EESA
THE ELECTRIC ENERGY SOCIETY OF AUSTRALIA

ENGINEERS AUSTRALIA

The Electric Energy Society of Australia

www.eesa.asn.au

A word from your President

Victorian Bushfire Disaster – what are the lessons?

As a former System Control Engineer in Wollongong, NSW, I know first hand how suddenly emergencies can arise and how difficult they are to deal with. In the case of bushfires the threat is awesomely powerful, difficult to predict with any accuracy and generally lasts only a short period of time.

We know that people in bushfire areas are reliant on electricity for pumps, communications and other services. To provide the service that everyone needs, electricity workers put themselves in harm's way to try and provide the service that we all need. The devastation in Victoria has taken us all by surprise. I can only imagine the stress endured and the courage required by SP AusNet operators and staff during this crisis. Like all Australian electricity utilities, these people always rise to the occasion to meet the challenge.

How is such devastation and loss of life possible after the lessons learned from the Ash Wednesday fires in Victoria and South Australia in 1983? I was in Victoria shortly after the Ash Wednesday fires and I have seen the memorials at Mt Lofty in the Adelaide Hills where there was much damage and loss of life. The Ash Wednesday fires triggered some of the biggest changes that I have seen in the electricity distribution industry. The outcomes resulted in much higher levels of maintenance in bushfire prone areas, greater tree lopping clearances, increased use of ABC conductors, more underground service mains, widespread use of LV spreaders, improvements to drop out fuse design, improved record keeping and clearer identification of private service mains. The changes were dramatic.

Since the 1980's these system have improved further with improved IT and GIS systems to the point where most electricity authorities have never had a better handle on maintenance and risk management. So how can power systems start bushfires? While electricity companies can manage the risks, they will never be able to eliminate the bushfire risk.

It is becoming apparent that "fuel loading" was a major factor in the ferocity of the Victorian fires. With fuel build up, we inevitably have a smaller number of large fires instead of larger numbers of smaller fires. It is ironic that the increased fuel load in bushfire prone areas could partly be due to the success of risk management of electricity distributors in reducing the number of fires started by power lines. Fewer fires means more fuel build-up and hence more powerful fires when they inevitably start.

I'm sure the Victorian Royal Commission will investigate all the underlying causes of the devastation and come up with new recommendations that will ultimately have some major impacts on the electricity industry. I wish SP AusNet every success in rebuilding their network and restoring supply to the bushfire affected areas. Restoration of electricity supply will be a key step in the reconstruction that will allows the victims of the tragedy to rebuild their lives.

Dr Robert Barr, EESA National President

Dates for your diary.....

- **EESA National Conference 2009**
  Smart Grid, Smart Energy, Smart People
  5-7th August, Conrad Jupiters
  Gold Coast, Queensland
  (see page 4 for more information)
- Site visit to the new TRUenergy Tallawara Power Station and the Integral Energy Springhill Transmission substation.
  Early April - more details to follow.
- EESA NSW State Conference 2009
  Managing the Winds of Change
  28-30th October, Powerhouse Museum, Sydney

EESA NSW State Conference 2008 - Best Paper Awards

The best paper presented by a member was awarded to Tony Patterson, Integral Energy for his paper "High voltage live working standards - new developments".

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The best paper presented by a non member was awarded to Bill Carman, EnergyAustralia for his paper "Implementing a risk based approach to the earthing of power systems"

DOWNLOAD a copy of the paper

bulletin 1/09 February/March 2009

News and issues from around the Industry...

Excerpts from a statement to the Senate Inquiry into Fuel and Energy by Andrew Blyth , CEO , Energy Networks Association on 2/02/09

The Energy Networks Association warned that events of recent days in Victoria and South Australia threaten many more Australians unless urgent action is taken to secure billions of dollars of much needed energy infrastructure investment.

As existing energy grids strain under sustained heatwave pressures that have broken weather and energy demand records, global financial conditions are restricting access to the capital necessary to build and upgrade energy infrastructure, ENA said.

In addition, a recent decision by the Australian Energy Regulator has proposed to reduce investment incentives by over $350 million per annum putting at risk the ability to build or reinvest in energy infrastructure. The decision also risks undermining the achievement of the Government's 20% renewable energy target and wider climate change policies.
This is in the context that the competition for global capital will intensify over the next decade.

"Energy companies have faced a very challenging week to ensure electricity supplies have met the needs of hospitals, air conditioning in homes and essential services, however it has been made that much harder with unprecedented temperatures and energy demand."

"More blackouts will happen unless urgent action is taken by energy ministers to agree to an independent assessment of a recent decision by the national energy regulator - a decision that will make it that much more difficult for ageing infrastructure to be replaced by new, smarter energy networks," ENA Chief Executive Andrew Blyth has warned.

He concluded by stating that one of the lessons from the global financial crisis is that it is dangerous to put decisions important to the community's welfare in the hands of bodies that do not bear the costs of being wrong! In the energy sector it will be the consumers and investors who will face the consequences of any regulatory errors.

