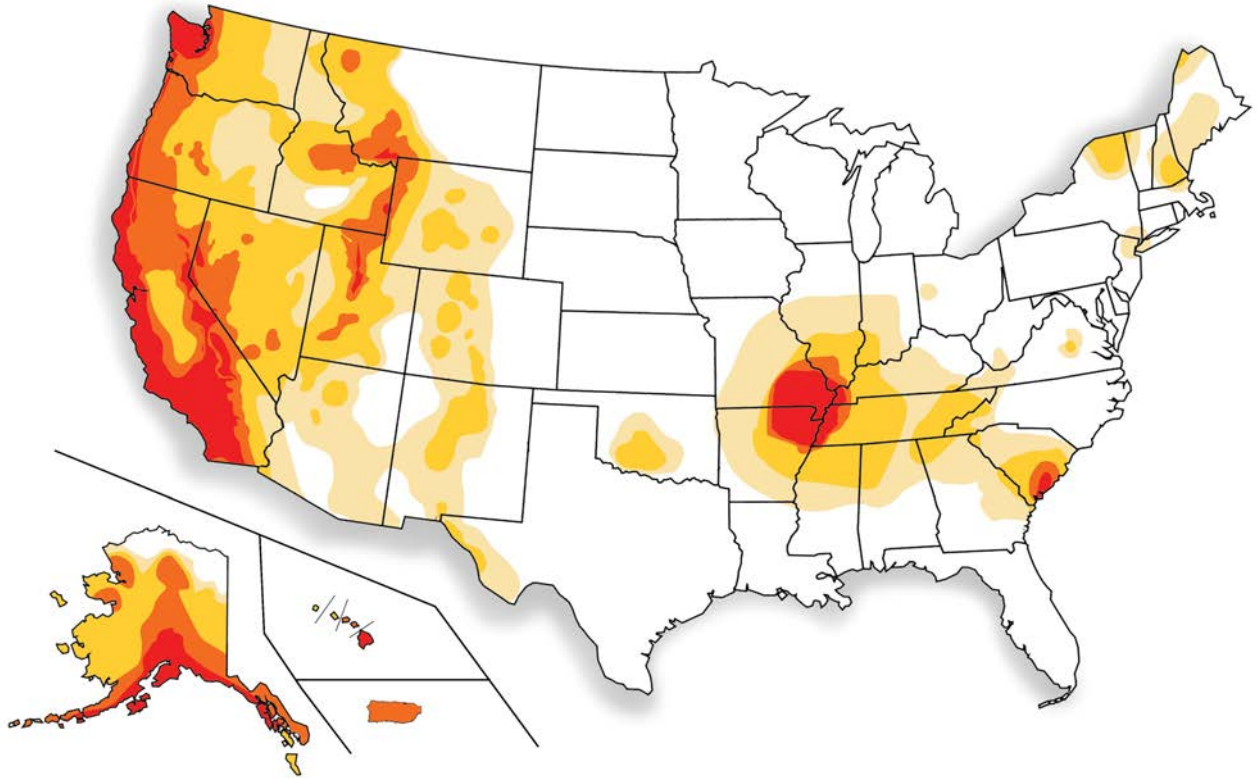


VA



U.S. Department
of Veterans Affairs

Office of Construction &
Facilities Management



Seismic Design Requirements

July 1, 2023
revised November 1, 2024

H-18-8

Seismic Design Requirements

FOREWORD

Background

In 1971, after the San Fernando earthquake resulted in the death of 46 patients and staff when two VA buildings collapsed, VA began to undertake a comprehensive seismic safety program. Title 38 - United States Code, Section 8105 requires the Secretary to assure that each medical facility constructed or altered must be of construction that is resistant to fire, earthquake, and other natural disasters. This initiated the creation of the Secretary's Advisory Committee on Structural Safety of Department of Veterans Affairs Facilities, which in 1975 formally approved the original VA Seismic Design document, H-08-8, Earthquake Resistant Design Requirements for VA Facilities. These requirements were developed with the concept that all VA Essential Facilities must remain in operation after an earthquake and were far in advance of National Codes.

This document is periodically updated and revised. The revision of H-08-8 to H-18-8 in 1995 was a major rewrite to bring VA seismic design requirements more in line with the updated national model codes. Further updates/revisions of minor nature were made in 1997, 1998, 2000, 2002, 2003, 2005, 2006, 2008, 2010, 2011, 2013, 2016, 2019, 2020, and 2023.

