National Council of Examiners for Engineering and Surveying

Principles and Practice of Engineering
Lateral Forces (Wind/Earthquake) Component of the
Structural DEPTH Examination

Effective Beginning with the April 2011 Examination

The **4-hour Lateral Forces (Wind/Earthquake)** depth examination is offered on Saturday afternoon. The depth modules of the Structural exam focus on a single area of practice in structural engineering. Examinees must choose either the **BUILDINGS** or the **BRIDGES** module. Examinees must work the same module on both components. That is, if bridges is the module chosen in the Vertical Forces component, then bridges must be the module chosen in the Lateral Forces component. All questions are constructed response (essay).

BUILDINGS

The **Lateral Forces (Wind/Earthquake)** Structural depth exam in **BUILDINGS** covers lateral forces, lateral force distribution, analysis methods, general structural considerations (element design), structural systems integration (connections), and foundations and retaining structures. This module contains four 1-hour problems in the following areas:

- Steel structure
- Concrete structure
- Wood and/or masonry structure
- General analysis (e.g., existing structures, secondary structures, nonbuilding structures, and/or computer verification)

At least two problems include seismic content at Seismic Design Category D and above.
At least one problem includes wind content of at least 110 mph.
Problems may include a multistory building.
Problems may include a foundation.

BRIDGES

The **Lateral Forces (Wind/Earthquake)** Structural depth exam in **BRIDGES** covers gravity loads, superstructures, substructures, and lateral forces and may test pedestrian bridge and/or vehicular bridge knowledge. This module contains one 2-hour **BRIDGE** problem and two 1-hour **BRIDGE** problems, as indicated below:

- Columns (1 hour)
- Footings (1 hour)
- General analysis (i.e., seismic and/or wind) (2 hours)