



A Rockwell Automation Company

Placer Dome Ltd. Placer Dome - Musselwhite, Ontario

The Client:

Placer Dome is a global mining company whose primary emphasis is gold. The corporation was established in 1987 by the amalgamation of Placer Development Limited of Vancouver, Dome Mines Limited and Campbell Red Lake Mines Limited, both of Toronto, to form one of the largest international

mining companies in the world. Placer Dome has interests in 16 properties and employs approximately 6,000 employees worldwide.

The Requirement:

Placer Dome was developing their new gold property "Musselwhite" located in northern Ontario. Unlike most of their properties, which employ open pit mining techniques, this project involved underground mining principles. Placer Dome needed a company familiar with underground mining applications. They selected

Hinz due to our extensive project experience with underground electrical and control design in a variety of different mining environments.

The Design Solution:

Placer Dome provided the project management with the design work being split up into surface and underground. The surface design was within the scope of the EPC consultant and the complete underground electrical and control design was the responsibility of Hinz. Commissioning and startup of the project was completed by Placer Dome.

Control and annunciation of the underground area was accomplished using a dedicated Modicon Quantum 113 processor. This processor was monitoring the status of the underground distribution system provided by the portable and unit substations distributed throughout the mine and all of the associated pumps and mining equipment. It also provided control of the dewatering and backfill systems. Local hardwired control panels were used for operator input because of the tough mining environment. The control system design included wiring diagrams, motor schematics, PLC panel layouts, loop diagrams, and logic diagrams.

Communication throughput and data integrity was of extreme importance. A fiber optic network was used

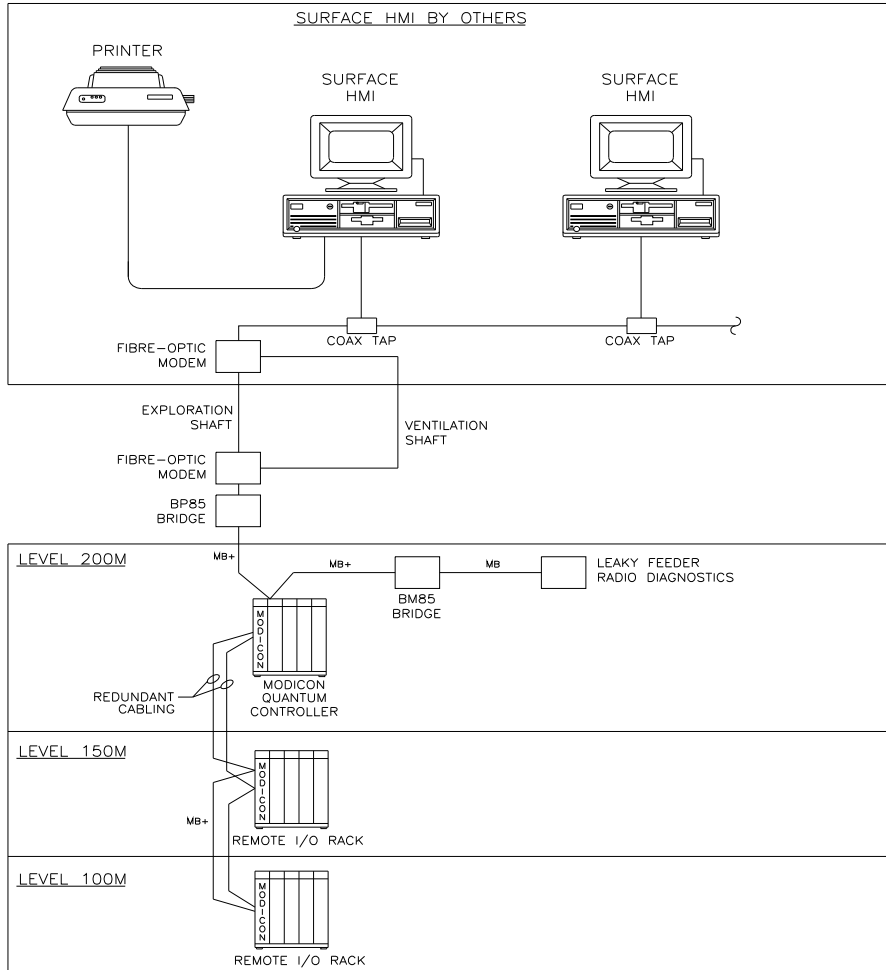
for connection between the main operator control room located on the surface and the underground PLC. Redundant Modbus Plus cabling was used between the processor and the remote I/O racks. A leaky feeder system was chosen for underground radio communication because of the multi level nature of the mine. The health of the leaky feeder mine communication system was monitored by the PLC and reported in the main control room.

The power system engineering involved the design of the complete U/G 4.16KV distribution system. This included the design, details and equipment specifications for electrical rooms, 4.16KV shaft cables, 4.16KV switchgear, 4.16KV/600V dry type transformers, 600V power cables, lighting distribution, lighting transformers, 600KVA portable substations, 1000KVA unit substations, grounding resistor, UPS system, MCCs and 4.16KV & 600V junction boxes. All cable routing, tray, shaft cables and miscellaneous mounting details were also included.



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System Specifications:

- Quantum 113 Processor
- 400 I/O
- Fiber Optic Link
- Redundant Modbus Plus
- Leaky Feeder radio communication
- Unit substation design
- Portable substation design
- Electrical Single Line Design

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

www.hinz.com