

University of California Policy



# Seismic Safety Policy

<b>Responsible Officer:</b>	EVP – Chief Financial Officer
<b>Responsible Office:</b>	CR – Capital Asset Strategies & Finance
<b>Issuance Date:</b>	1/16/1975
<b>Effective Date:</b>	xx/xx/xxxx
<b>Last Review Date:</b>	5/19/2017
<b>Scope:</b>	All University Facilities of the University of California within California except 1) those under the regulatory authority of the Office of Statewide Hospital Planning and Development or 2) K-12 schools or community college facilities built after 2018 under the regulatory authority of the Division of the State Architect.

<b>Contact:</b>	Lauren Friedman
<b>Title:</b>	Interim Executive Director, Capital Asset Strategies
<b>Email:</b>	<a href="mailto:Lauren.Friedman@ucop.edu">Lauren.Friedman@ucop.edu</a>
<b>Phone #:</b>	(510) 987-9947
<b>Contact:</b>	Rendell Camacho
<b>Title:</b>	Management Specialist, Capital Programs
<b>Email:</b>	<a href="mailto:Rendell.Camacho@ucop.edu">Rendell.Camacho@ucop.edu</a>
<b>Phone #:</b>	(510) 987-0564

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### I. POLICY SUMMARY AND APPLICABILITY

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The purpose of this Policy is to provide an acceptable level of earthquake safety for students, employees, and the public who occupy University Facilities located in California. For structures located in other states or outside the United States, the Responsible Official must take reasonable steps to manage the seismic life safety risk, if any, and comply with the applicable building code. See the Facilities Manual for specific requirements related to acquiring or leasing facilities outside of California.

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### II. DEFINITIONS

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**CBC:** California Building Code, Part 2 of the CBSC, (current edition).

**CBSC:** California Building Standards Code, Title 24 of the CCR, (current edition).

**CCR:** California Code of Regulations.

**CEBC:** California Existing Building Code, Part 10 of the CBSC, (current edition).

**Component Engineer of Record (CEOR):** A California-licensed structural or civil engineer responsible for the design of a component or portion of a building. A University of California employee may not perform this function (except that a licensed faculty member otherwise qualified may serve in this capacity).

**Consulting Geotechnical Engineer (CGE):** A California-licensed geotechnical engineer. The CGE should have demonstrated experience in field investigation and

analysis of earthquake damage, site-specific seismic forces, and evaluations of geohazards. A University of California employee may not perform this function (except that a licensed faculty member otherwise qualified may serve in this capacity).

**Consulting Structural Engineer (CSE):** A California-licensed structural engineer. The CSE should have demonstrated experience in field investigation and analysis of earthquake damage, site-specific seismic forces, and design of structural systems to resist seismic forces. A University of California employee may not perform this function (except that a licensed faculty member otherwise qualified may serve in this capacity).

**Designated Campus Building Official (DCBO):** Designated campus administrator who has the authority to ensure compliance for all campus projects by appropriate reviews and inspection in accordance with the CBSC.

**Engineer of Record (EOR):** A California-licensed structural or civil engineer who is responsible for the structural design of the facility. A University of California employee may not perform this function (except that a licensed faculty member otherwise qualified may serve in this capacity).

**Facilities Manual:** The University of California Facilities Manual contains policies, procedures, and guidelines for the University's facilities. Seismic issues are addressed in Volume 3, Chapter 5 and the [Resource Directory](#).

**Independent Seismic Peer Reviewer:** A California-licensed structural engineer retained by the University to provide a measure of additional assurance regarding performance and safety of new construction, and repair or renovation of existing facilities. The reviewer shall not be an employee of the University (except that a licensed faculty member otherwise qualified may serve in this capacity). The Independent Seismic Peer Reviewer shall not be the EOR.

**Lease:** A lease is an agreement in which the landlord agrees to give the tenant the exclusive right to occupy real property, usually for a specific term and, in exchange, the tenant agrees to give the landlord some sort of consideration. A lease transfers to the tenant a leasehold interest in the real property and, unless otherwise provided in the lease, a lease is transferable and irrevocable.

