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Institute of Electrical and Electronics Engineers
Queensland Section (ARBN 078576495)
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IEEE
Queensland Section
NEWSLETTER

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Message from the Chair IEEE Queensland Section

Dr Abbas Bigdeli

Email: abbas.bigdeli@ieee.org

This is the first newsletter for 2010. We are already well into the year and our Section Committee is working very hard to organise activities for all members in the coming months.

I'm very pleased to report that membership continues to grow strongly in Queensland. Towards the end of last year, we reached the magical **1000 members** mark. I am hoping that we can maintain this number and even increase it during 2010.

AGM & Dinner 2009

I was honoured to preside over the IEEE Queensland Section AGM and dinner. We made a few changes including the venue which allowed us to reduce the cost to members significantly. It seems the changes had positive affect on the turnout as there was a 50% higher attendance (65) compared to the previous year. It was held at the University of Queensland Staff Club In St Lucia on 4th of December.

The after dinner talk was given by Dr Doone Wyborn, Chief Scientific Officer of Geodynamics Limited. The presentation entitled "Enhanced Geothermal Systems: the answer to Australia's requirement for large scale base load clean power" was well received by all attendees including non-members.

AGM was also the occasion to present a number of awards including the IEEE Queensland Section Volunteer of the Year 2008 which went to our Immediate Past Chair, and long-time servant of Queensland Section, A/Prof. Vaughan Clarkson. Our Awards & Recognition Chair, Mr. Michael Lees, has the full run-down in his article.

I would like to thank our Vice Chair, Roelof Swanepoel, for the hard work he put into organising the event and attending every detail.

Region 10 Meeting

In February, together with our Section Vice Chair, Roelof, we represented the Section at the Region 10 Meeting in Cebu, Philippines. As usual, it was a great venue for meeting colleagues from other Sections within the Region 10 and a great chance to share information with other Section Chairs around the Asia Pacific, It was also an opportunity to meet with and hear from key officers and personnel from IEEE HQ.

Region 10 continues to be the largest Region in the IEEE and still growing which I believe is a reflection of the growing economies in the region. I hope to have occasion to use many of ideas I have picked up there during the year ahead.

This year marked the 25th anniversary of our Section which was celebrated receiving a special banner (see picture below) from IEEE President Elect, Professor. Moshe Kam.



Queensland Section Chair Dr Abbas Bigdeli (left) and IEEE President-Elect Prof Moshe Kam display the Queensland Section 25 Years banner



Delegates of the 2010 IEEE Region 10 Meeting, Cebu, Philippines

IEEE Endorsed Event: Electrical System Excellence



Reliable Engineering Series: 2010 Brisbane's largest Engineering event
Electrical Systems Excellence co-located with **Advanced Rotating Equipment Management**

Hilton Brisbane
8th & 9th July 2010

The continuity of the electrical power supply is very important to plant operation especially in the industrial sector. To improve operation from generation, transmission, distribution and utilisation of the power, a good understanding of the overall power network application, operation and maintenance are critical.

Electrical Systems Excellence 2010 aims to explore practical management of power quality, transmission and distribution, targeting the complementary needs of generation and supply.

The delegates will also gain insights of "how to" approaches of effective integration, adoption and optimisation of power systems operation. The event will highlight on power systems capability and supply improvements, maintenance and safety strategies with a strong focus on operational efficiency and cost control.

Electrical Systems Excellence

<http://www.marcusevans.com/marcusevans-conferences-event-details.asp?EventID=16568&SectorID=3>

Key topics

1. Power Systems Quality and Supply
2. Maintenance Strategies of Integrated Power Systems
3. Safety Management in Electrical Engineering
4. Operational Electrical Safety: Strategic approach of application, installation and maintenance

Key features

- Power **quality & supply** management
- Improving **reliability and capability** of power operations
- Balancing **operating costs and environmental impact management** of power systems
- **Predictive and sustainable** maintenance strategies
- **Critical safety** management to eliminate potential risks and unexpected outages

Please visit <http://www.marcusevans.com/marcusevans-conferences-event-details.asp?EventID=16566&SectorID=3> to find out more about **Advanced Rotating Equipment Management**.

