



Specialist Consultants
to the Electricity Industry

PSC NEWS

Helping our clients power the world



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AERIAL LASER SURVEY (ALS)

PSC in partnership with Opten, the leading ALS service provider, has been successfully awarded an aerial laser services contract for Transpower in New Zealand. This contract follows on from PSC's ongoing 12 year involvement in aerial laser survey technology and data services delivered for a range of clients.

Aerial laser surveying of transmission lines is conducted by a helicopter fitted with a high accuracy laser scanning system. The laser scans a swath under the helicopter's flight path, detecting conductors, towers, the ground surface, and other features such as roads, buildings and vegetation. Photo systems are used to supply imagery for object identification and as an accurate record at date of survey. GPS receivers are placed strategically along the route to provide differential GPS for accurate helicopter positioning. Weather stations are also placed in the field to enable accurate modelling by calculating the conductor temperature at time of survey. All this data enables the creation of accurate PLS-CADD

models of the surveyed transmission lines. This in turn provides valuable information to enable asset owners to manage their assets including looking at potential threats to clearance, reducing fire risk, capacity up-rating studies and/or new build activities for future development.

Transpower New Zealand 2015 survey

The survey stage for Transpower's 2015 scope has just been successfully completed. The latest generation Optech Orion scanner was used from a helicopter platform for the work. This system and configuration is used as it enables high quality pickup of small wires.

continued on page 2.

ALSO IN THIS ISSUE:

PAGE 2

- ▶ PSC Shines in the Spotlight at Smart Grid Consumer Collaborative

PAGE 3

- ▶ PSC Provides Improvements to Grant County PUD Balancing Authority
- ▶ Ross Murdoch and Stewart Drake celebrate 10 years of excellent service with PSC

PAGE 4

- ▶ PSC Welcomes New Staff





ALS Base Station

continued from page 1.

While small wire pickup is not an issue on the larger transmission line conductors themselves, it is very important to the pickup of the smaller undercrossing lines and other small objects below.

1400 km of transmission line survey have been completed, along with a variety of small area topographical surveys. A combined GPS and GLONASS positioning approach has been used to provide maximum positioning accuracy and availability. Along with the LiDAR and positioning systems, two photo systems were onboard to supply high quality imagery, and ground weather stations placed by New Zealand's National Institute of Water and Atmospheric Research (NIWA) provided the weather data input for the metrological modelling used for conductor temperature calculations.

Stage two of the project is now underway, with detailed data processing to produce the final PLS-CADD models required by the client, along with orthorectified photos and other imagery. An important part of the project deliverables are vegetation clearance reports used by the line owner to identify and manage the risk posed by vegetation near to their lines.

PSC's Transmission Line Services

Along with its aerial laser surveying services, PSC is able to offer a full range of transmission line engineering services using the latest line modelling and engineering tools.

PSC SHINES IN THE SPOTLIGHT AT SMART GRID CONSUMER COLLABORATIVE

PSC was the star of the SGCC's *Member Spotlight* this January, receiving honors for its commitment and contribution to a smarter grid.

The Smart Grid Consumer Collaborative is a nonprofit organization that works to learn the wants and needs of energy consumers in the United States, encourage the collaborative sharing of best practices in consumer engagement among industry stakeholders, and educate the public about the benefits of the smart grid.

2015 marks the second consecutive year PSC has sponsored the SGCC Consumer Symposium, as part of a larger commitment to the innovation and development of the smart grid.

PSC is engaged in a variety of smart grid projects, and employs a unique mix of partnerships to study grid operations. PSC worked with Pacific Northwest National Laboratory (PNNL) as part of the Maui Smart Grid Demonstration Project, helping to examine the effects of smart grid technologies like solar PV, electric vehicles, and micro Distribution Management Systems.

PSC provides North American grid operators with innovative system upgrade and installation solutions, positioning their Advanced Control Centers for a smarter and more reliable future.

A screenshot of the Smart Grid Consumer Collaborative website. The header includes the logo and navigation links: TOPICS, RESEARCH, PRESS, ABOUT, CONTACT, LOG IN. The main content area features a 'Member Spotlight' section for Power Systems Consultants, Inc. (PSC). The text reads: 'Member Spotlight: Power Systems Consultants, Inc.' followed by 'Member Spotlight' in large yellow letters. Below this is a paragraph: 'In 2015, SGCC will be recognizing a member each month, providing an organizational profile and highlighting the member's accomplishments and output in the smart grid space. Order of recognition is random and all full and affiliate members will receive a spotlight.' The PSC logo is shown, along with the tagline 'Specialist Consultants to the Electricity Industry'. A quote follows: '"Helping Our Clients Power the World" Power Systems Consultants (PSC) is an independent global provider of solutions and support to the electricity industry. Their mission is to help clients power the world through objective, unique services and a wide-range of technical expertise. PSC is a trusted advisor to the electricity industry, with a reputation for delivering effective solutions and enduring support. Major electricity transmission organizations, generators, market operators, and distribution companies worldwide turn to PSC for independent advice and services that span from project consulting assignments to long term support contracts.' At the bottom, there is an image of a person in a dark suit talking on a mobile phone, with a city skyline and data charts visible in the background.

PSC PROVIDES IMPROVEMENTS TO GRANT COUNTY PUD BALANCING AUTHORITY

Working closely with the Grant County Public Utility District (GCPUD) management and technical team, PSC provided consulting services to assist Grant County in the redesign of the Balancing Authority (BA) function. Based on Western Electricity Coordinating Council (WECC) monitoring and operating requirements, significant revisions were made to the GCPUD Reserve Monitor function. PSC is currently assisting with changes to position GCPUD to adopt WECC Reliability Based Controls (RBC).

