

## Summary Minutes

## Nevada Earthquake Safety Council

9 November 2005

The Nevada Earthquake Safety Council (NESC) met from 9:00 a.m. to 3:30 p.m. at the Sierra Pacific Power Company offices in Reno. These and previous minutes are posted on the NESC Web site ([www.nbmj.unr.edu/nesc](http://www.nbmj.unr.edu/nesc)).

Ron Lynn chaired the meeting. Individuals attending the meeting are members of the Council:

John Anderson\*, Nevada Seismological Laboratory

Elizabeth Ashby, Nevada Division of Emergency Management

Alan Bennett\*, Plans Examiner with the City of Reno

Mike Blakely\*, Blakely, Johnson, and Ghusn

Wayne Carlson\*, Nevada Public Agency Insurance Pool

Sheila Clement, Carson City Emergency Management (retired)

Press Clewe, who held the proxy for Bernie Anderson, Nevada State Assemblyman\*

Gaye Coté, UNLV Department of Civil & Environmental Engineering and Geoscience

Bob Cullins, University of Nevada, Reno

Craig dePolo, Nevada Bureau of Mines and Geology, who held the proxy for

Jim Werle\*, Converse Consultants

Diane dePolo, Nevada Seismological Laboratory

Sam Earman, Desert Research Institute (representing Bruce Hurley, U.S. Department of Energy)

Kirk Ellis, Kirk Ellis and Associates

Mark Harris\*, Nevada Public Utilities Commission

Juliette Hayes, FEMA Region IX, representing Jeff Lusk

Ron Hess, Nevada Bureau of Mines and Geology

Debbie Hinman, SBC

Jenelle Hopkins\*, Clark County School District, Las Vegas

Eric Hubbard, Kleinfelder

Gary Johnson, Nevada Bureau of Mines and Geology

Catherine Leon, Nevada Bureau of Mines and Geology

Ron Lynn\*, Clark County Building Department

Craig Marshall, State Public Works Board, representing Dan O'Brien

Rick Martin, Nevada Division of Emergency Management

Robert Martinez, Nevada Division of Water Resources

Glade Myler, Office of the Attorney General

Jim O'Donnell\*, UNLV

Rebecca Ossa, Nevada Historic Preservation Office

Jon Price\*, Nevada Bureau of Mines and Geology

Jim Reagan\*, Sierra Pacific Power Company

Dan Riebli, Kirk Ellis and Associates

Ed Ruttan\*, American Red Cross

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

Barry Smith, Nevada State Vulnerability Assessment Team

James Sudderth, Nevada State Vulnerability Assessment Team

Ann Wiswell, Nevada Public Agency Insurance Pool

\* 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:

Greg Flanigan\*, Farmers Insurance

Marge Gunn Nutman\*, Nevada Association of Counties & Lincoln County Office of Emergency Management

Warren Hardy\*, Nevada State Senator

Greg Moss\*, The Moss Group

Catherine Snelson\*, UNLV Geoscience Department

The minutes from the meeting on 3 August 2005 were approved, noting a correction to the date for May 2006 meeting.

Ron Lynn thanked Jim Reagan and Sierra Pacific for hosting the meeting at their office facility.

Glade Mylar noted that because the NESC Bylaws allow proxy voting, and because the NESC was created by the Nevada Division of Emergency Management rather than directly by the Legislature, proxy voting is allowed.

ACTION ITEM: Terri Garside will arrange for recording of future meetings to comply with Nevada statutes.

## **COMMITTEE REPORTS**

### **Awareness and Education Committee**

Diane dePolo reported that the Committee plans to put more items on the Web for Earthquake Awareness Week (February 26 - March 4, 2006). Diane will work with Richard Vinyard (Nevada Department of Education) and others to get the word out to teachers to check the Web site. Gay Coté also will try to get information into Clark County school newspapers, to PTAs, and the teachers' union.

