



State Of California



ALFRED E. ALQUIST SEISMIC SAFETY COMMISSION

Arnold Schwarzenegger, Governor

Minutes of October 21, 2010 Meeting
Westin Bonaventure Hotel, 404 South Figueroa Street, Los Angeles, California

Members Participating

Mark Church, Chair
William Chubb
Sharron Leason
Gary McGavin
Ali Sadre
Howard Smith
Michael Stevens
David Walls

Members Absent

Jonathan Changus
Christina Curry
John Littrell
Elizabeth Mathieson
Heather Scott

Staff Participating

Richard McCarthy, Executive Director
Karen Cogan, Administrative Manager
Robert Anderson, Engineering Geologist
David King, Legislative Manager
Fred Turner, Senior Structural Engineer

I. CALL TO ORDER/ROLL CALL

Commission Chairman Mark Church called the meeting of the Alfred E. Alquist Seismic Safety Commission to order at 1:05 p.m. Administrative Manager Karen Cogan called the roll and confirmed the presence of a quorum.

II. CHAIRMAN'S REMARKS

Chairman Church welcomed everyone and said the Commission was delighted to be meeting in Los Angeles to mark the second annual statewide ShakeOut event. He noted this ShakeOut was the largest earthquake drill in U.S. history, with over 7.8 million people participating in the drop-cover-and hold exercise that morning.

Chairman Church observed that as part of a later agenda item, the Commission would be hearing about tsunami impacts on the Ports of Los Angeles and Long Beach from the February 27, 2010 Chilean earthquake.

Chairman Church drew attention to the letter from Assemblymember Jerry Hill regarding the September 10 conflagration in San Bruno caused by a ruptured natural gas pipeline. He said this terrible disaster left 8 people dead and 58 injured, destroyed 37 homes, and damaged 18 more.

He advised that the incident was still being investigated, and there were still many unanswered questions about pipeline safety and PG&E's response.

Chairman Church commented that although the Legislature finally approved the state budget, the state's fiscal crisis has not been resolved and the deficit already exceeds projections by about \$1 billion in this fiscal year.

Chairman Church expressed his appreciation to Ms. Cogan for arranging the meeting at the Westin Bonaventure Hotel.

III. APPROVAL OF AUGUST 12, 2010 MINUTES

ACTION: Commissioner William Chubb made a motion, seconded by Commissioner Ali Sadre, that:

The Commission approve the August 12 minutes as presented.

* Motion carried, 8 - 0.

IV. EXECUTIVE DIRECTOR'S REPORT

Budget Update

Executive Director Richard McCarthy stated that the staff would have more detailed budget projections available at the December meeting.

Legislative Manager Dave King reported that the Commission received the funding it expected as part of the state budget approval, and the staff does not anticipate any major problems. He said the Commission will be reducing personnel costs by \$36,000.

Mr. McCarthy referred to the copy of the Governor's Executive Order in the meeting packet instructing state agencies to reduce personnel costs by 5 percent. He said the Executive Order call for increased pension contributions from employees, reduced retirement benefits to new employees, and mandatory personal leave days.

Boards and Commissions - Sunset Review

Mr. McCarthy referred to Assembly Bill 1659, approved by the governor on September 30, requiring all state boards and commissions to undergo a sunset review. He said the state currently has nearly 300 boards and commissions, and the purpose of AB 1659 is to determine which should be eliminated and which should be continued. He said the staff would keep the Commission posted as more information becomes available.

Annual ShakeOut Event

Ms. Cogan reported that the ShakeOut event continues to grow and gain momentum, with more registered participants this year than in the past. She said 108,000 state employees registered, and a number of departments within the State and Consumer Services Agency played an active role. She acknowledged numerous sponsoring organizations, including the National Science Foundation, the Federal Emergency Management Agency, U.S. Geological Survey, the California Emergency Management Agency, the California Earthquake Authority, and State Farm. Ms. Cogan expressed her appreciation to Kate Long and Mark Benthien for their tireless efforts in organizing and promoting the event.

ACTION: Commissioner Sadre made a motion, seconded by Commissioner Michael Stevens, that:

The Commission prepare a resolution formally recognizing the individuals and groups that participated in the 2010 ShakeOut.

* Motion carried, 8 - 0.

