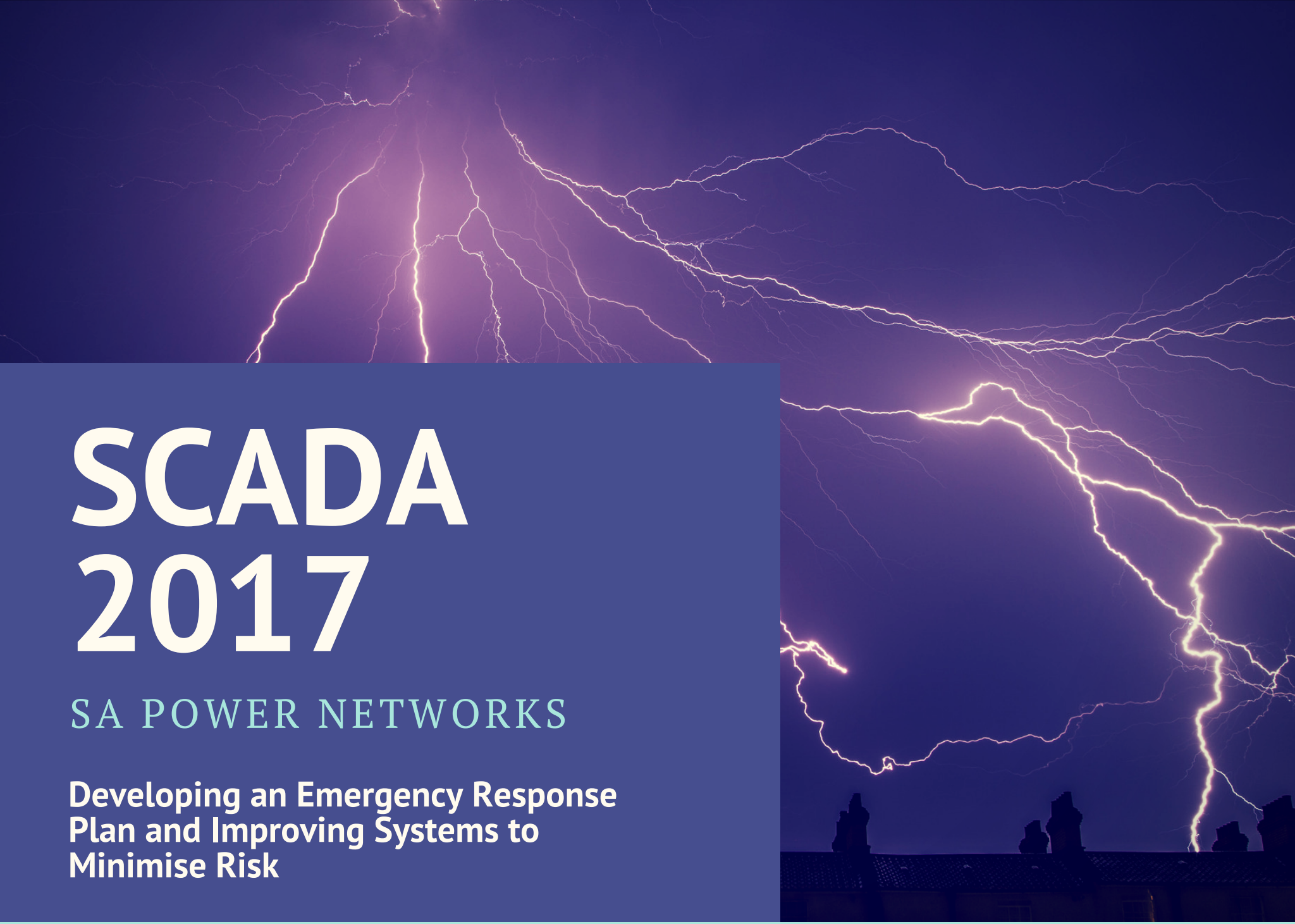

SCADA 2017

SA POWER NETWORKS

Developing an Emergency Response Plan and Improving Systems to Minimise Risk

8th ANNUAL

SCADA AUSTRALIA 2017

The Australian economy is in flux. It is estimated that the Industrial Internet of Things is set to include over 100 billion devices and that 44% of Australian jobs are susceptible to automation. Additionally, in a push towards renewable energy, companies are expected to meet State renewable energy targets before 2020, despite operating on out-dated legacy systems.

These factors amount to the expectation that manufacturing, utilities and infrastructure must prepare for a future with a vast increase in the amount of data SCADA is expected to collect, store and process and the increased reliance on these systems in day-to-day operations.

