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Remote Controlled Mine

North leads the way in high-tech underground mining

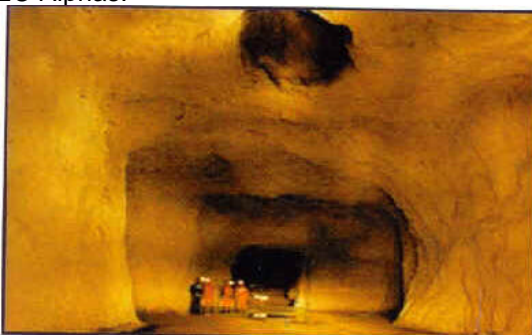
North Mining are pioneering the use of modern technology in underground mining with the implementation of the Australian developed SCADA package, MacroView.

The system recently commissioned at North Parkes Copper Gold Mine in central New South Wales, is being used to manage remotely operated vehicles, environmental monitoring and the linking of the process control system to the Maintenance Management System of the mine.

The North Parkes Mine is largely an underground operation, using block caving to extract the ore. Ore is extracted from drawpoints and transported to the surface using a series of conveyors and a winder. Primary processing takes place on site, with concentrate transported by road to customers.

The SCADA system supplied is one of the most comprehensive seen in an underground mining operation. The MacroView system has been supplied on a pair of DEC Alpha RISC machines configured as a dual redundant pair. These communicate with more than a dozen Siemens PLCs through a tiered structure comprising Siemens Ethernet and L2 interfaces.

Emphasis has been placed on availability of data, with more than forty users able to access the MacroView information through use of Windows NT PCs connected via ethernet to the DEC Alphas.



A variety of parameters are measured through this system including:

- Conveyor, winder and tramming level operation and monitoring via Siemens HI, with communication and sublinks via Siemens L2, Modbus and ASI.
- Geotechnical data via PLC and radio links.
- Remote vehicle operation and production information via dedicated computer links.
- Environmental monitoring via PLC.
- Traffic control system via PLC.



A feature of the system is the automatic operation of the remotely controlled loaders. In this part of the operation, the Control Room operator has responsibility for the access of personnel into the mine.

The data available on the system includes the viewing of tonnage and a drill down system where the reasons for low tonnage can be investigated, at least relative to plant availability.

All operational information and instructions are captured electronically and fed into the comprehensive reporting system via MacroView's companion products with the Control Room Organiser and Operator Log Book. This reporting system provides North's mine management with unprecedented information at their fingertips.

With the North Parkes facility having a design capacity of 15,000 tonnes per day, estimated reserves of 800,000 tonnes of copper and 1.1 million ounces of gold, there are many years of operation ahead for this system. The use of technology to minimise the number of personnel underground, has ensured a relatively safe working environment for the underground workers.

The safe working conditions coupled with the ability to effectively manage men and machinery, should ensure that North Mining are able to maximise their returns on this profitable venture.