



# THE CUSEC JOURNAL

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THE CENTRAL UNITED STATES  
EARTHQUAKE CONSORTIUM

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## Renewing Partnerships to Reduce the Earthquake Risk at Home and Abroad



*On February 4, 1976 a magnitude 7.5 earthquake struck near Los Amates, Guatemala, killing nearly 25,000 and injuring more than 75,000. Earthquakes like these provide valuable learning opportunities for the central United States.*

Recently, CUSEC was part of a delegation from Arkansas which traveled to Guatemala City, Guatemala on April 19-23, 2010, to participate in an “Emergency Management Earthquake Monitoring Exchange.” The exchange was part of the State Partnership Program (SPP) between the Arkansas National Guard (ARNG) and the Republic of Guatemala.

This particular exchange was focused on earthquake detection and study, but also concerned other aspects of earthquakes and geological hazards in Guatemala such as volcanoes and landslides. Much of the information Guatemala provided on earthquakes stems from its experience with a devastating M7.5 earthquake in 1976, and the hard lessons learned from that earthquake.

The delegation met with emergency management officials from the National Coordinating Agency for

the Reduction of Disasters, or CONRED, which fulfills the same basic function in Guatemala as FEMA does in the United States. The meetings included briefings from the delegation and from Alejandro Maldonado, Executive Secretary for CONRED. Paul Hogue, Exercise/Training Officer from CUSEC, spoke to the group about CUSEC, catastrophic planning, and the NLE 2011 exercise. Other briefings to CONRED were delivered by the Arkansas Department of Emergency Management (ADEM), the ARNG, and the Arkansas Earthquake Center at the University of Arkansas at Little Rock (UALR).

The group also visited the National Institute of Seismology, Volcanology, Meteorology, and Hydrology, known as INSIVUMEH. This agency is charged with monitoring the earthquake threat as well as other natural threats to Guatemala, and is the primary scientific resource for the national government and CONRED. The group was welcomed and briefed by Eddy Hardie Sanchez Benett, Director General of INSIVUMEH. After briefings from both INSIVUMEH and the Arkansas group, the group traveled with two of the staff from INSIVUMEH to inspect seismic monitoring equipment on the Pacaya volcano, only 18 miles from the capital of Guatemala City. Pacaya is a very active volcano, and is one of 34 active volcanoes in the country.

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It is expected that several of the future exchanges will also focus on earthquakes. Some of the CONRED officials participating in this meeting visited the CUSEC offices last May when their delegation visited Arkansas.

CUSEC Executive Director Jim Wilkinson on the recent exchange:

*“We were honored to be able to have staff accompany the delegation. I see this as an important opportunity to rebuilding what was a successful CUSEC/Latin American partnership organized under the Organization of American States in the 1990’s. Participating countries such as Colombia, Costa Rica, Ecuador, Chile, and Venezuela in the past, and now Guatemala, bring hands on experience to dealing with earthquakes that has proven to be very beneficial to our mitigation and response planning efforts.”*



*The visiting delegation from Arkansas and CUSEC include (left to right) MAJ Tracy Saucy, two staff from INSIVUMEH, Dr. Haydar Al-Shukri from UALR, Paul Hogue from CUSEC, David Johnston from the Arkansas Geological Survey, MSG Greg White from the ARNG, Carol Walton from ADEM, and two support staff for the exchange. Not Pictured - LTC Marcus Hatley and CPT James Nolley*

## AROUND THE REGION

### CUSEC Board Chairman Urges Personal Preparedness

*by Brigadier General John W. Heltzel*

*State Director, Kentucky Division of Emergency Management*

*Deputy Commander, Kentucky National Guard*



I recently returned from the National Emergency Management Association (NEMA) meeting in Washington DC. This is a great event marked by attendance from all high-ranking members of FEMA and Homeland Security. I’ve attended several of these meetings in the past, but this meeting was particularly outstanding. On Tuesday I was able to visit Capitol Hill and talk with nearly all of our congressional delegation about the issues and needs of emergency management

at the national and the state level. Our requests for additional funding for generators and mitigation projects were handed off to all congressional leaders. The discussion was lively and I’m happy to report that they are informed and supportive of our needs to continue to improve in areas of preparedness, response and recovery.

During my trip I got a chance to listen to the Administrator of the Federal Emergency Management Agency (FEMA), Mr. Craig Fugate. As many of you know, Mr. Fugate was a long time emergency manager in the state of Florida. In many ways he wrote the book on the modern preparedness and response models that are used nationally. His direct and common sense approach is a good guide for moving our program forward. One of the points he made is something that we must use as a guide and our preparedness for our response to the New Madrid Seismic Zone threat:

*We must be able to organize at the local level our survivors. We must consistently talk about personal preparedness. Failure at the individual level to be prepared for an emergency only increases the number of people that must be cared for...*

***It is critical that every able-bodied man, woman and child be prepared!***

When individuals and families fail to prepare, they actually take away resources from those who cannot prepare for their own situations. They place those in the greatest risk category - the ill, the aged, those with significant disabilities and those truly without resources in jeopardy. The greater the burden on the response system the less likely it is to meet the needs of the truly needy. As we build our preparedness and response plans, we have to keep things like this in mind.

