



Neweipa Bauxite Beneficiation Plant Borefield Telemetry System

Project Overview

As a leading contractor in the design and construction of automation and control systems, i.power solutions were approached to carry out preliminary design and pricing for the turnkey design, manufacture, installation and commissioning of the control system infrastructure for Queensland Gas Company's new CSE field.

During implementation of this phase the need for access to well head data was identified and i.power solutions were commissioned to undertake the design implementation and commissioning of a system that would fulfil the needs of the client. It was agreed that the best route to follow would be that of a meshed wireless system.

- Project Cost \$130k
- 700 Citect tags
- 3 Allen Bradley FlexLogic PLCs
- 12 Miri AD2000 Telemetry Stations
- Integration with third party control systems
- Training and 24 hour support

Description

The Borefield Telemetry System comprises 12 stations. Two "master" stations that are configured as a redundant pair are located at the Beneficiation Plant itself, communicate with 10 "slave stations". Each station consists of a Miri AD2000 Radio Telemetry Unit configured by i.Power which communicates with a Allen Bradley FlexLogix controller.

The "master" stations communicate with one of the plant's Allen Bradley ControlLogix PLCs using the Modbus protocol. A "master control strategy" has been implemented in this ControlLogix PLC to automatically start and stop each borefield pump in order to maintain the level in the plant's main process water dam.

The Miri RTUs at each "slave" station communicate with the station's FlexLogix PLC using DF1 protocol via the RS232 port of the AD2000. At 7 of the "slave" stations, the FlexLogix was programmed by a 3rd party vendor and interfaces with their VSD based bore pump system. At the other 3 "slave" stations, the FlexLogix was programmed by i.Power and utilises a DeviceNet network to control the pumps at their locations.

All status and control for the entire system, including extensive diagnostics information from all the Miri units, PLCs and Bore Pump VSDs is incorporated into the plantwide Citect SCADA system.

The system provides reliable and effective long-range control and monitoring of the plant's vital process water supply sources. Remote operation of these sites is of particular importance during the wet season, when vehicular access may not be possible.

i.Power Solutions' control systems engineers took a leading role in the coordination of 3rd party vendors and installation and testing electricians. i.Power Solutions also provided operator and PLC training to Comalco personnel, and continues to provide ongoing operational support, including 24hr phone and remote access support.

client

Comalco / Bechtel

total value

\$130k

summary

Design, manufacture, installation and Commissioning of the control system infrastructure

