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**Calendar of Events**

**MAY 2003**

- 8  
Association of Contingency Planners/ATC-20 Training  
SLC, Utah
- 15  
Div. Of Emergency Services  
City/County Director's Conf.  
SLC, Utah
- 20-22  
4th Inter-Mountain HazMat Conf.  
Ogden, Utah.

**AUGUST 2003**

- 10-13  
Sixth U.S. Conference and Workshop on Lifeline  
Earthquake Engineering  
(TCLEE), Long Beach, CA.
- 21-22  
Div. of Emergency Services  
Public Officials Conference  
Park City, Utah

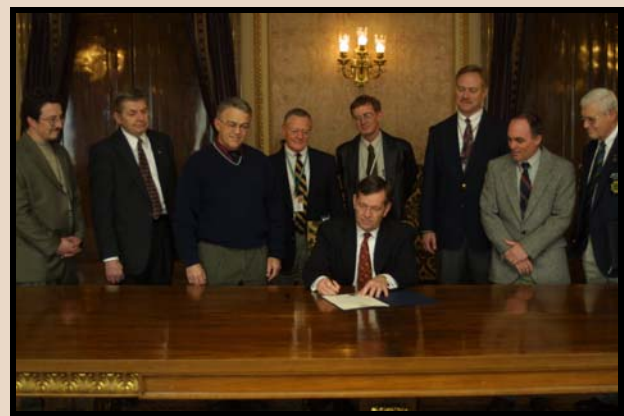
**SEPTEMBER 2003**

- 21-24  
WSSPC Annual Conference  
Portland OR

**Next issue look for Utah Seismic Safety Commission Meeting Minutes and U of U Quarterly Seismicity.**

**DECLARATION FOR APRIL EARTHQUAKE / DISASTER PREPAREDNESS MONTH SIGNED**

On March 19, Governor Michael O. Leavitt met with members of the Utah Seismic Safety Commission in the Gold Room to sign a proclamation declaring April 2003, as Earthquake and Disaster Preparedness Month. In the current environment where natural and technological hazards can occur at any time, the proclamation noted efforts of state and local officials and leaders from the business community in promoted seismic safety in their facilities. Also noted in the proclamation was the state's efforts to seismically retrofit the Capitol which demonstrates the importance of strengthening earthquake-vulnerable building in the state.



From Left to Right: Michael Keene, Carl Eriksson, Barry Welliver, Walter Arabasz, Governor Michael Leavitt, Rick Allis, Scott Behunin, Dave Nazare, & Kerry Baum

**NEW COMMISSIONER FOR THE UTAH SEISMIC SAFETY COMMISSION**

The Utah League of Cities and Towns has appointed Carl Eriksson to replace Anne vonWeller on the Commission. Carl is the Plan Check Coordinator for the Building Inspection Division for Park City. He is better know for his years of service with Salt Lake County Development Services Division and most recently the Public Works Director for West Jordan.

At the October USSC meeting, Commissioner Anne vonWeller, representative for the Utah League of Cities and Towns, announced her resignation. Anne has accepted a position with the International Code Council (ICC). She will be serving as the Vice President of the ICC which is a nonprofit volunteer organization that promulgates and provides support for construction and fire codes. ICC has 55,000 members in more than 30 countries and is the publisher of the construction codes used in 97% of the U.S. ICC represents the recent consolidation of the International Conference of Building Officials, Building Officials and Code Administrators, and the Southern Building Code Congress. Congratulations Anne. Let us know when you become President.

## Structural Engineering Emergency Response Plan

The Structural Engineers Association of Utah (SEAU) has formed a new committee dedicated to organizing and training Structural Engineers for emergency response.

The program will use the National Council of Structural Engineers Structural Engineering Emergency Response Plan (SEERPlan) Manual as its guide for establishing a volunteer effort by Structural Engineers to assist a variety of agencies in a number of emergency situations. The manual was created following the World Trade Center disaster in response to the need to have a consistent interface with other emergency response teams. The plan defines roles and responsibilities of the parties involved, recommends a system of credentialing, and defines procedures for the participants.