Mr Blyth was giving evidence on energy investment to a Senate inquiry into Fuel and Energy on the 2nd February in Canberra.

The next Ministerial Council on Energy is scheduled for Friday 6 February in Canberra.

Engineers needed in Parliament from Engineers Australia

Engineers Australia eNews 2nd February 2009 reports that many of the problems that NSW faces could be solved more easily if more politicians had the benefit of an engineering background, according to Craig Baumann, the member for Port Stephens.

"Engineering is the most important yet most underrated profession in the world. We are trained to solve rather than create problems. I believe engineers, with their strong analytical minds and ability to solve problems, are desperately needed in Parliament."

Baumann also said the use of the word "scientist" in the title "chief scientist and scientific engineer of NSW" was unnecessary. This position was recently given to Professor Mary O'Kane.

Hunter WiMAX network trial prepares way for smart home meters

A recent article in the Australian Financial Review reported that EnergyAustralia has undertaken a trial of a WiMAX wireless broadband network that will allow the management and monitoring of infrastructure and two-way communications with meters installed on customer premises.

The network has been tested at small roadside substations and for 200 smart meters in the Hunter region of New South Wales.

EnergyAustralia intelligent networks program manager Adrian Clark said, 'We are trying to give Energy Australia a whole platform for a smart grid.'

Environmental study to inform location of future offshore energy developments

A new study of the UK's shores, published in February, recommends that there is scope for between 5,000 and 7,000(1) more offshore wind turbines, enough to power the equivalent of almost all the homes in the UK and make a massive contribution to renewable energy targets.

Experts have spent more than a year surveying the environment of the UK's seas to assess the potential for further development in offshore wind, oil and gas licensing and natural gas storage. The extensive work included the surveying of bird populations, studying the geology of the seabed, tagging marine mammals like grey and harbour seals, as well as charting how shipping, fishing and other industries use the seas around the UK.

cont....

The report, published as part of the UK Department of Energy and Climate Change's Strategic Environmental Assessment, along with the feedback from public consultation, will help inform decisions on where future offshore energy development can be built to further secure the UK's fuel supplies.

In addition to wind farms, the seas around the UK provide some significant opportunities for sub-sea gas storage and the Government is expected to consult further on new licensing arrangements for offshore gas storage in the near future.

(1) Based on 3.6MW turbines and 5MW turbines

ENA Welcomes Release of Discussion Paper on Harmonisation of Energy Safety

The Energy Networks Association (ENA) has welcomed the release of the Discussion Paper on Harmonisation of Energy Supply Industry Technical and Safety Regulation by the Ministerial Council on Energy (MCE), but has cautioned against imposing more onerous regulations on the energy sector.

The Discussion Paper was developed by the Energy Technical and Safety Leaders Group, appointed by MCE, and which sets out options for achieving a common legislative approach to energy supply industry (ESI) technical and safety regulation.

“ENA congratulates Federal Minister for Energy, Martin Ferguson and other energy ministers for initiating this process and recognising that a common approach to energy safety regulation will assist workforce mobility across state and territories, as well as the safety and efficiency of the national energy market”, said ENA CEO Andrew Blyth.

“ENA agrees that an efficient national energy market ultimately requires one common set of rules.
“ENA doesn't believe there is any relevant evidence to suggest that a prescriptive approach will ensure energy networks are better able to identify and manage safety risks, or satisfy the twin objectives of industry efficiency and the maintenance of employee/community safety standards”, Mr Blyth said.

“ENA is concerned to ensure that a national framework for energy network safety meets the requirements of the COAG Best Practice Regulation Guidelines, in particular the COAG requirement that regulations should focus on outcomes rather than inputs (ie ‘performance based’ regulation).
“The purpose of a common approach should be to support a national approach to energy regulation, not to re-design Australian energy technical and safety regulation”, said Mr Blyth.

EEInformer Feb 2009 - Energy Demand, Like Everything Else, To Slip In 2009

Perry Sioshansi reports that the financial crisis that started in 2008 is likely to continue in 2009 with significant impact on the global energy sector. Already, the International Energy Agency (IEA) has cut back its projections of global oil demand by close to 1 million barrels per day for 2009. Likewise, the Energy Information Administration (EIA) projects 2009 US electricity consumption to fall 0.6% relative to 2008 after an anemic year in 2008 which saw a mere 0.1% increase relative to 2007. Electricity demand in the US industrial sector is projected to fall by as much as 2.5% in 2009 relative to 2008 – a figure some experts believe to be an under-estimate.
The story is pretty much the same everywhere, with demand for energy falling. In Italy, for example, the national grid operator TERNA reported a 30% drop in electricity consumption for October-November 2008 compared to the same period in 2007, according to its CEO Flavio Cattaneo.

While it is too early to venture a guess on the extent and duration of the recent drop in demand, early indications are that consumers are cutting back energy usage in the midst of a serious economic recession. An examination of electricity usage data for the third quarter 2008 from a handful of US utilities reported by The Wall Street Journal (21 Nov 08) indicates that even the residential sector, historically believed to be disconnected from economic cycles, shows significant decline.

