

Seismic Safety Commission  
Minutes of Meeting  
October 10, 2002  
Long Beach Hilton  
701 West Ocean Blvd.  
Long Beach, California

**Members Participating**

Bruce R. Clark, Chairman  
Stan Y. Moy, Vice Chair  
Andrew Adelman  
Jim Beall  
Mark Church  
William L. Gates  
Lucy Jones  
Lawrence T. Klein  
Douglas E. Mochizuki  
Linden Nishinaga  
Celestine Palmer  
Don Parker  
Ashok S. Patwardhan  
Daniel Shapiro

**Members Absent**

Senator Richard Alarcon/Chris Modrzejewski

**Staff Participating**

Richard McCarthy  
Robert Anderson  
Sue Celli  
Karen Cogan  
Henry Reyes  
Henry Sepulveda  
Fred Turner  
Vince Vibat

**I. CALL TO ORDER/ROLL CALL**

The meeting of the Seismic Safety Commission was called to order by Chairman Bruce Clark at 9:00 a.m. Secretary Sue Celli called the roll and confirmed the quorum.

**II. CHAIRMAN'S REMARKS**

Chairman Clark thanked Commissioner Patwardhan for chairing the Strong Motion Instrumentation Advisory Committee for the past two years. He commended Commissioner Patwardhan for his strong leadership and noted the SMIAC is widely respected for promoting strong motion instrumentation to monitor building performance and ground motions in the state. Chairman Clark said he hoped to appoint a new chair in the near future.

**III. APPROVAL OF SEPTEMBER 12, 2002 MEETING MINUTES**

**ACTION:** Commissioner Jones made a motion, seconded by Commissioner Beall, that:

*The Commission approve the minutes of the September 12 meeting as amended.*

Commissioner Nishinaga proposed a few changes. On Page 10, Section X, last paragraph, he suggested rewording the second and third sentences as follows: "He noted that based on his own

experience attending conferences in Japan, **there appear to be gaps between Japanese engineers' and American engineers' understanding of the state of the art in earthquake science.** Commissioner Nishinaga volunteered to help **the Commission fill some of these gaps through the recently executed Cooperative Agreement between the State of California and the Prefecture of Shizuoka."**

Referring to Page 8, Item VIII, first line, Commissioner Shapiro noted Mr. Martin's full name is actually John A. Martin, **Jr.**

\* Motion carried, 14 - 0.

#### **IV. EXECUTIVE DIRECTOR'S REPORT**

Executive Director Richard McCarthy thanked Commissioner Nishinaga for his assistance in arranging the tour of the Long Beach Harbor.

##### **FEMA Appeal**

Mr. McCarthy drew attention to letter from the Federal Emergency Management Agency (FEMA) under Tab B of the meeting packet denying the Commission's appeal. He noted FEMA's audit last year identified \$260,551 in costs related to the Northridge earthquake report that were then disallowed. Mr. McCarthy said the disallowed costs represented matching funds in the form of commissioner time and printing costs for extra copies of the report. He added that in discussions with FEMA's Region IX, it appears there are some misunderstandings regarding the accounting of matching funds. Mr. McCarthy noted that if the issues cannot be resolved with Region IX, the Commission will file a second appeal.

Chairman Clark confirmed that FEMA's regulations allow for soft matches in the form of donated time; Mr. McCarthy said the staff will cite those regulations in the second appeal.

##### **Possible Office Relocation**

Mr. McCarthy informed the Commission that there is a possibility the Commission offices will be moving to another location when the lease expires next February. He noted the current landlord is asking for \$1.80 per square foot, an increase of 30 cents per square foot. Mr. McCarthy said he would provide an update at the November meeting.

##### **November Meeting**

Mr. McCarthy reminded commissioners that the November meeting will be held on Monday, November 25, in Sacramento beginning at 10:00 a.m. He noted the main focus of the meeting will be review and approval of the AB 16 Advisory Committee's report and recommendations. Once approved by the Commission, the committee's report will be delivered to the Governor's Office by December 15, one month ahead of schedule. Mr. McCarthy emphasized the importance of this issue for the seismic safety of the state and urged all commissioners to attend.

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He said commissioners unable to attend in person should contact the staff in order to make teleconference arrangements.

Mr. McCarthy noted the Commission expended approximately \$20,000 on the AB 16 effort as of the end of September, and there will be two more committee meetings before their work is concluded. He said a final invoice will be submitted to the Department of Finance and Governor's Office for reimbursement.

## **V. COMMITTEE REPORTS**

### **Budget and Planning Committee**

Commissioner Gates drew attention to the budget status report. He noted the budget reflects the 5 percent cut requested by the Department of Finance. Commissioner Gates said there is a possibility of receiving reimbursement for some expenditures, such as those associated with AB 16. He asked the Commission to approve designation of Mr. McCarthy as the Commission's agent to work with the Office of Emergency Services (OES) to seek reimbursement.