SEAU will participate in a seminar this summer focusing on the introduction of the SEERPlan including a modified ATC-20 (Post earthquake Safety Evaluation of Buildings) training course. Design professionals, building officials and other interested parties may also participate, expanding the potential well of experience.

The committee is actively organizing a volunteer registry and working on details including establishing relationships with state and local governments. It is anticipated that a database of volunteers will be created and maintained for selective use in post-earthquake and other disaster situations. Response teams will be pre-qualified for their areas of expertise and work under the command and control of the local authority.

Contact the committee by e-mail at [barrywelliver@earthlink.net](mailto:barrywelliver@earthlink.net) for additional information or questions.

## FUTURE CONSIDERATIONS PART I & II

Washington State Department of Transportation has created a short list of projects in their Biennium 2003-05 Research Program for Bridges and Structures. Two of the research projects address seismic issues.

### Rapid Processing and Transmission of WSDOT-Specific Shakemaps

A quick response by the Preservation Office to a major earthquake is predicated on the availability of information concerning the magnitude of shaking experienced throughout the Puget Sound area. This study would customize and improve the Rapid Alert of Cascadian Earthquakes (RACE) System to provide specific information on WSDOT structures. Earthquake acceleration data, estimates of likely damage, and locations of affected structures will be provided to our Bridge Preservation Section. Primary benefit is a quicker and more efficient response to earthquake events.

### Seismic Assessment and Retrofit of Existing Multi-Column Bent Bridges

The bridge seismic retrofit program has essentially completed retrofitting all of the single column bridges. The next category of bridges, those with multiply columns in each bent, raise questions as to what the correct and most economical approach should be to retrofitting. Research will focus on assessing the seismic vulnerability of typical multi-column bent bridges and providing retrofit strategies that do not require the treatment of every column in every bent. Retrofitting every column would be both time and cost prohibitive. Primary benefit would be cost savings.

### Future Considerations Part II

For those of you who missed the article in the Salt Lake Tribune featuring Commissioner Dave Nazare here are some of the highlights.

In many places, particularly along Interstates 80 and 215 through Salt Lake City, they see large chunks of concrete missing from many of the bridge structures, exposing rusty steel rods that are supposed to add strength to the structures. Examine, for example, the bridge where 2300 East near Holladay enters westbound Interstate 80....What drivers see now is just a "cosmetic" problem, said David Nazare, bridge engineer for the Utah Department of Transportation....But farther to the southeast, at 3760 south, the two bridges holding up six lanes of Interstate 215 are well beyond the benefits of a cosmetic makeover. "They have to be torn down and rebuilt," said Nazare, pointing out road-salt-soaked concrete beams, exposed steel re-bar on the load-bearing beams, and cracking columns that hold northbound and southbound decks in place. These two bridges, built in the late 1960s, are among the more than 50 of the 1784 state-owned structures that engineers have determined must be replaced -- and soon....Nazare points out that Utah is in better shape bridgewise than many eastern states because its highways are newer. About 55 percent of UDOT's bridge system is less than 30 years old....

Future Considerations Part II taken from the Salt Lake Tribune, 03/02/2003, article by John Keahey

## NEW MEMBER TO THE WSSPC BOARDS OF DIRECTORS

Commissioner Rick Allis, UGS Director, has been named to the Board of Directors of the Western States Seismic Policy Council (WSSPC). WSSPC is a regional earthquake consortium funded primarily by the Federal Emergency Management Agency. Headquartered in Palo Alto, California, WSSPC draws its membership from the emergency manager and geoscientist directors of 13 western states, 3 territories, a Canadian territory and a Canadian province. As such, WSSPC provides a broad regional and multidisciplinary forum to enhance and create opportunities for seismic hazard mitigation.

## UGS CONVENES WORKING GROUPS TO DEVELOP A CONSENSUS ON EARTHQUAKE-HAZARDS MAPS AND FAULTS IN UTAH

by  
Gary E. Christenson  
Utah Geological Survey

The Utah Geological Survey (UGS), Utah Seismic Safety Commission, and U.S. Geological Survey (USGS), in cooperation with university and private-sector partners, are spearheading development of a cooperative interdisciplinary program to update and improve earthquake-hazards maps for the Wasatch Front, Utah. We have established a Ground Shaking Working Group and Liquefaction Working Group to define a multi-year program to produce the next generation of maps, tentatively including:

- large-scale ground-shaking maps incorporating improved characterization of geologic conditions and their effects on ground motions, and
- liquefaction maps depicting potential ground displacements or other parameters as appropriate.

