



State Of California

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION

Governor Edmund G. Brown Jr.

Consulate General of Mexico – Sacramento Office
2083 Arena Blvd.
Sacramento, California
Minutes of Meeting
May 2, 2012

Members Participating

Mark Pazin, Vice Chairman
Peggy Hellweg
Richard Conrad (for Chester Widom)
Helen Knudson
Emir Macari
Jim McGowan
Kit Miyamoto
Mathew Ortiz
Timothy Strack

Members Absent

Michael Gardner, Chairman
Mike Dayton
Kathy Smith

Staff Present

Richard McCarthy
Karen Cogan, Administrative Manager
Robert Anderson, Senior Engineering Geologist
David King, Legislative & Special Projects Mgr.
Henry Reyes, Senior Structural Engineer
Fred Turner, Senior Structural Engineer

I. CALL TO ORDER/ROLL CALL

Commissioner Helen Knudson called the meeting of the Alfred E. Alquist Seismic Safety Commission to order at 10:07 a.m. and welcome everyone. Administrative Manager Karen Cogan called the roll and confirmed the presence of a quorum.

II. APPROVAL OF MARCH 8, 2012 MINUTES

ACTION: Commissioner Mark Pazin made a motion, seconded by Commissioner Jim McGowan that:

The Commission approve the March 8 minutes as presented.

* Motion carried, 8 - 0 (Commissioner Mathew Ortiz absent during voting).

III. CHAIRMAN'S REMARKS

Commissioner Knudson announced that she would be chairing the first part of the meeting because Chairman Michael Gardner was unable to attend and the Commission had not yet elected a Vice Chair.

Commissioner Knudsen noted that the Commission-sponsored public outreach project with the Public Broadcasting System (PBS), "Totally Unprepared," had already won some awards and had been translated into Spanish and Chinese.

IV. WELCOMING REMARKS

Commissioner Knudson introduced Ms. Leslie Lopez, General Counsel and Deputy Secretary, State and Consumer Services Agency, and invited her to address the Commission.

Ms. Lopez said she was speaking on behalf of Agency Secretary Anna Caballero in noting that California and Mexico have a long history of cooperation in disaster response and preparedness, and that both nations share common problems and risks, including earthquake and tsunami. She encouraged commissioners to attend the reception that evening to further the state's personal relationships with counterparts in Mexico.

Commissioner Knudson introduced Mr. Gilberto Luna Moises, Deputy Consul General of Mexico, and invited him to address the Commission. Mr. Luna Moises welcomed the Commission to the Mexican Consulate. He expressed support for the Commission's important work and offered to help in any way to make the meeting a productive session.

Commissioner Knudson thanked the Mexican Consulate for hosting the meeting.

V. NOMINATING COMMITTEE REPORT

Commissioner Knudson reported that she and Commissioner Mike Dayton had considered three candidates for the office of Vice Chairman and recommend election of Commissioner Mark Pazin.

ACTION: Commissioner Knudson made a motion, seconded by Commissioner Jim McGowan, that:

The Commission elect Commissioner Mark Pazin Vice-Chairman by unanimous acclamation

* Motion carried, 8 – 0 (Commissioner Ortiz absent during voting).

Commissioner Knudson passed the gavel to Vice Chairman Pazin and asked him to chair the rest of the meeting.

IX. GLOBAL EARTHQUAKE MODEL (GEM) UPDATE (Out of Order)

Executive Director Richard McCarthy introduced Dr. Ross Stein, U.S. Geological Survey, for an update on the Global Earthquake Model (GEM), an international effort to collect reliable data and help mitigate dam threats.

Dr. Stein explained that GEM's goal is to convince people worldwide of the risks they face so they can take steps to mitigate their hazards. He said GEM was founded in 2009 as a public-private nonprofit partnership to develop the first-ever global seismic risk model. GEM currently has 15 staff and 600 scientists working to collect data and promote retrofit to members of the public. Dr. Stein stated that the first step in that effort entails collecting data sets and developing tools to help scientists identify hazards in each nation. He noted that GEM's mission is humanitarian and scientific, and its work can benefit California.

