



# THE CUSEC JOURNAL

THE OFFICIAL NEWSLETTER OF  
THE CENTRAL UNITED STATES  
EARTHQUAKE CONSORTIUM

VOLUME. 15, NO. 1, WINTER 2011

## EMERGENCY MANAGEMENT AND DISASTER CONSIDERATIONS FOR THE MENTALLY ILL

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When thinking about disaster preparedness, vulnerable populations are in the forefront of consideration to target assistance efforts, both prior to and following a natural disaster. When thinking about vulnerable groups, most would automatically regard the sick, the elderly, the young, and those otherwise unable to act for themselves, such as the homebound or disabled, as priorities for preparedness planning. However, among the vulnerable also in need of consideration are those with mental illness who reside in our surrounding communities, not only in the inner city, but also in outlying rural areas.

According to the National Institute of Mental Health, 26.2% of the US adult population will experience a mental disorder within a given year, with 22.3% of those (5.8% of the US adult population) diagnosed as severely mentally ill. Available regional statistics suggest prevalence rates are slightly higher in the Southeastern US, especially in areas of poverty, rural areas and among those with comorbid physical health conditions. With the de institutionalization of mental illness in the 1960s, the intent has been for those with severe mental illness to reside in the least restrictive environment, become integrated into society and live as independently as possible with community-based outpatient mental health support. As a result, individuals with mental illness are dependent upon community-based resources, not only for their routine mental health care, medication and monitoring, but also for information about public health concerns and awareness.

While most individuals with mental illness successfully maintain some degree of independent functioning and sustained family support, for a variety of reasons,



The January 12, 2010 M7.0 earthquake near Port-au-Prince, Haiti left an estimated one million people homeless. A substantial number of those people needed mental health care both before and after the earthquake. Disasters (natural and man-made) can take an untold toll on vulnerable population groups, especially those with mental illnesses.

for those with severe mental illness this is not the norm, as more commonly they remain stigmatized, misunderstood, and isolated, and consequently dependent on “the system.” As a result, those with severe mental illness often are dissociated from or have limited contact with their families, are wary of others (including those who want to help), have difficulty obtaining and/or sustaining employment, have limited resources or are otherwise impoverished, live in less

*Continued on page 2*

### – INSIDE THIS ISSUE –

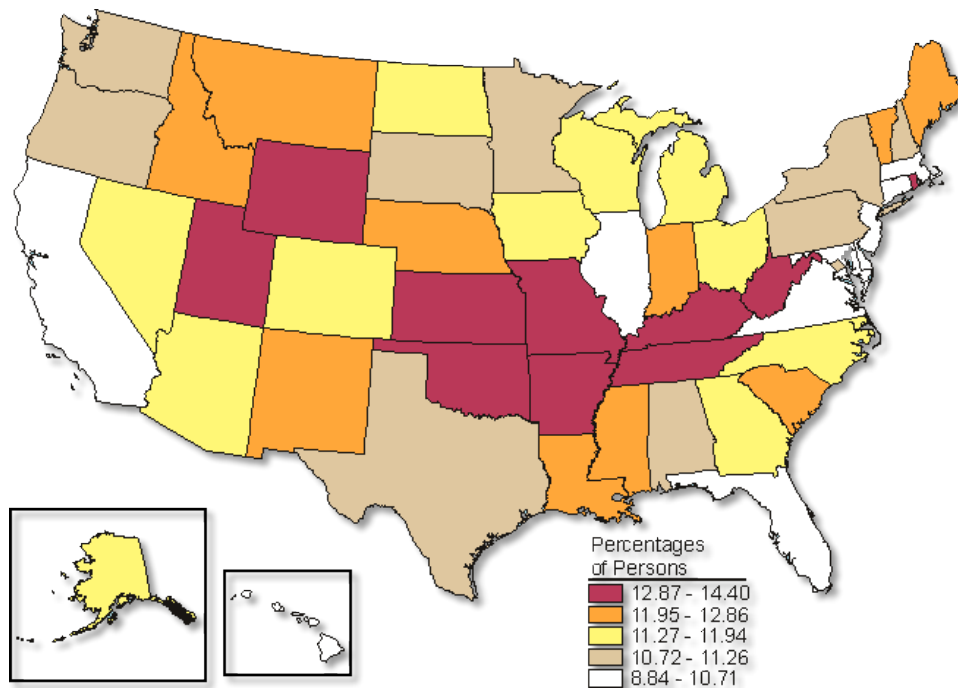
Around the Region .....	4
Recent Earthquake Activity.....	6
Upcoming Events .....	9
Other News .....	13

*continued from page 2*

than adequate housing or are homeless, and commonly become one another's surrogate support system.

Given the strain mental illness commonly places on familial relationships, those with severe mental illness are less likely to have an appropriate functional family member closely involved in their day-to-day care who is aware of their mental health diagnosis, current functioning, prescribed medications, and medication adherence, let alone have discussed or have in place a disaster plan for the individual. Such interaction is even less likely for the individual in the community whose mental illness remains undiagnosed or is otherwise untreated, and thus is not engaged in "the system." While rural settings provide low cost of living and low population density, providing those with mental illness privacy and anonymity, it comes with reduced access to daily interaction with others, increased isolation, and limited access to mental health care, if available at all.

