

Summary Minutes

Nevada Earthquake Safety Council

21 November 2003

The Nevada Earthquake Safety Council (NESC) met from 9:00 a.m. to 2:55 p.m. in the Journalism Building on the University of Nevada, Reno campus. These and previous minutes are posted on the NESC Web site (www.nbmng.unr.edu/nesc).

Ron Lynn chaired the meeting. Individuals attending the meeting are members of the Council. Voting is by members of the Board of Directors of the Council. The following people were present:

Rasool Anooshehpoor, Nevada Seismological Laboratory, who held the proxy for John Anderson*

Mike Blakely*, Blakely, Johnson, and Ghush

Ian Buckle*, UNR Center for Civil Engineering Earthquake Research

Wayne Carlson*, Nevada Public Agency Insurance Pool, who also held the proxy for Marge Gunn

Nutman*, Nevada Assoc. of Counties & Lincoln Co. Office of Emergency Management

Press Clewe, Washoe County Emergency Management

Robert Cox, Cox and Associates

Craig dePolo, Nevada Bureau of Mines and Geology (NBMG), who held the proxy for Jim Werle*,

Converse Consultants

Diane dePolo, Nevada Seismological Laboratory

Greg Flanigan*, Farmers Insurance

Terri Garside, Nevada Bureau of Mines and Geology

Melvyn Green, Melvyn Green and Associates

Mark Harris*, Nevada Public Utilities Commission

Deborah Hinman, SBC, who held the proxy for Jim Reagan*, Sierra Pacific Power Company

Jenelle Hopkins*, Clark County School District, Las Vegas

Rich Hodges, Washoe County Sheriff's Department

John Louie, Nevada Seismological Laboratory

Ron Lynn*, Clark County Building Department

Rick Martin, Nevada Division of Emergency Management (NDEM)

Robert Martinez, State Engineer's Office

Greg Moss*, The Moss Group

Glade A. Myler, Deputy Attorney General

Jim O'Donnell*, UNLV

Rebecca Ossa, Nevada State Historic Preservation Office

Bert Prescott, NDEM

Jon Price*, Nevada Bureau of Mines and Geology

Ray Shaffer*, Nevada State Senator

Burt Slemmons*, University of Nevada, Reno (retired, Las Vegas consultant)

Ken Smith, Nevada Seismological Laboratory

Catherine Snelson*, UNLV Geoscience Department

* indicates member of the Board of Directors.

A quorum of directors (the necessary 11) was present.

Board Members unable to attend or send a proxy included:

Bernie Anderson*, Nevada State Assemblyman

Tim Crowley*, Nevada Resort Association

Phil Herrington*, Carson City Building Department

Michael Lynch*, Builders Association of Northern Nevada

Ed Ruttan*, American Red Cross

The minutes from the meeting on 15 August 2003 were approved.

COMMITTEE REPORTS

Education Committee

Diane dePolo reported on the upcoming Earthquake Awareness Week, February 22-28, 2004. Plans include a possible statewide earthquake drill at 10:00 a.m. on Wednesday, February 25. The theme will be decided soon. Packets, including poster-contest rules and a perhaps a template for school earthquake preparedness and response plans, will be prepared in early December and sent to NESC members for review about December 15, with comments due by January 9, 2004. The packets will be sent to schools about a month beforehand. Poster entries will be submitted about March 12 and judged shortly thereafter. Winners will receive certificates and prizes about March 31.

Ron Lynn indicated that the Nevada Resort Association may support preparation of an all-hazards calendar.

ACTION ITEM: Diane dePolo will submit a proposal for a calendar to Ron Lynn, who will ask the Nevada Resort Association for financial support.

ACTION ITEM: Diane dePolo will contact Contact Rosemary Vacillatus at McCarren Airport and Rachel Dolbier regarding the Reno-Tahoe airport to determine the feasibility of displaying winning posters at these two airports.

Research Committee

Craig dePolo announced progress or organizing three meetings:

- (1) a non-structural mitigation workshop sometime in the Spring of 2004;
- (2) the Basin and Range Seismic Hazard Summit May 17-19, 2004 at John Aquaga's Nugget Hotel in Sparks;
- (3) a meeting on earthquake hazards in southern Nevada tentatively scheduled for sometime in October 2004.

