

Instrowest was established in 2006 to provide quality instrument and electrical contracting services to the mining and mineral processing industries, with a strong focus upon safety. Instrowest can provide a comprehensive installation, maintenance, calibration, and repair service to all sites within Western Australia. Instrowest can also help in solving any instrument or control related problem that you may be facing.

At Instrowest we are committed to providing reliable, high quality sales and service while maintaining respect, integrity and trust to our clients and those within our organisation. We aim to provide this service by understanding our client's needs, wants and constraints while finding a solution that is fit for purpose.

At Instrowest we will always maintain an innovative approach that sets us apart from others; if a traditional method is not suitable or ineffective, we will endeavor to find an alternative or innovative approach to achieve our client's goals.

Instrowest Pty Ltd
 Phone 08 9500 9120
 Fax 08 9535 6909
 Email
admin@instrowest.com.au

Marvel Loch Water Addition Automation Upgrade

In October 2010, Instrowest was approached by St Barbara's Southern Cross Gold Operations to assist them with upgrading and automating the Mill Water Addition on their Secondary Ball Mills at their Marvel Loch processing plant.

The issue that the site personnel had was that all the water addition control was still manual and that no metering was in place. This meant that operators had to physically adjust a valve in the field and wait before manually taking a density sample. If the process change was substantial, it also impacted on other water addition points. This resulted in poor control of density variation within the grinding circuit. To compound the issue, the sites gravity circuit, consisting of three Knelson Concentrators, would regularly dump large quantities of water into the grinding circuit when they went into a flush cycle.

Instrowest initially proposed to automate all addition points and fit a density transmitter to the cyclone feed line. This would control cyclone feed water addition in a cascade loop, although due to budget constraints, a density transmitter was deemed too expensive and another solution had to be found.

The solution came from the production superintendent, who suggested that we could take the process variable from the Knelson water addition flow meters and deduct the live process variable from the cyclone feed water addition set point (with a 17 sec delay) during a Knelson flush cycle. Working with programmers from Intellect Systems, we could see that this was easily achievable and set about designing the addition points.



Instrowest worked with our client to design the pipework and addition points; all pipework was manufactured by one of site's preferred local contractors.

In April 2011, Instrowest supplied, installed and commissioned four water addition points. They consisted of Yokogawa AXF dual frequency flow meters, Butterfly Valves (controlled by SMC IP6100 positioners) with filter regulators and Swagelok hard tubing for pneumatic supplies.

These addition points were:

1. Mill 2 Feed Water Addition
2. Mill 3 Feed Water Addition
3. Gravity Tower Feed Water Addition
4. Cyclone Feed Hopper Water Addition.

We also supplied, installed and commissioned a pressure transmitter for monitoring of system pressure and pump performance.

All of the addition points were installed and commissioned during a shutdown and the project was completed on time and within budget.

Results

The end result was vastly improved process control within the grinding circuit and very minimal density change during a Knelson flushing cycle. The overall response from site was very positive and they have had no issues with the installation to date.



If you would like Instrowest to assist you with any instrumentation queries or problems please contact us. Email:

admin@instrowest.com.au

Website: www.instrowest.com.au

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