



HOSPITAL SEISMIC SAFETY

Office of Statewide Health Planning & Development

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California state law requires hospitals to evaluate their facilities, develop plans to meet seismic standards and ensure that their buildings are seismically sound.

This bulletin shares the latest news on OSHPD's partnership with the state's approximately 450 acute care hospitals to meet those deadlines. We have also included recent items that may be of interest to those involved in hospital construction.

To contact OSHPD about this bulletin, call (916) 654-1606.

The OSHPD Ombudsman Hotline for FDD issues is (916) 653-0288.

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Reduced Nonstructural Bracing Requirements Will Benefit Hospitals

On December 13, 2005, the California Building Standards Commission unanimously approved emergency regulations proposed by OSHPD's Facilities Development Division. The regulations will provide substantial savings for hospital retrofit and remodel projects.

These regulations establish a new Nonstructural Performance Category for seismic retrofit projects (NPC-3R), which reduce the anchorage and bracing requirements for nonstructural components in critical care areas of general acute care hospitals that are slated for replacement or removal from service before January 1, 2030. NPC-3 or NPC-3R compliance must be attained by January 1, 2008, or 2013 with extensions. The reduction in anchorage and bracing requirements will also apply to alteration and remodel projects in all areas of existing hospital buildings.

It is anticipated that hospitals using the new requirements for retrofit and remodel projects will save approximately \$1,000 to \$100,000 per hospital building, depending on the size and seismic performance rating of the building, and the areas of the building devoted to critical care. Additional cost savings and reduced disruption of needed hospital services are further benefits of less complex retrofit and remodel projects.

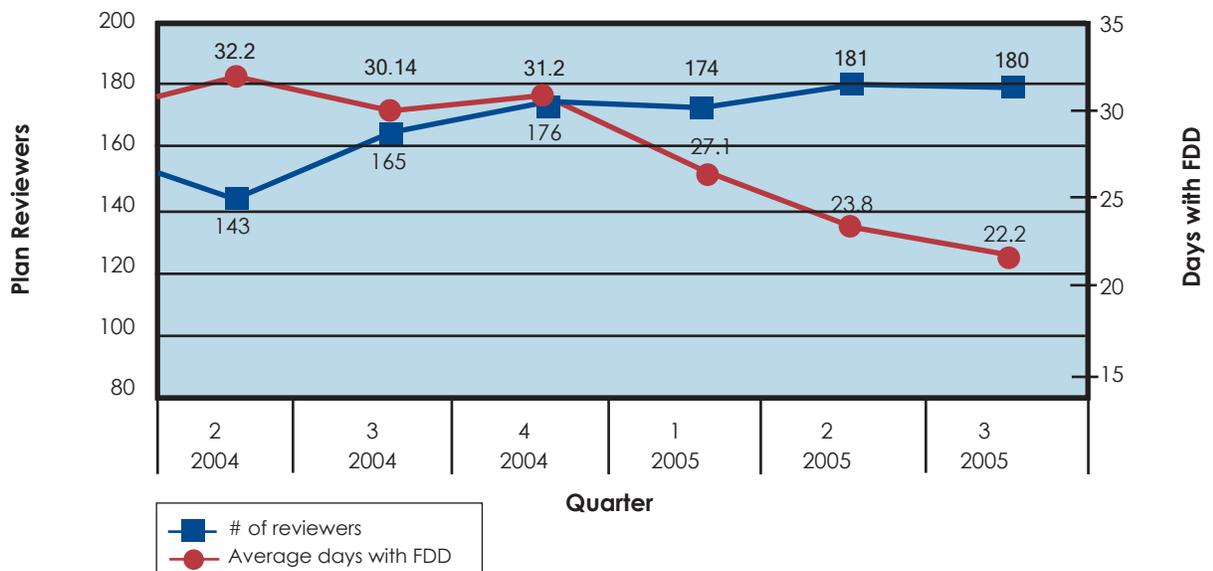
As emergency regulations, these changes became effective immediately.

A 45-day comment period will be provided for public input on the regulations, prior to permanent adoption by the California Building Standards Commission. The new regulations can be viewed on the OSHPD website at <http://www.oshpd.ca.gov/fdd/Regulations/CodeInfo.htm>, under Emergency Regulations - Hospital Seismic Retrofit Program.

OSHPD Meets Its Plan Review Goal

The addition of 37 new plan review staff has helped FDD significantly reduce its average turnaround time.

Average Turnaround Time in Days Compared to Number of Reviewers



This graph displays the relationship between an increase in FDD staffing levels and a decrease in the average plan review turnaround time (and vice versa) over the previous 2 years. From the 2004 fourth quarter through the third quarter of 2005, the average of turnaround time decreased by nine days or 29%.



Ombudsman Line

If you have questions or unresolved issues or complaints about OSHPD's Facilities Development Division (FDD), call the Director's Ombudsman Hotline at (916) 653-0288.

