 15, 1996.

problems or the need for enhancements are identified, they are addressed through TVA's Corrective Action Program. All of these programs, processes, and controls, as well as TVA's self-critical approach in this area, provide TVA with assurance that its plants are operated safely and consistent with their design and licensing bases.

To address the specific information requests contained in NRC's October 9, 1996 letter, TVA assembled teams of individuals at each nuclear plant site and the Corporate office having detailed knowledge of the programs and processes described in this response. These teams used their knowledge of these programs and processes to respond to the specific NRC information requests. The responses were then validated by appropriate organization managers at the sites and the Corporate office. An independent assessment of the adequacy of the overall response was also performed by a consultant. These efforts have provided additional confidence that the information provided in this response is complete and thorough.

For purposes of clarity and understanding, TVA has provided detailed responses to the specific information requests in the enclosures as follows:

- Enclosure 1 contains the response for BFN.
- Enclosure 2 contains the response for SQN.
- Enclosure 3 contains the response for WBN.

In addition, in order to eliminate any ambiguity with regard to commitments contained in this submittal, Enclosure 4 contains the only commitments in response to the information request. Provided below is a summary of TVA's response.

**TVA HAS SIGNIFICANT EXPERIENCE IN RECONSTITUTION  
OF DESIGN BASES**

Approximately ten years ago, TVA shut down SQN and BFN and suspended licensing activities at WBN to address a number of regulatory and operational deficiencies. As part of the restart efforts for SQN and BFN, and as part of the initial start-up of WBN, TVA committed to a program to maintain a documented design basis for our nuclear plants and to control plant configuration in accordance with that basis. TVA fulfilled its commitment, in part, through a Design

Basis and Verification Program (DBVP) for each site which confirmed the design bases and evaluated plant configurations to ensure:

- Plant configuration satisfies the design bases,
- Configuration of the systems and components within the scope of the DBVP is supported by engineering analysis and documentation, and
- Plant configuration is in conformance with NRC regulations and TVA licensing commitments.

Essential elements of the program were:

- Research and development of design basis documentation.
- Verification of plant configuration.
- Reconciliation of plant configuration to engineering design documents including essential calculations and design criteria.
- Reconciliation of the plant configuration to the Final Safety Analysis Report (FSAR) and licensing commitments.
- Performance of system evaluations of the verified plant configuration to identify design discrepancies for the operating plants.
- Issuance of configuration control drawings consistent with plant configuration for the systems within the scope of DBVP.
- Implementation of an improved change control process.

The DBVP addressed systems, or portions thereof, that perform safety-related functions including the safety functions necessary to mitigate postulated design basis accidents which are discussed in the BFN and SQN Updated Final Safety Analysis Report (UFSAR) and the WBN FSAR. This program also established high standards for TVA's design control change processes to ensure that design bases are maintained current.

The scope and key elements of this program were extensively reviewed by TVA and the NRC. During our restart and initial start-up efforts and throughout the program's implementation, the NRC performed several inspections. The most recent inspections were performed in December 1994, during the BFN Unit 3 restart effort, and in August 1995 at WBN.

As part of the restart and initial start-up efforts, TVA also upgraded plant procedures including those in the areas of operations, maintenance, and testing. The procedure upgrade programs utilized appropriate design information to ensure design bases requirements were incorporated into procedures.

#### **TVA MONITORS ITS CONTROL OF DESIGN BASES INFORMATION**

In the intervening time since implementation of these DBVPs, the integrity of TVA's design and licensing bases, as well as the translation of those bases into procedures and SSC configuration and performance, has been examined and tested through several mechanisms. These mechanisms include TVA review efforts that target specific industry and regulatory issues, TVA self-assessments, TVA Quality Assurance (QA) assessments, and NRC inspections. TVA has also kept pace with the latest developments in the industry and the NRC regarding design basis and configuration management programs. In this connection, TVA has initiated several actions to assess and strengthen the scope and quality of its design basis efforts to ensure greater compliance in these areas. Some of these efforts are outlined below and have been discussed with the NRC staff:

- TVA has enhanced its Corrective Action Program.
- Since January 1995, TVA has performed vertical slice assessments to review several systems at its nuclear facilities. These assessments focused on the capability of the systems to perform their design functions and specifically addressed the consistency between installation, operations, maintenance, and testing and the design/licensing bases. TVA is continuing to perform periodic vertical slice audits at each nuclear site as part of a Corporate-wide initiative.
- TVA has also performed assessments in the area of 10 CFR 50.59 Safety Assessments/Safety Evaluations.

#### **FSAR ACCURACY**

TVA is also mindful of the broader concerns identified by the NRC regarding the accuracy of the FSAR. TVA has initiated comprehensive actions to review the accuracy of the UFSAR/FSAR and the processes used to control these documents. These initiatives are summarized below:

- TVA has initiated an assessment of the programs that identify and control commitments that affect the plant. The assessment is following the guidelines of NEI 96-05, "Guidelines for Assessing Programs for Maintaining Licensing Basis."
- TVA is addressing the issue of UFSAR/FSAR accuracy by verifying UFSAR/FSAR content as part of ongoing QA activities. Additionally, TVA has completed an initial review of the BFN and SQN UFSARs to identify discrepancies that could result in Unreviewed Safety Questions (USQs), impact system operability, or require modifications to plant equipment. The UFSAR text was also reviewed by Operations personnel at both sites to ensure that the plants are operated consistent with UFSAR descriptions.

- For WBN, changes and clarifications to the FSAR are being identified and processed in accordance with site administrative processes in preparation for the first update of the FSAR. In addition, specific reviews regarding conformance to the FSAR have included the review of a select number of Design Change Notices implemented during mid-cycle outage to establish conformance with administrative requirements for initiation of FSAR changes. Another review evaluated portions of the FSAR for consistency with design documentation and plant configuration.

As a result of these activities, TVA has concluded that improvements can be made in Safety Assessments/Safety Evaluations, the accuracy of the UFSAR/FSAR, and design basis documentation. Problems found in these areas thus far have not presented any USQs or undermined TVA's overall confidence in its design bases or the translation of those bases to procedures and SSC configuration and performance at any of TVA's nuclear facilities. Appropriate corrective actions, root cause analysis, and extent of condition reviews have been taken or initiated and will be tracked to closure. Programs and processes will be modified to further enhance their effectiveness as needed.

The procedures, processes, and programs discussed in this response are dynamic by nature, and this response provides an accurate description of the present state of each. However, TVA reserves the ability to revise these procedures, processes, and programs in accordance with approved revision processes and applicable regulatory requirements without modifying this response.

#### CONCLUSION

TVA recognizes the need to diligently control changes to the design basis and to maintain an accurate UFSAR/FSAR. TVA will continue to dedicate the necessary resources to maintain design information and ensure its translation into procedures and SSC configuration and performance. TVA has established high expectations for performance in this area and will work to aggressively correct any deficiencies.

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If you have any questions, please contact me at  
(423) 751-8682.

Sincerely,

  
O. J. Zeringue

Subscribed and sworn to before me  
this 12<sup>th</sup> day of February 1997

  
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Notary Public

My Commission Expires 9-8-99

Enclosures  
cc: See page 8

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