Jenelle Hopkins discussed opportunities for education through the National Science Foundation's EarthScope program. EarthScope has three major components: (1) deep drilling across the San Andreas fault near Parkfield, California to learn about earthquake mechanisms; (2) deployment of seismic instruments throughout the lower 48 states and Alaska, to learn about Earth structure and processes; and (3) deployment of global positioning system (GPS) and other geodetic instruments in the western United States to better understand earthquakes and volcanoes. Jenelle serves on the National EarthScope Education and Outreach Committee and will keep the Committee and NESC apprised of opportunities. The Nevada Seismological Laboratory, the Nevada Bureau of Mines and Geology, and the geoscience departments at UNLV and UNR are engaged in the scientific aspects of EarthScope.

### **Research Committee**

Craig dePolo attended the August 2005 national earthquake program managers' meeting, which was sponsored by the Central United States Earthquake Consortium (CUSEC) and FEMA. NESC was praised at this meeting as one of the most successful State seismic safety councils or commissions in the country. Washington State worked with FEMA's liaison to Indian tribes to develop a successful multi-hazard program for the tribes. A new book, FEMA 460, is under development to address standards for high-rack storage in warehouses and discount sales facilities, such as Costco and Home Depot. Ron Lynn serves on the International Code Council (ICC) committee that is developing these standards, which may not become part of the International Building Code (IBC) until 2015.

Craig reported that the Association of Engineering Geologists (AEG) held a good symposium on earthquake hazards in the Southwest during its annual meeting in September in Las Vegas. The Las Vegas Valley fault system is being accepted as being an active faults system in the Holocene (the last 10,000 years). Speakers at the symposium noted that here may be a pulse of increased tectonic activity in the Mojave Desert; particularly as seen in geodetic data. The implications for seismic hazards in Las Vegas Valley are not entirely clear.

The Nevada Bureau of Mines and Geology (NBMG) has nearly completed its HAZUS (loss-estimation model developed by FEMA) runs for the individual counties. NBMG will soon be releasing an open-file report on this work and will be producing a fully peer-reviewed report as a follow up. Craig dePolo selected earthquakes that have happened in the past and that will likely happen in the future near each county seat. Ron Hess, the geographic information systems expert who ran the HAZUS program, stated that the resultant numbers (of expected dollar loss, buildings damaged, fatalities, etc.) should be used with caution, because the data used in the model are largely default data based on the 2000 census. Craig noted that these HAZUS runs are not accurate enough for detailed emergency planning. As order of magnitude calculations, the results are useful for heightening awareness of the hazards and stimulating decision makers to mitigate the risks. A new project, led by Gary Johnson and Christine Arritt, will provide better data, and these HAZUS runs will be redone for comparison. Ron offered to produce additional runs as needed.

Ron Lynn asked Wayne Carlson to chair an ad hoc committee on the HAZUS results. Other committee members include Elizabeth Ashby, Ron Hess, Craig dePolo, and Jon Price. Wayne Carlson offered to let county representatives know when the report is available, and Jon Price offered to present results of the work to County Commissions. Other opportunities for presentations include the May 1, 2006 meeting of the Board of Directors of the Nevada Public Insurance Pool and the November 14-16, 2006 annual meeting of the Nevada Association of Counties.

**ACTION ITEM:** The ad hoc committee on HAZUS results, chaired by Wayne Carlson, should report at the next NESC meeting.

NBMG will open-file a report on “Effective Nonstructural Mitigation Strategies for Earthquakes in Nevada,” which Craig dePolo is preparing. Craig will also be updating the “Earthquakes in Nevada and How to Survive Them” brochure that is widely distributed by the Nevada Seismological Laboratory, Nevada Bureau of Mines and Geology, and the Nevada Division of Emergency Management.

