

# CISN Advisory and Steering Committees Meeting Minutes October 13, 2010

CalEMA  
1130 K Street  
Sacramento, CA

## Participants

### Advisory Committee

#### *Present:*

- Lori Dengler (Humboldt State)
- Tracy Johnson (BART)
- Stu Nishenko (chair, PG&E)
- Cliff Roblee (Caltrans)
- Peter Shearer (UCSD)
- Hope Seligson (MMI Engineering)
- Loren Turner (Caltrans)
- Dan Dyce (ex-officio, California Earthquake Authority)

- Michael Hornick (ex-officio, FEMA – Region IX)

#### *Absent:*

- Yousef Bozorgnia (PEER)
- Richard McCarthy (Seismic Safety Commission)
- Mark R. Johnson (California Emergency Management Agency)

### Steering Committee

#### *Present:*

- Doug Given (USGS, Pasadena)
- Jim Goltz (CalEMA)
- Michael Gurnis (Caltech)
- Egill Hauksson (Caltech)
- Peggy Hellweg (UC Berkeley)
- Ken Hudnut (USGS, Pasadena)
- Erol Kalkan (USGS, National Strong Motion Program)
- David Oppenheimer (USGS, Menlo Park)

- John Parrish (California Geological Survey)
- Barbara Romanowicz (chair, UC Berkeley)
- Tony Shakal (California Geological Survey)

#### *Absent:*

- Tom Brocher (USGS, Menlo Park)

### Guests:

- Jim Agnew (Department of Water Resources)
- Tina Curry (CalEMA), Mike Dayton (CalEMA)

- Hamid Haddadi (California Geological Survey)
- Doug Neuhauser (UC Berkeley)
- Adena Reed-Ellis (CalEMA)

### **Opening Remarks, Approval of Minutes**

Stu Nishenko (Chair, Advisory Committee) and Barbara Romanowicz (Chair, Steering Committee) welcomed everyone to the meeting. Jim Goltz introduced Tina Curry, CalEMA's Assistant Secretary for Planning, Prevention and Preparedness, who sat in on the meeting in the

morning. Stu Nishenko introduced the new member of the Advisory Committee, Lori Dengler from Humboldt State University. Departing members of the Advisory Committee are Loren Turner, Yi-Ben Tsai, Dan Shapiro, John Anderson, Ron Alsop. The Steering Committee sent recognition awards to these departing members to thank them for their service.

Minutes from the 2009 meeting were accepted.

#### **Action Items**

- ShakeMap delivery performance – evaluate and develop a plan to improve performance and robustness

#### **Use of CISN products in Emergency Management (Stu Nishenko)**

Stu Nishenko gave a brief introduction and background information of the CISN from the point of view of the users of CISN products for Emergency Management. He showed how ShakeMap was used as input for searches for gas leaks after the 2010 Offshore Ferndale Earthquake (Jan 10, 2010), and stressed that the timeliness of the ShakeMaps is more important than station density. Also, users need to be educated about the uncertainties inherent in ShakeMaps. He also showed CISN data for the gas main explosion in San Bruno, CA, in September 2010.

#### **State of CISN Report**

- a) Current Activities, ARRA improvements (*David Oppenheimer*): After a brief history of the CISN, David Oppenheimer gave an update on current activities in its real time operations. Northern and Southern California are now using the same software package, now called ANSS Quake Monitoring Software (no longer CISN software). Quake monitoring equipment throughout the state is profiting from the America Recovery and Reinvestment Act (ARRA). Many old-to-ancient data loggers will be replaced. The microwave system through which data are collected is being upgraded in Northern California. In Southern California, the defunct microwave system is being reinstated.
- b) Engineering Data Center (*Tony Shakal, CGS, Hamid Haddadi, CGS*) Tony Shakal pointed out that the number of strong motion instruments in the State, both freefield and in structures has increased. Many more stations are now within 5 km of faults on which large earthquakes are expected. CGS has been developing an autonomous strong motion accelerograph which can be installed in locations where rapid recovery of the data is not important. It can run for 2 years on 2 D-cell batteries, and costs ~\$2,500 per unit. Data will be retrieved by site visits. All major state highway bridges (80 of ~12,000) are now instrumented, many buildings and some State hospitals. Hamid Haddadi reported on the CISN Engineering Strong Motion Data Center (CESMD). The website has been greatly improved with new capabilities. Also, the COSMOS data center is being folded in to the CESMD.
- c) VA Hospital Instrumentation (*Erol Kalkan, USGS*) A major effort in the National Strong Motion Program is instrumenting Veteran's Administration (VA) hospitals. The plan is to include an automated damage alert system. In the near future, two USGS Mendenhall postdocs will join the program and contribute to the development of software for these efforts. The software will be general enough so that it can also be used for monitoring other types of infrastructure.

#### **CISN and EEW (Egill Hauksson)**

Egill presented the status of the Earthquake Early Warning (EEW) project in CISN. In the current 3 year project, the EEW group will develop an end-to-end prototype system, capable of producing EEW-alerts. Part of the project is to find institutional users who are interested in receiving alerts and developing ideas of how the alerts can be used in their operations to improve safety and prevent or reduce losses.