* All **IEEE** members are entitled to a discount of 10% when registering with **Ms. Esther Wong**. Please contact **Ms. Esther Wong** for details and quote **EN - IEEE** during registration. *

For further details and brochures, please contact:

Ms. Esther Wong

Tel No: **+603 2723 6736**

Fax No: **+612 9223 2352**

Email addr: **estherw@marcusevanski.com**

READER NOTE: FIND A FLYER FOR THIS EVENT AS AN APPENDIX TO THIS NEWSLETTER

Awards and Recognition Report for Awards presented in 2009

Mr Michael Lees
Chair, Awards & Recognition

Email: michael.lees@fostersgroup.com

For 2009 the committee has retained the award structure that was used for 2008. This encompasses the following three categories.

The first category is *Recognition of Service* awards. These are an official recognition of a person's contribution in a particular role and are awarded at the first AGM following the completion of a person's term in a role. They are awarded to all people in this category without requiring nomination.

The second category is *Outstanding Contribution* awards. These are awarded to people who have been identified as having made a significant contribution during their term in a role. They are awarded at the first AGM following the completion of a person's term in a role. These awards require a nomination (by a member of the IEEE Queensland section) to be submitted to the section committee.

The third category is for the IEEE Queensland Section *Volunteer of the Year*. This is awarded to the person who is regarded as having made the most substantial contribution during their time in office. Only people who have completed their term of office are eligible. A single plaque is awarded each year. Nominations (by members of the IEEE Queensland section) are submitted to the section committee.

Recognition of Service Awards

A total of 13 *Recognition of Service* awards were awarded within the Queensland section during 2009. Most of them were presented in December at the section AGM.

Award Recipient	Contribution
Dr. Vaughan Clarkson	Chair Queensland Section 2007-2008
Dr. Zhao Yang (Joe) Dong	Vice Chair Queensland Section 2007-2008
Mr. Abbas Bigdeli	Secretary Queensland Section 2007-2008
Dr. Peter Sutton	Treasurer Queensland Section 2007-2008
Dr. Tony Ahfock	Educational Activities chair Queensland Section 2007-2008
Dr. Sheng How Goh	Webmaster Queensland Section 2006-2008
Dr. Philip Machanick	Student Activities Chair Queensland Section 2007-2008
Dr. Brijesh Verma	Chapter Chair Computational Intelligence Queensland Section 2007-2008
Dr. Marcus Gallagher	Vice-chair Computational Intelligence Chapter Queensland Section 2007-2008
Dr. Gerard Ledwich	Chapter Chair Power & Energy Queensland Section 2008
Mr. Mohammad Hesamzadeh	Vice-chair Power & Energy Chapter Queensland Section 2008
Mr. Andrew Bradley	Professional Activities Chair Queensland Section 2007-2008
Dr. Duncan Campbell	Vice-chair Joint CSS/R&A Chapter Queensland Section 2007

Outstanding Contribution Awards

A total of 5 *Outstanding Contribution* awards were awarded within the Queensland section during 2009. Most of them were presented in December at the section AGM.

Award Recipient	Contribution
Dr. Vaughan Clarkson	Chair Queensland Section 2007-2008
Mr. Abbas Bigdeli	Secretary Queensland Section 2007-2008
Dr. Peter Sutton	Treasurer Queensland Section 2007-2008
Dr. Brijesh Verma	Chapter Chair Computational Intelligence Queensland Section 2007-2008
Dr. Duncan Campbell	Vice-Chair Joint CSS R&A Chapter Queensland Section 2007

IEEE Queensland Section Volunteer of the Year 2009

Awarded to **Associate Professor Vaughan Clarkson**.

Continues on next page...

Thesis prize awards

There were two categories of award for undergraduate theses this year.

1. **IEEE Queensland Section Student Prize for the Best Final Year Thesis in All Fields of Electrical Engineering and Information Technology** was awarded to two recipients this year:
 - a) *Nathan Keilar* from Griffith University, for his thesis entitled 'Concept to Integrate Distributed Generation into the German Power Grid Intended for Multi-Agent System Realisation'
 - b) *Matthew Dwyer* from The University of Queensland, for his thesis entitled 'The Design, Analysis and Construction of a Polarisation-Agile Antenna'
2. **ICPADM' Mat Darveniza IEEE Queensland Section Student Prize for the Best Final Year Thesis in Power Engineering** was awarded to *Nathaniel Dunnnett* from the Central University of Queensland (CQU) for his thesis entitled 'Development of Closed Loop Voltage Control Simulator for Medium Voltage Distribution'

1:ICPADM: The International Conference on the Properties and Applications of Dielectric Materials.