Craig noted that Terri Garside attended and reported on the recent meeting of the Utah Seismic Safety Commission. NESC and the Utah Commission are discussing a workshop on rural earthquake hazards. The workshop and a possible joint NESC-Utah Commission meeting may be held in Wendover along the Utah-Nevada border. Utah submitted about seven proposals for FEMA’s Pre-Disaster Mitigation grant program. California has had an aggressive program to retrofit or destroy unreinforced masonry (URM) buildings, which commonly collapse or otherwise perform poorly in earthquakes. The Utah Commission passed a resolution on URMs.

Craig stating that researchers are discussing digging a “megatrench” (a large backhoe trench) on the Genoa fault, which would capture geologic evidence of perhaps as many as seven past earthquakes. Currently there are only two events fully constrained with shallow trenches. The cost could be as much as \$180,000. Potential sites are the Genoa quarry and Jobs Canyon fan.

Jon Price circulated a preprint of the United States Geological Survey (USGS)'s newspaper insert for the San Francisco area - “Putting Down Roots in Earthquake Country - Your Handbook for the San Francisco Bay Region” - which has been prepared for the 100<sup>th</sup> anniversary of the April 18, 1906 great earthquake in San Francisco (magnitude 7.8 on the San Andreas fault).

### **Policy Recommendations Committee**

Wayne Carlson called for nominations for earthquake mitigation awards.

Elizabeth Ashby noted that the Nevada Earthquake Risk Mitigation Plan needs to be updated by October 2007. Craig dePolo will follow up.

Ann Wiswell spoke about the PowerPoint presentation the Nevada Public Agency Insurance Pool has been giving to rural water districts. The American Lifelines Alliance has developed guidelines for designing water systems for seismic safety. They have made two presentations, and they plan to make presentations in Mesquite and at the Nevada Rural Water Association.

### **Strategic Planning Committee**

The Committee did not meet. Jim Reagan will be preparing the annual report.

**ACTION ITEM:** NESC committee chairs should give Jim Reagan information on any significant progress between November 2005 and the end of the year, so that this information can be included in the NESC annual report. In addition, each committee chair should provide input to Jim Reagan on the strategic plan for NESC.

### **Nominating Committee**

The Council unanimously passed a motion to accept the Nominating Committee's recommendation that all current members of the Board of Directors of the Council remain through the next year.

**ACTION ITEM:** Jon Price will convey the nominations to Frank Siracusa, Chief of the Nevada Division of Emergency Management, who approves appointments to the Board of Directors.

The Committee is still working on nominations for the two positions for business and industry (one in northern Nevada and one in southern Nevada).

ACTION ITEM: Alan Bennett will seek a representative from builders or architects in northern Nevada as a possible nominee for membership on the NESC Board of Directors.

ACTION ITEM: Ron Lynn will seek an engineer or safety officer from one of the major casinos in southern Nevada as a possible nominee for membership on the NESC Board of Directors.

### **Ad Hoc Committee on Rockery Walls**

No report was made by this committee.

ACTION ITEM: Terri Garside will allocate 30 minutes on the agenda for the next meeting for the report of the Ad Hoc Committee on Rockery Walls.

### **INTRODUCTION OF THE NEW FEMA - HAZUS PLANNING GRANT**

Gary Johnson discussed the project that is being funded by FEMA and NBMG to update the basic information that feeds into HAZUS. He and Christine Arritt are the principal investigators on this project. This will include better locations and information on critical facilities (schools, hospitals, etc.) than is currently in the HAZUS default files. They expect to complete the project within a year. Once the data are updated, they will rerun the HAZUS earthquake scenario simulations that Ron Hess is releasing in the NBMG open-file report mentioned above.

Elizabeth Ashby noted that once this project is completed, the mitigation plan for Nevada will be updated, which should give us a better chance of securing federal funding for mitigation projects.

### **NEVADA DIVISION OF EMERGENCY MANAGEMENT UPDATE**

Rick Martin noted that the Division's recovery program has been consumed with dealing with Hurricanes Katrina and Rita. FEMA is allowing people to go anywhere in the United States and its territories. Evacuees include about 4,600 in southern Nevada and a couple hundred people in northern Nevada. FEMA is paying for 100% of the costs. This includes 12 months of housing, with opportunities for an additional 18 months. Ed Ruttan noted that people are trickling in daily; the American Red Cross is helping with the effort. Metro Police put a clamp on scams involving false IDs. An emerging problem, as people move out of hotels, is that there are not enough low-income apartments to accommodate all the people in southern Nevada.

