

TECHNICAL EVALUATION

Based on the Licensee's submittal [2], a technical review was conducted. Before a final technical evaluation report can be issued, the Licensee is required to provide the following information.

1. Explain why the frequencies of some of the walls presented in Tables 4, 5, and 6 of Reference 2 are widely different from the frequencies of other walls of comparable dimensions. Also explain why some of the frequencies in these tables are indicated as OBE or DBE.
2. With reference to Section 6.1.4, Appendix A [2], justify using the average acceleration rather than the envelope of the response spectra for walls supported by two floors.
3. With reference to Section 5.8 [2], justify neglecting out-of-plane interstory drift in the analysis and explain whether the predicted in-plane interstory drift of 0.0006 in/ft of height applies to confined or unconfined walls.
4. With reference to Section 6.1.2, Appendix A [2], provide sample calculations to show that analysis using only the fundamental mode is adequate and is comparable to a multimode analysis.
5. With reference to the cover letter and Table 5 of the attachment [2], provide a description of the bracing system installed for two Unit 2 cantilever walls and indicate whether out-of-plane drift effects were included in the analysis.
6. With reference to Table 5 [2], briefly describe the techniques used for (a) verification by curves, (b) effective inertia analysis, and (c) dynamic analysis. Also clarify whether pipe reactions due to thermal expansion are considered in the analysis.
7. Provide more information on seismic analysis in different directions and explain how the equipment weights and pipe weights were accounted for.
8. With reference to Section 5.0, Appendix A [2], provide the values for allowable stresses in axial compression, bearing, tension normal to the bed joint, and tension parallel to the bed joint.
9. With reference to Section 5.2.1 of Appendix A [2], justify the proposed increase factor of 1.67 for shear, bond, tension normal to the bed joint, and tension parallel to the bed joint. The SEB criteria [3] suggest an increase factor of 1.3 for masonry shear, 1.5 for masonry tension parallel to the bed joint, and 1.3 for unreinforced masonry tension normal to the bed joint.

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10. Indicate the present status of walls which were inaccessible and hence excluded from the original field survey.

REFERENCES

1. IE Bulletin 80-11
"Masonry Wall Design"
NRC, May 8, 1980
2. D. C. Trimble (Arkansas Power and Light Company)
Letter and attachments for Unit 2 to K. V. Seyfrit (NRC)
January 29, 1981
3. Standard Review Plan, Section 3.8.4, Appendix A
"Interim Criteria for Safety-Related Masonry Wall Evaluation"
NRC, July 1981
4. Uniform Building Code
International Conference of Building Officials, 1979
5. ACI 531-79 and Commentary ACI 531R-79
"Building Code Requirements for Concrete Masonry Structures"
American Concrete Institute, 1979
6. ATC 3-06
"Tentative Provisions for the Development of Seismic Regulations for
Buildings"
Applied Technology Council, 1978
7. "Specification for the Design and Construction of Load-Bearing
Concrete Masonry"
National Concrete Masonry Association (NCMA), August 1979