By clearly separating the BA function from the Mid-C function, the restructure project has optimized GCPUD's process in the monitoring of Mid-Columbia hydro operations. When the BA restructure uncovered areas for improvement, PSC helped bring consistency to the way in which the MID-C function was represented in the EMS systems of the eight other nonfederal Mid-C participants.

As a Balancing Authority within the WECC, managing and maintaining reliability is one of Grant County PUD's key responsibilities. GCPUD displayed confidence in PSC's deep knowledge of EMS applications, contracting PSC staff to assist with improvements to the Balancing Authority functions that would enable GCPUD to more effectively enhance the policies, procedures and tools that support regional reliability – a decision that paid off, as the Balancing Authority function went live smoothly and without any impact on operations.

PSC's contributions to the BA function redesign have helped to ensure that operator training and practices are consistent with industry best practice. PSC also improved system ease-of-use for GCPUD operators by assisting with the update of all custom displays and navigation, which led to the development of several entirely new displays.

PSC coordinated with GCPUD stakeholders to design wholly new reserve monitor calculations and displays, ensuring clarity and concision of information for all parties.

Grant County Public Utility District (PUD) services over 47,000 customers in the largely agricultural region of central Washington State. The utility owns and operates the Priest Rapids Project on the Columbia River, comprised of Priest Rapids and Wanapum dams producing 2,000 megawatts of clean and renewable electricity. Sharing this electric power with 23 Northwest utilities serving millions of customers, Grant County PUD is responsible for the Balancing Authority function as well as scheduling of the Mid-Columbia river projects – 7 hydroelectric dams in total.

PSC continues to provide ongoing consulting support for Generation Control improvements and system analysis, as a trusted advisor to GCPUD.

ROSS MURDOCH AND STEWART DRAKE CELEBRATE 10 YEARS OF EXCELLENT SERVICE WITH PSC

Stewart Drake is a PSC Telecommunications Consultant and has over 30 years' experience in the deployment and maintenance of telecommunications infrastructure. This includes equipment build and commission, equipment maintenance, design specification preparation, tender preparation, strategic planning and project / contract management.

Stewart has been working on telecommunications and protection upgrade projects for PSC, and currently one of his roles is a project manager on a Telecommunications & Networking Programme to build a new SDH and MPLS core network.

Stewart Drake and PSC CEO Warwick Glendenning



Ross Murdoch is a Senior Telecommunications Consultant for PSC New Zealand. Ross has considerable experience in telecommunications networks and services for the electricity transmission industry. During this time he has had a wide range of functions, including network strategic planning, carrying out investigations and feasibility studies, detailed design, project management, and operations support. Ross has particular technical expertise in the specialist area of services, technologies and networks for power system telecommunications and most recently has been assisting a client with migration planning for a new SDH and MPLS network.

The PSC Management team congratulates Ross and Stewart on their excellent service and commitment to PSC over the past 10 years.

Ross Murdoch and PSC CEO Warwick Glendenning



PSC WELCOMES NEW STAFF

JIM RASMUSSEN

PSC North America welcomes Jim Rasmussen, who joins the company as Director of Sales. Jim comes to us from a long background at General Electric, where he managed the sales proposal process, led direct customer negotiations and developed and implemented long-term strategy for numerous accounts in the western U.S. He has a wealth of experience in the sale of hydro monitoring technologies, having participated in the development and sales of these products for over twenty years.



KRISTINE VACOLA

PSC welcomes Kristine Vacola, who has joined the Operational Technologies group in PSC North America. Kristine has experience in the delivery and integration of new SCADA projects as an engineer at ABB, and developed custom solutions as an SQL database specialist for multi-million dollar pipeline control projects at Telvent in Canada. She has also served as the Vice-Chair for the Calgary Chapter of IEEE Women in Engineering.



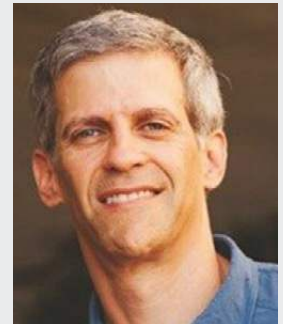
SOMA SOKO

Soma Soko has joined PSC North America as a Senior Planning Engineer and joins us from National Grid in Massachusetts where she worked as a Senior Transmission Planning Engineer. In this role, her primary responsibilities included conducting analytical studies for transmission system expansion, interconnection of new generation, and load to the transmission system. Prior to that, she worked as a Distribution Operations Engineer, also for National Grid. Soma will be based in our Westborough MA office and will start by performing system impact studies and feasibility studies for several of our clients.



NEIL MILANI

Neil Milani has joined PSC North America as an EMS Consultant and has over 20 years' experience working on software systems for automotive, telecom and renewable energy systems. He was most recently a systems engineer at GE Energy in Greenville, SC and was involved in industrial-scale wind and solar projects in North America, Europe and Asia. Neil has a BS in Electrical Engineering from Case Western Reserve University and an MS in Mechanical Engineering from North Carolina State University.



ERIC HEBEISEN

Eric Hebeisen has joined PSC North America as an EMS Consultant and will be based with our Minnesota team. Eric is an enthusiastic recent graduate in graphics and database design from the Dunwoody College of Technology in Minneapolis, and is ready to provide support for companies needing one line and tabular display development for their EMS systems. Eric's first assignment will be for one of our clients in Akron, Ohio.



NANCY MILLER

PSC welcomes Nancy Miller who has joined the PSC North America Operational Technologies group. Nancy has had an extensive career in the utility industry working on both the customer (Convex, Northeast Utilities) and vendor (Alstom, Viridity Energy) side, as well as managing a consulting services group and providing independent consulting services. Nancy will be managing several projects for our clients in North America.



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