Current Revision Highlights:

- The referenced versions of the following codes/standards have been updated to: IBC 2024, ASCE/SEI 7-22, ASCE/SEI 41-23, AISC 341-22, and RP 10-22.
- Renamed Facility Occupancy Category to Facility Criticality Designation.
- Sections 2.3 and 4.1 clarify that exempt existing buildings are not exempt from nonstructural requirements of Section 4.0 when permanent components/equipment are added or relocated.
- Section 2.4 includes the following revisions for consistency with RP 10-22 triggers for evaluation of existing buildings: replaces the seismicity triggers with equivalent Seismic Design Categories and removes redundant triggers for leased and relocated facilities.
- Section 2.7 adds Ancillary facilities for approval of alternative retrofit procedures.
- Section 3.2 incorporates recommended changes from the Advisory Committee on Structural Safety of VA Facilities.
- Section 5.1 clarifies field shear wave velocity measurements are used to evaluate the site class.
- Updates to Critical, Essential, and Ancillary facilities in Section 7.0, including moving CLCs from Essential to Critical to be consistent with IBC 2024's move of Group I-2 Condition 1 buildings (nursing homes) from Risk Category III to Risk Category IV (per IBC Chapter 16 Errata – 11/1/2023).
- Miscellaneous errata corrected throughout.

Note: A vertical bar is placed to the right of the revised sections, excluding errata and minor edits.

ROSS
DAVIDSON

Digitally signed by ROSS
DAVIDSON
Date: 2023.06.20 18:32:12
-04'00'

Ross A. Davidson, DBIA, Assoc. AIA, FHFI.
Associate Executive Director
Office of Facilities Planning

July 1, 2023



TABLE OF CONTENTS

| | |
|--|----|
| 1.0 Definitions | 1 |
| 2.0 General | 3 |
| 3.0 Modifications to Requirements of IBC for New Critical and Essential Facilities Assigned to High Seismic Design Categories..... | 6 |
| 4.0 Elements of Structures, Nonstructural Components, and Equipment Supported by Structures for Critical and Essential Facilities | 9 |
| 5.0 Site Data for Critical and Essential Facilities | 12 |
| 6.0 Commentary..... | 14 |
| 7.0 Risk Categories | 16 |



1.0 DEFINITIONS

- 1.1 AISC 341¹:** AISC 341-22, Seismic Provisions for Structural Steel Buildings.
- 1.2 ASCE 7¹:** ASCE/SEI 7-22, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, American Society of Civil Engineers.
- 1.3 ASCE 41¹:** ASCE/SEI 41–23, Seismic Evaluation and Retrofit of Existing Buildings, American Society of Civil Engineers.
- 1.4 Facility Criticality Designation (FCD):** VA facilities are categorized into the following categories below. For facilities with functions of varying criticality, the FCD shall be based on the most critical function.
- a) Critical Facilities:** Buildings and other structures that are intended to remain fully functional after the design level earthquake or other natural disaster such as hurricane, tornado, etc. These facilities include, but are not limited to, the VA FCDs listed as Critical Facilities in Tables Table 4 and Table 7, and they shall be assigned to Risk Category IV.
 - b) Essential Facilities:** Buildings and other structures that are intended to maintain essential functions with minor repairs after the design level earthquake or other natural disaster such as hurricane, tornado, etc. These facilities include, but are not limited to VA FCDs listed as Essential Facilities in Tables Table 5 and Table 7, and they shall be assigned to Risk Category III.
 - c) Ancillary Facilities:** These buildings and other structures include, but are not limited to, the VA FCDs listed as Ancillary Facilities in Tables Table 6 and Table 7. All Ancillary facilities shall be designated as non-essential facilities and shall be assigned to Risk Category II.
- 1.5 IBC¹:** 2024 International Building Code.
- 1.6 Risk Category:** A categorization of buildings and other structures used to determine natural hazard design loads based on the risk associated with unacceptable performance due to the nature of the occupancy, as defined in Section 7.0, and translated to IBC Risk Categories II, III, and IV specified in Section 1.4.
- 1.7 RP 10-22¹:** Standards of Seismic Safety for Existing Federally Owned and Leased Buildings, Interagency Committee on Seismic Safety in Construction (ICSSC) Recommended Practice 10 (RP 10-22), The National Institute of Standards and Technology ([RP 10-22](https://doi.org/10.6028/NIST.IR.8458e2022) is available at <https://doi.org/10.6028/NIST.IR.8458e2022>).

¹ Including any amendments (errata, addenda, supplements, interpretations, etc.).



1.8 Seismic Design Category (SDC): As defined in ASCE 7, a classification assigned to a structure based on its risk category and the severity of the design earthquake ground motion at the site.

1.9 Soft Story & Extreme Soft Story: As defined in ASCE 7, Table 12.3-2.

1.10 Spectral Response Acceleration: A parameter used to characterize the anticipated earthquake shaking at the location of the specific facility under consideration.

S_s : Spectral response acceleration parameter at short periods corresponding to the mapped maximum considered earthquake.

S_1 : Spectral response acceleration parameter at a period of 1 sec corresponding to the mapped maximum considered earthquake.

S_{DS} : Design spectral response acceleration parameter at short periods adjusted for site class effects, as defined in ASCE 7.

S_{D1} : Design spectral response acceleration parameter at a period of 1 sec adjusted for site class effects, as defined in ASCE 7.

1.11 VA Seismic Safety Coordinator: A VA Designated Seismic Safety Coordinator in the Office of Facilities Planning (OFP) within the Office of Construction & Facilities Management (CFM), responsible for reporting VA compliance with Executive Order 13717, Establishing a Federal Earthquake Risk Management Standard. When the VA Seismic Safety Coordinator is referenced in this manual for approvals, the Associate Executive Director for OFP also maintains the same approval authority.