Craig discussed a campaign to "Beat the Quake," as a message. The NESC unanimously passed the following motion: The Nevada Earthquake Safety Council endorses producing a refrigerator magnet and other items that highlight the "Beat the Quake" theme. The NESC will vote on this motion again at its February meeting to comply with the Nevada open meetings laws.

ACTION ITEM: Terri Garside will include an action item on the agenda for the next NESC meeting a vote to confirm that the Nevada Earthquake Safety Council endorses producing a refrigerator magnet and other items that highlight the "Beat the Quake" theme.

Subcommittee on Anchoring Water Heaters

Mike Blakely will address guidelines for anchoring water heaters to the walls of houses at the next meeting.

Committee on Policy Recommendations

Wayne Carlson led discussions on draft policy recommendations regarding mitigation of non-structural hazards in schools and in critical facilities. As a practical application of learning about earthquake hazards in classrooms, students and teachers can do much to secure bookshelves, computers, and other items to minimize damage from earthquakes. The effort may be easiest at high schools with seismometers that are part of the NESC-supported Nevada Educational Seismic Network. Carson City is currently requiring non-structural mitigation of its schools.

Mike Blakely stated that the first priorities should be small children, for whom a falling bookcase could be more dangerous than for a high-school student. Mike also expressed concern that we should also focus on structural hazards, which can be more serious than the non-structural hazards.

Jon Price noted that FEMA has funding for hazard mitigation, with a 75% federal match for most jurisdictions (90% for impoverished jurisdictions), and the Nevada Hazard Mitigation Planning Committee can help to encourage school districts to apply for funding to retrofit schools for structural earthquake hazards.

Jim O'Donnell noted that the Las Vegas Academy (high school built in the 1930s) will be filming some mitigation efforts.

Burt Slemmons noted that a middle school was built in the 1980s in Carson City across a Holocene fault, and there are serious liquefaction hazards in the Carson City area. In addition, some buildings on the Western Nevada Community College campus are built across Quaternary faults. Ron Lynn noted that the legislation adopted this year (A.B. 57) requires that local jurisdictions address such fault hazards in new construction.

Ian Buckle noted that non-structural mitigation includes not only such content issues as bracing bookshelves but also more expensive problems requiring engineering analysis (e.g., bracing of ceiling tiles).

Ron Lynn advised that the draft statements be reworded to be policy recommendations rather than statements, because NESC's role is to make recommendations to policy makers rather than make policy. Glade Myler stressed that the recommendations should avoid giving the impression of setting policy.

ACTION ITEM: The Committee on Policy Recommendations (Wayne Carlson, Chair) will continue to develop policy recommendations regarding non-structural mitigation.

Strategic Planning Committee

Debbie Hinman, who represented Jim Reagan, indicated that no report was available from the committee at this time.

ACTION ITEM: When the Strategic Planning Committee (Jim Reagan, Chair) is ready, Terri Garside will see that a motion to approve the revised strategic plan and a motion to approve the revised annual report will be placed on the agenda for adoption at a future Council meeting. She will also see that the revised strategic plan and the revised annual report are posted on the NESC Web site for review before that meeting.

Nominating Committee

Jon Price reported on behalf of the committee (John Anderson, Rick Martin, and Jon Price, as Chair) that the committee recommends all current members of the board and officers remain in calendar year 2004. The NESC unanimously voted to endorse this recommendation.

Nevada Hazard Mitigation Planning Committee

Ron Lynn reviewed the purpose of the committee, which is to advise the Nevada Division of Emergency Management concerning hazard-mitigation planning, activities, and policies. Specific charges include implementing, reviewing, and revising the State Hazard Mitigation Plan in accordance with the federal Disaster Mitigation Act of 2000. The plan, which was developed by DEM over the last 18 months with the assistance of a volunteer committee and a consultant, will be submitted to FEMA shortly. In order to receive funding from FEMA, which requires a 25% non-federal match (10% for certain impoverished jurisdictions), the jurisdictions must have a FEMA-approved hazard mitigation plan. In addition to the State, the following entities have been awarded FEMA grants through DEM for preparation of their local plans: Carson City, Clark, Douglas, Nye, and Washoe Counties, and the cities of Las Vegas, Reno, and Sparks. The Nevada Hazard Mitigation Planning Committee is also being supported by a FEMA planning grant, as are projects to

update the State's earthquake plan and underwrite the non-structural hazard mitigation workshop mentioned above under the Research Committee report.

