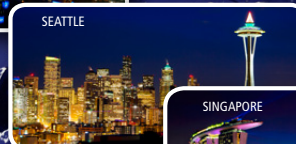




Specialist Consultants
to the Electricity Industry

PSC NEWS

Helping our clients power the world



Issue 43 | May 2015

ESTABLISHMENT OF PSC EUROPE

PSC is pleased to announce that as of 1st April 2015, PSC Europe is operational. The establishment of PSC Europe recognises the growing business opportunities in Europe particularly in HVDC.

Our European entity consists of two new companies, PSC UK Ltd and PSC Sweden AB (which is a wholly owned subsidiary of PSC UK). Our head office for this operation is based in Green Park, Reading, UK. Previously PSC had operated branches of our NZ company in the UK and Sweden.

Our initial focus will be to continue to work on HVDC and Power Networks projects for our clients in the United Kingdom, Ireland and Sweden and at the same time introduce new service offerings in the Operational Technologies area including EMS/SCADA, Telecommunications, IT networking & cyber security.

The new company will be led by Europe CEO Warwick Glendenning. Warwick will be responsible for managing the PSC businesses in the UK, Sweden, and any other European areas where PSC enters into projects

or pursues business opportunities. He is charged with growing the client base in Europe and recruiting high quality staff to service the client's needs. Complementing Warwick as part of the senior leadership team is David Monk in the role of Technical Director - HVDC and Tim Miles as Technical Director - Power Networks. David is well renowned for his expertise in successfully delivering HVDC projects across the world and Tim for the successful delivery of high voltage substation projects throughout the UK and Ireland.

By establishing a stronger European base, we plan to strengthen our relationships with our existing European clients and extend our service offering to new and existing clients leveraging PSC's global expertise. For further information, Warwick can be contacted at: warwick.glendenning@pscconsulting.com



PSC Europe's management team (L-R) – David Monk, Warwick Glendenning and Tim Miles

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PSC COMPLETES DEVELOPMENT OF 2018 INTERCONNECTION ANALYSIS BASE CASE AT PJM

In December of 2014, PSC completed development of the 2018 Interconnection Analysis base cases that will be used for the evaluation of the stability of proposed generator interconnections performed by PJM Interconnection Ltd during 2015. The primary inputs included PJM Transmission Planning's existing transmission planning stability cases, and load-flow and dynamic models for queue projects.

PSC examined PJM's summer peak (SP) and light load (LL) Transmission Planning source cases, as well as project generator and connection facility data, to ensure the following criteria were met for both SP and LL:

- Voltages within the PJM system were within baseline voltage ranges as defined by PJM
- Generators were not overloaded
- Existing HVDC injections from external networks were dispatched at maximum import to the PJM system

- Terminal voltages of machines in the PJM system were scheduled at realistic values
- Satisfactory case initialization
- A 20-second steady state dynamic simulation run met PJM criteria

The project was successful, due in large part to the effective professional relationship established between PSC and PJM engineers. Timely and regular communication and the prompt establishment of commonly understood objectives and priorities resulted in minimized down time, avoided re-work and created newfound improvements to productivity. PSC's Power Networks group has performed an increasing number of stability evaluations for PJM since 2012.

CIGRE AUSTRALIA SEAPAC 2015 CONFERENCE

PSC was a proud Bronze Sponsor at the CIGRE Australia SEAPAC 2015-South East Asia Protection and Automation Conference, held in Sydney from 17 - 18 March 2015. This conference has become very popular as a unique event focused on protection and control systems for the electrical power industry. It features a wide range of subjects covering traditional protection issues through to evolving technology deployment.

There were close to 20 vendors at the conference with their latest products and solutions. There were also 40 papers presented over the two days and question sessions which brought out some very interesting information including where the electrical industry is heading and how technology is changing at a rapid rate.

As part of our commitment to continuous staff development and information sharing within the electricity industry, PSC maintains a very active role in CIGRE (International Council on Large Electric Systems) through its involvement in CIGRE's Australian National Committee (ANC-CIGRE). Tony Armstrong, PSC Chairman and Asia Pacific CEO serves on the board of ANC-CIGRE and PSC staff participate in the following Australian Panels:

- C1 – Systems Development and Economics
- C2 – Systems Operations and Control
- B4 – HVDC and Power Electronics
- D2 – Information Systems and Telecommunications



Terry Killen (CIGRE) and Warren Young (PSC Australia Controls Manager) at the conference



HVDC IN NORTH AMERICA

PSC began providing HVDC services in 1995, backed by the expertise of its two founders. Today, PSC supplies advanced HVDC consulting to asset owners, operators and project developers, as well as HVDC and related equipment suppliers around the world.

PSC's range of HVDC services is expanding across North America. PSC assists existing and future HVDC asset owners with:

- Technology reviews
- Recommendations for improved functionality and capital investments
- Feasibility and conceptual design
- Construction cost estimation
- Procurement, construction and commissioning support
- O&M asset management and maintenance support
- Technical assistance to environmental permit and utility interconnection applications...

