
State of California
Seismic Safety Commission
Annual Report
(2001 Legislative Session)



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SEISMIC SAFETY COMMISSION

1755 CREEKSIDE OAKS DRIVE, SUITE 100
SACRAMENTO, CA 95833
(916) 263-5506
(916) 263-0594 FAX
INTERNET: www.seismic.ca.gov



January 1, 2002

The Honorable Gray Davis, Governor
Members of the California State Legislature
State of California
State Capitol, First Floor
Sacramento, CA 95814

Dear Governor Davis and Members of the State Legislature:

The Seismic Safety Commission is pleased to present herewith our Annual Report. This report covers the Commission's earthquake risk reduction activities during the 2001 fiscal year.

The Commission, working with the federal government, state agencies, local governments, business, industry, and individuals, has provided leadership and supported actions to reduce losses and speed recovery when earthquakes strike California. Great progress has been made this year because the commissioners and staff continue to dedicate themselves to implementing the recommendations presented in the *California Earthquake Loss Reduction Plan*, the State's strategic plan to reduce earthquake losses. The Commission revised the *Loss Reduction Plan* (attached) in 2001, which presents the next five years of mitigation recommendations through 2006.

The risk of damage to property and loss of life from earthquakes should not be underestimated. Even though California leads the world in seismic safety, we must not become complacent about the risks that the people and property of California face. Many critical issues still need to be addressed. We must remain forward-thinking about earthquake loss reduction and continue to lead the world in applying cost-effective, innovative solutions to reduce our losses. The Commission continues to encourage efforts in the private sector and by state and local agencies, to ensure that seismic safety remains a priority during the new year.

Sincerely,

Handwritten signature of Dr. Bruce Clark.

Dr. Bruce Clark, Chairman

Handwritten signature of Richard J. McCarthy.

Richard J. McCarthy, Executive Director

Mission Statement

To provide decision-makers and the general public with cost-effective recommendations to reduce earthquake losses and speed recovery.

Commission Membership

Dr. Bruce Clark, Chair	<i>(Geology)</i>
Andrew A. Adelman	<i>(Cities/Bldg.Official)</i>
Senator Richard Alarcon	<i>(Senate)</i>
Assemblywoman Elaine Alquist (Alternate: Bill Gates)	<i>(Assembly)</i>
Douglas E. Mochizuki	<i>(Emergency Services)</i>
Stan Y. Moy	<i>(Architectural Planning)</i>
Ashok S. Patwardhan	<i>(Mechanical Engineering)</i>
Lawrence Klein	<i>(Utilities)</i>
Mark Church	<i>(Local Government)</i>
Linden Nishinaga	<i>(City Government)</i>
Daniel Shapiro	<i>(Structural Engineering)</i>
Vacant	<i>(Soils Engineer)</i>
Vacant	<i>(County Government)</i>
Vacant	<i>(Seismology)</i>
Vacant	<i>(Social Services)</i>
Vacant	<i>(Fire Protection)</i>
Vacant	<i>(Insurance)</i>

Seismic Safety Commission Role and Responsibilities And Ongoing Activities

The California Seismic Safety Commission was established in 1975 to advise the Governor, Legislature, state and local agencies, and the public about strategies to reduce earthquake risk. (Government Code Section 8870, et seq.). The Commission is an independent agency composed of 17 commissioners chosen for their expertise and experience. Fifteen commissioners are appointed by the Governor, and one each represents the Senate and the Assembly.

The Commission investigates earthquakes, monitors earthquake-related issues, and evaluates and recommends to the Governor and Legislature policies needed to reduce earthquake risk. To ensure a coordinated framework for establishing earthquake safety policies and programs in California, the Commission:

- Uses the expertise of its 17 members, experienced in earthquake-related fields, to review, evaluate, and translate technical information and make recommendations to influence earthquake safety policies;
- Coordinates the State's mitigation efforts through publication and promotion of the *California Earthquake Loss Reduction Plan* as required by the California Earthquake Hazards Reduction Act

of 1986. This continually updated five-year plan fills several needs:

- (1) *California's Earthquake Loss Reduction Plan* is the State's policy statement about what needs to be done to reduce earthquake risk over the longer term;
- (2) The Plan serves as the State's strategic plan, guiding the executive and legislative branches with overall implementation strategies and priorities for seismic safety; and
- (3) The Plan serves as California's official response for a federally-required hazard mitigation plan for earthquakes, making the state eligible to apply for federal disaster relief funds after major earthquakes.

