

**National Earthquake Hazards Reduction Program  
Advisory Committee on Earthquake Hazards Reduction  
National Institute of Standards and Technology  
Gaithersburg, Maryland  
January 23, 2009**

**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
Ronald Hamburger	Simpson Gumpertz & Heger, Inc.
James Harris*	J. R. Harris and Company
Howard Kunreuther	University of Pennsylvania
Michael Lindell	Texas A&M University
Thomas O'Rourke*	Cornell University
Paul Somerville*	URS Corporation
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:**

Patrick Gallagher	NIST Deputy Director and Acting NEHRP ICC Chair
Arden Bement	NSF Director and NEHRP ICC Member
Shyam Sunder	NIST, Building and Fire Research Laboratory Director, ACEHR Designated Federal Official
Linda Acierto	NIST Congressional Affairs
Melissa Lieberman	NIST Deputy Chief Counsel
Edward Laatsch	FEMA
Joy Pauschke	NSF
David Applegate	USGS
Tina Faecke	NIST, NEHRP Secretariat
Jay Harris	NIST, NEHRP Secretariat
John Filson	NEHRP Secretariat
Ugo Morelli	NEHRP Secretariat
Brian Garrett	NEHRP Secretariat

## **Guests:**

Robert Bauer	Central United States Earthquake Consortium
Ken Cooley	California Seismic Safety Commission
Sam Cowin	Lewis-Burke Associates
Jim Farasatpour	Federal Aviation Administration
Chris Fostel	Bellamy Management Services
Bonnie Manley	Steel Market Development Institute

## **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 meeting agenda.

### **II. Roll Call**

Tina Faecke called the roll of ACEHR members, NEHRP member-agency representatives, NEHRP support staff, and registered guests to determine who was participating by telephone. Poland thanked everyone for attending and expressed his appreciation for their interest in the work of ACEHR.

### **III. Letter to the ICC on NEHRP Reauthorization**

Poland reviewed the legislation that Congress passed in 2004 to reauthorize NEHRP. He noted those sections that have been of particular interest to ACEHR as it has considered possible changes to the law. He referred ACEHR members to a draft copy of the letter that ACEHR is preparing on recommended changes to the legislation. The draft letter, which was displayed to members via WebEx online conferencing technology, contained edits suggested by Jonathan Bray. Poland reminded members that the letter is to be sent to the NEHRP Interagency Coordinating Committee (ICC) for its consideration in connection with the upcoming NEHRP reauthorization process in Congress.

Poland asked whether the ACEHR members and NEHRP member-agency representatives in attendance had any general comments about the draft letter. An agency representative responded that, in general, the recommendations presented in the draft adequately conveyed what and how changes should be made, but not why. He suggested that some additional text be incorporated to better explain why the requested changes are needed and why they are expected to enhance program effectiveness.

Poland asked for any comments on the introductory portion of the letter (i.e., the first three paragraphs), noting that he had no problem with the edits suggested by Bray. Hearing no comments, he moved to the body of the letter, which consisted of a series of seven recommendations. Noting that he had added the final recommendation, on lifelines, shortly before the meeting, he first displayed and described the content of that recommendation.

### ***Recommendation on Responsibility for Post-Earthquake Investigations***

Returning to the first recommendation, on changing the agency responsible for leading post-earthquake investigations, Poland noted Bray's suggested addition about funding for this responsibility and asked whether there were any other proposed changes. There were no objections to Bray's addition and no further edits were suggested. Poland asked Bray to explain the rationale for this recommendation.

Bray stated that because NIST has become the lead agency for NEHRP, responsible for coordinating the program-related activities of the member agencies, the committee felt that it was appropriate for NIST to also coordinate post-earthquake investigations, which are one of the most important program-related activities. The committee also felt that given its role in coordinating NEHRP activities, NIST would be the agency best able to coordinate and integrate the contributions of the various disciplines that are involved in post-event investigations. There is a need to better integrate discipline-specific findings—from earth science, seismology, engineering geology, geotechnical engineering, and structural engineering—into lessons learned, and NIST is in the best position to do this.