2.0 GENERAL

These requirements cover all VA facilities including those of National Cemetery Administration, Veterans Benefits Administration, and Veterans Health Administration.

2.1 New Critical and Essential Facilities

All new Critical and Essential Facilities shall be designed and constructed in full compliance with the earthquake design and detailing requirements of IBC as modified in these provisions.

2.2 New Ancillary Facilities

All new Ancillary Facilities shall be designed and constructed in full compliance with the earthquake design and detailing requirements of IBC with no additional modifications.

2.3 Existing Facilities

Evaluation and retrofit of all existing facilities shall comply with the minimum RP 10-22 standards as modified in these provisions, including triggers and exemptions for evaluation and potential mitigation in Section 2.4. Facilities that do not meet the triggers in Section 2.4 are not exempt from the requirements for new or relocated permanent equipment and nonstructural components and their attachments covered in Section 4.0.

- a. Exemptions (RP 10-22, Section 1.3)
 - i. Exemption 1.3.f shall not apply to Essential buildings.

2.4 Existing Facilities - Evaluation

- a. In addition to the RP 10-22 Section 1.2.1 triggers, a seismic evaluation and potential mitigation shall be conducted for existing Critical and Essential facilities assigned to SDC B or higher and Ancillary Facilities assigned to SDC C or higher that meet one or more of the following criteria:
 - i. Facilities selected for renovation as part of a VA Major Construction project.
 - ii. Facilities assigned to SDC C, D, E, or F that are selected for renovation where the area of renovation is greater than 50% of the total area.
 - iii. A project is planned which significantly extends the building's useful life through alterations or repairs which total more than 30% of the replacement value of the facility. This applies for facilities assigned to SDC C, D, E, or F.
 - iv. A significant addition to an existing building is planned that is not structurally independent of the existing building.



- b. Existing Critical, Essential, and Ancillary Facilities shall be evaluated using the procedures in ASCE 41 for the performance objectives in accordance with Table 1.

2.5 Existing Facilities – Retrofit

All Critical, Essential, and Ancillary existing facilities shall be retrofitted using Tier 3 nonlinear procedures described in ASCE 41 to achieve the performance objectives in accordance with Table 1.

2.6 Existing Facilities Performance Objectives for Evaluation and Retrofit

The performance objectives used for Evaluation and Retrofit are shown in Tables Table 1-Table 3, are defined in ASCE 41, and shall be applied for each applicable Tier (1-3) used for screening/evaluation and retrofit procedures.

Table 1. Performance Objectives

| Description | Evaluation | Retrofit |
|--|------------|----------|
| All triggered situations in Section 2.4.a and RP 10-22 Section 1.2.1, unless noted otherwise below | BPON | BPON |
| Damaged structures described in RP 10-22 Section 1.2.1 (e) | BPOE | BPOE |
| Leased space | BPOE | BPOE |

Table 2. Basic Performance Objectives Equivalent to New Building Standards (BPON)

| Risk Categories | Seismic Hazard Level | |
|------------------------|--|--|
| | BSE-1N | BSE-2N |
| Critical and Essential | Immediate Occupancy Structural Performance | Life Safety Structural Performance |
| | Operational Nonstructural Performance | Hazards Reduced Nonstructural Performance |
| Ancillary | Life Safety Structural Performance | Collapse Prevention Structural Performance |
| | Position Retention Nonstructural Performance | Hazards Reduced Nonstructural Performance |



Table 3. Basic Performance Objectives Equivalent to Existing Building Standards (BPOE)

| Risk Categories | Seismic Hazard Level | |
|------------------------|--|--|
| | BSE-1E | BSE-2E |
| Critical and Essential | Immediate Occupancy Structural Performance | Life Safety Structural Performance |
| | Position Retention Nonstructural Performance | Hazards Reduced Nonstructural Performance |
| Ancillary | Life Safety Structural Performance | Collapse Prevention Structural Performance |
| | Life Safety Nonstructural Performance | Hazards Reduced Nonstructural Performance |

2.7 Existing Facilities Retrofit – Alternative Approach

An alternative approach may be permitted on a case-by-case basis upon approval by the VA Seismic Safety Coordinator for Critical, Essential, and Ancillary Facilities to be strengthened according to procedures in ASCE 41.



3.0 MODIFICATIONS TO THE REQUIREMENTS OF ASCE 7 FOR NEW CRITICAL AND ESSENTIAL FACILITIES ASSIGNED TO HIGH SEISMIC DESIGN CATEGORIES

3.1 Structural Irregularities (ASCE 7, Section 12.3.3)

For structures assigned to SDCs D, E, or F, the following types of vertical irregularities as defined by ASCE 7 Table 12.3-2 are not allowed:

- a. Stiffness irregularity – Soft Story
- b. Stiffness irregularity – Extreme Soft Story
- c. Weight (mass) irregularity
- d. Vertical geometric irregularity

3.2 Seismic-force-resisting-systems (ASCE 7, Table 12.2-1)

The following structural systems are permitted for new Critical and Essential Facilities assigned to SDCs D, E, or F.

