



Specialist Consultants
to the Electricity Industry

PSC NEWS

Helping our clients power the world



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GENERATOR TESTING AND MODELLING IN MALAYSIA

PSC and Genassure have recently delivered generator governor testing at the Murum Hydroelectric Plant (HEP) for Sarawak Energy Berhad (SEB), which is both an energy development company and a vertically integrated electricity utility in the State of Sarawak in Malaysia.

The Murum HEP is located on the Murum River in the uppermost part of the Rajang River basin, in Belaga District, Karpit Division, 200 km from Bintulu. Construction began in 2008 and the Murum HEP was fully operational in mid-2015 with a total installed capacity of 944 MW.

PSC and Genassure were onsite at the Murum HEP Power Station to test two of the generator units and tune one of the governors. During the project we worked closely with SEB. The governor tuning improved the responsiveness of the tuned unit and the testing and modelling portions of the project were also successfully completed.

Genassure International became a member of the PSC Group in 2014. Genassure and PSC have been working together to provide our clients with generator testing, modelling and compliance services for their generation assets.

The Genassure test system is an automated solution for the testing and assessment of generator performance. Many grid operators have statutory requirements for the performance of connected generation assets. The Genassure system independently verifies compliance through a series of automated tests.

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SEB, Genassure and PSC staff in the Murum HEP control room

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Advantages of this system include,

- automated testing to improve the testing process and reduce asset downtime.
- precision data acquisition and processing techniques ensures more accuracy in the final analysis and reporting.
- independent compliance verification, standards compliant and built in internal safety mechanisms.

The team at Genassure provides the skills and resources to develop and

enhance testing solutions and to perform the on-site testing service. PSC provides the analytical expertise to develop and validate the models required by grid operators and regulators.

Genassure and PSC are able to offer a complete solution including strategic planning, testing, modelling and validation for our clients. For more information, please contact: Peter Brown, Genassure Manager at peterb@genassure.com

Please also visit: www.genassure.com



Murum HEP generator floor

PSC INVOLVEMENT IN CIGRE

As a specialist engineering consultancy catering to the electricity industry, we are committed to fostering collaboration and knowledge sharing in the power system community. PSC engineers are passionate about power systems. That's why we continue to stay involved in CIGRE, the recognized world forum for power systems.

CIGRE, the International Council on Large Electric Systems, is a permanent, non-governmental and non-profit international association. For nearly 100 years, CIGRE has been dedicated to facilitating technical exchanges among those involved in the production, transmission and distribution of electrical energy, as well as providing a forum for communicating the state of the art and the technical knowledge in these fields.

PSC routinely sponsors and supports CIGRE events around the world. 2017 marks the fourth year that PSC is the Diamond Sponsor of CIGRE Canada, which will be held in Winnipeg, Manitoba, in October. This rounds out a series of CIGRE events sponsored by PSC this year, including CIDER 2017, SEAPAC 17, and CIGRE Dublin.

PSC engineers are also closely involved with CIGRE technical activities,

holding memberships and key leadership positions among numerous Working Groups and Study Committees across the organization. As a member of the CIGRE Australia Board of Directors, PSC Co-founder Tony Armstrong supports CIGRE Australia with strategic insight and governance. PSC Technical Director of Power Networks, Dr. Zia Emin, is the International Chairman of Study Committee C4 – System Technical Performance, where he provides leadership in the definition and study of topical issues in the domain of Power Quality, Insulation Co-ordination, Lightning, and more.

Whether it is by active involvement in working groups, authoring of technical papers, or speaking at CIGRE events, PSC staff appreciate the opportunity to contribute to the conversation about planning, design, and operation of power systems. The collaborative environment and the resources made possible by CIGRE are a critical asset to the electricity industry. PSC is proud to support CIGRE in the continuous pursuit of knowledge related to power systems.

We look forward to seeing our peers in the power system community at CIGRE Winnipeg, in October.

PSC NORTH AMERICA 10TH ANNIVERSARY CELEBRATION



PSC North America celebrated its tenth anniversary in July at the breathtaking Suncadia Resort, nestled in the Cascade Mountains about 80 miles east of Seattle, Washington. PSC North America staff and President Alex Boyd were joined by PSC co-founders Tony and Robyn Armstrong for a relaxing weekend of summer fun. The getaway was also an opportunity to reflect on the past ten years of achievement in North America, and pay tribute to all those who made it possible.

The event gave us the opportunity to reflect on where it all started, with ISO New England being the first customer of PSC North America. Since then we have grown to around forty staff serving a mix of utility, developer and vendor clients. We sincerely thank all our North American clients, whose continued trust in PSC is the lifeblood of our success.



PSC North America staff outside Suncadia Resort, Suncadia, Washington



PSC North America 10th Anniversary Closing Dinner, Suncadia Lodge





Office administrator and event organizer Robin Lane, sharing one of many laughs with Jim and Rosemary Randolph



Kalyan Chilukuri and Wonbae Choi, members of the growing Power Networks team

PSC North America Clients



PSC Co-Founder Tony Armstrong, passing the torch - er, denim jacket? - to President Alex Boyd



President Alex Boyd dons the honorable PSC denim, the first corporate wardrobe ever produced



PSC Sr. Planning Engineer Roul Martin, performs a trumpet/sax medley over dessert

SINGLE BUYER REVIEW IN MALAYSIA

PSC is pleased to have assisted Single Buyer (SB) in Malaysia in completing an initial review of their existing infrastructure and tools to determine the necessary further actions for migration to an integrated market system.

