



Specialist Consultants
to the Electricity Industry

PSC NEWS

News and Views from the team at PSC

Issue 39 | July 2014

PSC and Genassure Partnership - Generator Testing & Modelling

PSC and Genassure have partnered together to work on several projects for clients in Australia and New Zealand over the past two years. The work has covered generator testing, governor and generator automatic voltage regulator (AVR) compliance testing, dynamics simulation model development and verification.

PSC's power networks team brings extensive and specialist experience in plant simulation modelling capability and expertise. Our powerful combination of engineering knowledge combined with our experience and intimate understanding of network studies tools makes us the partner of choice for companies seeking an expert.

Genassure Ltd are a New Zealand based company that provide specialist test engineering and data acquisition expertise, and generator AVR and governor testing. Genassure developed the genassure[®] test set that was originally developed to automate generator control system testing in response to regulatory changes in the

New Zealand energy market. The system overcomes problems associated with the existing manual test methods resulting in consistent and reliable results which are available in real-time.

Genassure's standard test portfolio includes step response, stability, deadband and reserve testing on a generator's Governor system, and step response, frequency response, power system stabiliser signature, over- and under-excitation limiter testing on a generator's Excitation system (specifically the Automatic Voltage Regulator). "The genassure[®] technology has proven to be extremely versatile," said Peter Brown, Genassure Managing Director.

By using real data provided by Genassure that is clearly presented in real-time reports, PSC has been able to provide and then improve and validate the dynamics simulation modelling required by the client.

With several projects successfully completed, PSC and Genassure are able to provide a highly complementary service offering that includes a complete modelling and testing solution for our clients.

For more information, please contact Les Brand, PSC General Manager Power Networks and HVDC, Australia & Asia
les.brand@pscconsulting.com

ALSO IN THIS ISSUE:

Page 2

- Markets and Applications

Page 3

- PSC provides Project Services to Puget Sound Energy
- Operational Technology – SCADA, Control and Automation Support

Page 4

- Chris Collie-Holmes celebrates 10 years of excellent service with PSC
- John Grace celebrates 10 years of excellent service with PSC



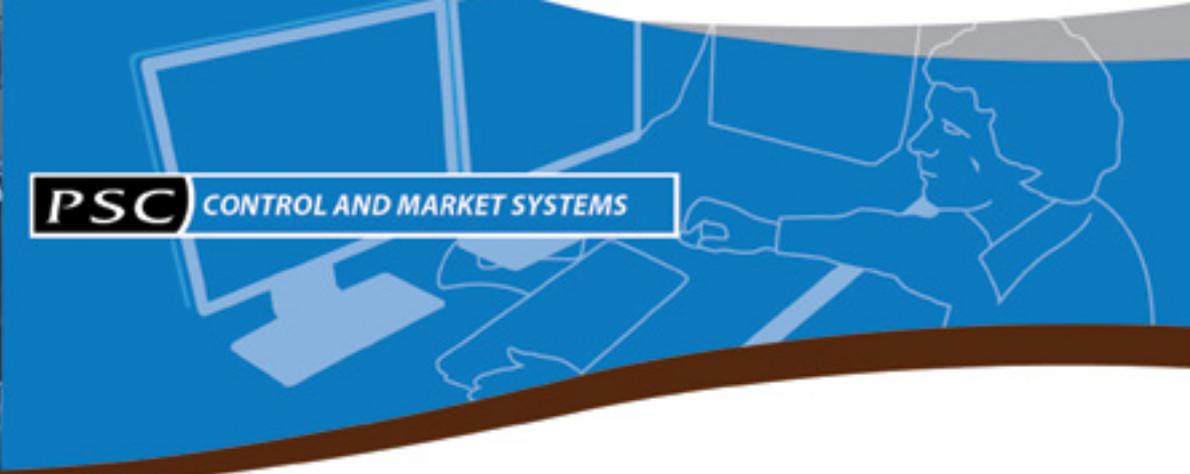
PSC NEW ZEALAND
Phone: +64-4-232 7680
Fax: +64-4-232 7682

