



State Of California

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION



Arnold Schwarzenegger, Governor

Alfred E. Alquist Seismic Safety Commission
Minutes of Meeting
September 10, 2009
Portola Hotel and Conference Center
Two Portola Plaza
Monterey, California

Members Participating

Mark Church, Chair
William Chubb
Sharron Leason
John Littrell
Elizabeth Mathieson
Gary McGavin
Ali Sadre
David Thorman
David Walls

Members Absent

Sally Kay
Christina Curry
James Schwab
Michael Stevens

Staff Participating

Richard McCarthy, Executive Director
Karen Cogan, Executive Assistant
Henry Reyes, Structural Engineer
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 10:00 a.m. and Executive Assistant Karen Cogan called the roll.

II. CHAIRMAN'S REMARKS

Chairman Church welcomed everyone and said the Commission was pleased to be meeting in Monterey to spotlight the seismic risk along the Central Coast. He noted the Commission regularly visits different regions in California.

Chairman Church said the Commission and other state agencies are facing major budget cuts in the months ahead. He advised that the Commission lost seven members in July because the governor held off on making any reappointments. He observed that the Commission remains committed to its mission and objectives and will continue to meet.

Chairman Church expressed his appreciation to Ms. Cogan and the Monterey County Visitors Bureau for arranging the meeting accommodations. He thanked the Portola Hotel and Conference Center for hosting the meeting and offering low government rates.

III. WELCOME FROM LOCAL ELECTED OFFICIALS

Monterey County Supervisor Lou Calcagno welcomed the Commission to the Central Coast and applauded the Commission for its vital work in improving earthquake safety.

Supervisor Calcagno stated that Monterey and Santa Cruz Counties are of critical importance to the economy of the state and the nation because they produce 80 percent of all the vegetables and fruits grown in the U.S. He said Monterey County straddles the San Andreas Fault and is considered by some to be the earthquake center of California. He pointed out that this high seismic risk poses a threat to major transportation corridors and infrastructure networks.

He encouraged the Commission to enjoy its stay in Monterey and keep up its good work.

IV. OVERVIEW OF SEISMIC HAZARD IN THE MONTEREY BAY AREA

Dr. John Boatwright, U.S. Geological Survey, gave a presentation summarizing the seismic hazards in the Monterey Bay area. He pointed out the location of major faults and showed slides of damage that occurred in past earthquakes. Dr. Boatwright advised that research indicates that damaging earthquakes in the future will likely occur on either the Calaveras Fault, the Santa Cruz segment of the San Andreas Fault, or the southern segment of the San Gregorio Fault. He encouraged people to use the Northern California shake maps to view more details of affected areas and probable levels of damage.

Chairman Church thanked Dr. Boatwright for his informative presentation.

V. CENTRAL COAST EMERGENCY OPERATIONS OVERVIEW

Ms. Sidney Reade, Emergency Services Planner, Monterey County Office of Emergency Services, said the uncertainty about when earthquakes will occur and how strong they will be gives emergency managers an opportunity to keep a high level of awareness within the community. She noted that the Monterey County operational area covers 12 cities, 44 special districts, and 27 school districts. She described her background as a fire captain during the Loma Prieta earthquake and reported that the Monterey area experienced landslides, chimney collapses, power outages, and gas leaks.

Ms. Reade discussed the Monterey County Office of Emergency Services' planning efforts with local schools, businesses, and citizen groups. She reported that programs include drills twice a year, interagency tabletop exercises, implementation of the incident command system, a school buddy program, and parent reunification drills. She said Monterey is working with neighbors to develop a regional plan.

Ms. Reade discussed the fire service mutual aid system. She said Monterey County has an experienced hazardous materials team as well as people with special training in rescue operations. She noted that all public employees have a responsibility to help in disasters, and the county will see that each individual is properly trained to specialize in a particular area. She

emphasized the importance of ongoing training, planning, and redundancies in ensuring a successful response to disasters. She advised that Monterey County was the first county in the state to partner with the Society for the Prevention of Cruelty to Animals to care for and evacuate animals.

Ms. Reade commented that preparing for a potential H1N1 flu epidemic will be an exercise in maintaining continuity of government functions. She noted the 40 percent expected absenteeism rate will be a major challenge if the flu epidemic occurs at the same time as heavy rains and mudslides, which are likely results of an El Niño season this year.

Chairman Church thanked Ms. Reade for her interesting presentation.

VI. MONTEREY BAY OCEAN BOTTOM BROADBAND OBSERVATORY

Ms. Barbara Romanowicz, Professor of Geophysics, Director, Berkeley Seismological Laboratory, discussed the Monterey Ocean Bottom Broadband (MOBB) project undertaken in cooperation with the Monterey Bay Aquarium Research Institute. She explained that the observatory is part of an effort to create a global seismographic network. She displayed a map of existing instrument stations and pointed out the location of the station in Monterey Bay. She indicated that the Monterey Bay site is about 14 kilometers off-shore from Moss Landing.

