



## 4<sup>th</sup> Annual Canada Protection Symposium

### December 3 - 5, 2019 Presentations

#### Opening Keynote Address

Dr. Edmund O. Schweitzer, III, SEL

#### Field Experience Testing Traveling Wave Line Protection

Christopher Pritchard, OMICRON

#### Update from NERC

Mark Lauby, NERC

#### Case Study: The Impact of the NERC PRC-025-2 Standard on Existing Generator Projects

Vince Green, CIMA+

#### FLISR, LOV, and Improved Reliability

Katherine Cummings, G&W Electric

#### Asset Performance Management

John McDonald, GE

#### Advances in Generator Protection

Dale Finney, SEL

#### Managing the New Grid

Damir Novosel, Quanta Technology

#### Validation of Power Network Simulations with RelaySimTest and Commercial Simulation Software

Stephan Brettschneider, Stantec

#### History of IEC 61850: Past, Present, Future

Alex Apostolov, PAC World

#### Hybrid Renewable Energy Standalone Systems

Ambrish Chandra, ETSMTL

#### Panel Discussion: Creating a Culture of Trust

Jackie Peer, OMICRON

Lorraine Gray, Hydro One

James Merlo, NERC

#### Keynote Speaker

Andrew Spencer, Hydro One

#### Best of Both Worlds – Analog Protection Principles in a Digital Relay

Dr. Bogdan Kasztenny, SEL

#### Transmission Protection Modeling and NERC Compliance Automation

Muna Anazodo + Ryan Parappilly, Hydro One

Ishwarjot Anand, Quanta Technology

#### Engineering a Cyber-Resilient Smart Grid

Dr. Eman Hammad, PwC

#### Attacking an IEC 61850 Substation

Dr. Fred Steinhäuser, OMICRON

#### Automated Distribution Coordination Setting Evaluation

Mehrdad Chapariha, Quanta Technology

#### ComEd's Experiences Designing and Implementing IEC 61850

John Bettler, ComEd

#### Substation Automation Systems – From Engineering to Automated Testing

Eugenio Carvalheira, OMICRON

#### Distribution System Automation using IEC 61850 protocol for Automatic Restoration

Himanshu Tiwari + Rupali Jain, S&C Electric

#### Centralized Protection and Modern Communication within a Distribution Network

Shahrazad Ghanei, ABB

#### System-Based Testing

Kevin Donaldson, OMICRON

## Opening Keynote Address

Edmund O. Schweitzer, III, Ph.D.



Dr. Edmund O. Schweitzer, III, is recognized as a pioneer in digital protection and holds the grade of Fellow in the IEEE, a title bestowed on less than one percent of IEEE members. In 2002, he was elected as a member of the National Academy of Engineering.

Dr. Schweitzer received the 2012 Medal in Power Engineering, the highest award given by IEEE, for his leadership in revolutionizing the performance of electrical power systems with computer-based protection and control equipment.

In 2019, Dr. Schweitzer will be inducted into the National Inventors Hall of Fame for his invention of the first digital protective relay.

Dr. Schweitzer is the recipient of the Regents' Distinguished Alumnus Award and Graduate Alumni Achievement Award from Washington State University and the Purdue University Outstanding Electrical and Computer Engineer Award. He has also been awarded honorary doctorates from both the Universidad Autónoma de

Nuevo León, in Monterrey, Mexico, and the Universidad Autónoma de San Luis Potosí, in San Luis Potosí, Mexico, for his contributions to the development of electric power systems worldwide. He has written dozens of technical papers in the areas of digital relay design and reliability and holds more than 200 patents worldwide pertaining to electric power system protection, metering, monitoring and control.

Dr. Schweitzer received his bachelor's and master's degrees in electrical engineering from Purdue University, and his doctorate from Washington State University. He served on the electrical engineering faculties of Ohio University and Washington State University, and in 1982, he founded Schweitzer Engineering Laboratories, Inc. (SEL), to develop and manufacture digital protective relays and related products and services.

SEL is a 100 percent employee-owned company that serves the power industry worldwide through the design, manufacture, supply, and support of products and services for power system protection, monitoring, control, automation, and metering. SEL offers unmatched local technical support; a worldwide, ten-year product warranty; and a commitment to making electric power safer, more reliable, and more economical.