

May 19, 2005

SEISMIC SAFETY OF VHA BUILDINGS

1. PURPOSE: This Veterans Health Administration (VHA) Directive establishes policy regarding the seismic safety of VHA buildings.

2. BACKGROUND

a. Since facilities identified as essential must remain in operation after a seismic event, the Department of Veterans Affairs (VA) is committed to providing adequate life-safety protection to veterans, employees, and other building occupants.

b. VA has had an active seismic mitigation program since the 1971 California San Fernando earthquake. This earthquake completely destroyed two occupied patient buildings killing 46 people. Since that tragedy, all VA buildings (approximately 1,000) located in medium and high seismic zones have been screened. Approximately 40 percent of those buildings were found to be at major risk, of which 35 percent have been strengthened, demolished, replaced, or such work is underway.

c. Executive Order (E.O.) 12699, signed by the President on January 5, 1990, requires each Federal agency responsible for the design and construction of new buildings to ensure that buildings are designed and constructed in accordance with appropriate seismic design and construction standards.

d. E.O. 12941, signed by the President on December 1, 1994, mandated the seismic safety of existing federally-owned or leased buildings by adopting RP4, Standards of Seismic Safety of Existing Federally-owned or leased buildings. These standards, developed by the Interagency Committee on Seismic Safety in Construction (ICSSC), were adopted as the minimum level acceptable for use by Federal departments and agencies in assessing the seismic safety of their owned and leased buildings and in mitigating unacceptable seismic risk in those buildings.

e. In compliance with E.O. 12941, VA developed an inventory of its owned buildings identifying their seismic risk. This data was reported to the Federal Emergency Management Agency (FEMA) in January 1999. Veterans Integrated Services Networks (VISNs) 8, 19, 20, 21 and 22, with facilities located in high seismic zones, were identified as having exceptionally high-risk (EHR) and high risk (HR) buildings. The Office of Facilities Management (FM) transmitted this data to all affected VISNs and periodic updates are transmitted to VISNs.

NOTE: See Attachment A for definitions.

3. POLICY: It is VHA policy that all VHA facilities identified as essential must remain operational after a seismic event.

THIS VHA DIRECTIVE EXPIRES MAY 31, 2010

4. ACTIONS

a. **FM.** FM is responsible for:

(1) Providing direction and policy to ensure that:

(a) All new buildings are structurally designed and constructed in compliance with VA Seismic Design Requirements H-18-8 and the International Building Code.

(b) VA programs are effective in mitigating life-safety hazards of existing buildings and ensuring that hospitals and other essential facilities remain in operation after an earthquake.

(2) Assisting VISNs and VHA management with the development of specific seismic upgrade project applications and in prioritizing these projects.

b. **VISNs.** Each VISN Director is responsible for:

(1) Developing a plan for addressing seismic deficiencies for their buildings.

(2) Developing a mitigation plan for all non-exempt buildings:

(a) To comply with seismic life-safety standards.

(b) Identified as essential (including EHR and HR buildings) to ensure that these buildings remain in operation after an earthquake.

(3) Formulating plans in coordination with FM to evaluate seismic risk in buildings that are identified as non-exempt in the FEMA Seismic Inventory Project.

(4) Determining, through the lessor, the seismic risk of leased buildings under their jurisdiction. If the leased buildings have a seismic risk, the VA medical center must develop a plan to mitigate these risks within the context of the lease agreement and/or at lease renewal.

***NOTE:** These plans must be incorporated into each VISN strategic plan.*

c. **Facility Directors.** Facility Directors are responsible for ensuring:

(1) Medical centers in high-risk seismic areas develop contingency plans to conduct post-earthquake safety evaluation of their buildings. ***NOTE:** These plans must be incorporated into each medical center strategic plan. The Applied Technology Council (ATC) is a source for training and learning procedures for conducting these evaluations.*

(2) Staff and patients' awareness about the seismic risk of their buildings is increased.

(3) Minor projects involving seismic rehabilitation must have:

- (a) A licensed structural engineer with experience in seismic rehabilitation to sign and seal construction documents.
- (b) An independent plan review of construction documents to ensure compliance with H-18-8.
- (c) Qualified staff with experience in seismic rehabilitation to oversee construction of these projects.

