



State Of California

ALFRED E. ALQUIST SEISMIC SAFETY COMMISSION



Governor Edmund G. Brown Jr.

Alfred E. Alquist Seismic Safety Commission
State Capitol, Room 4202
Sacramento, California
Minutes of Meeting
November 8, 2012

Members Participating

Michael Gardner, Chairman
Mark Pazin, Vice Chairman
Mark Ghilarducci/Christina Curry
Peggy Hellweg
Emir Macari (arrived at 10:03 a.m.)
Jim McGowan
Kit Miyamoto (arrived at 10:17 a.m.)
Timothy Strack
Chester Widom

Members Absent

Helen Knudson
Mathew Ortiz
Kathy Smith

Staff Present

Richard McCarthy, Executive Director
Karen Cogan, Administrative Manager
David King, Legislative & Special Projects Mgr
Henry Reyes, Structural Engineer
Fred Turner, Senior Structural Engineer

I. CALL TO ORDER/ROLL CALL

Chairman Michael Gardner called the meeting of the Alfred E. Alquist Seismic Safety Commission to order at 10:02 a.m. and welcomed all participants. Administrative Manager Karen Cogan called the roll and confirmed the presence of a quorum.

II. APPROVAL OF SEPTEMBER 12-13, 2012 MINUTES

ACTION: Commissioner Timothy Strack made a motion, seconded by Commissioner Mark Pazin, that:

The Commission approve the minutes of the September 12-13 meeting as presented.

* Motion carried, 5 – 0 – 2 (Commissioners Mark Ghilarducci and Chester Widom abstaining, Commissioners Emir Macari and Kit Miyamoto absent during voting).

III. CHAIRMAN'S REMARKS

Report on Diablo Canyon Independent Peer Review Panel

Chairman Gardner explained that the Commission is participating on a peer review panel to evaluate PG&E's proposed seismic mapping project offshore from Diablo Canyon. He said state legislation requires PG&E to conduct these studies, but the Coastal Commission may oppose the project because of its potential harm to sea mammals. Chairman Gardner noted the Coastal Commission will be meeting on November 14 to consider the issue, but their staff is recommending that they not approve the testing. He observed that if that position is taken, the state will have to take a step backwards and decide how to proceed without the seismic information.

Chairman Gardner said PG&E originally proposed seismic studies in four large areas, but the State Lands Commission recommended scaling back to three areas, with one this year and two next year. The idea is that this gradual approach will allow researchers to learn more about potential impacts on marine life so they can avoid potential problems. Chairman Gardner noted the California Energy Commission and the Public Utilities Commission have requested additional information. He added that if Diablo Canyon is shut down, the state would need to replace the energy generated there with some other source.

Commissioner Hellweg pointed out that even if the Diablo Canyon facility were closed, it would still pose a public safety risk. Chairman Gardner noted that spent radioactive fuel materials cannot be moved from the site, as no federal disposal site has been established.

Executive Director Richard McCarthy drew attention to the letter from the independent review panel to the Coastal Commission in the meeting packet. He said six of the seven panel members support the scaled-back seismic testing proposed by the State Lands Commission. Chairman Gardner added that he wrote to the Coastal Commission on the Seismic Safety Commission's behalf urging them to approve the testing.

Mr. McCarthy said the plan calls for testing to begin at the end of November and continue into December. Commissioner Emir Macari asked if the staff could arrange for commissioners to observe the testing process, and Mr. McCarthy replied that the Commission could make that request if the project is approved.

Chairman Gardner clarified that the Commission's role was limited to commenting on the proposed studies. He noted that the Coastal Commission's charge is to protect the oceans, not the power system or public safety.

Commissioner Macari remarked that radiation from the Fukushima power plant disaster in Japan has been shown to be detrimental to marine life, so the Coastal Commission should favor seismic testing as a way of protecting the whole environment.

Mr. McCarthy advised that he would have a full briefing on this topic at the Commission's January meeting.

IV. EXECUTIVE DIRECTOR'S REPORT

Mr. McCarthy invited Legislative and Special Projects Manager David King to brief the Commission on the status of the budget.

