



NEVADA EARTHQUAKE SAFETY COUNCIL

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TO: Mr. Ron Lynn, Chairman, Nevada Earthquake Safety Council
Board of Directors, Nevada Earthquake Safety Council

FROM: Jim Reagan, Chairman, Strategic Planning Committee

RE: Annual Report of Activities for Plan Year 2004

I am pleased to provide a summary of activities and efforts achieved by the Standing Committees and members of the Nevada Earthquake Safety Council for the calendar year 2004. This is the second full year with the revised Strategic Plan utilizing three interactive standing committees. As with previous years, the committee members and members of the council have made great progress toward the mission and goals of the council and earthquake safety in Nevada. This years accomplishments include:

EDUCATION COMMITTEE

- The theme for 2004 Earthquake Safety Week was "Beat the Quake." There were 79 entries for the poster contest from school districts in Clark County and Carson City. The winning posters were viewed on the Nevada Seismological Society Web site (www.seismo.unr.edu).
- Council members Cathy Snelson, Jenelle Hopkins, and Ken Smith organized a workshop in March 2004 in Las Vegas for teachers (students and parents) to learn to use the Nevada school earthquake network software.
- Council member Jim O'Donnell completed a nonstructural earthquake hazard survey and mitigation at the Las Vegas Academy.
- Education committee members, in cooperation with news media collected oral history accounts from the 1954 earthquakes near Fallon. This is the 50th anniversary of these events.
- The Education committee identified and e-mail promoting the "triangle of life" (using a fetal position along a wall), rather than "Duck, Cover, and Hold," as a preferred method of safety during earthquakes. Through their research and the support of FEMA representatives, the Nevada Earthquake Safety Council formally adopts FEMA's recommendation to use "Drop, Cover, and Hold On" or "Duck, Cover, and Hold."

RESEARCH & INFORMATION COMMITTEE

- Nonstructural Mitigation Workshop on April 28, 2004 at Boomtown, Verdi, Nevada was a success. Participants received FEMA publications and CDs from the Bureau of Reclamation. Many suggestions were made at the workshop, and much work is needed to follow up.
- The Basin and Range Province Seismic Hazards Summit II, was held May 17-19, 2004 at John Asquaga's Nugget Hotel in Sparks, Nevada.
- Council member Ron Hess provided extensive work on earthquake loss estimation modeling using FEMA's HAZUS program.
- Craig dePolo was involved in USGS-NEHRP-sponsored studies of faults in the Minden – Gardnerville - Carson City - Reno area and provided follow up presentation to the council.
- Eric Fossett, UNLV graduate student, defended his M.S. thesis on the Black Mountain fault south of Las Vegas, which was partially supported with FEMA/NDEM funds channeled through the NESC.

POLICY COMMITTEE

The Council unanimously endorsed the Policy committee's recommendations for:

- Mitigation of Non-structural Hazards in Schools – *Recommendation to DEM*
- Mitigation of Non-structural Hazards in Critical Facilities - *Recommendation to DEM*
- Emergency earthquake research funds, with the expectation that \$100,000 be made available for the first two years, enough to cover opening and documenting four trenches at \$25,000 each - *Recommendation to DEM*
- Unreinforced masonry buildings should be identified and prioritized for earthquake hazard mitigation. A statewide survey that identifies URM structures and categorizes the degree of earthquake damage vulnerability should be completed by state, local, and school officials - *Recommendation to DEM*

Three earthquake risk mitigation awards were given to:

- Assemblyman Bernie Anderson and the Nevada Legislature for sponsorship and passage of Assembly Bill 57 in the 2003 legislative session
- Lori Williams and Jim O'Donnell for mitigation efforts at the Las Vegas Academy
- Dan O'Brien for the work of the State of Nevada Public Works Board for remodeling the former Carson City Courthouse including earthquake retrofit features

The Council unanimously approved a resolution recognizing the 50th anniversary of the 1954 earthquakes near Fallon:

SCIENTIFIC AND INFORMATIONAL PRESENTATIONS:

Fault And Fissure Hazards In Clark County - The Council unanimously approved a motion to endorse the April 2004 University of Nevada plan for seismic microzonation measurements in the urban area of Clark County, Nevada, as presented by Dr. John Louie.

San Simeon Earthquake, San Luis Obispo County, California - Ron Alsop, Emergency Manager for San Luis Obispo County, discussed his county's effects from and response to the Magnitude 6.5, 22 December 2003 San Simeon earthquake.

San Simeon Earthquake - Professor Rakesh Goel, California Polytechnic State University, discussed effects of the earthquake at Paso Robles, Atascadero, Oceano, and San Luis Obispo.

The Impact of Rockery Walls, Are They Safe? - Werner Hellmer, Senior Engineer with the Clark County Department of Development Services, Building Department, discussed standards for design and construction of rockery walls. Werner Hellmer will chair an Ad Hoc Committee on Rockery Walls and report back to NESC with any recommendations for the adoption of guidelines for their construction and performance during earthquakes.

Las Vegas Seismic Response Project: Initial Results From SILVVER (Seismic Investigations of Las Vegas Valley) - Cathy Snelson updated the NESC on the project, which is being undertaken by UNLV, UNR, and Lawrence Livermore National Laboratory.

Seismic Velocities Measured in the Las Vegas Area - Wanda Taylor summarized the study, which identifies the area on the north side of the valley, having a higher potential for ground shaking than the area of the valley that has already been built up.

Earthquake Predictions are they Reliable and is Nevada Prepared? - John Anderson and Jim Brune discussed the history and current status of earthquake prediction. The scientific community does not believe that earthquakes can be predicted at this time with a narrow enough window in time or a high enough probability that the public can take short-term action.

2004 Adobe Hills Earthquake Sequence - Ken Smith reported that there were two significant earthquakes (M5.4 and M5.5) in the Adobe Hills volcanic area (2 million-year-old basaltic volcanic area), east of Mono Lake, California.

Lake Tahoe Deep Earthquakes and Activity at Mono Lake - Ken Smith briefly discussed the paper that he and colleagues published in Science magazine concerning the 2003 deep small earthquakes at the northwest end of Lake Tahoe, with a coincident movement of Slide Mountain up and to the northeast as measured by high-precision GPS instruments.

Updating Seismic Hazard Maps in the Reno-Carson City Urban Area - Feng Su reported on investigating the impact of alternative seismic hazard inputs on the probabilistic seismic hazard estimates in the Reno-Carson City metropolitan area.

PROJECTS:

The Council discussed and set priorities for funding of 8 project proposals totaling \$114,945.00 for possible FEMA federal fiscal 2004 year-end funding.

- Earthquakes in the Classroom
- Earthquakes in the Classroom: K-12 Workshops in Las Vegas
- Mapping and Timing of the California Wash Fault in Nevada
- Real-Time Earthquake Recognition in the K-12 Seismic Network
- V30 measurements at ANSS and NSL stations and Ground Motion Amplification in the Reno area
- Fabrication of a Low-Cost Educational Shake Table
- Seismic Microzonation for the Las Vegas Valley
- Bearing Capacity Under Developing Liquefaction.

In summary, the Nevada Earthquake Safety Council has provided a successful venue for science, research, and information on Nevada's Earthquake Hazards to be promulgated in legislature, provided to business and industry, and delivered to the citizens of Nevada. Additional information and details of these accomplishments are noted in the minutes of the quarterly meetings. The many contributors to this outstanding effort are recognized in the minutes, and it is important to note that it does indeed take many contributors, individually and in concert with one or more committees, to achieve the goal of Earthquake Safety in Nevada.