

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

830 Power Building

AUG 31 1978

Mr. Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Boyd:

In the Matter of the Application of)	Docket Nos. 50-327
Tennessee Valley Authority)	50-328
		50-390
		50-391
		50-438
		50-439

Enclosed are 40 additional copies of TVA's report entitled "Justification of the Seismic Design Criteria Used for the Sequoyah, Watts Bar, and Bellefonte Nuclear Power Plants - Phase I." This report was originally submitted by my letter to you dated May 1, 1978. Our original submittal contained one error. The second paragraph on page 4 of the document should read, "A similar empirical formula propounded by Murphy and O'Brien⁵ indicates that an MMI VIII produces a horizontal peak acceleration of 151 cm/sec² (0.15g) with a reported antilog of standard error of estimate of 2.19." The 40 enclosed copies of the report have been revised to reflect this correction.

Also enclosed are 40 additional copies of TVA's report entitled "Justification of the Seismic Design Criteria Used for the Sequoyah, Watts Bar, and Bellefonte Nuclear Power Plants - Phase II" and a Weston Geophysical Corporation Supplement to that report entitled "Prediction of Strong Motions for Eastern North America on the Basis of Magnitude." These reports were originally submitted by my letter to you dated August 11, 1978. A copy of the enclosed errata sheet has been inserted in each of the 40 copies of the Phase II report.

These additional copies are being provided in response to a verbal request from Harley Silver of the NRC staff to ensure that you will have enough on file to cover each of the three separate dockets.

Very truly yours,

REGULATORY DOCKET FILE COPY

J. E. Gilleland
J. E. Gilleland
Assistant Manager of Power

Enclosures

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LIST

ERRATA

Page 17, first paragraph, reference should read:

"Prediction of Strong Motions for Eastern North America on the Basis of Magnitude" (reference 8).

Page 17, second paragraph - 4.0 seconds should be 4.85 seconds

Page 21, reference 8 should read:

"Prediction of Strong Motions for Eastern North America on the Basis of Magnitude. Weston Geophysical Corporation, Boston, Massachusetts, August 1978."

Table 4-4: Replace with new copy provided.

Figures 3-7, 3-8, 4-5, 4-6, A-1 through A-38, and B-1 through B-58:

The Watts Bar response spectra curves have a break point at 0.20 seconds. This should be at 0.15 seconds by extending the line from 0.50 seconds through 0.20 seconds to 0.15 seconds. The uncorrected curves result in a more conservative interpretation.

TABLE 4-4

PREDICTED MAXIMUM HORIZONTAL ACCELERATIONSFOR SELECTED DESIGN EARTHQUAKES

Distance $m_b I_g$	10 km Duration		15 km Duration		20 km Duration	
	4.85 Sec	2.51 Sec	4.85 Sec	2.51 Sec	4.85 Sec	2.51 Sec
5.6	.06g	.07g	.04g	.05g	.03g	.04g
5.8	.10g	.12g	.06g	.08g	.05g	.06g
6.0	.15g	.18g	.10g	.12g	.08g	.09g

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Dear Mr. Boyd:

In the Matter of the Application of)	Docket Nos. 50-327
Tennessee Valley Authority)	50-328
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In response to your letter to Godwin Williams, Jr., dated December 27, 1977, requesting additional information regarding the seismic design basis for the Sequoyah, Watts Bar, and Bellefonte Nuclear Plants, enclosed are a TVA report entitled, "Justification of the Seismic Design Criteria Used for the Sequoyah, Watts Bar, and Bellefonte Nuclear Power Plants - Phase II," and a Weston Geophysical Corporation supplement to our report entitled, "Prediction of Strong Motions for Eastern North America on the Basis of Magnitude." These documents constitute TVA's Phase II report as defined in my letter to you dated February 6, 1978.

The report includes an examination of recorded earthquakes of magnitudes similar to the Giles County event. Calculated spectra from these strong motion recordings are compared with the Sequoyah, Watts Bar, and Bellefonte design spectra. These comparisons show that the mean response spectra from the strong motion earthquakes are below the design spectra at the three plants.

The report also includes the development of procedures to predict strong motion associated with the magnitude of an earthquake similar to the Giles County event. These predictions compare favorably with existing strong motion data. For an earthquake similar to Giles County, a top of rock acceleration of 0.08g is predicted. Anchoring a Regulatory Guide 1.60 spectra at 0.08g shows the design spectra at the three plants are not exceeded.

Mr. Roger S. Boyd

August 11, 1978

Based on the results in this report and the results previously submitted in the Phase I report, TVA concludes that the seismic design bases used at the Sequoyah, Watts Bar, and Bellefonte Nuclear Plants are appropriately conservative and adequate to ensure the health and safety of the public.

We would be pleased to meet with you and members of the staff to discuss the results of Phase I and Phase II as they relate to the resolution of your concerns in Bethesda on August 17, 1978. Tentative arrangements for this meeting have been discussed with Harley Silver of the NRC staff.

Very truly yours,

A handwritten signature in cursive script, appearing to read "JE Gilleland".

J. E. Gilleland
Assistant Manager of Power

Enclosure