Budget Update

Mr. King reported that the Commission staff submitted an augmentation request letter to the Legislature. He said the Commission was asking for \$300,000 less from the general fund than anticipated, so he expected approval. He noted that the current funding arrangement through the Insurance Fund and the CRAF research funds will be expiring at the end of December.

Mr. King observed that the Commission's budget is about where it should be at this time of year. He indicated that the spreadsheet provided by Contracted Fiscal Service did not include any of the reimbursements the Commission would be receiving.

Chairman Gardner commented that that the CRAF funds gave the Commission a unique opportunity to direct money for useful research. He noted that although the Commission is entitled to take a 10 percent charge for overhead expenses, it has not yet done so, and he recommended trying to preserve as much of the funds as possible for actual research. He remarked that the Commission is unlikely to find another source of research funding once the CRAF fund is exhausted.

Mr. King clarified that the Commission's budget for this year calls for charging the 10 percent overhead now. He added that the staff has been very careful about minimizing administrative overhead costs.

Mr. McCarthy said the staff will send commissioners a revised budget before the January meeting.

2013 Commission Meeting Dates

Mr. McCarthy drew attention to the proposed meeting calendar for 2013. He suggested holding about two thirds of the meetings in Sacramento and one third in other locations throughout the state. He said the 2013 proposed meeting dates were January 10, March 14, May 9, July 11, September 12, and November 14.

Ms. Cogan indicated she would email commissioners about their ideas for out-of-town sites and key agenda items for future meetings.

V. FIRE FOLLOWING EARTHQUAKE II REPORT

Dr. Charles Scawthorn, Pacific Earthquake Engineering Research Center, gave a PowerPoint presentation about his research on the reliability of water for fires following earthquake. He noted his findings apply to other disasters as well. He showed a map of the utility pipelines throughout the Los Angeles area and pointed out that earthquake damage to these systems often leads to fires.

Dr. Scawthorn reported that during the first year of his study, he surveyed water and fire departments throughout the state to assess their levels of preparedness. He said the findings show that agencies are aware that earthquakes are a major problem, but they are not all well informed about local risks, do not communicate well with each other, and often waste resources in piecemeal and duplicative efforts. Dr. Scawthorn added that many agencies have identified alternative sources of water, but these resources are not well documented, and there is still a problem moving water over any long distance.

Dr. Scawthorn stated that his first year research also identified potential solutions to these problems, including portable systems such as those employed in Oakland, San Francisco, Vancouver, Vallejo, and Berkeley, or adding a pumping system to the Los Angeles Basin's existing network of canals and waterways. He added that the feasibility of a pumping system in Los Angeles was documented in his Year One report.

For this year, Dr. Scawthorn advised, his focus would be on arriving at a consensus among fire and water departments on reliability goals, developing a framework for solutions, creating a set of performance goals, and continuing efforts and activities that encourage fire and water departments to work together and coordinate their efforts.

Dr. Scawthorn said he planned to disseminate draft performance goals that include quantifying median and upper bounds of likely fires after a major earthquake; adopting a written response plan that considers a range of factors such as other demands on resources, weather variability, alternate and normal sources, and mutual aid; exercising and drilling at least once a year; and publishing yearly estimates of post-earthquake fire potential and identify buildings likely to be destroyed. Dr. Scawthorn added that he would be preparing a guidance document with further information about quantifying seismic demand, estimating ignitions, preparing for a maximum credible event, identifying alternate water sources, and transporting water.

Dr. Scawthorn indicated that his next steps would be to fine-tune the performance goals so they can be published next spring, continue discussions with fire and water departments, and develop a guidance document.

Commissioner Strack urged Dr. Scawthorn to involve gas utility companies in discussions with local fire and water departments. He said local agencies should be encouraged to work with emergency services, disaster coordinators, and other stakeholders in their areas. He noted that some counties have multiple water departments that need to be part of the effort.

Commissioner Mark Ghilarducci applauded Dr. Scawthorn's work and noted that his findings will be very helpful to the California Emergency Management Agency (Cal EMA). He cautioned that the availability of mutual aid and other resources should not be underestimated. Commissioner Ghilarducci advised that the state has been maintaining fire tenders and equipment caches at various sites so they can be deployed quickly after disasters.