## Earthquake Awareness 2010 Recap

In February of this year, many central U.S. residents participated in events hosted throughout five of eight CUSEC member states - Arkansas, Kentucky, Mississippi, Missouri and Tennessee - participating in Earthquake Awareness Month. The increase in interest about earthquake preparedness seemed to stem from the recent 7.0 magnitude earthquake in Haiti on January 12. As this catastrophic event unfolded, news that this was the largest earthquake to hit the island in 200 years raised questions and concerns among Americans as the central U.S. approaches the 200th anniversary of the 1811 and 1812 great New Madrid earthquakes.

At various earthquake awareness and preparedness events, EMA officials and members of academia, volunteer organizations and the private sector

reminded central U.S. residents that through pre-disaster preparedness and mitigation efforts, they can determine what their lives will be like after a catastrophic earthquake in the region. Participating states began their earthquake awareness observance with a governor's proclamation followed by a variety of activities that included:

- seminars, workshops and business meetings
- public health (and medical issues) courses
- earthquake-related training
- earthquake townhall meetings, exhibits, school drills, and more!



*CUSEC Earthquake Program Coordinator Brian Blake shown here talking with visitors to the CUSEC booth at the St. Louis Science Center in February.*

In conjunction with the second anniversary of the April 18, 2008 earthquake, the state of Illinois highlighted earthquake preparedness during the month of April. The Illinois Emergency Management Agency (IEMA) kicked off its earthquake preparedness campaign with a statewide press release and an announcement on the agency's Twitter and Facebook pages. In addition to hosting activities similar to those mentioned above, IEMA posted four YouTube videos of speakers, one featuring CUSEC Executive Director Jim Wilkinson, from an Earthquake Summit held in January.

For more information about Earthquake Awareness 2010 and earthquake-related information in general you can visit your state's emergency management agency website; or you can log on to [www.cusec.org](http://www.cusec.org).



## CUSEC Board Member Nominated as FEMA Regional Director



April 16, 2010 - FEMA Administrator Craig Fugate applauded President Obama's recent appointment of Andrew Velasquez III as FEMA Regional Administrator for Region V, which includes the states of Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin.

"Regional Administrators are crucial to our ability to respond effectively to emergencies based on the needs of the communities we serve," said Fugate. "Andrew Velasquez is not only an experienced emergency manager with deep roots in the region, but also a dedicated public servant. His knowledge and experience make him uniquely qualified to help lead our efforts there."

Velasquez brings extensive experience in emergency management at the state and local level. He has served as Director of the Illinois Emergency Management Agency (IEMA) and State Homeland Security Advisor since 2007, and prior to that was Executive Director of Chicago's Office of Emergency Management and Communications.

Since joining IEMA, Director Velasquez has been an active and vocal participant on the CUSEC Board of Directors. We wish him the best of luck in his new role as Regional Director of FEMA Region V.

## CUSEC GIS Workgroup Meets in Mississippi

Representatives from the CUSEC member states and other organizations attended the second meeting of the CUSEC Geographic Information System (GIS) Working Group in January in Southaven, Mississippi. At this meeting, participants discussed -

- *current state GIS and WebEOC capabilities*
- *the sharing of best practices to solve problems*
- *state-to state data flow, sharing and storing of information*

- *how to integrate with other divisions within their organizations*
- *the strengthening of the eight CUSEC state capacity to work together*
- *taking on the abilities of social media*

The primary mission of the working group is to build GIS capacity and leverage existing GIS systems found within the member states .

## CUSEC Participates in a USACE Earthquake Readiness Workshop

Nearly 300 representatives from all levels of government, academia and the private sector convened in Memphis recently for a U.S. Army Corps of Engineers New Madrid Earthquake Regional Readiness Workshop. The goal was to improve overall preparedness to response to a catastrophic earthquake occurring in the central U.S. Workshop facilitator, Bob Fletcher noted the importance of thinking outside of the box to address the unparalleled challenges to post-earthquake response and recovery efforts in the region because of the unique nature of this seismic event.

*"This will not be business as usual. This will not be a regular disaster. We're going to have to do ten times what we would normally do."*

In break-out sessions, attendants talked about general intergovernmental operational priorities and challenges, local/state requirements and corresponding with the FEMA mission assignments to the U.S. Army Corps of Engineers (USACE), significant challenges for USACE under its own authority, and the identifying any policy or statutory obstacles.

CUSEC Executive Director, Jim Wilkinson gave a presentation that covered the history of the New Madrid Seismic Zone (NMSZ) and summary of the organization's earthquake awareness activities. He was also among a selected group of workshop participants who answered questions in a two hour panel discussion about medical care, mass sheltering and the operability of communications after a major New Madrid earthquake.