Rick mentioned that the Division's Web site (<http://dem.state.nv.us/>) allows for registration for training courses. They are adding exercise design courses.

Rick stated that prospects for funding of year-end projects proposed by NESC at its May meeting don't look promising this year. They expect to get guidance for funding the Council within the next two weeks.

### **FEMA UPDATE**

Juliette Hayes represented Jeff Lusk, FEMA-Region IX. Juliette is a Disaster Recovery and Operations Specialist in FEMA's Mitigation Division for California, Arizona, and Nevada. So far, Congress has not finalized the budget for the Pre-Disaster Mitigation Program, but it looks as if, because of the recent hurricanes, funding will be cut from \$150 million per year to \$50 million in federal fiscal year 2006.

Juliette gave an interesting slide show from her experiences in the aftermath of Hurricane Katrina. Region IX was the backup for Region IV (Mississippi), so she spent several weeks helping FEMA in Mississippi; Jeff Lusk is expected to return from Mississippi in about two weeks. Hurricane Katrina was a catastrophic event. The amount of debris, loss of housing stock, displacement of people, and needs for mass care and housing are overwhelming. There was essentially total devastation for 80 miles along the coast, 4 blocks deep. There was complete loss of infrastructure. Search and rescue efforts saved about 6,000 people in Mississippi. Hospitals are still out of commission; acute care is being given in temporary shelters. Security is a huge issue. Alternative housing includes 16,000 trailers, but a total of

45,000 are needed. The Governor asked that trailers be placed on people's private lots, rather than in makeshift trailer parks, to encourage people to stay in Mississippi.

A question raised from the lessons learned from Katrina is: Should we in Nevada plan for a large influx of Californians from a catastrophic event there? A major urban earthquake in either the Los Angeles or San Francisco Bay Areas may be on the same scale, or larger, than Katrina.

Mike Blakely noted that recovery from Katrina may take 5 to 8 years.

Bob Cullins spoke from the perspective of the International Association of Emergency Managers. Debris removal was a huge issue. Contractors were not always scrupulous. There are many lessons learned. The communities in Louisiana were ill prepared.

Rick Martin noted that FEMA's individual assistance program allocates up to \$26,500 for families to replace contents if a family is not covered by insurance and if they are not qualified for a small business loan.

Ed Ruttan asked that FEMA develop a down-to-earth booklet, a "FEMA Aid for Dummies" document, to help citizens understand what their options are.

Glade Myler noted that there is a national discovery channel that does provide considerable information.

Press Clewe questioned what's up with the Administration's proposal that disaster response be undertaken by the military. Glade noted that the National Emergency Management Association is fighting this and will discuss it heavily at its February meeting.

**ACTION ITEM:** Terri Garside will ask Jeff Lusk to discuss potential changes in FEMA and the overall federal disaster response during the FEMA Update at the next NESC meeting.

In response to questions about FEMA's budget cuts and changing responsibilities under the Department of Homeland Security, Juliette stated that to the best of her knowledge, FEMA is committed to supporting HAZUS.

### **Nevada Hazard Mitigation Planning Committee**

Ron Lynn noted that the proposal review subcommittee of the Nevada Hazard Mitigation Planning Committee met on November 2, 2005 to review and set priorities for three proposals for mitigation funds that are available as a result of the Waterfall fire near Carson City. These include the following:

1. Lake Tahoe Nevada State Park Mapping - completion of a vegetation map that will aid planning and mitigation to reduce risks from fires;
2. Elko County Mitigation Plan Development - completion of a disaster mitigation plan, so that the county will be eligible for federal mitigation funds;
3. State Public Works, Caliente Youth Center - installation of sprinklers.