Several standing subcommittees have been formed to carry out these duties, including a Project Subcommittee (to assist DEM in the preparation of proposals to FEMA and to initiate the preparation of appropriate proposals from state agencies for pre-disaster mitigation projects in Nevada), an Outreach Subcommittee (to promote activities that contribute in a meaningful way toward building disaster-resistant communities throughout Nevada, including stimulating and encouraging local and regional, multi-jurisdictional governmental agencies to prepare appropriate proposals for pre-disaster mitigation projects), a Proposal Review Subcommittee (to recommend, for consideration by the whole committee, priorities for funding, which DEM would transmit to FEMA), and a Risk Assessment Subcommittee (to assess risks from natural and man-made hazards in Nevada and use risk assessments in the development of hazard mitigation plans and in the evaluation of proposals). One of the first activities of the Risk Assessment Subcommittee will be formation of a HAZUS users group; HAZUS is a loss-estimation computer model that will soon include modules for earthquakes, floods, and wind damage.

Earthquake Studies in the Las Vegas Area

Cathy Snelson reported on a successful technical session on earthquake hazards in southern Nevada at the Geological Society of American annual meeting in November 2003 in Seattle and on an upcoming session at the American Geophysical Union meeting in December in San Francisco.

Jenelle Hopkins, who recently defended her UNLV master's thesis, provided a PowerPoint presentation summarizing her work, which demonstrated that the Nevada Educational Seismic Network can be used for scientific research by high-school students and teachers.

Ken Smith will be working with Cathy Snelson on training teachers to better use the Nevada Educational Seismic Network.

Jon Price noted that, since the last NESC meeting, FEMA-Region IX donated five used but valuable and useful computers to the Nevada Educational Seismic Network. Jeff Lusk (Region IX earthquake specialist) and Jeff Griffin (Regional Director and former mayor of Reno) have been instrumental in donating these machines, which were surplus computers after FEMA completed its work on disasters in the region.

ACTION ITEM: Ron Lynn will write a letter of thanks to FEMA for the donation of computers.

DEM Update

Rick Martin reported that fiscal year 2004 grants from the Department of Justice for Homeland Security in Nevada will total \$26 million. – The Governor's Homeland Security Commission will set priorities and procedures for applications, which will probably be due shortly after DEM receives the award in January. Local governments, state agencies, and universities are eligible.

The Governor's Homeland Security Commission will next meet on January 8.

The Las Vegas urban area is receiving a \$10.5 million Urban Area Security Initiative Grant to protect against terrorism and weapons of mass destruction.

The Homeland Security Critical Infrastructure Expansion Program will provide \$2.6 million for equipment, planning, training, and exercises. Application forms are being sent out next week. Local governments and universities are eligible.

Community Emergency Response Teams (CERTs) will be given major training by DEM this coming spring in Las Vegas. Please contact Dave Crockett (775-687-7365) at DEM for further information.

The "Determined Promise" bioterrorism exercise in August 2003 in Logandale, Clark County went well. DEM also participated in a chemical release exercise in October 2003 in Storey County; Washoe, Douglas, and Lyon Counties and Carson City also participated.

Carson City will be conducting a homeland security exercise at FEMA's training center on January 26-30 in Emmitsburg, Maryland.

There will be a search and rescue exercise April 22-25 in Sparks. There will be a class for public information officers (PIO) as a prerequisite for a PIO class by FEMA in Emmitsburg, Maryland. Please contact Harlan Ashby regarding exercises and Elizabeth Ashby regarding training.

The State Department of Information and Technology now administers DEM's Web site.

The State Comprehensive Emergency Management Plan is undergoing complete revision. It will follow the incident command structure used by FEMA.

The Hazardous Materials Plan is also being updated. Mike Alexander from DEM and Tom Duncleman from EPA are the leads on updating this plan.