**ACTION:** Commissioner Gates made a motion, seconded by Commissioner Mochizuki, that:

*The Commission designate Mr. McCarthy as its agent to work with OES to seek reimbursement for expenditures.*

Commissioner Mochizuki suggested designating the executive director rather than any specific individual to act as the Commission's agent. Commissioner Gates accepted that modification.

\* Motion carried, 14 - 0.

## **VI. AB 16 ADVISORY COMMITTEE UPDATE - PUBLIC SCHOOLS AND SEISMIC RETROFITS**

Commissioner Stan Moy reported that the AB 16 Advisory Committee held its third meeting on September 19 in Oakland. He said the meeting featured testimony from structural engineers and DSA representatives. Commissioner Moy noted the next meeting is scheduled for October 17 in San Diego, and the last meeting of the committee will be held on November 21 in Sacramento.

Commissioner Moy referred to the committee's preliminary draft report, provided under Tab D of the meeting packet. In particular, he drew attention to the "Overall Justification" section on Page 8 and the seven recommendations following that section.

Staff Structural Engineer Henry Reyes noted Page 6 shows the committee's meeting schedule and the main topic for each meeting. He pointed out that the October 17 meeting will feature testimony from school district representatives. Mr. Reyes said Page 6 also contains a list of issues raised in the committee meetings so far, and Page 7 lists the individuals who provided testimony on seismic retrofit and application of the Field Act. He noted the recommended

finding at the top of Page 8 will be discussed and determined by the committee at the November meeting.

Mr. Reyes noted the “Overall Justification” section discusses the concept of equivalent pupil safety performance and provides background on Field Act requirements. He said the specific recommendations address development of new regulations by the Division of the State Architect (DSA) regarding conversion of existing buildings to schools, informing school districts that conversions may be more expensive and time-consuming than new construction, developing a feasibility checklist to help school district facility managers and design professionals screen buildings to identify reliable candidates for conversion, new testing and inspection procedures to verify the strength and stiffness of critical elements and connections in existing buildings, identifying specific types of buildings that are best suited for conversion, developing requirements for performance-based seismic engineering and independent peer review, and addressing non-seismic requirements for converted buildings.

Mr. Reyes noted the committee’s report will include a list of members and a brief description of their backgrounds and qualifications.

Commissioner Moy thanked Mr. Reyes for his work. He said committee members are pleased with the progress made so far. Mr. McCarthy added that the Department of Finance is also pleased with the committee’s work. He noted the Department of Finance will be paying close attention to the committee’s recommendations and justification. Mr. McCarthy commended the staff and the committee for their work.

Commissioner Shapiro noted AB 16 explicitly indicates that converted buildings must provide an equivalent pupil safety performance standard as buildings constructed according to the Field Act, and “equivalent” performance is defined in the California Building Code as an ability to resist major earthquake forces without risk of collapse. Commissioner Shapiro said the key problem is whether existing buildings can be retrofitted in such a manner that the expected performance equals that of a Field Act building. He emphasized that converted buildings do not have to meet Field Act requirements, but they must perform at an equivalent level.

Chairman Clark observed that the report contains only a brief section on justification. He asked whether additional justification will be included within the recommendations themselves. Mr. McCarthy responded that the justification will be separate from the recommendations. He noted the recommendations may appear as part of the justification section. Chairman Clark suggested it might be helpful to add a separate paragraph under each recommendation to explain specific justifications related to the recommendation.

Commissioner Nishinaga noted the quotation in the second paragraph on Page 3 indicates school buildings are expected to “resist earthquake forces”; he suggested “withstand” might be a clearer term.

Referring to Page 4, second paragraph, last sentence, Commissioner Nishinaga asked whether “allowable stress design” should be “working stress.”

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In the recommendation on Page 10 regarding classifications of buildings, Commissioner Nishinaga noted there might be other types of buildings that are suitable for conversion as well as the three classifications mentioned. Mr. Reyes explained that the three classes identified are those recommended by structural engineers. He acknowledged there may be other types that do not fit in those three main categories.

Commissioner Jones observed that the three classifications identified in the report are based on how much information is available about their construction. She suggested considering listing certain other types of buildings, such as tilt-ups, that should not be considered because of the difficulty in bringing them up to reasonable standards. Commissioner Moy said there was considerable discussion about specific types of buildings, including wood-frame buildings, steel-frame buildings, and tilt-ups.

Commissioner Shapiro pointed out that some types that may appear unsuitable, like tilt-ups, might actually be good candidates because their roofs and connections are exposed and a considerable amount is known about their construction. He said the committee tried to avoid singling out construction type and focused instead on how much was known about the buildings.

Commissioner Nishinaga questioned the wisdom of transferring liability from individuals owners and design professionals to DSA in terms of certifying converted buildings. Mr. Reyes explained that under current regulations, architects and engineers are responsible for certifying that conversion projects comply with approved plans and specifications. He said that if DSA adopts new regulations for converting buildings consistent with the committee's recommendations, DSA will assume responsibility for certifying compliance. He noted that the feasibility checklist will help assure that more suitable buildings are selected for conversion in the first place.