Another member added that transferring this responsibility to NIST makes sense given that the agency was designated as a national disaster investigator in the wake of the 9/11 terrorist attacks. A NIST representative noted that this role, which was assigned to NIST under the National Construction Safety Team Act, is limited to building-failure investigations and that NIST has not yet received ongoing funding for this activity. He commented that NIST would need additional resources to support the training and organizational infrastructure required to coordinate post-earthquake investigations, and that while it is challenging for science agencies to secure such funding (as opposed to funding for research outputs), it is not impossible for them to do so. Other representatives noted that USGS never sought the responsibility for leading post-earthquake investigations and has never received funding for this role, and that giving up the role should not adversely impact the agency's other major post-earthquake responsibilities.

In concluding the discussion on this recommendation, an agency representative recalled the comment made earlier about the importance of rationales. He suggested that in making this and other recommendations to the ICC, the most useful information that ACEHR can provide is a crisp rationale for whatever change is being recommended. Regarding the responsibility for post-earthquake investigations, he suggested that the most compelling reason why NIST should assume this role is not simply because it is the lead agency for NEHRP; rather, it is because through its work as the lead agency, NIST is developing unique expertise in coordinating among the agencies and disciplines involved in earthquake risk reduction, expertise that would apply very well to the coordination of post-earthquake investigations. ACEHR is uniquely qualified to articulate such rationales, and in making its recommendations, should ask the ICC to determine the specific legislative changes and the changes in agency roles and responsibilities needed to implement the recommendation. Chris Poland asked Jonathan Bray to take the lead in revising this recommendation.

### ***Recommendation on Establishment of Interagency Working Group***

Poland next reviewed the second recommendation in the letter, concerning the establishment of an interagency working group. He acknowledged the need to incorporate more about why such a group is needed, and noted that a member had suggested that the National Oceanic and Atmospheric Administration be added to the list of potential group members. An agency representative suggested that, rather than creating a new group, it would be simpler and less expensive to revitalize and use the Interagency Committee on Seismic Safety in Construction (ICSSC) for this function. Others noted that many of the agencies participating in the ICSSC are not involved in earthquake-relevant research, but rather are on the committee to ensure that their buildings are appropriately protected against seismic hazards.

Poland explained that the recommendation for an interagency working group came about largely because ACEHR has heard about agencies (other than the four NEHRP agencies) that may be involved in research that could be relevant to and leverage the work of NEHRP. An example is the Department of Homeland Security (DHS) Directorate for Science and Technology (S&T Directorate), which appears to be expanding the scope of its research to encompass natural hazards. An agency representative noted that, as the parent agency of FEMA, DHS is already represented in NEHRP through FEMA. He added that the Coast Guard is another DHS component, in addition to the S&T Directorate, that may be relevant to the work of NEHRP.

The committee concluded that this recommendation should be revised to focus on the rationale for more coordination between NEHRP and other agencies whose research may benefit or benefit from the work of NEHRP. In particular, the recommendation should explain how such expanded coordination would benefit NEHRP. Although the recommendation can cite the ICSSC as a possible venue for such coordination, ACEHR should let the ICC determine the best mechanism for responding to this need. Poland stated that he would consult with ACEHR member James Beavers on revising this recommendation.

### ***Recommendation on Fund Allocation for Performance-Based Seismic Design***

The committee next considered the third recommendation, which called for removing from the NEHRP authorizing legislation the stipulation that 10 percent of appropriated program funds be made available for the development of performance-based seismic design (PBSD) guidelines and methodologies. Noting that this provision was inserted into the 2004 reauthorization to help reinforce congressional interest in the program (since congressional committee members were at that time very interested in PBSD), one member suggested that the provision may no longer be needed and perhaps should be removed to allow for more balance and flexibility in the allocation of program funds. Although several members agreed that legislated allocations are generally undesirable, others were concerned that removing this provision might weaken support for PBSD. Ultimately, the consensus among members was that this recommendation was too specific and prescriptive in relation to the other recommendations and therefore should be removed from the letter.

