

National Earthquake Hazards Reduction Program Advisory Committee on Earthquake Hazards Reduction

Teleconference Summary
April 27, 2012

Advisory Committee Members:

Chris Poland, Chair
Norman Abrahamson
James Beavers
Richard Eisner
John Hooper
Michael Lindell
Jack Moehle
Thomas O'Rourke
Susan Tubbesing
Anne vonWeller
Yumei Wang
Brent Woodworth
Ralph Archuleta*, Ex-officio member of ACEHR as Chair of USGS SESAC

*not in attendance

NEHRP ICC Member-Agency Representatives and NIST Support:

Shyam Sunder	NIST, EL Director, ACEHR Designated Federal Official
Jack Hayes	NIST, NEHRP Director
Ed Laatsch	FEMA
Joy Pauschke	NSF
John Filson	USGS
Tina Faecke	NIST, NEHRP Secretariat
Brian Garrett	BRI Consulting Group, NEHRP Secretariat support

Abbreviations Used Above

ACEHR—Advisory Committee on Earthquake Hazards Reduction	NIST—National Institute of Standards and Technology
EL—Engineering Laboratory	NSF—National Science Foundation
FEMA—Federal Emergency Management Agency	SESAC—Scientific Earthquake Studies Advisory Committee
ICC—Interagency Coordinating Committee	USGS—U.S. Geological Survey
NEHRP—National Earthquake Hazards Reduction Program	

Summary of Discussions

I. Call to Order

Chris Poland, Chair of the Advisory Committee on Earthquake Hazards Reduction (ACEHR), welcomed attendees and asked Tina Faecke to conduct the roll call of committee members. Noting that the purpose of this meeting was to review and further refine the committee's draft 2012 report on NEHRP effectiveness, the Chair suggested that the committee begin by reviewing the appendix, "Trends and Developments in Science and Engineering," and follow that, in turn, by reviewing the sections on "Program Effectiveness and Needs," the "Introduction," and the "Executive Summary."

Due to technical difficulties, attendees were unable to access an online, shared copy of the draft report via WebEx, as had been planned. Instead, they followed the discussion by using copies of the report that Faecke had distributed to committee members and posted on www.nehrp.gov prior to the meeting.

II. Review of the Appendix on Trends and Developments

The Chair led a section-by-section review of "Trends and Developments in Science and Engineering." The committee determined that no further changes were needed in the following sections: "Social Science," "Geotechnical Earthquake Engineering," "Building Codes and Quality Assurance," and "Lifeline Earthquake Engineering." Each remaining section is listed below along with a description of the revisions discussed and decided upon for that section.

Earth Science

It was suggested that under the topic of "Earthquake Early Warning," some text should be added about the need to review what happened last year in Japan, because that country has the most robust warning system and it was tested under real conditions.

Structural Earthquake Engineering

A member commented on the content linking this section to the 2011 National Research Council (NRC) report "National Earthquake Resilience: Research, Implementation, and Outreach," noting that this material was more detailed and specific in this section than in other sections. The Chair responded that all authors were asked to link their sections to the tasks identified in the NRC report (particularly the five tasks that ACEHR was recommending for focused attention by the National Earthquake Hazards Reduction Program [NEHRP]), and that each author had done this somewhat differently.

There was a comment about the text included under "Developments" about the Federal Emergency Management Agency's (FEMA) recent work with the Code Resource Support Committee (CRSC). It was suggested that this text be modified to make it clear that this was not the first time that FEMA has done this work; rather, this was the latest instance of work that the agency has been doing regularly over the past 12 years, coordinating with CRSC to ensure that potential code changes related to seismic risk reduction are considered in the cyclical updates to the Nation's model building codes.

A member asked that the statement about the PEER Tall Buildings Initiative be updated to indicate that the primary product of the initiative, “Guidelines for Performance-Based Seismic Design of Tall Buildings,” was completed and published in November 2010. An update was also suggested for the paragraph about standards for existing buildings. The American Society of Civil Engineers (ASCE) and its Structural Engineering Institute (SEI) are now in the third and final year of a process to update and combine ASCE standards 31 and 41. The new combined standard, ASCE/SEI 41-13, will be completed in 2012.

The Chair suggested that a statement be added under “Needs” about the need to reconsider post-earthquake tagging procedures in light of the new information that scientists are developing about changes in seismic hazards related to aftershock sequences and triggered earthquakes. This new information is discussed in the section on the U.S. Geological Survey (see the USGS section below).

