

CISN Advisory and Steering Committees Meeting

August 30, 2006

Berkeley Seismological Laboratory, Berkeley CA

Summary of the Meeting

Participants

Advisory Committee Members Present: Dan Dyce, Dan Shapiro, Chris Poland, David Kennard (replacing Jeff Lusk), Rob Alsop, Loren Turner, Richard Gailing, Stu Nishenko, Greg Beroza, John Anderson

Steering Committee Members Present: Barbara Romanowicz, Peggy Hellweg, Rich Eisner, Doug Given, David Oppenheimer, John Parrish, Tony Shakal, Rob Clayton (replacing Jeroen Tromp), Egill Hauksson, Woody Savage

Guests: Doug Neuhauser, Ernie Majer, Richard Allen, James Agnew.

Advisory Committee members not present: Edward Bortugno, Paul Jacks, Neal O'Haire, Maurice Power, Jeff Sedivec.

Steering Committee members not present: Rufus Catchings, Sue Hough.

Opening Remarks and Approval of Minutes

Opening comments were offered by Barbara Romanowicz (host of the meeting), Stu Nishenko, and Rich Eisner

The minutes were approved for the October 17, 2005 Advisory and Steering Committees meeting.

Review Advisory Committee Charges.

Stu Nishenko reviewed the following charges to the Advisory Committee:

1. Charge on behalf of CISN: The CISN will create an Advisory Committee composed primarily of users of CISN data and services to provide advice to the Steering committee and Program Management Group on directions and goals. (From the CISN MOU)
2. Charge on behalf of OES: The Advisory Committee shall provide guidance to the Director of the Governor's Office of Emergency Services in evaluating program effectiveness, establishing priorities for the allocation of OES support to CISN, in developing Outreach Strategies, and in reviewing the utility of CISN products and product delivery mechanisms. (From Rich Eisner)

3. Charge on behalf of ANSS: Reviews planning documents and provides guidance on the development and operation of the ANSS within the CISN. Advocates the development of the ANSS and fosters enhanced participation at the local and regional level from interested parties, including representatives from the private sector. (From Bill Leith)

Stu Nishenko led the discussion. Objective of the AC is to provide CISN with good, sound advice. Important to clearly identify what CISN expects, and what the expectations are from the AC. Responsibilities of AC to the three groups differ slightly, but strong focus on meeting needs of users.

Stu reviewed the recommendations of the AC last year, as a reminder of what was recommended and as a stimulus for this year's deliberations.

1. *Form a sub-committee for outreach and advocacy.* Stu started preparing a draft letter to Henry Renteria with input from Woody Savage, but needed to be clear about the charge to the AC and the Committees proper role. The existing outreach committee could be fleshed out more and given a clear charter.
2. *CISN strategic plan should be more of a business or operational plan.* This brings in a short-term perspective of efficiently and effectively spending the available funding. Funding may not change dramatically in the next few years.
3. *Expand outreach of CISN to go beyond ShakeMap.* What other valued products can be produced that will increase the users' support base of CISN and thereby motivate continuing and perhaps increased funding?

Stu invited the participants to consider his discussions as a starting point for considerations during the meeting. Regarding Item 1 above, there is an Outreach Committee under the PMG headed by Jim Goltz, but the AC recommendation was for a higher level group. This Outreach Committee could be refocused. The nature of advocacy was discussed—what is the purview of the AC regarding advocacy, and what programmatic activities are appropriate? Advocacy may be outside the charge of the AC. The AC does have a reporting responsibility to evaluate how the CISN is doing and what important funding is needed. Advocacy of the development of ANSS is included. The broader community that makes decisions about funding needs to be engaged, a constituency of users beyond the individuals in the room needs to be developed to increase the visibility of CISN within the principal agencies. Potential CISN developments and initiatives can be well articulated in advance of new funding opportunities that may come along. The CISN Strategic plan should be kept current and alive—this is where we are, this is where we need to be—so that we can be effective when the opportunities arise that are driven by events. At the state level, the legislature needs to be re-educated frequently. This education could be accomplished by the CISN organization in providing an annual report, in holding a workshop or other meetings in high-visibility circumstances. But CISN and ANSS are not large enough to have high visibility outside of the budgeting in the executive branch agencies. We need to prioritize what we are NOT doing and what we will NOT have so that the decision-makers have a basis for best allocating the available resources—advocacy at the middle-management level, not directly with the legislature. It is also important to stay in contact with friendly

legislative members. The focus should be on useful products, what the gaps are, what needs to be done. Earthquake anniversaries can motivate these communications.

There is no annual report of CISN. It should contain some performance information about the use of the products, and the impact of expansion of product use and of inadequate funding. The individual AC members represent different user sectors, and they can serve as examples of the benefits of CISN products to like users—this is advocacy to users. The annual report could document the effectiveness of outreach efforts. We have not penetrated the media markets—this is a significant gap.