### ***Recommendation on Support for Earthquake Engineering Research Centers***

In regard to the fourth recommendation, about transferring funding responsibility for the earthquake engineering research centers (EERCs) from NSF to NIST, an agency representative commented that this appeared to be somewhat at odds with an earlier ACEHR recommendation

to the effect that EERC research should be highly interdisciplinary with more involvement from the social sciences. Noting that interdisciplinary research and social science research are strengths of NSF, he suggested that it might be better to recommend that NSF and NIST jointly support the EERCs. He also observed that since the EERCs have graduated from NSF's engineering research centers program, the agency no longer has any funding responsibility to be transferred.

The representative added that he was comfortable with NIST having the responsibility for managing EERCs, but that EERC research agendas should be driven by NSF research opportunities as well as by NIST. He noted that NSF's Directorate for Social, Behavioral and Economic Sciences is a prominent funder of interdisciplinary research involving the social and physical sciences. A member asked whether, given its focus on fundamental research, NSF can support the applied, problem-focused research that the EERCs and NIST are so well suited to perform. The representative acknowledged that, while EERC investigators often pursue both basic and applied research, NSF generally prefers that other agencies support applied research.

Another representative confirmed that, in regard to research, NIST's niche is problem-focused research in support of standards, practices, and codes. He suggested that ACEHR may want to recommend that the EERCs receive core funding for problem-focused research, and that the centers continue to seek support from NSF for their more basic research work. After additional discussion, it was concluded that the fourth recommendation should be modified to be less prescriptive and more focused on research gaps and rationale. More specifically, it should describe the multidisciplinary, problem-focused research that is needed; explain that such research is no longer being adequately supported since the EERCs have graduated from NSF's engineering research centers program and no longer receive the steady, core support that this program provided; and recommend that a new means of providing this "critical mass" of support be instituted. Chris Poland asked ACEHR members Sharon Wood, Michael Lindell, and Mark Zoback to help revise this recommendation.

### ***Recommendation on Utilization of NEES***

An agency representative urged reconsideration of the fifth recommendation, concerning the solicitation of support for the George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES). The recommendation called for NSF, which supports NEES operations and many NEES-based research projects, to be tasked with soliciting additional research work for NEES from other federal agencies to further leverage its investments in NEES. The representative stated that this kind of solicitation is something that NSF does not do, and that generally, such solicitation is the responsibility of the President's Office of Science and Technology Policy (OSTP) and its National Science and Technology Council (NSTC). He also suggested that this could be a role for the interagency working group proposed in the second recommendation. Other representatives noted that NSTC's Subcommittee on Disaster Reduction coordinates across agencies on behalf of OSTP and could perhaps help with such solicitation.

The consensus was that this recommendation should be retained but revised to emphasize the need to further leverage the substantial investments that have already been made in NEES. NEES is a unique resource that should be used to its full potential for the benefit of the Nation, and there appear to be other agencies besides NSF that could conduct or sponsor NEES research.

There may be a role for OSTP in coordinating and promoting the cooperation of such agencies, to help ensure that the full value of the Nation's investment in NEES is realized. Chris Poland said that he would take the lead on revising this recommendation.

### ***Recommendation on USGS Multihazard Demonstration Projects***

The committee reviewed and briefly discussed the sixth recommendation, which called for USGS to continue the development and sponsorship of multihazard demonstration projects. Members generally felt that this recommendation was in line with the letter's emphasis on needs and rationales, and agency representatives indicated that it was also in line with the priorities of USGS.