**Leased Facility:** A space within buildings or other structures that is leased by the University and used for University-related purposes.

**Owned Facility(ies):** Buildings and other structures that are owned by the University and used for University-related purposes.

**Program for Abatement of Seismic Risks in University Facilities (Program):** As defined in Section III.D.

**Responsible Officer:** The Executive Vice President-Chief Financial Officer, Office of the President.

**Responsible Official:** For their respective areas of responsibility, the Chancellors, the Executive Vice President-Chief Operating Officer, the Vice President-Agriculture and Natural Resources, and the Director-Lawrence Berkeley National Laboratory.

**Seismic Advisory Board (SAB):** A group of structural and geotechnical engineers and others with seismic expertise appointed by the Office of the President to provide seismic advice to the University in accordance with this Policy.

**Seismic Hazard Zone of Required Investigation (Seismic Hazard Zone):** Zones of required site investigation for possible earthquake faulting, landslides, and liquefaction delineated by the California Geological Survey to help identify where higher building standards may be necessary for safe development.

**Seismic Performance Rating (SPR):** Ratings prepared for University Facilities and Leased Facilities by CSE's in conformance with this Policy.

**Seismic Risk Model (Model):** A tool, maintained by the Office of the President, to assess seismic risk of University Facilities.

**University Facility:** Owned Facilities and Leased Facilities.

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### III. POLICY TEXT

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The University shall provide an acceptable level of earthquake safety for students, employees, and the public who occupy University Facilities in a reasonable time frame. The University shall weigh the probability and gravity of potential injury to persons foreseeably exposed to the risk of injury from a seismic occurrence against the practicality and cost of protecting against the risk of injury from seismic occurrences.

Responsible Officials shall immediately consider alternatives to undiminished continued use and occupancy of University Facilities not meeting the requirements of this Policy, including partial evacuation, temporary emergency measures, reduction in or cessation of use, demolition, retrofit, or combinations of these alternatives. Notwithstanding any other provisions of this Policy, Responsible Officials shall, for buildings under their jurisdiction, ensure that no University Facility with an SPR of V, VI, or VII as defined in the Facilities Manual, is occupied beyond December 31, 2030. However, a Responsible Official may request an extension of such date on a building-by-building or portfolio basis; such request shall be considered by the Responsible Officer in consultation with the General Counsel.

### **A. Seismic Advisory Board**

The SAB provides guidance to the University on seismic design, risk, and retrofit associated with University Facilities, including assessing seismic risk, advising on seismic priorities, and providing policy revision recommendations.

The SAB also advises as to whether changes in present understanding of seismology and building vulnerabilities or the CBSC require Responsible Officials to update the survey of University Facilities in accordance with Section III.C of this Policy.

### **B. Seismic Risk Model**

The University shall maintain a Model for University Facilities to assist in the evaluation of seismic risk. For each University Facility, the Responsible Official shall provide the Office of the President with all building data required for input to the Model (as outlined in the Facilities Manual).

### **C. Ratings for University Facilities**

Each Responsible Official shall engage one or more CSEs who shall examine University Facilities, any facility acquired (as described in Section III.G below) or subject to a Lease (as described in Section III.H below), and any newly constructed or renovated building. The CSE shall report on the adequacy of the resistance of such facilities to seismic forces, and provide an SPR, in accordance with the Table of Expected Seismic Performance ratings in the Facilities Manual, based on the criteria in the Facilities Manual. For newly constructed or renovated buildings, the EOR shall prepare a letter at the conclusion of the project identifying an SPR for each building; such SPR shall be presumptive based on the CBC or CEBC applicable when the project was submitted for permit review.

The CSE shall prepare a report for each building that includes a written technical discussion of the basis for the facility's SPR (as defined in Facilities Manual) with preliminary recommendations for resolving any noted deficiencies. In cases where one or more reviewing CSE(s) finds that the expected seismic performance is consistent with a one-level higher or lower SPR than that selected by the CSE who makes the assessment, this alternative SPR may be assigned if and only if the original assessing CSE concurs.