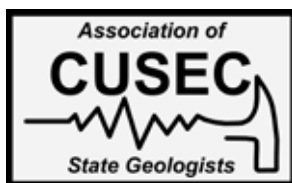
## USGS Hosts Meeting with CUSEC Association of State Geologists

The CUSEC Association of State Geologists met with Dr. Jill McCarthy, Geologic Hazards Team Chief Scientist with the U.S. Geological Survey (USGS) at FedEx Institute of Technology on the campus of the University of Memphis in on February 25 and 26. Discussions included the following:

- *the 2011 National Level Exercise (NLE 2011)*
- *the 2011 Central US ShakeOut*
- *New Madrid Bicentennial activities*
- *state geological survey post-earthquake response plans*
- *state geological survey support of emergency response activities*
- *potential meeting with the state emergency management agency operations chiefs*
- *mapping projects and geographic information systems*
- *"The Central U.S. is Earthquake Country" course*

There was also discussion surrounding the question "Should We Base Response on Magnitude or Intensity-Based Measurements?" In addition to the topics mentioned above, the group talked about their ongoing effort to determine and meet the needs of state emergency managers and the general public.

Sponsored by the USGS, this meeting was organized by Robert Bauer, CUSEC Association of State Geologists Technical Director and Joe Gillman, Chairman of the CUSEC Association of State Geologists. All CUSEC member states were represented.



## EMA Officials Meet for Earthquake Planning

Emergency Management Officials from Mississippi, Tennessee, CUSEC and FEMA met in Memphis on March 31 and April 1 to identify the shared challenges of these two states to enhance cross-state coordination in response to a damaging earthquake in the central U.S. Topics discussed in this meeting surrounded the scenario of a 7.0 magnitude earthquake in the New Madrid Seismic Zone (NMSZ) causing significant damage in at least eight states—Alabama, Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri and Tennessee. Mike Brown with FEMA's Regional Exercise Support Program kicked-off the meeting with a brief overview of the seven CUSEC planning priorities—transportation, emergency medical, public information and education, communications, search and rescue, multi-state coordination and the multi-state clearinghouse. In a discussion about damage to highways and interstates that run through Mississippi and Tennessee, EMA officials agreed that in spite of jurisdictional rules, crossing state lines to respond to the needs of impacted communities would not be an issue.

"Just because there is a line on the map doesn't mean that we can't use Tennessee resources to help Mississippi victims," said Derial Bivens, Emergency Services Coordinator with the Tennessee Department of Transportation (TDOT).

As meeting attendants discussed the CUSEC planning priorities, emphasis was placed on the need for both states to be on one accord with post-earthquake response efforts because of the physical, social and economic impacts that this no-notice event will have on the region and the nation.

"When this earthquake takes place, there's going to be a paralysis," said James Bassham, State Director of the Tennessee Emergency Management Agency (TEMA). "It's going to be something that we've never seen before in this part of the world."

Recognizing that local EMA and law enforcement will be on the frontline responding in the region's grass-root communities before state and federal aid arrive, Mississippi Emergency Management Agency

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## RECENT CENTRAL U.S. EARTHQUAKE ACTIVITY

DATE	LOCATION	MAGNITUDE
2/10/10	Pingree Grove, IL	3.8
2/18/10	Twin Groves, AR	2.5
3/02/10	East Prairie, MO	3.7
3/10/10	Caruthersville, MO	2.6
3/16/10	Hector, AR	2.5
3/25/10	Lincolnton, GA	2.5
4/8/10	Jones, OK	3.2
4/10/10	Jones, OK	2.8
4/12/10	Luther, OK	3.0
4/21/10	Choctaw, OK	2.6
4/21/10	Choctaw, OK	2.5
4/20/10	Maryville, TN	3.3
4/22/10	Maryville, TN	2.6
4/24/10	Near Mt. Carmel, IL	2.5
4/25/10	North Madison, OH	2.7
4/25/10	Rancho Banquete, TX	4.0

**IF YOU FEEL AN EARTHQUAKE, REMEMBER TO:  
DROP, COVER, & HOLD ON FOR MAXIMUM SAFETY**



Visit <http://www.dropcoverholdon.org> to learn more ~ Image Courtesy Southern California Earthquake Center

### DID YOU FEEL IT?

If you recently felt an earthquake, remember to go to the USGS website and log your experience on the “Did You Feel It?” webpage. The information you provide helps scientists understand how the ground shakes at different locations and helps show the wide reaching effects of earthquakes. Visit - <http://earthquake.usgs.gov/dyfi> for more info



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State Director Mike Womack also stressed the importance of pre-disaster coordination with city and county emergency management. In addition to the seven CUSEC planning priorities, there were discussions about the 2011 National Level (Earthquake) Exercise and regional long-term recovery.

## **CUSEC and SEMA Conduct Post-Earthquake Medical Issues Course**

CUSEC recently presented a class called *Disaster Medicine 201: Post-Earthquake Medical Challenges in the New Madrid Seismic Zone* on March 18-19, 2010, in Festus, Missouri. The class, conducted at the Shalimar Plaza Hotel and Convention Center, was created in cooperation with the Centers for Disease Control and Prevention (CDC), and is a big-picture overview of medical issues related to the earthquake threat in the New Madrid Seismic Zone. The course was arranged by the State of Missouri Emergency Management Agency (SEMA) with assistance from the Missouri Hospital Association (MHA). Representatives from CUSEC and the CDC worked on the curriculum for the class.

“We feel fortunate that we are able to partner with an organizations like SEMA, MHA and CUSEC to present such an important and unique training opportunity,” said Miguel Cruz with the Office of Terrorism Preparedness and Emergency Response at the CDC.