Ms. Romanowicz stated that the MOBB project is a pilot program that represents the first step towards completing the Northern California on-shore broadband seismic network. She indicated that sensors were installed in Monterey Bay in 2002 and have worked successfully for seven years. She said connection of the sensors to the Monterey Accelerated Research System (MARS) cable allows real-time monitoring of off-shore seismicity and tectonics.

Chairman Church proposed taking a portion of the Executive Director's Report out of order while waiting for Ms. Romanowicz to set up her video equipment.

IX. EXECUTIVE DIRECTOR'S REPORT (Out of Order)

San Francisco PUC Project

Mr. McCarthy drew attention to the handout commissioners received before the meeting.

Commissioner Littrell reported that consistent with the Commission's recommendations last year, the San Francisco Public Utilities Commission successfully revised and published a design requirements manual for its infrastructure improvement project and convened a panel of independent reviewers. He said the reviewers met twice to consider the project revisions, with a special focus on the area where the pipeline crosses the Hayward Fault. Commissioner Littrell advised that the SFPUC anticipates some additional schedule delays due to notification requirements and the time taken by environmental impact reviews. He stated that the Commission's task is to determine whether the further delays will impact the seismic safety of the project, and comments are due by December 1. Commissioner Littrell said Senior Structural Engineer Fred Turner prepared a summary of key issues and delays.

Commissioner Littrell observed that the Commission will need to review and comment on the SFPUC project in the future, and he recommended arranging for adequate staff support to accommodate this process on an ongoing basis.

Mr. McCarthy noted that the Commission will hear more about the San Francisco PUC project at the next meeting.

VI. MONTEREY BAY OCEAN BOTTOM BROADBAND OBSERVATORY (Continued)

Ms. Romanowicz played a 10-minute DVD showing the 2002 installation of the sensor instruments and their connection to the MARS cable. She said the data so far is being analyzed, and scientists are already learning more about waves, background noise, and seismic vibrations.

Ms. Romanowicz said MOBB has already set a record with its seven years of operation. She noted that electronic equipment usually needs to be replaced every five or ten years; she added that the seismometer is expected to operate for as long as twenty years.

Ms. Romanowicz noted the location was selected for convenience based on its proximity to shore and the depth of the water at that spot. She said the data collected there can be used to investigate other potential sites. She added that it might be better to place the sensors farther away and deeper to provide a broader view and minimize some of the background noise.

At 12:02 p.m., the meeting was recessed for lunch. Chairman Church reconvened the meeting at 1:15 p.m.

Chairman Church asked Commissioners Littrell, Sadre, and Mathieson to serve as an Ad Hoc Committee for Review of the San Francisco PUC Project.

VII. APPOINT NOMINATIONS COMMITTEE

Chairman Church appointed Commissioners David Walls and Gary McGavin to serve as a Nominations Committee to propose a slate of officers.

X. COMMISSION RESEARCH PROJECTS UPDATES (Out of Order)

The Field Act and its Relative Effectiveness in Reducing Earthquake Damage in California Public Schools - Report and Appendices

Dr. Guna Selvaduray, Executive Director, Collaborative for Disaster Mitigation, San Jose State University, introduced his associate, Professor Steven Vukazich, and Mr. Dave Murphy, structural engineer.

Dr. Selvaduray explained that the objective of the Field Act building performance research project was to determine the effectiveness of the Field Act in reducing damage compared to

other buildings. He said the researchers used existing data and interviewed individuals to gather information on the damage to public and private school sites in fifteen significant earthquakes since 1934. He noted that the study also looked at use of schools as emergency shelters.

Dr. Selvaduray drew attention to the list of earthquakes on Page 4 of the draft report and the findings on Page 16. He said the study found there was less damage to public schools than other buildings, damage that did occur was relatively minor, and there was minimal life-threatening structural damage. He advised that most damage to public schools was attributed to nonstructural items such as ceilings, light fixtures, and building contents. He added that legislators and state government officials are the target audience for the report, so the document was written in easy-to-understand and nontechnical language.

Dr. Selvaduray expressed appreciation for the assistance provided by the Seismic Safety Commission, the ad hoc committee, Mr. Murphy, the Red Cross, the City of Los Angeles, the Division of the State Architect (DSA), and others.

Commissioner Littrell commented that this draft represents a considerable improvement over the previous version. He said he was still concerned that the conclusions were not fully supported by the research. He questioned whether certain other factors such as code changes, improvements in structural and geotechnical engineering, and better materials and construction methods had been overlooked as contributors to the improved seismic performance. He recommended wording the conclusions more thoughtfully to recognize other factors too.

