

66kV Switchyard-15 kV Substation



Project Scope:

- Replacement of the existing 7 MVA (2 MVA & 5 MVA 66kV: 2.4 kV transformers) switchyard with a new 66 kV switchyard consisting of two new 10 MVA DSC 66 kV: 12.47 kV transformers, two new 12.47 kV switchgear lineups, site civil works and a new substation building.
- Installation of three new 12.47 kV, 266.8 kcmil transmission lines fed out of new switchyard/substation.

Project Financials/Schedule:

- Project scope definition and cost control budget estimate was completed by AMPS Services. The cost control budget cost was estimated at \$3.59 million; the actual total all inclusive project completion cost was \$3.62 million.
- The EPCM project schedule was developed by AMPS Services with a scheduled start date of January 15, 2010 and a completion date of September 17, 2010. Actual project completion date was September 2, 2010 with a total plant down time of 14 hours. Scheduled project startup

and plant outage downtime were both reduced with innovative engineering and effective project/construction management.

Objectives:

- The EPCM of a new increased capacity switchyard/substation capable of running the mine site from multiple feeds while minimizing potential downtime by maintaining a high level of configurability.
- Responsibility for all Civil, Structural, Mechanical and Electrical detailed design. Civil, Structural, and Mechanical Engineering sub-consultants were employed, directed and managed by AMPS Services.
- Responsibility for all Civil, Structural, Mechanical and Electrical construction management, testing/commissioning, QA/QC and site safety programs.
- Regulating line voltage at 12.47 kV due to the high variation of incoming voltages supplied from MB Hydro.
- Redundancy of control power through use of multiple UPS modules and automatic transfer switch.
- Future expansion capability of third DSC transformer and switchgear without building modification.
- Fully customizable trip settings and data recording ability through the use of GE Multilin 750 Feeder Management Relays.
- Minimized mine site downstream station step and touch hazards through use of high-resistance grounding.
- Minimized outage time and reduced schedule to meet fall 2010 plant expansion power requirements.





