



Instrowest Pty Ltd
Phone 08 9535 9069
Fax 08 9535 6909
Email admin@instrowest.com.au
Web www.instrowest.com.au
EC 8070

Case Study

Cosmos Nickel Cyanide Addition

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 endeavour to find an alternative or innovative approach to achieve our client's goals.

Instrowest was approached by Jubilee Mines Cosmos Operations to help them find a solution to their chemical dosing problem. The problem involved dosing sodium cyanide to the flotation circuit to aid the rejection of arsenic present in the ore. Cosmos contacted other instrumentation and valve service providers but due to the small dosing rates required, typically 0- 150 ml/min, and the tendency for sodium cyanide to crystallize in changing temperatures, a solution could not be sourced.

The second of two options presented by Instrowest was selected. It involved the use of electrically actuated metering valves with low flow coefficients. Instrowest managed to source these actuators from an overseas manufacturer. The actuators are 24 volt DC driven and controlled by 4-20 mA.

Instrowest designed the ring main around the required flow rates for the ten dosing points. The ring main is designed to run at a constant pressure controlled by the Yokogawa DCS. The valves were then sized according to their desired flow rates and the known pressure of the ring main.

Instrowest presented their ideas in a "Proposal of work". This included a full break down of the project, calculations for valve sizing, the type of measuring device required, the reasons why the products were chosen and the pros and cons of each of the products. A full budget estimate for Instrowest to supply, install and commission the products chosen was included at the end of the proposal.

The personnel at Cosmos were very pleased with the Instrowest proposal and organised a site visit so the project could be discussed and finalised prior to parts being ordered. It was decided to implement the ring main pressure control and the conditioner tank dosing point as soon as possible.

The installation of the ring main and conditioner tank dosing point went ahead in October 2007 and was proved to successfully control the low rates of cyanide required. In April 2008 an additional two dosing points were added (1st Rougher Cell and Mill Addition).

As a result of this project's success, Cosmos now has greater control over the cyanide dosing system, leading to better arsenic rejection and efficiency in their cyanide usage. The Cosmos Senior Metallurgist is pleased with the systems performance.

Based on this projects success and performance of the valves and actuators installed, Instrowest has become the West Australian Distributor for Hanbay Actuators. Instrowest can see there is a strong market for this product and is currently in discussion with a major gold mining company to use them for cyanide addition in a CIP process.

