



## ***The new U. S. Coast and Geodetic Survey Seismological Laboratory at Albuquerque***

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*This is one of many related papers that were included in the 1961 NMGS Fall Field Conference Guidebook.*

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## The New U. S. Coast and Geodetic Survey Seismological Laboratory at Albuquerque

The following press releases issued by the U. S. Department of Commerce have been furnished by Herman J. Wirz, Jr., technical director of the new seismological laboratory.

### **New World-Wide Network Will Improve Detecting of Earthquakes and Monitoring of Earth Vibrations**

(Complete text of press release for May 26, 1961)

A modern network of earthquake recording stations, spanning six continents, will be instrumented by the Coast and Geodetic Survey beginning in mid-1961, it was announced today by Secretary of Commerce Luther H. Hodges.

Information gathered from this improved world-wide network will provide data on the nature, location, and frequency of world earthquakes that might ultimately lead to prediction of destructive shocks.

With financial support of the Advanced Research Projects Agency (ARPA), of the Department of Defense, Coast and Geodetic Survey technicians will be sent to 65 countries and islands to install modern seismic equipment at 125 existing earthquake recording stations.

The major objective of this modernization program, the Secretary said, is to provide sensitive standardized instrumentation capable of furnishing uniform quantitative data for the study of earthquakes, earthquake mechanisms, seismic wave propagation, and energy determinations.

Each station will be equipped with three-component short-period and long-period electromagnetic seismographs capable of recording seismic waves from nearby and distant earthquakes with wide-period ranges (about 0.1 to 100 seconds). Time control for each station is furnished by an electronic clock, accurate to 1 second in 40 days, which also regulates the power supply to the recorders, thereby providing a very uniform rate of rotation of the recording drum. Time signals, detected by high-quality radios, are automatically impressed on the records.

The entire program is focused on a precise, uniform method of recording and reporting earth vibrations. The Advanced Research Projects Agency is supporting this effort, which is one part of ARPA's project Vela-Uniform, the national program of research in seismic phenomena. The modern seismic instrumentation to be installed by the Coast and Geodetic Survey aims to upgrade seismic research throughout the world and permit scientists to learn more about thousands of minor earthquakes that occur each year.

By mutual agreement, records made at the 125 stations will be forwarded to the Coast and Geodetic Survey, U. S. Department of Commerce, in Washington. The Coast and Geodetic Survey is establishing an analysis center in the Washington, D. C., area where the seismograms from all participating stations will be available for examination and study by competent researchers of all nationalities.

The Vela-Uniform Program will develop improved knowledge of the world's crust and mantle, particularly

with regard to the number, thickness, and nature of the major layers. It will improve world knowledge of wave propagation characteristics through the earth, including a thorough study of regional travel time anomalies, and it will provide improved data for comparison of all types of seismic waves from earthquakes.

U. S. Coast and Geodetic Survey seismologists will begin installing the instruments at universities and scientific institutions around the world about August 15, 1961. In many instances the Survey will provide the respective institutions with modern earthquake recording equipment which it could not otherwise obtain. Installation is scheduled for completion late in 1962.

### **New Laboratory Built for Earthquake Studies**

(Excerpts from press release for June 29, 1961)

Construction of the Nation's newest and most modern seismological laboratory has been completed by the Coast and Geodetic Survey on [a 673-acre tract of] land owned by the Isleta Indians near Albuquerque, New Mexico. The laboratory will serve as the principal research and development center for earthquake studies and instrumentation in the Survey, an agency of the U. S. Department of Commerce, and provide a vital link in the Agency's vast program of locating earthquakes throughout the world.

Rear Admiral H. Arnold Karo, Director of the Coast and Geodetic Survey, announced that the laboratory will play an important role in the development of seismic instrumentation, particularly strong motion equipment which is extremely important in engineering seismology and, in turn, gives data from which codes for the safe construction of buildings in earthquake areas are formulated. Experimental work to be done at the New Mexico site could prove to be very valuable in the perfection of a system for detecting artificial explosions, Admiral Karo said.

The facility, which will cost approximately \$340,000 when fully equipped, is made up of seven buildings and two specially constructed vaults. The three principal buildings contain the instrumental research laboratory, the office, and the instrument shop—all fully air conditioned. The two vaults are about one-quarter mile distant from the buildings and located inside the granite mountain at the end of 40-foot tunnels. Within these vaults some of the most sensitive seismographic equipment in the world will operate. The entire construction program was carried out under the technical direction of the Bureau of Indian Affairs at Albuquerque, New Mexico.

A highly trained staff of seismologists and instrument makers will man the laboratory under the direction of Mr. Herman J. Wirz, Jr., of Tulsa, Oklahoma. Personnel will commute from Albuquerque to the laboratory, a distance of approximately 15 miles.

Further information may be obtained from Mr. Herman J. Wirz, Jr., Technical Director, Coast and Geodetic Survey, Seismological Laboratory, Sandia Base Branch Post Office, Albuquerque, New Mexico.