Dr. Stein indicated that data collection is a \$10 million effort that will build an inventory of the world's fault systems to better identify potential exposures. He said local governments should follow up with building inventories, followed by mitigation actions that would lessen damage and save property owners and insurance companies. He expressed his opinion that insurance companies should charge lower premiums to insure retrofitted buildings. Dr. Stein noted that GEM will build an open-source software engine to teach people about hazards and encourage local programs. He pointed out that California will have access to more information about its own faults so that risks can be communicated to the public so mitigation steps can be taken. He advised that there is strong evidence establishing that retrofitting buildings helps reduce damage.

Dr. Stein commented that recovery in Haiti was very challenging because many government officials were unaware of the seismic risk. He said just one simple step like retrofitting hospitals could have been of tremendous value immediately after the earthquake. Commissioner Kit Miyamoto recalled giving a speech for a Port au Prince Webinar in December of 2009 warning participants about the seismic risk in Haiti, and the time is now to mobilize public awareness. He urged GEM to move forward as quickly as possible to prevent deaths in future events.

Mr. McCarthy observed that the Commission will continue to establish relationships with industry and international partners, and he expressed interest in developing closer ties with GEM. Dr. Stein welcomed the Commission's involvement and encouraged interested individuals to join GEM's governing board to have a role in directing its future. He said there are already a number of California governmental organizations helping GEM collect data.

Vice Chairman Pazin invited Dr. Stein to update the Commission on GEM's activities after another six months.

VI. PRESENTATION OF RESOLUTION TO DELOITTE CONSULTING, LLC

Vice Chairman Pazin read a resolution of appreciation to Deloitte Consulting for working with the Commission to better understand the economic impact of earthquakes on California businesses. Vice-Chair Pazin presented Ms. Julie Quinn with the framed resolution and thanked her for her work.

XIII. RESEARCH PROJECTS UPDATES (Out of Order)

1. Fire Following Earthquake, Phase II Update and Insured Losses in Japan Earthquake/Tsunami

Dr. Charles Scawthorn, Pacific Earthquake Engineering Research Center, gave a PowerPoint presentation on Japan's recovery from the 2011 earthquake and tsunamis. He displayed a map of the affected area, and then showed pictures of the tsunami approaching shore, damage to ports and shipping facilities, effects on air and rail transportation, highways and bridges, wastewater processing, and electric power.

Dr. Scawthorn advised that 52 of Japan's 54 nuclear power plants have been shut down since the Fukushima nuclear power plant failure. He said gas shutoff meters have been installed on all users as well as block groups of pipes to prevent fire following earthquake. Dr. Scawthorn showed a map and identified locations where fire broke out after the earthquake and tsunamis. He said most fires were due to flammable liquids on top of debris. He noted that San Francisco installed a neighborhood water shutoff system ten years ago, and a similar system could be used for gas and water.

Dr. Scawthorn said only about 10 percent of Japanese insurance policies were affected by last year's disaster, or perhaps a total of \$35 billion, while total property losses are estimated at up to \$300 billion. He observed that the situation is reversed in New Zealand, where 80 percent of total losses were covered by the national insurance program. He noted that fire and earthquake are issued as separate policies in California, but the two hazards are combined in New Zealand.

Dr. Scawthorn summarized the lessons learned from Japan's experience:

- Earthquake magnitudes may be underestimated; Japan was not prepared for the severity of shaking and subsequent flooding.
- Energy generation and distribution systems are vulnerable; and major transportation networks and port shipping will likely be disrupted.
- The early warning system worked well in Japan; a similar message system is in place in Mexico City.
- Gas shutoffs were done everywhere.
- There were instances of fire following earthquake/tsunami.
- Emergency response was sometimes tardy.
- The nuclear risk to nearby populations must be addressed;
- Firefighters need a reliable supply of water for firefighting.

Vice Chairman Pazin thanked Dr. Scawthorn for the update.