- Responds promptly after earthquakes to gather new information and recommend policy changes to apply lessons learned from these events;
- Creates and directs specialized committees of experts from the private and academic sectors and representatives of state and local government agencies, directing those committees to investigate specific policy areas and recommend regulatory changes and legislation to the full Commission and Legislature for action;

(3)

Seismic Safety Commission Role and Responsibilities And Ongoing Activities (*continued*)

- Exercises leadership in seismic safety issues by conducting public hearings on earthquake-related topics;
- Offers guidance to increase effectiveness and promote application of loss reduction policies and techniques;
- Educates professionals and the general public about earthquake risk and how to manage that risk through publications and distributes non-technical guides to help homeowners, building owners, and business owners;
- Establishes and maintains relationships with boards, commissions, departments, agencies and other public and private organizations to implement policies to improve seismic safety;
- Promotes applied research and sponsors training programs to improve construction in the State ranging from the planning stage to ongoing code enforcement.

New Members Welcomed

Governor Davis appointed three commissioners in 2001:

- Mark Church
- Lawrence T. Klein
- Linden T. Nishinaga

These commissioners brought in-depth knowledge and a strong understanding of seismic issues. Six vacant positions remain open on the Commission.

Mr. Church, of Burlingame, is a San Mateo County Supervisor. Previously, he served as Mayor and City Councilman for the City of Millbrae and is a practicing attorney specializing in general civil litigation. Mr. Church

represents local government on the Commission.

Mr. Klein of San Francisco is the Assistant General Manager for Operations at the San Francisco Public Utilities Commission, a position he has held since January 2000. Mr. Klein represents utilities on the Commission.

Mr. Nishinaga of Redondo Beach is a civil engineer/project manager formerly with the Port of Los Angeles, and presently with the City of Long Beach's Department of Public Works. Mr. Nishinaga represents cities government on the Commission.

Revision of the State's Earthquake Loss Reduction Plan

The Earthquake Loss Reduction Plan coordinates the State's mitigation efforts as required by the California Earthquake Hazards Reduction Act of 1986. The *California Earthquake Loss Reduction Plan* continues to be the State's policy statement about what needs to be done to reduce earthquake risk over the long term. It serves as the State's strategic plan, guiding the executive and legislative branches with overall implementation strategies and priorities for seismic safety and it serves as California's federally-required hazard mitigation plan for earthquakes, making the state eligible to apply for federal disaster relief funds after major earthquakes.

In February, the Commission appointed subcommittees to revise the 11 elements of the State's Earthquake Loss Reduction Plan. The project manager, Mr. Harry Hallenbeck, was secured to oversee the revision of the Plan. With the assistance of Seismic Safety Commissioners, the Governor's Office of Emergency Services, and outside stakeholders, the Commission updated, deleted and created new initiatives as needed. During March and April, the subcommittees met individually to update respective elements. The Commission meetings on May 9 & 10 were dedicated to the overview of those subcommittee meetings and the Commission released the Plan in December.

Initiation of a Progress Report for the State's Earthquake Loss Reduction Plan

The Commission's *California Earthquake Loss Reduction Plan* (Plan) which is required by the California Earthquake Hazards Reduction Act (*Government Code Chapter 12, Section 8870 et seq.*) was updated in 2001. Upon its completion, the Plan will identify current and proposed efforts, goals, and priorities of the State through 2006. Along with this update, the Commission is in the process of tracking the progress on the Plan's initiatives. This separate document is being developed which will identify those initiatives that have been completed, are underway, or are inactive. This document serves as the annual progress report for the *California Loss Reduction Plan*.

The Governor's Office of Emergency Services and the Seismic Safety

Commission asked State and local agencies for assistance in updating the initiatives contained in the State's Plan. A survey was mailed in July, signed by Dallas Jones, Director of OES and Richard McCarthy, Director of the SSC. Recipients were asked for updates on any successes and accomplishments, obstacles or impediments to seismic projects. The survey asked recipients to report on any progress that has been made, impediments that have prevented efforts, resources that have been expended, and to report on commitments and plans put in place for the next five years to implement the initiatives. The Commission is expected to approve the first progress report in January 2002.

Participation in Field Trip and Meeting In Palm Desert, California

Palm Desert was the site of the Commission's January 11, 2001 hearing. The Commission received updates on seismic programs from representatives of San Bernardino County, Riverside County and the Coachella Valley Water District. An excellent presentation was also given by the Braille Institute, focusing on the

latest solutions and obstacles facing sight-challenged people. The Commissioners and members of the public participated in an educational field trip on January 10 by the Metropolitan Water District of Southern California of the Water District's facilities.