PSC AUSTRALIA
Phone: +61 1300 933 632
Fax: +61-7-3252 8640

PSC NORTH AMERICA
Phone: +1-425-822 8489
Fax: +1-425-822 3520

PSC ASIA
Phone: +65-9128 1830

PSC EUROPE
Phone: +46-767-690 825



Markets and Applications

Introduction

PSC is a leading market systems and applications service organisation with support and project teams currently working across multiple clients. Our teams have many years of international experience in supporting, enhancing and upgrading custom and commercial energy market systems.

PSC works closely with market operators and has built an excellent record for delivering and supporting these specialised systems. Our teams offer a unique combination of skill sets, encompassing knowledge of power systems engineering, power flows, operational research and information technology.

Our Approach

PSC is committed to delivering value to our clients through enduring and sustainable relationships. PSC works collegially with our clients, blending seamlessly with our client's teams. We often represent our clients on market systems projects, working closely with their vendors to ensure successful project delivery.

PSC has a non-proprietary and neutral approach to market systems, which means we do not own or sell software. This places us in a unique position to offer global advice and support services on any market system without favour or bias.

As we often make enhancements to market systems which are fed back to the vendor as improvements, we continue to maintain strong relationships with all market systems vendors.

Key Capabilities

PSC has a dedicated team with extensive industry experience, providing strategic advice and delivering solutions that are tailored to our client's business needs.

Our core market systems capabilities are:

- PSC are vendor neutral and technology agnostic. Our advice is based upon the team's practical experience of "tried and proven" solutions.
- PSC are a world leader in providing independent specialist energy management and market systems support, maintenance and upgrade services with teams working for numerous Market and System Operators (ISOs). Our services include Market systems software upgrades and technology refreshes, as well as customisation and integration of commercial vendor product solutions.
- PSC are specialist Market Clearing Engine (MCE) support providers for all commercial and custom built market clearing solvers (covering all aspects of Scheduling, Pricing and Dispatch).
- PSC provides advice to our clients in the areas of market systems strategy and evolution. This advice is derived from our mix of market systems expertise and practical experience.
- PSC has extensive experience in the design of wholesale electricity markets, be that from first principals with an initial market design or as part of an evolutionary design process.
- PSC are specialists in the "end-to-end" delivery of high quality, robust and flexible market systems and energy applications. Our services cover the entire application lifecycle, from business analysis, software development, systems integration, test, support and maintenance.

PSC provides Project Services to Puget Sound Energy

Puget Sound Energy supplies more than 1 million electricity customers and more than 770,000 natural gas customers, with a service area of 6,000 square miles primarily in the Puget Sound region of Western Washington.

PSC is providing project management services for projects that will upgrade Puget Sound Energy's electric and gas PI systems, upgrade its gas SCADA system, and add visualization features to the EMS.

As an independent consulting firm, PSC is able to provide services across a variety of technologies on a project-by-project basis. The customer-oriented approach of PSC's business model provides valuable services to clients like Puget Sound Energy, whose systems utilize multiple vendor platforms.

The PI and SCADA upgrades include new architecture, hardware, operating systems and software versions in order to increase reliability, improve security, reduce risk, and diminish the need for maintenance and support. The new capabilities will enable future projects to deliver further business benefits.

The PI projects will implement OSIsoft's



Left to Right: Ken Pratt - Director OT, PSC-NA; George Hendrickson - Manager, Energy Control Systems, Puget Sound Energy; Ellis Gentle - Principal Consultant, PSC-NA; Frank Kendall - Principal Consultant, PSC-NA

high availability architecture and add PI Asset Framework (AF), PI Notifications and PI Coresight capability. The gas SCADA project will implement the latest Schneider gas SCADA software and add Schneider Gas Measurement and Analysis System (GMAS) capability. The electric PI project is due for completion in 2014, with the gas PI and SCADA systems slated for a 2015 integration.