All University Facilities must have a current SPR, except certain limited facilities identified in the Facilities Manual.

### **D. Program for Abatement of Seismic Risks in University Facilities**

Each Responsible Official shall develop a Program to establish priorities for seismic retrofit projects in accordance with this Policy. Guidelines for retrofit prioritization are included in the Facilities Manual.

The Program shall include identification and correction of the potential for earthquake-induced failure of structural and non-structural elements, rupture of utilities, or falling, dislodging, overturning, or sliding of interior and exterior building elements, equipment, fixtures, furnishings, and other contents. Interim measures to reduce the risks of injury pending permanent corrective action shall be considered and implemented by the Responsible Official.

The Program shall also include a funding plan and schedule for all abatement and retrofit as needed for projects above and below the threshold for inclusion in the Capital Financial Plan. The Responsible Official shall incorporate any related capital costs into the Capital Financial Plan, as applicable. Facilities with SPRs of V, VI, or VII reflect conditions that need to be addressed. These facilities must be given high priority in campus capital planning and allocation decisions.

## **E. Seismic Standards**

### **1. Geotechnical Standards**

All campuses will seek to characterize ground motions and identify geologic hazards considered at the location of a proposed new building or existing building that is a candidate for retrofit, in accordance with one or more of the methodologies specified in the CBSC and through the California Hazards Mapping Act.

### **2. Standards for New Construction**

The design and construction of University Facilities shall comply with the current seismic provisions of the CBC for new buildings and with University policies. An EOR shall be responsible for the structural aspects of the entire project and must sign and stamp all final documents for which he/she is responsible.

### **3. Standards for Retrofits**

In conducting seismic retrofit projects, the University shall seek to provide an acceptable level of earthquake safety based on the protection of life and prevention of personal injury in accordance with requirements stated herein. Standards for the retrofit of existing buildings must follow the requirements of the CBSC (including without limitation Sections 317-323 of the CEBC), as well as University policies. To provide further guidance to Campus building officials regarding compliance with the two options in Section 317.6 of the CEBC, a “timely manner” as referenced in (2) means the seismic retrofit shall commence as soon as feasible and the facility must be given high priority in campus capital planning and funding allocation decisions.

### **4. Renovations, Alterations, and Additions of Existing facilities**

Impact of renovations to existing University Facilities shall be assessed relative to CEBC Section 317.3. Where the applicability requirements of Section 317.3 indicate

that retrofit or evaluation is required, the evaluation and/or retrofit design shall adhere to the requirements stated under “Standards for Retrofits” above.

#### **F. Peer Review**

Peer review by an Independent Seismic Peer Reviewer shall be conducted for all the following:

1. New construction of University Facilities;
2. Retrofits of existing construction; and
3. Renovations of University Facilities that require alterations or additions to any structural portion of the seismic lateral or gravity load-bearing structure or that affect life or safety of the occupants.

The Independent Seismic Peer Reviewer shall be contracted for and paid directly by the campus. The Designated Campus Building Official shall select the Independent Seismic Peer Reviewer and plan for the peer review.

See the Facilities Manual for additional requirements and options for Peer Review.

#### **G. Standards for Acquisition by Purchase or Other Title Transfer**

1. Prior to acquisition of any structure or facility for University occupancy, either by purchase or other title transfer, the University shall retain a CSE to perform a seismic evaluation and assign an SPR in accordance with Section III.C above. In addition, any structure or facility proposed to be acquired that is located within a Seismic Hazard Zone shall be investigated to determine the potential hazard and assessment of its potential effect on the structure or facility.
2. Except as provided below, each structure or facility that will become a University Facility through acquisition by purchase or other title transfer to the University must be rated at least SPR II or IV (see Section III.C), depending on occupancy category.
3. The University may acquire property by purchase or other title transfer with a structure or facility with an SPR of V only if the structure or facility is unoccupied at the time of title transfer; except that use for University-related purposes is allowed for no more than 24 months only when the space is used for relocation from another University Facility that is undergoing seismic retrofit.
4. The University may acquire property by purchase or other title transfer with a structure or facility with an SPR of V or VI if the structure or facility is unoccupied at the time of title transfer. The structure or facility must remain unoccupied until it is rated at least SPR II or IV (see Section III.C), depending on occupancy category.