Seismic Safety Gas Valve Hearing Held and Task Committee Formed

The Seismic Safety Commission hearing on October 12, 2000 focused on policy issues surrounding earthquake activated gas shutoff valves. Gas shut-off valves are safety devices designed to reduce fire danger following major earthquakes. The Commission received testimony from the Public Utilities Commission, the State Department of General Services, Pacific Gas & Electric Company, Southern California Gas Company, American Society of Civil Engineers, Representatives from the City of Los Angeles, and various valve manufacturers. Commission Chairman Donald Manning stated that the hearing was interesting and informative and it enabled information to be gathered on the latest technology, benefits, problems, and public safety issues surrounding gas shut-off valves.

After the hearing, the Commission formed a special Seismic Gas Safety Task Committee and prepared information for consumers and governments for residential and small commercial applications. By early 2002, the committee will provide public information and education in a report with information to be issued to the general public, and a related technical report to be issued to interested parties and elected officials, local governments, building officials, utilities, design professionals, installers, and manufacturers. Commissioner Stan Moy chaired the Committee and the report is being prepared with the help of the American Society of Civil Engineers. The Southern California Gas Company and Pacific Gas and Electric Company provided financial support.

Storage Rack Safety Reviewed

The Seismic Safety Commission hearing in San Francisco on April 12, 2001 addressed the seismic safety of high storage racks. The Commission was concerned that numerous warehouse stores throughout California are using high storage racks that may expose occupants to falling hazards from contents during earthquakes. Among those who

presented testimony were representatives from Cal-OSHA, State Fire Marshal, and EQE International. Public comments were also received. Recently proposed legislation by Senators Alarcon and Speir called attention to rack safety issues. The Commission's focus was to gather information to further develop SB 629 (Alarcon).

Hospital Issues Examined at Commission Workshop

In July, the Commission held a special workshop on SB 1953 (the Alquist Hospital Facilities Seismic Safety Act). This Act requires that all acute care hospitals be evaluated and meet specified seismic safety standards. By January 2008, all acute care hospitals must be able to withstand a major earthquake without collapsing. By January 2030, all general acute-care hospital buildings must be “reasonably capable of providing services to the public after an earthquake.

The purpose of the workshop was to focus on identifying the underlying public policy issues, review inventory data of affected buildings, analyze the impacts of SB 1953, and collect any other important information to aid in

developing Commission Findings that will be presented to the Governor, Legislature and the public.

The Commission heard testimony from representatives of the Hospital Building Safety Board, Office of Statewide Health Planning and Development, various healthcare Associations, Senator Spier and Senator Alarcon, Speaker Robert Hertzberg, and Assembly members Chan, Dunn, Aroner, and Alquist. The draft Findings were approved by the full Commission in October. For more information about SB 1953, contact Henry Sepulveda, the Commission’s Legislative Manager at (916) 263-0579

Proposition 122 Summary Report Released

Proposition 122 passed by the voters in June 1990 and authorized the state to issue \$300 million in general obligation bonds for the seismic retrofit of state and local public buildings. The Seismic Safety Commission administered the portion of the program that capitalized on seismic retrofit experience developed in the public and private sectors. The mission was to develop products for the Seismic Retrofit Practices Improvement Program and make recommendations to further the

effectiveness of the Proposition 122 program.

The Commission released its summary report which evaluates the programs and products developed under this Program as well as provide recommendations for the future. The publication is entitled “*An Evaluation and Assessment of the California Seismic Safety Commission’s Seismic Retrofit Practices Improvement Program—Proposition 122*”. To receive a copy, contact the Commission office.

Local Outreach for 2001

To better engage local governments in statewide policy development and to provide an opportunity for the Commission to exchange important information with local residents and officials, the Commission

endeavors to hold some of its monthly meetings out of Sacramento. Cities visited in 2001 were Palm Desert, Pasadena, San Francisco, and Orange County (Irvine).

Commission Reviews The Pacific Earthquake Engineering Research Center (PEER)

The Pacific Earthquake Engineering Research Center (PEER) is a National Science Foundation earthquake engineering laboratory located in Richmond, California. Investigators from over twenty universities and several consulting companies conduct research in earthquake related geohazard assessment, engineering seismology, risk reduction, and performance based earthquake engineering. On July 30, 2001, PEER announced that it successfully completed its review by the National Science Foundation and has been renewed for a second five-year funding cycle. Funds provided by the National Science Foundation for operating PEER are matched by the State. Additional funding is provided by the California Department of Transportation and the California Energy Commission, the Federal Emergency Management Agency, and the Pacific Gas and Electric Company.