The State Hazard Mitigation Plan will be submitted to FEMA as soon as it has received final review by DEM.

The federal government provides funds after a disaster for individual assistance, public assistance, and hazard mitigation. Some funds for hazard mitigation are available without a disaster as part of the pre-disaster mitigation program.

Two disasters are still open with regard to funding from FEMA: the 1997 flood in northern Nevada and the 1999 floods in southern Nevada. The latter should be closed out in two months.

The new Preliminary Damage Assessment (PDA) Team was called out for the flood in Las Vegas in August 2003. Although there was not enough damage to public structures to call for a presidential disaster declaration, there was considerable damage to the private sector. DEM therefore asked for help from the Small Business Administration, which provided low-interest loans through their disaster declaration.

The PDA Team also evaluated the Mount Wilson area in Lincoln County, where extreme drought has created a fire hazard at the urban-wildland interface. The area has received a grant from the Nevada Division of Forestry for fuels reduction, and the residents are looking for additional funds, including money for fuels reduction, emergency fire-fighting equipment, and an emergency warning system.

There will be a PDA training session December 17, at which Jim Utterback (American Red Cross) will discuss the role of the American Red Cross in damage assessment.

Bert Prescott reported that FEMA funds for hazard mitigation planning grants have been awarded. (SEE notes on the Nevada Hazard Mitigation Planning Committee).

Rick Martin stated that DEM is working on determining how much money is left over from fiscal year 2003 that could be used to underwrite the proposals for which NESC set priorities at its meeting on 16 May 2003.

Western States Seismic Policy Council (WSSPC)

From September 26 to 30, 2004 WSSPC and other earthquake consortia will be co-sponsoring a National Earthquake Hazards conference in St. Louis.

The 2003 WSSPC annual meeting (September, Portland, Oregon) was a success. Information on the WSSPC Awards in Excellence, most of which recognize exceptionally innovative or effective risk-reduction programs in other states and communities, is available for copying from the WSSPC Web site (www.wsspc.org). Craig dePolo discussed a pre-meeting workshop on public information and risk communication, a field trip of the tsunami hazards and the warning system at Cannon Beach, Oregon (which uses loud cow moos instead of a piercing siren to test the system, thereby humorously reminding the residents about the serious hazard). Craig recommended the book "Perceptions of Risk" by Paul Slovic as particularly good. An idea that he got from the meeting was that an earthquake experience could be a good amusement ride at casinos, hotels, or parks.

Oregon is producing a CD for hotel operators on what to do when an earthquake occurs.

Ron Lynn noted that Jon Price received the 2003 Leadership Award from WSSPC at the September 2003 WSSPC annual meeting. This award was in recognition of his leadership as Chair of the WSSPC Board of Directors from 1998 to 2002.

Incremental Seismic Rehabilitation – A Different Approach to Strengthening Buildings

Melvyn Green, Melvyn Green and Associates, Inc., discussed the concept of incremental seismic rehabilitation. He is on contract with FEMA to produce a series of handbooks for CEOs and facility managers (both private and public) on how to prepare for earthquakes. A big problem is that building owners do not see a way to cheaply rehabilitate buildings. But seismic strengthening could be incorporated into routine maintenance work and capital improvement outlays. Incremental seismic rehabilitation is an option that should be considered more frequently. One of the handbooks is FEMA 395 (December 2002) "Incremental Seismic Rehabilitation of School Buildings (K-12)." Others will include books for hospitals, office buildings, apartment buildings, retail buildings, hotels and motels, storage buildings, emergency buildings and engineering guidelines. All the handbooks should be available within about six months.

Opportunities exist for seismic rehabilitation during roofing maintenance and reproofing, exterior wall maintenance, fire and life safety improvements, modernization and remodeling for new technologies, underfloor and basement work, energy conservation, hazardous materials removal, and accessibility improvements.

As an aside, Melvyn Green and Associates, Inc. has worked on seismic rehabilitation of some historical buildings in Nevada, including the Las Vegas Academy.

Update on Recent Earthquakes

Rasool Anooshehpour noted that there are now 14 strong-motion instruments operating in the Las Vegas area.