Women in Engineering Affinity Group

The IEEE Queensland Section is forming a Women in Engineering (WIE) Affinity Group to encourage community and networking at a local level. We welcome you to join us!

Special Launch Offer! For the first 10 people to sign up for WIE from 19th of May, the Queensland Section is going to subsidise your WIE member dues for 2010! Simply e-mail us your proof of payment/registration at the address below. This offer will be valid until the 10 registrations have been received, so don't delay!



What is WIE?

IEEE Women in Engineering (WIE) is the largest international professional organization dedicated to promoting women engineers and scientists. The mission of IEEE WIE is to inspire, engage, encourage, and empower IEEE women worldwide. Visit www.ieee.org/women for more info.

Why join WIE?

Whether you would like to meet other like-minded people, attend free professional development workshops, or just be informed of the latest news, WIE has something to offer you.

- **Leadership** - Contribute to your local community while upgrading your skills by volunteering for an internationally recognised organisation. Please email sandra.mau@ieee.org
- **Networking** - Enlarge your network by participating in fun local activities to meet other like-minded people.
- **Professional Development** - From negotiating skills to work-life balance, we will offer free events throughout the year to help you gain a new perspective.

On top of those benefits, membership includes access to the IEEE WIE electronic membership directory, a monthly e-newsletter, and the award-winning Women in Engineering Magazine.

Cost to join?

IEEE WIE Member dues are US\$25 annually. Take advantage of our Special Launch Offer to have your fees subsidised for 2010. Be one of the first ten to email your proof of payment/registration to sandra.mau@ieee.org to receive the subsidy. IEEE WIE Membership is free for Students, Graduate Student Members and Life Members.

How to join?

Simply add WIE to your membership online at <http://www.ieee.org/go/WIE-add>

The Queensland Section WIE affinity group is planning our events for 2010 and hope you will be able to join us. Start getting involved by signing up for WIE today!

UQ Student Branch Update

Prof. Vaughan Clarkson
UQ Student Branch Counsellor

Email: v.clarkson@uq.edu.au

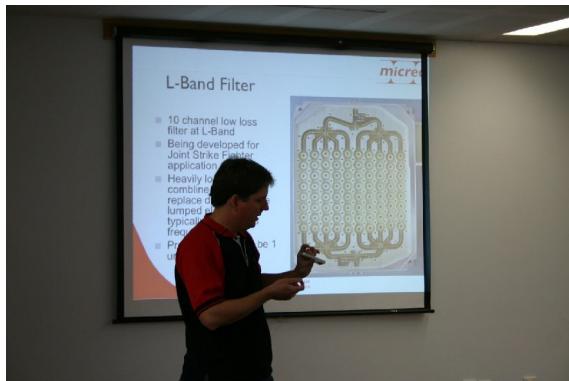
It's been nearly two years since the UQ Student Branch made its last report in this newsletter. However, that does not mean the Branch has been inactive.

UQ Student Branch: 2008-2009

In 2008/9, the Branch was ably Chaired by Mr. Robby McKilliam. There were three notable activities that have so far gone unreported here during that time. On 29th August, 2008, the Branch hosted a pizza lunch and a talk by Dr. Ben Upcroft of UQ entitled 'Perception in Robotics'. More than 20 student members attended the event.

On 20th November, 2008, the Branch co-hosted, with the Aerospace & Electronic Systems (AES) Chapter, a talk Messrs. Lee Davis and Don Cameron of Boeing Defence Australia entitled 'Vigilare: A Complex Systems Integration Project'. See the AES Chapter Chair's full report in the Q2/09 edition.

A third event was held on 11th August, 2009. This was a joint event with the Microwave Theory & Techniques/Antennas & Propagation (MTT/AP) Chapter and with the UQ School of Information Technology & Electrical Engineering (ITEE) On-Campus Alumni group. As reported by the Chair of MTT/AP in the Q3/09 edition, on this occasion, Dr. Ashley Robinson, Engineering Director of Mireco, Ltd., presented a talk entitled 'Design and Manufacture of Broadband Microwave Receivers at Mireco'. The talk was followed by a light lunch at the UQ Staff & Graduates Club and was attended by about 20 students and members of MTT/A&P chapter.



