

10 Seismic Retrofitting

HSSA 1973 - SB 519 (Alquist)

The Alfred E. Alquist Hospital Facilities Seismic Safety Act (SB 519 HSSA) of 1973 established a seismic safety building standards program applicable to hospitals built on or after March 7, 1973 to be overseen by the Office of Statewide Health Planning and Development (OSHPD).

The legislation was initiated as a result of the Sylmar earthquake of 1971, when a Veteran's Hospital collapsed resulting in fatalities, serious injuries and damages that exceeded \$2.4 billion. Insufficient building codes and defects in design and construction were found to be the cause.

Legislative Intent

This legislation was adopted to avoid the loss of life and the disruption of operations and the provision of emergency medical services that may result from structural damage sustained to hospitals resulting from an earthquake.

SB 519 established the Hospital Building Safety Board (HBSB) to advise OSHPD on the implementation of the Alquist Seismic Safety Act and act as a board of appeals for hospital facilities in regards to seismic safety and fire and life safety issues.

Amendments

A series of amendments have been made to the Alfred E. Alquist Hospital Facilities Seismic Safety Act since its adoption in 1973 to handle additional safety concerns, such as addressing nonstructural components, and implementation issues, such as required progress reports and deadline extensions.

SB 961 (Alquist, 1983)

The Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983 amended the original Alquist

HSSA of 1973. This new legislation transferred the authority of construction plan review of health facilities from local building departments to OSHPD. The Facilities Development Division (FDD) of OSHPD was created to handle these new responsibilities. By 1991, construction observation activities (i.e. inspection) were added to its duties, making them the single authority and enforcement agency on construction projects of health care facilities. The OSHPD FDD governs all new construction, renovations, additions and alterations on health care facilities throughout in accordance with the California Building Standards Code, Title 24, California Code of Regulations. OSHPD responsibilities include plan review, construction observation, regulations, seismic retrofit and post earthquake evaluations. They are advised by the HBSB that was created by SB 1953.

SB 1953 (Alquist, 1994)

After the Northridge earthquake in 1994, SB 1953 was written to address the hazards related to damage incurred to nonstructural components of hospital buildings from a seismic event, in addition to the structural components addressed in the Alquist Seismic Safety Act.

The SB 1953 legislation is an unfunded mandate which states that in order for a facility to remain a general acute care hospital facility beyond a specified date, the owner must perform a seismic evaluation and submit to OSHPD a comprehensive evaluation report and compliance plan to reach the structural and nonstructural performance categories (see Exhibit 10-2 for performance category definitions).

The initial evaluation reports revealed that close to 40 percent of California's hospital buildings were in the SPC-1 performance category as of 2001; there was a significant risk of collapse resulting from damage sustained by a seismic event.

Exhibit 10-1**SB 1953 Seismic Compliance Deadlines**

1996	OSHPD to establish performance categories
2002	Deadline for compliance plans to be submitted to OSHPD with facility's intent Required bracing of major nonstructural systems and features
2006	HAZUZ 2007 approved by HBSB and implemented by OSHPD
2008	All general acute-care inpatient buildings at risk of collapse must be retrofitted, rebuilt or closed
2013	The extended deadline for qualified SPC-1 facilities for retrofits, rebuilds or closure
2030	All hospital buildings must be operational following a major seismic event

The bill allowed for a possible extension of the 2008 deadline up to January 1, 2013 for SPC-1 facilities that qualify. Nearly all SPC-1 extension requests were granted.

Hospitals that cannot afford compliance by the set deadlines will be forced to close or reduce patient care to non-acute services.

Exhibit 10-2**SB 1953 Performance Categories****Structural Performance Categories**

SPC-1	Buildings at risk of collapse. Must meet SPC-2 by 1/1/2008. Eligible for a possible 5-year extension to 2013.
SPC-2	Buildings are "life safe." May not be repairable post seismic event. Must meet SSA structural provisions by 1/1/2030 or switch to providing non-acute services.
SPC-3	Has SSA compliant steel moment resisting frames built pre-1994. May incur structural damage without significantly jeopardizing life. May not be repairable post seismic event. Usable to 1/1/2030 and beyond.
SPC-4	Compliant with structural provisions of SSA. May incur structural damage that disrupts services post seismic event. Usable to 1/1/2030 and beyond.
SPC-5	Compliant with SSA. Reasonably capable of providing services post seismic event. Usable to 1/1/2030 and beyond.

