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to the Electricity Industry

PSC NEWS

News and Views from the team at PSC

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PSC Assists Transpower New Zealand with Grid Telecommunications & Networking Programme (TNP)

For the last three years, PSC's Wellington-based telecommunications group has been assisting Transpower New Zealand with the establishment of a new, mostly fibre-based, national broadband telecommunications network, TransGO.

Transpower is replacing its existing legacy equipment with a high capacity network that has high resilience designed in. The new TransGO network will enable the introduction of modern IP based technologies in a manner that fits within Transpower's overall secure IP architecture. It also caters for the numerous traditional channel based connections (also known as TDM services in the trade) that provide teleprotection services.

For the immediate future TransGO is also carrying legacy SCADA services but these are expected to transition to IP in the next SCADA generation. The network equipment is interconnected by approximately 6000 km of fibre (mostly leased by Transpower) around New Zealand. An important objective of the upgrade is a reduction in the number of technologies and makes of equipment that Transpower currently manage in the network, as well as improving reliability and reducing operational costs.

As part of this complex Transpower programme, PSC's consultants have played a key role working within the Transpower Telecommunications and Networking Programme (TNP) team and alongside Alcatel-Lucent, Transfield, UGL and a number of other design consultants.

Early in the project, PSC's engineers Ross Murdoch, John Grace and Karyn McLachlan were involved in the development of specifications to prepare the sites for the SDH transmission equipment. This required the development of the generalised site design guides that are now the basis of specific site designs. On site route and equipment diversity requirements are a key part of these site designs. The work included the development of power supply design standards and the main fibre distribution frame (MFDF) standards. They designed the first set of "site make ready" installations linking 10 substations in the North Island from Hamilton to Bunnythorpe (380km).

Stewart Drake and Karyn McLachlan currently provide Engineer to Contract Services for the Site Make Ready component of the Transpower network upgrade. This includes working with the installation contractors to provide and install racks to house the SDH FOTS equipment, fibre terminations (MFDF), power supplies and batteries. They have also assisted with the planning, splicing and installation of inter-site fibre and in achieving diverse fibre cable routes within the substation. Ross Jones is currently assisting Transpower with project management

services as part of the TNP programme team and Ross Murdoch with migration planning (where current grid services will be transferred to the new TransGO network).

PSC has been pleased to assist Transpower with this complex programme and looks forward to its successful completion.

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PSC signals its commitment

PSC recently signaled its commitment to electrical engineering by taking up the major sponsorship of the annual Electricity Engineers' Association conference in New Zealand

We are passionate about the electricity industry and see this sponsorship as an ideal opportunity to signal our commitment to the electrical engineering discipline in New Zealand.

PSC's presence in five countries across the globe has enabled this opportunity.

It is this emerging presence as a global company that has given the critical mass to be able to support events of this scale. It also enables us to bring knowledge from outside the borders of New Zealand and introduce it to the New Zealand industry. As a result our experts will be presenting some interesting technical papers at the conference.

EEA Conference



This year's conference theme 'Resilient, Intelligent & Sustainable Electricity' is another reason PSC wanted to be the major sponsor of the event. With operations in markets such as the USA this theme, often espoused with such phrases as 'Smart Grid', is one we are increasingly dealing with in the real world.

We are heavily involved in the Smart Grid challenge. As an industry specialist, our global knowledge is helping bring

clarity for customers around these kinds of issues and their strategic implications. We expect the conference will be a further opportunity to enhance industry connections and knowledge in this area.

The conference is set to run 23 / 24 June at Sky City in Auckland and is expected to attract six hundred delegates from across the New Zealand and Australian industries.

PSC Passionate about Power.

Southern Company IDMS Project

PSC is pleased to announce that it is working with Southern Company in Birmingham, Alabama. PSC is assisting Southern Company with the implementation of Alstom distribution SCADA systems for three of the four operating companies of Southern Company.