Commissioner Ghilarducci suggested that Dr. Scawthorn contact the Fire Scope organization and make his presentation to its board of directors. He noted that Fire Scope has specialist subgroups devoted to developing standards. He offered his assistance in getting Dr. Scawthorn's presentation on a Fire Scope agenda. Dr. Scawthorn thanked Commissioner Ghilarducci and said he had not thought of Fire Scope. He also thanked Commissioner Strack for his suggestion about working with emergency services and disaster coordinators.

Chairman Gardner thanked Dr. Scawthorn for his presentation.

VI. REVIEW OF CALIFORNIA SHAKEOUT REPORT

Chairman Gardner said he redrafted the Executive Summary reviewed by the Commission at the last meeting to make it much simpler and more readable for non-technical audiences. He noted that the original report was very good and makes an important contribution to the research literature, but its academic tone was too technical for most readers. He asked if other commissioners had comments or objections, and Commissioner Hellweg said she found the revised version very readable.

VII. SSC PARTNERSHIP WITH U.C. DAVIS AGRICULTURAL ISSUES CENTER

Mr. McCarthy introduced Dr. Daniel Sumner, Director, U.C. Davis Agricultural Issues Center, and invited him to talk with the Commission about working with agricultural industries to help them prepare and respond to earthquakes and other disasters.

Dr. Sumner noted that many of the challenges in preparing for fire following earthquake are also issues in the agricultural sector. He said California's agriculture also has some unique vulnerabilities because of the perishable nature of the commodities, limited flexibility for absorbing losses, the fragile infrastructure at many farms and manufacturing operations, and disruption in the distribution and marketing process. He pointed out that farmers also have a responsibility to care properly for their animals and to preserve and protect the soil they need for future crops.

Dr. Sumner advised that there is a need for more research on land and soil issues, and he urged the Seismic Safety Commission to work with industry and experts to identify key problems facing the agricultural sector. He recommended finding out more about the impact of strong shaking on soil quality and physics.

Dr. Sumner said the U.C. Davis Agricultural Issues Center can help the Commission by sponsoring statewide meetings, seminars, and workshops with member of the agricultural community and related industries. He volunteered to direct a study to identify key vulnerabilities

and find ways to communicate most effectively with the agricultural sector. He suggested reaching out to research organizations, agriculture companies, banks and financing sources, and insurance companies.

Commissioner Macari noted that problems with agriculture came to the Commission's attention after the Mexicali earthquake two years ago caused extensive damage to irrigation canals and agricultural operations. He said the threat of soil liquefaction is a problem on both sides of the border, and California has long-standing worries about the safety of its Delta levee system, a critical component of the state's agricultural water supply.

Dr. Sumner observed that there are high levels of salt in the soils on the west side of the San Joaquin Valley, and saltwater intrusion has become a problem in Monterey County as well. He talked about the potential impacts of disruptions in the water supply on livestock operations. Chairman Gardner noted that dairy farmers would be unable to milk their cows or store their milk for some time, and chicken farmers might lose their stock, but overall, farmers could recover relatively quickly from these short-term losses. However, if farm land becomes contaminated and unusable, those problems could last for years, making recovery much more difficult.

Dr. Sumner pointed out that images of animals suffering would cause considerable public outrage. Commissioner Macari agreed, noting that livestock issues have triggered concerns about disruptions to the water delivery system and rail transport.

Dr. Sumner said a serious policy question for California is whether to invest public money to strengthen the Delta levees. He remarked that in some cases, the levees themselves are more valuable than the farmland they protect.

Commissioner Macari offered to provide Dr. Sumner with contact information for a professor at U.C.L.A. who was looking at some of these issues.

Chairman Gardner thanked Dr. Sumner for his presentation. He said the Commission looks forward to working with the U.C. Davis Agricultural Issues Center.

VIII. DESCRIPTION OF U.S. RESILIENCY COUNCIL MISSION

Senior Structural Engineer Fred Turner introduced Mr. Evan Reis, U.S. Resiliency Council board member, and invited him to brief the Commission on this new nonprofit organization focusing on mitigation business interruption and damage to buildings.