Mr. McCarthy added that the purpose of the feasibility checklist is to provide a reliable screening process so there is less liability entailed. He said that both the Department of Finance and the Governor's Office expect the result of the conversion process to be a level of earthquake performance equivalent to the Field Act.

Commissioner Beall asked for clarification as to the meaning of "design professional." Mr. Reyes responded that design professionals are architects and engineers, including structural, mechanical, electrical, soils, and geotechnical engineers. Commissioner Shapiro clarified that design professionals are ultimately responsible for the safety of a given design. He added that DSA approves the design team working on every DSA project.

Mr. Reyes said descriptions and pictures of conversion case studies are available on the Web site.

Chairman Clark thanked Commissioner Moy and Mr. Reyes for the report. He congratulated the AB 16 Advisory Committee for its progress.

## VII. LEGISLATIVE REPORT

Director of Legislation Henry Sepulveda drew attention to the legislative report provided under Tab E of the meeting packet. He said the first section of the report is a recap of how Commission-sponsored legislation fared during the recently completed legislative session. He noted that of the eight bills sponsored by the Commission, three were signed into law (AB 184, AB 118, and AB 2002) and five failed to pass out of committees.

Mr. Sepulveda summarized the status of 34 bills on which the Commission took a position. He reported that 7 of the 17 bills supported by the Commission were signed by the governor, and 17 of the 18 bills opposed were either rejected by the Legislature or vetoed by the governor.

Mr. Sepulveda reviewed 2001-02 legislation affecting the Commission that was signed by the governor.

Mr. Sepulveda noted that AB 16 (Hertzberg) authorized issuance of \$25 billion in state bonds to finance new construction and modernization of public schools. As discussed in the previous agenda item, AB 16 also directs the Commission to form an advisory committee to study the feasibility of converting existing buildings to school buildings without compromising Field Act safety standards.

Mr. Sepulveda said AB 1000 (Simitian) allows three community college districts to enter into design-build contracts for campus projects exceeding \$10 million. In addition, the Chancellor of Community Colleges may select up to five projects for construction or renovation of campus facilities. Mr. Sepulveda noted that AB 1000 requires the Community Colleges Board of Governor to consult with the Commission and other state agencies in the development of design-build guidelines.

Mr. Sepulveda said a similar bill, AB 1402 (Simitian) allows local school districts to enter into design-build contracts for projects exceeding \$10 million, subject to DSA's approval of plans. Again, guidelines are to be developed in consultation with the Commission and other state agencies.

AB 1823 (Papan) requires the City of San Francisco to submit annual reports to the Commission describing progress on public works projects, including seismic improvements, to the Hetch Hetchy water system, plus special reports on any changes to the approved 2002 capital improvement plan. Mr. Sepulveda noted that as part of this bill, the City of San Francisco will be required to reimburse the Commission for any costs incurred in reviewing and responding to the reports.

Mr. Sepulveda noted AB 2002 (Alquist) directs the Commission, in consultation with OES, to establish an Urban Search and Recovery (USAR) Emergency Response Advisory Committee to develop a strategic plan with recommendations. The committee's report is due in September of 2003. Mr. Sepulveda said Chairman Clark appointed Commissioner Mochizuki to chair the committee, and the first meeting is scheduled for November 7.

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Mr. Sepulveda reported that the governor vetoed AB 1511 (Frommer), a bill that would have deleted the January 1, 2003, deadline for use of leased or purchased nonconforming school buildings. He noted the bill would have allowed nonconforming buildings to be used by schools under specified conditions. Mr. Sepulveda said the Commission opposed an earlier version of the bill, but Mr. Frommer inserted the contents of that bill in AB 1511 in the final days of the legislative session. At the last meeting, the Commission authorized the staff to send a letter to the Governor's Office opposing AB 1511, and the governor specifically cited the Commission's ongoing work on AB 16 as a justification for his veto.

Mr. Sepulveda noted SB 842 (Speier), a bill to allow extensions of the 2008 deadline for hospital seismic safety compliance, was eventually dropped by the author. He said the Commission supported limited extensions of the deadline in exchange for accelerating the more rigorous 2030 standards, but the Commission opposed giving OSHPD blanket authority to grant extensions on a case-by-case basis.

Mr. Sepulveda recommended that the Commission consider proposals for legislation in the new 2003-04 session. He reviewed a number of ideas proposed so far, including reintroduction of secured funding for the Commission's emergency earthquake investigations account, reintroduction of a state bond bill to fund seismic retrofitting of local government facilities, an omnibus hospital seismic safety bill authorizing a five-year extension of the 2008 deadline in exchange for accelerating the more rigorous 2030 hospital building standards, conforming technical requirements for K-12 design-build projects to the requirements for community college design-build projects, and reintroduction of 1990 legislation to identify and inventory potentially hazardous concrete buildings throughout the state.