### **Serious Psychological Distress in Past Year among Persons Aged 18 or Older**



*Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2005 and 2006.*

Comorbid limited cognitive abilities and/or substance use/abuse problems frequently further compound the presence of mental illness, interfering with one's ability to adhere to psychotropic medications as prescribed, if prescribed, which exacerbates symptoms of mental illness, and decreases the likelihood of maintaining independent functioning. Further complicating the treatment of mental illness are the medications themselves. Due to prescribing restrictions and/or medication costs, those with mental illness are not likely to have a reserve of medications available beyond that needed for the month in which the prescription is filled. Keeping up with timely refills requires vigilance and the ability to plan ahead, and for many, supervised case management. To complicate matters further, medications often are self-discontinued by those with mental illness because of failure to refill or renew a prescription (typically due to missed follow up with routine mental health clinic visits) or adverse medication side effects associated with prolonged use. It also is not uncommon for an individual with mental illness to self-discontinue medications due to "feeling better" believing the medications are no longer needed without the ability to rationally consider the consequences of symptom recurrence and resumed decline in functioning. Thus, at any given time, it may not be known whether those with mental illness in the community are engaged in treatment and if so, whether medications are taken as prescribed to sustain therapeutic symptom control.

Further, if medicated, depending on when last seen for medication management, there is no guarantee the individual will have enough medication on hand to take with them in the event of a disaster or have a sufficient supply to adequately get them through the duration of a prolonged emergency.

While those with certain medical illnesses may wear a medical alert bracelet or carry with them a card alerting others to their illness, medications, etc., as well as carry an emergency supply of medications with them, the same typically is not true for those with mental illness. In addition, the unstructured and potentially transient nature of those with severe mental illness may complicate matters as they may not be at their primary residence at the time a disaster hits, likely having left home unprepared to be away overnight, let alone potentially for days or weeks.

While anyone can become distressed in response to an unexpected or prolonged natural event, the associated increased stress can exacerbate pre-existing symptoms in those with mental illness. Depending on the type of mental disorder, some individuals may refuse to leave their homes despite being unsafe, may be unable to be around unfamiliar people, or cannot be in crowded environments whereby attempts to evacuate them to safety or to a designated shelter may result in increased agitation and distress, and ultimately be futile. Further, given most psychotropic medications should not be stopped abruptly, should the individual become displaced without access to medication, not only may their mental health worsen, other serious medical complications can arise with unplanned and unmonitored medication withdrawal.

If significantly distressed by a disaster and prolonged subsequent events, individuals with mental illness may become confused or disoriented, unable to recall their names, their diagnoses, what medications they need or in what dose, or who to call on their behalf, even if in an otherwise ordinary circumstance they readily knew that information. While medical records may remain available for those within medical facilities at the time of an untoward event, the same is not true for those in the community. Even if an individual is able to locate someone to advocate for urgent mental health needs on their behalf, given current HIPPA laws protecting private medical information, without the ability to positively identify the patient, such assistance may be rendered useless, emphasizing the

need to establish a viable work around on behalf of the patient in an emergency situation. In addition to planning for and coordinating necessary emergency mental health accommodations during the crisis, it is equally important to prioritize ongoing round-the-clock access to qualified mental health resources throughout the duration of the disaster's aftermath to its resolution. Subsequent restoration of access to mental health records, medications and routine mental health care to stabilize those with mental illness within the community as quickly as possible following a disaster is imperative.

Disaster/emergency preparedness materials made available and discussed in schools, at community events, and in medical care settings, also need to be available in community mental health centers and distributed throughout rural communities (including churches) for those who otherwise may not be captured in more common venues. Multi-agency efforts need to be coordinated in cooperation with community mental health centers and case managers to reach those with mental illness, especially in rural areas. Such cooperative efforts are necessary to disseminate preparedness information, help identify a viable contact person in an emergency, and develop a disaster plan so those with mental illness know what to do, where to go, what to take with them, and how to access medications if urgently needed. We all rely on routine access to that with which we are familiar on a daily basis. Disaster preparedness for the mentally ill is highly variable by state, region, and municipality, dependent upon prior experience with disaster. Unlike health care, there does not appear to be a readily identifiable central agency or point of contact to coordinate mental health disaster efforts on behalf of the mentally ill, which could prove unnecessarily challenging if attempting to locate the appropriate agencies, organizations or resources in the crux of a disaster. We take for granted what systems, agencies or services will be down or unavailable following a disaster including phone access, ability to use credit or debit cards, access to ATMs which may neither have power nor cash available, inability to predict what food sources, transportation, medical offices, pharmacies, or other social service agencies will be operational.

This article may have raised more considerations and potential obstacles than offered solutions for the mentally ill during and following a disaster. However,

*Continued on page 4*

*continued from page 3*

if it initiates necessary discussion among emergency planning and mental health agencies to facilitate emergency preparedness on behalf of the mentally ill in surrounding communities, especially in rural areas where access to care already is limited, it has served its purpose. Not every person with a mental illness has a family member, case manager or community treatment team to routinely follow up by phone, make home visits, or advocate on their behalf, especially during an emergent situation or following a disaster.

It is this vulnerable individual who could end up symptomatic, unidentified and unmedicated in the community or in a community shelter lost in the shuffle until someone recognizes something is wrong, triages the situation, acts on their behalf, and intervention can be provided. While this scenario may not be preventable for all those potentially affected, with discussion, preparation and integrated community agency efforts, the risk can be significantly reduced.

## AROUND THE REGION

### Central U.S. to Recognize the 1811/1812 New Madrid Earthquakes

Starting in the month of February, which is Earthquake Awareness Month in several states in the central U.S., organizations across the region will begin to observe the 200th anniversary of the great New Madrid earthquakes—also known as the New Madrid Bicentennial (NMB). Events will be hosted throughout the CUSEC Member States ranging from townhall meetings to preparedness fairs. Although the official kickoff for the bicentennial is February 11, a couple of pre-kickoff activities have been planned. CUSEC and the Kentucky Division of Emergency Management will host an “Earthquake Mitigation for Hospitals” workshop in Madisonville, Kentucky on February 2. This workshop will include topics and speakers on:

- Earthquake Hazards
- Structural Basics
- Non-Structural Elements and Hazards
- Non-Structural Mitigation for Hospitals

During the second week of February, some key organizations that participate in the central U.S. awareness and preparedness effort are taking their

preparedness message on the road. CUSEC, FEMA, the Institute for Business and Home Safety (IBHS) and the states of Arkansas, Illinois, Kentucky, Missouri and Tennessee are partnering to hold an Earthquake Outreach Tour from February 7-10. This tour will be a series of town hall meetings designed to bring community and business members into a forum to learn about earthquakes, mitigation, and other earthquake related topics. The program will encourage participants to identify their risk, make a plan, and take actions to increase earthquake readiness.