X. CALIFORNIA EARTHQUAKE LOSS REDUCTION PLAN UPDATE (Out of Order)

Mr. McCarthy noted that Dr. Guna Selvaduray had incorporated comments made by commissioners since the last meeting and developed a proposed scope and budget of \$49,500 for updating the California Earthquake Loss Reduction Plan. He said this update will have a more international focus, with a new element on agriculture and incorporation of lessons learned in Japan and other recent earthquakes. Mr. McCarthy proposed pairing down the documents initiatives from the current 146 in eleven elements to just 5 for each element. He suggested finishing the update by the end of 2012, forwarding it to Agency for review in January, and then to the Governor's office. He recommended that the Commission approve the scope and budget as proposed.

ACTION: Commissioner Peggy Hellweg made a motion, seconded by Commission Knudson, that:

The Commission approve the proposal and budget as presented.

* Motion carried, 9 – 0.

XIII. RESEARCH PROJECTS UPDATES (Continued)

4. Office of Public School Construction Seismic Retrofit for Schools Project Closeout Report

Senior Structural Engineer Henry Reyes noted that the Seismic Safety Commission provided the Office of Public School Construction (OPSC) with \$200,000 to develop an evaluation template to assist school districts in applying for the \$200 million available for retrofits that the voters approved in Proposition 1D. He reported that the template was completed, and 9 districts applied to use the template to evaluate 21 buildings. The standards were then expanded to broaden eligibility, and 42 more buildings were evaluated for retrofit potential. Mr. Reyes advised that \$230,000 was spent so far to identify 63 qualified projects. He estimated that these projects alone would use up most of the \$200 million Prop. 1D funds.

At 11:43, the meeting was recessed for lunch. Vice Chairman Pazin reconvened the meeting at 1:00 p.m.

XI. USING TSUNAMI DATA TO FORECAST TSUNAMI FLOODING

Mr. McCarthy noted that the 1992 edition of *California at Risk*, the state's loss reduction plan at that time, dealt with the threat of tsunamis from distant and local sources, an issue that was met with some resistance. However, after a tsunami later that year resulted in flooding in Point Arena, California officials took more interest in the matter. Mr. McCarthy displayed slides Dr. Eddie Barnard had prepared showing the worldwide map of tsunami detection buoys and deep-ocean assessment equipment used to forecast tsunamis. He compared the accuracy of forecasts

with real tsunami effects in Japan. He noted that California is engaged in dialogue with Mexico about filling the gap off the Baja coast.

GLOBAL TSUNAMI BUOY NETWORK

Mr. Robert Lawson, Vice President, SAIC, Inc., a manufacturer of tsunami buoys and bottom pressure recorders, discussed the global network of tsunami buoys. He noted the world is divided into four major regions: Pacific Ocean, Caribbean, Indian Ocean, and Northeast Atlantic and Mediterranean, and he displayed maps showing the present system.

Mr. Lawson described the types of buoy systems available and explained how they work. He showed pictures of deployments. He said the next generation of easy-to-deploy buoys are being tested for use this year, and new systems are in the final stages of production. He said the latest version is smaller, with core components and new meteorological instruments in a new package,

Vice Chairman Pazin thanked Mr. Lawson for his presentation.

XII. JAPAN'S RECOVERY FROM THE MARCH 11, 2011 EARTHQUAKE/TSUNAMI

Commissioner Miyamoto summarized Japan's progress in reconstructing after the 2011 earthquake and tsunami disaster. He said the government announced a reconstruction policy last summer to create a decentralized system of special districts to allocate funding to affected local governments, to provide better tsunami protection, and to develop alternate sources of energy generation for the future.

Commissioner Miyamoto described the special districts and types of projects they would administer. He noted that the special districts will offer relaxed criteria, new zoning, special taxes, and special loans for business and residential reconstruction. He said direct losses from the 2011 disaster are estimated at \$210 billion, and \$290 billion has been committed for reconstruction, coming from a combination of national bond proceeds, sales taxes, and future taxes. Commissioner Miyamoto observed that Japan is catching up quickly, and its economy is even stronger than it was in the months leading up to the earthquake.

