**Study of the Dam and its Left Slope and Surface Spillway by Geoelectrical Method**

**Introduction**

In 2020 and 2021, geoelectrical tomography studies were carried out to obtain data on water flow distribution in the body of Zhinvali HPP dam, especially on the left bank.

In 2022, new studies are planned to be carried out to obtain information about changes in the distribution of water flow in the dam body after the large flood.

Also, an important issue is the examination of the left slope, where the contact between the dam and the rocks is a subject of special interest, during which the issue of water filtration in the spillway area during meteorological events or high water levels in the reservoir should be considered.

In 2020, the rehabilitation of the surface spillway concrete dam was carried out: a cement curtain was made in the upper canal pound, and cementing works of the dam base were also performed. During the flood of 2022, there was a prolonged overflow in the said channel, 5-30 m3sec. Because of the latter, it is necessary to conduct geophysical surveys of the horizontal and inclined areas of the surface spillway (bottom and slopes) to identify the thickness of the concrete, quality, and determination of voids behind the concrete.

To determine the data of changes in water distribution in the body of the dam, it is recommended to perform the following works:

The works to be performed:

1. To obtain data on the distribution of water flow in the body of the Zhinvali HPP dam;
2. The geophysical examination of the left slope, where the contact between the dam and the rocks, is a subject of special interest, during which the issue of water filtration in the spillway area should be considered during meteorological events or high water levels in the reservoir.
3. Geophysical survey of the horizontal part of the surface by-wash.
4. Geophysical survey of the inclined area of the surface by-wash.
5. Comparison of data obtained during the previous investigation and analyzes of both studies;
6. Development of a detailed report on the performed works, which should contain the methods of performing the works and the obtained results, as well as other relevant information, including recommendations if there are any

**NOTE:**

The bidder may propose one or several investigation methods for the works to be performed. Investigation methods will be selected by the Client. Accordingly, bidders should take into account that along with the submitted documentation, they must present the detailed methodology of all the proposed methods.

**Works implementation period:**

It is preferable to perform the work during a high water level period.

The work execution plan and schedule must be submitted together with the documents required in the tender documents.