### **Western States Seismic Policy Council (WSSPC) Annual Meeting**

Ron Lynn stated that WSSPC adopted several policy recommendations during its annual meeting in September in Boise, Idaho. These included one on tsunamis, one on the definition of active faults, and one on real-time earthquake monitoring networks. These policy recommendations will be posted on the Web at [www.wsspc.org](http://www.wsspc.org).

Next year there will be a WSSPC business meeting in association with the 100<sup>th</sup> anniversary of the April 18, 1906 San Francisco earthquake. WSSPC is planning a 2007 joint meeting with the International Code Council. The meeting will likely be in Reno and include a national symposium on earthquakes.

Jon Price noted that, as a result of the earthquake and tsunami in Indonesia and the Indian Ocean in December and the hurricanes in the Gulf Coast this year, the WSSPC discussions concluded that there is heightened awareness that much more effort needs to be focused on planning for catastrophic events.

Glade Myler stated that despite this awareness, FEMA's budget has been cut drastically since September 11, 2001, and little attention has been paid to natural disasters at either the federal or state levels.

Bob Cullins noted that the State of Florida, after Hurricane Andrew, added a \$1 surcharge per year to insurance coverage to fund increased emergency management activities.

### **Nevada Seismological Laboratory Report**

John Anderson reported that David von Seggern, Seismic Network Director, retired September 30. Ken Smith has been named the Acting Seismic Network Director, and Glenn Biasi has been named the Acting Associate Seismic Network Director. A search is underway for another scientist to work with their seismic network.

With funding from the U.S. Geological Survey's Advanced National Seismic System, the Nevada Seismological Laboratory has established a basic network of strong-motion instruments in central areas of Reno, Carson City, and Las Vegas. The Nevada Seismological Laboratory considers the NESC to serve as a de-facto standing advisory committee for ANSS in Nevada. Shake Maps are being produced automatically for all earthquakes of magnitude 3 or greater throughout the Nevada seismic network; these maps show measured shaking in the urban areas of Reno, Carson City, and Las Vegas and predicted ground motion based on magnitude and distance at other locations. The educational seismic network is not feeding into Shake Map, because those seismic instruments don't measure strong motion.

“Did you feel it?” (or community intensity) maps are being produced by the USGS and linked to the Lab's Web page ([www.seismo.unr.edu](http://www.seismo.unr.edu)). Craig dePolo suggested that people in Nevada enter what they felt after an earthquake into this system, partly for long-term research needs.

Current priorities for updating and improving the network include improving the near-real-time location, automating moment magnitude ( $M_w$ ) calculations while assuring more reliable magnitudes for large events, and developing real-time focal mechanisms.

John noted that UNR is progressing on its Disaster Resistant University project, thanks to help from Blakely, Johnson, and Ghush.

David Wald from the USGS calculated that the population exposed to Intensity VII ground shaking in the recent Pakistan earthquake was comparable to that from the Northridge, California 1994 earthquake. Over 80,000 people died in Pakistan, whereas about 57 were killed in the Northridge earthquake. Construction standards (building codes and enforcement) and practices are largely the reason for this three order-of-magnitude difference.

### **Earthquakes in Southern Nevada - Outreach Efforts**

Gaye Coté, Director and Project Administrator for the UNLV Earthquakes in Southern Nevada Project, spoke about their efforts in public outreach. They have developed a series of educational PowerPoint presentations to increase basic knowledge of the science, geotechnical aspects, and structural engineering techniques and considerations of earthquakes. Borrowing freely from published sources, they have specific information on earthquake risk in Las Vegas Valley and how to mitigate risk and be prepared. Target, the retail store, has donated materials for demonstration emergency kits. Gaye and others have made several presentations, including demonstrations with a small shake table, to local schools in their little theaters and in classrooms. The fact sheets from the Incorporated Research Institutions for Seismology (IRIS) are used as handouts. They have a city-planner activity for the schools as well. They also have made presentations at health and safety fairs in the community, where they hand out brochures from the American Red Cross. Groups also come to the UNLV campus, including officials from the Community College of Southern Nevada, local college advisors, and high-school counselors. They also helped with the teachers' workshop during the annual AEG meeting in September. They have worked with the Greenspun School of Journalism and Media Studies at UNLV to

prepare two public service announcements.