The Malaysian Electricity Supply Industry is undergoing reform with new initiatives such as the New Enhanced Dispatch Arrangement, which paves the way for a more competitive and cost efficient Single Buyer market.

Single Buyer is a ring-fenced entity within Tenaga Nasional Berhad (TNB) – the largest electricity utility in Malaysia. In recent years, TNB have also embarked on a sustainable agenda through efforts such as renewable energy and other environmental as well as social initiatives.

With a presence throughout Peninsular Malaysia, Sabah and Labuan, this makes TNB one of the largest electricity companies in Asia.

PSC has also completed an additional market systems workshop/training session which was completed by members of our Market Systems Team. Representatives from Single Buyer, Grid System Operator, and Energy Commission attended the workshop. PSC looks forward to assisting SB with their future project requirements.

ALEX BOYD CELEBRATES 10 YEARS OF EXCELLENT SERVICE WITH PSC

PSC's Alex Boyd recently achieved ten years of excellent service with the company. Alex has over 20 years' experience in the electricity sector in project management, engineering, product development and business management. In 2007, Alex founded PSC North America as the President and CEO.

Over the past ten years, Alex has worked to successfully build the PSC legacy in North America by focusing on the project and operational support requirements of our clients and partners through a high level of technical expertise and strong working relationships at all levels of the business.

Alex now moves to his new role as President and CEO of the PSC Group to lead all of PSC's operations as a single global entity. This is an exciting time for PSC as the company moves into a new era of rapid change and development within the electricity industry.



PSC Co-founder Tony Armstrong (left) congratulates Alex Boyd (right) on 10 years of excellent service with PSC.

ISO9001 QUALITY AUDITS IN PSC AUSTRALIA AND NEW ZEALAND

Telarc SAI Ltd (PSC's external auditor) have recently completed transition quality audits under ISO 9001:2015 at a number of PSC's Australian and New Zealand offices. This follows a successful transition of PSC United Kingdom to the new quality standard earlier in the year.

The transition process was accomplished thanks to the active participation of all staff involved in the development, improvement and compliance to the requirements of PSC's quality management system.

This is an excellent achievement and ensures PSC's continued quality certification. The audit results show PSC's continued commitment to the improvement of its quality management system and service to PSC's clients.



Quality
ISO 9001



PSC WELCOMES NEW STAFF

MEHDI DARYABAK

PSC welcomes Mehdi Daryabak who is a power systems specialist and experienced consultant specializing in power system analysis, design, and simulation with a focus on HVDC and FACTS devices. Mehdi has significant experience with power systems simulation software packages PSS/E, PSCAD/EMTDC, RTDS/RSCAD, and DlgSILENT PowerFactory. A Ph.D. in Electrical Engineering, Mehdi has been providing detailed analysis of many large scale electric infrastructure projects in North America and around the world for several years. Mehdi is a part of PSC's growing system studies group in Vancouver, B.C.



DANIEL GHEORGHE

PSC is pleased to welcome Daniel Gheorghe who recently joined PSC in the United Kingdom as a Senior Power Systems Engineer and has professional experience in smart grids, power systems analysis and network design. With a PhD programme in Power Quality, his background includes a research period focused on the application of artificial intelligence techniques in power quality analysis. Daniel is also well accustomed to UK power grids and has DNO experience focused on renewable generation connections through conventional and alternative methods.



ALEXANDRA BARANSKI

PSC is pleased to welcome Alexandra Baranski who has joined our Power Networks group in Australia as a Power Systems Engineer. She graduated from the University of Queensland in 2015 with a degree in Electrical Engineering (Hons) and in 2016 worked in the Queensland freight rail industry in power systems and overhead design. Alexandra will be based in our Brisbane office and is looking forward to developing further knowledge in power systems with PSC.



DWAYNE HOLLOWAY

PSC welcomes Dwayne Holloway who joins PSC Australia as a Senior Design Drafter and has experience in primary design and project engineering for the electricity industry. This includes substation upgrade projects covering a wide range of equipment including primary equipment installation. He has also been involved in primary design for several wind farm substation projects and a mining site substation. Based in the PSC Adelaide office, Dwayne will be assisting our clients with their transmission line projects.



ROBERT LAKE

PSC is pleased to welcome Robert Lake as a Principal Civil & Structural Engineer, with over 30 years of experience in transmission line, structure and foundation design and analysis. This includes technical management, staff leadership, and software development for transmission line projects up to 500kV. He is a member of CIGRE's overhead line panel, APB2, and convener of CIGRE WGB2.40 on the loading for line clearances. Robert has experience on projects throughout Australia, New Zealand, and even Afghanistan. He will be part of the PSC Transmission Lines team in Australia.



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