The line is available 24/7 and if you have any questions, leave a voice message. Your call will be returned as soon as possible within two to three working days. You may also e-mail your questions to: Ombudsman@oshpd.ca.gov

This line is not intended to handle specific questions regarding code interpretation or routine construction questions that should be directed to OSHPD's plan review or field personnel.

New LA Office

The Southern California office of FDD has moved to the Metropolitan Water District Building in downtown LA adjacent to the historic Union Station and within minutes of the region's transportation hubs such as Amtrak, Metrolink, red-line (subway) and MTA bus networks. Driving directions and parking in the vicinity may be found at http://www.mwdh2o.com/mwdh2o/pages/about/union_station_parking_map.pdf Visitors must sign in at the reception desk in the central rotunda, where directions to FDD's second floor suite are available.

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Hoag Memorial Hospital

Hoag Memorial Hospital recently celebrated the grand opening of its new 309,000 square foot Women's Pavilion Patient Tower. Consisting of a seven floor tower, a basement, and a mechanical penthouse, the state of the art building design combines the requirements of an acute care hospital with the therapeutic components of a healing environment. With its extensive use of natural lighting and integrated garden settings, the facility is both functional and restorative.

The hospital also incorporates state of the art seismic technology. Located in a Level 4 Seismic Zone, the facility is just two kilometers from the Newport-Inglewood Fault, which is capable of producing a 6.9 magnitude earthquake. The new tower is designed as a moment-frame structural steel building that incorporates the latest in seismic base isolation technology. The base isolator design is expected to set a precedent for future base isolated hospital projects. The base isolators, which are located in the sub-basement between the foundation and the structural steel columns, allow lateral movement of 30 inches in any direction during a seismic event, thus minimizing damage to the structure and its contents.



Following are highlights from a letter from the Hoag Memorial Hospital Senior Project Manager listing the positive aspects of the project:

- Teamwork and cooperation between the Owner, Construction Manager, Contractor, Architect and OSHPD were the primary reasons for the Project's success.
- The willingness of OSHPD's Los Angeles staff to meet with the Architectural Engineering Team (AE) on an as-needed basis to resolve questions face to face whenever possible. These efforts reduced plan check turnaround time because the AE Team had fewer comments to address on the back check.
- Regular weekly meetings at the site during construction with the OSHPD area compliance officer, the OSHPD district structural engineer and the OSHPD fire and life safety officer to review and approve Change Orders saved considerable time. The OSHPD team was kept abreast of all changes occurring during construction.
- OSHPD consistently met or exceeded their estimated review and approval times on this project. This allowed construction to continue with little or no delays to the scheduled work flow.





Earthquake Notes

The largest recorded earthquake in the United States was a magnitude 9.2 that struck Prince William Sound, Alaska on Good Friday, March 28, 1964.

The average rate of motion across the San Andreas Fault Zone during the past 3 million years is 2 inches per year. Assuming this rate continues, scientists project that Los Angeles and San Francisco will be adjacent to one another in approximately 15 million years.

It is estimated that there are 500,000 detectable earthquakes in the world each year. More than 100,000 of those can be felt, with 100 of them causing damage.

California averages over 200 earthquakes per day. From 1975-1995 there were only four states that did not have any earthquakes. They were Florida, Iowa, North Dakota, and Wisconsin.

Facility Development Division's Over-the-Counter Program

Responding to requests from Southern California hospital designers to speed up the plan review process and cut travel time to Sacramento, OSHPD's Facilities Development Division (FDD) instituted its over-the-counter plan review program. While the program began nearly 17 years ago, it has continued to evolve and expand its service area.

Originally, a senior architect and a field fire marshal traveled throughout Southern California locales such as San Diego, La Jolla and Rancho Cucamonga conducting small over-the-counter plan reviews. As workload and requests multiplied throughout the region, the program expanded. Approximately nine years ago, a decision was made to send a complete plan review team to San Diego for two days per month. This team consisted of an OSHPD senior architect, a fire life safety officer, a senior electrical engineer, a senior mechanical engineer, and a senior structural engineer. The program's popularity led to its expansion into San Bernardino in 2004, where a team is now available two days a month.

Plan reviews in these locales are limited to small projects that take about 30 minutes per reviewer. With the on-site availability of a complete project review unit that includes architects and engineers, issues are resolved quickly in a collaborative atmosphere with teams averaging 20 to 25 reviews per trip.

Client feedback for the over-the-counter service has been extremely positive. The reduced travel time to Sacramento, along with the expeditious plan review have been much appreciated. The over-the-counter program demonstrates FDD's efforts in responding to requests for program adjustments to better meet its clients' needs.