CUSEC Executive Director Jim Wilkinson says “*CUSEC and our Member States are pleased to be a participant in this local, state, and national partnership effort to educate communities on the value of earthquake risk reduction and community preparedness during the New Madrid Bicentennial. We look forward to future efforts in this region of the country.*”



FEMA

Institute for  
Business &  
Home Safety

### New Madrid Bicentennial Kickoff

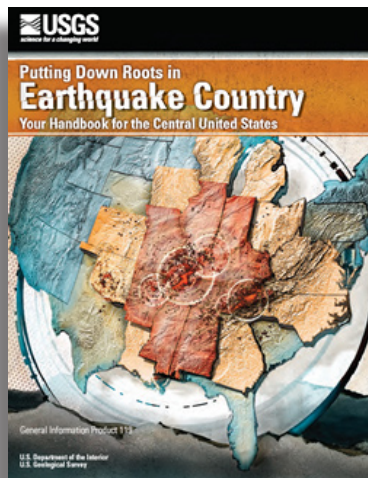
The official NMB kickoff begins on February 11 at the “Earthquakes Means Business Seminar” in St. Louis, Missouri. This seminar is an outreach event from the geoscience, engineering and preparedness communities; and is especially for business and government decision makers. Representatives from all eight CUSEC Member States will be in attendance as well as FEMA Administrator W. Craig Fugate, who will be the keynote luncheon speaker.

### The Great Central U.S. ShakeOut

Central U.S. residents will soon get the opportunity to put the information they’ve learned during the Earthquake Outreach Tour into practice. CUSEC is coordinating the Great Central U.S. ShakeOut—a multi-state “Drop, Cover and Hold On” drill. On April 19th (Indiana residents only) and on April 28 of 2011 (the remaining CUSEC Member States along with Associate Member States Georgia, Oklahoma and South Carolina), communities will “Drop, Cover, and Hold On” to prepare themselves in the event of a moderate or major earthquake. *Everyone* is encouraged to register for the ShakeOut by logging on to <http://www.shakeout.org/centralus>



## New USGS Publications Available



January 2011 - The US Geological Survey has released two new products in conjunction with the New Madrid Bicentennial. The publications come after a multi-year effort to develop more central U.S. specific earthquake products by the USGS.

The first product, “Putting Down Roots In Earthquake Country” is a 45 page handbook that outlines earthquake hazards in the central U.S., common earthquake-induced phenomenon, and the “Seven Steps to Earthquake Safety”. From the USGS -

*“This handbook provides information to residents of the Central United States about the threat of earthquakes in that area, particularly along the New Madrid seismic zone, and explains how to prepare for, survive, and recover from such events. It explains the need for concern about earthquakes for those residents and describes what one can expect during and after an earthquake. Much is known about the threat of earthquakes in the Central United States, including where they are likely to occur and what can be done to reduce losses from future earthquakes, but not enough has been done to prepare for future earthquakes. The handbook describes such preparations that can be taken by individual residents before an earthquake to be safe and protect property.”*

“Putting Down Roots in Earthquake Country” is available for download on the USGS website at - <http://pubs.usgs.gov/gip/119/> (40MB PDF Download) and hard copies will be available soon.

The second product, is a poster describing the 1811-1812 New Madrid Earthquake sequence. The poster shows images and describes reports of events felt throughout the region during those earthquakes. It is available for download (17MB PDF) at - <http://pubs.usgs.gov/gip/118/>. Hard copies of this poster will also be available soon.

## National Level Exercise 2011

Just one month later, the emergency management community is scheduled to hold the largest emergency management exercise in U.S. history to be focused on a natural disaster. On May 16-20, 2011, CUSEC Member States are partnering with the federal government and various other agencies and organizations to conduct the National Level (Earthquake) Exercise— also known as NLE 2011. This exercise will be conducted to test local, state, and federal response plans and annexes that have been either modified or created as a result of the New Madrid Seismic Zone (NMSZ) Catastrophic Planning Initiative— a project initiated by FEMA to increase national readiness for a catastrophic earthquake in the NMSZ.

CUSEC, IBHS and St. Jude Children’s Research Hospital have teamed up to build an earthquake resistant home in Memphis, Tennessee. The Dream Home, which is built for St. Jude’s by a local contractor, and is auctioned off as a part of their national St. Jude Dream Home program. This Dream Home will be built to the IBHS Fortified ...for safer living standards. CUSEC, IBHS and St. Jude are making plans to start construction on this home in late 2011. The house will be available for viewing in April of 2012; with its completion in June.

## USArray Coming to the Central U.S.

In conjunction with the New Madrid Bicentennial, the Transportable Array will be in the central U.S. According to [www.usarray.org](http://www.usarray.org), the transportable array (also known as the USArray), is a network of 400 high-quality broadband seismographs that are being placed in temporary sites across the conterminous United States from west to east, and Alaska, in a regular grid pattern. With station spacing of about 70 km, Transportable Array data are extremely useful for mapping the structure of Earth’s interior. After a residence time of two years, each instrument is picked up and moved to the next carefully selected location on the eastern edge of the array. When completed, nearly 2000 locations will have been occupied during this program. All Transportable Array systems were acquired with funds provided by the National Science Foundation. In August 2007, the first footprint was established from north to south along the westernmost quarter of the United States.