5. The University may acquire property with a structure or facility with an SPR of VII only if the structure or facility is unoccupied at the time of title transfer. The structure or facility must remain unoccupied, and must be brought into compliance with this Policy or demolished within 12 months of title transfer.
6. For any proposed acquisition or other title transfer subject to Sections III.G.3, III.G.4 or III.G.5, approval documentation (whether approved by the Regents or approved under delegated authority) must include an estimate of the total project cost to undertake retrofitting to achieve conformance to the requirements of Section III.E; or to demolish the structure(s) or facility(ies).

#### **H. Standards for Leased Facilities**

1. Prior to entering into a new Lease or renewing an existing Lease for University occupancy, the University shall retain a CSE to perform a seismic evaluation and assign an SPR in accordance with Section III.C above. In addition, the CSE performing the evaluation should determine whether the structure or facility proposed to be occupied through a Lease is located within a Seismic Hazard Zone; if it is, the CSE shall further investigate to determine the potential hazard and assess its potential effect on the structure or facility.
2. All Leased Facilities shall be rated, at a minimum, SPR II or IV (see Section III.C), depending on occupancy.
3. The University may enter into a Lease for space within a facility rated at SPR V for University-related purposes for no more than 24 months, but only when the space is used for relocation from another University Facility that is undergoing seismic retrofit.
4. The University may enter into a Lease for a property within a facility rated at SPR V, VI or VII for University-related purposes if the structure or facility is unoccupied at the time of entering into such Lease. The structure or facility must remain unoccupied until it is rated at least SPR II or IV (see Section III.C), depending on occupancy category.
5. Prior to entering into a Lease, the DCBO must evaluate a facility's compliance with this Policy and all requirements of the Facilities Manual, and report to the Responsible Official on such compliance. A CSE shall complete the applicable form (see Facilities Manual) prior to entering into such Lease.
6. If the University enters into transactions where the space occupied through a Lease of real property is ancillary to, but a necessary part of, a business transaction, (such as the purchase of a physician practice or ancillary health care services provider that, at the time of the transaction, occupies space through a Lease), the following shall apply.

Notwithstanding any provision in this Section III.H to the contrary, with respect to a Leased Facility that is ancillary to a business transaction:

- a. Prior to close of the business transaction, the DCBO shall follow requirements of Section III.H.1 of this Policy;
- b. If the Leased Facility is rated at SPR V, the University may use the space for no more than 24 months from the date of determination of such a rating;
- c. If the Leased Facility is rated at SPR VI or VII, the facility must be vacated prior to close of the business transaction; and
- d. The Responsible Official shall promptly report to the Office of the President any Leases assumed or entered into pursuant to this Section III.H.6.

## I. **Special Considerations**

1. **Geotechnical Investigations:** Any geotechnical investigation conducted for a University project shall include consideration of the potential for, and likely magnitude of, seismically induced ground failure hazards, including liquefaction, differential settlement, lateral spreading, earthquake-induced landsliding, and surface faulting.
2. **Deferred Approvals for structural building components:** If a project includes deferred submittals, or a portion of the project is designed by design-build subcontractors, the structural design for such components or portions of a facility shall be under the responsible charge of a CEOR and must be signed or stamped by that individual. In order to establish responsibility for the overall design and component design, the project EOR and the CEOR shall have responsibility as follows:
  - a. The EOR shall establish written criteria and other requirements necessary for coordination of the components and their incorporation into the overall structural system and design before the project is released for design of the system or components by the CEOR. The EOR shall review, and document such review, the design of these elements for general conformance with the established criteria prior to construction.
  - b. The CEOR design for each submittal shall include calculations indicating design criteria, applicable loads, properties, and deformation analysis in accordance with the component or system design requirements provided in the contract documents. The CEOR design information shall include plans and details indicating all structural elements of the component; assemblage of elements including, as appropriate, profiles, connections, welding, bracing, and attachments to elements designed by others. The resulting construction documents (plans, calculations, and details) shall bear the stamp and signature of the CEOR.
  - c. Special inspection requirements specific to the deferred work must be prepared and submitted with the design documents for each deferred item.

