

December 2013

## Major RTDS Simulator Installation at Manitoba Hydro

Manitoba Hydro, the provincial utility in Manitoba, has recently completed a major installation of RTDS® Simulation equipment. The primary purpose of this installation is for the study of the proposed Bipole III HVDC expansion.

With their new RTDS Simulator, Manitoba Hydro will be able to model a significant portion of the Manitoba Hydro power grid in great detail. Manitoba Hydro will also be able to connect external devices to the RTDS Simulator in order to test their protection and control equipment.

A more in-depth article on the application of the RTDS Simulator at Manitoba Hydro will be presented in an upcoming issue of the RTDS® News.



SEL Ensures Electric Power Reliability

Manitoba Hydro Orders RTDS Simulator

Year-End Wrap Up

## **SEL** SCHWEITZER ENGINEERING LABORATORIES, INC.

### SEL Ensures Electric Power Reliability

*Guest Article*



Customers will always have questions about the operation of their new, upgraded, or future power systems. Schweitzer Engineering Laboratories, Inc. (SEL) often answers their questions using model power system testing. SEL uses a Real Time Digital Simulator (RTDS®) from RTDS Technologies. With one of the largest commercially available installations of RTDS Simulation technology in the world, the SEL Engineering Services (ES) team helps customers find answers and solutions to a variety of power system questions, such as:

- How will adding series compensation to my 500 kV transmission line affect protection settings?
- Will phase-shifting transformers confuse my differential relays?
- Parts of my transmission network are different than they were three years ago. Are my protection settings still valid? If not, how will I know?
- I want to deploy a power management (or distribution automation) system and need to know that it will work before it commissions. How can I do that?

Comparing static model solutions to dynamic, closed-loop testing using the RTDS Simulator is like comparing a photograph to a movie. Both communicate ideas, but the movie is often a much richer source of information. Static models from traditional software tools have their place. But when needed, the RTDS Simulator allows SEL ES to create a detailed power system model that includes series-compensation, phase-shifting transformers, or other customer-defined system designs. SEL ES connects protective devices to the computer model and exposes the protection system to thousands of faults that resemble real-world conditions.



## SEL Ensures Electric Power Reliability

### Guest Article

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By exposing the protection system (power system model plus the actual protective relays) to these fault scenarios, SEL ES optimizes the relay settings and proposes the best, tailor-made configurations for each customer's power system. By discovering system weaknesses during model power system testing using the RTDS Simulator, SEL ES is able to identify ways to avoid problems—well before those problems occur in the actual power system.

For SEL ES and their customers, this early warning capability is the central benefit of the RTDS Simulator.

Other important modeling and testing applications performed with the RTDS Simulator at SEL include:

- Building and testing custom relay logic to address phase-shifting transformer challenges to ensure proper operation of the transformer protection.
- Transient testing series-compensated line protection to ensure that the protection devices will make the proper directional decision and phase selection during a system fault.
- Validating Automatic Generator Control and Automatic Load Shedding algorithms to avoid blackouts at critical industrial sites.
- Applying voltage profile stability using DNA™ (Distribution Network Automation) to automatically control voltage regulators and shunt capacitor banks and to reroute circuits as necessary.

Real-time, dynamic modeling and testing of power systems using the Real Time Digital Simulator from RTDS Technologies helps fulfill SEL's mission to make electric power safer, more reliable, and more economical.

## RTDS Technologies: Year-End Wrap Up

2013 has been an exciting year for everyone at RTDS Technologies Inc. We now have customers in 36 countries worldwide, and will soon reach our 300th customer.

In 2014, RTDS Technologies will be celebrating 20 years as the world leader in Real Time Digital Simulation. As such, you can expect to see then-and-now features that will span our company's 20 year history. We will also be releasing several new ads to mark the occasion.

As 2013 comes to a close, RTDS Technologies would like to take this opportunity to say Season's Greetings and Best Wishes for a Happy New Year!

## RTDS Training Courses

We are currently accepting registrations for the following course:

### INTRODUCTORY RTDS SIMULATOR TRAINING

January 20 - 24, 2014 in Winnipeg, CANADA

Email [steph@rtds.com](mailto:steph@rtds.com) for more details.

\*\*If you have suggestions for future training course topics, please don't hesitate to get in touch.\*\*

## Upcoming Events

### Electrical Networks of Russia

Moscow, RUSSIA

December 3-6, 2013

### Middle East Electricity

Dubai, UAE

February 11-13, 2014

Booth 2F01

### PSC 2014

Clemson, SC, USA

March 11-14, 2014

### DPSP 2014

Copenhagen, DENMARK

March 31—April 3, 2014

Booth 19



### RTDS is on Facebook!

Check us out on Facebook to see our regular "Model Monday" feature as well as postings about events, new equipment and the latest in RTDS Technologies news!

### You can also find us on:



RTDS Technologies



@RTDS\_Simulator