Commissioner Shapiro asked when new bill proposals need to be submitted. In particular, he noted, the Commission needs to be proactive on hospital seismic safety legislation to counteract the pressure to do away with or weaken current deadlines. Mr. Sepulveda responded that the staff should draft proposals by the end of December so potential authors can be approached in January. He said legislators introduce bills in February, and bills are typically assigned to committees in March and April.

Commissioner Gates commented that hospital seismic safety will be a major issue in the next legislative session, and he recommended that the Commission focus its time and attention on this issue. Instead of just reacting to bills presented by others, he recommended that the Commission develop its own bill spelling out everything that should and should not be allowed on this issue. He noted having an omnibus bill sponsored by the Commission will encourage other legislators to keep their proposals consistent with the Commission's bill.

Commissioner Gates expressed doubt as to whether any new bond bills have a chance of passing during the next legislative session, and he cautioned against spending time on issues that are unlikely to succeed.

Commissioner Church agreed that the Commission should be proactive on hospital seismic

safety. He supported developing legislation similar to SB 842 to provide extensions of the 2008 deadline conditioned on accelerating the more stringent 2030 standard.

Commissioner Linden asked about the chances of finding an author for hospital seismic safety legislation. Mr. Sepulveda responded that a great deal depends on the nature of the bill and the level of sensitivity within the legislator's district and among his or her constituency. He noted Senator Speier and Senator Dunn both welcome the opportunity to champion hospital seismic safety legislation. He added he did not anticipate problems finding an author.

Commissioner Beall noted hospitals are an extremely important issue in his area. He said one private hospital in San Jose has already announced plans to close because of the exorbitant costs of doing seismic upgrades. Commissioner Beall pointed out there is a perceived hierarchy in hospital health systems, starting with trauma care centers and countywide emergency response facilities. He expressed his opinion that extending the 2008 deadline will be essential for many hospitals who have a huge backlog of seismic work and lack of financing, and he recommended also linking the deadline extension with a funding mechanism. Commissioner Beall suggested working with the hospital community to develop a bond bill; he noted a 50-50 match provision could entice support from the Legislature and incentivize the hospital community to move forward with the necessary work.

Mr. Sepulveda commented that during the last legislative session, the hospital association estimated the total cost of seismic retrofit work at \$20 billion to \$25 billion, so a proposal to provide only half of that amount through a 50-50 match may be viewed as inadequate. Mr. Sepulveda noted there were bills proposed during the last session that set up a prioritization system, which might be a reasonable approach to funding. He pointed out that a hospital seismic safety bond would compete against many other uses of state bond funds. He cautioned that the law forbids using state general obligation bonds to assist private, for-profit organizations, making many hospitals ineligible for bond funds.

Chairman Clark asked the staff to provide all commissioners a copy of the white paper developed by the Commission last year on the issue of hospital seismic safety.

Commissioner Adelman said the Hospital Building Safety Board would be meeting on October 23 and 24 in Monterey, and he recommended that Mr. Sepulveda attend. He noted representatives of OSHPD and the hospital industry participate on the Board, and compliance with SB 1953 is a major issue with that group as well.

Commissioner Jones supported Commissioner Gates' idea about developing a legislative proposal reflecting the Commission's consensus on what should and should not be allowed. She suggested that the Commission work with the Hospital Building Safety Board to identify areas of agreement and consensus. Chairman Clark noted the purpose of the Commission's white paper was to identify those key issues and make consensus-based recommendations. He agreed with Commissioner Adelman that it would be helpful for Mr. Sepulveda to attend the October meeting of the Hospital Building Safety Board and to maintain close contact with that entity.

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Mr. Sepulveda said that as a follow-up to the annual report of the Hospital Building Safety Board presented at the last meeting, the staff sent a letter indicating support and interest in working together on future legislation. He added that the staff hopes to get a response from the Board at the October meeting.

Commissioner Jones expressed an interest in exploring legislation regarding nonstructural standards for hospitals.

Chairman Clark asked commissioners to contact the staff with their ideas for future legislation. He noted earthquake insurance is another topic that might be worth pursuing, especially in light of the fact that a new Insurance Commissioner will be elected in November.

Commissioner Parker asked if other agencies will be approaching the Commission to co-sponsor legislation. Mr. Sepulveda said the Board of Equalization approached the Commission last session to co-sponsor a bill making technical corrections to tax law. He noted the structure of most state agencies requires them to make legislative proposals through the agency secretary and the Governor's Office, and that chain of approvals usually takes considerable time. The Commission, on the other hand, being an independent agency, is not subject to the same restrictions, so the Commission has the ability to approach legislators about carrying bills.

Chairman Clark thanked Mr. Sepulveda for his report. In terms of future legislation, Chairman Clark asked the Legislative Advisory Committee to review the ideas for legislation and make recommendations for the Commission's consideration at the November meeting.

