

ABSTRACT

External Grant Award Number 01HQAG0009

WESTERN GREAT BASIN SEISMIC NETWORK OPERATIONS

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During the December 1, 2002 to November 30, 2003 period the Nevada Seismological Laboratory continued operation of the Western Great Basin Seismic Network under Grant 01HQAG0009. UNR located over 8900 earthquakes in or near the network in the past contract year. This is up over 1000 from last year and 2300 higher than than the first year of this Cooperative Agreement. Over 1500 were contributed from a single swarm near north Lake Tahoe. The average depth of over 25 km and the high productivity (maximum magnitude 2.2, b-value over 2.2) make this swarm unprecedented in Nevada network recording and illustrate the importance of maintaining network sensitivity. A spatial map of network sensitivity based on cumulative magnitude plots shows that the network average completeness level is -M1.0, with a range from -0.3 to 1.6. Five analog stations were completely rebuilt in an ongoing effort to improve reliability of the network. Funds for a senior analyst furthered education and outreach objectives to school children through tours at UNR, in-class teaching, and related outreach presentations. Outreach to at the Nevada state level was advanced through the Nevada Earthquake Safety Council. Western Great Basin data availability objectives were again advanced by outside funding. Southern Great Basin local and regional events were re-mastered from 9-track tape, filling the last major hole in NSL's archive of Nevada network seismograms. At this point waveforms from 1982 to 2000 are available on a research account basis at UNR. Funding will be pursued to improve access to this archive. Data exchange objectives were supported by continuing real-time Earthworm and Antelope connections to seven cooperating networks. Supplemental support and equipment through the ANSS program provided for the installation of seven new Refraction Technologies ANSS- 130 strong motion recorders. This installation significantly improves geographic coverage of strong-motion instrumentation in urban areas of Nevada.