3. **Ground Leases:** Where the University has entered into a ground lease, as lessee or lessor, upon which a third-party constructs a structure for University related use, the third-party shall be required to design, build, and maintain the structure, as if it were a University Facility, consistent with this Policy.

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## **IV. COMPLIANCE / RESPONSIBILITIES**

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The Responsible Officer through UCOP Capital Asset Strategies & Finance is responsible for overall administration of this Policy, including:

1. interpretation or clarification of this Policy;
2. providing advice on additional seismic safety criteria, standards, and guidelines, as necessary; and
3. evaluating seismic safety programs and review of proposals for abatement of seismic hazards.

Responsible Officials shall take reasonable steps to assure protection of persons from loss of life, injury, or property damage resulting from earthquakes in their respective jurisdictions. This responsibility may not be delegated, except for responsibilities specifically delegable in this Policy. However, each Responsible Official may assign specific duties and authority to individuals within their respective jurisdiction to assist in the discharge of this responsibility.

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## **V. PROCEDURES**

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See Volume 3, Chapter 5 and the [Resource Directory](#) of the University of California Facilities Manual.

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## **VI. RELATED INFORMATION**

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California Code of Regulations, Title 24, California Building Standards Code, including Part 2, the California Building Code, and Part 10, the California Existing Building Code

Section 15001 of the California Health and Safety Code

California Seismic Hazards Mapping Act (Public Resources Code, Chapter 7.8, Section 2690-2699.6)

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## **VII. FREQUENTLY ASKED QUESTIONS**

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Not applicable.

## VIII. REVISION HISTORY

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**xxxx xx, xxxx:** Significantly revised to reflect guidance from the Seismic Advisory Board; moved portions of prior Policy to the UC Seismic Program Guidebook, including Appendices A, B and C, which is part of the UC Facilities Manual; and made numerous conforming changes.

**May 22, 2017:** Reformatted to meet Web Content Accessibility Guidelines (WCAG) 2.0.

**May 19, 2017:** Established SAB, implemented seismic risk model in lieu of interim use plans, modified leases and acquisitions, included prioritization guidelines, and made editorial revisions throughout the Policy.

**January 9, 2017:** Changed policy owner contact information and the interim overall authority in the administration of the Policy. Added a definition of lease and removed applicability to licenses.

**September 15, 2014:** Updated Appendix B to reflect the certificate developed by the California State University and the Department of General Services. Also, transferred policy in the Official UC Template.

**August 25, 2011:** The Seismic Safety Policy incorporates and consolidates the three policies listed above to provide consistency with newer ratings systems for seismic safety adopted by Department of General Services (DGS) Division of the State Architect (DSA) and the California State University, and to reflect current practices with regard to engineering and process.

**April 20, 2005; January 17, 1995; May 17, 1988:** Minor editorial changes.

**October 16, 1996:** Seismic Safety Policy for Leased and Purchased Facilities (issued by Assistant Vice President Bocchicchio, and revised by President Dynes in his June 29, 2007 letter to Chancellors)

**September 30, 1985:** Policy for Independent Seismic Review of Capital Projects, revised on June 29, 2007.

**January 16, 1975:** Seismic Safety Policy reviewed and accepted by the Regents' Grounds and Buildings Committee, and formally transmitted to campuses by Vice President McCorkle on January 20, 1975.