### **VIII. RESEARCH AND IMPLEMENTATION PLAN FOR EARTHQUAKE RISK REDUCTION IN CALIFORNIA RESEARCH ACTIVITIES**

Chairman Clark noted this agenda item is a continuation of the Commission's effort to obtain information from key researchers and research users to assist in updating the *California Earthquake Loss Reduction Plan*.

As the first speaker, Chairman Clark introduced Dr. Tom Jordan, Executive Director, Southern California Earthquake Center (SCEC), and invited him to discuss SCEC's activities.

Dr. Jordan explained that SCEC is a consortium of research organizations studying earthquakes in Southern California under sponsorship of the National Science Foundation and the U.S. Geological Survey. He identified 14 institutions currently belonging to the consortium. Dr. Jordan said SCEC has a threefold mission: to gather information on earthquakes in Southern California, to integrate information in a comprehensive and predictive understanding of earthquake phenomena, and to communicate this understanding to end users and the general public in order to increase earthquake awareness, reduce losses, and save lives. He noted SCEC's main thrust is to translate research and understanding into practical information and knowledge.

Dr. Jordan reviewed some of SCEC's key activities and referred to his written report for more

details. He said SCEC gathers extensive geological information through its data centers, participates with other agencies in seismological networks, develops seismic stress maps, and compiles and stores information in regional databases. SCEC conducts integrated studies on seismic hazards and develops reports on earthquake probabilities, analyzes site effects, and creates new models to predict the occurrence of earthquakes in Southern California. Dr. Jordan noted SCEC shares information through a comprehensive communication, education, and outreach program. As examples, he said, SCEC fosters interaction among scientists and technical experts, offers educational programs to K-12 and college students, provides workshops for teachers, and supports user groups for regional emergency planners. Dr. Jordan reviewed some of SCEC's publications and brochures promoting earthquake awareness and preparedness. He noted SCEC also provides a wide range of earthquake information on its Web site.

Dr. Jordan described how SCEC collaborates with other research organizations and governmental agencies. He noted these partnership relationships allow SCEC to leverage its resources and knowledge to reach a wider audience than would otherwise be possible. Dr. Jordan discussed how SCEC's activities help advance the initiatives and goals articulated by the Seismic Safety Commission in the *California Earthquake Loss Reduction Plan*.

Dr. Jordan asked the Commission for help in obtaining state funds to support SCEC's activities.

Chairman Clark thanked Dr. Jordan for his presentation. He said the Commission will be looking at ways of addressing some of the impediments identified in Dr. Jordan's slide presentation.

Chairman Clark invited Dr. Paul Somerville, Earthquake Engineering Research Institute (EERI), to address the Commission.

Dr. Somerville noted EERI is a non-profit organization of earthquake scientists, engineers, public officials, emergency responders, and policy makers. He discussed the plan being developed by EERI for research and application of earthquake engineering research in the U.S. He said funding comes from the National Science Foundation, and he reviewed the members of the panel created to draft the research plan.

Dr. Somerville explained that the purpose of the research plan is to address the challenge of growing earthquake vulnerability; prevent catastrophic earthquake losses; use information technology to predict seismic hazards and assess and reduce earthquake impacts; enhance community resilience; and create opportunities to expand knowledge. Dr. Somerville showed charts demonstrating how earthquake losses are increasing as the population grows and urban areas become more dense. He identified obstacles to progress, including lack of knowledge about how earthquakes occur and how structures perform. He discussed the benefits of preventing and mitigating earthquake losses through intelligent risk management.

Dr. Somerville said EERI's research and application plan will feature information on hazard prediction, impact assessment, impact reduction, and loss mitigation. He reviewed some of the information technology resources that can be used to develop new knowledge and opportunities.

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In particular, he discussed two particular applications that hold promise for the future, the Advanced National Seismic System and the Network for Earthquake Engineering Simulation. Dr. Somerville noted other EERI research activities include shake maps, models for retrofit systems and repair techniques, a program for predicting earthquake hazards, tools to assess the built environment, structural simulation models, and system-level simulations. He said future needs include research on new materials and innovative structural systems, nonstructural systems, lifelines, geotechnical engineering, foundation design techniques, coastal engineering, fire protection and engineering, land use issues, methods for assessing cost-effectiveness of mitigation, financial instruments for risk transfer, and real-time emergency response tools.

Dr. Somerville concluded that substantial increases in funding are necessary to help make communities more resilient to earthquakes. He provided costs estimates for activities in hazard prediction, impact assessment, impact reduction, enhancing community resilience, and education and outreach over the next ten to twenty years. He welcomed assistance from the Seismic Safety Commission, industry, design professions, and other stakeholders.

Chairman Clark asked what audience EERI programs are intended to reach. Dr. Somerville said that besides providing information to EERI's membership, programs are targeted to funders of research, federal and state government agencies, building officials, and the professional community at large.