Nonstructural Performance Categories

NPC-1	Equipment and systems do not meet any NPC.
NPC-2	Certain equipment and systems must be braced to Part2, Title 24 requirements by 1/1/2002.
NPC-3	Meets NPC-2. Certain nonstructural components must be braced to Part2, Title 24 regs and fire sprinkler systems braced to NFPA 13, 1994 (or subsequent applicable standards) by 1/1/2008. Usable to 1/1/2030.
NPC-4	Meets NPC-3. Certain systems, components and equipment must be braced to Part2, Title 24 regs. Usable to 1/1/2030.
NPC-5	Meets NPC-4. Requires on-site water supplies, wastewater holding tanks and fuel supply for 72 hours of emergency operations by 1/1/2030. Usable to 1/1/2030 and beyond.

SB 1953 has no requirement for hospitals to provide an implementation progress report after the initial evaluation and compliance plan submittal, as such, additional legislation was undertaken to track progress towards established compliance deadlines.

AB 2194 (Gallegos, 2000)

Existing law under the HSSA of 1983 established the seismic safety standards for hospitals. AB 2194 would allow a general acute care hospital to obtain a waiver from certain standards if services were to be relocated on an interim basis as part of its compliance approval plan. This legislation appropriated \$145,000 from the state general fund in order for the State Department of Health Services to establish the Alfred E. Alquist Hospital Facilities Seismic Safety Act Unit. Under the scope of the HSSA, this two liaison unit would serve as a central resource for hospitals and ensure compliance of licensing issues, serve as a liaison between OSHPD, the State Fire Marshall, the Seismic Safety Commission and other entities on hospital operation issues, and process requests for program flexibility.

SB 1801 (Speier, 2000)

Existing HSSA law gave OSHPD the authority to extend the January 1, 2008 compliance deadline for general acute care hospitals to January 1, 2013 if the owners demonstrate that compliance will negatively impact health care capacity that is not alternately available at other general acute hospitals within a reasonable proximity, and therefore may result in the loss of life.

SB 1801 allowed for the five-year extension of the January 1, 2008 compliance deadline to January 1, 2013 for certain hospital buildings of a general acute care hospital under the condition that certain designated services will be transferred to a building in compliance with the structural and nonstructural performance categories by that time. It was enacted to address the issue of those general acute care hospitals in the SPC-1 performance category that would not be able to meet the current compliance deadline due to lack of financing. This legislation also required

OSHPD to establish a schedule of interim work progress deadlines that hospitals must meet in order to be eligible for deadline extension.

AB 2632 Project Review (Bogh, 2004)

AB 2632 authorizes specified hospitals, skilled nursing facilities and intermediate care facilities to carry out certain types of maintenance and repair work without going through the lengthy OSHPD plan approval. Only single-story health facilities of wood or light steel frame construction are eligible for this expedited permitting process. Projects must meet all of the required project criteria in Exhibit 10-3. This statute applies to modifications done for routine maintenance purposes or those designed to restore health facilities back to normal operating status, including necessary alterations to repair systems or equipment. Examples would include the replacement of hot water heaters, dishwashers, handrails, lights, and finish materials. Except for the expedited permitting, these construction projects must still conform to the California Building Standards Code.

Exhibit 10-3 AB 2632 Project Criteria

1. The construction or alteration is for a single-story building of wood frame or light steel frame construction.
2. The construction or alteration is undertaken to repair existing systems or to keep up the course of normal or routine maintenance.
3. The construction or alteration either restores the facility to the same operational status, or improves operational status from its operating condition immediately prior to the event, occurrence, or condition that necessitated the alteration.
4. The scope of the construction or alteration is not ordinarily within the standard of practice of a licensed architect or registered engineer.
5. The construction or alteration does not degrade the status of condition of the fire and life safety system from the status of the system immediately prior to the event, occurrence, or condition that necessitated the alteration.

AB 2632 procedures do not prevent a facility from performing emergency work such as immediate repair or replacement necessary to maintain occupant safety or health that result from occurrences such as equipment failure or natural disasters.

SB 224 (Chesbro, 2005) (Discontinued)

Similar to AB 2632, SB 224 simplified plan review and construction observation for maintenance and repair projects for multi-story hospital buildings. It was intended to expedite the plan review process, diminish the potential for construction delays and reduce costs for hospital owners. A trial period, or demonstration project, that allowed hospital projects with certain criteria to be exempt from the OSHPD plan review process expired on January 1, 2009, when it was discontinued. Open SB 224 projects will be processed through the SB 224 review until complete. AB 2632 is still in effect.

