Geophysical Research Abstracts, Vol. 9, 08033, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-08033

Efficiency of Geophysical Methods (Electrical and seismic methods) on Determination the Problems in HEPP areas. Example of EŞEN-I HEPP

O. Cakmak (1), O. Uyanik (1)

Süleyman Demirel Üniversitesi Jeofizik Mühendisliği Bölümü 32260 Çünür/ Isparta, Türkiye (olcaycakmak@sdu.edu.tr / Fax: +90 246-2370859)

This study presents the results of geophysical surveys and the mechanical borehole which purpose to investigate geological structures in the area of the EŞEN-I hydro electric power plant (HEPP). Geophysical methods are used such as vertical electrical sounding data and seismic refraction which has been performed for the purpose of mapping into the underground, determining its structural problems and investigates the strength, the underground structure was tried to be determined by the method of geoelectric. Bedrock depth, overlaying layers thicknesses are determined by seismic and electrical methods executed at reservoir area. Permeability tests were performed to detect possible degraded areas that are potentially liable to water leakage. And geotechnical cross-sections were illustrated by comparing the result obtained from these investigations and the mechanical borehole. In addition, the geological structure of the dam location, the possible places having landslide problems on the open channel alignment or on the surface penstock alignment, the strength features of geological units in power tunnel alignment and the soil features of the powerhouse area have been investigated by geophysical and mechanical borehole. It is concluded that a significant stability and permeability problem will not be met at EŞEN-I HEPP project dam location and reservoir area.