

Inete Case Study:

Water Release

Solar Powered

Actuated Penstock



The Project

The Client required an environmental water release point to be installed on their newly constructed environmental dam. The release point needed to be completely powered by solar, have remote operation capabilities and be able to perform several open / close cycles from the battery system without being recharged.

Because of the strict legislative requirements governing the release of mine water, the system had to be robust and reliable. The solution as installed has in-built redundancy through out, from dual radio communication services to excess capacity in the battery banks.



Each of the three major component areas (control, valve 1 and valve 2) has it's own solar supply and battery. The batteries are able to be disconnected via plug and socket receptacles for ease of maintenance and for added safety, the actuators have lockable isolation points adjacent to the actuators.

The system has been designed for local or remote operation. With capability to connect to the site wireless network and to secure SMS from the local Telco, redundancy and reliability are built in.

A comms link (using the site standard protocol) connects the actuator to the control

station, allowing full remote viewing of the release point and actuator status.

The system is designed with full SCADA interface capability, for display on the site control system if required. With the ability to connect environmental monitoring stations, the system is ready to be semi or fully automated (with manual intervention).

As a Green Energy option the site is completely powered by solar. This is also a bonus when mains power is not available or too expensive to connect. The solar panels and batteries have been sized to give several days of autonomy, even during inclement weather.



Project Overview

Project

Mine site installation of a completely solar powered remotely controllable water release system.

Location

Peak Downs Mine, approximately 40 km south west of Moranbah.

Infrastructure

- 2 x 900 mm water release penstocks with electrically operated valve actuators, control / communication systems and solar panels with battery storage and charging control.

Project Scope

- Design, procure equipment, construct, install, commissioning and functionally check, a full solar powered solution to allow the mine site to remotely control water release from the storage dam on site.

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