

An Aerial Radiological Measuring Survey (ARMS) of the Albuquerque - Los Alamos area was made for the Civil Effects Test Operations, Division of Biology and Medicine, U.S Atomic Energy Commission, by Edgerton, Germeshausen and Grier, Inc. (EG&G) during the periods Aug. 9 through Aug. 20, 1961; Nov. 17 through Dec. 9, 1961; and May 7 through June 1, 1962.

The survey was part of a nationwide program to measure the present environmental levels of gamma radiation. Approximately 9500 traverse miles were flown, at an altitude of about 500 ft above the ground, in the area that consists of two 100-mile squares centered on Albuquerque and Los Alamos, N. Mex. The EG&G ARMS-II instrumentation was used in the survey.

The data are presented as aeroradioactivity units, or areas with similar gamma-radiation counting rates at 500 ft, at two map scales: (1) generalized at about 1:1,000,000 and (2) detailed at 1:250,000. The maximum aeroradioactivity in about one-half of the area is less than 800 counts/sec, and in most of the remainder, it is less than 1200 counts/sec. Maximum counting rates of more than 1200 but less than 4000 counts/sec occur in about one-tenth of the area.

Aerial measurements of ground radioactivity in the ARMS-II Albuquerque - Los Alamos area were consistent with what was expected, considering the geology of the area. Precambrian metamorphic rocks, Tertiary intrusive rocks, and rhyolites were generally more radioactive than basaltic and andesitic rocks and clastic materials. Artificial radionuclides were probably present in only small quantities, for background gamma radioactivity was less than 200 counts/sec in several places.