

PROPOSAL IT1-1 (2009)

SCOPE: Create introductory Section 1.1 in Part 1, stating the intent of the Provisions.

PROPOSAL FOR CHANGE:

Add Sec. 1.1 to Part 1 of the 2009 *Provisions*:

1.1 Intent. These *Provisions* are minimum recommended requirements for the design and construction of buildings and other structures. The intent of these Provisions is to provide reasonable assurance of seismic performance that will:

- avoid serious injury and life loss;
- avoid loss of function in critical facilities;
- minimize nonstructural repair costs when practical to do so.

The *Provisions* seek to avoid such losses by allowing only a small risk of collapse for every building and structure covered, even in very rare extreme shaking at the site. For smaller, more frequent shaking levels, the *Provisions* covering design and installation of both structural and nonstructural systems seek to reasonably control damage that would lead to risks to life safety, economic losses, and loss of function. These design requirements include minimum lateral strength and stiffness for structural systems and guidance for anchoring, bracing, and accommodations of structural drift for nonstructural systems.

Buildings and other structures required to have enhanced safety or functionality, such as Occupancy Categories III and IV of ASCE 7, are required to have more strength than normal buildings to reduce damage to the structural system. In addition, allowable drifts are reduced to control damage to building components connected to two or more floor levels. Performance of nonstructural systems is enhanced by strengthening the anchorage and bracing requirements, and extremely important equipment must be shown to be functional after being shaken.

The degree to which these goals can be achieved depends on a number of factors including the structural framing type, building configuration, materials, as-built details of construction and the overall quality of design. In addition, large uncertainties as to the intensity and duration of shaking in any earthquake and the possibility of unfavorable response of a small subset of buildings or other structures prevent precise prediction of performance.

REASON FOR PROPOSAL:

A purpose or intent statement specifically for seismic performance is not included in ASCE 7 or the IBC. Such a statement has been included in previous editions of the NEHRP Provisions and is carried forward here. The intent has been updated from previous versions to better reflect the design philosophy using the MCE maps. If the risk based definition of MCE is adopted as recommended by Project 2007 is adopted, a few more sentences may be needed. However, the subtleties of equal margin versus equal risk as well as the use of caps in areas near active faults might be left to Chapter 21, the Part 2 Commentary, or to Part 3.

IT1 VOTE: 5 Y, 0 YR, 0 N