The intended audience for the class was medical personnel— EMT’s, paramedics, nurses, doctors, and others concerned with medical and operational issues following an earthquake. The class is a follow-up to the successful “Disaster Medicine 101” class which was primarily concerned with public health issues following an earthquake, conducted in Sikeston, Missouri, in 2008. The class consisted of lectures on the earthquake threat, initial hospital and medical establishment response, the field response in the first 24 hours (including state and federal efforts), and longer-term concerns including public health efforts and mass casualty management. Additionally, a discussion panel on the second day examined mass casualty management at the local, state and federal level to show what resources could be available to the medical community. Total attendance for the two days was 105 students.

“The class was very successful,” said Paul Hogue, CUSEC Exercise/Training Officer. “We had a great range of careers and disciplines in the medical community attending. It was a fantastic opportunity for the students to have those instructors and panelists in one room, and we very much appreciate their participation.”

Disaster Medicine 201 is a redesign of a similarly-named course conducted by CUSEC in the 1990’s. It takes into consideration the development of the National Incident Management System (NIMS), new and modified federal resources and advances in scientific knowledge of the earthquake threat.

Primary instructors for the course included Dr. Mark Keim, Senior Advisor to the Director for the National Center for Environmental Health/Agency for Toxic Substances and Disease at the CDC; Dr. Joe Holley, Medical Director for Baptist-Collierville and Tennessee Task Force One; and Dr. Robert Galli, Professor, Department of Emergency Medicine at the University of Mississippi Medical Center. A briefing on the earthquake threat was delivered by David A. Gaunt, a geologist with the Geologic Survey Program, Missouri Department of Natural Resources in Rolla, Missouri.

Panelists included Gary W. Brown, Regional Coordinator, DHHS Region VII, Office of the Civilian Volunteer Medical Reserve Corps; Jim Imholte, Supervisory Regional Emergency Coordinator, DHHS Region VII, Office of Asst. Secretary for Preparedness and Response; Glenda R. Miller, Director, Division of Community and Public Health Missouri Department of Health and Senior Services; Dr. Douglas Char, Senior Medical Officer, MO-1 DMAT; and Kathleen Young, EMS Deputy Chief, City of St. Louis Fire Department. Course instructors also served on the panel.

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## Member State Spotlight

### Arkansas Geological Survey



The mission of the Arkansas Geological Survey (AGS), formerly known as the Arkansas Geological Commission (AGC) is to increase the knowledge of the geology of the state, to stimulate the orderly development and utilization of the state's mineral, water and fossil fuel resources; while protecting the environment.

The Geological Services section is one of three divisions of AGS. The primary responsibilities in this section are:

- *to search for and provide information on the state's mineral, fossil-fuel (coal, oil and gas) and water resources*
- *to encourage the orderly development of these resources.*
- *to maintain current geologic map coverage of the state.*
- *to study and report on the geologic factors affecting the State's environment.*

Geological Services' day-to-day activities revolve around: Fossil Fuels (oil & gas, lignite & coal); Geohazards (earthquakes, landslides, karst); Minerals (metallic or non-metallic); Hydrology; Geologic Mapping (surface, subsurface); and Public Outreach. Outreach efforts such as the Geology Learning Center fall under this Section but are not a separate activity.

In addition to the activities mentioned above, AGS has several cooperative projects with the following programs within the U.S. Geological Survey (USGS).

- *Water Resources Division*
- *Groundwater Survey*
- *Stream Gauging*
- *Water Quality*

A donation by State Farm Insurance has enabled AGS to form an Earthquake Education and Outreach Program. This program will conduct a series of town hall meetings throughout Arkansas to present Earthquake

101 –an educational program designed for residents of the state. To learn more about the Arkansas Geological Survey, visit: <http://www.geology.arkansas.gov/home/index.htm>

## Associate Member State Spotlight

### Oklahoma Geological Survey

Located on the Norman Campus of the University of Oklahoma, the Oklahoma Geological Survey (OGS) is chartered in the Oklahoma Constitution and is charged with investigating the state's land, water, mineral, and energy resources and disseminating the results of those investigations to



promote the wise use of Oklahoma's natural resources consistent with sound environmental practices. The survey's activities include:

- *location and assessment of road and building materials*
- *examination of earthquakes and ground collapse, water quality and availability studies*
- *information for siting roads and dams*
- *studies that aid in exploration for and production of oil and gas*

Survey findings are made available through the internet, books, maps, workshops, seminars and lectures. OGS has served the state of Oklahoma for more than 100 years, and is the only geological survey to be written into a state constitution. Dr. G. Randy Keller has been the survey's director since 2009. He received his Ph.D at Texas Tech University, and has worked in the field of Geoscience since 1970. For more information about OGS, visit: [www.ogs.ou.edu](http://www.ogs.ou.edu).

## UALR Receives Grant for Seismic Monitoring

*Story By: KARK 4 News in Little Rock, AR*

In January, the U.S. Department of Interior awarded UALR a \$454,449 grant to establish the Arkansas Seismic Observatory to monitor earthquake activity in the central United States. Dr. Haydar Al-Shukri,



chair of UALR's Department of Applied Science in the Donaghey College of Engineering and Information Technology, and Dr. Hanan Mahdi, research assistant professor in the Graduate Institute of Technology, sought the grant to install and operate six broadband state-of-the-art seismic stations to enhance the capability of earthquake monitoring in the central United States in general and in Arkansas in particular.