Mr. Reis said the U.S. Resiliency Council's effort to develop resiliency standards and a resiliency rating system fits well with the Seismic Safety Commission's goals. He explained the difference between sustainability, an attempt to reduce environmental impacts, and resiliency, which focuses on withstanding environmental impacts. As an example, he noted, the LEED rating system encourages building owners to minimize energy usage, but it does not necessarily ensure post-disaster functionality and safety. Mr. Reis indicated that resiliency has become a

national policy directive for both the Department of Homeland Security and the Federal Emergency Management Agency.

Mr. Reis reported that the U.S. Resiliency Council is working in conjunction with the Structural Engineers Association of Northern California to develop a resiliency rating system built on performance-based design standards. He said this effort grew out of a 2011 workshop with building owners, real estate professionals, engineers, architects, scholars, bankers, and insurance company representatives. Mr. Reis explained that the proposed rating system would provide information to building owners and tenants so they can make informed decisions about real estate transactions and know what to expect in emergencies. He noted that the rating system will be multi-dimensional, communicative, credible, independently peer-reviewed, cost-effective, and voluntary, at least at first. Target users will be building owners, lenders, insurers, tenants, engineers, and real estate professionals. Mr. Reis stated that the rating system will incorporate high-quality technical standards already in use, and the U.S. Resiliency Council will provide a method of classification, accreditation, and evaluation.

Mr. Reis demonstrated how the rating system would work. He noted that points will be given for various factors entailed in safety, repairability, and functionality, and building rankings would be based on the level of compliance, Mr. Reis said buildings could be scored with 5, 4, or 3 stars, or they could be designated as either certified or not certified. He indicated that the system will originally deal with earthquakes, but it will eventually be expanded to address multiple kinds of hazards. Mr. Reis stated that the U.S. Resiliency Council helped develop New Zealand's new Quake Star program, a soon-to-be-implemented earthquake rating authority with a primary focus on safety.

Mr. Reis outlined the next steps in developing the resiliency rating system. He said the U.S. Resiliency Council needs to finalize the rating system and the technical standards at a stakeholder meeting in January, raise funds, launch the system by rating a few high-profile buildings, develop an accreditation process, and build public awareness and support.

Chairman Gardner thanked Mr. Reis for his presentation.

At 11:59 a.m., the Commission recessed for lunch. Chairman Gardner reconvened the meeting at 1:00 p.m.

IX. SSC PARTNERSHIP WITH GOVERNOR BROWN'S OFFICE OF BUSINESS AND ECONOMIC DEVELOPMENT

Mr. McCarthy said the Commission staff has been having discussions with The Governor's Office of Business and Economic Development (GO-Biz) about ways to help California businesses recover quickly after disasters. He introduced Ms. Barbara Vohryzek, Small Business Advocate, GO-Biz, and invited her to provide an overview of GO-Biz programs and activities.

Ms. Vohryzek stated that GO-Biz was established as a result of the passage of AB 29 in the fall of 2011, and permanent staff were just hired in September and October. She said GO-Biz's mission is to foster economic development and job creation in California by helping businesses deal

with permitting issues, foreign trade, legislative issues, procurement. GO-Biz promotes innovation and entrepreneurship at 12 iHub clusters throughout the state focusing on different kinds of industries.

Ms. Vohryzek said California has 3.5 million small businesses, defined as companies with less than 750 employees, and GO-Biz wants to find ways to leverage its efforts to assist with licensing and permitting issues and help businesses plan for the future. She added that GO-Biz is excited about the opportunity to partner with the Commission to address long-term business recovery issues.

Chairman Gardner expressed his appreciation to Ms. Vohryzek, the GO-Biz staff, and the Governor's Office for highlighting the importance of business recovery for the financial health of the state.

Commissioner Macari asked how GO-Biz was related to GO Ed. Ms. Vohryzek explained that GO-Biz is the next-generation outgrowth of GO Ed. She clarified that GO-Biz was created in response to AB 29.

Commissioner Pazin commented that the GO-Biz is a refreshing approach to dealing with issues faced by California businesses. Ms. Vohryzek said the recent superstorm that devastated New Jersey and New York will yield some important lessons for California. She noted that most businesses struggle to restore operations for months after a disaster, but long-term recovery can take years. She emphasized the need to have business-friendly policies in place so the business community has assistance and resources during the post-disaster recovery period.