Mr. McCarthy said the staff would prepare a resolution for the Commission's approval at the next meeting.

Round Table Summit with Representatives from Baja, Mexico

Mr. McCarthy announced that the Commission would be holding a Round Table Summit on November 4 in Sacramento to discuss the impacts of the April 4, 2010 El Mayor-Cucapah earthquake on Mexico's agriculture and to consider how major earthquakes can affect California's important agricultural sector.

Mr. King said the summit would feature presentations from several Mexican officials, including the governor of Baja, Baja's Secretary of Agriculture and Secretary of Public Safety, three mayors, and an admiral. California experts in agricultural and water issues will also be invited to attend and discuss California's recovery plans. Mr. King noted that the group will plan next steps and identify ways California and Mexico can work together on these issues.

Restoring California Commerce After an Earthquake - Update

Mr. King reported that the Commission was working with a contractor to solicit feedback from business leaders about steps California can take to facilitate rapid economic recovery after earthquakes. He stated that the contractor has reached out to representatives from several major industries, chambers of commerce, insurance groups, and trade organizations, and a series of meetings is being planned for Northern and Southern California. He added that the first meetings will likely take place in November and December.

Request for Memorandum of Understanding between California and Armenia

Mr. McCarthy introduced Mr. Grigor Hovhannissian, Consul General of the Republic of Armenia, and invited him to address the Commission.

Mr. Hovhannissian requested the Commission's assistance in developing a memorandum of understanding (MOU) between the State of California and Armenia. He noted that Armenia is situated in a high-seismicity region and has a history of large and devastating earthquakes. Since gaining independence from the Soviet Union, he said, Armenia has been working hard to establish a modern mechanism to address the challenges of improving its housing stock, infrastructure, communications systems, and building codes. He observed that California is one of the world's leaders in setting high standards for seismic safety. Mr. Hovhannissian expressed interest in developing a relationship of cooperation with California so scientists in California and Armenia can share information and expertise.

Mr. McCarthy noted that the staff provided Mr. Hovhannissian with sample MOU's between California and other countries. He suggested meeting with Mr. Hovhannissian within the next few weeks to review areas and issues to be included in a draft MOU. Mr. Hovhannissian offered to provide background information and other details. He thanked the Commission for its assistance and said he looks forward to working closely with California in the future.

Chairman Church welcomed Mr. Howard Smith, the Acting State Architect, to the Commission.

V. SEISMIC SAFETY OF HIGH-PRESSURE NATURAL GAS TRANSMISSION PIPELINES IN CALIFORNIA

The Commission received a letter from Assemblyman Jerry Hill requesting information on who regulates gas lines in California. Assemblyman Hill also requested information on seismic standards for gas lines. Mr. McCarthy advised that Assemblymember Hill will probably be holding hearings on the San Bruno natural gas pipeline rupture in early 2011.

Mr. McCarthy noted that the Commission recently approved a research project regarding fire following earthquake, an issue which has attracted considerable attention since the September 10 fire in San Bruno. He said the Commission's research focuses on identifying water sources for fire suppression. He reported that Dr. Charles Scawthorn from the Pacific Earthquake Engineering Research Center (PEER), the Commission's contractor, has visited San Bruno twice, and Mr. King met with Assemblymember Hill's chief of staff to discuss the issues in more detail.

Chairman Church commented that Congresswoman Speier introduced national legislation on this topic. He stated that PG&E is reviewing all of its pipelines and is considering installation of automatic shut-off valves on its gas mains to control the flow of gas to residential neighborhoods.

VI. THE 2010 CHILEAN TSUNAMI'S IMPACTS ON THE PORTS OF LOS ANGELES AND LONG BEACH

Mr. McCarthy reported that the staff attended a meeting with representatives from the San Diego Port Authority, U.S. Navy, the Mexican Navy, to discuss the Commission's recently completed study on distant tsunami threats to the Ports of Los Angeles and Long Beach. He said participants expressed interest in expanding the research to include the Port of San Diego, and they discussed ways vulnerable ports can mitigate the risk by taking certain actions to protect vessels, such as creating detailed maps, identifying safe places to relocate ships within harbors, and dredging certain areas to accommodate large ships.