"A six-component strong ground motion station will also be installed within the seismically active part of the New Madrid fault system in the northeast part of Arkansas," Al-Shukri said. The sensors will give scientists a better handle on seismic activity on the New Madrid Seismic Zone, a major seismic zone and the source of earthquakes within the tectonic plate in the southern and mid-western U.S. "In addition to monitoring the seismicity in the region, the stations will be integrated into the Advanced National Seismic System that is operated by the U.S. States Geological Survey," he said.

The New Madrid Seismic Zone was responsible for the 1811–12 New Madrid Earthquakes and may have the potential to produce large earthquakes in the future. Since 1812 frequent smaller earthquakes were recorded for the area. These earthquakes threaten parts of eight U.S. states: Alabama, Arkansas, Kentucky, Illinois, Indiana, Missouri, Mississippi, and Tennessee.

Al-Shruki said the observatory will help communities in hazard mitigation and early warning, provide public education and community outreach, and collect high-quality data to help the scientific community to better understand seismic activity and its risk in the region. "With the observatory, we can provide real-time information on seismic activity to allow for rapid response by responsible government agencies such as the U.S. States Geological Survey, the Arkansas Geological Survey, and the Arkansas Department of Emergency Management," Al-Shruki said.

## ***UPCOMING CONFERENCES, TRAINING, WORKSHOPS, ETC.***

<b>WHEN</b>	<b>WHAT</b>	<b>WHERE</b>
April 29-30	FEMA Region VI NMSZ Regional Planning Workshop	Little Rock, AR
May 3-4	CUSEC State Earthquake Program Managers Meeting	Birmingham, AL
May 7	FEMA 154 Rapid Visual Screening Workshop	Little Rock, AR
May 10	GeoMO 2010	Rolla, MO
May 25	FEMA 154 Rapid Visual Screening Workshop	Memphis, TN
May 25-26	CUSEC State Communications Officers Meeting	Jackson, TN
June 10-11	CUSEC State Transportation Task Force Meeting	Sikeston, MO
June 15-16	NLE2011 Multi-State Midterm Planning Conference	Frankfort, KY
June 29	Earthquake Mitigation for Hospitals Workshop	Memphis, TN
July 7-8	CUSEC Board of Directors Meeting	TBD Indiana
July 10-13	35th Annual Hazards Workshop	Broomfield, CO
July 25-29	Conference on Earthquake Engineering	Toronto, Canada
July 27-28	2010 Missouri Public Health Preparedness Conf.	TBD Missouri
August 30-31	2010 Disaster Preparedness Conference	Paducah, KY

# NMSZ Catastrophic Planning Project Update

## Multi-State Issues, Recent Major Earthquakes and Long Term Recovery

Thanks to the FEMA-funded New Madrid Seismic Zone (NMSZ) Catastrophic Planning Project, the CUSEC States and these counties and cities in the risk area have current earthquake plans, and continue to prepare for earthquakes. Mississippi held two state workshops the last quarter of 2009 focusing on communications, transportation, mass care and logistics. Illinois held a workshop for elected officials in early 2010 to help them understand the possible impact of earthquakes, based on scientific analysis. All eight member states are preparing to participate in the National Level (Earthquake) Exercise to be conducted in May of 2011.

With the state and regional workshops complete, the general planning focus is on multi-state issues. We're looking at common and shared cross-border issues initially for Mississippi and Tennessee. A small adjoining state workshop for these states was held (see page 5) to explore how they can work together after an earthquake. In both states, the areas expected to be heavily impacted by an earthquake are near state lines but far from the state capitols. By working together, these two states hope to enhance post-earthquake response and assistance. FEMA will participate and assist in this workshop; after evaluating the Mississippi/Tennessee meeting, similar workshops for other adjoining states may be held.

Since there has not been a major earthquake in the NMSZ in almost 200 years, we drew upon the experience and advice of scientists, researchers, first responders and organizations in areas affected more recently by earthquakes for our state and local plans. With media coverage,—print, broadcast and internet—we continue to monitor the events following other major earthquakes to enhance the CUSEC member states' NMSZ Annex accordingly.

The year 2010 has already brought several powerful earthquakes (and often powerful aftershocks) outside of the U.S.:

- *Haiti, 7.0 Jan. 12*
- *Chile, 8.8 Feb. 27*
- *Taiwan, 6.4 Mar. 4*

Smaller earthquakes have also occurred in the Central U.S., including:

- *Near Chicago, 3.8 Feb. 10*
- *Near Oklahoma City, 4.1 Feb. 27*
- *Near New Madrid, MO, 3.7 Mar. 2*

We can watch and learn from these recent events to better understand the challenges we will face following a major New Madrid Seismic Zone earthquake. These include security (civil unrest and looting); transportation systems, utilities and communications severely damaged or unavailable; not enough food, water, medical supplies, and first responders to meet the needs of those in the affected area (or can't get to the affected area due to devastation caused by the earthquake/aftershocks); and many other obstacles we don't normally have to face. We can use these lessons to improve response and recovery plans and to add realism to earthquake exercises and drills.

