specifically is to "improve the capability of essential facilities and structures containing substantial quantities of hazardous materials to function during and after design earthquakes." This is achieved by introducing the occupancy importance factor of 1.25 for Seismic Use Group II structures and 1.5 for Seismic Use Group III structures. The NEHRP Commentary Sections 1.4, 5.2, and 5.2.8 explain that the factor is intended to reduce the ductility demands and result in less damage. When combined with the more stringent drift limits for such essential or hazardous facilities the result is improved performance of such facilities.

Federal Government Construction. The Interagency Committee on Seismic Safety in Construction has prepared an order executed by the President, Executive Order 12699, that all federally owned or leased building construction, as well as federally regulated and assisted construction, should be constructed to mitigate seismic hazards and that the *NEHRP Provisions* are deemed to be the suitable standard. It is expected that this standard would be deemed equivalent, but the reader should bear in mind that there are certain differences, which are summarized in this commentary.

C11.1.1 Purpose

The purpose of Section 11.1.1 is to clarify that when the design load combinations involving the wind forces of Chapter 6 produce greater effects than the design load combinations involving the earthquake forces of Chapters 11 through 23 such that the wind design governs the basic strength of the lateral force resisting system, the detailing requirements and limitations prescribed in this section and referenced standards are still required to be followed.

C11.1.3 Applicability

Industrial buildings may be classified as nonbuilding structures in certain situations for the purposes of determining seismic design coefficients and factors, system limitations, height limits, and associated detailing requirements. Many industrial building structures have geometries and/or framing systems that are different from the broader class of occupied structures addressed by Chapter 12, and the limited nature of the occupancy associated with these buildings reduces the hazard associated with their performance in earthquakes. Therefore, when the occupancy is limited primarily to maintenance and monitoring operations, these structures may be designed in accordance with the provisions of Section 15.5 for nonbuilding structures similar to buildings. Examples of such structures include, but are not limited to, boiler buildings, aircraft hangars, steel mills, aluminum smelting facilities, and other automated manufacturing facilities, whereby the occupancy restrictions for such facilities should be uniquely reviewed in each case. These structures may be clad or open structures.

C11.2 DEFINITIONS

BASE: Many factors affect the location of the seismic base. Some of the factors are

- location of the grade relative to floor levels,
- soil conditions adjacent to the building,
- openings in the basement walls,
- location and stiffness of vertical elements of the seismic force-resisting system,
- location and extent of seismic separations,
- depth of basement,
- manner in which basement walls are supported,
- proximity to adjacent buildings, and
- slope of grade.

For typical buildings on level sites with competent soils, the base is generally close to the grade plane. For a building without a basement, the base is generally established near the ground level slab elevation as shown in Fig. C11-2. Where the vertical elements of the seismic force-resisting system are supported on interior footings or pile caps, the base is the top of these elements. Where the vertical elements of the seismic force-resisting system are supported on top of perimeter foundation walls, the base is typically established at the top of the foundation walls. Often vertical elements are supported at various elevations on the top of footings, piles caps, and perimeter foundation walls. Where this occurs, the base is generally established as the lowest elevation of the tops of elements supporting the vertical elements of the seismic force-resisting system.

For a building with a basement located on a level site, it is often appropriate to locate the base at the floor closest to grade, as shown in Fig. C11-3. If the base is to be established at the level located closest to grade, the soil profile over the depth of the basement should not be liquefiable in the MCE_G ground motion. The soil profile over the depth of the basement should also not include quick and highly sensitive clays or weakly cemented soils prone to collapse in the MCE_G ground motion. Where liquefiable soils or soils susceptible to failure or collapse in an MCE_G ground motion are located within the depth of the basement,