Rasool also reported on the recent Tokachi-Oki earthquake in Japan (magnitude 8.0). He visited the epicentral area to verify and calibrate a hypothesis that Jim Brune has proposed that precariously balanced rocks are knocked over when specific amounts of shaking occur during earthquakes. Although the hypothesis makes good sense, there are few strong-motion measurements in areas where balanced rocks were noted prior to an earthquake, thereby making calibration difficult. Tombstones in Japan have toppled during earthquakes in the past, and the hope was that there would be opportunities to determine whether tombstones were toppled in areas where nearby strong-motion instruments recorded the amount of shaking. Kushiro cemetery, about 1 km from a strong motion station, had about 10% of its 5000 tombstones toppled or displaced during the earthquake. At the Makubetsu Nukanai cemetery, 31 of 49 tombs were toppled. At the Makubetsu cemetery, 59 of 520 tombs were toppled, and 31 were rotated or translated on their bases. The data that Rasool collected should be useful in evaluating the hypothesis.

Ken Smith discussed recent earthquakes in Nevada. There were two magnitude 4.5 earthquakes northeast of Columbus Marsh near Mina, plus a number of aftershocks on November 15.

There have been about 900 earthquakes since August 2003 on the north side of Lake Tahoe. They are 25 to 32 kilometers deep and have epicenters across a 5-kilometer-long zone. They appear to be related to a reverse faulting mechanism along a north-northwest trending structure that dips gently (about 40 degrees from horizontal) to the east. One possibility is a deep magmatic sequence, similar to volcano-related earthquakes at Lassen Peak and Mammoth Lakes, but the seismograms are not entirely like those associated with magma beneath volcanoes. The largest event was a magnitude 2.2.

Research Priorities for Investigating the Earthquake Hazard of Nevada

John Louie presented the results of preliminary discussions among scientists interested in earthquake hazards in Nevada. Mark Petersen with the U.S. Geological Survey had requested that Nevada scientists form consensus on research priorities for next May's request for proposals for external funding from the USGS's portion of the National Earthquake Hazard Reduction Program (NEHRP). The priorities must tie in with the USGS's hazard-reduction products, such as its probabilistic hazard reduction program. The USGS is currently spending about \$400,000 per year on hazard-reduction research in the Intermountain West region, of which Nevada is a part. A group of mostly university researchers met on November 12 to develop priorities. The USGS has identified a number of priorities in their five-year plan, which is currently in draft form. The group concluded that the following issues need to be addressed as high priority items.

A. Consensus fault parameters (product: reviewed database)

1. Characterize high-hazard faults near the Reno-Carson City and Las Vegas urban areas. Seek geologic limits on ground motions.
2. Develop fault and earthquake parameter uncertainty input to urban hazard maps for Nevada.

B. Ground shaking models (products: community velocity models, attenuation relations, Reno and Las Vegas hazard maps)

Obtain shallow, basin, and basement velocities below the Reno and Las Vegas areas. Investigate the relation of ground shaking to geologic attributes in Nevada urban areas, assess the sufficiency of the IBC VS30 criterion for predicting ground shaking.

C. Organize a Nevada Seismic Hazard Workshop to develop a preliminary Nevada Community Fault Model (CFM) and Community Velocity Models (CVMs) and to prioritize future efforts (January 2005).

D. Develop probabilistic seismic hazard models and planning scenarios for Reno and Las Vegas.

The group did not reach consensus on how to fund subdiscipline workshops on faults and the community velocity models. These would include geological and engineering consulting groups as well as university-based scientists and USGS scientists and engineers. Other concerns include fault and seismicity studies that define tectonic framework and geodetic studies that help define the earthquake hazards.

Please see www.seismo.unr.edu/nvnehrp for details and provide names and ideas to louie@seismo.unr.edu or cdepolo@unr.edu.

Ron Lynn remarked that Clark County, Henderson, and North Las Vegas have adopted the 2000 International Building Code (IBC), and other jurisdictions are adopting the 2000 or 2003 IBC. The law (A.B. 57) passed this year by the Legislature requires that local jurisdictions adopt the seismic provisions of the IBC.

