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SUCCESS STORY

High Process Availability at Cadia Hill Gold Mine Newcrest Mining Limited

Location: Orange, NSW, Australia
Order Date: June 1997
Completion: 1998
Industry: Mining & Metals

Newmont Corporation established an Australian subsidiary in 1966 with the philosophy that "high standards of scientific exploration and professional mine development and management were the tried and proven avenue to the creation of shareholder wealth." (1993 Annual Report). Nearly 40 years later that philosophy is embedded in the successor to that Australian subsidiary, Newcrest Mining Ltd., and it has fostered the creation of a strong, independent and growing resource group.

Process Details

Cadia Hill is an open pit mining operation that annually produces approximately 300,000 ounces of gold and 23,000 tons of copper. With reserves of 200 million tons of 0.73 g/t gold ore and an annual processing throughput of 17 million tons, this mine has an expected life of 12 years. At the time of installation, its 12.2 meter 20 megawatt semi-autogenous grinding (SAG) mill was the largest of its kind anywhere in the world.

Economical recovery of gold from low-grade ore requires high throughput and high availability of the process. Operation costs need to be kept low by minimizing the number of plant staff, and the plant must meet increasingly strict safety and environmental regulations.

To achieve these objectives, Newcrest Mining Ltd. turned to Yokogawa for an automation solution. Yokogawa provided the CENTUM CS integrated production control system (DCS), transmitters, magnetic flowmeters, pH analyzers and a local area plant network. The fully redundant DCS enables high process availability at an economical cost. Integration of the General Electric (GE) Multilin motor protection relay diagnostics into the DCS operator stations significantly reduces maintenance times.

Benefits achieved with the Yokogawa automation solution have included a more stable business-driven operation with high process availability, more manageable and lowered cost of ownership due to the high reliability of the DCS and instrumentation, reduction of maintenance costs, and production in accordance with safety/environmental regulations.

A Yokogawa project team provided all services from configuration and Factory Acceptance Testing to start-up and commissioning, including integration of a Pyramid knowledge based adaptive expert supervisory control system for improved production rate and efficiency.

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Project

Bechtel and Minproc formed a joint venture (BMJV) to manage this project. Yokogawa Australia performed the design and configuration in a co-operative approach, which included DCS configuration activities at the BMJV offices in Sydney. The DCS was completed and factory tested on schedule and site commissioning commenced in 1998. Yokogawa assisted Bechtel with the plant startup, which was successfully completed in July 1998.

System:	**CENTUM CS**
Total I/O:	**approx. 4,000**
System Configuration:	**6 dual screen, 2 single screen environmentally hardened workstations, 2 EWS, 8 redundant FCS, integration of GE Multilin motor protection relays**
Scope:	**system, project management, configuration engineering, commissioning services**

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