Mr. Yousef Bozorgnia, Executive Director, PEER, explained that PEER coordinates a number of mega-research projects, and he described the work involved in the Tall Buildings Initiative; research on the seismic performance of transportation systems, bridges, and rail lines; analysis of electric and nuclear power lifelines; investigation of older concrete buildings to identify the most hazardous types and find cost-effective retrofit methods; quantification of ground motions in the western and central-eastern parts of the U.S., and tsunami engineering research.

Professor Costas Synolakis, Department of Civil Engineering, University of Southern California (USC), reported on his observations of the effects of the Chilean tsunami on the Ports of Los Angeles and Long Beach. He noted the USC has undertaken a mapping project to show coastal areas of California likely to be inundated by tsunami surges. He stated that the mapping effort began with consideration of near-source seismic events, including onshore and offshore landslides, and work is now underway to determine impacts from more distant sources. Dr. Synolakis said the inundation maps can be used to identify high- and low-risk zones and estimate direct and indirect losses from tsunamis. He added that California has considerable exposure, with 11 cargo seaports and 27 small craft harbors, and even brief port closures can cost billions of dollars in business losses.

Dr. Synolakis reported that he was disturbed by the confusion in the ports themselves and the uncertainty about what to do. He showed a film of people wading in the surf at Santa Monica as the tsunami waves were arriving, and he expressed his opinion that public agencies should have done more to clear beaches and evacuate coastal areas. Dr. Synolakis noted that people did not seem to realize how long the effects of tsunamis can last and how strong the currents can be. He emphasized the need for more public education to clarify what actions are safe and unsafe in the event of even a small tsunami. He recommended identifying safe havens for boats inside ports. Dr. Synolakis urged the Seismic Safety Commission to work with local jurisdictions to avoid tsunami risks to life and property in the future.

Chairman Church thanked Dr. Synolakis for his presentation.

VII. THE SEPTEMBER 4TH DARFIELD, NEW ZEALAND M 7.0 EARTHQUAKE BRIEFING FROM THE EARTHQUAKE ENGINEERING RESEARCH INSTITUTE'S RECONNAISSANCE TEAM

Mr. McCarthy introduced Mr. Bill Holmes, Earthquake Engineering Research Institute, and invited him to brief the Commission on the recent New Zealand earthquake.

Mr. Holmes showed a map of New Zealand and pointed out the epicenter of the magnitude 7.1 earthquake that struck near the town of Darfield, 25 miles west of Christchurch, at 4:31 a.m. on September 4. He reported there were no deaths and only a few injuries, but property damage and business interruption is estimated at several billion dollars. He noted there was extensive liquefaction and lateral spreading that caused damage to chimneys and unreinforced masonry (URM) buildings and disrupted water mains and sewer lines, but buildings with seismic-resistant designs performed well.

Mr. Holmes showed slides depicting the kinds of damage and disturbance he observed. He noted that there was permanent soil deformation in many areas, which affected storm drainage patterns, altered watercourses, and changed the drop of gravity-based sewer lines. He observed that much of the damage was similar to that observed in the Baja earthquake last April. He pointed out that although there was a low level of shaking, large flat areas and flood plains were affected by vertical movement, a pattern of damage that could occur in California and other places in the U.S. with similar topography.

Mr. Holmes noted that the California Building Code has provisions addressing liquefaction hazards, and the Seismic Hazards Mapping Act requires liquefaction screening for all projects except residential developments of 4 units or smaller. He observed that California's URM law, SB 547, only dealt with URM's in high-seismicity zones, but such buildings can be hazardous even in zones with lower levels of shaking. He expressed his opinion that the law should be strengthened by requiring upgrades whenever there is a change in ownership.

Commissioner Chubb asked how other utility systems like communication and power fared during the earthquake. Mr. Holmes replied that the sanitary sewer and water systems were the biggest problems, and other utilities performed well. He noted that natural gas is not widely used in New Zealand residences.

Chairman Church thanked Mr. Holmes for his presentation.

VIII. SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC) WATER DELIVERY SYSTEM REVIEW UPDATE

Senior Structural Engineer Fred Turner advised that the Commission received the SFPUC's annual report on the status of the Water System Improvement Program for the Hetch Hetchy regional water transmission system. The report proposes no project deletions, but it does identify five projects with major delays. Mr. Turner said the Seismic Safety Commission and the Department of Public Health are required to review and comment on any project deletions or delays within 90 days of such changes, but no action is required yet because the SFPUC has not formally adopted the delays identified in the annual report. He noted that the SFPUC will adopt the scheduled delays next July, and the Commission will need to conduct a review at that point.