Individuals can better prepare their home, families and work places (<http://www.cusec.org/publications/safety/newspaperinsert.pdf>); stock up on food and other items that we might not be able to obtain following an earthquake due to transportation or other earthquake-related problems; and make sure family members know where to go, what to do, and how to communicate if separated.

The recovery from the recent Haiti and Chile events will extend over many years. There will be lessons to be learned from their recovery that will apply to recovery from a Central U.S. earthquake. If we can lay some groundwork in advance based on lessons learned from these recent earthquakes, it could greatly expedite our post-earthquake recovery. State and local jurisdictions can pass legislation and write or revise directives before a disaster occurs which will expedite post-disaster recovery. After a major earthquake, it will be very difficult for affected jurisdictions to operate, much less pass laws and ordinances.

The CUSEC Board of Directors recently designated Long Term Recovery (LTR) as a priority, mainly as a follow-up to the 2011 National Level (Earthquake) Exercise. This effort complements the national LTR effort in progress. The Secretaries of the Department of Homeland Security (DHS) and Housing and Urban Development (HUD) are co-chairing a Long-Term Disaster Recovery Working Group to develop a National Disaster Recovery Framework. Information about this initiative can be found about at (<http://www.disasterrecoveryworkinggroup.gov>). The first draft of the new framework was out for comment in February. CUSEC and some of our states are involved in this effort, which was addressed in more detail in the winter edition of the CUSEC Journal.

As you can see, there's still plenty to do to prepare for a series of NMSZ earthquakes. Taking an in-depth look at long term recovery issues, applying lessons from recent major earthquakes to improve our plans, and fostering multi-state cooperation are just a sample of what the CUSEC member states are doing to reduce deaths, injuries, property damage and economic losses that would occur following catastrophic earthquakes.

## The Road to NLE 2011 Update



*by Paul Hogue*

*CUSEC Exercise/Training Officer*

The CUSEC member states continued working on planning for the Tier One National Level Exercise scheduled for May of 2011, commonly known as NLE 2011. This is a huge undertaking involving many participants, planning conferences, strategy sessions, working group meetings, and lead-up and follow-on events taking place through the summer of 2011. The exercise will test local, state, and federal plans and annexes that were either modified or created as a result of the NMSZ Catastrophic Planning Project in the CUSEC states over the last few years. To keep readers of our newsletter well-informed of these activities, we will have this as a regular column to list major news and events pertaining to the exercise.

Along with the National Initial Planning Conference for NLE 2011 on January 6-7 in Alexandria, VA, the National Steering Committee met and added two additional overarching objectives to the six proposed by the states. One is "Medical Surge" and the other is "Long-Term Recovery." The second was put in as a place-marker for the long-term recovery conferences at the state and federal levels during the summer after the exercise. Those conferences will likely be conducted as workshops rather than tabletop exercises since detailed long-term recovery plans are not presently in place to test. The states are expected to conduct their workshops within 45 days of the exercise, and feed the information up to a federal event within 90 days of the exercise.

On March 30, the CUSEC Board met with Dr. Keith Holtermann, Director of FEMA's National Exercise Division as part of its spring board meeting. Numerous issues were discussed concerning the exercise, and the NED assured the board of several items, including:

1. Length of exercise: This will likely be five days, beginning mid-morning on Monday, which would allow for contract support and other personnel to setup before the kickoff. The fifth day, Friday, would primarily be an AAR with work devoted to establishing metrics for the long-term recovery workshops in the following months.
2. Scenario: This issue is being visited by FEMA NED in discussions with MAE Center and USGS. The NED assures us it will be sufficient to drive exercise play across the region.
3. NLE Funding Issues: Direct funding to the states is not available, however the CUSEC Board will request on behalf of all the states the ability to use HSGP funding to support NLE 2011 activities. However, FEMA will place exercise planners in each state and region.



4. The Great Central U.S. ShakeOut: This remains scheduled for April 28, 2011, and is linked to the Citizens Preparedness Working Group. CUSEC continues to work funding options to make it a robust activity.

In this past quarter, there were several lead-up exercises in our states. These include three interoperability exercises in Tennessee, a tabletop in Illinois on February 25, and a tabletop exercise in Missouri on March 17.

### **NLE 2011 Transitions**



John Aucott, who has been the NLE 2011 lead exercise planner for FEMA National Exercise Division for almost two years was recently promoted and took a temporary assignment working with the USDA in its exercise program. He will still be involved with NLE 2011 planning. CUSEC would like to thank him for all

his hard work and support to make NLE 2011 the best possible exercise, and wishes him the best of luck in his endeavors.

## **OTHER NEWS**

### **Community Preparedness Webinar Series Focuses on Earthquake Preparedness**

Lessons Learned from Earthquakes in Haiti and California were the topics of discussion in February in a live Earthquake Preparedness Webinar hosted by the Federal Emergency Management Agency.

Steve Willey with Virginia's Fairfax County Urban Search and Rescue Team set the stage as he gave an overview of his team's deployment to Haiti following the island's 7.0 magnitude earthquake on January 12. As one of many search and rescue teams, Willey described mass devastation that included collapsed buildings (most being of the "pancake" type collapse) and several hours of retrieving live and dead victims. His search and rescue team also provided other assistance such

as post-earthquake structural assessments of several hospitals, structural shoring of hospitals, and re-roofing several other buildings.