*continued on page 7*

## RECENT CENTRAL U.S. EARTHQUAKE ACTIVITY

DATE	LOCATION	MAGNITUDE
11/18/10	Octavia, NE	3.3
11/20/10	Guy, AR	4.2
11/20/10	Guy, AR	3.9
11/24/10	Luther, OK	4.2
11/24/10	Jones, OK	3.2
11/24/10	Arcadia, OK	3.9
11/27/10	Jones, OK	3.2
11/27/10	Jones, OK	3.3
12/11/10	Shawnee, OK	3.4
12/13/10	Guy, AR	3.1
12/13/10	Enola, AR	3.1
12/13/10	Guy, AR	3.1
12/30/10	Greentown, IN	3.8
01/4/11	Jones, OK	3.0
01/15/11	Jones, OK	3.4

### 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



*continued from page 5*

Each of the Transportable Array stations consists of a three-component broadband seismometer with associated signal processing, power, and communications equipment. In the early phase of the experiment, significant effort was devoted to the design of the temporary vaults to house the instruments, which resulted in a configuration that provides both high-quality data and a data return of greater than 90%. Data from each station are continuously transmitted to the Array Network Facility at the University of California, San Diego, where initial operational and quality checks are performed, and then sent to the IRIS Data Management Center, where all data and associated metadata are archived.

For more information about the New Madrid Bicentennial and associated events, visit [www.newmadrid2011.org](http://www.newmadrid2011.org)

## **CUSEC Participates in the Great California ShakeOut**

In preparation for the Great Central U.S. ShakeOut, CUSEC Public Outreach Coordinator, Alisa Nave attended the third annual Great California ShakeOut held on October 21, 2010. The Great California ShakeOut is a “Drop, Cover and Hold On” drill, originally developed by scientists and emergency managers in California to help re-enforce to the state’s residents what they should do during an earthquake. With representation from schools, colleges, businesses, churches, government and community organizations, a total of seven point nine million Californians registered to participate.

Prior to the drill, participants got the chance to experience what a major earthquake feels like on The Big Shaker, the world’s largest earthquake simulator that was provided at one of the drill sites by Ready America. During the actual drill, every participant dropped to the floor, got under a sturdy desk or table, protected their head as they held on to the table’s/desk’s leg until the shaking stopped. The ShakeOut also gave emergency managers the opportunity to test their response skills.

Even though the 2010 Great California ShakeOut was a success, Mark Benthien, Associate Director for Communication, Education and Outreach at the Southern California Earthquake Center (SCEC) said that this success did not come without its obstacles.

“The biggest challenge we began to address in 2010 is how to more effectively involve the various participant groups such as schools, businesses, hospitals, governmental agencies and other organizations,” he said. “We did this by forming committees of people from these groups to spread the word, develop materials and promote participation.”

The Great California ShakeOut has been an annual event held in the month of October in California since 2008. Organizers and sponsors of this event include:

- US Geological Survey
- Southern California Earthquake Center
- California Emergency Management Agency
- California Earthquake Authority
- American Red Cross
- State Farm Insurance
- Federal Emergency Management Agency



*Participants at a high school in Burbank, California practice “Drop, Cover, and Hold On” during the Great California ShakeOut on October 21, 2010. More than 7.9 million participated in the ShakeOut statewide. Photo provided courtesy Jordan Scott, California Emergency Management Agency*



## Member State Spotlight

### Kentucky Geological Survey



Since 1838, the Kentucky Geological Survey (KGS) has provided citizens, researchers, government, and industry with scientifically based information about Kentucky's geology and mineral water resources. Among many of the values listed in its 2009-2014 strategic plan, KGS promotes excellence in research, excellence in public service and community engagement as well as respect for the environment and earth resources. KGS has a diverse research program which is primarily supported by grants from federal and state agencies and industry. The survey's research programs are divided into five areas: Oil and Natural Gas, Minerals, Coal, Water and Earthquakes and other Geologic Hazards. As a national leader in digital geologic mapping, geoscientists at KGS provide technical advice to more than 100 committees, boards and advisory groups. The survey currently houses the Central U.S. Seismic Observatory (CUSO). It is the only seismic station in the region with the ability to record bedrock ground motions, soil column ground motions, and free-field ground motions in thick soil sediments.

After 20 years with the survey, James Cobb was appointed State Geologist and Director of KGS in October of 1999. As director, he makes decisions concerning the survey's mission, objectives, research direction, new initiatives and the budget. Cobb has worked in the field of Geology for more than 40 years receiving numerous honors and accolades along the way. He is also a member of several notable geological organizations and a published author. Visit <http://www.uky.edu/KGS> for more information about the Kentucky Geological Survey.

## Associate Member State Spotlight

### South Carolina Geological Survey



The South Carolina Geological Survey (SCGS) has been the primary source of scientific information about the state's natural resources for more than 180 years. The survey's program areas

center around geologic mapping, product refinement and outreach. Throughout the years, geologists with SCGS have helped shape South Carolina's legislation pertaining to mining, oil and gas; and they continue to have important advisory roles to the Governor's office and the General Assembly on other state natural resource issues. The survey is currently conducting studies to evaluate the geologic response to earthquake induced motion. These seismic studies will become important in the development of a statewide earthquake hazard mitigation strategy. Dr. Charles "Bill" Clendenin was appointed State Geologist and Chief of the Geological Survey in 1995. His geology career began in 1973; and prior to his appointment, he worked in the mineral industry as both a mining and exploration geologist, as well as a Lecturer at the University of Witwatersrand, South Africa. Recently, he was given responsibility for both the Geological Survey and Hydrology Sections in the South Carolina Department of Natural Resources (SCDNR). His professional interests are in basin analysis and the structural style of faults. He has published papers in *Geology*, *Tectonics*, and *Journal of Structural Geology* that address those interests.