The EMS visualization project will provide a geographical overview of the electric network with real-time representations of results from the network security

applications, including state estimation and contingency analysis, greatly improving system operators' situational awareness. The visualization project, which will utilize e-terravision™, is scheduled to go live in 2014.

PSC's project management services are provided by Ellis Gentle and Frank Kendall – both seasoned professionals in the energy control systems environment, according to Ken Pratt, PSC North America's Director of Operational Technologies.

Operational Technology – SCADA, Control and Automation Support

PSC's mission to become one of the leading service providers in the Electricity Industry has seen us refocus our attention onto key areas of specialisation in order to highlight and further promote PSC's excellence in these key areas.

The Operational Technology group has been formed to recognise our specialisation and excellence in a range of technologies that typically support operation of large electrical systems (generation, transmission and distribution).

PSC has long been recognised for its strengths in SCADA, control and automation, networks and communications and has a proven track record to support this capability having worked with a number of large industry clients worldwide.

PSC has recently been working with a key client in the generation sector where PSC's knowledge and experience has been used to support the client through a large SCADA upgrade project by providing the services of system integrator.

In 2013 PSC acquired a contract to provide support for Meridian Energy's Generation Control System SCADA (GCS) and PLC control and automation systems. These systems are critical to the operation of the client's generation plant and are very tightly coupled. PSC has the experience and capability to provide ongoing support for these systems and continues to operate a support base in Twizel providing key resources to Meridian for round the clock support.

The critical nature of the generation industry requires in-depth and specialist knowledge of key generation assets and their operation. PSC specialisation with PLC systems lies in the application of hardware and development of software solutions for the control, automation and monitoring of generation plant and further to the integration with high level operational systems such as the SCADA. PSC staff have particular experience in the application and integration of Rockwell PLC technology for such systems.

For more information, please contact Barry Ireland – Control and Automation Manager - barry.ireland@pscconsulting.com

Chris Collie-Holmes celebrates 10 years of excellent service with PSC

PSC would like to congratulate Chris Collie-Holmes who recently completed 10 years of excellent service with the company. Chris joined PSC as the Engineering Manager for PSC Australia in 2004 and one of his first projects was completing the Project Director duties for the replacement of the 220kV Bus B at the George Town substation in Tasmania for Transend Networks in conjunction with Ascension Consulting from Hobart.

In 2007, Chris moved back to New Zealand and carried out a number of tasks for Transpower New Zealand, mostly focussing on the North Island Grid Upgrade Project (NIGUP). He used his system operations, engineering and project management experience to complete the role of commissioning manager for the NIGUP in 2012. Chris



PSC Director and Chairman Tony Armstrong (left) congratulates Chris Collie-Holmes

also assisted Transpower with the NAaN project and the Haywards Condenser refurbishment project.

Chris is the PSC New Zealand General Manager Power Networks.

PSC congratulates Chris on achieving this important milestone and for his excellent work in assisting our clients with many of their important projects over the past 10 years.

John Grace celebrates 10 years of excellent service with PSC

John Grace is a Senior Telecommunications Engineer and has recently completed 10 years of excellent service with PSC. Since joining PSC, John has worked on a large number of projects for our clients in Australia and New Zealand. When he joined PSC in 2004, John managed the PSC telecommunications design team for the Te Kowhai substation project, a new 220kV/33kV substation in the Hamilton region of New Zealand.

John is very experienced in all aspects of telecommunications design, specification, installation and commissioning for the high voltage electricity industry. His recent projects include the Transpower telecommunications network site make ready and protection service migration,



Andrew Dunn PSC Australia General Manager Operational Technologies (right) congratulates John Grace.

and investigation and detailed design for new and existing substation development projects for ElectraNet in South Australia.

The PSC Management team congratulates John on his excellent service with PSC and his outstanding work record over the past 10 years.