

July 9, 1991

Docket Nos. 50-390
50-391

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

Dear Mr. Nauman:

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR ADDITIONAL INFORMATION ON
FSAR SECTION 2.5, AMENDMENT 54-63 (TAC 77061 AND 77548)

Our Structural and Geosciences Branch has reviewed FSAR Section 2.5, Amend-
ments 54 through 63. This section pertains to stability of subsurface materials.
We found that additional information is needed to complete our review (see
enclosure).

Please respond within 45 days of receipt of this letter. This requirement
affects fewer than 10 respondents and, therefore, is not subject to Office
of Management and Budget review under P.L. 96-511."

Sincerely,

Original signed by
Peter S. Tam, Senior Project Manager
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

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Document Name: WBN TAC 77061, 77548

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WATTS BAR NUCLEAR PLANT
REVIEW OF FSAR AMENDMENT NOS. 54 THROUGH 63
REQUEST FOR ADDITIONAL INFORMATION
STRUCTURAL AND GEOSCIENCES BRANCH

1. What is the basis for the assumptions made in FSAR Section 2.5.4.2.2.6.1 (Amendment 63) concerning the proportions of different rock types, (and the modulus value of rock type 3), in the four settlement calculations made for comparison of building settlements?
2. The lower half of page 2.5-102 and the full page of 2.5-103 of the FSAR are left blank without any notation; however, amendment No. 59 is marked at the margins of these blank pages. Confirm that these blank spaces were left intentionally blank.
3. In Section 2.5.4.2.2.9.2 (Amendment 63), it is stated that all rock supported Category I structures were designed for total settlement of 1 to 2 inches and differential settlement of 1 inch. Provide the basis for this value of the differential settlement. Also state, and justify, the amounts of differential settlements for which Category I buried pipes entering the structures from the soil or rock were designed.
4.
 - a. Justify the appropriateness of the values of the dynamic soil properties summarized in Tables 2.5-17a through 2.5-17d and used in the soil-structure interaction analysis (FSAR Section 2.5.4.4.2.4, Amendment 63).
 - b. Also provide the sources and the bases for acceptance of the curves showing the shear modulus and damping variations with strain (FSAR Figures 2.5-233A through 2.5-233K, Amendment 63).
5. Provide a copy of a sample calculation of liquefaction potential evaluation for the material located about 17.5 ft below the surface discussed in FSAR Section 2.5.4.8, page 2.5-128 (Amendment 63); justify the various assumptions made (including the appropriateness of material properties used) in the analysis.
6. It is stated in FSAR Section 2.5.5.2.3 (Amendment 59) that no stability analysis has been performed for station 6+78 of trench A because the soil profile was not identified above the top of the shale. TVA states that this is not considered critical since 17 of the 18 cross-sections of trench A were analyzed and found to be adequate. Provide, for the staff review, the stability analysis calculations for the station 5+78 of trench A and the station 2+50 of trench B for which the factors of safety against slope failure are 1.03 and 1.00 respectively.

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