Several individuals stressed the importance of focusing on the urban areas of Reno-Carson City and Las Vegas, rather than more geographically broad areas. Clark County expects to build over 20,000 new homes per year and 1 new classroom per day. The Reno-Carson City urban area ought to include Fernley and the Minden-Gardnerville areas, and the Las Vegas urban area ought to include Pahrump and the I-15 urban corridor.

ACTION ITEM: The Research Committee (Craig dePolo and Jim Werle, co-chairs) should present its recommendations for endorsement of NEHRP research priorities to NESC at the February 11 meeting.

Old Business

Ron Lynn reviewed action items from the previous meeting. Several items reappear in the Review of Action Items at the end of these minutes.

New Business

Wayne Carlson suggested that the Capitol Annex seismic retrofit project be slated for receipt of a NESC Award in Excellence. This is a 98-year old building, sometimes called the Octagon Building, which currently houses the State Controller's Office.

Terri Garside noted that a form for nominations of Awards in Excellence is posted on the NESC Web site.

Ron Lynn suggested that an award be presented to the Nevada Legislature in February 2005, during Earthquake Awareness Week, for its foresight in passing earthquake legislation.

ACTION ITEM: The Committee on Policy Recommendations should handle NESC Awards in Excellence, including a process for calling for nominations and selection of awards.

Craig dePolo discussed a request from the California Seismic Safety Commission to have a joint project to produce a map for decision makers on Earthquake Shaking Potential for Portions of Eastern California and Western Nevada. This would be a derivative seismic safety hazard map. We would advocate including the entire urban corridor in the Reno-Carson City area. John Louie voiced concern about the assumptions of soil types or local ground-shaking characteristics that may be included in such maps, because the assumptions are often wrong, when detailed studies have been undertaken.

ACTION ITEM: Terri Garside will place on the agenda for the February 11 meeting discussion of a proposal from the Research Committee for NESC to endorse the preparation of a joint map to be released by the California Seismic Safety Commission and NESC, with the assistance of the Nevada Bureau of Mines and Geology and the Nevada Seismological Laboratory.

ANNOUNCEMENTS

Ron Lynn cautioned that committees need to adhere to the Nevada open meeting laws. Be sure to relay information to Terri Garside at least two weeks before committee meetings. Specific information needed includes time and date, location, access (for disabled individuals), items that will be discussed on the agenda, and provisions for public comment, should the meeting be held by teleconference.

The following dates and locations have been set for NESC meetings:

Wednesday, 11 February 2004, 9:00 a.m. to 4:00 p.m. (at the Clark County Building Department's Russell/Cameron Office in Las Vegas)

Wednesday, 5 May 2004, 9:00 a.m. to 4:00 p.m. (in Reno)

Wednesday, 4 August 2004, 9:00 a.m. to 4:00 p.m. (at the Clark County Building Department's Russell/Cameron Office in Las Vegas)

Wednesday, 17 November 2004, 9:00 a.m. to 4:00 p.m. (in Reno).

Wayne Carlson offered to host the meeting at his office in Carson City. The alumni room in the Jot Travis Student Union on the UNR campus is another possibility. The circular room in the UNR Journalism Building is not available on Wednesdays when classes are in session.

PUBLIC COMMENT PERIOD

There were no additional comments from the public.

The meeting adjourning at 2:55 p.m.

REVIEW OF ACTION ITEMS

Diane dePolo will submit a proposal for a calendar to Ron Lynn, who will ask the Nevada Resort Association for financial support.

Diane dePolo will contact Contact Rosemary Vacilliatus at McCarren Airport and Rachel Dolbier regarding the Reno-Tahoe airport to determine the feasibility of displaying winning posters at these two airports.

Terri Garside will include an action item on the agenda for the next NESC meeting a vote to confirm that the Nevada Earthquake Safety Council endorses producing a refrigerator magnet and other items that highlight the "Beat the Quake" theme.

The Committee on Policy Recommendations (Wayne Carlson, Chair) will continue to develop policy recommendations regarding non-structural mitigation.

Ron Lynn will write a letter of thanks to FEMA for the donation of computers.

The Research Committee (Craig dePolo and Jim Werle, co-chairs) should present its recommendations for endorsement of NEHRP research priorities by NESC at the February 11 meeting of NESC.

