

**National Earthquake Hazards Reduction Program  
Advisory Committee on Earthquake Hazards Reduction  
National Institute of Standards and Technology  
Gaithersburg, Maryland  
April 28, 2010**

**Meeting Summary**

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**Advisory Committee Members:**

Chris Poland, Chair	Degenkolb Engineers
Walter Arabasz	University of Utah
James Beavers	University of Tennessee
Jonathan Bray	University of California, Berkeley
Richard Eisner*	Fritz Institute
James Harris*	J. R. Harris and Company
John Hooper*	Magnusson Klemencic Associates
Michael Lindell	Texas A&M University
Thomas O'Rourke	Cornell University
Paul Somerville*	URS Corporation
Susan Tubbesing	Earthquake Engineering Research Institute
Anne vonWeller	Chief Building Official, Murray City, Utah
Yumei Wang	Oregon Department of Geology and Mineral Industries
Sharon Wood	University of Texas at Austin
Brent Woodworth*	Global Crisis Services, Inc.
Mark Zoback*	Stanford University (SESAC ex-officio liaison)

\*not in attendance

**NEHRP ICC Member-Agency Representatives and NIST Support:**

Shyam Sunder	NIST, Building and Fire Research Laboratory Director, ACEHR Designated Federal Official
Jack Hayes	NIST, NEHRP Director
Edward Laatsch	FEMA
David Applegate	USGS
Tina Faecke	NIST, NEHRP Secretariat
John Filson	NEHRP Secretariat
Brian Garrett	NEHRP Secretariat

## **Summary of Discussions**

### **I. Call to Order**

Chris Poland, chair of the Advisory Committee on Earthquake Hazards Reduction (ACEHR), welcomed attendees to the conference-call meeting and reviewed the agenda. The meeting was convened to review and make final edits to the draft of ACEHR's annual report to the NEHRP Interagency Coordinating Committee (ICC) on the effectiveness of NEHRP. The draft had been distributed to ACEHR members prior to the meeting, and several members had submitted suggested edits to Poland. The draft and suggested edits were displayed online for attendees via WebEx conferencing technology.

### **II. Roll Call**

Tina Faecke read the names of those viewing the online WebEx display and Poland asked all other participants to identify themselves verbally.

### **III. Overall Impressions**

Poland asked participating ACEHR members to describe their overall impressions of the content and tone of the draft report, and to identify any parts that they would like to discuss. All of the members in attendance indicated that they liked the draft overall. Several members praised the forceful tone of the report, and several said that they had minor editorial changes that they would like the committee to consider.

One member was concerned that some recommendations contained in the committee's last full report on NEHRP effectiveness, completed in May 2008, appeared to have been omitted or diluted in this report. Poland asked this member to specify these concerns when the committee reviewed related sections of the report. The member also observed that this draft was lengthier throughout than the 2008 report, noting that ACEHR had emphasized brevity in preparing the 2008 report. Acknowledging that the committee had not explicitly considered length this year as it had in 2008, and that it would be beneficial to consider this issue when planning future reports, Poland responded that generally, the added length reflected the authors' efforts to describe the committee's recommendations in greater detail to facilitate their implementation.

### **IV. Review of the Draft Report**

The committee conducted a page-by-page review of the draft report, beginning with the first page of the executive summary. Members discussed each of the edits that had been suggested prior to the meeting, as well as additional changes suggested by members during the meeting. As each suggested change was ratified, modified, or rejected by the members, Faecke entered the corresponding revisions into the draft displayed online via WebEx. Rather than documenting each revision made during the meeting, this summary describes the issues discussed by ACEHR members as they revised the draft report.

There was some discussion about whether it is possible for areas to be “permanently destroyed” by an earthquake or earthquake-induced tsunami. The committee decided that it would be better to state that hard-hit areas could be “permanently impaired,” and “take decades to recover.” Members also replaced the term “mega-losses” with “severe economic losses,” noting that language that could potentially be regarded as hyperbolic could adversely impact readers’ perceptions of the report.

Several members noted that acronyms did not appear to be defined in a consistent manner throughout the report. In response, the committee deleted two groups of undefined acronyms that appeared in parentheses within a recommendation, since defining these acronyms would make the recommendation too lengthy, and decided that all acronyms appearing in the executive summary (other than FEMA, NEHRP, NIST, NSF, and USGS) should be defined where the names that they abbreviate are first used.

Members discussed whether the report should explicitly characterize the adequacy of the budgets allocated for NEHRP activities. The committee decided that such characterizations should be avoided, since they are implicit within many of the recommendations provided in the report. Instead of talking about funding, the report would focus on identifying and describing gaps between what NEHRP is doing and accomplishing and what it needs to do and accomplish.

A member asked for clarification about how the investments needed to strengthen the seismic resilience of lifelines relate to the much greater investments needed to update and restore the Nation’s civil infrastructure. Both needs were mentioned in the executive summary, and the member was concerned that the latter might overshadow the former. In response, the committee inserted language clarifying that the seismic resilience of lifelines should be addressed as part of the efforts, called for by the American Society of Civil Engineers, to strengthen the Nation’s infrastructure.

