

Roxburgh HV Transmission Lines Refurbishment

Project: Upgrade of Transmission Lines between Power Station and Switchyard

Client: Contact Energy Limited

Location: Roxburgh, Central Otago, New Zealand

Contract Value: NZ\$400k

DESCRIPTION

As part of Contact Energy's ongoing maintenance of its assets, Electrix Ltd completed a study into the condition of transmission lines owned by Contact Energy between the Roxburgh Power Station and Transpower's 110/220kV switchyard downstream from the power station. As a result of the findings of this investigation, it was recommended that all aerial hardware, insulators and deadends be replaced. Contact Energy adopted this recommendation and Electrix was engaged to complete the upgrade, which was undertaken over a planned continuous 11 day period in April 2008.

SCOPE

The scope of the upgrade included:

- replacement of all glass insulators with composite insulators
 - replacement of hardware and deadends on seven double strain circuit towers, two bridge strain towers,
 - replacement of terminations onto the Roxburgh power house,
 - replacement of terminations onto Transpower substation gantry.
- Due to the environment and proximity to the power house and substation, implosive fittings were not able to be used, so all replacement deadends (126), jumper flags (156) and jumpers (75) had to be pressed hydraulically – all completed within consecutive 2 to 2.5 day outages, minimising Contact Energy's generation constraints.

This work was completed over a short time frame due to the extensive specialist access plant Electrix had available, including elevating work platform vehicle (to access substation gantry and power house terminations), and crane truck complete with man-bucket (reach of 30m to access double circuit and bridge tower). Two double circuit structures were unable to be accessed using this plant so all work on these structures had to be undertaken manually with ladders and ropes.

VALUE TO CLIENT

Electrix also identified and removed of a future operational threat to the G7/G8 110kV circuit by way of vegetation growing under the line. This complex and imposing undertaking was completed two days earlier than planned.