Doug Given, the USGS point person for EEW, said that the USGS is exploring possible “push” mechanisms for the EEW alert information, including the internet and the cell telephone systems. Lori Dengler mentioned that there needs to be some “fuzziness” in the display of the alerts (to indicate the uncertainty). Stu Nishenko asked about possible case histories of “successes” in countries already operating EEW systems. Doug Given responded that as of now, only anecdotal case histories exist.

Nonetheless, one benefit of the outreach necessary to make EEW-alerts useful will be the education of the public about earthquakes and preparedness.

### **CISN Outreach** (*Jim Goltz*)

Jim Goltz described the changes in the CalEMA system since the last Advisory Committee Meeting (January 2009). At that time, the Governor’s Office of Emergency Services (OES) had just been merged with Homeland Security to form CalEMA. The new undersecretary is Mike Dayton (visited our meeting in the afternoon). The earthquakes and tsunamis group now has 5 staff members and 3 contract employees. Funding to the CISN has not changed since January 2009, and is not expected to change (either up or down) in the next round. CalEMA now has a “My Hazards” web portal. Egill Hauksson mentioned that many emergency managers do not understand how to use ShakeMap. Jim Goltz pointed out that many emergency managers receive training at the CSTI, 60-80 people several times a year. CISN Display is used extensively in the tsunami community. Lori Dengler suggested that users be surveyed, as to what they want and what they understand. Doug Given said that the CISN tools appear not be integrated with EOC tools, which means they are used less. Lori Dengler asked if the PAGER products will be included in CISN Display. Jim Goltz said that one possible aid to improving awareness of CISN is to update the CISN brochure.

### **CISN Strategic Plan 2011-2016 (Draft)**

Peggy Hellweg presented the draft CISN Strategic Plan for the next five years, and we had some discussion about it.

### **Advisory Committee Meeting**

#### **Steering Committee Meeting**

In view of the importance of ShakeMap, and dissatisfaction expressed by Stu Nishenko and Loren Turner, the Steering committee discussed the status of ShakeMap preparation and publication. The CISN currently produce regional ShakeMaps (NC at UCB and USGS Menlo Park, SC at Caltech and USGS Pasadena, and statewide at CGS). They are published through the USGS earthquake information systems. There are some stumbling blocks to going statewide, including the resources in terms of people and computers, and the possibility of using the “home network’s” event ID, hypocentral information and magnitude from the EIDS messages. From the point of view of scientific participation, Rob Graves from Southern California will participate more. Everyone expressed interest in also having statewide finite fault solutions prepared. We will work toward having statewide ShakeMap and Finite Fault capability.

Based on the request by Caltrans, we will review ShakeMap timing and delivery within CISN. We will also move forward our plans to ShakeMap delivery more robust.

Earthquake early warning (EEW) was our next topic. David Oppenheimer asked that the CISON develop a document to describe the implementation. John Parrish said that it needs to cover two topics in particular: the scientific/technical explanation of how it will be developed and implemented and some description of the funding necessary and expected savings in terms of lives, resources and infrastructure. Recently, High Speed Rail has been seen as a driving force in getting EEW going in California, but that force seems to have petered out. We decided that we need to put a case together, based on the cooperation of universities, CGS and USGS that we can take off the shelf when something big brings in some (lots) of funding. We don't want to roll out EEW without appreciably more funding than we have. The CISON needs to prepare a position paper describing the utility of EEW, capabilities of the CISON, its needs, things that can be mitigated. EEW information could be pumped out over the internet. We could have a user app. Egill Hauksson suggested that we need to focus on users who operate/maintain infrastructure. CISON also needs to look at how EEW fits into the AQMS software system.

Ken Hudnut reported on the current status of GPS. The GPS community is ready to rapidly contribute static offsets to earthquake monitoring for finite fault solutions and ShakeMap. There are ~450 GPS stations running in CA, many close to active faults, some with realtime telemetry. USGS and UNAVCO are upgrading many to realtime telemetry. GPS "waveforms" are also possible and would be independent of seismic sensor technology. Within a year ~100 more stations will have high rate, realtime GPS data. Currently there are efforts to make robust realtime processing of GPS data realistic. USGS has now funded MIT to develop and provide a realtime processing capability in Gamut (TrackRT) to give position vs time. From the GPS point of view, he is concerned how the location uncertainties will be mapped into the realtime displacements. Data could be used in moment tensors and finite fault inversions. Barbara Romanowicz suggested a CISON workshop of seismologists and GPS folks to move the plan along.

Renewal of state funding is always a hot topic. Our three-year contracts are due to be renewed in July 2011. Jim Goltz says that there will probably be no increase in CISON funding in this round, but we could ask for augmentation after the first year. He suggested that we write some legislation that could be taken off the shelf if the opportunity ever arose.

In Summer 2011, Jim Goltz plans to retire. We discussed possible successors with no conclusion. Jim Goltz also pointed out that the upper echelons at CalEMA may change when the new administration arrives after January. The CISON should prepare a transition report (1-2 pages) describing its activities. This will go into a binder for the new administration. It is important to maintain the awareness of the hazard of earthquakes and tsunamis (and therefore CISON) to the State.

**2:30 – 3:55      Joint Discussions: Advisory/Steering,**

**3:55 – 4:00      Steering Committee Chair Transition**

**4:00              Adjourn Meeting**