You can find out more about the South Carolina Geological Survey at <http://www.dnr.sc.gov/geology>

## The Road to NLE 2011

*Paul Hogue, CUSEC Exercise/Training Officer*



The CUSEC 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, 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 Catastrophic Planning Initiative in the CUSEC states over the last few years. To keep readers of our newsletter well-informed of these activities, this regular column lists major news and events pertaining to the exercise.

### Resource Allocation Workshop

The Resource Allocation Workshop was held in November 30-December 3 in Nashville, TN. Although



this workshop was not strictly for the NLE, it will affect planning and execution for the exercise. See the “New Madrid Catastrophic Planning Project Update” on page 10 in this newsletter for a detailed article.

### **“Highly Recommended” Training**

The NLE 2011 Training Working Group, working with FEMA’s Emergency Management Institute (EMI), has organized a number of “Highly Recommended” courses for players in NLE 2011. Some are being conducted via VTC (Video Teleconference) from EMI’s studios at the National Emergency Training Center (NETC) in Emmitsburg, MD. Federal, state, and some local agencies are participating as host locations. Other courses are being conducted as webinars, and are available to anyone with an internet connection and a phone line.

The first class was “New Madrid Seismic Zone: Plan Overview,” and was taught by Jim Hardy from FEMA, as well as Paul Hogue, CUSEC’s Exercise/Training Officer. It was conducted December 14-17, and again

December 20-21. A second class, “New Madrid Seismic Zone: Earthquake Effects,” was held January 10-14, and was based in part on CUSEC’s “The Central U.S. is Earthquake Country.” The schedule for remaining classes is:

- Resource Management Training, January 31-February 4 (Webinar)
- Community Preparedness, Response, and Recovery, February 7-11 (Webinar)
- Joint Information System/Joint Information Center Training, February 14-18 (Webinar)
- Incident Action Plan (IAP) Training, February 21-25 (VTC)
- Response Doctrine and Incident Management Training (NRF/NIMS), February 28-March 4 (Webinar)
- Incident Command System (ICS)/ Emergency Operations Center (EOC) Interface Training, March 7-11 (Webinar)

*continued on page 10*

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

<b>WHEN</b>	<b>WHAT</b>	<b>WHERE</b>
January 27/28, 2011	ATC-20 / FEMA154 Rapid Visual Screening Training	Springfield, Illinois
February 2011	Earthquake Awareness Week/Month Observed	AR, TN, KY, MO
February 1, 2011	FEMA154 and ATC-20 Training (and Webinar)	Frankfort, Kentucky
February 1, 2011	ATC-20 Training	Chicago, Illinois
February 2, 2011	Hospital Mitigation Workshop	Madison, Kentucky
February 7, 2011	CUSEC/FEMA/IBHS Earthquake Outreach Tour	AR, TN, KY, IL, MO
February 10, 2011	CUSEC Board of Directors Meeting	St. Louis, Missouri
February 17, 2011	Hospital Mitigation Workshop	Jonesboro, AR
February 11, 2011	“Earthquakes: Mean Business” Seminar	St. Louis, Missouri
February 17, 2011	School Earthquake Retrofit Webinar	Nationwide
February 23/24, 2011	ATC-20 / FEMA154 Rapid Visual Screening Training	Springfield, Illinois
March 17-19, 2011	EarthScope Central U.S./New Madrid Workshop	Memphis, TN
April 5-7, 2011	National Earthquake Program Managers Meeting	Boise, Idaho
April 13-15, 2011	Seismological Society of America Annual Meeting	Memphis, TN
April 28, 2011	Great Central U.S. ShakeOut (April 19 in IN)	Central U.S. States

continued from page 9

- Medical Surge Awareness Training, March 14-18 (Webinar)
- Mass Care and Housing Awareness Training, March 21-25 (Webinar)
- Advanced ICS Training (Exercise Specific) for Unified Area Coordination Group, April 4-8 (VTC)

For the VTC courses, participants must attend a site location to view the training. To register for any of the classes, go to [https://www.seeuthere.com/NLE2011\\_Highly\\_Recommended\\_Training\\_Site](https://www.seeuthere.com/NLE2011_Highly_Recommended_Training_Site). For information how to be a host site for the VTC's, please contact the Training Working Group at [NEP@dhs.gov](mailto:NEP@dhs.gov).

### Other Events

In this past quarter, there were several NLE related lead-up events and exercises in our states and regions. These included:

- AL: Multiple planning meetings; TTX in November
- AR: Multiple local and ESF planning meetings; NEMA conference in October
- IL: Multiple planning meetings; TTX's in October and November
- IN: Multiple planning meetings, statewide TTX in November, private sector TTX in December
- KY: Multiple planning meetings; private sector TTX in November; workshop in December
- MO: Multiple planning meetings; Earthquake IEMC in October; Area TTX's in October and December
- MS: Multiple planning meetings, including interagency coordination and prep for Vigilant Guard exercise (MS NG's linked exercise to NLE 2011)
- TN: Multiple planning meetings; Functional exercise (w/logistics focus) in October

## NMSZ Catastrophic Planning Project Update: New Madrid Seismic Zone Resource Allocation Workshop

*Mike Calvert, CUSEC Emergency Planner*

The National Emergency Management Association (NEMA), FEMA, and CUSEC sponsored a Resource Allocation Workshop November 30-December 3 in Nashville, TN. Leading up to National Level Exercise 2011, which is based on a New Madrid Seismic Zone (NMSZ) earthquake, the workshop sought to improve planning for a catastrophic event similar to the earthquakes of 1811-1812. Based on scientific damage estimates, state, regional and federal planners and operators assessed resource capabilities and shortfalls, allocated potential resources in advance where possible, and established or strengthened relationships and understanding of the national impact of catastrophic event of this nature.