CISN Report

David Oppenheimer provided a brief PowerPoint review of the technical status of CISN. He included the geographic distribution of various types of stations, data handling to improve reliability of operations, and the many products provided. Additional cooperative networks are being added, and there are 13 networks involved now. Common software is being developed to enable true statewide monitoring, including redundancy and robustness. CISN is a cooperative effort, but funding is to the individual networks, not to CISN. He reviewed the history of CISN funding. Expectations of large increased funding levels from ANSS and OES in 2001 were not realized, and network funding is now static, while costs continue to rise. David also summarized the status of products and delivery thereof, and summarized the numbers and types of users. He described the USGS-funded effort called NetQuakes to acquire and install a lower-cost, internet-connected, strong-motion instrument that can be used to greatly densify urban monitoring at lower costs.

Discussion: OES receipt and use of CISN data and products could be improved. HAZUS can be run in the three OES offices, using manual retrieval of ShakeMap and operation of the HAZUS software. The CISN data ring is currently not built for serving data products to multiple major users.

Tony Shakal reported on the development and status of a new National Center for Engineering Strong-Motion Data, cosponsored by USGS and CGS. The National Center represents an expansion of the scope of the CISN Engineering Data Center to cover the nation. Strong-motion data of engineering interest from around the nation will be uniformly received from CISN and other networks across the country, processed according to established standards, and made available through a user-friendly web portal, such as that used by the CISN EDC. The National Center will begin operation in 2007. A key need is to prepare and maintain current and accurate information about all strong-motion stations, both reference and structural.

Discussion: Data will be provided to users in COSMOS data format. Concern was raised about assuring the quality of data provided and the efficiency of data processing. The National Center will have the national responsibility to process, review, and provide the data for engineering users. The ANSS regions will receive credit for collecting the raw strong-motion data, and will continue to use the strong-motion records for ShakeMap

production and other regional uses, but the processing for engineering users will be done at the National Center. National standards will be used to assure quality and reliability of the strong-motion recordings and station metadata that are entered into the National Center. Processing of data for engineering purposes at the National Center will likely be limited to earthquakes of about magnitude 3.5 and larger, but raw data will be available for all earthquakes from all ANSS networks, including CISN.

Egill Hauksson discussed the ANSS Performance Standards and how CISN is meeting them, and the future of CISN infrastructure. CISN has had a significant role in drafting ANSS standards for review by others in ANSS. The standards address speed and accuracy expectations for various earthquake products including earthquake location, magnitude, earthquake catalog completeness level, ShakeMap production, and preparation of Internet Quick Reports of processed engineering strong-motion data. CISN is doing a good job of meeting the ANSS standards. With respect to the future of CISN infrastructure, the needs of OES and other users for improved and highly reliable earthquake products statewide will involve both sustained operation of CISN as well as improvements and expansion in instrumentation, data quality, data analysis, and communications reliability. He identified three alternative funding paths to address these needs: continue the current staffing and monitoring capabilities with the current funding, redirect current resources, or augment CISN. The first alternative leads to a steady decline in CISN capabilities with time, and does not meet even current needs. For the second alternative, staff members are already working at capacity, so changing priorities means that some current operations, such as maintenance of field stations, would not be done, leading to missed critical data. The third alternative would involve directed additional funding for new and upgraded seismic stations in the urban areas, increase reliability and robustness of product preparation and deliver, and increased outreach. The resulting additional funding, at an annual level of about \$10M, is consistent with the initial ANSS plan, and could be developed on the format of a California Budget Change Proposal.

Discussion: The question was raised about possibly negotiating lower overhead rates, lower than the assumed 30% of gross funding that was assumed. The demand for better products exists, but it is not being well verbalized. The current products are not as good as they could be, and some users are asking for improvements. The current under-funded CISN cannot be described as delivering a bad product, but are in the dilemma of not being able to do the improvements that we and an increasing group of users recognize as necessary. Emergency managers particularly recognize this. Nonetheless, the information available now is greatly improved over what was available 10 years ago. Everyone in the science and engineering communities recognize that we can do better things with more money. The question is, do we need to do better things, or can we get by with what we have? The justification is needed by the users for having better products so they can do their jobs right. A process is needed for the user community to understand what they could have. Also, for significant earthquakes, we may not do as well as we do for the 4s and 5s. The justification should focus on the need to get better, not just avoiding getting worse. We are the victim of our own success, because we haven't fallen on our face yet. We don't want to find out that our products could be a lot better after the

facts of the next severe earthquake. Maybe maintenance/replacement should be separated from expansion/improvement. It could be an issue of recovering capability versus improving it.

Discussion of CISN Outreach Strategy

Rich Eisner reviewed the objectives of the outreach effort to increase the numbers of users and the effectiveness of their use of products. He also reviewed the status of the various products with respect to outreach activities. A key issue is effectively using HAZUS, which currently takes about an hour to run. CISN Display Version 1.2 is currently made available to all legitimate users, but is not released for use by the general public due to limitations in server capacity. Planned activities revolve around using CISN Display with ShakeMap as a desired product for scenarios and post-earthquake information. Planned activities include increasing rapid data access and the Turkey Flat competition. Improvement in maps to emphasize the dynamic nature of the development of shaking has been released at Caltech, and the media have used these in Southern California.