Commissioner Miyamoto agreed that long-term recovery is critical for businesses. He observed that disasters can also be opportunities for growth and job creation. Ms. Vohryzek remarked that she had not thought about disasters in such a positive light, but reconstruction does have the potential to open new jobs. Commissioner Miyamoto added that in order to be successful in the long term, reconstruction needs to be done properly, and he emphasized the value of careful planning.

X. SSC PARTNERSHIP WITH CALIFORNIA SMALL BUSINESS DEVELOPMENT CENTER

Ms. Michele Gault-Woonacott, Director of Outreach, Small Business Development Centers, stated that the U.S. Small Business Administration maintains a national network of 1,100 small business development centers that work with businesses in a wide variety of programs. She said California leverages its \$12 million in federal funds with contributions from corporations and organizations to fund a \$24 million program, the largest network in the country. She gave some examples of disaster preparedness and recovery assistance provided by the Small Business Development Centers to small businesses. She reported that the Small Business Development Centers helped 65,000 small businesses in California in 2011, including 900 start-ups, and these businesses created or retained almost 10,000 jobs.

Ms. Gault-Woonacott noted that 40 percent of businesses impacted by disasters go out of business within two years, so keeping businesses healthy and functional is a top priority. She said the Small Business Development Centers help companies create disaster preparedness plans, navigate through the post-disaster permitting and application processes, obtain fast access to capital, find replacement facilities, assess clean-up options, and plan strategically for the future.

Ms. Gault-Woonacott discussed some ideas for partnering with the Commission in education, outreach, and training. She said the Small Business Development Centers' overall goal is to educate small businesses about preparedness so they can remain operational and minimize losses from earthquakes and other disasters. She suggested creating a disaster preparation toolkit, and she offered to work with the Commission to develop a grant proposal.

Commissioner Ghilarducci advised that Cal EMA was pleased to work with the Governor's Office, GO-Biz, and the Small Business Development Centers to develop a state disaster recovery framework based on federal guidelines. He advocated having policies in place before disasters so the governor can take fast action to streamline processes and facilitate business recovery. Commissioner Ghilarducci indicated that Cal EMA planned to appoint a state disaster recovery coordinator and a new team to spearhead this effort, and a December or January workshop was being organized to begin the process.

Chairman Gardner thanked Ms. Gault-Woonacott and noted that preparedness is often lacking in business planning, especially for small businesses.

Mr. McCarthy said Dr. Selvaduray was incorporating post-disaster recovery as the major theme of the second phase of the California Earthquake Loss Reduction Plan update.

XI. SSC PARTNERSHIP WITH GLOBAL EARTHQUAKE MODEL (GEM)

Mr. McCarthy noted that the Commission staff had been talking with Mr. Michael Rossi and GO-Biz about the GEM partnership opportunity as well. He invited Dr. Ross Stein, U.S. Geological Survey, to discuss that initiative.

Dr. Stein explained that GEM is a public-private partnership whose goal is to promote a better understanding of earthquake hazards and to communicate those risks to people around the world. He showed a list of GEM's partners and sponsor countries and organizations. He said GEM will use its \$30 million investment to build the world's first seismic risk model. This risk model can then be used to prevent damage to buildings and infrastructure, minimize fire following earthquakes, protect contents of buildings, and provide adequate staffing for incident command centers. Dr. Stein noted that GEM's seismic risk model will be humanitarian, scientific, credible, and independent.

Dr. Stein stated that the seismic risk model can be an important factor in California's recovery and reconstruction efforts after disasters. He said most existing earthquake models in California assume an 8.1 magnitude earthquake on the San Andreas Fault, but last year's 8.6 magnitude earthquake in the Indian Ocean show that the global risk may be underestimated. He pointed out

that an earthquake of that magnitude anywhere in California could affect the entire state, not just the area close to the epicenter.

Dr. Stein discussed GEM's work in compiling data on earthquake hazards, faulting, and shaking. He said this data will yield valuable information about vulnerabilities and exposures that can help minimize injuries to people and damage to property. In addition, raising awareness about risks can have an important social impact by motivating mitigation actions, such as developing retrofit incentives and making earthquake insurance more affordable. Dr. Stein noted that GEM plans to create retrofit cost-benefit tools and risk transfer tools to help people make decisions about how to deal with the risks they face.