This was truly a national effort, with active participants from as far away as Alaska and Vermont. The Director of the Alaska Division of Homeland Security & Emergency Management, John W. Madden, served as the facilitator for the Arkansas breakout sessions with the ESF Plus groups and noted the following:

*"Alaska lives under constant threat of earthquakes. We endured the most destructive earthquake in our nation's history, 9.2 magnitude in 1964. Because of our history and our geology, earthquake preparedness is among our highest priorities. Therefore, we are eager volunteers to aid other states in understanding earthquakes, analyzing potential effects, and preparing for immediate response."*

*In this workshop, I found that the CUSEC states take this hazard seriously and are creating innovative approaches for effective regional response. This workshop revealed issues of great relevance to my state and the nation. Alaska is proud to support the states of the New Madrid seismic zone in this workshop and for the upcoming exercise. And if the worst happens, Alaska will bring its experience and its resources to the disaster and help our fellow states in every way possible."*

We appreciate the willingness of Mr. Madden and many others to participate and assist as needed.



*Leon Shaifer, National Emergency Management Association, shown here facilitating a breakout session at the Resource Allocation Workshop in December 2010. In addition to general sessions, breakouts were held for each CUSEC Member State that included members of various ESF groups and helped drive the workshop.*

Some of the workshop objectives were to:

Identify and coordinate the provisioning of operational and resource capabilities for predetermined, mission-ready packages for response from across the Nation by anticipated State-capability deltas to the NMSZ States.

Identify a comprehensive national earthquake resource/capability inventory to determine the point where “all available resources are deployed, yet many needs remain unmet.”

Develop a common understanding within and among the eight regional-State NMSZ earthquake response plans for both individual and shared multi-State planning purposes and the revised national NMSZ earthquake response plan.

Identify and align State capabilities-based resource requirements with Federal and other resource providers to ensure a rapid response to a catastrophic NMSZ event.

Perform a gap analysis for the key resources required to provide lifesaving/life-sustaining capabilities to the impacted NMSZ States, and develop possible courses of action for resourcing the gaps for Federal leadership and review action.

Ensure that the “Whole of Community” concepts are reflected in the alignment of national assets to meet State resource shortages and in the discussion of recommendations to address the deltas in resource needs

*continued on page 12*

*The Great Central U.S. ShakeOut is a multi-state drop, cover, and hold on earthquake drill to be held on April 28, 2011 at 10:15AM CDT (04/19/11 in Indiana). Register to participate at <http://www.shakeout.org/centralus>*



*continued from page 11*

Prior to the workshop, each CUSEC State populated a “State Shortage Annex” spreadsheet identifying their expected post-earthquake resource shortfall based on damages estimated by the scenario. Each Emergency Support Function group and the 10 Associate CUSEC State populated a “Resource Provider Information” spreadsheet which included those resources they may be able to offer to meet the post-earthquake resource needs (shortages) of the CUSEC states after the earthquake.

On the morning of day one of the workshop, the CUSEC States and the four FEMA Regions briefed the status of their earthquake planning, their process for command and control, and their concept for resource deployment and integration into the response. The damage estimates helped everyone understand the impact of the catastrophic event, and laid the foundation for breakout sessions between each CUSEC State and the Federal ESF Plus groups (which included ESFs plus private sector representatives).

On the afternoon of day one and over the next two days, each of the CUSEC States had a designated breakout room and conducted meetings with Federal ESF partners. The states remained in their breakout rooms; the 10 ESF Plus groups rotated through the state breakouts, spending two hours with each. Each State had a dedicated facilitator, note-taker and spreadsheet technician who stayed with them throughout the round-robin breakout sessions. NEMA provided the facilitators, who were usually directors of other state emergency management agencies or their representatives.

As the ESF Plus Resource Providers visited with each state, the State shared their shortage spreadsheet. The ESF group allocated resources from their Resource Provider Information spreadsheet, where available and possible, to fill state shortfalls. Each ESF Plus group also had support personnel to capture changes to their Resource Provider Information Spreadsheet and key points of discussion and issues for future consideration.

On the fourth day of the workshop in a Briefing/Plenary session, each ESF Plus Provider group briefed their specific deployment and support concept for the impacted areas and the priority issues uncovered throughout the week. The goal was to understand national response plans and identify and discuss issues and items for additional dialog.

In addition to many states and Federal agencies, many volunteer organizations active in disasters (VOAD), first responders, private sector businesses and utilities, and DoD and National Guard representatives participated. The final attendance was well over 400 people. We appreciate all organizations who sent representatives and each person who participated.

After the workshop Barbara Farr, Director of Vermont Emergency Management (who facilitated Missouri’s workshop breakout sessions) stated: “Overall this was an excellent event that should be regarded as a best practice. I was very impressed with the organization and outcome of the workshop. I believe we all walked from the workshop not only exhausted but very enlightened. The need for a common language between state and federal partners for typing of resources was evident across the board. The lesson learned that impressed me the most was that the states and federal agencies need to speak the same language when requesting and supplying needed resources. A simple example that demonstrated this was the State of Missouri requested x thousand gallons per day of drinking water and a Red Cross representative replied that they calculate their water resources in liters instead of gallons. This was a very small example of how we communicate to each other using a common language can improve the response time when needed.” Most who attended agreed that the workshop advanced our national understanding of how to respond to a large, geographically dispersed disaster. We hope to refine this concept continue to have periodic workshops to make sure that critical life-saving resources will be available quickly following a catastrophic NMSZ event wherever needed. We hope what was learned during the workshop will enhance the way we as a nation plan and prepare for catastrophic disasters.