- a. Building Frame Systems
 - i. Steel eccentrically braced frames (EBF) moment resisting connections at columns away from links
 - ii. Special reinforced concrete shear walls (Building Frame)
 - iii. Special reinforced masonry shear walls (Building Frame)
 - iv. Special steel concentrically braced frames, if approved by the VA Seismic Safety Coordinator
 - v. Light frame walls with shear panels-wood structural panels/sheet steel panels (Building Frame) for structures two stories or less
 - vi. Buckling-restrained braced frames, moment-resisting beam-column connections
- b. Moment-Resisting Frame Systems
 - i. Special steel moment-resisting frames (SMRF)
 - ii. Special reinforced concrete moment-resisting frames, if approved by the VA Seismic Safety Coordinator
- c. Dual Systems
 - i. Special reinforced concrete shear walls with SMRF
 - ii. Special reinforced masonry shear walls with SMRF
 - iii. Steel EBF with SMRF
 - iv. Special steel concentrically braced frame with SMRF
 - v. Buckling-restrained braced frame



Other structural systems as permitted by the ASCE 7 for SDCs D, E or F, including ones that employ seismic isolation and seismic damping systems are permitted subject to written approval by the VA Seismic Safety Coordinator. Proposals to obtain written approval for other structural systems shall demonstrate the equivalent performance of those systems, relative to the permitted systems, considering (a) initial construction and maintenance costs, (b) requirements for bracing non-structural components and building contents, (c) risk of economic losses and disruption to hospital functions due to earthquakes and (d) other demonstrable benefits.

3.3 Special Provisions for structures assigned to Seismic Design Categories D, E, or F.

The provisions of this section shall apply to all new Critical and Essential Facilities.

- a. Bay spacing essentially shall be equal and uniform throughout.
- b. Transfer beams or trusses supporting upper-level columns shall not be used unless permitted on a case-by-case basis by the VA Seismic Safety Coordinator.
- c. Seismic joints shall be avoided, if at all possible. When required, they shall be specifically identified in the schematic design phase of the project and approved by the VA Seismic Safety Coordinator, subject to the following provisions:
 - i. Seismic joints shall be properly detailed on the working drawings;
 - ii. Seismic joints shall be sized based on the maximum expected displacements, considering the effects of story drift, diaphragm displacements and rotations, and a realistic approximation of element section properties. For materials designed considering the ultimate limit state, such as concrete, the stiffness representative of this state shall be used. Seismic separations shall be 125% of the separation required by ASCE 7; and
 - iii. Adjacent structures that are not integral with an existing structure shall be separated by not less than 2 inches per story.

3.4 Limitations on Reinforced Concrete Structures

The provisions of this section shall apply to all new Critical and Essential Facilities assigned to SDCs D, E, or F.

- a. Prestressed concrete structural members, including pre-tensioned and post-tensioned members, and precast elements such as tilt-up wall panels, and precast beam and column elements shall not be used to resist seismic forces.
- b. Lightweight concrete shall not be used in structural members resisting earthquake forces, except in concrete floors and roof slabs used as diaphragm elements to distribute earthquake forces to vertical lateral-load resisting elements.



3.5 Limitations on Steel Structures

The provisions of this section shall apply to all new Critical and Essential Facilities assigned to SDCs D, E, or F.

- a. Special steel moment resisting frame system shall be in compliance with Section E3 of AISC 341.
- b. Steel eccentrically braced systems shall be subject to the following special provisions:
 - i. Connections of non-structural elements shall not be located in the vicinity of EBF link beams. Non-structural elements include, but are not limited to, pre-cast panel connections, elevator guide rail supports, stairs, and pipe supports, etc.

3.6 Story Drift Limitations

The calculated story drift for the construction of all new Critical and Essential Facilities assigned to SDCs D, E, or F shall not exceed 50% of the values allowed by ASCE 7.



4.0 ELEMENTS OF STRUCTURES, NONSTRUCTURAL COMPONENTS, AND EQUIPMENT SUPPORTED BY STRUCTURES FOR NEW AND EXISTING CRITICAL AND ESSENTIAL FACILITIES

- 4.1** New or relocated nonstructural components, permanent equipment, and their attachments, including structure-supported attachments, shall be designed to resist the effects of earthquake motions prescribed in ASCE 7, Chapter 13 for new installations, as modified by this document.

Existing permanent equipment and nonstructural components and their attachments in existing structures triggered by Section 2.4 shall follow the requirements of ASCE 41, Chapter 13.

All nonstructural components in Critical facilities shall have a component importance factor, I_p , equal to 1.5. For existing structures, this requirement shall only apply when meeting the Operational Nonstructural Performance Level in the BPON objective in Table 2, Section 2.6.

- 4.2** In structures assigned to SDC C, D, E, or F, permanent equipment and components are to have Special Seismic Certification in accordance with requirements of section 13.2.3 of ASCE 7 except for equipment and components that are considered inherently rugged as listed in Section 4.2.2, and shall comply with section 13.2.7 of ASCE 7.