5. REFERENCES

- a. E.O. 12699, Executive Order for Seismic Safety of New Federal Buildings.
- b. E.O. 12941, Executive Order for Seismic Safety of Existing Federal Buildings.
- c. Public Law 101-614, National Earthquake Hazard Reduction Program Reauthorization Act.
- d. ATC 20: Procedures for Post-Earthquake Safety Evaluation of Buildings.
- e. VHA Handbook H-18-8, VA Seismic Design Requirements.
- f. IBC: International Building Code (IBC).

6. FOLLOW-UP RESPONSIBILITY: The Chief Facilities Management Officer (18) is responsible for the contents of this Directive.

7. RESCISSION: VHA Directive 2000-012 is rescinded. This VHA Directive expires May 31, 2010.

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DISTRIBUTION: CO: E-mailed 5/26/05
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ATTACHMENT A

DEFINITIONS FOR THE SEISMIC SAFETY OF DEPARTMENT OF
VETERANS AFFAIRS (VA) BUILDINGS

1. **H-18-8: VA Earthquake Design Requirements (formerly known H-08-8).** The document H-18-8 is regularly reviewed and updated by the Office of Facilities Management (FM). A major upgrade was implemented in 1995 to H-08-8, and retitled as H-18-8. National Model Building Codes have also been revised periodically since 1975, and now have merged into a single International Building Code (IBC). Department of Veterans Affairs (VA) Earthquake Design Requirements closely align with IBC.
2. **Essential Facilities.** Essential buildings are buildings which house functions that are required to remain operational after an earthquake or other natural disaster. They include patient bed buildings, nursing homes, domiciliaries, outpatient clinics, psychiatric care facilities, research facilities, and boiler plants.
3. **Exceptionally High Risk (EHR) Buildings.** In general, an EHR building is a large main hospital building located in a high-seismic zone, and constructed before the adoption of H-08-8 in 1975. Specific definitions of EHR buildings' are described as:
 - a. Buildings located in high seismic zones;
 - b. Building is an essential facility;
 - c. Buildings designed prior to adoption of H-18-8; and
 - d. Buildings whose area is greater than 10,000 feet.
4. **High Risk (HR) Buildings.** The HR buildings, the second tier category, have been added to identify buildings just below EHR level. They are defined as meeting one of the following:
 - a. Buildings that meet the definition of EHR except they are located in an area of moderate-high seismicity; or
 - b. Buildings that meet the definition of EHR, except they are smaller than 10,000 square feet and greater than 1,000 square feet.
5. **Applied Technology Council (ATC).** ATC is a non-profit, tax-exempt corporation established in 1971 through the efforts of the Structural Engineers Association of California. ATC assists design practitioners in structural engineering in keeping abreast of, and effectively utilizing, technological developments. Funding for projects is obtained from government agencies and the private sector in the form of tax-deductible contributions.

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6. Federal Emergency Management Agency (FEMA) Seismic Inventory Project. Executive Order 12941 mandated the seismic safety of Federally-owned buildings. It required agencies to develop seismic inventory of their buildings and estimate the costs of mitigating unacceptable seismic risk in those buildings. FEMA was responsible for assembling the data from all agencies, and submitted a comprehensive report to Congress in December 2000.

7. International Building Code (IBC). Earlier National Model Codes, i.e., the National Building Code (BOCA), the Standard Building Code (SBC), and the Uniform Building Code (UBC) were merged into single IBC in the year 2000.

8. Exempt Buildings. Exempt buildings as defined by RP4, Standards of Seismic Safety of Existing Federally Owned or Leased Buildings, are:

- a. Buildings classified for agriculture use, or intended for incidental human occupancy.
- b. Detached one or two-story family dwellings in a low seismic zone.
- c. One-story steel, light frame, or wood constructed buildings with an area less than 3,000 square feet.
- d. Fully rehabilitated buildings.
- e. Buildings constructed and designed after the adoption of Executive Order 12699.

9. Non-exempt Buildings. All buildings not specifically meeting the definition of exempt buildings are designated as non-exempt. This does not necessarily mean that they are seismically unsafe; it simply means that they need to be evaluated for seismic risk.