Commissioner Miyamoto observed that reconstruction and recovery in New Zealand seems to be going in the opposite direction, with \$20 billion in claims and widespread demolition of buildings. He said the central government swept into central Christchurch immediately following the earthquake and red-tagged the whole area, killing commerce for the next year and a half. He noted that not much seismic strengthening is going on, although the efficacy of retrofit was demonstrated once again, because people have transferred their risk to the national insurance program, and building owners are opting to submit claims and rebuild completely. Commissioner Miyamoto expressed alarm that exposure to another earthquake is extremely high right now, with the national insurance system's funds already severely depleted.

Vice Chairman Pazin thanked Commissioner Miyamoto for the update.

XIII. RESEARCH PROJECTS UPDATES (Continued)

2. Shake Table Test of 5-Story Building at UCSD Update

Senior Structural Engineer Fred Turner drew attention to his diagram handout describing the shake-testing project going on at UC San Diego. He noted that he, Mr. McCarthy, Chairman Gardner, and Commissioner Tim Strack visited the site on April 17. He reported that researchers were about halfway through their shake tests, with only a couple more shake tests planned before the structure is ready to burn.

Mr. Turner advised that there are a few follow-up tests researchers would like to include, one that entails strapping life-size dummies to gurneys, hospital beds, and tables, and another for mobile go-pro cameras that can be worn into a disaster area to record conditions in real time.

3. Evaluations of Recent Hospital Evacuations

Mr. Turner noted that the Commission allocated \$50,000 in research funds to the Pacific Earthquake Engineering Research (PEER) project analyzing how hospitals handled major earthquakes in Mexico, New Zealand, and Chile. He said the purpose of the study was to quantify each hospital's loss of function, to draw lessons learned, and to identify follow-up steps. He observed that in general, horizontal evacuation is less disruptive than vertical evacuation, but hospitals often move patients from floor to floor. He noted that common themes were: 1) Extensive damage to communication systems with outages of land lines and cell phones caused problems with hospitals; 2) Power utilities were severely damaged, and many backup systems had problems that could have been prevented with regular testing and maintenance; 3) Water and wastewater systems malfunctioned; 4) Structural damage was not severe, and nonstructural damage was a greater problem; vulnerability of electronic medical records also needs to be addressed.

Mr. Turner said water leakage was cited as a major factor in hospitals' decisions to evacuate patients. He noted that hospital buildings can be rendered inoperable even without actual structural collapse. He emphasized the need to prevent nonstructural damage, improve communication systems, have redundant power and utility systems, train people to respond effectively in emergencies, and encourage mitigation and preparation.

Mr. Turner advised that the final report on this project would be issued soon.

XIII. LEGISLATIVE UPDATE

Legislative & Special Projects Manager Dave King said the deadline for bills leaving their houses of origin is June 1, so many bills were being heard by committee, and some were being forwarded on to the Appropriations Committee. He noted that many bills are being sent from Appropriations to Suspense because there are no funds available for implementation.

Mr. King indicated that the Commission has been following SB 1002, a bill that requires all public records to be maintained in electronic form, meaning old nonelectronic records must be

scanned and saved as a searchable, indexable file. He stated that most of the Commission's records were already in electronic form, so SB 1002 would not create big problems for the Commission.

Mr. King noted that SB 1065, dealing with post-earthquake water supply for firefighting, was sent from Appropriations to Suspense. Commissioner Mathew Ortiz advised that the author is working to narrow the scope of the bill and reduce its costs. He said the Suspense threshold is \$50,000 for Senate bills and \$100,000 for Assembly bills.

Mr. King described SB 1272 as legislation aimed at Division of the State Architect's process improvements. He reported that the bill was heard by a select committee the previous week. He noted the bill will go to Appropriations next, but no funding source has been identified. He added that Governor Brown will likely veto any bills that raise issues local governments could resolve, bills calling for general fund appropriations, and bills that create new unfunded mandates.

XIV. EXECUTIVE DIRECTOR'S REPORT

Budget Update

Mr. McCarthy referred to the last budget reconciliation worksheet for a summary of the Commission's revenues and expense for the current fiscal year. Mr. King added that the staff met with an analyst from Contracted Fiscal Services to review the year-end fiscal status, and the Commission's budget appears to be in good shape, in part due to reductions in travel.