4.2.1 List of Equipment and Components Typically Requiring Special Seismic Certification

The following is a list of equipment and components that may require special certification. This is not an exhaustive list and is intended to provide guidance on types of equipment that may require special seismic certification.

1. Emergency and standby power systems equipment including generators, turbines, fuel tanks, and automatic transfer switches
2. Elevator equipment (except elevator cabs)
3. Components with hazardous contents, excluding pipes and ducts
4. Exhaust and Smoke control fans
5. Switchgear and Switchboards
6. Motor control centers
7. Built-up or field assembled mechanical equipment
8. Fluoroscopy and x-ray equipment required for radiological/diagnostic imaging service
9. CT (Computerized Tomography) systems used for diagnostic assessment of trauma injuries
10. Air conditioning units
11. Air handling units
12. Chillers, including associated evaporators, and condensers
13. Cooling towers
14. Transformers



15. Electrical substations
16. UPS and associated batteries
17. Distribution panels, including electrical panel boards
18. Control panels, including fire alarm, fire suppression, preaction, and auxiliary or remote power supplies
19. Power isolation and correction systems
20. Motorized surgical lighting systems
21. Motorized operating table systems
22. Internal communication servers and routers
23. Medical gas and vacuum systems
24. Electrical busways as defined in UL 857
25. Electrical control panels powered by the life safety branch

Exceptions:

1. Equipment and components exempted in ASCE 7 Chapter 13, including rugged components and equipment listed in Section 4.2.2
2. Movable (mobile) and temporary equipment/components, which are not anchored to structure or permanently attached to the building utility services such as electricity, gas, or water. For the purposes of this requirement, “permanently attached” shall include all electrical connections except plugs for duplex receptacles.
3. Pipes, ducts, conduits, and cable trays, excluding in-line equipment and components
4. Underground tanks
5. Electric motors, pumps, and compressors up to 20 hp
6. Electrical Controllers, Switches, Transformers, Circuit Breakers, and fuses up to 10 lbs. or 10 amperes
7. Components where importance factor, I_p , is permitted to be 1.0 by Chapter 13, ASCE 7
8. Emergency generators up to 25 kilowatts
9. Equipment and Components used for clinical trials only

4.2.2 Rugged Components and Equipment

1. Valves (not in cast-iron housings, except for ductile cast iron)
2. Pneumatic operators
3. Hydraulic operators
4. Motors and motor operators
5. Horizontal and vertical pumps (including vacuum pumps)
6. Air compressors
7. Sterilizers
8. Blanket warmers
9. Anesthesia power columns, ceiling or wall mounted
10. Refrigerators and freezers



11. Microwave ovens for patient service
12. Film illuminators
13. Elevator cabs
14. Underground tanks
15. Equipment and components weighing not more than 20 lbs. supported directly on structures (and not mounted on other equipment or components) with supports and attachments in accordance with Chapter 13, ASCE 7

Exemptions above are for factory assembled discrete equipment and components only and do not apply to site assembled or field assembled equipment or equipment anchorage.



5.0 SITE DATA FOR NEW AND EXISTING CRITICAL AND ESSENTIAL FACILITIES

Geologic hazards and site-specific ground-response reports shall be required for all proposed construction of new and proposed seismic retrofit of existing Critical and Essential Facilities assigned to SDC C, D, E, or F.

The geotechnical investigation shall use appropriate methods, involving field shear wave velocity measurements, to allow the most accurate evaluation of the site class in accordance with Chapters 20 and 21 of ASCE 7.

5.1 Geologic Hazards Report

The purpose of the geologic hazards report shall be to identify potential geologic and seismic conditions that require detailed evaluation, and may require mitigation by the project. The report shall contain data that provides an assessment of the nature of the site and potential for earthquake damage based on preliminary investigations of the regional and site geology, subsurface conditions and the potential seismic shaking. The engineering geologic report shall not contain design criteria, but shall contain basic data to be used for a preliminary earthquake engineering evaluation of the project. The basis for seismic assessment in geologic hazards reports must be stated clearly.

The report shall include, but shall not be limited to the following:

- a. Geologic investigation;
- b. Identification of any known active and potentially active faults, both regional and local, including estimates of the peak ground accelerations that could occur at the site; and
- c. Evaluation of any slope stability problems at or near the site, liquefaction potential and settlement potential of the building site.

VA shall approve the engineering geologic hazard report prior to the preparation of the geotechnical report, which should include the results of quantitative evaluation of the hazards identified in the geologic hazard report.

5.2 Site-Specific Ground-Response Report

The site-specific ground-response report shall present a detailed characterization of earthquake ground motions for the site. The characteristics of the expected strong ground motion to be used in design shall be determined by site evaluation studies based on geological and seismological characteristics of the site, including data given in the engineering geologic hazards report. The estimates should be derived by accepted methods of seismological practice, including the most current Next Generation Attenuation (NGA) relationships where applicable, and fully documented in the ground



response report. The level of ground motions to be developed shall be determined using the procedures in Chapter 21 of ASCE 7.

VA shall approve the site-specific ground response report prior to its adoption for project design.