In assessing their outcomes, they have found that the efforts in schools have been less effective than the booths at community events, the workshops with teachers, and work with the media. They are working on bill stuffers and newsletters from local utilities, articles for magazines and newspapers, the K-5 Math and Science Fair on February 9, 2006, and Saturday workshops on home preparedness and emergency kits at Home Depot stores, more media coverage, more workshops, and additional marketing tools (bookmarks, etc.). They are working on a Lego competition for Earthquake Awareness Week (following Berkeley's approach); the successful Lego buildings have to be designed with certain specifications and withstand shaking on a shake table.

The Council thanked Gaye for her presentation and encouraged her to continue the fine efforts.

### **Structural Analysis of the New Washoe Medical Center Tower**

Kirk Ellis and Dan Riebli, with Kirk Ellis and Associates, reported on their company's structural analysis of the new 12-story tower (and basement) that Washoe Medical Center is adding at their facility in Reno. Their company was asked to check the plans presented by the structural engineering firm that designed the building. The computer model predicts 9 inches of displacement on the top floor during the maximum considered earthquake for this site. The design exceeds the criteria in the International Building Code 2005, and the building should be able to be occupied immediately after the expected earthquake.

John Anderson asked whether there is a need for a consensus figure for the maximum considered earthquake (specifically the time series of the expected ground motion). Such technical details are important in performance-based engineering design, for which a building may be expected to be functional after an earthquake rather than simply meet minimum standards of the building code, which typically are meant to prevent loss of lives.

### **Strategic Planning for the Nevada Earthquake Safety Council**

Ron Lynn led a continuation of the discussion from the August NESC meeting concerning strategic planning. Craig dePolo will collate comments as the starting point for updating this plan. He will add narrative statements about the progress made so far on goals that were established in the previous plan.

**ACTION ITEM:** Mike Blakely will create a list of criteria of building construction that should be identified in a database that could be used by the Nevada Historic Preservation Office and others in assessing buildings for which seismic retrofitting may be needed (e.g., whether a building is a URM built prior to 1935; whether it is wood frame on rubble foundation). Mike will send this to Ron Lynn, who will have staff at the Clark County Building Department review it and add to it as necessary.

### **Old Business**

Ron Lynn reviewed action items from the last meeting. He noted that the Council is pleased that the Department of Defense had decided, in part in response to the letters written by the Council and individual members, that the C-130 airplanes will remain with the Nevada Air National Guard in Reno and not be transferred as part of the nationwide efforts on military base closure and realignment. The planes will be available for emergency response after a major event, such as an urban earthquake.

Craig dePolo reported for Greg Moss, who at the last meeting agreed to suggest a policy recommendation regarding the identification and mapping of active faults in development plans that are submitted for approval by local jurisdictions. Greg suggested that the Council write to local governments requesting that they catalog geotechnical information on faults and submit copies of the information to the Nevada Bureau of Mines and Geology. Greg's specific recommendation is as follows:

“The Nevada Earthquake Safety Council, in conjunction with the Nevada Bureau of Mines and Geology, requests that [jurisdiction/agency] catalog all geotechnical investigations submitted to your agency that involve investigation of earthquake faults. The purpose of this catalog is to broaden our

understanding and knowledge of earthquake fault locations and characteristics within Nevada. Geotechnical investigations represent a valuable resource of such data that are currently inaccessible in a regional or statewide context.

Each report should be referenced by public land coordinates (Section, Township, and Range), as well as by assessors parcel number, as shown below. The geotechnical consultant should be required to include specific information with respect to the location of all fault trenches and the trace of each fault investigated, in the report. Such data would, at a minimum, comprise GPS or surveyed coordinates.