The three operating companies are Alabama Power, Gulf Power and Mississippi Power. In assisting Alabama Power, PSC is supporting the testing and validation of the Integrated Distribution Management System (IDMS) from Alstom. The IDMS is a seamless integration of SCADA, DMS, Switching Management and Outage Management functions as one application suite. The IDMS solution is a critical component to the Southern Company smart grid initiative providing vulnerability prevention, synchronization of power flow among the distribution lines, and outage isolation.

The highly skilled team of engineers at Southern Company determined they needed additional resources to meet their business objectives. The resources need to be added quickly without "training and explaining" as Robbie Benton of Southern explained.

Southern Company brought PSC in to help with these additional resource needs. The agreed solution engages two of PSC's senior engineers immediately for a few months and then adds two local resources that will be engaged long term at Southern Company. The senior resources of PSC will provide the "training and explaining" to the additional PSC engineers. This solution achieves a number of benefits to Southern Company including:

- Highly skilled domain experts deployed to site very quickly to accelerate the project.
- Recruitment and training for longer term PSC engineers with limited overhead on Southern Company's engineers.
- Reduced risk to the project schedule

- Assist in meeting the corporate objectives of environmental benefits, reduced operational costs and increased reliability of the power grid which includes handling of distributed resources like electric vehicles.

Simon Bowen, the Manager of the projects at Southern Company was pleased with the approach. "We know from experience that finding skilled EMS and DMS engineers can be very hard. Within a few weeks of agreeing to the approach with PSC we had two senior engineers on site to give the project a turbo boost and we have a plan in place to address the longer term requirements".

Renewable Demand Response™ Utilizing A Real-Time Renewable Signal

GridMobility (<http://www.gridmobility.com/partnersnews/>) and Power Systems Consultants are conducting a Renewable Demand Response™ (RDR) program in WA State that for the first time enables consumers to exercise their preference for using renewable-generated electricity.



The key objectives of the project are:

1. Implement an automated DR system to selectively manage demand in direct correlation with the availability of intermittent renewable resources.
2. Validate the optimal control and shedding strategies that can be automated for seasonal intermittent renewable events, power outages, and control system peaking events.
3. Confirm the economic and socio-economic factors that influence customer participation that will impact wide-scale RDR™ deployment.

Utilizing the *Color of the Electron™* Demand Response server, this program consists of homes equipped with either an internet or cellular network configured for RDR signal delivery to their water heaters. The system can be used in conjunction with smart meters, but does not require smart meters. The installed hardware provides bi-directional communication signals for load control and device status. The control logic essentially tracks the forecasted and real time intermittent renewable supply, or wind generation curve. The system is designed to operate in a "set it and forget it" mode

and does not require user intervention. Each home is able to configure, manage, and track their power use and renewable content via a secure web site. The same system provides traditional DR capabilities of peak reduction through load shifting.

Future application of the solution include large scale residential deployment, commercial and industrial deployment, Electric Vehicle(EV) charging systems and secure facilities such as military bases.

Congratulations to Warren Young and Graham Long

PSC is pleased to congratulate Warren Young and Graham Long on completing 10 years of excellent service with PSC. Warren Young is the Manager of the Control and Market Systems group in Australia and joined PSC as a SCADA support engineer at Transpower's control centre in Hamilton New Zealand. He then moved to Sydney to provide SCADA support services to NEMMCO (now AEMO) before taking up the position of Control and Market Systems Manager. Warren has extensive experience in the support of Alstom Grid SCADA/EMS systems, control & data centre infrastructure and ICCP connections.

Graham Long is the Manager of PSC's Control and Market Systems group in New Zealand, with responsibility for PSC's support and development contracts for Electricity Market Systems in New Zealand and Singapore, and SCADA/EMS systems in the Generation area. Two of Graham's recent projects include the management of on-site teams for system integration of two major projects for national grid operator Transpower: the Market System replacement project and the SCADA/EMS replacement project.



Warren Young, PSC Director & Chairman Tony Armstrong and Graham Long

The PSC Management team congratulates Warren and Graham on their excellent service with PSC and their dedication and commitment over the past 10 years.