Disaster Preparedness, Response, and Recovery

The emerging information about changes in seismic hazards related to aftershock sequences was also the subject of a suggested addition to this section. A member recommended that the text under “Needs” include the need to evaluate whether short-term or intermediate-term changes to building codes should be applied in the vicinity of large seismic events, given that such events can be followed by energetic aftershock sequences lasting from years to decades. The recent earthquakes in New Zealand and Japan have highlighted this issue, and it could potentially be a major stumbling block to recovery following future earthquakes in the United States. The only other suggested revision to this section concerned a correction to the title of NRC task 10, which should read “Socioeconomic Research on Hazard Mitigation and Recovery.”

III. Review of the Sections Under “Program Effectiveness and Needs”

Management, Coordination, and Implementation of NEHRP

The committee suggested that this section be revised so that it not only comments on whether and how the recommendations that ACEHR made in 2010 have been accomplished, but also states what the committee’s new (2012) recommendations are for the management of NEHRP. The only other revision to this section involved the following sentence: “Of the 18 tasks, ACEHR would like to recommend five, in particular, for focused effort.” It was suggested that “ACEHR would like to recommend” be changed to “ACEHR recommends.”

Federal Emergency Management Agency

One of the authors of this section asked the Chair whether the section should identify which of the five NRC tasks emphasized by ACEHR are related to each of the recommendations made in the section. The Chair answered that this information should be added to the section.

There was some discussion about the meaning of the word “support” in recommendation 2 (“Support and encourage state and local efforts to assess the seismic preparedness of public education facilities ...”). It was suggested that if “support” means “fund,” the word should perhaps be deleted. The authors responded that they had in mind support other than funding; for example, FEMA could work with State earthquake programs and regional earthquake consortia, which it already funds, to develop and disseminate information about seismic safety in schools. The Chair asked the authors to add some text to the second paragraph under recommendation 2

to explain what is meant by support in this context. It was also suggested that, in the third sentence of this paragraph, “recovering from a major earthquake” be changed to “recovering from disasters.”

National Institute of Standards and Technology

John Hooper explained that in drafting this section, he focused on the new earthquake engineering research that NIST has undertaken in recent years through its internal and extramural research and development (R&D) programs. He acknowledged the need to add a table or text that links the two recommendations to the NRC tasks emphasized by ACEHR.

The committee talked about whether and how NIST should contribute to NRC task 11 (Observatory network on community resilience and vulnerability). Although as the NEHRP lead agency, NIST has a role in coordinating the program’s contributions to all of the NRC tasks, that managerial role is addressed under “Management, Coordination, and Implementation of NEHRP.” The issue for this section is whether NIST’s earthquake R&D should contribute to the work on the observatory network. It was noted that the National Science Foundation (NSF) has been coordinating and supporting the initial planning work on this task, and that the observatory network concept has continued to evolve beyond what was envisioned when NRC task 11 was formulated. Several members referred Hooper to specific language on pages 129 and 136 of the NRC report about how NIST R&D could contribute to the observatory network by helping to standardize terminology and data collection and by transferring research findings into disaster risk reduction practices.

National Science Foundation

The author of this section, Jack Moehle, noted that since the last ACEHR meeting on April 20, he had received and incorporated comments provided by Michael Lindell and Ralph Archuleta. He had also added text that links the recommendations to several of the five NRC tasks emphasized by ACEHR.

There was a suggestion that recommendation 2 (Assess large-scale experimental facilities ...) and recommendation 3 (Assess the effectiveness of current approaches to soliciting and coordinating research ...) be made more direct or specific. The committee felt that this could be accomplished for recommendation 2 by making the language used in the recommendation itself more consistent with that used in the text that follows and discusses the recommendation (e.g., “ACEHR urges that NSF continue to provide support for the NEES laboratories ...”). Yumei Wang volunteered to provide some suggested language that Moehle could use to try to make the third recommendation more specific.

Moehle observed that the NSF section was organized differently than some other sections. This section listed all of the recommendations first, then discussed them, while in the FEMA section, for example, each recommendation was followed by whatever discussion pertained to it. The Chair indicated that this sort of formatting inconsistency would be addressed by the NEHRP Office, which would have an editor review the full report.

The Chair noted that the NSF recommendations were relatively long in comparison to most of the committee’s other recommendations. This made them stand out in the “Executive Summary,” where all of the report’s recommendations are listed, and could perhaps make them less easily

grasped by readers. Moehle said that he would make the recommendations more clear and concise.

U.S. Geological Survey

The committee discussed the Nation's fundamental need to finish developing the Advanced National Seismic System (ANSS), and how that need should be addressed in this section, where it then appeared as recommendation 1. Acknowledging that similar recommendations solely about ANSS completion had not been successful in past reports, the committee felt that it may prove more effective to tie the completion of ANSS to the accomplishment of other essential objectives.