Commissioner Nishinaga noted that EERI members include representatives from many different types of organizations, and he asked how duplication of efforts is avoided. Dr. Somerville explained that EERI works with others to advance knowledge of earthquakes and improve building codes. He said that after major earthquakes, EERI publishes reconnaissance reports that are made available to a diverse range of users. Commissioner Jones commented that EERI is a professional organization that solicits interaction for the engineering community. She noted most EERI members are employed elsewhere. Chairman Clark pointed out that EERI plays a useful role in serving as a forum for engineers and nontechnical people to exchange ideas and share information.

## **X. MISCELLANEOUS - PUBLIC COMMENT (Out of Order)**

Chairman Clark said Mr. Richard Otterstrom, Coast Harbor Realty, Inc., had requested an opportunity to address the Commission on the issue of gas shutoff valves. Noting Commissioner Adelman had to leave early, he suggested taking public comment on this topic before moving on to the other presenters.

Mr. Otterstrom said he was speaking on behalf of the Apartment Association of the Los Angeles Board of Realtors. Mr. Otterstrom noted the City of Los Angeles has an ordinance requiring installation of gas shutoff valves at the point of sale on all properties with gas service. On September 20, the Los Angeles City Council approved a six-month moratorium on the point-of-sale issue for properties with multiple meters, primarily due to concerns about costs. Mr. Otterstrom explained the PUC last year began requiring gas shutoff valves on every meter rather than one valve on the supply line to a multi-unit building. He noted this decision placed a huge

cost burden on apartment owners, which will be passed along to tenants in the form of rent increases. In addition, the high cost may deter some owners from voluntarily installing gas shutoff valves to protect their tenants and their buildings.

Mr. Otterstrom expressed his opinion that point-of-sale restrictions are a slow and incomplete way to effect retrofit change. Instead of the current disincentive, he recommended creating incentives to encourage people to install gas shutoff valves. Mr. Otterstrom asked the Seismic Safety Commission to intervene with the PUC to request reconsideration of the decision to require shutoff valves on each meter.

Commissioner Adelman commented that gas shutoff valve installation is an important public interest issue. He said that when the PUC allowed gas shutoff valves to be installed on the gas company's side of the meter, costs were considerably lower, and he cited the example of a ten-building apartment complex with fifty units in each building. He noted installation of ten gas shutoff valves would cost about \$3,000, compared to \$150,000 for the 500 separate gas shutoff valves required by the current law. Commissioner Adelman stated the purpose of requiring gas shutoff valves is to prevent large fires in high-density areas, a goal that could be achieved by going back to the old system of installing valves on the supply line. He said the Los Angeles City Council is discussing this possibility with the gas company during the moratorium in an attempt to arrive at a more acceptable solution.

Commissioner Shapiro asked why the PUC authorized the policy change. Commissioner Adelman said gas companies expressed concern about their liability for maintaining gas shutoff valves and restoring gas supplies after earthquakes. He noted that requiring building owners to pay such high costs acts as a disincentive to getting gas shutoff valves installed. Mr. Otterstrom added that gas companies and their contractors were responsible for installing valves before the PUC policy changed. He said building owners are now required to get separate permits for each gas shutoff valve, and the devices must be installed on the owner's side of the meter.

Commissioner Klein said he was sympathetic to the concerns expressed by Mr. Otterstrom. He expressed his opinion that the benefits of gas shutoff valves are minimal, so their costs ought to be borne by the city because the city is requiring them.

Commissioner Gates asked what difference it makes if gas is shut off on one side of the meter or the other. Mr. Otterstrom responded that there can be a slight amount of gas left in the line on the owner's side. He added that gas companies were more concerned about their liability for installing valves on the owner's side of the meter.

Commissioner Jones pointed out that in most emergency situations, it would make sense to shut gas off to an entire building rather than just to certain units.

Chairman Clark said that based on testimony presented on the issue, the Seismic Safety Commission is skeptical about the safety value of gas shutoff valves. He noted the Commission is unlikely to intervene unless a clear safety benefit can be shown.

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Commissioner Nishinaga commented that a house being tented for termites recently exploded in Torrance due to what was preliminarily reported as a small amount of gas left in the supply line. He pointed out that this is a risk that needs to be taken into consideration as well. Mr. Otterstrom noted in that case, it would be better to have a valve on the gas company's side of the meter because the gas company could provide more reliable monitoring and servicing of valves than individual owners. Mr. Otterstrom added that he voluntarily installed gas shutoff valves on all of his apartment units because he felt the additional measure of safety was worth the cost.

Chairman Clark asked Mr. Otterstrom to articulate his concerns in writing to the Commission. He recommended focusing on the issue of seismic safety rather than costs. Mr. Otterstrom said he would consult with a number of installers for their input and then draft a letter for the Commission. Chairman Clark noted that after receiving the letter, the staff can advise the Commission as to what response would be appropriate.

