

3A Seismic Soil Structure Interaction Analysis

The information in the appendix of the reference ABWR DCD, including all subsections, tables, and figures, is incorporated by reference with the following site-specific supplement. The supplemental information in Subsections 3A.12 through 3A.20, Tables 3A-29 through 3A-38, and Figures 3A-229 through 3A-269 of COLA Revision 1 have been replaced with the following supplemental information.

3A.12 Site-Specific SSI Analysis

In accordance with the requirements of Sections 3.7.1 and 3.7.2 of NUREG-0800, a site specific soil-structure interaction (SSI) analysis will be performed and the FSAR will be updated with the results in the next scheduled revision. This SSI analysis will account for effects due to kinematic and inertial interaction and will meet the following conditions:

- (A) A. The approach will be based on the finite-element method using substructuring technique. The finite element computer program SASSI will be used for the analysis. This program uses finite elements with complex moduli for modeling the structure and foundation properties and is based on the flexible volume method of substructuring and the frequency domain complex response method of analysis. The SSI methodology is the same as provided in Sections 3A.5.2 and 3A.5.3 of the DCD. The methodology for the free-field site response will be the same as described in Section 3A.6 of the DCD. The free-field site response analysis will be performed using computer program SHAKE.
- (B) B. The design earthquake ground motions used as input to the SSI analyses will be consistent with the design response spectra as defined in FSAR Section 2.5S.2.

This analysis will use measured shear wave velocities, with appropriate variation to represent the variability at the site. There is a high degree of confidence that the results of this SSI analysis will be bounded by the results of the standard plant SSI analysis documented in the DCD for the following reasons:

- (A) A. The site-specific SSE, as described in FSAR Section 2.5S.2, is enveloped by Regulatory Guide 1.60 spectrum anchored to 0.15g acceleration, which is only half the standard plant SSE of 0.30g.
- (B) B. The standard plant SSI results are based on an envelop of 22 different cases. The site-specific SSI will be based on only the STP 3 & 4 site conditions.

