

# **CISN Advisory and Steering Committees**

## **Meeting Minutes**

### **January 28, 2009**

US Geological Survey  
Menlo Park, CA  
Room C3237, Building 3

#### **Participants:**

*Advisory Committee Members present:* Stu Nishenko (PG&E, chair), Peter Shearer (UCSD), John Anderson (UNR), Richard McCarthy (CSSC), Dan Shapiro (Soha Eng.), Ron Alsop (SLO County OES), Cliff Roblee (Caltrans), Loren Turner (Caltrans), Hope Seligson (MMI Eng.), Ben Tsai (PG&E), Tracy Johnson (BART), Yousef Bozorgnia (PEER).

*Steering Committee Members present:* Peggy Hellweg (UCB), Barbara Romanowicz (UCB), John Parrish (CGS), Joe Fletcher (USGS-NSMP), Egill Hauksson (Caltech), Doug Given (USGS-Pas), Rob Clayton (Caltech), Tony Shakal (CGS), David Oppenheimer (USGS-MP), Jim Goltz (CalEMA), Susan Hough (USGS-Pas)

*Guests:* Johanna Fenton (FEMA), Dan Dyce (CEA), Hall Daily (Caltech), Richard Allen (UCB), Carl Mortensen (USGS-MP), Michelle Moskovitz (UCB), Jessica Murray-Moraleda (USGS-MP)

*Advisory Committee Members absent:*

*Steering Committee Members absent:* Tom Brocher (USGS-MP)

#### **Opening Remarks, Steering Chair Transition, Approval of minutes**

Stu Nishenko (PGE), Chair of the Advisory Committee welcomed everyone to the meeting. He announced and welcomed the new chair of the CISN Steering Committee, Barbara Romanowicz (UCB). He thanked Ron Alsop, John Anderson and Loren Turner for their six years of service on the Advisory Committee. Stu also introduced the new members, Tracy Johnson and Cliff Roblee.

The minutes from the September 27, 2007 Advisory and Steering Committee Meeting at Caltech were approved.

The agenda was amended to allow discussion of Network Funding as the first point of business, before the Caltech and UCB government affairs people, Hall Daily and Michelle Moskovitz had to leave.

#### **Action Items**

- \* CISN to cosponsor EEW workshop with PEER, USGS on "Benefits of EEW for High Speed Rail in CA". The workshop will also include geologic hazards such as fault rupture). PMG to coordinate with Yousef Bozorgnia.
- \* Information on stimulus package progress for CISN. For state activities: Dick McCarthy, John Parrish, Michelle Moskovitz, Hall Daily. For federal activities: USGS, and professional organizations, such as SSA.
- \* Prepare a document with CISN infrastructure needs. PMG to prepare and pass to ANSS (Bill Leith), CalEMA(?)
- \* Introduce CISN to CalEMA: Advisory Committee should present/champion the value of CISN at CalEMA once things have settled down from the transition.
- \* Legislative boundaries as a layer for ShakeMaps in CISN Display

- \* Robust state-wide backup exercise and assessment: PMG
- \* CISN should think about how to facilitate network-based EEW approach: PMG, EEW group
- \* Amendment to the CISN MOU to allow Stu Nishenko one more year (really absolutely final) as chair.
- \* Action items from the Steering Committee meeting:
  - 3 year operational plan: PMG
  - an information sheet for Dick McCarthy: PMG
  - a plan for spending stimulus package funds: PMG
  - contact with Sam Blakeslee about legislating a mandate to provide earthquake info
  - a courtesy call to CalEMA: CISN Advisory members, users

### **Discussion about Network Funding**

CISN is funded through State (OES/CalEMA) and Federal (ANSS) money. From neither source has the funding ever reached the levels ideally envisioned.

*Current State funding:* Jim Goltz and John Parrish reported that the state deficit is \$47B and growing. Much of CISN's funding comes through the general fund, which has shortfall. During the past 18 months, CISN tried to submit a budget change proposal through OES, but it was not passed on, as OES was afraid that the financial people would notice that CISN funding originally had a sunset clause which was reached several years ago. Solutions are still unclear. CISN funding has been cut by 10% and may be cut more. At the same time, CISN has moved from the now defunct Gov. Office of Emergency Services to CalEMA. It is unknown how money will soak through this agency. The director of the new agency is Matt Bettenhaus, Henry Renteria is not part of the new agency. Hall Daily reported that UCB and Caltech government affairs office have been working on behalf of CISN in Sacramento and in the Governor's office in particular. A "legislated mandate" might be a good option. Sam Blakeslee could be a champion for such legislation.