Commissioner Adelman agreed with Chairman Clark that the seismic safety issue is of paramount importance to the Commission. However, he noted, costs and benefits also need to be considered. Commissioner Adelman observed that more building owners would be willing to install gas shutoff valves if the costs are reasonable, but high costs function as a disincentive.

Commissioner Parker noted that in the past, utility companies advocated for tax credits for consumers who installed energy-saving devices. He asked about the possibility of tax credits to offset the costs of gas shutoff valves for building owners. Commissioner Parker added that he agreed with Commissioner Klein that the safety value of gas shutoff valves is questionable.

Mr. Otterstrom volunteered to work with the Commission and others to explore the possibility of tax credit legislation.

Chairman Clark thanked Mr. Otterstrom for his comments.

## **VIII. RESEARCH AND IMPLEMENTATION PLAN FOR EARTHQUAKE RISK REDUCTION IN CALIFORNIA RESEARCH ACTIVITIES (Continued)**

Mr. Chuck Real, California Geological Survey (CGS), said CGS works with organizations like SCEC and PEER and other state agencies to incorporate earthquake research into products that support public policy at the local level. He presented a brief overview of some of CGS' applied research in three main areas: hazards assessment methodology, risk assessment methodology, and technology transfer.

Mr. Real said CGS, in cooperation with the U.S. Geological Survey and SCEC, generates probabilistic seismic hazard mapping. He showed a series of maps reflecting the kinds of information incorporated in the seismic hazard maps, including California earthquake history, background seismicity, data on slip rates for active faults, classifications of materials, and regional site conditions. Mr. Real discussed CGS's efforts to quantify ground displacements associated with earthquakes and liquefaction deformation.

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Mr. Real noted the seismic hazard maps and other tools can be used by local government agencies to assess risks in their areas and then minimize risks by making sound land use decisions. He said that as a result of working with CGS, the California Earthquake Authority (CEA) made adjustments in insurance premium rates for areas in northern California.

Mr. Real stated CGS is actively pursuing technology transfer to help lower the costs of mapping while improving accuracy and quality. As examples, he discussed a data-sharing program with the federal government, use of GIS technology and remote sensors to monitor changes in the earth's surface and temperature, airborne radar mapping with the U.S. Department of Defense, and satellite imaging systems. Mr. Real noted CGS also participates in the state's Strong Motion Instrumentation Program, an effort overseen by the Seismic Safety Commission.

Mr. Real said CGS is interested in working with the Commission to secure sustained funding for the seismic hazard mapping program.

Chairman Clark thanked Mr. Real for his presentation.

At 12:05 p.m., the Commission took a brief recess, followed by a working lunch.

Chairman Clark introduced Mr. Martin Eskijian, State Lands Commission, and invited him to address the Commission.

Mr. Eskijian noted the California State Lands Commission has sponsored research into the assessment of the performance of coastal structures, including marine oil terminals. He said the SLC recently developed new engineering and maintenance standards for marine oil terminals, which can be applied to other port and harbor structures in general.

Mr. Eskijian reviewed the statutory authority for the SLC's performance standards development project. He noted work began in response to concerns about the structural condition of marine oil terminals, many of which were constructed long ago and poorly maintained. He showed slides depicting damage to marine terminals in recent major earthquakes. Mr. Eskijian pointed out that damage and accidents can cause crude oil leaks, resulting in harm to the environment and high clean-up costs.

Mr. Eskijian said the Commission's *California at Risk* document provided the basis for a grant proposal to FEMA for funds to begin developing performance standards for marine oil standards. He expressed his appreciation to Mr. McCarthy and the Commission staff for their assistance and support in this effort.

Mr. Eskijian noted the standards for marine terminals are based on performance-based design principles and cover all aspects of construction, risk management, and maintenance, including underwater seismic assessment, mooring analysis, pylon assessment, and fire prevention plans. He said facilities are classified in three types based on the size of risk entailed. Mr. Eskijian reviewed the criteria for evaluating risk. He noted the standards call for regular monitoring and inspection by structural engineers, seismic analysis, geotechnical analysis, schedules for

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structural rehabilitation and repair, and long-term cost estimates.

Mr. Eskijian said the Port of Oakland has already begun using the SLC's seismic criteria for new and existing structures. He noted the Port of Los Angeles and the Port of Long Beach will be using the new standards as they move forward with plans for new wharves. NEHRP is also looking at the new standards, along with a number of international organizations.

Commissioner Nishinaga asked whether the standards can be applied to offshore facilities such as the Chevron facility in El Segundo. Mr. Eskijian noted the number of offshore facilities has decreased over the last five years. He said testing has shown the standards can also be applied to offshore facilities.

Commissioner Parker asked if the regulations will apply to liquefied natural gas terminals if and when they are built on the West Coast. Mr. Eskijian responded that there are no other standards available nationally or internationally, so the SLC standards will probably be used as a starting point. Commissioner Parker asked if storage tanks and pipelines will be subject to the regulations as well. Mr. Eskijian said he wished they did; he added storage tanks and pipelines are probably a bigger threat to Southern California than marine terminals. He pointed out that tsunamis and earthquakes could jeopardize tank farms situated in coastal areas.