Dr. Ashley Robinson presents his talk at the joint IEEE MTT/AP/UQ Student Branch/OCA event on 11th August.



After Dr. Robinson's talk, members enjoy a delicious light lunch at the UQ Staff & Graduates Club.

The Year Ahead

This year, the UQ Student Branch is off to a great start. New officers were elected in late 2009. The current committee is:

- Miss Nicola Holmes, Chair
- Mr. Robert Chang, Secretary

Already, there have been three activities. The first two were held back-to-back in support of Orientation Week activities at UQ. On Tuesday, 23rd February, the Student Branch set up a desk at the Academic Advising Session for new engineering students. The next day, the Student Branch was again present at the conclusion of the inaugural ITEE treasure hunt for new student. This resulted in the recruitment of 12 new student members for the Branch.

The most recent event was held on 1st April. This was a pizza lunch for students. Prof. Tapan Saha briefly spoke about the benefits of IEEE membership to introduce the event. The lunch was extremely well attended and I am advised that 64 new student members were recruited. Well done, Nikki, Robert & Caroline!

I would like to close by thanking Robby McKilliam for his efforts as Chair in 08/09. Volunteers are always busy people, and Robby gave generously of his time to support Student Branch activities. Robby is now concentrating on writing up his Ph.D. thesis and I would like to wish him the best of luck with that task.

GOLD Affinity Group Update

Mr Robert Ellen
Vice-Chair, GOLD Affinity Group

Email: rellen@ieee.org

Commercialisation Seminar Theme

The GOLD Affinity Group finished 2009 with a successful seminar on November 26 by Mr Peter Allison of i.Lab, talking about incubation of new technology-based start-ups.

We intend to continue this major commercialisation theme with several more seminars in 2010, including one when our guest speaker will be Mr Greg Luck of Wotif.com, EHCACHE and Terracotta, who will discuss the Australian open source software industry and IT commercialisation. Keep your eyes peeled for an E-Notice with event details.

GOLD Social Networking Presence

A reminder that you can find us on the popular networking websites Facebook and LinkedIn. Just search for IEEE Queensland GOLD within these services and you'll be on your way.

Aerospace and Electronic Systems Chapter Update

Prof. Peter Lindsay
Chair, Aerospace and Electronic Systems Chapter

Email: p.lindsay@itee.uq.edu.au

ARCAA/AESS seminar on UAV research in South Korea

The Australian Research Centre for Aerospace Automation (ARCAA) and the Queensland chapter of the IEEE Aerospace & Electronic Systems Society (AESS) jointly hosted two seminars by distinguished visiting South Korean Unmanned Air Vehicle (UAV) experts on Thursday 22 April.

Prof Youdan Kim and Assoc Prof H. Jin Kim were visiting from the Seoul National University and Prof Min-Jea Tahk was visiting from the Korea Advanced Institute of Science and Technology (KAIST). They described a wide range of research projects associated with aerospace engineering and UAVS, including vision-based collision avoidance and landing, coordination of multiple UAVs, and fault tolerance.

The seminar was held at ARCAA's new premises in the Airport Precinct. AESS local chapter chair Prof Peter Lindsay (UQ) thanks ARCAA Director Prof Rod Walker and Business Manager Ms Lyn Pearson for making the arrangements.



AESS seminar on UAV research in South Korea(left to right): H. Jin Kim, Yourdan Kim, Jason Ford (ARCAA), Min-Jea Tahk, Peter Lindsay (AESS Qld Chapter Chair)

Computer Society Chapter Update

Dr Philip Machanick
Chair, Computer Chapter

Email: philip.machanick@gmail.com

Computer Chapter solicits speakers

The Computer chapter is the largest in the Queensland section, with 350 members. I would like to see more interaction between members, including contacts between industry and academia. I am working on getting together some public events, but would like to solicit ideas from members. If there is a topic on which you would like to see a public event or, better still, to which you can contribute, please contact me at: philip.machanick@gmail.com.

This is an exciting time for the industry with major developments not only at the top end, but in mobile devices and embedded systems. If you have an interesting experience to share, IEEE can provide a forum.



