

## New gas division already a key player

With the recent acquisition of Gas Services Ltd and the transition of the Central and Northern Gas networks from Vector, Electrix has cemented its move into the gas industry. The new Gas Services Division with its staff complement of 80 was established to provide a broad capability spectrum.

Less than a year later, the division is already living up to its strategic promise with four major contracts on its books.

Division Manager Gerry Thompson explains that the service offering was designed in response to industry needs and provides true diversity in terms of coverage and capability; a one-stop-shop as it were. "We can look after all aspects of the network, from the pipeline through metering to the end user appliances," he says, "and that's a significant advantage for network owners and end users alike."



## Capability on show

Electrix' specialised capability in the domain of pole inspection and condition assessment was showcased at Energy 21C - the recent International Transmission and Distribution Conference and Exhibition in Melbourne.

In partnership with Powercor Australia, Electrix provided live demonstrations of the ELMAST and POLECAM systems - the highly efficient and effective cross-arm and pole top inspection methodologies developed by Powercor.

Feedback at the conference was overwhelmingly positive. Industry players showed great interest in the capability and consider it a smart solution in the quest to improve network reliability and maintenance efficiencies.

## Electrix on the right track

South Australia's only remaining tram line connects Adelaide's city centre with the seaside suburb of Glenelg. This popular tourist and commuter tram route is currently undergoing a major realignment at the South Road intersection where a tram overpass is set to remove traffic delays on the busy arterial road.

The undertaking includes the construction of a temporary 800-metre track diversion, and the subsequent construction of the permanent overpass for client the Department for Transportation, Energy and Infrastructure. As main contractor for the project, McConnell Dowell brought Electrix on board to install the overhead supply and provide associated electrical installations. While new to the rail sector, Electrix' focus on quality and safety are welcome qualities in this arena.

According to project manager Spencer Cullen, it's an exciting project, but clearly also demanding. "Working in a live rail corridor with 120 tram movements a day, very restrictive access and a tight construction programme has its challenges," he says. The final project milestone is a case in point; it will see the decommissioning of the old track and the commissioning of the new overpass within a brief 48-hour window.



The track realignment and new overpass for the Glenelg tram is an important local infrastructure project and a successful debut for Electrix' in the rail sector.

However, the project has progressed well so far, and Operations Manager for Lloyd's Register (Rail), Barry Hedley, was duly impressed with Electrix' performance and noted, "In the years I have been auditing overhead rail installations this is the first time I have been unable to find a single fault in the workmanship."

The overpass is scheduled to be operational by Christmas 2009.

# electrixline

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## A winning combination



Nevertheless, there are plenty of challenges. Creating a new Gas Services Division from scratch, complete with some 75 staff, resourcing a further 150 staff for the electricity distribution contract; establishing operations for an associated gas distribution contract at eight locations in the North Island; and more.

One of the key concerns was ensuring the 'cultural fit' of the new divisions. "We went to great lengths to attract not just good people, but also the right people," says Robert Ferris. "We've put much emphasis on thorough induction and training."

That approach seems to have paid off, much like the acquisition of Gas Services Ltd, which boosted Electrix' capability and reach in the gas services sector.

Of course, there was also the matter of ensuring a reliable and secure transition into the new contract, on September 18.

What is the verdict so far? Well, it's obviously early days, however, the transition went smoothly and "so far, things are going very well, but we have high standards to maintain" says David Worsnop.

In September, Electrix officially commenced operations as service provider under a major multi-utility service agreement for Vector.

When Vector, New Zealand's leading network infrastructure owner and manager, decided to consolidate its zone-based maintenance structure, Electrix was one of a number of companies invited to register interest in 2007.

What followed was an intensive and lengthy process of documentation and planning, encompassing different utility combinations. "During the process, we were looking at electricity, gas and communications, as part of our delivery model," says Robert Ferris, Electrix New Zealand General Manager.

In December 2008, Electrix was awarded the combined service agreement for gas and electricity; a gratifying outcome for the Electrix team, especially since the evaluation focused extensively on non-price attributes.

Vector's David Worsnop, Group General Manager Service Delivery explains that Electrix was chosen after a rigorous and robust process that began 18 months ago. "It was clear early on that Electrix shared many of the same values as Vector, and that it was looking to be a real partner in the process, providing not only commercial, but intellectual value too."

"We were very impressed by Electrix' overall approach - its culture, business processes and practices, and of course, its people," says David Worsnop.

Robert Ferris adds, "We have a very strong collaborative ethos which underpins our commitment to quality and innovation. We believe it is essential for creating a high-performance environment." The collaborative spirit is supported by a series of workshops involving personnel from Vector, Electrix and Northpower (the other service provider) to fine-tune the cultural framework, and ultimately to produce win-win-win outcomes.

He reflects on the maturing nature of the relationship between the companies and concludes, "Electrix is working towards becoming an integral part of the Vector team and its service offering to customers. The new servicing arrangements were put to the test on the electricity network during the recent bad weather, and Electrix' response was very good."

### The Vector service agreement:

- Electricity maintenance across the Northern Zone (Harbour Bridge to Warkworth to West Auckland)
- Gas maintenance contract extends across the whole Vector Network
- Gas distribution for North Island, with eight depots in major centres
- Contract value \$50 million per year.



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## An innovative response

The replacement of a 220kV grid connection cable at Contact Energy's Gas Combined Cycle power station at Stratford, proved to be an interesting assignment earlier this year.