The Committee on Policy Recommendations should handle NESC Awards in Excellence, including a process for calling for nominations and selection of awards.

Terri Garside will place on the agenda for the February 11 meeting discussion of a proposal from the Research Committee for NESC to endorse the preparation of a joint map to be released by the California Seismic Safety Commission and NESC, with the assistance of the Nevada Bureau of Mines and Geology and the Nevada Seismological Laboratory.

Action Items Remaining from Previous NESC Meetings

Mike Blakely and Jeff Lusk are tasked to look into methods for securing water heaters. Specifically, the International Building Code requires a three-strap method for bracing water heaters, but there may be suitable alternatives that the Nevada Organizations of Building Officials (NOBO) may want to consider.

Jon Price will put discussions of (1) hazard information for hotel staff and visitors and (2) business interruption and recovery after a disaster on the agenda for a future meeting of the Nevada Hazard Mitigation Planning Committee.

When the Strategic Planning Committee (Jim Reagan, Chair) is ready, Terri Garside will see that a motion to approve the revised strategic plan and a motion to approve the revised annual report will be placed on the agenda for adoption at a future Council meeting. She will also see that the revised strategic plan and the revised annual report are posted on the NESC Web site for review before that meeting.

Terri Garside will ask Bob Cox to make a presentation to the Council at the next meeting in Reno regarding earthquake preparedness of buildings that provide essential services in Nevada.

The Education Committee (Diane dePolo, Jenelle Hopkins, and Cathy Snelson) should present a proposal for endorsement by NESC for action regarding an initiative to have Nevada teachers be properly trained in the (earthquake-related) disciplines that they teach.

respectfully submitted by Jon Price, 23 November 2003.

Nevada Earthquake Safety Council
c/o Nevada Bureau of Mines and Geology
University of Nevada/MS 178
Reno, Nevada 89557
775/784-6691 ext. 126

NEVADA EARTHQUAKE SAFETY COUNCIL
Members of the Board of Directors and Officers
(as of 21 November 2003)

Business and Industry, Southern Nevada	Tim Crowley Nevada Resort Association
Business and Industry, Northern Nevada	Michael Lynch Builders Association of Northern Nevada
Insurance Industry (statewide)	Greg Flanigan Farmers Insurance (Las Vegas)
State Government (statewide)	Mark Harris Public Utilities Commission (Carson City)
Local Government, City	Wayne Carlson Nevada Public Agency Insurance Pool (Carson City)
Local Government, County	Marge Gunn Nutman Nevada Assoc. of Counties & Lincoln Co. Office of Emergency Management
Seismology (statewide)	John Anderson Nevada Seismological Laboratory (UNR)
Geosciences, Southern Nevada	Burt Slemmons Las Vegas consultant, UNR (retired)
Geosciences, Northern Nevada	Jonathan G. Price Nevada Bureau of Mines and Geology
Engineering, Southern Nevada	Jim Werle Converse Consultants
Engineering, Northern Nevada	Mike Blakely Structural Engineers Association of NV
Education (statewide)	Jenelle Hopkins Clark County School District, Las Vegas
Community Organizations, Southern Nevada	Ed Ruttan American Red Cross
Community Organizations, Northern Nevada	Jim Reagan Sierra Pacific Power Company
University, Southern Nevada	Catherine Snelson UNLV Geoscience Department
University, Northern Nevada	Ian Buckle UNR Center for Civil Engineering Earthquake Research
Building Official, Southern Nevada	Ronald L. Lynn Clark County Building Department
Building Official, Northern Nevada	Phil Herrington Carson City Building Department
State Senate	Ray Shaffer Nevada State Senator (Las Vegas)
State Assembly	Bernie Anderson Nevada State Assemblyman (Sparks)
Member at Large, Southern Nevada	Jim O'Donnell UNLV
Member at Large, Northern Nevada	Greg Moss The Moss Group

Members of the Executive Committee

Chair	Ronald L. Lynn
First Vice Chair-South	Burt Slemmons
First Vice Chair-North	Jim Reagan

Second Vice Chair-South
Second Vice Chair-North
Secretary
Past Chair
Division of Emergency Management Representatives

Jim Werle
Greg Moss
Jonathan G. Price
John Anderson
Rick Martin