



Dam Safety Monitoring

“This is what happens when an unstoppable force meets an immovable object” - *The Joker*

Industry
Mining

Sector
Dams

Segment
Safety Systems



Project

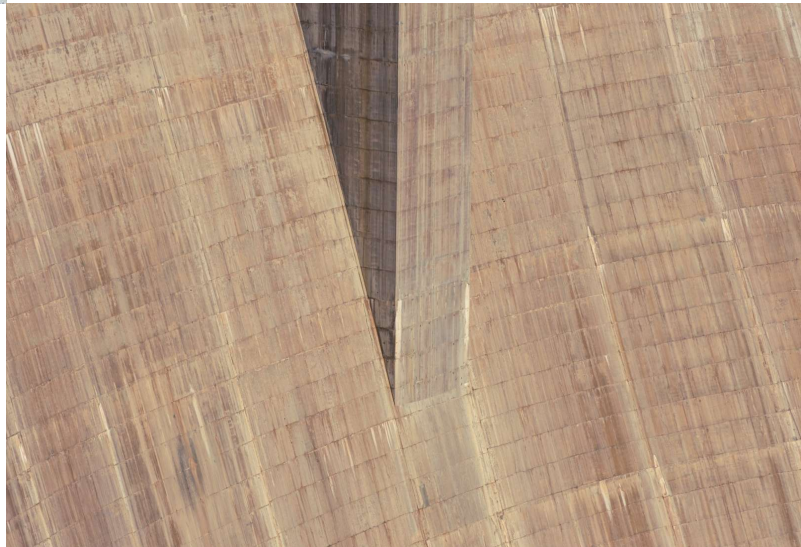
- The client is a global resources company that mines explores and develops base metal projects around the world.
- To extend the operational life of its Tasmanian operation the client need to increase the capacity of it's Tailings Storage dam.
- To achieve this in an economical manner a project was proposed to raise the embankments of the existing dam.
- Due to the nature of the project extensive safety monitoring needed to be in place.
- The client engaged a major civil contractor to perform the works and Cromarty were engaged to implement the safety monitoring systems.

Solution

In coordination with the civil construction of the dam wall extension the dam safety equipment implementation was proposed in 3 phases:

- *Phase 1* - The installation and commissioning of Piezo pressure sensors in the dam wall to monitor the pressure of groundwater held within the dam wall. Pressure changes can be used to identify dam instability.
- *Phase 2* - The installation and commissioning of inclinometers to measure the angle of the dam wall slope to provide early identification of any changes in slope.
- *Phase 3* - The installation and commissioning of GPS positioning on the finished dam wall to provide precise measurements of dam deformation.

The data from the 3 types of instrument is then recorded by data loggers and fed into the facility SCADA system.



Outcome

The project was complicated, it was an extension to an already operational storage dam meaning that the upgrade needed to be carefully planned so that at all stages safety wasn't compromised. The end result was that the client had a cost-effective solution eliminating the significant costs of constructing a new dam with improved monitoring, meeting current safety requirements allowing the mine to operate for many more years to come.