Discussion: The issue of our products being useful came up, with television media being an example of a failure to get beyond the epicenter bulls eye. Possible on-line surveys would provide helpful information, but we also need to directly survey the current registered CISN Display users. We could collect information on use cases for successes and non-successes. Media usage was emphasized, and the graphics need to be formatted for TV applications. Continuing outreach is needed to kept TV media educated.

Separate Meetings of Advisory and Steering Committees

Joint Discussion: Advisory Committee Report

The Advisory Committee reelected Stu Nishenko as Chairman, and elected Loren Turner as Vice-Chairman.

Stu recognized Greg Beroza, Chris Poland, and Maury Power for completing two three year terms as members of the CISN Advisory Committee, and thanked them for their service. Their positions will be refilled prior to the next annual meeting of the Advisory Committee.

Stu reported on four proposed points discussed by the Advisory Committee in their closed-door meeting for the Steering Committee to consider during the coming year.

1. Funding. CISN should expect the status quo in funding for the coming year. The AC noted the in-kind contributions of Caltrans and PG&E in contribution stations providing data to CISN. These contributions are acknowledgments of the value of

CISN operations. The concept of a Budget Change Proposal to OES was felt to have a lot of merit. They considered the following three options

- a. Do nothing—gradual decay and loss of function
- b. Status Quo—Replace instrumentation and other components to maintain current function
- c. Aggressive expansion—have it available to take advantage of future funding opportunities

Discussion: The AC committee focused on the format for the BCP idea more than who the proposal could be sent to. The ideas could be used as a BCP, but should be available for use with other opportunities.

2. CISN Annual Report. CISN should prepare an annual report intended for a wide audience, and should include the results of a survey of the CISN product users and potential users, CISN sponsors, and selected large users like Caltrans and PG&E. This will provide valuable case histories of real-world applications. The report should include information about each CISN product, budget, developments, and status of growing the network.

Discussion: The suggestion of interviewing sponsors (e.g., heads of OES and ANSS) is to find out what they really think they are getting from CISN, how satisfied they are now and how satisfied they might be given the potential for poor performance in future damaging earthquakes. The discussions need to be very specific. The Golden Gateway exercise could be a useful way to bring up the limitations of the current CISN performance—this could be discussed in the post mortem of the exercise.

3. Marketing. There needs to be more aggressive marketing for CISN that the CISN Outreach Working Group could address.
 - a. All fire stations could be the focus of marketing
 - b. Meeting with governmental middle management to educate them about ANSS and build a constituency of individuals who are aware of the products and use the products.
 - c. Preparing Fact Sheets as was done for the 2006 Earthquake Conference to educate about the benefits of CISN products, and the risks CISN face

Discussion: Decision-makers could also be contacted to inform them, not only middle management. However, US Senators don't talk with you unless big money is at issue. The program has to be sold at a lower level. But you're then in the arena of competing interests. An independent group needs to get in and make the case. It is a zero-sum game, so you have to go inside and convince them that the earthquake need is worth more than someone else's program. You have to make a compelling argument that there are huge benefits measured against the mission of the agency that is coming up with the money to be able to justify getting more money. Otherwise you're stuck.

4. Add Loren Turner to the Outreach Working Group as an Advisory Committee liaison. He would be charged with emphasizing the need for user friendliness, keeping product up to date, and identifying additional products. He would help get the most benefit from the suggested user surveys.

How to Improve Future Advisory Committee meetings

It is beneficial to have the Advisory Committee meeting move around to various CISN locations, to learn more about what is happening on the ground. This meeting has been more engaged than in the past. Shorter presentations and more time for discussion are valuable. There could be an Annual Report Committee that would include advice and perspective from the Advisory Committee. The annual report should be aimed at a broad audience. The report is an opportunity to deliver the message that CISN is more than a research instrument; it is a tool that the real world can use to provide valuable services in and to the state. The case studies would help emphasize this. CISN definitely benefits from the combination of research and operations (e.g., the development and implementation of ShakeMap), but the operational impact could be brought forward more in terms of social relevance.

Report from the Steering Committee

Woody Savage reported that the Steering Committee discussed the importance of the role that OES has been carrying out to provide guidance and leadership as part of the valuable relationship between CISN and OES. The Steering Committee plans to communicate with Henry Renteria regarding the importance of continuing to fill this role following Rich Eisner's retirement. This activity would be part of increase and ongoing effective communications with OES.

Earthquake Early Warning: Status Report

Richard Allen provided a brief report on the research being carried out with CISN to learn about the transition from research to operation for earthquake early warning. USGS, Caltech, UC Berkeley, and SCEC are involved. The work focuses on testing alternative algorithms that could be used in a statewide early warning system. The warning times involve a few seconds to a few tens of seconds.

Adjourn Meeting

Meeting presentations are available on the CISN web site at <http://www.cisn.org/advisory/2006.08.30.html>.

Optional Tour of the Northern California Earthquake Data Center

Tour leaders: Doug Neuhauser and Peggy Hellweg