REVIEWS

These reviews have been prepared by the Soil Mechanics Information Center, and the Technical Information Center Library, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss.

Evaluation of In Situ Shear Wave Velocity Measurement Techniques

**REFERENCE:** Viksne, Andy, "Evaluation of In Situ Shear Wave Velocity Measurement Techniques," REC-ERC-76-6, U.S. Bureau of Reclamation, Engineering and Research Center, Denver, Colo., April 1976, 40 pages.

Several geophysical methods used by the Bureau of Reclamation to obtain the in situ shear wave velocity of earth embankments were evaluated. In situ low-strain shear wave velocity determinations were performed on a number of existing zoned earthfill dams and on an earth dam under construction. In the course of the shear velocity measurements, various borehole methods, such as the downhole, crosshole, and uphole, as well as seismic refraction were used. Shear wave velocity measurements were performed with explosive and nonexplosive impulsive energy sources by using cased and uncased test holes. The results of these field studies have provided not only input parameters for dynamic analyses, but also information as to which method or combination of methods should be used to obtain optimum results. The test methods and results of the various in situ measurements are compared and evaluated.

Use of Californium-252 in Laboratory Testing for Moisture and Density of Soils


This report, on Phase I of a current Waterways Experiment Station investigation which used radioisotope californium-252, is concerned primarily with determination of moisture and, to a limited extent, density. A major portion of the study was devoted to quantifying moisture and density along thin, discrete soil layers in unopened 2.875-in.-diameter steel-encased soil cores. Both gaging and film imagery methods were evaluated for their applicability in the detailed soil studies. Descriptions of methods, results, and recommendations are given.