

GEODESY

Geodetic measurements determine the absolute three-dimensional movements of reference points on a dam or any other structure. In other words, they make it possible to evaluate and monitor their movements.



As part of the monitoring of dams subject to the LOA (Dam Act 2010), we carry out tasks pertaining to levels N1 and N2. Level N1 includes not only the tasks of the dam operators but also geodetic measurements. These measurements are then evaluated by the engineer in charge at level N2.

The entire 'geodesy' service is provided by specialists from our civil engineering unit who are highly qualified in the field of geomatics.

Methodology

In general, a geodetic network includes pillars near the dam that are mainly used to determine the position of markers permanently placed on the structure's downstream cladding. It also includes pillars and targets that are further apart, to verify the stability of the network in place. Altimetric reference points are positioned in stable zones far from the dam.

The markers' positions are determined by placing a theodolite on geodesic pillars. Levelling paths on the crest of the dam, extending along the right and left banks, guarantee the altimetric results. These results are correlated with the dam operators' measurements. They also reveal the structure's movement within its environment.

The measurement frequency recommended by the dam's civil engineering expert (N3) is approved by the supervisory authority, SFOE (N4).

ADDITIONAL SERVICES

Auscultation of civil engineering works

The auscultation of civil engineering works allows the owners of electricity generating facilities to assess the viability of their installations, as well as renewal or maintenance operations to be carried out and their frequency.

Dam monitoring

The objective of dam monitoring is to prevent long-term dam deterioration and to ensure dam safety. The Swiss concept for monitoring dams provides for 4 levels of monitoring.

CONTACT

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Client benefits

Hydroelectric facility owners can benefit from our global experience and understanding of dams and reservoirs. Our experts work with the latest generation of instruments. Close collaboration between the N1 and N2 levels is a real advantage for the long-term monitoring of the structure. Example dams:

- Grande Dixence
- Zmutt
- La Lurette
- Salanfe
- Zenbinnen