PSC works closely with equipment vendors to ensure successful design and commissioning. HVDC owners also engage PSC to address maintenance and fault tracing issues. PSC's ability to mobilize quickly helps minimize the impact of faults or outages in these time-critical scenarios.

The PSC North America team has assisted a number of organizations in a wide variety of categories, including owners' engineering roles, technology assessment, overhead and underground transmission and submarine cable route planning, capital cost estimates, technical specifications, and development of operation and maintenance plans and budgets. PSC also provides technical assistance with commercial agreements, EPC (engineering-procurement-construction) contracts and permitting.

PSC North America is backed by a talented global resource pool to support its HVDC projects. PSC's global knowledge network ensures the most intelligent approach to addressing customer challenges.

Recent HVDC projects completed by PSC include:

- Development of a plan for a major HVDC-Transmission Line integration, which included recommendations for resourcing O&M, an integration schedule, and high level budget.
- Provided technical assistance with HVDC project development, technology selection, transmission route options, technical specifications, capital budgets and O&M plans.
- Assisted with commissioning and start-up of the Mackinac Converter Station
- Owner's Engineer services for:
 - HVDC control and protection upgrade
 - HVDC main circuit equipment fault tracing and restoration
 - Repair of an HVDC submarine cable system

Since 1995, PSC has provided expert services on both Line Commutated Converters (LCC) and Voltage Source Converters (VSC). PSC staff were involved with the majority of the early VSC projects such as Directlink, Murraylink, Cross Sound Cable and Trans Bay Cable. PSC continues to provide support for many VSC projects as the technology becomes more prevalent.

PSC – MAJOR SPONSOR OF EEA CONFERENCE 2015

PSC New Zealand is pleased to continue its major sponsorship of the 2015 Electricity Engineers' Association (EEA) Conference & Exhibition to be held in Wellington from the 24 - 26 June. The conference theme for 2015 is 'Delivering Leadership – Technology, Safety & Quality'.

A team of delegates from PSC will be in attendance at the conference to be held at the Wellington TSB Arena and Shed 6 Complex. We hope to meet those of you also attending.



PSC WELCOMES NEW STAFF

KEVIN HART

PSC welcomes Kevin Hart as GM Sales based in our Wellington office. Kevin will be responsible for managing and overseeing all sales, client relationship and account management activities for PSC's business within the AsiaPacific region. Prior to joining PSC, Kevin spent the last 6 years as Alstom Grid's Country Sales Director for New Zealand where he was responsible for all transmission and distribution sales, and project deliveries. Previously, Kevin had a 16 year career at Transpower New Zealand as part of the senior management team focusing primarily on vendor commercial management and new business development. Kevin will be well known to many of PSC's clients and spends his personal time with his growing family and continuing his plans to build a 7 star energy efficient home.



BERNARD HARNETT

PSC New Zealand welcomes Bernard Harnett who has joined us as an IP Specialist and has over 30 years' experience in the Communications and Information Technology industry. His past experience includes the installation, commissioning, management and maintenance of; Juniper Networks E and M - Series devices, Cisco enterprise and Data Centre routers and switches, microwave radio and optical networks, and UNIX systems administration. Bernard most recently has been consulting to a major New Zealand utility. This is a continuation of his work on the Strategic Industries Program. He was the Technical Lead of a project migrating all the IP Services from the customer's legacy network onto their new MPLS enabled network.



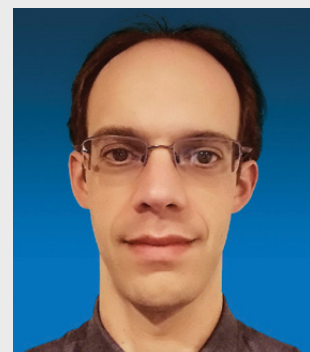
DIGBY CAMPBELL

PSC welcomes Digby Campbell who has joined the PSC HVDC group. After completing a BE in electrical engineering at the University of Canterbury in Christchurch, Digby spent three years working for PBA – a New Zealand high voltage electrical contractor. He has worked on high voltage power station and substation projects throughout New Zealand including project management for the Benmore power station Final Configuration Project (FCP), a hydro generation transformer upgrade in the South Island and the new Static Synchronous Compensator (STATCOM) at Marsden substation in the North Island. For the past two years Digby has been travelling in central and south America.



DENIS FERLAY

PSC North America welcomes EMS Consultant Denis Ferlay, who joins the Operational Technologies team in Kirkland, Washington. Denis (pronounced "Denny") brings expertise in the development, integration, configuration, and testing of energy management and market systems, and has worked with all levels of technical and management staff in North America, Europe and Asia. Denis prides himself on the ability to improve the quality of complex software deliveries by implementing efficient testing organization and processes.



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