Is this the next big (no, small) thing?

http://images.apple.com/ipad/features/images/overview_safari_20100414.png

Power and Energy Society Chapter Update

Professor Tapan Saha
Vice-Chair, Power and Energy Chapter

Email: saha@itee.uq.edu.au

New PES Student Travel Prize

The IEEE Queensland section PES chapter has established a \$2000 travel prize for student members to attend and present a paper at the IEEE PES General Meeting conference. This prize will be administered by the PES chapter of IEEE Queensland section and is initially available for 5 years from 2010 – 2014. The PES chapter received 5 applications from the students of Queensland universities to attend and present a paper at the IEEE 2010 PES GM to be held at Minneapolis, USA. The prize winner will be notified by May 15th, 2010. For future reference, the details of the prize including eligibility, submission documents and selection criteria can be downloaded from the website of the PES chapter at: <http://www.ewh.ieee.org/r10/queensland/v2/doku.php/chapters:pes:start>

Student Branch Chapter Petition

The PES chapter has submitted a petition to the PES headquarters for the establishment of PES student branch chapter to increase student participation in the chapter activities.

Seminars and Distinguished Lecture Program

The PES chapter is in the process of organizing a few technical seminars and workshops for 2010. The date and time of seminar/workshop will be announced in advance through chapter's website, newsletter and e-notices.

Electrical Systems Excellence

Achieving uninterrupted power operations by improving power quality & supply and ensuring the safety, reliability and efficiency of your plant electrical systems

Hilton Brisbane, Australia

8th & 9th of July 2010

Reliable Engineering Series: 2010 Brisbane's largest Engineering event

Electrical Systems Excellence co-located with Advanced Rotating Equipment Management

Featuring two interactive workshops on:

Workshop One: Protection Systems and Operational Electrical Safety

Your workshop leader:

Bob Coulter Protection Engineering Manager
Energex

Bob Coulter has over 40 years of professional engineering experience associated with large electrical power networks, gained primarily in the State Electricity Commission of Victoria (27 years) but also in Powercor Australia (7 years) and as a consultant (8 years). This experience covers all facets of engineering management, business planning, R&D, design, operations, substation construction, equipment procurement, standardisation, training, electrical testing/commissioning and organisational restructuring. For the past 8 years he has practiced as a Principal Engineering Consultant to Australian and overseas electricity supply industry, electrical infrastructure project developers and electrical equipment suppliers in Australia and South East Asia. He recently joined Energex Ltd, an electrical utility serving the city of Brisbane and south east Queensland, Australia as their Protection Engineering Manager.

Workshop Two: Advanced Engineering Asset Management Concepts

Your workshop leader:

Dr Rudolph Frederick Stapelberg Principal
Academy for Professional Education and Training
Adjunct Professor, Centre for Infrastructure and Engineering Management
Griffith University Gold Coast Campus
Director and Principal Consultant
ICS Industrial Consulting Services

Dr Rudolph Frederick Stapelberg is a registered professional engineer, also holding a Doctorate in Business Administration. He has close on three decades of consulting experience, and has delivered training courses for more than two decades to a very wide range of organisations including international corporations such as Alcoa, Anglo American, BP, BHP Billiton, Caltex, Escom, Rio Tinto (CRA), Sasol, Shell, WMC and more. Fred is the main architect of the EAM Body of Knowledge CEAIM has developed.

Attend this premier conference and gain insights into:

- **Deploying** advanced power quality & supply to support the operations of electrical equipment
- **Improving** reliability and capability of electrical network operations
- **Balancing** operating costs and environmental impact management of the overall electrical systems
- **Examining** predictive and sustainable maintenance strategies
- **Mastering** critical safety management to eliminate potential risks and unexpected outages in your plant operation

***Early Bird & Group Discounts**
Ask about our savings

"Ask yourself always: *How can this be done better?*"

G.C. Lichtenberg

Avoiding costly plant outages and electrical related accidents are major challenges today faced by electrical engineering group, however this can be managed through strategic electrical system planning, installation, design, operation and maintenance.


marcusevans

Your distinguished chairperson:

Jim Kennedy Immediate Past National Chair
Asset Management Council
Director
Interlogis Consulting

Delivering practical case studies, expert presentations and insights by the following industry leaders:

Jim Chisholm Executive General Manager Energy Sustainability & Market Development
Ergon Energy

Sarath Perera Technical Director
Integral Energy Power Quality and Reliability Centre
Associate Professor, Electrical, Computer and Telecommunications Engineering
University of Wollongong