### ***Recommendation on Lifelines***

Chris Poland reiterated that he had added the seventh and final recommendation to the letter shortly before this meeting. Based on discussions held at the last ACEHR meeting in December, he felt that it was important to include a recommendation about lifelines. This recommendation stated that lifeline systems of different types and in different localities have generally been constructed in isolation from one another and with little regard for system interdependencies, disaster resilience, and the potentially nationwide impacts of system failures. It called for a greater focus on lifelines at the national level, both to develop more disaster-resilient lifeline design and mitigation strategies, and to coordinate the implementation of such strategies nationwide.

A member suggested that it may be useful to combine this recommendation with the recommendation on the interagency working group, since the working group was being recommended, in part, to extend NEHRP's activities across more of the Nation's infrastructure. While acknowledging that both recommendations are linked to infrastructure, other members felt that lifelines are so unique and important, and have been so neglected at the national level, that a separate recommendation was warranted. The members decided to move the lifelines recommendation to an earlier spot in the letter, so that it will immediately follow the recommendation on the working group. They also decided that the language about a lifeline czar was too prescriptive and should be removed from the recommendation. In its place, the recommendation should cite the need for a single point of responsibility for lifelines at the national level.

A member noted that DHS is reportedly planning to emphasize critical infrastructure protection in the coming year. An agency representative commented that lifeline protection and critical infrastructure protection are both huge endeavors, and that seismic mitigation is one of many aspects involved in this work. He said that the DHS National Infrastructure Protection Plan is heavily oriented toward the security aspects of terrorism and natural disasters, and that seismic mitigation is not a significant part of the plan. He suggested that in the lifelines recommendation, the committee may want to emphasize, as a first step, the need to accomplish the lifeline priorities outlined in the NEHRP strategic plan. The members agreed on the importance of bringing the same level of effort to protecting lifelines as has been given to protecting buildings from earthquakes and other natural hazards. Chris Poland stated that he would ask ACEHR member Tom O'Rourke to help revise the lifelines recommendation.

Regarding the closing paragraphs of the letter, the only comment from members was that it may be beneficial to adjust the tone somewhat to reflect the emphasis on the identification of gaps and problems and on the rationale behind the recommendations.

#### **IV. Public Comments**

Chris Poland invited statements from the guests in attendance. Ken Cooley introduced himself as the vice chair of California's Alfred E. Alquist Seismic Safety Commission and first vice president of the League of California Cities. He noted that these organizations and their counterparts in other states can be important partners for NEHRP and asked the committee to keep that in mind. He applauded ACEHR's focus on needs, opportunities, and rationales in its recommendations and added that language about what capabilities need to be developed and brought to bear is also important. He suggested that such information can help not only in the federal sphere but also in stimulating advocacy among states and cities.

A statement was also made by Chris Fostel of Bellamy Management Services, which provides support services to the Federal Aviation Administration's (FAA) Seismic Safety Risk Mitigation Program. Fostel reported that FAA contracting officers are seeking an update to ICSSC RP 6 (Standards of Seismic Safety for Federally Owned and Leased Buildings) that reflects the latest standards from the American Society of Civil Engineers. He asked ACEHR to look into what committee may be responsible for updating this guidance.

#### **V. Adjournment**

Chris Poland stated that although the committee did not have time during this session to discuss ACEHR's next annual report, much of what was discussed will be of help in preparing the report. He asked that those members tasked with helping to revise the reauthorization letter submit their revisions to him within the next 2 to 3 weeks, so that he can assemble the next draft for discussion during the next meeting.

Poland asked which members would be available if the next meeting were scheduled for February 20 at 11:00 a.m. eastern time. Michael Lindell, Anne vonWeller, and Sharon Wood indicated that they could attend at that time, while Howard Kunreuther said he would be unable to attend and Jonathan Bray was uncertain about whether that time would work for him. Poland said that some alternative dates for the meeting will be explored, but that he would like it to take place in late February or early March. He then adjourned the meeting.