



Specialist Consultants
to the Electricity Industry

PSC NEWS

News and Views from the team at PSC

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PSC Assists with KiwiRail Upgrades

KiwiRail (the New Zealand Railways Corporation) owns and operates the New Zealand railway network. Each week, KiwiRail's National Train Control Centre is responsible for monitoring and controlling the movement of approximately 900 freight trains, 52 inter-city passenger trains, 2,200 suburban passenger services in Wellington and 1,500 suburban passenger services in Auckland.

The rail network controllers rely on train control and signalling systems to monitor where the trains are and to change signals and points to allow the trains to run efficiently and safely to their destinations.

PSC is proud to have been providing KiwiRail with technical and software support for their train control and signalling SCADA (Supervisory Control and Data Acquisition) systems, located in Wellington and Auckland, since 2004.

KiwiRail has been undertaking some major projects to improve the efficiency of the rail network. In Auckland, the metro network is being upgraded and electrification introduced. In Wellington, major efficiency upgrades are in progress and the electrification is being extended. PSC has been assisting with various aspects of these projects.

During the past year, PSC has been working on the implementation of a Traction Control SCADA system for the Wellington

electrification area as part of the Wellington Region Rail Programme. Control and Market Systems team members Keith Fisk, Ross Gaspard and Simon Lister worked with KiwiRail to develop the conceptual design for the SCADA master station and RTUs (Remote Terminal Units). They were subsequently joined by Naresh Kumar, James Miele and Roger Ward to implement the system working as sub-contractors to the SCADA system and RTU vendors and to KiwiRail for project managing the installation of new RTUs at the existing traction substations in Wellington.

PSC has also assisted KiwiRail with interfacing the train control and signalling SCADA systems to new interlocking equipment and made modifications to these systems to implement track and signalling upgrades made in Wellington and Newmarket, in Auckland, over recent months. David Gaspard joined the team over the summer to help implement the database and display changes required for these upgrades.

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National Train Control Centre operations



SCADA & Controls Close to our Heart

Although PSC may have originally grown out of HVDC, as was explained in the last issue of PSC News, it was PSC's passion for SCADA/EMS and Control Systems that really drove our initial growth beyond that fledgling company of 1995.

From very early days PSC has had a team supporting and maintaining Transpower's SCADA/EMS system in New Zealand, and we have then gone on to develop our operations in Australia, New Zealand and USA. You need to be passionate about systems to willingly provide call-out support at all hours day and night, but that's what our people do. And, knowing that electric power is an absolutely essential lifeblood for modern society, that passion extends to getting the very best out of the systems to automate and control that critical infrastructure.

The thing about having a core business in supporting SCADA systems is that it gives you a real inside knowledge of the systems and also a long-established relationship with the manufacturers of these systems and their key people. These relationships allow PSC to keep our key experts at the cutting edge of new developments in the SCADA and Controls areas, even providing resources to independently test manufacturers' new products before release, and this depth of experience provides a major underpinning of our success in upgrades and development projects.

PSC's SCADA and Controls people now have a strong client base within transmission utilities, distribution utilities, generation, system vendors, and even railway systems, across the Australian, New Zealand and USA markets. We work with SCADA, historians (such as PI), high-level applications (eg. for transmission, generation, distribution), networking, RTUs, distributed control (eg. IEC 61850), PLCs and embedded logic systems.

We work with big systems and tiny systems, and our services cover all phases of projects... from investigation and business case preparation, through conceptual design & specification, to system staging & configuration, testing, documentation & training, commissioning, warranty support and finally long-term support. All these are underpinned by PSC's project management and quality assurance disciplines. It's our passion.

PSC SCADA Timeline

1999	Transpower SCADA/EMS Support NEMMCO EMS Support
2000	ESCA (AREVA) Support
2001	Transpower SCADA Replacement
2003	SP AusNet EMP Upgrade
2004	Vector SCADA/DMS Support KiwiRail SCADA Support Westpower SCADA Support
2005	ElectraNet EMP Upgrade Northpower SCADA Support Unison SCADA Support Westpower SCADA Upgrade
2006	Powerlink SCADA Support Vector SCADA Upgrade
2007	ElectraNet SCADA Support SP AusNet SCADA Support ISO New England EMS Upgrade Support
2008	Northpower SCADA Upgrade Transpower SCADA/EMS Upgrade
2009	Transpower System Modelling and Support KiwiRail Train Control and signalling SCADA Projects Western Power OSIsoft PI Project Support ElectraNet EMS Upgrade Siemens Industry Railway Operations Control Centre, PM Support PG&E Historian Project Powerlink EMS Upgrade Support Florida Power & Light EMS Upgrade Project Support
2010	KiwiRail Traction Control SCADA Project Unison SCADA Upgrade PJM Multi Control Centre Project, Program Support AESO EMS Support

PSC USA on-site at AESO

PSC USA is proud to assist the Alberta Electric System Operator (AESO) based in Calgary, Alberta, Canada with preparations for the ongoing operations and support of its new AREVA Energy Management System.

