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**STATEMENT FOR THE RECORD**

**On behalf of the  
Illinois Emergency Management Agency**

**Submitted to the House Committee on Science, Space, and Technology  
Subcommittee on Research and Technology  
United States House of Representatives**

*A Review of the National Earthquake Hazards Reduction Program*

**July 29, 2014**

Thank you Chairman Buschon, Ranking Member Lipinski, and distinguished members of the subcommittee for holding this hearing today.

I am pleased to have the opportunity to testify today on behalf of the Illinois State Emergency Management Agency and Governor Quinn on an issue of paramount importance to the people of Illinois. The National Earthquake Hazards Reduction Program (NEHRP) remains a critical asset in our fight against the myriad hazards facing our state and region.

## **Background**

The Earthquake Hazards Reduction Authorization Act authorizes appropriations for carrying out the Earthquake Hazards Reduction Act of 1977. The program provides funding for the National Science Foundation, the Federal Emergency Management Agency, the U.S. Geological Survey (USGS), and the National Institute of Science and Technology.

In addition to NEHRP's scientific and research-driven efforts, the program provides assistance enabling states to develop preparedness and response plans and increase earthquake awareness. A primary objective of NEHRP is providing outreach and public education. Other key NEHRP objectives include development of cost-effective measures to reduce earthquake impacts on individuals, the built environment, and society-at-large; providing guidance and recommendations on codes and ordinances to enhance seismic safety; and improving earthquake resilience of communities nationwide.

The overarching functional purpose of NEHRP is to bring together the partner agencies to promote knowledge of and institute practices for the risk reduction of earthquakes. According to the NEHRP website, the program accomplishes these goals "through coordinated, multi-disciplinary, interagency partnership among the NEHRP agencies and their stakeholders – that improve the Nation's earthquake resilience in public safety, economic strength, and national security." Unfortunately, while this sentiment is noble, in recent years the program has wandered from the stated intent and started focusing on research more than actionable activities. This move from the intent of the program comes at a time when the risk and consequences of a major earthquake in this nation are more present than ever.

## **Understanding the Hazard**

This discussion regarding NEHRP is quite timely, especially given the ongoing threat of earthquakes across the country. Two weeks ago the U.S. Geological Survey (USGS) released an update to the National Seismic Hazard Maps along with updated statistics on earthquake activity in all regions of the country. In the central United States where Illinois is located, the number of earthquakes annually has quintupled from 2011-2013 with an average of one hundred tremors per year, up from a 30-year average of 20 per year from 1981-2011. This spike in seismic activity serves as a reminder of the NEHRP program's value to the nation and the challenge of preparing for a natural disaster of proportions never seen in U.S. history.

Illinois specifically is at risk from two major seismic zones, the Wabash Valley Seismic Zone and the New Madrid Seismic Zone (NMSZ). The Wabash Valley Zone is located between southeastern Illinois and southwestern Indiana. The NMSZ is located in the Central Mississippi Valley and includes portions of the states of Alabama, Arkansas, Illinois, Indiana, Kentucky, Missouri, Mississippi, and Tennessee.

During any 50-year time span, there is a 25 percent to 40 percent chance of a magnitude 6.0 or greater earthquake in this seismic zone. Since 1974, the year network monitoring of seismic activity began, more than 3,000 earthquakes have been recorded in the NMSZ. Fortunately, none of these earthquakes exceeded a magnitude of 5.0, and most occurred without our noticing. The largest earthquake in recent years occurred on the Wabash Valley Seismic Zone. This earthquake registered a magnitude of 5.4 and occurred in Mt. Carmel, Illinois on April 18, 2008.

The most powerful earthquakes ever to occur in the continental United States took place in the NMSZ during the winter of 1811-1812. When put into context, an earthquake today in the NMSZ of similar magnitude to the quakes of 1811-1812 would result in an economic impact of nearly \$300 billion. That is 300 percent larger than the most costly American disaster ever; Hurricane Katrina.

### **Actionable Progress**

Given the nature of this threat, the state emergency management agencies in the central United States continue working extensively on catastrophic planning and conducted two of the largest homeland security exercises ever in 2011 and 2014. The lessons gleaned from these efforts have produced national best practices in the areas of resource management, response protocols, information sharing and whole community integration of an unprecedented scale. The tools and processes created for these exercises have fundamentally changed the way we plan for, respond to, and recover from disasters of all types. Additionally we have developed awareness campaigns such as the Great U.S. Shakeout, with millions of people participating across the country. We have also improved school safety drills and offering public service announcements to educate those in areas of the country where this threat remains a relative unknown.

The enormity of the task in front of the emergency management community to respond a disaster of this magnitude were demonstrated during the recent Capstone 14 exercise when more than 2,500 personnel in 20 states participated in the four-day event. We beta tested the first ever multi-state common operating picture sharing more than 13,000 real-time status updates of critical data from 440 counties in 7 impacted states. Additionally, we launched the first national resource database with more than 500 mission ready packaged assets deploying from 18 states.

