



Hail Creek 132kV Substation

Project Overview

i.power solutions was awarded the contract to design, manufacture and commission the Kemmis Creek temporary 132/22kV substation - the first electrical package to be awarded for the Hail Creek Mine project.

The Kemmis Creek substation was built to provide temporary construction power for the Rio Tinto Hail Creek Coal Mine project in Central Queensland.

Equipment

- Greenfield Site
- 132KV/11KV 20 MVA Substation
- Earthing transformer
- Refurbished Min Oil 132 KV C/Breaker
- Backup fault throw switch
- 11/22KV step-up Transformer

Description of Works

Although specified as 132/22kV, the design of the substation had to be based around a "free issue" 132/11kV 20MVA star/delta transformer. A further requirement was for the provision of a back-up protection device to the circuit breaker for the 132kV feeder. In addition to the normal requirements of the substation, the design had to include a fault throw switch, earthing transformer and an 11/22kV 2MVA load transformer.

Included in the project were the following tasks:

- Substation layout
- Earthing study and design of earth-grid
- Site preparation and footings construction
- Equipment procurement excluding "free issue" 132kV equipment
- Protection studies
- Determination and settings
- Protection and auxiliaries panel design and manufacture
- Substation construction
- Electrical work
- Commissioning

The construction took place at a remote "green-field" site and thus required i.power solutions to provide its own power and amenities. The project was completed on time, without a single safety incident and with minimal affect on the environment.