In a subsequent presentation about the Great California Shakeout, Mark Benthien, Director for Communication, Education and Outreach for the Southern California Earthquake Center (SCEC) highlighted the purpose of the Drop, Cover and Hold drill, and why residents in earthquake prone areas should participate. The Great California Shakeout, [www.shakeout.org](http://www.shakeout.org), gives Californians the chance to put into practice what they have learned about earthquake preparedness. Representing families, businesses and other community organizations, more than 12 million California residents have participated in this drill since 2008. Benthien also addressed questions about Drop, Cover, and Hold technique versus the other less credible methods.

Organizers of the New Madrid Bicentennial (NMB), the 200th anniversary of the great New Madrid earthquakes, are planning a Drop, Cover, and Hold drill for residents in the central U.S. The Great Central US ShakeOut will be held at 10:15a.m. on April 28, 2011. With a goal of at least one million participants, the 2011 ShakeOut will be the largest earthquake preparedness event in central U.S. history.

In the coming months, you will be able to get more information and register your family, school, business or organization to participate in the drill, by visiting [www.ShakeOut.org/centralus](http://www.ShakeOut.org/centralus) (website coming soon!).

**The Great  
Central U.S.  
Shake  
Out**

## Updates on Earthquake Reconnaissance

*from the EERI Website*

EERI reconnaissance teams are currently preparing reports on the Haiti and Chile events that will run in our May and June Newsletters. A clearinghouse site for the Baja California event is now publicly accessible, and information continues to be posted to both the Haiti and Chile clearinghouses. All three clearinghouses are accessible from EERI's main website (the three grey boxes in the middle of the home page). Links to the three clearinghouse sites are:

Haiti Clearinghouse

<http://www.eqclearinghouse.org/20100112-haiti/>

Chile Clearinghouse

<http://www.eqclearinghouse.org/20100227-chile/>

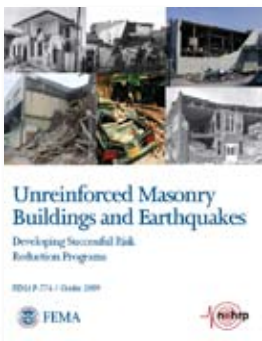
Baja California Clearinghouse

<http://www.eqclearinghouse.org/20100404-baja/>

In addition, reports from other organizations will be posted on the clearinghouse sites as they become available. The Geo-Engineering Extreme Events Reconnaissance (GEER) reports on the January 12 Haiti and February 27 Chile earthquakes, are available on the Haiti and Chile clearinghouse sites under Preliminary Reports and Presentations.

## FEMA URM Guide is Now Available Online

*from the FEMA Website*



In February of 2010, *FEMA P-774: Unreinforced Masonry Buildings and Earthquakes: Developing Successful Risk Reduction Programs* became available for download on the FEMA website.

This publication provides guidance on reducing the risks faced by those who own, occupy, or use unreinforced

masonry (URM) buildings in seismically active areas. Among structures currently in use in U.S. communities, URM buildings are typically the most vulnerable to

earthquake damage and the type of construction that is most commonly singled out for voluntary and mandatory seismic risk reduction programs. The publication includes illustrations and photographs of URM buildings and describes their seismic vulnerabilities. It discusses policy and regulatory issues that often must be considered in efforts to reduce URM risks, such as retrofit costs, the economic viability of older buildings, numbers of occupants and types of use, and historic or architectural values. Rather than prescribing a rigid sequence of steps for URM risk reduction, FEMA P-774 documents a wide variety of successful approaches that have been developed across the United States. To download this document log on to: <http://www.fema.gov/library/viewRecord.do?id=4067>

## USGS Offers \$7 Million in Earthquake Research Grants

**Applications due May 14, 2010**

The U.S. Geological Survey (USGS) will award up to \$7 million in grants and cooperative agreements for earthquake research in 2011.

Interested researchers can apply online at GRANTS.GOV under the funding opportunity number 11HQA0001. Applications are due May 14, 2010.

The USGS awards approximately 90 research grants to universities, state geological surveys and private institutions. Key projects include cataloging earthquakes in southern California to better prepare emergency responders, the public and the media about earthquakes; providing seismic hazard estimates so communities and critical institutions can engineer their buildings and roads to be structurally sound; and providing data on ground shaking to help minimize damage.

"We seek research proposals focused on the geographical areas in the United States that are most at risk from earthquakes, earthquake physics, earthquake effects and nationally applicable earthquake hazards issues," said Elizabeth Lemersal, external research support manager for the USGS Earthquake Hazards Program. A complete list of funded projects and reports can be found on the USGS Earthquake Hazards Program external research support web site - <http://earthquake.usgs.gov/research/external/>

## The New Message

### *Information About the New Madrid Scenarios*

by Greg Hempen

*Earthquake Engineering Research Institute, New Madrid Chapter*

An “earthquake scenario” is a brief narrative, or story, that describes the impacts of a hypothetical event. By establishing specific magnitude, time and location, an earthquake scenario can project impacts on the physical, built and social environment. Scenarios are often used to determine how a specific earthquake will affect a community. Small events can be assessed more easily because of their specific limited area and regional infrastructure impacts. Strong to great earthquakes affect so many community dependent parts that the event’s interrelationship of impacts cannot be easily imagined or appraised. Scenarios help to visualize the interrelations within and between communities that may be impacted by an earthquake.