FDD's Timely Response Provides Temporary Power to Hospital

August 18, 2005, the Engineering Department at Alvarado Hospital in San Diego, California notified the gas and electric company that their main utility transformer, which provides power for the entire hospital, had reached dangerous heat levels. Transformers reaching these heat levels can hit a flash point causing an explosion. An explosion of this magnitude could cause severe damage to both life and property. It was determined that the transformer had to be replaced immediately as there was no way of knowing when an explosion might occur.

The utility company forecast the replacement time would be approximately 18 hours. Any power outage requires the utility to run a temporary generator for the duration of the outage. Emergency generators do not provide power to the entire hospital, but only to select loads. Temporary trailer mounted generators must be brought in to provide power to the loads not connected to the main generator in order to keep the hospital operating.

Local engineers contacted OSHPD's FDD and were put in touch with Senior Electrical Engineer Del Kirkish. FDD was apprised of the situation and plans were drawn up to install temporary power to the hospital while the transformer was being replaced. Faxed plans detailing the installation of the temporary generator arrived at Mr. Kirkish's home for review. With timing crucial, Mr. Kirkish reviewed the final designs to assure that they were in full compliance with current codes designating sizing of the generator and its feeders, while insuring sufficient fuel to run the generator. Generator replacement proceeded upon Mr. Kirkish's final approval. Mr. Kirkish notified OSHPD's Area Compliance Officer Alexis Torrey, who would be on hand to verify that the work was performed according to plan.

The following day, August 19, 2005 at approximately 8:00 p.m., work began on replacing the transformer at the hospital. By 8:30 p.m., power to the hospital had been turned off and temporary power established. The utility company replaced the transformer, after which time the temporary power was removed. The entire procedure took only 9.5 hours, and utility power was restored by 6:00 a.m. Saturday morning. Alvarado Hospital now has a new transformer, along with new primary and secondary feeders.

This case highlights FDD's flexibility and timely response to an extreme emergency situation. While FDD's role only had to do with the installation of temporary power to the hospital during transformer replacement, without expeditious plan review and field verification, the transformer could not have been replaced ahead of schedule.



Seismic Safety Extensions:

If you have questions on the seismic safety extensions, call or write to:

Attention: Seismic Safety Extension Program
Office of Statewide Health Planning & Development
Facilities Development Division
1600 Ninth Street, Room 420
Sacramento, CA 95814
(866) 667-3794

Legislation to Expedite Repair / Maintenance Projects

A bill recently signed by Governor Schwarzenegger simplifies the plan review and construction observation process for repair and maintenance projects for multi-story hospital buildings. The intent of the bill is to expedite the plan review process, diminish the potential for construction delays and reduce costs for hospital owners. A similar bill was passed in 2004 for single-story hospital buildings and skilled nursing facilities.

The 2005 bill, SB 224-Chesbro, requires OSHPD to establish a demonstration project that allows hospitals to submit a written description of the repair or maintenance construction project. The description must demonstrate that the proposed project is limited to repairing existing systems or performing routine maintenance. Upon OSHPD approval of the written project description, a building permit will be issued. When the construction is completed and prior to using the repaired system, OSHPD will inspect and verify that the work meets the California Building Standards Code.

The demonstration project allows hospital projects that meet specific criteria to be exempt from pre-construction plan review, approval and inspection by OSHPD. It is paramount that the exemption does not result in undetected building code deficiencies that could cause unsafe construction and jeopardize public life and safety. OSHPD will review the results of the demonstration project and prepare a comprehensive report for the Legislature within two years of implementation. The demonstration project sunsets January 1, 2009.

SB 224 also requires OSHPD to perform plan review and building inspection of hospital outpatient clinical services if the hospital governing authority requests OSHPD's services in lieu of the local building official.

Status of Seismic Compliance Extensions

As of December 2005, approximately 450 acute care hospitals were serving patients in California and of those, 223 had submitted requests, and 199 have received approvals for seismic safety compliance extensions until 2013. These hospitals have received extensions under the following criteria:

- 191 hospitals have received extensions under the "diminished capacity" criteria where it has been determined that seismic compliance would result in an interruption of healthcare services provided by general acute care hospitals within the service area.
- 3 hospitals have received extensions under SB 1801-Speier (Chapter 850, 2000). These hospitals have agreed that by 2013, designated services will be (a) moved into an existing conforming building, or (b) relocated to a new building, or (c) moved to an existing building that has been retrofit to designated seismic performance categories.
- 5 hospitals have received extensions under SB 2006-Leslie (Chapter 851, 2000). These hospitals are located in Seismic Zone 3 Areas, as indicated in the 1995 edition of the California Building Standards Code, and have met associated requirements and deadlines.

The deadline has passed for the SB 1801 extension. California hospitals can continue to submit requests for extensions under the diminished capacity criteria and may continue to do so until the January 1, 2007 deadline. A list of the California hospitals that have filed extension requests is available at <http://www.oshpd.ca.gov/SB1953/seismicext.pdf>.