Each Working Group is developing a consensus among the technical experts regarding the types of maps needed, new data required, preferred data-collection and mapping techniques, and possible funding sources. Working Groups will develop partnerships, identify projects, and pursue funding. The UGS and USGS will also participate through internally funded projects by UGS and USGS investigators. Working Group results will help define the State's plan for new earthquake-hazards maps. Investigators can then use the plan to demonstrate the relevance of their proposed work, hopefully improving funding success.

The process is funded through the USGS National Earthquake Hazards Reduction Program (NEHRP). The initial one-day meeting of the Working Groups was held in Salt Lake City on March 18, 2003. The meeting brought together geologists, engineers, seismologists, and geophysicists from Utah State University, Brigham Young University, University of Utah, UGS, USGS, and various consulting companies and other state agencies. Working Group efforts will be complete by June 2003 and results will be presented in a future issue of the Fault Line Forum.

In a parallel process, Bill Lund (UGS) has established a Quaternary Fault Parameter Working Group, also partially funded by a USGS NEHRP grant, to develop a consensus among paleoseismologists working in Utah regarding earthquake timing, slip rates, and recurrence intervals for Utah faults. These parameters are important in making the probabilistic earthquake ground-shaking maps used in the building code and in regulations for bridge and dam design and retrofit. Earthquake timing, slip rates, and recurrence intervals also help us understand whether faults generate earthquakes regularly and whether earthquakes on one fault may trigger earthquakes on other faults. Fault experts from the UGS, USGS, U.S. Bureau of Reclamation, and various universities and consulting companies that have worked on faults in Utah will analyze trenching data and meet periodically over the next year to discuss their results and develop consensus values for the important fault parameters. The project is scheduled for completion by 2004.

### UTAH SEISMIC SAFETY COMMISSION CHOOSES STUDENT RESEARCH GRANT PROGRAM WINNERS

The Awareness and Education Committee has accepted two research proposals for funding. Awards were given to Ogden High School and South Summit Middle School. The Ogden High proposal is an engineering and architectural investigation of their school. The students will be assisted on the project by VCMI, an architectural firm hired by the school district to conduct a physical facilities study.

South Summit Middle School will be investigating the changes and damages that earthquakes cause. The students will conduct a field research at Hebgen Lake. In addition to the seismic investigation, the students will also study Yellowstone National Park geology, natural life, and history.

*Awards are given to  
Ogden High School  
and  
South Middle School.*



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## CALIFORNIA DIVISION III-R

The seismic retrofit regulations, known as Division III-R, apply to all existing general acute care hospital buildings. The goal of these regulations is to develop retrofit and repair designs for existing hospital buildings to yield predictable seismic performance, whether at the essential life safety level or post-earthquake continued operations level. The requirement of Division III-R must be used to upgrade from an existing seismic performance category to a higher category level. Specifically, these regulations were explicitly developed for use in the retrofit, repair, modification or alteration of existing hospital buildings.

Each general acute care hospital facility must be at certain seismic performance category levels by specified timeframes. For example, all general acute care hospital facility buildings must be at the SPC 2 ("Life Safety Level") by January 1, 2008 to be in compliance with the provisions of the regulations. In addition, timeframes for submittal of seismic evaluation, compliance plans, and other seismic performance levels are cited in the seismic evaluation procedure regulations.

On September 28, 2002, the Governor of California approved legislation that extended the compliance deadline to January 1, 2013 for certain hospital buildings of a general acute care hospital that designated services being provided by moving into an existing conforming building, relocating to a newly-built building, or continuing in the building as retrofitted where the buildings are in compliance with designated structural and nonstructural performance categories. To be eligible for the deadline extension each hospital has to submit a schedule of interim work progress deadlines that the hospital would meet.

Compliance oversight for this legislation is the responsibility of the Seismic Retrofit Unit of the Facilities Development Division of the Office of Statewide Health Planning and Development.