6.0 COMMENTARY

Section 1.0

Section 1.4: After the design level earthquake, all functions in critical buildings and other structures are intended to remain fully functional, whereas in Essential buildings and other structures, all essential functions are intended to remain functional while non-essential functions can be repaired.

Section 2.0

Executive Order 13717 requires Federal agencies comply with the latest edition of the IBC for the seismic design of new Federal buildings and adopt the *Standards of Seismic Safety for Existing Federally Owned and Leased Buildings (ICSSC RP Standards)* for the minimum seismic safety standards of existing buildings. Both the latest IBC and ICSSC RP Standards must be adopted by Federal agencies within 2 years of issuance. EO 13717 also encourages agencies to exceed both minimum codes and standards to achieve higher resilience in Federal buildings, which is consistent with H-18-8 provisions. The current adopted editions are IBC 2024 and RP 10-22, and the H-18-8 seismic requirements are aligned with the baseline requirements of both IBC 2024 and RP 10-22, with modifications. The modifications are consistent with both ASCE 7 and ASCE 41, which specify procedures for seismic design of new buildings and seismic evaluation and retrofit of existing buildings, respectively.

Section 3.0

Section 3.1: The design engineer shall provide multiple lines of resistance when selecting a lateral force-resisting configuration. Redundancy of frame lines is intended to avoid concentration of seismic force demands in the structure and/or foundation system. Lines of lateral force resistance shall be located at major areas of plan irregularity such as reentrant corners.

Section 3.2: The permitted structural systems listed in Section 3.2 are chosen to provide cost-effective and reliable seismic performance.

Section 3.3c: Because seismic joints have a serious impact on exterior veneer/building envelope, floor joints, and interior construction and utilities, they should be avoided if at all possible.



Section 5.0

Site class is used to determine the values of short-period and 1-second design spectral accelerations, S_{DS} and S_{D1} that define Seismic Design Category in accordance with ASCE 7. An accurate evaluation of site class is to be made in accordance with Chapter 20 and Chapter 21 of ASCE 7 and is to be presented in the geotechnical evaluation report. Field shear wave velocity measurements typically provide the most reliable basis for an accurate evaluation of site class. Exceptions for low seismicity were removed because certain local site conditions have been observed to significantly amplify response spectral characteristics within a period range which may be in resonance with certain structures.

Although geotechnical studies exist for most of VA's vulnerable sites, the intent of this provision is to replace those studies (conducted in mid-seventies) for all proposed construction of new and proposed seismic retrofit of existing Critical and Essential Facilities assigned to moderate or high seismic design categories.

New site-specific studies for VA facilities are to consider up-to-date information on the attenuation of earthquake ground motions with distance from the earthquake source, and other relevant seismologic and geologic information. Research sponsored by the Pacific Earthquake Engineering Research Center has led to significantly improved procedures to estimate attenuation of earthquake motions (e.g., publication in 2008 of so-called Next Generation Attenuation (NGA) relationships for plate-boundary tectonic regimes dominated by crustal faults, such as the Western United States). It is the intent of VA requirements that new site-specific studies for VA facilities take advantage of those improved procedures and other pertinent published information on earthquake ground motion estimation, in accordance with the state of practice for the seismic design of buildings.

The standard practice of preparing a geotechnical report containing foundation recommendations, soil-bearing values, results of any necessary soil borings, etc., is still required for all VA projects.



7.0 RISK CATEGORIES

VA Facility Criticality Designations (FCDs)

Table 4. Critical Facilities¹

| |
|---|
| Acute Care [Acute Beds] - inpatient medical/surgical beds |
| Acute Care (Acute Beds) – outpatient ² |
| Community Living Center (CLC) (Long Term Care) |
| Drug/Alcohol Rehabilitation - inpatient |
| Fire Station, Police Station |
| Hazardous Material Storage |
| Hospital |
| Medical Records - standalone central storage |
| Mental Health (MH)/Psychiatric Care - inpatient |
| National Continuity of Operation Center |
| OIT - Core Data Center (CDC) |
| Polytrauma - inpatient |
| Research - Animal Facility |
| Research Facility w/ Wet Labs |
| Security & Law Enforcement |

Table 5. Essential Facilities¹

| |
|--|
| Dietetics (serving inpatient/food production) ³ |
| Domiciliary/MH Residential Rehabilitation Treatment Program (RRTP) |
| Hospice Care (inpatient service) |

Notes:

- 1) Deviations from default FCDs shall be submitted to the VA or VHA Seismic Safety Coordinator for coordination of review by pertinent VA administrations/offices.
- 2) Includes urgent care (not 24/7) and Emergency Department.
- 3) The purpose of the facility is serving inpatient and food production, not administrative office space.