Mr. McCarthy advised that the staff anticipates a balance of approximately \$73,000. He recommended allocating up to \$70,000 to pay for personnel and accounting services.

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

The Commission authorize prepayment of up to \$70,000 for accounting and personnel services for the next fiscal year.

* Motion carried, 8 – 0 (Commissioner Emir Macari absent during voting).

Mr. McCarthy noted the Commission will no longer receive money from the Insurance Fund as of July 1, 2012, so a permanent funding source needs to be arranged before then. He reported that the Commission submitted a budget change proposal (BCP) last fall proposing that the arrangement be made permanent, but at a prehearing with members of the Senate and Assembly, the legislative analyst cautioned that taking money from the Insurance Fund was an unconstitutional tax.

Mr. McCarthy cautioned that this year's solution is a one-time option because there will be no overhead or Insurance Fund balance the next year. He welcomed suggestions from

commissioners about future funding sources and promised to keep the Commission posted as news becomes available.

Mr. McCarthy recommended that the Commission establish an Emergency Budget Committee to make final decisions, and he suggested appointing Chairman Gardner and Vice Chairman Pazin to serve on that committee. There was consensus supporting the creation of the committee to make decisions regarding the FY 12/13 budget.

Commissioner Jim McGowan said the Building Standards Commission secured an alternate source of funds tied to issuance of building permits.

Independent Peer Review Panel for Diablo Canyon Update

Mr. McCarthy said he and Senior Engineering Geologist Robert Anderson have been serving on a peer review panel to advise PG&E on what surveys need to be taken. He noted the Commission will receive \$30,000 over two years to help identify suitable geologic targets for investigation. Mr. McCarthy reported that the California Public Utilities Commission (CPUC) expanded the scope of the review to include the capabilities of the ship to gather geophysical data, how the data are processed and an audit of contract expenditures, areas outside the Commission's expertise. Mr. McCarthy proposed that he and Mr. Anderson continue to participate in the process, and he recommended sending a letter to the CPUC urging the CPUC to hire an industry consultant, an academic representative, someone from the State and Federal government. Expanding the reviewers from one to three would be a more balanced approach and reduce the perception of conflict of interest.

ACTION: Commissioner Strack made a motion, seconded by Commissioner Hellweg, that:

The Commission authorize sending a letter to the CPUC expressed the concerns articulated by the staff.

* Motion carried, 8 – 0 (Commissioner Macari absent during voting).

Review Commission Committee Assignments

Ms. Cogan drew attention to the revised committee rosters. She advised that Commissioner Miyamoto would serve as the Commission's representative to the State Historic Building Safety Board, and Commissioner Jim McGowan would represent the Commission on the Hospital Building Safety Board.

Meeting Dates and Locations for 2012

Mr. McCarthy noted that future Commission meetings were scheduled for June 14, likely to be a teleconference meeting, and then July 12, if the state budget is approved by then. Vice Chairman Pazin observed that it might be helpful to have a meeting toward the end of June to discuss budget items. Ms. Cogan noted there might be problems moving meetings from the second

Thursday of the month. Commissioner Miyamoto recommended sticking with the originally published meeting dates.

Mr. McCarthy proposed holding June 14 open for a teleconference meeting, considering a Sacramento meeting on July 12, meeting out of town on September 13, and then holding meetings in Sacramento on November 8 and possibly December 13. He suggested revisiting the meeting schedule once the budget has been signed.

XV. PUBLIC COMMENT

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

XVI. GOOD OF THE MEETING

Ms. Cogan asked commissioners to submit their travel reimbursement claims as quickly as possible so they can be processed before the end of the fiscal year.

XIX. ADJOURNMENT

There being no further business, Commissioner Knudson made a motion, seconded by Commissioner Strack, that the meeting be adjourned. The motion was carried unanimously by all present and the meeting was adjourned at 3:10 p.m.

Sue Celli
Office Manager

Approved by:

Richard McCarthy
Executive Director