



A Rockwell Automation Company

Placer Dome, Dome Mine DCS Replacement Project

The Client:

Placer Dome is one of the largest gold producers in the world and maintains properties that span the globe. The Dome Mine utilizes both Underground and Open Pit mining technology, with a 12,500 tpd crushing and metallurgical facility located in South Porcupine,

Ontario. Underground operation has been continuous since 1910 and open pit mining began in 1988. Gold is recovered using a combination of gravity stripping, electrowinning and carbon reactivation.

The Requirement:

Dome Mine required an upgrade to their site wide Comdale HMI. The system had been experiencing a high number of system crashes and delays resulting in upsets to plant operation. In addition, Comdale has gone out of business and no longer offers customer support. These factors led Placer Dome to the decision to replace their HMI system with Wonderware. At the same time, Rosemount indicated that their RS-3 DCS

was not Y2K compliant and therefore required replacement.

Hinz was awarded the contract to provide the new PLC programming and Human Machine Interface designs for the site, as well as the panel and electrical design for the new PLC.

The Design Solution:

The existing system was comprised of nine (9) Square D Model 450 and 650 PLCs used to control the discrete I/O and the Rosemount DCS controlled analog I/O in the Leaching, Electrowinning, Backfill, CIP, and Grinding systems. Placer Dome's initial request was to use Wonderware as the new site wide HMI system and to replace the DCS with a Square D PLC (the current plant PLC standard). However, the Square D PLCs were nearing the end of their product life cycle and did not have the capability of replacing a DCS system. The decision was made to use a Modicon Quantum PLC with Concept Software as the programming media.

The existing Comdale nodes were replaced with a total of ten (10) Wonderware nodes. All devices communicate using a 10base2 Thin Net Ethernet LAN over an existing fiber optic system. Over 100 screens were generated for the Wonderware Version 7.0 installation. Thirty (30) screens provide plant process control and the rest are comprised of alarm screens, trends, templates, and pop-ups. The database consists of more than 6000 tags/points and all graphic nodes make use of PC Anywhere software allowing the plant personnel to make system changes from the main electrical maintenance room.

The Quantum PLC was selected to directly replace the older Rosemount DCS because of its high performance

and use of the new IEC compliant Concept Software. The Concept programming package provides a function block format, which enables the PLC to manipulate the analog functions in the same manner as a Distributed Control System. Concept provides the functionality required by the most complex analog control loops (cascade, feed forward, etc.) in the application.

The design ensured that capacity for expansion in the PLC Cabinet and the processor was available for future additions. The PLC system executes all of the analog functions previously done by the Rosemount DCS with a minimal load on system resources and a scan time of less than 2ms.

The PLC Cabinet design and layout was completed by Hinz, with supply and manufacture by the PLC supplier, Avad Industrial of Sudbury, Ontario.

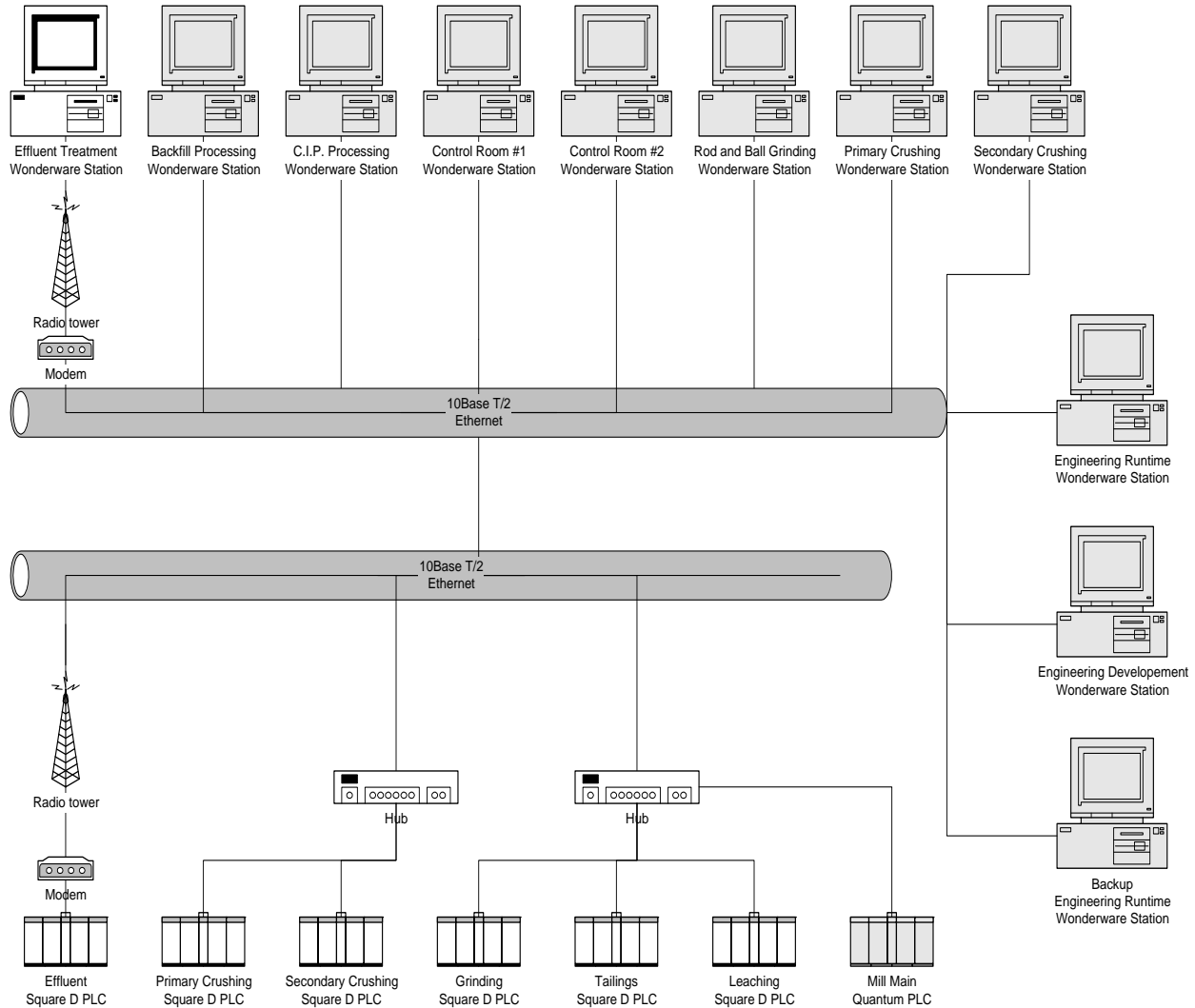
The project timeline was compressed to attain Y2K compliance and all engineering and commissioning was completed within 5 months. The Project was fully commissioned during a 3 day scheduled shutdown with general cleanup occurring over the next 7 days. After a smooth conversion to Wonderware and Quantum, Placer Dome is making plans to swing some of their Square D PLCs into the new Quantum system.



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Placer Dome New Network/Control System Layout



System Specifications:

- Eleven (11) Wonderware Stations (Version 7.0)
- Five (5) Square D PLCs
- One (1) Quantum PLC with concept configuration

For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com