PEER has two major components: the core program and the lifelines program. Basic research is conducted under the core program, and applied research for utilities and transportation systems is conducted under the lifelines program. One of the new areas of research is in the area of earthquake risk reduction decision-making. Other areas of research include: Loss Modeling, Hazard Assessment and Geoperformance, Assessment and Design Methodologies,

Simulation and Information Technologies, Structural and Nonstructural Performance.

The Commission helped support the legislation (SB 1864 Alquist) that provided matching state funds to establish PEER. The Commission periodically updates the legislature regarding PEER activities and progress in applied research earthquake loss reduction. PEER research is in alignment with both the State's *Earthquake Loss Reduction Plan* and with the *Research and Implementation Plan for Earthquake Risk Reduction in California*. The Commission also worked with PEER on the assessment of the seismic retrofit program for the Bay Area Rapid Transit (B.A.R.T.) system.

The Commission is under contract with the University of California, at Berkeley, the host of the PEER Center, to prepare a report for the Legislature and for the Governor regarding PEER's 67 current projects. The first report was completed in 1999 and the second report was completed in 2001 with involvement of the Commission's PEER Review Committee which was chaired by Commissioner Linden Nishinaga. For more information about this program, contact Bob Anderson at (916) 263-5505.

Commission Reviews Design-Build Conceptual Issues

The Commission held a hearing in June 2001 to examine the seismic safety implications of an alternative design and construction management system called "design-build." The Commission heard from stakeholders in the design and construction industries as well as regulators in its efforts to develop more detailed policy recommendations on future proposed changes to state laws regarding the wider use of "design-build." As with any management system, "design-build" presents some advantages as well as potential disadvantages over other alternatives. Commissioners expressed concern that design-build projects place too much emphasis on saving time and costs and less on their effect on seismic safety performance and public safety problems. Completion time is a major issue in construction and long-term considerations are not always factored into competitive bids. Design-Build, Low-Bid" contracting method

was not recommended because of concerns of combining the worst qualities of both methods. Support was expressed instead for qualification-based or modified or value-added or negotiated design-build contracts. Participants at the hearing provided the Commission with several recommendations including prequalifications of design-build teams and steps to ensure best value in new construction. In general, there was widespread support expressed for independent quality control personnel and procedures to ensure that design-build projects and all other types have reliable seismic safety. At present the Commission does not recommend changes to state law but feels the regulators of construction activities such as local building departments should be alerted to the potential for safety problems developing on design-build projects.

Commission Updates Web Site

The Commission presented its new web site at the October 2001 commission meeting. The Commission's new web site features more maneuverability, more publications available for downloading, and more links to find other related seismic information. The site now has a link to current earthquake activity in

California and throughout the world. It also highlights recently published Commission reports available to the public online. The Commission plans to publish the *Earthquake Loss Reduction Plan* on the web, as soon as it is finalized. Web site is www.seismic.ca.gov

Seismic Legislative Summary for 2001

Seven Commission-sponsored bills were introduced at the start of the 2001-02 legislative session. The measures covered a wide-range of areas of interest to the Commission –from schools' earthquake preparedness to high storage racks safety to a new \$600 million State bond sale for the retrofitting of local government buildings and residential property.

In August, AB 184 (Liu), a Commission-sponsored bill, was enacted and subsequently signed by the Governor. AB 184 encourages seismic retrofitting of private property (residential and commercial) by making technical corrections to existing law relating to tax benefits for retrofitting projects.

Six other Commission-sponsored bills remained pending when the Legislature adjourned in August.

AB 977 (Alquist) ensures ongoing, set-aside funding for the Commission's earthquake investigations.

SB 717 (Speier) authorizes the issuance of \$600 million in State bonds to finance retrofitting of local government buildings as well as residential dwellings (multifamily and single family units).

AB 1118 (Corbett) provides an allocation of monies to the Department of Insurance for their program which provides residential grants and loans for purposes of retrofitting.

AB 724 (Corbett) promotes schools' earthquake preparedness by requiring annual inspections by local fire and emergency personnel, and awards compliant schools with \$1,000 grants to support preparedness and training.

SB 629 (Alarcon) proposes that the Commission undertake a comprehensive study of the seismic risks posed by high inventory storage racks to warehouse workers and the shopping public

SB 998 (Alarcon) directs the Office of Emergency Services to develop a Statewide Disaster Recovery Plan.