Location APN(s) City/County Geotechnical Consultant Report Title Report Date

(T,R,S)

A copy of the catalog of geotechnical investigations should be submitted to the Nevada Bureau of Mines and Geology on an annual basis. Copies of such reports (electronic or paper) should be retained by [jurisdiction/agency]. In the event that [jurisdiction/agency] does not wish to retain copies of these reports, they should be forwarded to the Nevada Bureau of Mines and Geology.”

**ACTION ITEM:** Terri Garside will place Greg Moss's recommendation regarding the identification and mapping of active faults in development plans that are submitted for approval by local jurisdictions on the agenda for discussion at the next NESC meeting.

The following action items remain to be done.

**ACTION ITEM:** Mike Mike Blakely and John Kubota will work with Werner Hellmer to further investigate necessary steps to develop guidelines for the construction of rockery walls that could be adopted as part of the building code. They will also reevaluate the role of the Council in this process.

**ACTION ITEM:** Jon Price and John Anderson will work with the USGS on issues of funding for deployment of the Advanced National Seismic System to best meet needs for seismic monitoring and research in Nevada.

**ACTION ITEM:** Rick Martin and Ron Lynn will work on arranging ATC-20 classes in both northern and southern Nevada. Alan Bennett volunteered to help set up the class in northern Nevada, assuming that FEMA funds would be available for the instructor.

**ACTION ITEM:** The '06 Committee (co-chaired by John Anderson and Craig dePolo) will report at the next NESC meetings on its progress regarding a Nevada response to the commemoration of the 1906 earthquake in San Francisco. Terri Garside will allocate up to 15 minutes for this report on the agenda for the next meeting.

### **New Business**

Jim Reagan introduced James Sudderth, who spoke about the State Vulnerability Assessment. They are taking an all-hazards approach and will report to the Nevada Commission on Homeland Security. They are accessing information from the NESC and the Nevada Hazard Mitigation Planning Committee.

Jim O'Donnell suggested that Ron Lynn give his presentation about subsidence on the Strip, which he recently made to the AEG chapter in Las Vegas, to the Council at an upcoming NESC meeting.

### **Announcement of Future Meetings**

Future NESC meetings are as follows:

Wednesday, February 8, 2006 (Las Vegas)

Wednesday, May 10, 2005 (Reno)

Wednesday, August 2, 2006 (Las Vegas)

Wednesday, November 8, 2006 (Reno).

### **Public Comments**

None.

### **REVIEW OF ACTION ITEMS**

Terri Garside will arrange for recording of future meetings to comply with Nevada statutes.

The ad hoc committee on HAZUS results, chaired by Wayne Carlson, should report at the next NESC meeting.

NESC committee chairs should give Jim Reagan information on any significant progress between November 2005 and the end of the year, so that this information can be included in the NESC annual report. In addition, each committee chair should provide input to Jim Reagan on the strategic plan for NESC.

Jon Price will convey the nominations to Frank Siracusa, Chief of the Nevada Division of Emergency Management, who approves appointments to the Board of Directors.

Alan Bennett will seek a representative from builders or architects in northern Nevada as a possible nominee for membership on the NESC Board of Directors.

Ron Lynn will seek an engineer or safety officer from one of the major casinos in southern Nevada as a possible nominee for membership on the NESC Board of Directors.

Terri Garside will allocate 30 minutes on the agenda for the next meeting for the report of the Ad Hoc Committee on Rockery Walls.

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respectfully submitted by Jon Price, 23 November 2005

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 9 November 2005)**

Business and Industry, Southern Nevada vacant

Business and Industry, Northern Nevada vacant

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  
EM

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 Alan Bennett

City of Reno

State Senate Warren Hardy 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 Jim Werle

Second Vice Chair-North Greg Moss

Secretary Jonathan G. Price

Past Chair John Anderson

Division of Emergency Management Representatives Rick Martin