Table 6. Ancillary Facilities¹

| | |
|--|--|
| Accessory Non-Building Structure | OIT - Network Support Center (NSC) |
| Canteen, Cafeteria, Retail Store | Parking Garage |
| Chapel (standalone building) | Polytrauma - outpatient |
| Child Care | Post Office |
| Credit Union | Quarters (Non-Veteran Residential) |
| Drug/Alcohol Rehabilitation - outpatient | Recreational |
| Fisher House | Rehabilitation Medicine - outpatient |
| Greenhouse (Freestanding) | Research Facility w/ Dry Labs only |
| Library/Museum | Spinal Cord Injury/Disorders Center (SCID Center) - outpatient |
| Maintenance Facility (Shops) | Student Housing |
| Maintenance Storage (Non-biomedical Equipment and Non- Critical and Non-Essential Equipment Support) | Toilets (Outhouse) |
| Mental Health/Psychiatric Care - Outpatient | Training, Education |
| Miscellaneous structure/facility not otherwise identified | Transitional Residence / TR-RRTP |
| Non-occupied structures | Veterans Services |
| Office (e.g., Clinical Administrative, General Administrative, etc.) | Waste Management (Incinerator & Recycle) |
| OIT - National Call Center | Waste Storage (Non-hazardous) |



Table 7. Facilities with Varying FCDs¹

| Facilities | Possible FCD | | | Notes |
|--|--------------|-----------|-----------|--|
| | Critical | Essential | Ancillary | |
| Ambulatory Surgery Center (ASC) | X | X | X | Default FCD is Critical. Request to lower the FCD can be submitted for review/approval when there is identified alternate VA site of care. |
| Auditorium | - | X | X | Default FCD is Ancillary. Follow FCD of the primary facility that it supports up to Essential. When the auditorium/facility, with public assembly as primary occupancy and with an occupant load greater than 300, design to Risk Category III per IBC (i.e., upgrade to Essential). |
| Biomedical Eng. (equip. & wheelchair repair) | - | X | X | Default FCD is Ancillary. Follow FCD of the facility that it supports, up to Essential. |
| Central Energy/Utility Plant (including chiller and boiler plants) | X | X | X | To be designed to the same level as the highest buildings the Plant serves. |
| Connecting Corridor-Concourse, and Bridge | | X | X | Default designation is Ancillary. Consider upgrading to Essential based on factors such as the facility that it supports, contents, and importance to mission. Such upgrade can be determined at the VA Medical Center (VAMC) & Veterans Integrated Service Networks (VISN) level without additional approval. |
| Consolidated Mail-Out Pharmacy (CMOP) | X | X | - | Default FCD is Essential. FCD can be upgraded to critical when the need arises. There are a limited number of CMOPs that cannot be duplicated for handling of controlled substances. |
| Generator | X | X | X | To be designed to the same level as the highest buildings the Generator serves. |
| Imaging Service | X | X | X | To be designed to the same level as the highest buildings the Imaging Service supports |



| Facilities | Possible FCD | | | Notes |
|---|--------------|-----------|-----------|--|
| | Critical | Essential | Ancillary | |
| Laundry | - | X | X | Default FCD is Ancillary. Consider upgrading to Essential based on factors such as regional workload, likelihood of natural disasters/hazards, and community availability of laundry services. Such upgrade can be determined at the VA Medical Center (VAMC) & Veterans Integrated Service Networks (VISN) level without additional approval. |
| Medical Equipment Storage | X | X | X | To be designed to the same level as the highest buildings the Medical Equipment Storage serves. |
| Medical Gas Storage | X | X | X | To be designed to the same level as the highest buildings the Medical Gas Storage serves. |
| Medical Records Storage | X | X | X | Medical Records Storage areas that are not standalone central storage facilities shall match the building FCD of the most critical function of the building they are within. |
| OIT - Campus Support Center (CSC) | X | X | - | Follow FCD of the highest level of a supported entity on the campus. |
| OIT - Mission Support Center (MSC) | X | X | - | Default FCD is Essential. To be elevated to Critical when supporting mission-critical production environment that directly supports patient care. |
| Outpatient Care (including Ambulatory Care, OPC,CBOC, HCC, multi-specialty, primary care, etc.) | X | X | X | Default FCD is Ancillary. Refer to the list of strategic planning categories in Table 8 for determination of FCD. If the FCD is raised due to services provided, request to lower the FCD can be submitted for review/approval when there is identified alternate VA site of care. |
| Rehabilitation Medicine - Inpatient (Blind, PT/OT) | X | X | - | To be designed to the same level as the highest building the facility serves (e.g., hospital, CLC, etc.). |
| Sterile Processing Service | X | X | X | To be designed to the same level as the highest buildings the Sterile Processing Service serves. |



| Facilities | Possible FCD | | | Notes |
|---|--------------|-----------|-----------|--|
| | Critical | Essential | Ancillary | |
| Temporary Building | X | X | X | FCD to be defined on a case-by-case basis and requests for determination shall be submitted to the VA Seismic Safety Coordinator for coordination of review by pertinent VA administrations/offices for a determination. |
| Utility Supply Storage Structure or structures supporting utilities | X | X | X | To be designed to the same level as the highest buildings the structure serves. |
| Warehouse | | X | X | Default designation is Ancillary. Consider upgrading to Essential based on factors such as the facility that it supports, contents, and importance to mission. Such upgrade can be determined at the VA Medical Center (VAMC) & Veterans Integrated Service Networks (VISN) level without additional approval. |
| Water Tower | N/A | N/A | N/A | N/A – seismic design to follow IBC Risk Categories and requirements. |



