

## ENCLOSURE

### SUPPLEMENT TO SAFETY EVALUATION REPORT GRAND GULF NUCLEAR STATION, UNITS 1 AND 2 CONFIRMATORY EVALUATION OF SOIL STRUCTURE INTERACTION

#### INTRODUCTION

The SSWCTB is the only deeply embedded structure at Grand Gulf and the licensee was requested to compare its seismic responses resulting from the finite element method (FEM) reported in the FSAR with the responses obtained using the elastic half space method (EHS). Such a comparison of responses is required by the Section 3.7.2 of the Standard Review Plan (SRP) for deeply embedded structure. However, the licensee's EHS analysis was considered unacceptable since it incorporated a forty percent reduction factor to account for embedment effects.

#### DISCUSSION

In responding to NRC's subsequent request for additional information concerning the methodology of the SSI analysis for the SSWCTB, Reference 1 explained that the EHS method based on BC-TOP-4 (Ref. 3) but without incorporating the 40 percent peak reduction has been used. An engineering assessment by the licensee was therefore initiated to determine the impact on the SSWCTB component design and equipment qualification using the envelope of the floor response spectra (FRS) curves generated from (1) the EHS seismic model with no peak reduction factor and (2) the FEM seismic models employed earlier by the licensee.

In Reference 2 the licensee has further clarified that the proposed FRS are the envelopes of (1) the FEM with control motion at the ground surface and (2) the 10 percent EHS with control motion input at the foundation level.

#### CONCLUSION

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The licensee has complied with the staff position stipulated in Section 3.7.2 of the SRP and the FRS obtained by means of this enveloping procedure are therefore acceptable.

## REFERENCES

- References:
1. Letter from L. F. Dale, MP&L to H. R. Denton, NRC, AECM-85/0028, dated January 28, 1985.
  2. Summary of April 29, 1985, meeting regarding soil structure interaction for Standby Service Water Basin.
  3. "Seismic Analyses of Structures and Equipment for Nuclear Power Plants" Bechtel Power Corporation, Topical Report BC-TOP-4A, Revision 3, November 1974.