Dr. Stein remarked that GEM's work can make a huge difference in improving seismic safety worldwide. As an example, he said, Ecuador's use of a seismic hazard model led to adoption of building codes and creation of a new earthquake insurance program in that country. Dr. Stein commented that installing black boxes in airplanes has been an extremely valuable tool for scientists to understand the factors that lead to crashes and accidents, and a similar system in buildings could be used to create an insurance program based on expected levels of shaking.

Dr. Stein concluded by saying that GEM is just one link in the chain connecting scientific research to real-life preparedness, and he welcomed the Commission's support. He said he was pleased that Mr. McCarthy and Commissioner Miyamoto would be attending GEM's meeting in December.

Chairman Gardner thanked Dr. Stein for his presentation.

XII. POST-DISASTER ECONOMIC RECOVERY REPORT STATUS

Dr. Guna Selvaduray, San Jose State University gave a status report on the update of the California Earthquake Loss Reduction Plan. He said he, Ms. Vohryzek, and Ms. Gault-Woonacott had a teleconference recently and were all working together on the issue of post-earthquake economic recovery. Dr. Selvaduray thanked the Commission for the helpful input provided at the workshop session in Riverside.

Dr. Selvaduray said the 2007 California Earthquake Loss Reduction Plan is a multi-faceted, comprehensive document focusing on the built environment and governmental actions to promote mitigation. He noted that many of the 146 initiatives in the Plan deal with technical and regulatory issues, and post-earthquake recovery is not well addressed. He stated that the Plan features a narrow view of the private sector, primarily emphasizing industry rather than small businesses or agriculture.

Dr. Selvaduray explained that the Commission wants to update the Plan to appeal to a broader audience and shift to a multi-hazard approach that incorporates worldwide lessons from major earthquakes. He said the updated document should serve as an "enabling" document with greater flexibility to adapt to changes in the socioeconomic and political climate. Dr. Selvaduray noted that since the 2007 Plan was published, people have learned more about the global effects of disasters, the critical importance of private-sector recovery, the key role agriculture and

animal husbandry play in the state's economy, the devastating impact earthquakes can have on small businesses, and the unintended consequences that result from major disasters.

Dr. Selvaduray proposed updating the Plan in several key ways. First, he recommended shortening the document to about 20 pages and reducing the number of initiatives to focus on three to five initiatives for each element. He suggested addressing post-earthquake long-term recovery issues, agriculture and animal husbandry, small businesses, fire following earthquakes, hazardous materials, and tsunamis. He said the document should discuss local and global effects of earthquakes and use case studies to illustrate important lessons learned. Dr. Selvaduray proposed eliminating the prioritization and timeframes to accomplish the initiatives.

Dr. Selvaduray reviewed the major components of the updated Plan. He said the title should reflect the broader scope of the document, and he suggested calling it the "California Earthquake Loss Reduction Plan – Post-Earthquake Economic Recovery." He proposed beginning with a one-page executive summary, describing the history of earthquakes in California and their effects, summarizing loss reduction legislation, discussing the global effects of earthquakes, listing major earthquakes since 1960, and then addressing post-earthquake economic recovery with a series of elements and strategies. Dr. Selvaduray suggested including an appendix listing important loss reduction legislation enacted in California and another appendix containing all the elements and initiatives in the 2007 Plan.

Dr. Selvaduray proposed including the following elements in the updated Plan: research, education and information, economics and finance, recover, structures, utilities and transportation, preparedness, and emergency response. He gave examples of possible strategies and initiatives for the research element and said he would draft similar lists for each of the other elements for the Commission to review and critique.

Dr. Selvaduray noted that once the first phase of the update is completed, he would move to Phase 2, expanding to an all-hazards approach, a broader study of lessons learned, and a more detailed discussion of economic consequences and economic recovery issues.

Chairman Gardner thanked Dr. Selvaduray for his report and said the Commission looks forward to the next iteration of the updated Plan.

XIII. PUBLIC COMMENT

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

XV. GOOD OF THE MEETING

There were no other items brought to the Commission's attention.

XVI. ADJOURNMENT

There being no further business, the meeting was adjourned at 2:23 p.m.

Sue Celli
Office Manager

Approved by:

Richard McCarthy
Executive Director