

# Un-official Minutes of the Interim National Steering Committee of the Advanced National Seismic System (ANSS)

November 13-14, 2001

(Parts taken from minutes by George Crawford drafted by Jim Davis, Interim Chair)

## A. ANSS Interim National Steering Subcommittee Observations and Recommendations:

The USGS report, *An Assessment of Seismic Monitoring in the United States Requirements for an Advanced National Seismic System* (USGS Circular 1188) calls for five basic elements to accomplish its ANSS goals:

- **Urban** seismic monitoring capable of recording strong ground shaking and the response of buildings and other structures during moderate and large earthquakes.
- **Regional** seismic monitoring of active geologic sources, such as earthquake-producing faults and volcanic activity.
- **National** seismic monitoring to ensure a recording capability down to a uniform magnitude level nationwide, and serve as the national monitoring backbone and backup to regional systems.
- **Portable seismograph arrays** that can be deployed rapidly following an earthquake to record the ground motion of aftershocks in areas of significant damage.
- **Regional and national data centers** with the capability to collect and process data in real time, to rapidly disseminate notifications of earthquake occurrence and impact, and to provide other information products and services on earthquakes in general and on specific earthquake loss reduction practices.

In the context of the ANSS goals, the Subcommittee reviewed 2002 Regional network plans developed by the Regional Steering Committee and approved by the Regional Advisory Committees. This assessment has prompted the ANSS Interim National Steering Subcommittee to present the following recommendations and requests of the ANSS National Implementation Committee and Regional Steering Committees:

1. The USGS and the ANSS Regional network Steering Committees deserve recognition and commendation for their impressive accomplishments to date!
  2. With much less than the originally conceived funding the ANSS as organized a promising management structure. It has facilitated establishment of regional networks that consolidated smaller

fragmented monitoring units with significant amounts of analog equipment, has coordinated previous local monitoring infrastructures, developed standards, and has installed an impressive number of real-time monitoring stations with its limited resources.

3. Review of the ANSS Management plan (April 2001) milestones shows that a number of these important achievements have been deferred or missed
  4. Request updates from the Regional Steering Committee on the status of all deferred or missed milestones with explanation of the circumstances.
  5. Requests that it be provided an account of the status of the site installation guidelines.
  6. Requests that Version 1.0 of the Technical Guidelines for ANSS be completed by March 1, 2002.
  7. ANSS staff and regional networks should establish procedures for revision of the ANSS annual management plans and the Interim Steering Subcommittee should be promptly informed of decisions that depart from original milestone task accomplishment dates.

The ANSS Interim National Steering Subcommittee makes the following recommendations:

- The ANSS National Steering Committee strongly encourages sustaining aggressive efforts to expanding monitoring particularly in the Pacific Northwest and in Northern California.
- The ANSS National Steering Committee advises USGS staff that regional networks need additional federal support in data management, distribution, and regional product development. This limitation may restrict network expansion in some regions.
- The ANSS Interim National Steering Subcommittee encourages regional network steering committees to consider the extent to which their (conditions and geologic units within their jurisdiction. It is desirable that, site condition information be included in the regional network station inventories. Future updates should provide to the Interim Subcommittee with updates on the status of site condition information by monitoring network region.
- The ANSS Interim National Steering Subcommittee advises the ANSS Regional Steering Committees and the USGS Program staff that they should request increases in funding for the development of regional network infrastructure in future USGS budgets.
- The ANSS Interim National Subcommittee advises that: ANSS goals are to have a generally equal balance between free field strong

motion monitoring in urban areas and the monitoring of instrumented structures in order to better understand the performance of structures in the context of measured input ground motion.

- The number of instrumented structures to date is not in balance with the number of free field stations in the overall ANSS plan. Early emphasis on free field sites is justifiable, but effective strategy for monitoring performance of structures should be developed and implemented in subsequent funding cycles.
- In addition, more communication with and involvement of the engineering community in achieving ANSS goals is needed in association, with other relevant federal and state agencies.

### **ANSS Based Real Time Products for Users**

- **ShakeMap:** In addition to California, ShakeMap capability has been implemented in additional urban regions (Seattle, Salt Lake City, Anchorage) successfully during the last year. The ANSS Interim Subcommittee recommends that ShakeMap delivery be given attention in all areas with consideration of local user requirements.
- **Other real-time products:** Some emergency managers are interested in using real time ground motion data to make preliminary estimates of property damage loss. The ANSS Interim Subcommittee recommends that Regional Steering Committees explore the need for development of advanced techniques for rapid, reliable, and useful estimates of damage potential with their Regional Advisory Committees and report their findings to the USGS staff and the ANSS Subcommittee as soon as practical. Where Regional interest is high, partnerships with engineers, etc. should be explored. The USGS should work with Regional users, FEMA, interested State agencies, and the National Earthquake Engineering Research Center to consider next steps. One possibility is the integration of ShakeMap output into HAZUS.
- The ANSS Interim Subcommittee recommends that data distribution and archiving strategies and responsibilities need to be developed and implemented. Regional steering committees should contribute to this process by defining regional needs. National and regional needs and responsibilities should be defined for real-time, near-real time, and management of archival data streams.

### **ANSS Interim Steering Committee Longer Term Recommendations:**

All of these items below are necessary conditions for success of the ANSS program.

- **Regional feedback** ANSS National committee encourages regions to sharpen their implementation plans in context of ANSS goals.
- Progress has been made with limited funding to date; however, future progress and community participation cannot be sustained by perpetuating current funding levels.
- Continuation of ANSS success depends on :
  1. Greater fiscal and organization support
  2. Greater active involvement of the earthquake engineering community
  3. Greater involvement of and support from external groups at federal, state, and local levels
  4. Continued close coordination of regional and national ANSS activities
  5. Continued strong national leadership from the USGS
- Engineering Applications of ANSS products
  1. Need to develop a more explicitly stated national strategy for ANSS engineering effort including a means to compare needs and efforts between regions. The Interim Subcommittee suggests facilitation by the Applied Technology Council (ATC), the Earthquake Engineering Research Institute (EERI), and regional professional groups, such as the Structural Engineers Association of California (SEAO) and such.
  2. Involve national engineering research centers (ERCs) at regional levels. Cooperative efforts with these centers should be pursued. Involve ERCs to advocate the needs and requirements for instrumentation in structures. Include NSF as a possible funding source.
  3. Develop engineering involvement and leadership in Regional Advisory Committees.

### **Expand Base of Activities**

- The USGS and regional participants should seek new partnerships. Partners are a necessary condition for success.
- Participating roles for state governments should be explored and developed. This may include financial participation.

- USArray Ñ continue joint participation and communication and collaborative efforts to support both programs.
- ANSS should explore support from the US Department of Transportation (DOT), Army Corps of Engineers (ArmyCOE), Consortium of Strong Motion Operating Systems (COSMOS), the US Senate, Natural Hazards Caucus, Homeland Security (security of the urban environment in regard to disaster mitigation and response).
- Portable arrays Ñ specifications and needs of portable arrays should be considered in next release of the Technical Information Committee (TIC). Further coordination is needed with the Incorporated Research Institutions for Seismology (IRIS) to assess national capabilities and needs.
- COSMOS is absolutely essential to make relevant ANSS data easily available to the engineering community. COSMOS exists as a current satisfactory solution to this problem.
- ANSS should explore funding in short term with joint support from regional sources and partners who benefit from the services.

**Recommendation for participation in future ANSS National Steering Committee Meetings:**

At the next ANSS National Steering Committee meeting, the chairs of the Regional Steering and Regional Advisory Committees should be present to contribute their perspectives to the discussions.