Despite the successes, these efforts also serve to identify the gaps in our systems and capabilities, as well as inherent weaknesses in our critical infrastructure and life support systems. These discoveries bring great uncertainty to whether we are adequately prepared as a nation for the earthquake threat. Far too many structural vulnerabilities compromise our resilience, and NEHRP is potentially on a track which will not only see us lose the valuable gains we have made, but regress to a time that predates the establishment of the program.

### **Issues, Challenges, and Recommendations**

The problems begin with the expiration of the NEHRP authorization in 2009 and the lack of reauthorization since then. This program deserves to be a legislative priority, and balance should be restored to how the program is governed and funded. While emergency management plays a significant

role in earthquake preparation, response, and mitigation, only one of the 15 members of the NEHRP Advisory Committee on Earthquake Hazards Reduction (ACEHR) panel comes from our profession. From a funding perspective, emergency management is also grossly underrepresented receiving less than 7 percent of the funds allocated for this threat. To make matters worse, the state-level earthquake program managers are rapidly disappearing due to a decision by the Federal Emergency Management Agency (FEMA) pulling all state funding in Fiscal Year 2013. To help address all these issues, the following recommendations should be considered:

1. **Enhance Coordination.** The need for coordination between all levels of government has never been greater, and yet the program continues to lag behind at the federal level because FEMA's NEHRP office is buried and fragmented within the agency. While the hurricane program benefits from its presence in the Office of Response and Recovery, the earthquake program is currently housed in the Mitigation Division, with no major emphasis on response or preparedness activities. This leads to grant guidance which omits the eligibility of response and preparedness activities in direct contradiction to the original program guidance.

To correct this, program emphasis should be balanced and the program placed under the control of an SES level National Earthquake Program Manager within FEMA similar to the hurricane program. This will allow them to equally draw upon the various FEMA Divisions and functions. This disjointed approach at the federal level also leads to the increased importance of an already vital asset, the earthquake consortiums. These entities are the most effective and indispensable means of multi-state collaboration because they are focused on the unique nature of the threat in each region of the country.

2. **Support for Regional Consortiums.** Illinois is a member of the Central United State Earthquake Consortium (CUSEC) one of three such organizations representing a total of 43 states and territories which has a seismic risk. CUSEC, like the other two consortia, was formed with NEHRP funding support from the Federal Emergency Management Agency. CUSEC's primary mission working with its 18 member and associate states is, "... the reduction of deaths, injuries, property damage, and economic losses resulting from earthquakes in the Central United States."

FEMA should continue to fund and rely upon the earthquake consortia to foster multi-state coordination, regional earthquake planning and exercise initiatives, increase public awareness, and leverage new technologies in emergency management. Many consortia-led initiatives have become national models, programs, and improvements in emergency management. Also, 75 percent of respondents to a July 2014 national survey of at-risk states and territories indicated states rated their partnership with the FEMA NEHRP consortia as "effective" or "highly effective." Language related to consortia needs to be restored as part of reauthorization.

3. **Balancing Research and Implementation.** NEHRP currently lacks a balanced program of engineering, science and research, and emergency management as originally intended by Congress. The most important change in research and development measures is a better integration of the components of the program. NEHRP was designed to be a hazard reduction

program, not just hazard research. The information being collected and analyzed should be leveraged to conduct more targeted risk assessments based on joint evaluations from program participants. These assessments should be focused on more detailed impact analysis on sectors of critical infrastructure such as road and bridge networks, rail systems, potable and wastewater systems, voice and data communications, and the national power grid. The importance of this interdependent infrastructure cannot be overstated; in the case of the power grid a New Madrid Earthquake could cause a power loss to more than a third of the U.S. population and result in an outage in the hardest hit areas that could last up to six months. The best way to combat these issues is through empowering those responsible for hardening and protecting these systems with the knowledge needed to be efficient in their efforts. This approach will greatly aid the planning process and guide mitigation efforts to help prioritize an endless list of needs and vulnerabilities to help us maximize the limited resources available. The inevitable conclusion of these efforts is saving countless lives when this terrible disaster hits.

## **Conclusion**

As you can see through this testimony, NEHRP is a worthwhile and valuable program. As with most national programs, however, opportunities remain for us to continually support those responsible for managing the potentially horrific consequences of these hazards. Scientists, researchers, and emergency managers cannot operate in a vacuum independent of one another. Only through robust coordination can we properly prepare for, mitigate against, respond to, and recover from the impacts of a major earthquake.

The emergency management community stands ready to work with our partners in this effort, but we must have the continued partnership with our friends in Congress to push this program to the next level of success. I owe it to the citizens of Illinois to ensure this program is robust and effective in saving lives and protecting property. I appreciate you taking the time to hold this hearing and help me as I continue to ensure the safety of millions of Illinois residents and look forward to any questions you may have.