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SUBJECT: COMMENTS ON DRAFT REPORT ON TASK 10/  
TAP A-40 BY LLL

We have received the draft of the subject report containing recommendations for changes in the NRC criteria currently used in the seismic design of nuclear power plants. However, we do not find the appendices which include marked-ups on specific rewritten SRP sections and Regulatory Guide sections as stated in the section "Approach" of the subject report. Our comments on the draft report are listed in the enclosure.

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Enclosure: As Stated

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COMMENTS ON DRAFT REPORT OF TASK 10/TAP A-40

(Items refer to subtitles of articles concerned since no page number is given in the report)

1. Abstract

The term "nationally recognized experts" implies biased opinion and may have political and commercial implications. It should be replaced by the word "specialists".

2. Introduction: Task 2. Why the braced frame is typical in a power plant? It is not clear that this analysis be applied to reinforced concrete or steel structures.

3. Introduction: Task 8. To avoid confusion, the strong ground motion spectra should be clearly indicated as response spectra.

4. Recommendations: I. A. General. Same reason as Comment #3, site specific spectra should be clarified as site specific response spectra.

5. Recommendations I. B. Define or explain "spectral damping", "fractile".

6. Recommendations I.D. What is a "broad band target spectrum"? Can we abolish artificial or synthetic time history all together?

7. II. Soil-Structural Interaction. A. General analytical techniques should not be verified by field data, nor be influenced by engineering judgement. They should have sound theoretical basis and use mathematical methods.

8. II.A. It appears that the problems in SRP 3.7.1 are not well understood. The present problem is in modeling the soil media (half-space, shear beam, or soil column with various assumed boundaries) and not in the analytical technique (Direct solution vs substructure approach). The recommendations in this article seem unrelated.
9. II.B. Nonlinear Soil Behavior. The concept of primary and secondary nonlinearities is not clearly described. However, recommendation to eliminate tedious and unreliable nonlinear analysis in favor of a simplified approximate linear analysis is a step in the right direction.
10. II.C. Direct Solution Techniques. This paragraph should deal only with solution technique and not be confused with modeling and assumptions (such as boundaries and soil conditions). Transmitting boundaries are not acceptable at many sites and fundamental frequency of soil stratum is not controllable.
11. II.E. Seismic Design Environment and Wave Passage Effects. This paragraph is not clear. What is a broad band response spectra? Why should it be used for firm soil sites. What is the basis for 25% reduction of the surface response spectra?
12. III.B. Buried Pipes, Conduits, etc. The concept of primary and secondary forces and strains is not clear.
13. III.D. Modal Response Combinations. It is not clear in the response spectrum method how the higher mode responses be combined algebraically and how the phasing of mode shapes be determined.

14. III.F. Damping values. Various kinds of damping are not well defined. Mathematical expression for damping should be given to avoid confusion. Implementation of recommended damping values according to stress level should be described in detail.
15. III.G. Seismic Analysis Methods. There is no need to specify how each structure should be modeled.
16. IV.D. Effect of Uncertainties on Floor Spectra. Detail procedure to generate probabilistic floor spectra and its theoretical basis should be given.
17. IV.D.E. To avoid confusion floor spectra should be called floor response spectra.