

APR1400 DCD TIER 2

Safe Shutdown Earthquake Load (E_s)

In the structural analysis for the EDG building, seismic loads are considered with the equivalent static load method involving equivalent horizontal and vertical static forces.

3.8A.3.3.2 Load Combinations

The load combinations are addressed in Subsection 3.8.4.3.6 and are used for analysis and design of the EDG building and associated components.

3.8A.3.4 Analysis and Design for Critical Sections

EDG Building

This section summarizes the analysis and design for critical sections of the ~~AB~~. The critical sections are listed below. The description of critical section, analysis and design methods, and design summary are provided for each critical section. The locations of critical sections are shown in Figure 3.8A-53.

3.8A.3.4.1 Basemat

Description

The EDG building and DFOT building are built on a separate concrete-reinforced mat foundation with a thickness of 1.21 m (4 ft). The two basemats are separated by an isolation gap of 900 mm (3 ft).

Vertical loads are transmitted through columns and walls down to the basemat. Lateral loads are transmitted to the basemat by a load-resisting system, such as shear walls and concrete slab. The foundation provides resistance to the transmitted loads through friction and bearing. Friction between the basemat and the foundation is to prevent sliding of the structure. Vertical load and load due to overturning of the structure are resisted by the foundation bearing.

Analysis and Design Methods

Structural analysis for the EDG building is performed using the ANSYS structural analysis program. Global structural analysis is first conducted to compute all member forces of