Gary Winsor Manager – Asset Modelling and Transmission Mains Maintenance & Replacement Planning
EnergyAustralia
Sydney Chapter Chair
Asset Management Council

Leonardo Torelli Senior Electrical Engineer
Andrew Hill Specialist Electrical Engineer (Power)
Hydro Tasmania

Phil Scheibel Electrical Supervisor
Bega Cheese

Peter Warry Engineering Technologist, Engineering & Maintenance
International Power Mitsui - Loy Yang B

Timothy Edwards Managing Director
Metro Power

Ray Beebe Senior Lecturer, Maintenance Management & Reliability Engineering Programs - School of Applied Sciences and Engineering Monash University
Monash University
Gippsland Chapter Chair
Asset Management Council

Testimonials of previous events:

"Very Well Done"
Rio Tinto

"The Seminar was well arranged and appropriate speakers selected."
CS energy

"I attended the marcus evans conference on Switchgear Breakers & Transformer Operations & Maintenance & found it to be well organised and interesting speakers & topic."
BlueScope Steel

"Very effective management of events. Excellent selection of speakers".
Walmet Technologies

"Interesting and personal".
IR Technology Australia

"Organisation, documentation and a good grouping of topics. The event was very well run".
CSR Sugar

"Usefull information from knowledgable presenters."
CitiPower and Powercor

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Endorser



Queensland Section

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About the Endorser



Queensland Section

IEEE is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. IEEE inspires a global community through its publications, conferences, technology standards, and professional and educational activities. The IEEE Queensland Section provides local activities and services to members who live and work in Queensland.

About the Media Partners



APT Publications publish a suite of electrical magazines, each focused to a different sector of the electricity market. **Transmission & Distribution (T&D)** is focused to the High Voltage Electricity Supply Industry; Energy Generation (EG) covers all aspects of Energy Generation including plant operation and maintenance; and **Industrial Electrix (IE)** is focused to the 415V Three Phase to 36kV sector of the Industrial Electricity market and includes Electrical Safety and Maintenance, and the Use and Application of Low to Medium Voltage Products and Services. Free subscription within Australia and New Zealand is available to all personnel working within these market sectors. Apply via www.powertrans.com.au or tel +61 7 3374 2877



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Visit www.industrysearch.com.au or email amanda@industrysearch.com.au

Thursday 8th of July 2010

0830 Registration and coffee

0900 Opening address from the Chair

Jim Kennedy Immediate Past National Chair
Asset Management Council
Director
Interlogis Consulting

Plant Power Systems Quality and Supply

0915 Session One – Case Study

Improving the reliability and capability of electrical systems

- Forecasting the load, price, capacity, equipment states, rating, reliability analysis of power systems
- Controlling and planning economic dispatch, optimal flow problem, energy trading, maintenance, area planning, capital expenditure
- Ensuring reliability and capability and adequately satisfy the customer load requirements
- Securing power supplies at levels above actual consumption in order to provide a cushion of supply and maintain a high standard of reliability moreover isolate and rectify power quality problems

Sarath Perera Technical Director
Integral Energy Power Quality and Reliability Centre
Associate Professor, Electrical, Computer and Telecommunications Engineering
University of Wollongong

1000 Session Two – Case Study

System planning and equipment selection for integrated industrial power systems

- Planning and installing critical components and equipment to meet utility service & requirements
- Meeting the continually changing load demand for both active and reactive power while the desired system frequency and voltage profile are maintained
- Understanding the level of failure-proofing that specific equipment may require

Leonardo Torelli Senior Electrical Engineer
Andrew Hill Specialist Electrical Engineer (Power)
Hydro Tasmania

1045 Morning refreshment networking break

1115 Session Three - Case Study

Advanced back-up systems and effective emergency power supplies management

- Creating an intelligent uninterruptible power supply (UPS) to address coordination related disturbances
- Managing and controlling potential power difficulties and adopting technologies available to manage emergency conditions and restoration
- Benefiting from Power Flow Analysis to ensure cost efficiency and safe operations
- Assessing how to safeguard against unexpected electricity interruptions and supply

1200 Session Four – Case Study

The future smart grid and smart metering

- Utilising smart grid and metering to keep track of all electricity flowing in the system and reduce power losses and remove associated inefficiencies
- Moving towards reduced reliance on operators, through automation and proactive protection to respond rapidly to changing conditions and prevent outages
- Integrating transmission and distribution grid by two-way real-time communications systems and sensors to optimise grid performance