Sarah Leask celebrates 10 years of Excellent Service

Sarah Leask is a SCADA Engineer for PSC and recently celebrated 10 years of excellent service with the company. Since joining PSC, Sarah has been involved in a large number of projects and technical roles including SCADA support and upgrade projects, market systems projects and HVDC commissioning.

Sarah is currently assisting Transpower New Zealand with the HVDC Pole 3 System Operator tools project and has extensive knowledge and experience in the testing and application design required for this project. The PSC Management team congratulates Sarah for the excellent effort and results she has achieved over the past 10 years.



Sarah Leask and Tony Armstrong
PSC Group Director & Chairman

PSC Welcomes New Staff

PSC welcomes new staff, and is continuing its recruitment of industry leading people to meet the growing demand for services in the specialist areas that we support.

Arthur Vernon

Arthur Vernon has joined PSC Australia as an IT Consultant (J2EE, Java and Oracle). He has over 25 years experience in Information Technology within both public and private sectors and specialises in the design, development and support of Java and J2EE applications. Arthur holds a Bachelor of Business degree (Information Processing) and will be working on projects for our Western Australian clients.



Paul Willems

Paul Willems has joined PSC Australia as an IT Consultant (J2EE, Java and Oracle). He has 10 years commercial experience and is proficient in many areas of software design and implementation with a primary focus on J2EE web solution development. He has a vast amount of knowledge in the mining, financial and insurance industries. Paul holds a B.Sc. in Computer Science and will be working on projects for our Western Australian clients.



Gary Wade

Gary Wade has joined PSC Australia as an IT Consultant (J2EE, Java and Oracle). He has 15 years experience in the Information Technology industry. This includes 9 years within Java environments which included a significant period working as a Senior Java Developer within the finance and insurance industries. Gary is a Sun Certified Java Programmer and will be assisting our clients in Western Australia with project support services.



Soumya Bhattacharya

Soumya Bhattacharya has joined PSC Australia as a Senior Transmission Lines Engineer and has 16 years experience as a structural designer for transmission line, tower and pole projects. He has completed senior roles in design teams for transmission line projects up to 400kV in India, Saudi Arabia and most recently in Western Australia. These roles have included detailed design, project management, design reviews and the preparation of technical specifications. Soumya will be based in our Adelaide office in Australia.



Tom Bobrowski

Tom Bobrowski has joined the PSC team in Seattle and brings over 30 years of automation industry experience to PSC. Tom's first assignment takes him to Birmingham Alabama where he will be assisting Southern Company. Prior to joining PSC Tom worked with several organizations including Consolidated Edison of New York (CONED), California Department of Water and Power (DWR), EBASCO, and Alstom Grid. Tom has firsthand experience with many automation technologies used in both electric and gas utility operations. He has worked with Boeing EMS technology, Alstom Grid EMS technology, GE XA/21 technology and is proficient in communications technology such as InterSite Data and RTU protocols.



John Everaarts

John Everaarts has joined PSC New Zealand as a Senior Control Systems Engineer. John has experience in the high voltage electricity industry in the commissioning and maintenance of substation control and protection equipment including extensive expertise in RTU configuration, commissioning and support. John will be working in the Controls and Market Systems Group supporting our clients in New Zealand.



JoEe Liew

JoEe Liew has joined PSC Australia as a SCADA/EMS Engineer and has over 7 years experience working on the design, development, implementation, testing and commissioning of SCADA and control systems for electricity utilities and energy companies in Malaysia. JoEe has a Bachelor of Electrical Power Engineering degree and will be supporting our clients in South Australia.



Johan Hendriks

Johan Hendriks has joined PSC New Zealand as a Senior Electrical Engineer. Johan has a Bachelor of Electrical Engineering Degree from the University of Canterbury and has over 20 years experience in the electricity distribution and generation industries. This includes electrical engineering design, project management and asset management through to the installation and commissioning of high voltage AC systems with a specialisation in power transformers. Johan will be working in the PSC New Zealand Engineering group.