# OTHER NEWS

## Earthquakes Means Business Seminar to be Held on February 11

The 18th annual “Earthquakes: Mean Business” program will be held on Friday, February 11, 2011, in St. Louis, Mo. Saint Louis University’s Parks College of Engineering, Aviation and Technology and the Heartland Center for Public Health Preparedness are hosts.

“Earthquakes: Mean Business” is an outreach event from the geoscience, engineering, and preparedness communities and is especially for business and government decision-makers. Topics include results of new earthquake research in the central US, practical engineering solutions that minimize earthquake risks, and an overview of regional earthquake preparedness.

This year, the program includes a plenary session in the morning, an on-site luncheon, exhibits, and break-out sessions in the afternoon. CEUs for design professionals also are available through Saint Louis University.

Speakers include Dr. David Applegate from the US Geological Survey in Reston, Va., who will speak on the “Central US Earthquake Hazards -- In the News.” Robert Williams, from the US Geological Survey in Golden, Colo., will report on the “2010 New Zealand Earthquake -- and What St. Louis Can Learn from It.” Dr. Riyadh Hindi, Saint Louis University, will present on the role of structural engineering in earthquake risk mitigation.

The luncheon speaker is FEMA Administrator W. Craig Fugate, from Washington, DC.

Six breakout sessions are planned for the afternoon. The breakout sessions include a workshop on non-structural earthquake engineering options; on the “2011 National-Level Exercise,” a national FEMA response practice that will simulate a major earthquake along the New Madrid fault zone, and “Public Health Preparedness” for healthcare administrators, facilities managers, and program planners.

Other breakout sessions include “Open for Business,” a program presented by the Institute for Business & Home Safety, from Tampa, Fla.; and “QuakeSmart,” a program by FEMA, Washington, DC. Tours of the

Saint Louis University’s Earthquake Center are also planned.

This event will kick-off the New Madrid Bicentennial, the official recognition of the 200th anniversary of the 1811-12 New Madrid earthquakes.

Registration cost is \$90 and includes lunch, CEUs, handouts, exhibits, and parking. To register, visit <http://parks.slu.edu/conferences/upcoming-conferences/earthquakes-mean-business/> or contact Brooke Lund at [blund@slu.edu](mailto:blund@slu.edu) or call 314-977-7820.

## EarthScope Announces Special Workshop to Aid in Central U.S. Earthquake Outreach Efforts

Applications are being accepted for a free EarthScope workshop for interpretive rangers and museum educators in the central United States. The workshop coincides with the 200th Anniversary of the great New Madrid, Missouri earthquakes —also known as the New Madrid Bicentennial— as well as the arrival of the USArray of seismometers in the central U.S. Participants will work with scientists to develop interpretive programs focused on how society benefits from earthquake monitoring and knowledge of continental development.

This workshop will be held March 17-20, 2011 at the Fogelman Executive Conference Center on the campus of University of Memphis.

We welcome applications from informal educators working at museums, science learning centers, the National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, state parks, the U. S. Geological Survey, and state geological surveys, as well as other individuals who engage the public in natural and cultural history. Applicants do not have to be geologists, but they should have some knowledge of Earth science and experience incorporating geological information into interpretive programs or exhibits. We also welcome applications from K-12 Earth science teachers who interact with interpretive specialists in parks or museums, as well as from college faculty and graduate students involved in informal education programs in the region.

EarthScope is a National Science Foundation (NSF) Program that deploys seismic, GPS, and other

*continued on page 14*

*continued from page 13*

instruments to explore the structure and evolution of the North American continent and understand processes that cause earthquakes and volcanic eruptions ([www.earthscope.org](http://www.earthscope.org)). The workshop will combine presentations by EarthScope scientists and interpretive specialists to convey the story of how geological processes result in the region's landscape and geological hazards.

The EarthScope National Office will cover participant expenses while at the workshop, including shared lodging, food, materials, and field trip travel. Participants or their organizations are expected to pay their own travel costs to and from the workshop site.

Details about the New Madrid Central U.S. Workshop and an online application form are at: [http://www.earthscope.org/workshops/new\\_madrid](http://www.earthscope.org/workshops/new_madrid)

Space is limited to about 25 participants. Participants are required to attend the entire workshop, from 6:00p.m. Thursday, March 17 to 12:00p.m. Sunday, March 20. Preference will be give to those who apply by February 14, 2011.

## **FCO Cadre Review Catastrophic Earthquake Response**

As emergency managers prepare for the National Level (Earthquake) Exercise which is to be conducted in May of 2011, the Federal Emergency Management Agency (FEMA) hosted the 17th Federal Coordinating Officer (FCO) Cadre Operational Review in Memphis, Tennessee on November 16-18. The purpose of this meeting was to provide in-depth training for the FCO cadre critical to the accomplishment of their disaster management mission with a focus on catastrophic earthquake response operations. Attendees of this two-day meeting included FEMA Headquarters Senior Leadership and Regional Administrators, along with Federal Coordinating Officer Cadre, selected regional and headquarters staff and other federal agency guests. Among FEMA Headquarters Senior Leadership was FEMA Administrator, Craig Fugate, who spoke at length about planning efforts to improve the agency's earthquake program efforts. Day one of this meeting consisted of discussions about:

- Stafford Act and Legislative Initiatives
- National Disaster Recovery Framework
- FEMA's Qualification and Unified Readiness Reporting Systems and Readiness Assessment Program
- 2010 Operations Review Panel
- Earthquake and Catastrophic Planning