Professor Vukazich noted that the report does contain some language that addresses this concern. Dr. Selvaduray commented that the researchers' task was not to study the effect of code changes, but to look at the relative performance of Field Act buildings. He pointed out that the Field Act uses the existing building code. He said the report recognizes that overall performance has improved and the differences have narrowed over time. Mr. McCarthy observed that the scope of this project was limited as Dr. Selvaduray indicated. He suggested that the Commission consider a follow-up project to look at other factors contributing to better performance.

Commissioner Mathieson noted that it might be possible to address Commissioner Littrell's concern by including a simple schematic graph showing how building performance has improved over time and illustrating that Field Act buildings have performed at a higher level than non-Field-Act buildings.

Commissioner McGavin asked commissioners to email further comments and suggestions to Special Projects Manager Henry Reyes by September 18.

Chairman Church thanked Dr. Selvaduray for the update.

Tsunami Threat to Ports of Los Angeles and Long Beach

Dr. Burak Uslu, Research Scientist, Pacific Marine Environmental Lab, National Oceanic and Atmospheric Agency (NOAA), provided an update on the Commission-funded research project examining the tsunami threat to the Ports of Los Angeles and Long Beach. He reported that

NOAA and the Pacific Marine Environmental Lab developed the world's first tsunami forecasting system using deep-ocean detection technologies and tsunami inundation models. He showed slides of damage from a tsunami that hit Crescent City in November of 2006 and said the new forecasting system produced projections that were very similar to what was actually observed.

Dr. Uslu noted that tsunamis are a big concern to California because of the large coastal population and major ports. He said this project focused on risks to the ports of Los Angeles and Long Beach using existing inundation models and comparisons with other studies. He displayed a slide identifying the key tsunami sources in the Pacific area. He indicated that a number of actual tsunami events were used to predict current velocities and maximum wave heights.

Dr. Uslu described how signals from deep-ocean buoys are transmitted to shoreline receivers to project a wave spread. He showed a simulated tsunami event and pointed out possible impacts to major ports.

Dr. Uslu stated that the study identified 11 possible sources of tsunamis that could threaten the California coastline and determined that these events could generate waves up to 2 meters high and currents of more than 8 knots. He recommended a more detailed hazard assessment study of all California ports using the NOAA forecast system.

Chairman Church thanked Dr. Uslu for his informative presentation.

IX. EXECUTIVE DIRECTOR'S REPORT (Continued)

Budget

Mr. McCarthy drew attention to the preliminary budget projections in the handout distributed to commissioners earlier. He said the Commission expects to break even by year-end. He observed that better information will be available over the coming months. He added that the Commission has not yet charged any overhead expenses for the research program.

Federal Stimulus Fund Letter of Support

Mr. McCarthy recommended that the Commission send a letter supporting the Coachella Valley Emergency Managers Association's request for a \$2.6 million federal stimulus grant to install an earthquake early warning system in strategic locations in local schools and fire stations. He referred to the information in the meeting packet for more details.

ACTION: Commissioner McGavin made a motion, seconded by Commissioner Chubb, that:

The Commission send a letter of support as requested.

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

Rescheduling Tsunami Presentation

Mr. McCarthy advised that Professor Costas Synolakis apologized for having to miss the meeting and asked that his report on the tsunami threat to the Central Coast be rescheduled for the October meeting.

XI. PUBLIC COMMENT

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

VIII. APPROVAL OF JULY 2009 MEETING MINUTES (Out of Order)

Commissioner Mathieson pointed out that this agenda item had been skipped earlier in the meeting.

ACTION: Commissioner Thorman made a motion, seconded by Commissioner Mathieson, that:

The Commission approve the minutes of the July 9, 2009 meeting as presented.

* Motion carried: 9 - 0.

XII. MISCELLANEOUS AND GOOD OF THE MEETING

Commissioner Mathieson reported that the Bay Area Earthquake Alliance met on board the aircraft carrier *Hornet* in Alameda in August. She said the *Hornet* is applying for federal funds to become a floating emergency operations center, similar to a sister ship on the East Coast. She said this self-contained and secure vessel has space for helicopters, a control tower, communications equipment, kitchen facilities, and housing. She suggested inviting an Alliance representative to make a presentation at a future meeting and recommended that the Commission send a letter in support of this application. She provided commissioners with brochures describing the project in more detail.

Chairman Church proposed agendizing this topic for discussion at a future meeting.

XIII. ADJOURNMENT

There being no further business, the meeting was adjourned at 2:24 p.m.

Sue Celli
Office Manager

Approved by:

Richard McCarthy
Executive Director