EEInformer Feb 2009 -Has Sempra Found The El Dorado In Solar PVs?

Perry Sioshansi reposts that the Spaniards searched the new world but never found the promised El Dorado. Now, Sempra Generation, a subsidiary of Sempra Energy, claims it has found the Holy Grail of renewable energy – grid parity – in a promising new type of solar photovoltaic (PV) technology (Google Wants Renewables, Fast And Cheap, Jan 08).

In early January 2009, Sempra took delivery of power from the El Dorado Energy Solar facility, a gleaming new 10-MW PV plant in sunny Boulder City, 40 miles southeast of Las Vegas, Nevada. As reported by The Los Angeles Times (5 Jan 09) the plant is producing electricity at “costs below anything comparable to date,” – reportedly as low as 7.5 ¢/kWh. If true, one can expect multiple utility-scale contracts for more of the same from other utilities in California and other sunny regions.

Instead of using conventional polycrystalline silicon modules that turn sunlight into electricity, the plant uses cadmium telluride, a lower-cost semiconductor manufactured by First Solar into thin-film cells that are cheaper to manufacture than their silicon-based counterparts.

Michael Allman, CEO of Sempra Generation boasts, "Our contract (with First Solar) is the least expensive solar power ever delivered in the world at scale." "It's like the Wal-Mart of solar panels," Allman added. Sempra is planning to install an additional 50 MW of panels manufactured by First Solar at the El Dorado site, while looking into a 500 MW installation adjacent to its Mesquite Power Generating Station, a gas-fired plant near Phoenix, Arizona.

The Electric Energy Society of Australia

News and issues from around the Industry...

IET James N Kirby Award presented to Phil Dulhunty OAM

The James N Kirby Award was established in 1956 to mark the contribution of Sir James Kirby, CBE to manufacturing in Australia by the Institution of Production Engineers (latterly the Institution of Manufacturing Engineers).

The first award was presented in 1956 in Sydney. Following the merger of the Institution of Manufacturing Engineers with the Institution of Electrical Engineers (now the Institution of Engineering and Technology), responsibility for the Award now rests with IET Australia.

The Award comprises an engraved medal and certificate and is awarded to "a person who has achieved outstanding eminence, distinction and public recognition in any sphere of activity, not necessarily engineering". Previous recipients of the Award include Sir Mark Oliphant, Sir Arvi Parbo and Senator John Button

Dulhunty Power Ltd was very pleased to see the James N Kirby Award – 2008 presented to their founder, Philip Dulhunty OAM.

At the formal presentation on the evening of 29 November 2008, Philip gave an interesting presentation of his life in the Electricity Supply Industry for the sixty years he has been involved introducing many of the products and procedures now in common practice. These included hot line tools and procedures, helical products, wood pole impregnation, bi metal connections, vibration recordings and damping – bundle conductor spacers, aircraft warning spheres, cadd line design, tension monitoring and many others.

Of some surprise to the EESA members was Philip's involvement in novel practices and products related to the marine and aviation industries, where he is also well known.

Philip turns 85 this year and is still deeply involved in these industries.

A copy of his very entertaining speech is on the web - see http://ietaust.org/node/232

EESA National Conference

EESA National Conference 2009: Smart Grid, Smart Energy, Smart People
5-7th August, Conrad Jupiters, Gold Coast, Queensland

It's on again, the EESA Queensland Chapter is pleased to announce the 85th National Electric Energy Society of Australia Conference and Exhibition to be held at Conrad Jupiter's Broadbeach, Gold Coast, Queensland from Wednesday 5 August to Friday 7 August, 2009.

The theme of this year's conference - Electricity 2009 - Smart Grids, Smart Energy and Smart People again promises to create, nurture and foster ideas that will make our industry a leader in enabling a sustainable future and to be the most sought after for Australia's brightest engineers.

The conference will be at Queensland's premier holiday destinations - the beautiful Gold Coast. This is an excellent opportunity to come to the Sunshine State. We have arranged a variety of accommodation venues, from hotels to fully self contained apartments located in Broadbeach. These provide easy access to the beach and the conference venue, Conrad Jupiter's. So why not take advantage of your time on the Gold Coast and bring the family for a short get away.

The call for abstracts is currently available and further details regarding this can be found at -
85th National EESA Conference and Exhibition - Call for Abstracts

We are also inviting you to register to attend the conference and this can be done by clicking on the link below –
85th National EESA Conference and Exhibition - Registration

We look forward to you seeing at this year's conference and encourage you to let others know about this premier electric energy industry event.

Regards
Greg Bartlett, Conference Convenor

For conference information, please contact, the conference organiser -
Anthony Bordignon
I AM EVENTS, PO BOX 278, ALBION, QLD 4010
Ph: 07 3834 3333 Fax: 07 3839 2409 Mobile:0410 300 930
Email: anthony@iamevents.com.au

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on
pmcmullan@energy.com.au