Table 8. Veterans Health Administration (VHA) Strategic Planning Categories

| VHA Strategic Planning Categories | Facility Criticality Designations (FCD) | | |
|--|---|-----------|-----------|
| | Critical | Essential | Ancillary |
| Amb Medical: Audiology and Speech | | | X |
| Amb Medical: Cardiology | | | X |
| Amb Medical: Dialysis | X | | |
| Amb Medical: Digestive/GI/Endoscopy – Office Visit | | | X |
| Amb Medical: Digestive/GI/Endoscopy – Procedure | | X | |
| Amb Medical: EEG/Neurology | | | X |
| Amb Medical: Endocrine/Metabolic and Diabetes | | | X |
| Amb Medical: NonSurg: All Other | | | X |
| Amb Medical: NonSurg: Allergy & Immunology | | | X |
| Amb Medical: NonSurg: Dermatology | | | X |
| Amb Medical: NonSurg: Infectious Diseases | | | X |
| Amb Medical: NonSurg: Nephrology | | | X |
| Amb Medical: NonSurg: Rheumatology | | | X |
| Amb Medical: Oncology – Office Visit | | | X |
| Amb Medical: Oncology – Procedure | | X | |
| Amb Medical: Pulmonary/Resp Care | | | X |
| Amb Medical: Rehab Medicine | | | X |
| Amb Mental Hlth: Homeless | | | X |
| Amb Mental Hlth: Intensive Community Mental Health Recovery Services (ICMHR) | | | X |
| Amb Mental Hlth: Mental Health Clinic - All Others | | | X |
| Amb Mental Hlth: Mental Health Clinic - Psychotherapy | | | X |
| Amb Mental Hlth: MH RRTP Outpatient | | | X |
| Amb Mental Hlth: MH RRTP Residential Stay | | X | |
| Amb Mental Hlth: Psychology Clinic - All Others | | | X |
| Amb Mental Hlth: Psychology Clinic - Psychotherapy | | | X |
| Amb Mental Hlth: Substance Abuse Clinic | | | X |
| Amb Mental Hlth: Work Therapy | | | X |
| Amb Surg: Cardiovascular and Thoracic Surgery | X | | |
| Amb Surg: Colon Rectal Surgery | X | | |



| VHA Strategic Planning Categories | Facility Criticality Designations (FCD) | | |
|--|---|-----------|-----------|
| | Critical | Essential | Ancillary |
| Amb Surg: ENT | X | | |
| Amb Surg: General and All Other Surgery | X | | |
| Amb Surg: Neurological Surgery | X | | |
| Amb Surg: Obstetrics & Gynecology | X | | |
| Amb Surg: Plastic Surgery | X | | |
| Amb Surg: Urology | X | | |
| Amb Surg: Eye Clinic | X | | |
| Amb Surg: Orthopedics | X | | |
| Amb Surg: Podiatry | X | | |
| Amb: Dental - Basic | | | X |
| Amb: Dental - Major | X | | |
| Amb: Dental - Minor | | | X |
| Amb: Geriatrics | | | X |
| Amb: Laboratory and Pathology | | X | |
| Amb: Nuclear Medicine | | X | |
| Amb: Primary Care | | | X |
| Amb: Radiation Therapy | | | X |
| Amb: Recreational Therapy | | | X |
| Amb: Urgent Care | X | | |
| Blind Rehab - Inpatient | | X | |
| Blind Rehab - Outpatient | | | X |
| CLC - Long | X | | |
| CLC - Short | X | | |
| Home Hospice Care (Administrative Program) | | | X |



| VHA Strategic Planning Categories | Facility Criticality Designations (FCD) | | |
|--|---|-----------|-----------|
| | Critical | Essential | Ancillary |
| Home Respite Care (Administrative Program) | | | X |
| Home Telehealth | | | X |
| Home-Based Primary Care | | | X |
| Homemaker/Home Health Aide Programs | | | X |
| Inpt Mental Hlth: General Compensated Work Therapy/Transitional Residence (Gen CWT/TR) | | X | |
| Inpt Mental Hlth: PRRP, PR RTP, SARRTP & Dom | | X | |
| Inpt Mental Hlth: Sustained Treatment and Rehab (STAR I II III) | X | | |
| Inpt: Maternity Deliveries | X | | |
| Inpt: Maternity Non-Deliveries | X | | |
| Inpt: Medical | X | | |
| Inpt: Observation Beds (47 hour) | X | | |
| Inpt: Psychiatric | X | | |
| Inpt: Substance Abuse | X | | |
| Inpt: Surgical | X | | |
| Psychosocial Rehabilitation and Recovery Center | | | X |
| Purchased Skilled Home Care | | | X |
| SCI&D Home Care | | | X |
| Spinal Cord Injury - Outpatient | | | X |
| Spinal Cord Injury Centers - Inpatient | X | | |
| VA Adult Day Health Care | | | X |