Ahead of **SCADA 2017** we chat to Tasnim Abdel-Razaq, Network Control Manager at SA Power Networks. In September 2016 South Australia experienced a severe storm that lead to a statewide blackout which impacted over 1.7 million people (the population of South Australia). Tasnim shares with us SA Power Networks' Emergency Response Plan and how systems and processes have been reviewed to reduce risks into the future.

SA Storm Snapshot

Who: SA Power Networks, operator of the South Australian electricity distribution network.

What: Widespread blackouts, lasting in some areas nearly 48 hours, across South Australia following a severe storm event left 1.7 million people without power.

When: South Australia was hit by multiple network disruptions during 2016, the most severe of which occurred on September 28th at approximately 4pm local time.

Where: Almost the entire state of South Australia was impacted by the blackouts - only Kangaroo Island off the SA coast was unaffected

Why: Widespread blackouts occurred due to a number of reasons: the cascading failure nature of the SA Power Networks grid, old infrastructure and storm damage.

DEVELOPING A PLAN

“Following the September storm event last year, we had to deal with an unstable network, wide-spread blackouts due to the impacts of mother nature on the transmission network, and also as a result of damages to infrastructure from fallen trees.

We were ultimately fortunate that the storm hit later in the day about 4:30 pm as there was less PV penetration in some parts of our network. Immediately when a storm event is forecast , as part of my role as Network Control Manager, I am also the Incident Response Manager, this means I coordinate our response to major events across the state in line with our Emergency Response Plans (ERP) as well as liaising with Control Authorities as required.

Storm and bushfire events have assigned levels, and each level dictates the coordination and response required in line with our corporate priorities being safety of personnel, safety of plant, and continuity of supply. Essentially the ERP governs how we respond operationally and lays out a restoration priority list along with a support negotiation plan covering communication with stakeholders, customers and our restoration teams down on the ground.

DEVELOPING A PLAN

Due to the wide-spread nature of last year's storm we had a few additional issues to contend with. When dealing with blackouts customers are always priority as it puts many of them at risk – hospitals, traffic lights, everything just sort of becomes chaotic. To add to the chaos we lost communications due to supply interruptions to our network provider and had to revert back to radio communication links, which highlighted the importance of redundant communications so we could talk to our field operators.

Additionally we had to contend with a number of 'copycat' accounts popping up on social media, like on Facebook and Twitter. People are always curious, they want to know what's happening, but the fake social media accounts weren't sharing valid information, they just added to the overall confusion for our customers."

NEW PROCESSES & INTEGRATION

“Since the storm event we’ve been working on a number of different things internally as part of our post event reviews, and there is always continuous improvement.

Technological developments not only provide options for our customers, but also create opportunities for improvements to our network operations through new ways to monitor, control, maintain and augment assets.

We’re looking at integrating new processes that allow us better access through remote monitoring and control technology. Installation of more intelligent devices such as distribution transformer monitors, SCADA enabled remote-controlled switching devices and advanced meters will help us to manage risk and network performance. These technologies also facilitate flexibility in our network operations and will enable the ‘two-way’ network of the future.

We’ve also integrated distribution feeder automation that improves distribution network reliability for our customers. Basically it’s an automatic self healing network system which divides our network into branches and works around a faulty branch to restore connection back to as many people as possible. “

WHERE TO NOW?

“There are a number of key challenges that we’re looking to work through at SA Power Networks.

We’ll be continuing the implementation of our advanced SCADA and Distribution Management System, which is intended to provide improved customer service through remote and automated switching of the network. This improves overall response times to outages, and our reliability and assists us in meeting customer expectations.

The most exciting thing that we’re currently doing though is a battery trial in 100 homes, this is done using Tesla Energy and Samsung Batteries.

The trial will test the benefits of combining solar and battery storage to avoid the need to build additional network infrastructure to meet growth in local electricity demand in an existing residential area and will also provide a viable alternative to the market.

We think our Tesla battery trial will be a vital component in helping our customers and our State to derive the greatest benefit from investment in these technologies. The trial gives us an opportunity to explore the customer, technological and capability impacts on our regulated network business.”

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If you'd like to hear more about developing an Emergency Response Plan in the face of a critical event and how SCADA system upgrades and automation are minimising assisting with controlling network risks then join Tasnim at **SCADA 2017.**

Attend the event in Melbourne on 30th – 31st May to hear from over 15 industry experts, explore real-world case studies and network with peers.

For special early bird prices and to secure your ticket to the event simply fill in the **form** and email to **registration@iqpc.com.au**