The Earthquake Engineering Research Institute (EERI), a not-for profit professional society, has been a leader in creating earthquake scenarios. The New Madrid Chapter of EERI has begun development of the New Madrid Earthquake Scenarios (NMES). The scenarios are scheduled for completion in February 2012, the Bicentennial of the 1811-1812 New Madrid earthquake series. These scenarios will be developed largely by in-kind volunteer efforts, conducting meetings on important issues and encouraging research, but they currently have no dedicated funding. The NMES will follow EERI’s “Guidelines for Developing an Earthquake Scenario” (March 2006). The NMES will be a complement to the Federal Emergency Management Agency’s Central U.S. Catastrophic Earthquake Planning Scenario. The Catastrophic Planning Scenario is described in the “Impact of New Madrid Seismic Zone Earthquakes on the Central U.S., Volumes 1 and 2,” Illinois Digital Environment for Access to Learning and Scholarship.

To read a full report on the EERI New Madrid Earthquake Scenario, visit - <http://www.cusec.org/documents/misc/nmesupdate.pdf>

## GeoCaching Season is Here!



Geocaching is a high-tech treasure hunting game played throughout the world by adventure seekers equipped with GPS devices. The basic idea is to locate hidden containers, called geocaches, outdoors and then share your experiences online. Geocaching is enjoyed by people from all age groups, with a strong sense of community and support for the environment. In 2007, CUSEC placed our first earthquake geocache at our headquarters. Since then, we have placed earthquake themed geocaches in seven of eight member states. The caches are visited regularly, more than 50 visits in April of 2010 alone, and we have received very positive feedback for our efforts. Some comments from this year include -

- *IN - My son and I loved (the cache) took a walk afterwards and learned about earthquakes, too...*
- *IL - First cache of the day and a great one! I took a cool piece of fluorite, courtesy of Illinois State Geological Survey....*
- *MO -This is a great site for a cache (and) we learned a lot here - Thanks for placing the cache...*
- *MO - You have a nice cache and a great location for it. Thanks for bringing us here!*
- *MS - Wonderful place and definitely worth a visit. Timing was perfect and we enjoyed a chat with the man who knew all about the area and the cache...*
- *TN - I enjoy these earthquake-related caches. This is the fifth one that I have found...*



## DATES TO MARK

**The 2010 Disaster Preparedness Conference** will be held in Paducah, Kentucky on August 30-31, 2010. This conference will provide up-to-date information those near the New Madrid and Wabash Valley Seismic Zones and provide information about what they can do individually to be prepared for, cope with and survive any disaster. For more information contact [poston@illinois.edu](mailto:poston@illinois.edu).

**The Great Central U.S. ShakeOut** CUSEC is planning a Drop, Cover, and Hold drill for residents in the central U.S. This drill, known as the "ShakeOut" will be held at 10:15am on April 28, 2011. With a goal of 1 Million participants, this drill will be the largest ever held in the central U.S. The ShakeOut web-site will be available soon at [www.shakeout.org/centralus](http://www.shakeout.org/centralus). We encourage all interested parties to participate.

**200th Anniversary of the 1811-1812 New Madrid Seismic Zone Earthquakes** - Ongoing throughout 2011-2012. In 2011-2012, there will be events held throughout the central United States observing the 200th anniversary of the great 1811-1812 New Madrid earthquakes. Many organizations will participate in the events, which will include national conferences, earthquake exercises, public outreach events, and more. For more information visit the CUSEC website.

The Central United States Earthquake Consortium is a not-for-profit corporation established as a partnership with the Federal government and the eight member states: Alabama, Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, and Tennessee; and ten associate member states: Georgia, Iowa, Kansas, Louisiana, South Carolina, North Carolina, Ohio, Oklahoma, Nebraska and Virginia. The Federal Emergency Management Agency provides the basic funding for the organization.

CUSEC's purpose is to help reduce deaths, injuries, damage to property and economic losses resulting from earthquakes occurring in the central United States. Basic program goals include: improving public awareness and education, mitigating the effects of earthquakes, coordinating multi-state planning for preparedness, response and recovery, and encouraging research in all aspects of earthquake hazard reduction.

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*Please send comments and suggestions to [cusec@cusec.org](mailto:cusec@cusec.org)*

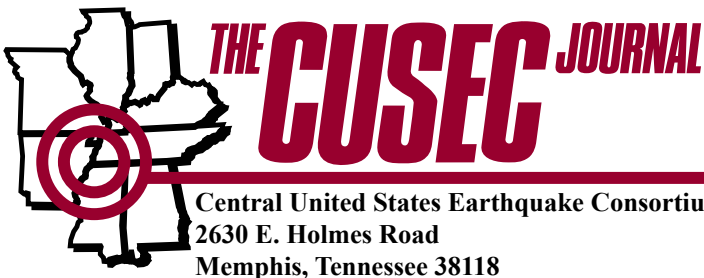
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