*ANSS/Federal funding:* Funds from ANSS have been level for many years. If the stimulus package is passed, some money, amounting to several \$10M will come to USGS to "upgrade/improve equipment". Some may be available to upgrade seismic networks. Other stimulus money will go to Governors' offices throughout the country, and some might be made available to CISN, if we find the right champions in Sacramento. The money must be spent within 6-24 mo, with priority to provide stimulus for job creation. How money spent within USGS is still uncertain. The money is not for ongoing costs. The CISN should document the needs in the state for upgrading/replacing old equipment, for new equipment needs. NEHRP legislation is also up for reauthorization in the near future. And ANSS was a 5 year plan for \$180M. Now 7 years have passed an only \$47+M have been spent. If ANSS were viewed as having been fully funding by stimulus money, it could consider "done".

*High speed rail:* Carl Mortensen (USGS) knows some high speed rail people, and tried to get someone to come to the Advisory Committee meeting. The bond is for \$9B in seed money. We need to target the high speed rail group with the message of what can we do for them, explicitly. Yousef Bozorgnia says that PEER will organize a workshop for the

high speed rail people on earthquake hazards and earthquake early warning systems. CISN (and USGS) should co-sponsor the workshop.

### **Status of CISN**

Doug Given gave a brief introduction to CISN and reviewed some of the progress in the past year. Stu Nishenko added that the private sector sees the value of CISN. Companies like PG&E also contribute data to CISN from stations/networks that they operate. In Southern California, slate computers will be installed at Multi Hazard Demonstration Project (MHDP) stations along southern San Andreas. MHDP installation must be completed by end of FY09. The CISN software was adopted as the official software by the ANSS. It is now officially supported through a contractor. Someone asked if legislative boundaries could be added as a layer for ShakeMaps.

### **Nov 13 Shakeout – SCSN, SCEDC: Lessons**

Egill Hauksson presented a brief summary of activities during the Great Southern California ShakeOut (Nov. 13, 2008). He ended with a compilation of problems recognized and lessons learned for CISN operators responding to a real big event. They ranged from having up-to-date contact information, to alternatives for the internet for RT (Real Time) operations, good checklists. This brought up the topic of state-wide robustness and back-up capabilities, a CISN-goal that has been delayed by the low funding level. Suggestions were made that CISN should have an "internal exercise" to assess problems and needs and develop a plan. In addition, CISN could participate more fully in state-sponsored exercises like the Golden Guardian. CISN should also delineate better the role that it expects NEIC to play.

### **Center for Engineering Strong Motion Data**

Tony Shakal presented the progress at the Center for Engineering Strong Motion Data. He showed examples of web interface for viewing and downloading data, and finding out about stations. The density of stations along Hayward Fault is being increased, in cooperation with the USGS. Many stations in the state are on phone lines or cell phones.

### **Interaction with ANSS; Netquakes Devices**

*ANSS:* David Oppenheimer, the CISN representative to the ANSS reported on interactions with the ANSS. Menlo Park has become responsible for the National Strong Motion Program activities (NSMP). This project was recently reorganized. Now, data acquisition/processing will be done by the NCSN. Field installation/maintenance will be supervised by Joe Fletcher. Processing will migrate into the CISN architecture with effective user interface tools in place of the software dating from 1992 (BAP).

*Netquakes:* These are small, inexpensive strong motion stations. The idea is to blanket population centers with them by installing them in people's garages. Because they piggyback on wireless internet from their host family, they are also inexpensive to operate. Oppenheimer has instruments to set out and is looking for "informed volunteers for the first round. Servers are ready to receive the data, amps (?) will be fed into CISN software.

## **Shakecast**

Loren Turner reported on the implementation of ShakeCast V2.0. It runs on a webserver and retrieves measured shaking data within minutes after quake. It compares the measured and estimated shaking distribution with unique vulnerabilities fed into the ShakeCast implementation by the user/organization. It produces maps with predicted damage states and sends emails to the organization's responders. It helps prioritize inspections.

## **CISN Outreach**

*CalEMA:* OES and State Office of Homeland Security merged to form Cal Emergency Management Agency (CalEMA). The director of OHS, Matt Bettenhaus, was appointed Agency Secretary. The merge has only just begun and will probably evolve over next 6-8 months. "Earthquake and Tsunami" is in the Preparedness Branch. Jim hopes he may get additional staff, but he reports to same people. Jan 30 there is a meeting at CalEMA for "earthquake interested parties", hoping to form a state-wide unified group on EQ awareness/preparedness. Stu Nishenko offered that CISN could pay a courtesy call to CalEMA to inform people. Jim thinks it would be a good idea to get an appointment with Matt Bettenhaus. The suggestion was circulated that Advisory Committee members could help promote CISN in the new CalEMA.