SB 1838 (Perata, 2006)

Effective January 1, 2007, SB 1838 authorizes OSHPD to bypass its plan review process for hospital, skilled nursing facilities and intermediate care facilities construction or alteration projects if they meet the exemption criteria. This legislation is attempting to expedite the permitting and construction process of smaller projects.

Exemption criteria:

- Cost of construction is estimated at \$50,000 or less.
 - Projects subdivided to avoid cost limit will not be exempt.
 - Excludes imaging equipment costs, design fees, inspection fees, off site work and fixed equipment costs.
- Project plans and specifications must be stamped and signed in accordance with Section 7-115 (a) and (b) of the 2007 California Administrative Code (CAC).
 - Pursuant to Section 7-115 (c) of the 2007 CAC does not qualify for exemption.

Some projects are excluded from exemption, as shown in Exhibit 10-4.

Additionally SB 1838 requires a pre-submittal meeting between OSHPD and design professionals for projects of buildings with estimated construction costs of \$20 million or more. This legislation also authorizes OSHPD to establish training programs so that enough qualified individuals are available to facilitate the

timely performance of the office's duties and responsibilities, and requires the submittal of reports on the program until January 1, 2012 in addition to requiring the office to assess processing time for plan review and to provide an update of this assessment to the Legislature no later than February 1 of each year after.

Exhibit 10-4

Projects Excluded from Exemption in SB 1838

- Building additions (defined in Section 7-111, 2007 CAC) or projects that change occupancy
- Alternate Method of Compliance projects
- Modifications to seismic force load system, primary gravity load members and their load paths
- Addition/ alteration of medical gas or vacuum systems
- Addition/ alteration of fuel storage tanks
- Addition/ alteration of fire alarm or fire sprinkler systems, exceeding 5 devices or 10 sprinklers, respectively
- Addition/ replacement of an emergency generator or new electrical panel added to the essential electrical system
- Addition/ replacement of large capacity fan in excess of 2,000 cubic feet per minute (cfm)
- Projects where a plans and specifications review reveal a component that has a clear and significant risk to health and safety of the staff or general public

SB 1661 Compliance Status Reports (Cox, 2006)

SB 1661 would allow OSHPD to grant an additional two-year extension to hospital facilities from the original extended deadline of 1/1/2013 outlined in SB 1953. This 2-year extension of the HSSA compliance deadline to 1/1/2015 will be granted if it is under construction at the time the extension is requested and the hospital has made reasonable progress in meeting the compliance deadline, but extenuating circumstances prevented it. Additional provisions authorize OSHPD to revoke a deadline extension if construction has been suspended (except for extenuating circumstances) and will require, under certain circumstances, owners of general acute care hospitals to submit prescribed reports to OSHPD.

SB 2006 (Leslie, 2006)

This bill would allow any general acute care hospital building located in a seismic shaking zone classified as Zone 3, to request an exemption from certain nonstructural requirements of the HSSA outlined in SB 1953, as long as the hospital building complies with certain 2002 nonstructural requirements. This legislation would require OSHPD to grant the exemption if certain conditions are met.

Exhibit 10-5

Seismic Zones

- Seismic Zones in the U.S. range from 1 to 4; higher numbers indicate higher danger associated with earthquakes.
- All of California is classified as Seismic Zone 3 or 4.
- Stronger construction standards exist for structures in Zones 3 and 4. In Uniform Building Codes

Seismic Design Category D

- A newly defined geographic area which includes all Seismic Zone 3 and some of Seismic Zone 4 not in close proximity to fault lines.
- New OSHPD regulation allows buildings in this new category to have until 2030 to meet NPC compliance requirements

SB 306 (Ducheny, 2007)

SB 306 authorizes certain SPC-1 hospital owners lacking the financial capacity to meet compliance by 2013 to replace those buildings by January 1, 2020 instead. A declaration must be filed which includes specified financial information and a fee to cover the additional costs. The bill would require the hospital to bear the costs of reviewing and verifying the financial information. Additionally, the bill allows OSHPD to enter into a phased submission and review agreement at its discretion, and authorizes them to assess a related fee that will be deducted from the application fee.

SB 289 (Ducheny, 2009)

SB 289 requires all nonconforming SPC-1 general acute care hospitals who have requested an extension to the 2008 compliance deadline to

include additional information about the buildings they intend to remove from acute care services in their compliance reports to be submitted to OSHPD by June 30, 2011.