Timothy Edwards Managing Director
Metro Power

1245 Networking luncheon

Safety Management in Electrical Engineering

1345 Session Five – Interactive workshop

Protection systems and operational electrical safety

Module One

Electrical protection and safety performance

- Assessing critical electrical protection for safety performance, compliance, and reliability
- Effective testing, diagnostics and safety management in your power systems
- Best practice for protection systems asset management for switch gears, circuit breakers, transformers and power cables

Module Two

Optimising electrical safety with HV/LV earthing, grounding and bonding to ensure reliable power system operations

- Earthing and safety
- Earthing choices and their practical impacts on reliability
- Earthing problems

Module Three

Managing arc flash hazards

- Arc Flash hazards
- Arc Flash standards (IEEE1584, NFPA and CSA-Z462)
- Arc Flash hazard control

Your workshop leader:

Bob Coulter Protection Engineering Manager
Energex

Bob's areas of particular technical specialisation are: power system protection, control and automation; power system planning; grid-connected embedded generation and co-generation; application of power electronic systems in high voltage distribution networks and customer installations; rural electrification; electricity supply power quality and reliability; earthing and safety, and power system interference mitigation.

He has authored or co-authored more than 25 technical papers over the past 25 years and is a guest lecturer at both Victoria and Monash Universities, delivering final year elective subjects covering Power System Protection, Power Quality, HV Engineering, Power System Analysis and Transmission & Distribution Network Design.

Workshop timetable

1515	Afternoon refreshments & networking break
1545	Workshop resumes

1630 Session Six – Panel Discussion

Responding to the change of local and global arc flash hazard standards

- Examining regulations and legislations and how does it impact the business - IEEE1584 and NFPA 70E 2000, Canadian Standards Association (CSA) new arc flash safety standard CSA-Z462
 - How to adopt and adapt to new arc flash standards – the technical aspects and physics associated with arc flash
 - Discussing common problem areas in industry and the practical aspects of application of arc flash safety and implications involved to your electrical systems
- Moderated by:

Bob Coulter Protection Engineering Manager
Energex

Panelists:

Sarath Perera Technical Director
Integral Energy Power Quality and Reliability Centre

Phil Scheibel Electrical Supervisor
Bega Cheese

Leonardo Torelli Senior Electrical Engineer
Andrew Hill Specialist Electrical Engineer (Power)
Hydro Tasmania

1715 Closing remarks from Chair and end of Day One

Why you must attend

The continuity of the electrical power supply is very important to plant operation especially in the industrial sector. To improve operation from generation, transmission, distribution and utilisation of the power, a good understanding of the overall power network application, operation and maintenance are critical in electrical equipment management.

Electrical Systems Excellence 2010 aims to discuss practical management of power quality, transmission and distribution, targeting the complementary needs of reliable and constant supply to support your plant operations and productivity.

The delegates will also gain insights of the "how to" approaches of effective integration, adoption and optimisation of electrical systems operation. The event will highlight on power systems capability and supply improvements, maintenance and safety strategies with a strong focus on operational efficiency and cost control.

Friday 9th July 2010

0830 Sign in and Coffee

0900 Opening address from the Chair

0915 Session One – Keynote Case Study

Empowering green power operations

- Meeting the increasing demand of cost-effective power operations and stringent environmental pressure
- Profiling a clear meaning of expectations, responsibility, authority and accountability at all levels of power systems structure
- Satisfying the demand for affordable electricity while reducing CO2 emissions

Jim Chisholm Executive General Manager Energy Sustainability & Market Development
Ergon Energy

Maintenance Strategies of Integrated Electrical Assets

1000 Session Two – Case Study

Deploying proactive-predictive maintenance strategies effectively to support plant operations

- Determining the condition of in-service equipment and monitoring the health condition to predict when maintenance should be performed
- Maintaining operating satisfactory by systematic inspection, detection, and correction of incipient failures for increased readiness and greater reliability of network
- Ensuring adequate software tools to provide objective data that reveals production patterns and trends, and forms the basis for corrective action

Peter Warry Engineering Technologist, Engineering & Maintenance
International Power Mitsui - Loy Yang B

