

Project Information

Project: Mackay Transmission Station Refurbishment



Owner:

Brookfield Power

Contractor & Construction:

EPTCON Ltd.

Design/Build & Engineering:

EPTCON Ltd.

EPTCON Ltd. provided the design/build and complete electrical engineering for the replacement of 8-115kV bulk oil circuit breakers with SF6 circuit breakers in a live switchyard. The scope of work included:

- Replacement of 8-115kV bulk oil circuit breakers with SF6 circuit breakers including all civil and electrical construction services.
- Replacement of 115kV disconnect switches.
- Station service upgrades as required for the breaker replacement.
- Design and installation of 11 new P&C panels and integration with the existing protection systems.
- Design of new SCADA communication architecture and development of the alarm lists for the new breakers.
- Development of outage and changeover plans.
- Complete testing and commissioning services.

EPTCON Ltd.
560 Sheldon Drive
Cambridge, Ontario
N1T 0A4

Phone: 519-620-4414
Fax: 519-620-4413

Contact: info@eptcon.com
Website: www.eptcon.com

Disconnect Installation included:

- Replacement of 16 manual disconnect switches including reinforcement of the existing structures.
- Installation of 5 new kV motor operated disconnect switches.



Protection & Control included:

- Design and replacement of 6-115kV line protection relay panels
- Design and replacement of 3-Breaker failure protection relay panels.
- Design and replacement of 2-Bus protection relay panels.



Complete engineering included:

- Verification of existing facilities including AC & DC station service
- Design of the new protection relaying systems
- Design of the new P&C panels
- Design of new terminal rack
- Update of Single & Three line diagrams.
- DC schematics for A & B protection and breaker fail.
- Cable schedules for field and control room cabling.
- Interconnect cable schedule.
- Wiring connection details.
- SCADA communication architecture and I/O List.
- Design and installation of new ground grid system.
- In-Service planning of the new breakers and protection systems.
- Project scope plan and development.
- Updating and revision of all station protection drawing to 'As Built' status.



Complete commissioning included:

- Relay setting and programming
- Commissioning and outage planning
- Isolation of equipment to be replaced
- End-end testing of protection relaying devices and transfer trips between stations.
- Testing of all breakers and switches
- Function testing of P&C logic.
- In-service of all equipment.
- Removal of retired equipment including breaker oil removals per MOE and Owner requirements. Also PCB contaminated bushing removals and disposal per Owner and MOE requirements.