## **RECENT CUSEC GEOCACHE COMMENTS**

Geocaching, a high-tech treasure hunting game, is played throughout the world by people who try to locate hidden containers with GPS devices and then log their experiences, or "finds" online. 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, with hundreds of visits during the spring and summer months. Some comments from our cache visitors this quarter include -



- *AR - "...Decided we were going on a caching trip today.... Interesting info."*
- *IL - "What a fun cache" "Great cache"*
- *IN - "This is a very cool cache! Really shook us up!!"*
- *KY - "Three generations of cachers went out today. Nice Location"*
- *MO - "Really enjoyed where this took us. I have been interested in the history here for awhile."*
- *MS - "Really neat cache in the Tunica area. Be sure to catch this one."*
- *TN - "This was a very cool place for a cache. Took lots of pictures and soaked in the scenery"*



Day two included presentations which covered the US Geological Survey (USGS) Response Plan, the Haiti Earthquake Response, and updates on earthquake planning from other federal organizations. According to the January 2008 edition of the National Response Framework, a Federal Coordinating Officer is a senior FEMA official trained, certified, and well experienced in emergency management, and specifically appointed to coordinate Federal support in the response to and recovery from emergencies and major disasters. In all cases, the FCO represents the FEMA Administrator in the field to discharge all FEMA responsibilities for the response and recovery efforts underway.

## **CUSEC Earthquake Program Managers and Public Information Officers Meet in Tennessee**

Representatives from CUSEC and our Member and Associate States and FEMA met in Nashville, Tennessee on December 2 to discuss topics pertinent to ongoing earthquake public awareness and preparedness efforts in the central U.S. Participants in this meeting discussed the observance of the upcoming New Madrid Bicentennial (NMB), specifically about the following events already being planned, which are:

- Earthquake Awareness Month
- The Great Central U.S. ShakeOut
- The National Level Exercise 2011

Other information shared between attendees included earthquake program updates, the use of social media in disasters, the May 2010 Nashville Floods, and new database tools to help states document officials trained in post-earthquake safety evaluations of buildings.

## **Red Cross Chapter to Host Preparedness Conference**

JACKSON, Tennessee, January 5, 2011 – Disasters are becoming more frequent, stronger in magnitude, and larger in scope. West Tennessee continues to be significantly impacted. Are you and your business prepared?

The Jackson Area Chapter American Red Cross will host the *Shake, Rattle and Roll Emergency Preparedness Conference* on Thursday, March 31, 2011 at the Tennessee Army National Guard Armory,

1015 Highway 70 Bypass, Jackson, Tennessee.

The *Shake, Rattle and Roll Emergency Preparedness Conference* will offer a variety of courses designed for executive-level managers, owners and employees of small to medium size businesses, nonprofits, educators, emergency management officials and first responders, security, and government administrators.

To help the business community plan for emergencies of all types, a *Business Continuity and Emergency Management* planning course will be offered at the conference. The Northwest Arkansas Community College, a part of the Rural Domestic Preparedness Consortium, will present the eight hour course.

Media representatives from Toyota Motor Engineering and Manufacturing North America, Inc. will present a workshop to focus on *Crisis Communications: Working with the Media*. The course will help company representatives communicate with the media during emergency events that may impact operations.

Dr. Deborah Tootle, associate professor, community and economic development with the University of Arkansas, will facilitate a *Disaster Awareness and the Disadvantaged or Socially Vulnerable Population* course at the conference.

A *Workplace Violence Awareness and Prevention* course will be presented by specialist Jimmy Leach, co-owner of Training Services Group, Inc. The two-hour course will offer sessions on facility security, threat assessment and risk analysis, and recognizing personal threats and potentially violent individuals.

A \$15 registration fee will reserve participant space for the conference. The fee will provide lunch and conference materials. Deadline to register is March 10, 2011. For more information about the *Shake, Rattle and Roll Preparedness Conference* and to receive a course application, please call the Jackson Area Chapter, 731-427-5543 or email [jacksonareachapter@redcrossjac.org](mailto:jacksonareachapter@redcrossjac.org).

In addition to conference courses, free mini workshops and exhibitions will be open to the public starting at 4:00 p.m. until 6:00 p.m.

# DATES TO MARK

**200th Anniversary of the 1811-1812 New Madrid Seismic Zone Earthquakes** 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 - [www.newmadrid2011.org](http://www.newmadrid2011.org).

**The Great Central U.S. ShakeOut** CUSEC is planning a “Drop, Cover, and Hold On” drill for *all* residents in the central U.S. This drill, known as the “ShakeOut”, will be held at 10:15am on April 28, 2011 (April 19 in Indiana). With a goal of one million participants, this drill will be the largest ever held in the central U.S. We encourage all interested in participating to sign up at [www.shakeout.org/centralus](http://www.shakeout.org/centralus).

**The 2012 National Earthquake Conference** will be held in Memphis, Tennessee on April 23-27, 2012. This conference will provide national attention to earthquake hazard risk reduction and incorporate learning from historic earthquakes to protect us from future hazards. In the near future, a conference website will be established at - [www.earthquakeconference.org](http://www.earthquakeconference.org).

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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*This publication is funded through a cooperative agreement with the Dept. of Homeland Security / Federal Emergency Management Agency Grant Number EMW-2010-RC-51-K005*

### CUSEC Partners

- American Red Cross
- American Society of Civil Engineers
- Association of CUSEC State Geologists
- Cascadia Regional Earthquake Workgroup
- Center for Community Earthquake Preparedness
- Centers for Disease Control and Prevention
- Center for Earthquake Research and Information
- Federal Highway Administration
- Federal Emergency Management Agency
- Institute for Business and Home Safety
- Mid America Earthquake Center
- National Emergency Management Association
- National Earthquake Hazards Reduction Program
- Northeast States Emergency Consortium
- U.S. Department of Transportation
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