Mr. Turner reported that the staff has been in conversations with the Department of Public Health and the Bay Area Water Supply & Conservation Agency (BAWSCA) about the implications and risks of compressing the schedule and delaying major projects up to 17 months. He drew attention to the BAWSCA letter in the meeting packet recommending a more comprehensive analysis of these issues. He suggested that the Commission communicate with the Joint Legislative Audit Committee and provide a progress report so the committee is aware of the situation. He added that the Commission is still awaiting SFPUC responses to the recommendations made in 2009, and he recommended including this point in the report to the Joint Legislative Audit Committee as well.

IX. RESEARCH PROGRAM – UPDATE ON CURRENT PROJECTS

Lake Tahoe Hazard Study

Engineering Geologist Bob Anderson informed the Commission that the remote operated vehicle to be tested in Lake Tahoe was still under construction, and field trials were likely to be delayed because of a delay in obtaining parts from Germany. He said the launch will probably need to be postponed until next spring, and the Commission might have to extend the contract as a result. Mr. Anderson reported that the contract with Northern Illinois University to conduct test dives was in place, but the staff was still working on the contract with the California Geological Survey to collect more accurate hazard data about active faults in Lake Tahoe.

Tall Buildings Initiative

Mr. Turner advised that the Tall Buildings Initiative was nearing completion. He said initial design guidelines published online were already getting comments from members of the public. The remaining products, including the Applied Technology Council's computer modeling acceptance criteria, the cost-benefit analysis of the design criteria, and the final report, are due by November 30. Mr. Turner noted the staff will evaluate the project at that time to confirm that the Commission's contribution of \$350,000 was spent wisely.

Performance of Hospitals in Earthquakes and Post-Earthquake Fire

Mr. Turner introduced Professor Jose Restrepo, University of California San Diego, and invited him to update the Commission on the status of the hospital performance research project.

Professor Restrepo reported that UC San Diego was finalizing its contract with the Seismic Safety Commission. He explained that the Commission is contributing \$300,000 for certain portions of this \$5 million, multi-organization, three-year research project to analyze the seismic performance of hospital nonstructural components and post-earthquake fire performance. He said UC San Diego will receive \$1.2 million from the National Science Foundation and in-kind contributions from a number of other sponsors to build a full-scale five-story hospital building and test the building components on a shake table. He noted there is broad stakeholder participation in the project, and he reviewed a list of industry and government agency sponsors.

Professor Restrepo stated that the goal of the hospital performance research project is to better understand how total building systems perform in earthquakes, to develop better models and simulation tools, and to improve design guidelines for hospital systems. He showed elevation and cross-sectional views of the building, and identified major components. He identified the tasks entailed in the project: Task A, construction of the structural systems; Task B, installation of nonstructural components and systems; Task C, protective systems, including base isolation; Task D, simulation and modeling; Task E, construction management; and Task F, education, outreach, and technology transfer. He said Commission funds will be used for Tasks B, C, and F.

Professor Restrepo indicates that Task A was 60 percent complete, Tasks B and C were 40 percent complete, and Task D was 20 percent complete. He said all construction documents will be completed in December 2010, construction will begin next March, instrumentation will be installed in August, and construction will be completed in October 2011. He noted that seismic and fire testing will take place in early 2012, and the structure will be demolished in March of 2012, after which the researchers will process the information and publicize the results.

Chairman Church thanked Professor Restrepo for his presentation.

X. LEGISLATIVE UPDATE

Mr. King referred to his written report in the meeting packet and reviewed the outcome of legislation the Commission had been tracking.

XI. PUBLIC COMMENT

There were no members of the public who wished to address the Commission.

XII. GOOD OF THE MEETING

Commissioner McGavin

XIII. ADJOURNMENT

Chairman Church thanked everyone for participating.

There being no further business, Chairman Church adjourned the meeting at 3:43 p.m.

Sue Celli
Office Manager

Approved by:

Richard McCarthy
Executive Director