*Shakeout:* Kate Long prepared the report. She has been part of the Earthquake and Tsunami staff since March 08. Focus of the ShakeOut was the most probable Southern SAF event, an earthquake beginning in Bombay Beach and rupturing northward over 3 segments. Scenario events were calculated, and the ShakeOut was to raise awareness. The OES group worked with the USGS Multihazards demonstration project (MHDP). ShakeOut efforts included advice for business continuity plan ([daretoprepare.org](http://daretoprepare.org)) and an international EQ conference. The goal was to foster a "culture of preparedness in CA". The meeting on Jan 30 will be to continue to build on EQ preparedness foundations, with the suggestion that NC and SC merge to have one Earthquake Country Alliance. This would provide an umbrella approach to develop comprehensive campaigns. FEMA is contributing funding through an HMPG grant.

## **Earthquake Early Warning, Testing and Development**

Richard Allen reported on the Earthquake Early Warning project currently using CISN infrastructure to evaluate the performance of early warning algorithms under real time conditions and assess the infrastructure requirements. An "earthquake early warning" is a rapid estimate of shaking which will be available after the earthquake starts. For some locations, it will be available before the shaking arrives. Three algorithms are currently being tested. SCEC is providing a central location to compile and compare results. Education programs are vital if EEW becomes a reality. They are also an opportunity for broad earth science education and improving preparedness.

## **Planning for earthquakes, RT GPS and EEW**

Jessica Murray-Moraleda reported on the value of GPS for real time reporting on really large earthquakes. It can be used to make direct displacement measurements. An ideal earthquake station should be able to measure acceleration (accelerometers), velocity (seismometers), displacement (GPS) and rotation (tiltmeter). GPS could contribute to real

time damage assessment and to EEW systems. Software to provide rapid GPS displacements still needs development work.

### **Steering Committee Breakout Meeting**

John Parrish started the discussion with the suggestion that CISN come up with a 3-year operational plan, which would be updated yearly. It would deal with maintenance, upgrade and when possible expansion of the existing system. Such a document would be a valuable tool to help get a sustainable budget for operations. An EEW system could be one consideration in that plan. The operational plan would describe what we do with the budget we have, that is, it could pull our individual statements of work for CalEMA as well as for the ANSS. It should also discuss how all the work integrates into our overall CISN objective(s). Not "this is where we would like to be, if only", but "this is where we are going. Our requirements ...". Make our mandate CalEMAs mandate.

We need to document why what we do is critical to the state and (the need for ?) sustainable funding outside the general fund. As an example, the SM program is funded by building permits.

We also need to be ready with a proposal if a window of opportunity opens after a big EQ. We also request that the advisory committee to push our agenda. CISN's users should visit Matt Bettenhausen, for example, the directors of DWR, CalTrans, PGE, etc. Jim and John pointed out that it could be useful to have a mandate for earthquake monitoring and reporting legislated, even it does not include funding. Sam Blakeslee might be a good champion for this.

### **Advisory and Steering Committee Wrapup Session**

1) Amendment to the CISN MOU to allow Stu Nishenko one more year as chair.

New membership in the Advisory Committee is necessary, as several members have reached their six year limit. We can, however, invite people who have previously served to serve again. Cliff Roblee (Caltrans) was elected as co-chair.

2) Recommendations from the Advisory to the Steering Committee

- Develop plan/proposal on the problem of the aging infrastructure. What will it cost to renew the infrastructure? How shall we go forward? What does it take to finish the job we delineated in the proposal in 2001 CISN depends on the strong foundation of good network. John Parrish suggested that we may want to look at the plan from (almost) 10 years ago and revise/update it, and explain the risks of not doing the work.

- A small group to meet with Mark Bettenhaus, CalEMA, to introduce CISN and remind him of the jeopardy in which the state is if CISN continues to decay.

- Sponsor/Co-sponsor a workshop on high speed rail/all transportation – CISN, PEER, USGS, CGS, Caltrans, BART. How to provide seismic safety?

3) Critically evaluate CISN based on lessons learned in ShakeOut. Find areas that we need to improve, weak points in table-top exercise. Add redundancy based on what we find out. Feed results into strategic/operational plan

4) Use ShakeOut as introduction to CalEMA, and as foundation for budget.

The Steering committee indicated that the network operators visited OES last time. This time, it may be better to have users go to CalEMA and act as advocates. They can explain

how people use CISN products and information and explain why CISN relevant and critical to the people and businesses of California.