The cable was found to be faulty and needed to be replaced along a length of 500m involving unusually varied and difficult terrain: two bridge crossings, 15 bends as well as numerous elevation changes.

Conventional cable installations methods were precluded as they put too much stress on the cable and the hardware during the pull.

The solution? "A unique route requires a unique method of installation," was the credo. Under Damian Bilbe's project management, the team designed a hybrid method utilising Electrix's dual drum line winch. It provided a synchronized pull on both, the cable nose and the side of the cable, via a bonded winch rope.

Endless engineering calculations, peer reviews and planning paid off in the end. The installation for 1.5km of 220kV 1600sq mm<sup>2</sup> cable was successfully carried out by a 60-strong team; strictly as planned and designed.



## Brewing on a massive scale

Lion Nathan's new brewing complex in South Auckland is quite a sight to behold. As one of New Zealand's largest construction sites (known as "Project Century"), it has more than 400 contractors working feverishly to create a state-of-the-art facility on the 17 hectare site. Seven separate building areas will incorporate manufacturing, brewing, contract bottling, warehousing, research and development, and office facilities. With a total building footprint of 60,000 sqm the facility will centralise all of Lion Nathan's Auckland operations.

The electrical services installations are equally impressive. Electrix was initially brought on board by Lion Nathan to provide the HV reticulation around the site. A massive project in itself, it called for specialist expertise which Electrix delivered. One kilometer of high voltage cabling, eight transformers, three ring main units and five main switchboards now provide the backbone for the site.

Main contractor Mainzeal subsequently also secured Electrix for the remaining electrical installations and low-voltage work which is nearing completion.

The 20-strong Electrix team under the project management of Doug McRobbie and Phil Cadman have been working on this complex installation for 18 months. Electrix also worked closely with Krones AG of Germany to install the electrical and pneumatic controls of the brewing process system.

The biggest challenge has been accommodating the design variations which have developed through the evolution of the various building and process requirements. This extra work was accommodated by a dedicated team, while keeping the project within the strict deadlines. When completed this site will showcase Electrix' experience, skills and dedication. It shows

that the team can "step up to the plate and adapt as necessary without sacrificing quality or timeliness," says Doug.

With all the milestones achieved and the first batches of beer already brewed on site the team is completing the last of the construction phases. Thanks to a very productive and positive working relationship with all the project stakeholders the construction will be complete by early 2011.



Lion Nathan's new facility in South Auckland is taking shape. It will have an annual capacity to produce 180 million litres of beer.

## Electrix expertise shines at Otahuhu Substation

Transpower's Otahuhu substation is a critical link in the delivery of power to parts of Auckland and Northland. It is also notable for its unusual technical layout which has 220kV transmission lines crossing over the 110kV and 220kV switchyards - a feature that largely resulted from upgrades over the years, however is no longer considered desirable.

In order to improve the reliability of the substation, Transpower addressed this design issue and commissioned the construction of a new 220kV switchyard facility within this rather constrained site.

The design response was a challenging switchgear configuration, in addition to 220kV underground cabling in order to avoid undesirable line crossovers. The project called for Gas Insulated Switchgear (GIS) - essential in this environment with its small foot print - and conventional Air Insulated Switchgear (AIS) for the outdoor installations.

With much experience in AIS and 220 kV cable installations, Electrix was brought on board by Areva T&D who secured the project as part of an EPC contract.

Electrix project director, Gavriilo Kovacevic, notes that this project allows Electrix to demonstrate its industry-leading 220kV capability and solid GIS expertise.

"We have a large team of excellent people on site and are well placed to deliver this time-intensive project in close collaboration with Areva and other contractors involved in this big project," says Gavriilo.

Electrix has up to 70 staff on site to provide the necessary manpower for the 220kV cable connection and the GIS and AIS installation.



## Leading the way in innovation and efficiency

Until recently, the 'dead-ending' procedure on strain towers was carried out by linesmen working from cherry-pickers, personnel buckets or platform ladders, neither of which is considered particularly efficient.

As acknowledged industry innovator and early adopter, Electrix has long been seeking to improve the process. When 'working platforms' emerged in the UK, they seemed to be the answer.

However, after extensive research it was concluded that while the concept was suitable, the UK product failed to meet Electrix' expectations.

"Rather than make do with an imperfect solution, we set about developing our own platform and figured we could tailor it to our specific needs," says Electrix' Grant Johnson who managed the process.

After 12 months of modifications, testing, design refinements and field trials, the Electrix Strain Working Platform was unveiled. It was promptly used on the Nga Awa Purua deviation project where it was hailed a huge improvement - and not just in terms of efficiency but also with regards to safety. According to Grant

Johnson the modifications were well worth it. "Our design is much more user-friendly and also affords the flexibility of using the platform on 110kV and 400kV lines alike."

While the platform is believed to be the first of its kind used in New Zealand, it may well follow in the path of other Electrix innovations and become an industry-wide standard.

### Strain dead-ending

The so-called 'dead-ending' of conductors on strain towers is a lengthy procedure. It is carried out at each strain structure and involves the fitting of steel and aluminium sleeves to the conductor. This terminates the conductor onto the cross-arm and allows it to be looped beneath the crossarm via a jumper, so the conductor can connect to the adjacent span.



Electrix' modified strain working platform improves safety and efficiency. Linesmen can now carry out 'dead-ending' from the safety of a suspended platform that is securely anchored to the tower and ground.