In addition to the Commission-sponsored legislation, the Commission took positions on 30 other bills pending before the Legislature. Those bills involve hospital seismic safety, the Field Act (seismic safety on school construction), disaster planning and emergency preparedness.

Highlighted Presentations Before the Commission in 2001

The Braille Institute, Seismic Related Programs – *Ms. Sally Jameson, Vice President*

Coachella Valley Water District, Seismic Emergency Program – *Mr. Scott Coulson, Service Director*

San Bernardino County Seismic Emergency Program – *Chief Peter Hills*

Riverside County Seismic Emergency Program – *Ms. Bonnie Reed, Office of Emergency Services Program Supervisor; Rick Cook, Emergency Services Coordinator; and Mr. Steve Kupferman, County Geologist.*

Overview of TriNet, Integrated Seismic Network – *Dr. Lucy Jones, U.S. Geological Survey; Dr. Egill Hauksson, Caltech; and Dr. James Davis, State Geologist, California Division of Mines and Geology.*

Earthquake Preparedness Programs for K-12 Schools – *Andrea Terry, La Canada Flintridge Unifield School District, parent Teacher's Association Council Chair and Current La Canada High School Safety Chair; and Janna Kelly, Director of Risk Management for Montebello School District.*

Urban Search and Rescue Team – *Assistant Chief Dean Cathey, Los Angeles Fire Department.*

Hearing on Storage Racks in Public Areas – *Larry McCuen, Enforcement Officer, Cal OSHA; Nancy Wolf, State Fire Marshal, Department of Forestry and Fire Protection; Vic Taugher, retired Building Official, City of Dublin; Pat Moran, California State Firefighters Association; Robert Bachman, SE, Consulting Structural Engineer, ASCE 7 Seismic Commission Chair; David McCormick, EQE International; Andre Filiatrault, Professor, UC San Diego Structural Engineering Department; Peter Higgins, SE, Structural Engineering Rack Design Consultant; Joseph Byrne, Western Regional Governmental Affairs Chair, International Council of Shopping Centers; Bruce Young, Senior VP CA Retailers Association; Lance Hastings, California Grocers Association; Mark Arpaia, Home Depot, Store Planning Manger; Dennis Hoover, Costco; John Leyenberger & Tim Crowell, Wal-Mart and Sam's Club; Joshua Marrow, Simpson, Gumpertz & Heger; Ron Lopez, RN, Emergency Medical Services Disaster Specialist, City & County of San Francisco.*

Hospital Building Safety Board, Annual Report to the Commission – *Trailer Martin, Board Chairman, and Barbara Martinez, Executive Director*

Revision of Seismic Safety Commission Web Page – *Dr. Rob Mellors and Dr. Eric Frost, San Diego State University.*

Highlighted Presentations Before the Commission in 2001 (*continued*)

Design-Build Conceptual Issues – *Mr. Ken Baker, Vice President of the Western Pacific Chapter of the Design-Build Institute of America; Paul Meyer, Executive Director, Consulting Engineers and Land Surveys of California; Ken Luttrell, Structural Engineer past President Structural Engineers Association of California; William Schock, Board Member, California Building Officials.*

Bay Area Rapid Transit Retrofit Project Update – *Tom Horton, Project Manager.*

Update on Structural Provisions Proposed in the NFPA International (National Fire Protection Agency)

5000 Building Code Draft – *Bonnie Manley, Raymond Bizal, P.E., Western Building Code Office.*

Pre-1973 Hospital Buildings Workshop – *Senator Jackie Speier from Hillsborough; Assemblywoman Ellen Corbett from San Leandro; Sue Botelho, Office of Statewide Health Planning and Development; Roger Richter, California Healthcare Association; Maura Kealey, HealthCare Coordinator; Chris Tokas, SB 1953 Program Manager OSHPD; Trailer Martin, Chair of Hospital Building Safety Board, Chris Poland, Chair of SB 1953 Committee; and Mike Reichle, California Division of Mines and Geology.*

Commission Budget Summary

	2000/01	Positions	2001/02	Positions
General Fund	\$821,000	9	\$755,000 <i>(\$917,000 was original budget amount before current year's cuts)</i>	8 <i>(one lost position due to current year's budget cuts)</i>
Proposition 122	\$105,000	1.8		0
Reimbursements	\$75,000	-	\$235,000	-
Total	\$1,001,000	10.8	\$990,000	8