SB 499 (Ducheny, 2009)

Existing law of the HSSA of 1983 requires SSPC-1 general acute care hospitals that have been granted an extension to the compliance deadline to submit a compliance report by June 30, 2011. Compliance reports were not required of noncompliant SPC-1 general acute care hospitals who were not requesting a compliance deadline extension.

SB 499 requires the submittal of a compliance report from the owners of all noncompliant SPC-1 general acute care hospitals, regardless of whether they are requesting an extension or not. A compliance report must be submitted to OSHPD by November 1, 2010 and updated annually beyond. It requires additional information on the status of their compliance. The reports will be made available to the public via website within 90 days of receiving the information.

Hospitals who do not submit a compliance progress report by the deadline will incur per diem be fines until it meets the provisions of this legislation.

AB 303 (Beall, 2009)

AB 303 authorizes certain hospitals that contract with the California Medical Assistance Commission to serve Medi-Cal patients, specifically county hospitals and University of California disproportionate share hospitals, to receive supplemental Medi-Cal reimbursement for new capital to undertake projects to meet the existing HSSA deadlines from the Construction and Renovation Reimbursement Program.

SB 90 Seismic Safety Extension (Steinberg, 2010)

SB 90 grants OSHPD the authority to consider public safety when determining the approval of an

extension request and the length if granted within the newly allotted seven-year extension of the existing seismic safety deadline for an SPC-1 building as long as certain criteria are met. The criteria for the public safety consideration include the

- Building’s structural integrity
- Access to care by the community if it were to close
- Financial capacity required for project completion in a timely manner

**Exhibit 10-6
SB 90 Compliance Deadlines**

March 31 2012	Extension request submitted including the compliance project type (retrofit, rebuild, remove acute services) and the estimated time required
September 30, 2012	Submit HAZUS application for review
January 1 2015	Submit plans, the schedule and financial report addressing the capacity to complete project
July 1 2018	Obtain a building permit by this date

Any hospital with SPC-1 buildings may apply for the deadline extension regardless of its compliance status and approval of the extension for the compliance deadline will granted on a case-by-case basis for an additional fee. SB 90 extension request requirements and deadlines are in Exhibit 10-6 above.

**Exhibit 10-7
SB 90 Fines for Noncompliance**

\$10 per licensed acute care bed (up to \$1,000 per day), for each noncompliant SPC-1 building until provisions are met.

Implementation

Hospitals are needed to provide emergency medical services to the public in the event of a disaster, such as an earthquake, terrorist event or large scale accident and regularly house patients who face increased risk of death and injury when

forced to evacuate. Repairing heavy damage sustained to hospital buildings is expensive and it can take many years to complete, resulting in higher costs to the public in the form of tax monies spent and the loss of healthcare services to the local community. They are required to be much stronger than non-health care facilities, facing higher design and construction standards to withstand forces exerted by earthquakes, gravity and winds. Meeting these higher standards requires more complicated building codes, methodical and more time intensive plan review, and complex inspection and quality assurance requirements specific to this type of occupancy. The California Office of Statewide Health Planning and Development (OSHPD) Facilities Development Division (FDD) governs this specialty process for health care facility construction projects.

The OSHPD FDD is responsible for all plan checking and inspection for the design and details of health care facilities building components, including the architectural, structural, mechanical, plumbing, electrical, and fire and panic safety systems, in addition to observing the construction process in accordance with the California Building Standards Code, Title 24, California Code of Regulations.

CCR Title 24, California Building Standards Code

The California Code of Regulations (CCR), Title 24 compiles building code standards from three sources:

- National codes that have been adopted by state agencies without change
- National model code standards that have been adapted to address particular conditions in California
- Building standards authorized by the California legislature addressing particular California concerns as additions to supplement the above adopted model codes

Enforceable codes for hospital facilities under the authority of the Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983 for applications submitted to OSHPD on or after January 1, 2011 include:

- California Administrative Code (CAC)
Part 1, Title 24, CCR
- California Building Code (CBC)
Part 2, Title 24, CCR - based on 2009 International Building Code (IBC)
- California Electrical Code (CEC)
Part 3, Title 24, CCR – based on 2008 National Electrical Code (NEC)
- California Mechanical Code (CMC)
Part 4, Title 24, CCR – based on 2009 Uniform Mechanical Code (UMC)
- California Plumbing Code (CPC)
Part 5, Title 24, CCR – based on 2009 Uniform Plumbing Code (UPC)
- California Fire Code (CFC)
Part 9, Title 24, CCR – based on 2009 International Fire Code (IFC)