

# Call for Papers

August 18-19, 2015

Powerhouse Museum  
Darling Harbour, Sydney, Australia

Abstract  
submission has  
been extended  
to April 30

[www.protectionsymposium.com.au](http://www.protectionsymposium.com.au)



Australian  
**Protection** Symposium

## Overview

**The Australian Protection Symposium (APS)** is an annual event dedicated to the presentation of new developments, practical application of methods and technologies and experiences gained in the field of protection, automation and control for modern electrical power generation, transmission and distribution systems. APS is characterized as the ideal forum for discussions and exchange of information and experiences of this subject area, bringing together utilities, energy companies, manufactures, consultants, service providers, standard committees, universities and research centers.

In 2014, more than 90 protection industry leaders and professionals gathered to share their industry insights. Now in its 9th year, the Australian Protection symposium will again bring together researchers, experts, engineers, practitioners and professionals involved and interested in the electrical protection industry facing similar challenges allowing them to discuss their views face to face and build close cooperation channels for solving future challenges.

The steering committee of the 2015 APS would like to invite interested protection experts from utilities, suppliers, vendors and academia around the world to submit a paper for consideration. The focus of these papers can be on experiences, challenges, applications, ideas and solutions related but not limited to topics mentioned on the next pages. Authors of accepted papers will have the opportunity to present at the event with complementary registration and the papers will be published in the APS Proceedings.





## Why you should present a paper?

Our involvement in the electrical protection field is forever teaching us in practice things that cannot be found in text books and manuals. The experiences gathered through implementing techniques, trying new paths and learning from failures are so valuable that sharing them enhances the entire industry. In fact, not learning from each other's experience and doing it all over again risks repeated problems, wasted time and significant unnecessary costs.

Writing and presenting a paper is an opportunity to share knowledge, practices, processes, technology, experiences and technical expertise of an organization or individual. It will bring recognition for the company and/or individual as an engineering leader allowing them to express their views and build on their professional development and training by participating in a well-established and specialized event.

At a strategic level, it allows broadening of perspectives, setting of good work practices, opening up of discussions with different point of views for better ideas and creative solutions for any existing challenge. It will be the best opportunity to report on a recent research, technological development and industry projects and lessons learned along the way.

# Paper Topics

## **Design, Application, Advantages and Pitfalls of IEC61850**

- > Challenges and opportunities in Implementation of IEC61850
- > Real life case studies of existing installations and future outlook
- > Security implications in digital communications
- > Operation isolation of IEC 61850 protection schemes
- > Multi-vendor integration experiences
- > IEC61850 sampled values Applications and status of process bus implementation
- > IEC61850 influence on development of relay protection and substation automation
- > Challenges of interfacing IEC61850 network with SCADA/RTU system
- > Need for increased intelligence in power systems
- > Effective documentation procedures during design and implementation
- > Ethernet configuration in substations

## **Innovation and Advancements in Protection Schemes**

- > Wide area protection, communication and control
- > Distributed generation Schemes
- > Islanding Protection of Distribution Systems
- > Synchrophasor applications
- > Adaptive Protection systems
- > Automatic Under Frequency Load Shedding
- > Protection performance in hostile environments
- > Protection of smart grids and micro grids
- > High impedance earth fault detection
- > Protection of series compensated lines
- > Schemes and settings to address mutual coupling
- > Generator Protection
- > Point on wave switching
- > Load modelling
- > High impedance vs. low impedance biased differential busbar protection scheme
- > Line distance protection with signalling and weak in-feed sources
- > NER requirements - design and operation of schemes
- > Development standards in protection and control
- > Improving protection schemes to meet regulatory requirements
- > Protection settings - basics calculations and pitfalls of Managing configurations
- > Protection signalling technology - Pilot wire, Microwave radio, Power line carrier, Synchronous Digital Hierarchy
- > Enhancement of operational reliability
- > Developments in condition monitoring of digital protection systems
- > Power system Management and Planning
- > Power quality enhancement
- > Information technology security for electric power utilities
- > Parallel Redundancy Protocol – IEC 62439-3



# Paper Topics

## Commissioning and Testing Case Studies

- > Fault location
- > Use of relay data for fault analysis
- > Industry experience of failures and faults
- > Protection refurbishment and maintenance
- > Travelling wave techniques
- > Protection Scheme Testing through Network Simulation Modelling
- > Collecting and analysing disturbance events and implementation of results
- > Standardized relay testing
- > Operational experience - successes and challenges of Testing
- > New approaches to reduce commissioning time
- > Testing of IEC61850 based devices and systems
- > Testing of GOOSE protection schemes
- > Testing under dynamic and power swing system conditions
- > Testing of power quality monitoring devices
- > Recording of analog and digital signals during abnormal operation
- > Health and safety approaches and culture
- > Arc flash management

## Non-conventional and Conventional Sensors

- > Challenges of non-conventional instrument transformers
- > Redundancy requirements for protection systems using Non-Conventional Instrument Transformers and Merging Units
- > Optical CT's
- > Saturation effects and its impact on protective relaying
- > Transient Behaviour of CTs

## Management and Business Strategies

- > Case studies for business benefits/value added through implementation of innovative protection and control systems
- > Developing skills and competencies for next generation protection and control systems (technology, change management, training etc)
- > Best practices for roll out of new standards and Technologies
- > Managing EPC contracts and subcontracting designs
- > Data gathering, analysis and management
- > Maintenance Management for Protection systems
- > Performance monitoring of protection systems including communications

## Power Talk

Sharing of experiences and lessons learned have proven to be of the highest interest and benefit to all involved in the industry. Great lessons are learned from failures. Unfortunate events causing mishaps often provide the most valuable experience with lessons more worthwhile than any success story.

The APS steering committee would like to introduce a power talk session where unfortunate events and lessons learned from these events are discussed. These will be short format 5-10 minute power talks independent from paper presentations. To facilitate sharing, these talks will not require written format and will not be distributed in the proceedings. Talks can range from local or overseas experiences where a failure has provided an invaluable lesson.

## Target Audience

The target audience for this event is engineers, technicians, managers, field staff and supervisors, planners, standard writers, system analysts, students and professionals from electrical utilities, consultants, service companies, industrial and mining industries, protection system designers and manufacturers, Universities and others employed in planning, design, standardization, construction, commissioning, maintenance and assessment of electrical protection systems.

## How to Submit

Please submit your **Paper Abstract** of approximately 250 words to **Maryam Khallaghi**, Technical Program Chair, via email to [maryam.khallaghi@omicron.at](mailto:maryam.khallaghi@omicron.at). Please include the following information:

- > Paper title
- > Authors' and Co-Authors' names and organization
- > Authors' affiliation
- > Country
- > Email address of the main contact / author

Please express your interest in delivering a **Power Talk** along with the topic and short description to the Technical Program Chair via email.



## Important dates

Abstract submission: **April 30, 2015**  
Acceptance notification: **May 11, 2015**  
Full Papers submission: **June 29, 2015**  
Power Point Presentation: **July 20, 2015**

## Contact

For enquiries and further paper submission details or interest in the Power talk session, please do not hesitate to contact us:

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