When reviewing the recommendations made in the report about FEMA’s NEHRP activities, the committee focused on FEMA’s new state assistance program. Members agreed that FEMA had taken a significant step forward in reestablishing this program, but noted that the level of assistance provided through the program has so far not been sufficient to successfully revitalize state earthquake programs. They revised one of the FEMA recommendations to explicitly call for the revitalization of state earthquake programs.

A member commented on the recommendation about building multidisciplinary expertise within NIST, stating that this recommendation was not supported commensurately within the body of the report. The member suggested that the supporting text emphasize that NIST needs to have a multidisciplinary team in-house in order to provide multidisciplinary leadership. No changes were made to the report in response to this discussion.

A member observed that enhancing support for curiosity-based research was not included in the recommendations pertaining to NSF, as it had been in ACEHR’s 2008 report. Members involved in drafting this section indicated that curiosity-based research was left out, not because it was thought to be any less important, but because other issues were thought to be more critical and actionable and the committee had determined at its March 2010 meeting to limit the number of

recommendations in this year's report. Several members commented on the importance of the first NSF-related recommendation dealing with support for earthquake reconnaissance activities. Language was added to this recommendation to emphasize the need for ongoing NSF support, not only for post-earthquake investigations, but also for the permanent infrastructure needed to coordinate reconnaissance efforts and disseminate reconnaissance findings.

Members discussed several aspects of the recommendation relating to full implementation of the USGS Advanced National Seismic System (ANSS). One member commented that the recommendation appeared to be asking USGS to do something (complete the installation of ANSS instrumentation sites) that the agency does not have the resources to do. Others said that it was not clear whether the recommendation was calling for USGS to implement the original, 6,000-site version of ANSS, or the more advanced version that is currently envisioned. The members agreed that this recommendation, like all of the others made in the report, is directed to the ICC rather than to a single NEHRP agency, and that ensuring the implementation of ANSS is within the purview of the ICC. Revisions were made to clarify that ACEHR regards the full implementation of ANSS, as currently envisioned, to be an essential first step in developing the seismic monitoring capabilities needed by the United States.

Another recommendation relating to USGS, about communicating earthquake information to the public, was discussed at length. Members questioned whether the recommendation, which called for greater involvement of social scientists in designing such communications, was too narrow in scope. They acknowledged that the public and the news media turn to USGS for information during periods of seismic activity, and agreed that USGS is the agency best able to respond to such inquiries. Some felt that, given its role as a leading conduit for communications from the earthquake community to the public, USGS should work not only on how to effectively (i.e., understandably and unambiguously) deliver earthquake information, but also on the types of content and expertise that should be incorporated into such communications. More information from earthquake engineers regarding impacts to the built environment, for example, could possibly help the public to personalize and thereby comprehend seismic risk. The committee modified the language of the recommendation to call for collaboration with social scientists and other earthquake professionals to enhance the content and delivery of information for the public.

Several participants noted the tremendous demands placed on USGS by the news media in the wake of recent major earthquakes. Attendees were unanimous in praising and affirming ACEHR's respect for the job that USGS has done in responding to the myriad inquiries that it has received, and made it clear that the recommendation relating to public communication was intended not as criticism but rather as a way to further enhance the agency's invaluable links to the public.

The meeting concluded with a discussion about whether there was adequate continuity between the new report and the committee's 2008 report. A member noted several instances where recommendations made in 2008 were omitted from this report, even though the activities recommended had not yet been fully realized. In addition to the example of curiosity-based research mentioned earlier, these instances included language about how post-earthquake reconnaissance should incorporate discipline-specific investigations along with overarching multidisciplinary investigations.

Members discussed whether it was necessary to do an audit that would track the recommendations made in 2008, how they have since been addressed, and whether they have been appropriately carried forward into the current 2010 report. The consensus was that such an audit was unnecessary, since the authors of the current report had implicitly considered the committee's past recommendations in deciding what to emphasize in this report, and had agreed that the number of recommendations in the new report should be limited so as to facilitate future implementation and tracking. An audit would also delay completion of the report, and members agreed that such a delay, although permissible, was not desirable. The members decided to include the recommendations made in the 2008 report as an appendix to the new report, and to explain in the new report that these past recommendations were considered in formulating the current recommendations. It was suggested that future reports should include information (perhaps a separate section) about past recommendations, ACEHR's assessments of how they have been implemented, and how these assessments influenced the committee's current recommendations.

## **V. Adjournment**

Poland asked staff from the NEHRP Secretariat to incorporate the edits made by the committee into the draft report and to send the resulting draft to him for a final check. He will then return the final report, along with a transmittal letter, to NEHRP for submission to NIST Director and ICC Chair Patrick Gallagher, for distribution to ACEHR members, and for posting on the NEHRP Web site. Poland thanked everyone for their assistance in preparing the report and adjourned the meeting.