It was therefore decided to combine recommendation 1 into recommendation 2, which concerned the need for changes to design ground motions and building codes in areas affected by ongoing, energetic earthquake aftershock sequences. This would allow ANSS completion to be characterized as an essential prerequisite to properly addressing an issue that has major implications for earthquake recovery. It was also suggested that the recent earthquakes in New Zealand, a country that has more complete instrumentation than does the United States, could be cited to illustrate the benefits of adequate monitoring.

An attendee noted that the evaluation contemplated in recommendation 2—of the need for changes to building codes in regions experiencing aftershocks—cannot be performed by USGS alone. It will require the participation of ASCE, the Building Seismic Safety Council, and the rest of the code-development community. The committee agreed that recommendation 2 should be clarified to indicate that while USGS should take the lead in planning and organizing this collaborative evaluation, the cooperation of others will be needed to perform the evaluation.

The Chair asked that the text that discusses recommendation 2 be supplemented to note that the change in seismic hazard following large earthquakes has implications not only for building codes, but also for post-earthquake building tagging procedures. A member added that this issue may also have implications for earthquake advisories. The section's author, Norman Abrahamson, noted that he would insert text that links the recommendations to the NRC tasks emphasized by the committee.

IV. Review of the "Introduction" and "Executive Summary"

The Chair summarized how he had developed the "Introduction" by using the NRC report to update the subsection on "Resilience—the Twenty-First-Century Goal for NEHRP," by inserting and endorsing the NRC tasks, and by updating the subsection on "Preparation and Organization of This Report." He invited comments from the committee on the "Introduction," but none were offered.

Several members commented on the first page of the "Executive Summary." There was consensus on the need to insert some additional praise for the recent work of the NEHRP agencies. The committee discussed where these kudos would best fit, and it was agreed that the best location would be in the initial part of the fourth paragraph. It was also suggested that the section include some mention of the fact that, despite how well prepared New Zealand and Japan

were in 2011, the earthquakes that they experienced still revealed facets of preparedness that had not been adequately addressed.

There was a recommendation that the second paragraph of the “Call to Action” subsection be made more clear and punchy. The gist of this paragraph was that the President’s fiscal year 2013 budget, which despite the austere fiscal climate was purportedly designed to address the Nation’s critical priorities, should have included greater support for NEHRP, since more funding is clearly needed to help the program adequately safeguard the public. Yumei Wang offered to develop some text that could be used to make this point more strongly.

The Chair asked whether Shyam Sunder could comment on the premise of this paragraph, that the absence of a significant expansion of support for NEHRP in the President’s budget was inconsistent with the budget’s purported intent to adequately address the Nation’s priorities. Sunder explained that this premise may not be accurate, because the budget priorities were necessarily defined by the Obama administration and in the course of preparing the budget, Federal agencies were generally asked to include potential budget cuts that could be used to fund these priorities. He noted that several of the administration’s priorities, including manufacturing R&D and cybersecurity, accounted for much of the increase in funding that the President requested for NIST.

There was also some discussion about the relative advantages and disadvantages of having line items designated for NEHRP in the budgets of the participating agencies. Attendees noted that, while visible line items can present targets for budget cutting, they can also preclude intra-agency struggles over appropriated funds. USGS currently has a subactivity line item for its Earthquake Hazards Program in the hazards portion of its budget. The trend at NIST, however, has been away from detailed program-specific line items (there is currently one line item covering all of the NIST laboratories), which gives management greater potential flexibility in shifting resources among programs. It was suggested that a more effective tactic for gaining visibility in the budget process and in Congress is to communicate what things should be done that are not now being done, and the detrimental consequences that will ensue if they are not done.

The author of the “Executive Summary,” Chris Poland, thanked Jack Moehle for his suggested edits to this section, and said that he would welcome any additional edits suggested by other members. A member noted that there were some things mentioned in the “Executive Summary” that were not included in the “Introduction” or other sections of the report. Poland said that he would check on that because he did not want the “Executive Summary” to introduce any new information that was not covered in the body of the report.

V. Adjournment

No members of the public registered with the NEHRP Office to provide input at this meeting, nor did any members of the public announce their presence or request to speak during the meeting.

The Chair asked that all of the revisions discussed during this meeting be submitted to Tina Faecke within the next few days. Faecke will then forward the revisions to Brian Garrett, who

said that he could compile, format, and edit the submissions for consistency, and provide a final draft by mid-May for distribution to the committee. The committee decided to meet again by conference call on June 1 to finalize the report. The Chair asked that, when members receive the final draft in mid-May, they review it, mark their suggested edits, and send their edits to Faecke for compilation prior to the June 1 meeting. He then adjourned this meeting.