



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

August 31, 1988

Docket Nos. 50-390/391

Mr. S. A. White
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. White:

SUBJECT: WATTS BAR NUCLEAR PLANT (WBN) VERTICAL SLICE REVIEW (VSR) PLAN

This is in response to your letter dated June 24, 1988 regarding the Vertical Slice Review (VSR) plan. As stated in your letter, the purpose of this VSR is to provide reasonable additional assurance that the design and construction of WBN meets licensing requirements through (1) a review of the technical adequacy of selected systems and the design process, (2) a verification of the as-constructed plant for selected systems, and (3) a review of the QA/QC records for selected systems to demonstrate that the records adequately reflect the design and installed plant hardware. The VSR will be performed on two systems selected by the VSR team and accepted by the Watts Bar Program Team (WBPT). It will be necessary to include in the VSR portions of other systems; or to perform a limited horizontal review of selected portions of the plant. The selection of these systems shall be made to ensure coverage of essential plant elements. The VSR will either verify the adequacy of plant systems, components, and structures, or identify the nonconforming conditions.

The NRC staff has reviewed the proposed plan and considers the methodology as proposed by Sargent & Lundy (S&L) to be reasonable for a project of this nature. The NRC staff has the following comments:

1. The staff understands that as proposed by TVA, the elements and/or attributes associated with five well-defined corrective action programs (CAPs) will be excluded from the VSR. These programs are Hanger and Analysis Update, Concrete Quality, Equipment Qualification, Control Room Design Review, and Welding. The VSR team should consider these areas to make a determination if portions of these programs should be included in the VSR program for completeness of the review. The NRC staff has not reviewed any of these five areas either programmatically or technically. Exclusion of the elements and/or attributes associated with these programs places an additional burden on the VSR team for one to assume that the exclusion does not invalidate the intent of the VSR program.

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2. Page II-3 - If design and construction activities are not homogeneous (i.e., similar activities performed by different contractors to different acceptance standards) then the VSR should be expanded horizontally to sample non-homogeneous activities.

Page II-8 - The design process review should include an evaluation of Field Change Requests (FCRs) and Nonconformance Reports (NCRs) for appropriate disposition, especially important are those NCRs that have been dispositioned "Use-As-Is."
4. Page II-9 - Sargent & Lundy intends to review TVA performed design reviews for technical adequacy. The Sargent & Lundy review should also evaluate the adequacy of TVA's plant-specific corrective actions.
5. Page II-9 - The review of selected design documents should include the following attributes: (1) proper application of barriers at safety-related fluid system interfaces and (2) transmittal and utilization of interdisciplinary information, i.e., adequacy of discipline interfaces.
6. Page II-10 - In as much as the cut-off date for the vertical slice review documentation was April 22, 1988, some mechanism should have been in place to capture those attributes/elements not included or which were included but were incomplete as of April 22.
7. Page II-11 - It is stated that the Mechanical Systems review will include "process design." This terminology is very broad and sweeping but obviously implies different things to different people. The design attributes reviewed need to be clearly defined for all design disciplines.
8. Page II-11 - The scope of Civil/Structural review is very vague. This review should include a review of the design attributes that are included in safety-related structures, e.g., design of reinforced concrete walls and slabs, design of masonry walls, development of building seismic models and the generation of the amplified response spectra at various building elevations, cable tray and conduit supports, auxiliary steel, etc.
9. Page II-11 - The Electrical Systems review should include the DC system as well as the AC system. The design attributes to be reviewed are not specified.
10. Page II-11 - Design for "common requirements" such as seismic II/I, HELB/MELB, internal flooding, etc., should be verified by a field walkdown conducted by the Sargent & Lundy VSR team.
11. Page II-14 - We agree that certain items embedded in concrete are inaccessible, however, pull tests on anchor bolts can be performed and anchor bolt depth can be measured by ultrasonics. These tests are not difficult to perform and should be included in the Construction Verification Review (CVR).

Mr. S. A. White

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Watts Bar Nuclear Plant

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- 12. Page II-14 - The examples of what is anticipated to be reviewed in the CVR inspections are quite general. The purpose of the CVR and the specific attributes reviewed need to be clearly stated.
- 13. Page 11-16 - It is not clear to the staff how the Construction Support Records review will determine to what extent maintenance activities have been done on elements and how the elements have been changed materially as a result of these maintenance activities.
- 14. General - TVA should have a program that determines the adequacy of its as-built reconciliation programs for piping, electrical cable routing and pull lengths, common hazards, (e.g., HELB target evaluation,) etc.
- 15. Section V - Who does the Head, Quality Assurance Division report to as described in the Quality Assurance Program for the VSR?
- 16. Section V - The Quality Assurance Coordinator reports to the Senior Quality Assurance Coordinator as described in Section 2.2.4. However, the Senior Coordinator does not appear on the organization chart (Exhibit IV-1). Where does the Senior QA Coordinator fit in the organization?

If you have any questions please call Dr. Rajender Auluck, NRC Project Manager, at 301/492-0759.

Sincerely,

Original Signed by S. Black for
Steven D. Richardson, Director
TVA Projects Division
Office of Special Projects

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