The key members of the PSC team working with the AESO on site are Patrick Carroll and Jack Homeyer, both seasoned EMS engineers with over 50 years of utility experience and over 30 years AREVA EMS experience between them. Patrick has been onsite since September last year just prior to the go live date of the AESO's new **e-terra**platform 2.5 Energy Management System. Jack joined him just before Christmas to ensure a continuity of service during the Christmas and New Year period and to assist with the growing process development needs.



Jack Homeyer (PSC), Mayank Pandya (AESO), Patrick Carroll (PSC), Jack Kelly (AESO).

The PSC team has been working with the AESO's IT and EMS groups assisting them with:

- Delivering to the following ITIL Process Objectives: Capacity Management, Availability Management, Continuity Management, and Security Management.
- Development of documents and procedures to support day to day operations, Incident and Problem Management.
- Mentoring the AESO's staff on the

maintenance and administration of the EMS and associated infrastructure.

- Provision of assistance to the AESO's staff to prepare for the successful go live of their new EMS.

According to Mayank Pandya, the AESO's IT Operations Manager responsible for the day to day operation of the EMS, "The PSC team has been a great help to the AESO as they prepare for the ongoing day to day operations of the EMS. The AESO is very

focused on developing clear, documented procedures for all their processes and Patrick and Jack's experience has been very valuable in assisting in the development of these procedures."

PSC USA is very pleased to have the opportunity to work with the AESO on this important project and we have been impressed with AESO's approach to risk management in the operation of their critical systems.

PSC completes AEMO Report network extensions to remote areas

Subsequent to a competitive selection process, PSC was very pleased to recently complete an important package of work for the Australian Energy Market Operator (AEMO) concerning planning considerations and technical options for long distance transmission line extensions to enable the potential connection of "remote" renewable energy resources to the Australian shared transmission network.

The first part of this work package provided

a list of planning considerations for the connection of generation over long distances while the second part involved a case study looking at various options for connecting large scale (up to 5000MW) geothermal or "hot rock" baseload generation at Innamincka in the north-east region of South Australia.

PSC's Director of System Studies Dr Ranil de Silva and Andrew Robbie, a senior power systems engineer based in our Tasmanian

office, completed this work package over a short period of time to meet the client's timing requirements. Further details of the report and copies of both parts of the work package are available via the AEMO website as per the link below:

<http://www.aemo.com.au/planning/nera.html>

PSC has been providing support and project services to AEMO (formerly NEMMCO and other businesses) for over 10 years in various roles and looks forward to working with AEMO going forward.

PSC Indoor Cricket Team in Final

The PSC Indoor Cricket team made the major final for their summer league division this year which was held in March. The team played well and had a narrow loss in a very competitive final game of the season. Congratulations goes to the team and their supporters for another successful year.



PSC Welcomes New Staff



Jeff Shandorf

Jeff Shandorf has joined PSC USA as a Senior Software Developer in the SCADA / EMS area. He is a graduate of Winona State University in Minnesota (1995) with a BA in Mathematics and a BS in Computer Science. His first job was with Siemens Power Systems Control in Minneapolis.

He next spent several years as a systems analyst with various organizations before returning to Siemens as a Senior Software Engineer working in the EMS product development arena. We are very pleased Jeff has now joined PSC USA, where his first assignment is helping PJM install their new multi – control centre system in the Philadelphia area.



Yi Chen

Yi Chen has joined PSC Australia as a SCADA Engineer. Yi specialises in the design, development, implementation, testing and commissioning of SCADA and control systems. This is across a broad range of industries including manufacturing, science and infrastructure organisations. He started his career as an

Electrical Power Systems Engineer and has experience with support for energy management systems. Yi will be based in our Adelaide office supporting our clients in South Australia.

Les Brand – Engineering Manager for PSC Australia

PSC Australia is pleased to welcome Les Brand as Electrical Engineering Manager. His experience in the high voltage electricity industry has encompassed a broad range of roles ranging from the electrical engineering design, project management, installation and commissioning of high voltage AC and DC transmission systems, through to senior management within the power systems industry throughout Australia, Asia and the United States.

Les has a Bachelor of Engineering (Electrical) degree and started his career in the mining industry in Western Australia. He then spent several years in key roles for the installation of several HVDC projects in Australia including the Directlink (between NSW and QLD), Murraylink (between VIC and SA) and Basslink (between VIC and Tasmania) HVDC projects. Between 2004 and 2008, Les held senior management positions with PB Power as the HV Networks Group Manager in

Brisbane and the Director of Power Networks and Renewable Energy in Singapore. In these roles, Les developed an expanding team of professionals and lead the teams on significant projects throughout Australia and Asia.

His most recent role has been as a Technical Advisor, Submarine Cable Installation Manager and as Operations Manager for the Trans Bay Cable project, a 400MW



PSC Electrical Engineering Manager Les Brand

HVDC link from Pittsburg to San Francisco which recently completed its commissioning program. In joining PSC, Les will work closely with our clients to assist them with their engineering projects. Les can be contacted at les.brand@pscconsulting.com

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