Commissioner Shapiro asked if oil tanks and pipelines are regulated by other authorities. Mr. Eskijian said FEMA 368 addresses those facilities. He noted lifelines and pipelines are regulated by other agencies.

Commissioner Mochizuki suggested adding the SLC's use of *California at Risk* as an example of a successful program in the next issue of the *California Earthquake Loss Reduction Plan*. Mr. McCarthy commented that Mr. Eskijian's efforts were instrumental in obtaining funding for the project.

Chairman Clark asked about the process for adopting regulations incorporated the SLC's new standards. Mr. Eskijian said the regulatory process was initiated through the Office of Administrative Law, and if approved by two of the three representatives of the Lieutenant Governor, Comptroller, and Governor, probably sometime in 2003, the regulations will go into effect.

Chairman Clark thanked Mr. Eskijian for his presentation.

## IX. UPDATE ON SEISMIC HAZARD INFORMATION FOR LEGISLATORS

Chairman Clark noted the Commission embarked on this educational effort as a way of making legislators more aware of seismic hazards in their districts so they can respond more effectively after the next earthquake.

Senior Engineering Geologist Robert Anderson reported that the Commission staff has been working the CGS, OES, and CEA to develop a packet of information for legislators. He said the

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information will include a map of probabilistically-based shaking risk for California, which identifies anticipated levels of damage for different areas of California. Mr. Anderson noted other information in the packet will be a description of what happens in a typical earthquake and how various agencies respond, a list of contact numbers for current information, and an explanation of how disaster funds can be obtained. He said the staff hopes to have the information packet ready for distribution in January, 2003.

Mr. Anderson noted OES approached the Commission about submitting the map for a contest sponsored by the Association of Bay Area Geographic Information Specialists to recognize media products that effectively convey different types of information to the general public. He drew attention to the draft map and welcomed input from commissioners.

Commissioner Jones expressed concern about giving information on expected levels of damage. She noted earthquakes can be much larger than the ones presented in the typical scenarios, so it would be unwise to indicate that bad damage will not occur in a given area. She suggested using the term "most probable" rather than "typical," and clarifying that larger events may take place at less frequent intervals.

Commissioner Johnson asked if the map includes site effects. Mr. Anderson responded that site effects are included. He said the map was developed by the U.S. Geological Survey and CGS. Mr. Chuck Real commented that the latest version of the map incorporates five different levels of materials, and one includes site effects. Commissioner Johnson questioned whether the draft map reflects the most recent version. After some discussion, participants concluded the map did not include site effects. Chairman Clark suggested adding a qualifying statement saying the map will be upgraded as additional information becomes available, and then replacing the map with a better version later.

Chairman Clark pointed out the map shows intensity rather than peak ground accelerations. He suggested making that distinction clear so people understand its basis. He recommended rewriting the narrative to make sure the description is accurate. Mr. Anderson said the map and text will be reviewed and approved by OES, CGS, and CEA. Chairman Clark suggested having the partner state agencies with more expertise finalize the text rather than having the Commission rewrite the document.

Commissioner Jones suggested asking Mr. Rick Eisner to assist with revising the text.

Chairman Clark asked the staff to bring a revised draft back to the Commission to review at the November meeting.

Mr. McCarthy noted Senior Structural Engineer Fred Turner contacted OES for clarification on how FEMA funds are distributed after an event. Mr. Turner reported that OES is currently rewriting its procedures for how they run regional emergency operations centers and disaster field offices, and that process will not be complete until the end of October. He said the staff will work with OES to draft a concise summary of the process in the interim.

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Mr. McCarthy said CEA had concerns about explaining to legislators how insurance issues are handled in their individual districts. CEA suggested providing a generic map in the packet, with information to contact CEA for more specific information on their individual districts. Mr. McCarthy noted the staff will be working with CEA to develop that material.

### **X. MISCELLANEOUS**

There were no miscellaneous matters brought to the Commission's attention.

### **XI. GOOD OF THE MEETING**

Commissioner Moy expressed his opinion that taking the public comment from the Apartment Association during the meeting presentations was disruptive and inappropriate. He suggested it would have been better for that organization to have presented its concerns through the staff. Commissioner Moy observed that the Commission's regular agenda does not have a public comment period, and he recommended adding item that to future agendas.

Chairman Clark noted the Commission generally invites public comment at the end of each meeting. He explained that he took Mr. Otterstrom's comments earlier because Commissioner Adelman had to leave early.

Commissioner Beall said the Santa Clara County Board of Supervisors imposes a two-minute time limit on public comments.

### **XII. ADJOURNMENT**

There being no further business, the meeting was adjourned at 1:16 p.m.

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Sue Celli  
Secretary

Approved by:

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Richard McCarthy  
Executive Director