1045 Morning refreshment networking break

1115 Session Three – Case Study

Condition monitoring your electrical assets

- Analysing equipment condition using new vibration meter measurement devices to detect changes in operation and highlighting faults
- Using a network data acquisition system to improve equipment reliability from condition monitoring
- Minimising downtime of equipment with scheduled maintenance and repairs, saving time and costly repairs

1200 Session Four – Industry Examples

Solving vibration problems in generators

- Rotating looseness in 200MW generator rotor (38 weeks off line!)
- Shorted turns in rotor windings - how to manage temporarily
- Temperature-sensitive 25MW rotor - but not shorted turns
- Balancing of a 120MW generator using its exciter as a drive motor

Ray Beebe Senior Lecturer, Maintenance Management & Reliability Engineering
Programs - School of Applied Sciences and Engineering Monash University
Monash University
Gippsland Chapter Chair
Asset Management Council

Who must attend

Directors, General Managers, Heads, Superintendents, Engineers and Specialists of:

- Engineering
- Substations
- Maintenance
- Plant Management
- Electrical Engineering
- Power & Electrical Systems
- Condition Monitoring
- Asset Management
- Electrical Machine
- Process Control
- Design
- Operations
- Electrical Safety
- System Integrator
- Reliability

From these target sectors:

- Energy & Utilities
- Petrochemicals and Chemicals
- Manufacturing
- Oil & Gas
- Mining and Minerals

And other plant-based and process industries

1245 Networking luncheon

1345 Session Five – Interactive Workshop

Advanced Engineering Asset Management Concepts

A reliability engineering and risk maintenance decision-making approach for power systems vulnerability, adaptive capacity, and operational sustainability under severe conditions.

Module One

Power systems vulnerability and adaptive capacity

- Systems vulnerability and risk in severe operating conditions
- Adaptive capacity of power systems to changing conditions
- Reliability engineering and risk maintenance decision-making

Module Two

Moving towards sustainable maintenance systems

- Determining and calculating the expected life of equipment
- A life cycle of power systems in normal operating conditions
- Developing a risk maintenance strategy to meet changing operating conditions

Your workshop leader:

Dr Rudolph Frederick Stapelberg Principal
Academy for Professional Education and Training
Adjunct Professor, Centre for Infrastructure and Engineering Management
Griffith University Gold Coast Campus
Director and Principal Consultant

ICS Industrial Consulting Services

Dr Stapelberg is a registered professional engineer, also holding a Doctorate in Business Administration. He is currently Director for the engineering consultancy Industrial Consulting Services (ICS). In addition, Dr Stapelberg is Adjunct Professor to the Centre for Infrastructure Engineering and Management at Griffith University, Queensland, Australia and is a member of the executive management team for the Cooperative Research Centre for Integrated Engineering Asset Management (CIEAM).

Fred Stapelberg has close on three decades of consulting experience, and has delivered training courses for more than two decades to a very wide range of organisations including international corporations such as Alcoa, Anglo American, BP, BHP Billiton, Caltex, Escom, Rio Tinto (CRA), Sasol, Shell, WMC and more. Fred is the main architect of the EAM Body of Knowledge CEAIM has developed.

He is also the author of 'Handbook of Reliability, Availability, Maintainability and Safety in Engineering Design' covered the inclusion of the topics of reliability and performance, availability and maintainability, and safety and risk, in an overall concept of designing for integrity during the different phases of the engineering design process. These topics add significant value to the theoretical expertise and practical experience of process, chemical, civil, mechanical, electrical, and electronic engineers, by considering process engineering design from the point of view of "what should be achieved" to meet criteria for designing for reliability, availability, maintainability and safety.

1530 Afternoon refreshments & networking break

1600 Session Six – Case Study

Refurbishments and Replacement: the need, the cost and the requirements of ageing electrical equipment

- Managing ageing switch gears, circuit breakers transformers, power cables
- Replacing new equipment and renovating the power plant vs repair of old equipment
- Retrofitting and replacement of obsolete equipment

Gary Winsor Manager – Asset Modelling and Transmission Mains
Maintenance & Replacement Planning

EnergyAustralia
Sydney Chapter Chair
Asset Management Council

1700 Closing remarks from Chair and end of forum

marcus evans would like to thank everyone who has helped with the research and organisation of this event, particularly the speakers and their staff for their support and commitment.