

# ELECTRA

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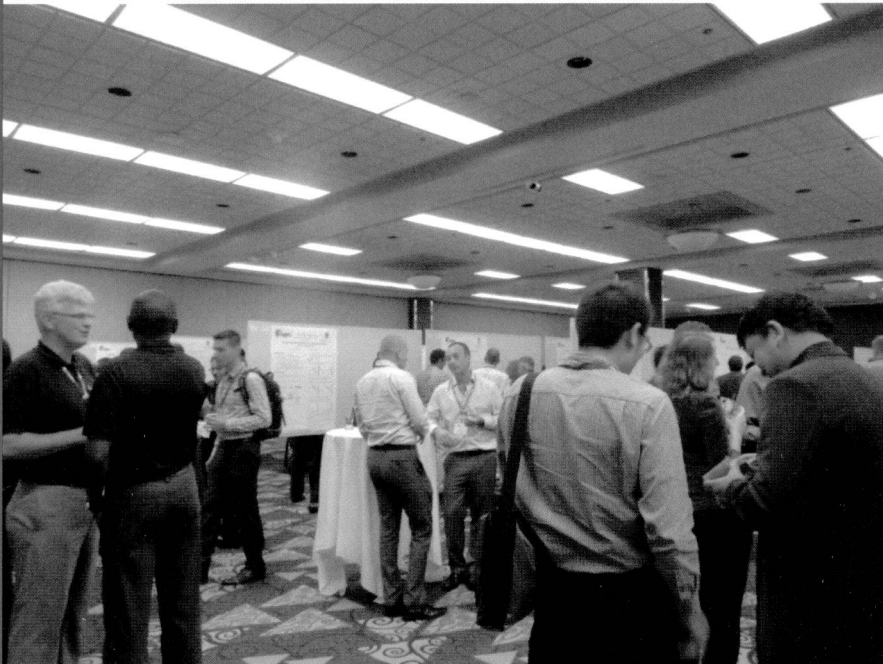
**Inside / A l'intérieur**  
**CIGRE Session 2016**  
**General Programme**  
**Programme Général**

**2016 Membership:**  
**annual renewal**  
**Adhésions 2016 :**  
**renouvellement annuel**



# CIGRE Canada Conference 2015: “What’s Next for the Power Grid?”

August 31 to September 2, 2015, Winnipeg, Canada



Conference hosted by Manitoba Hydro and the Canadian National Committee of CIGRÉ

Manitoba Hydro last hosted the CIGRÉ Canada conference in 2008 and saw 260 delegates attend. This year close to 400 delegates from around the world attended the 10th annual CIGRÉ Canada Conference held in Winnipeg, August 31 to September 2.

The conference opened with a keynote address from Mark Lauby, Senior Vice President of the North American Electric Reliability Corporation, who spoke on some of the upcoming reliability challenges that will be faced by industry. More

and more emphasis is being placed on the resilience of an organization to be able to respond to extreme events and to ensure security of assets. In addition, the nature of the grid is fundamentally changing due to the addition of distributed generation, demand response and micro-grids. NERC is responding to these changes by developing standards that focus on essential reliability services and developing frameworks and tools for assessing reliability risks.

Throughout the two days, sixty-five technical papers were presented in parallel sessions on a wide variety of topics ranging from asset management to emerging technology developments in substation equipment. In addition, thirty-seven technical papers were presented in a poster session including many quality student contributions. A few of the highlights are summarized below.

PMU data is now being used to help make decisions on the real life operation of the power system. The work presented good opportunities for benchmarking and increasing the comfort level with PMU data and makes a contribution towards moving the industry closer to implementing PMUs in the areas of real time protection and control.

The application of new technologies on the distribution system were proposed for visibility (smart line sensors) and automation (network switching), as well by the consumer (electric vehicles). Of particular interest was the commonality of anticipating, recognizing and accommodating the reaction of human behavior to the technology. As these new technologies are introduced into distribution systems, they force a change in the way the system will be planned, operated, and consumed. There are challenges with accommodating new technologies with existing infrastructure. However, the papers demonstrated a growing understanding of the needs to overcome these issues for mutual benefit.

Of particular interest was the live testing of black-start capability of a large-scale Voltage Source Converter. The test setup to complete these tests on-line and the ability to complete these tests was unique and very difficult to duplicate via simulation. This requirement to complete such on-line testing of functionality was further emphasized in the paper discussing testing requirements, as it is evident that even with a very extensive study and RTDS offline testing regimen, it is very difficult to be 100% confident in on-line performance.

Condition assessment of toughened glass insulators was presented with the conclusion that high quality insulators remained in near perfect condition after over 40 years in operation. These insulators are expected to serve well for the remainder of the transmission line asset expected life span without a need for replacement.

Two panel sessions were organized. The first panel session brought together experts to discuss some of the key lessons learned from recently completed integration studies and how they might be applied to Canada as part of the Pan-Canadian Wind Integration Study. Some of the key lessons brought forward were that icing losses are expected to be significant in Canada and affect 8% of hours system-wide. Hydro storage capability is expected to have broad regional benefits and should be able to greatly assist in mitigating wind integration challenges. The second panel session focused on challenges and solutions for the transmission and distribution industry. Several very different challenges were identified. One related to the life cycle cost of transmission line insulators. Pro-active preventative maintenance programs are now becoming more common in industry. Another highlighted that Canada has close to 300 communities that are operated as micro grids due to their remote locations. There is an opportunity to integrate more renewable in these communities to help reduce fuel costs.

In conjunction with the conference was a sold out Technical Exhibition, which included many of the manufacturing and technical consultant experts in our line of business. In addition, a one day workshop was held to exchange engineering knowledge on the latest techniques to help avoid equipment damage due to different kinds of electrical and mechanical resonances. ■

