

# 3rd Annual Protection & Control Conference

November 18-19, 2015 • New Orleans, Louisiana

## Conference Overview

The fast-paced evolution of microprocessor-based protection relays with their ever increasing waveform sampling rates and computing power, combined with availability of high-speed communication links is opening new opportunities for designing more sophisticated protection schemes and their networking and integration into station automation systems. In practical applications, however, incorporation of technological advancements is accompanied by many challenges, such as optimization of protection assets replacement strategies and degree of protection and controls functions integration, implementing adequate cyber security, managing protection system settings, maintenance practices and records, providing utility staff with timely requisite training, etc.

The main objective of the CEATI 2015 Protection & Control Conference is to bring industry professionals together to identify, discuss and develop solutions to common issues by sharing experiences and creating a networking opportunity for engineers concerned with application, optimization and the innovative use of advanced protection and control technologies in their power systems.



**For more information, visit**  
**[www.ceati.com/event/PC2015](http://www.ceati.com/event/PC2015)**

## Conference Themes

- Protection Design Practices
- Management of Relay Firmware Updates
- IEC 61850 Applications
- Power Apparatus Condition Monitoring Using Protection Relays
- Arc-flash Mitigation
- Protection Aspects of Distributed Generation & Microgrids
- New and Emerging Protection Technologies

## PCTF Meeting Overview

CEATI's Protection & Control Task Force (PCTF) will hold their General Meeting on Friday, November 20th, 2015, following the Conference. The full day meeting will place emphasis on the participant driven program development for 2016, as well as sharing of protection & control best practices, issues and solutions. Participants will also review the achievements and activities from 2015.

## PCTF at a Glance

**Participation:** 20+ Participating Members

### Focus Areas:

- Management of Protection Assets and Investment Strategies
- Protection Systems Design Standards and Utility Practices
- Substation Automation – Experiences and Best Practices
- Optimizing Protection System Maintenance and Compliance Reporting
- Introduction of New and Emerging Protection Technologies

## PCTF Participants



## Who Should Attend?

Electric Utilities  
Consultants  
Service Providers  
Manufacturers & Equipment Vendors  
Universities

**CEATI**  
INTERNATIONAL

# DAY 1 • November 18, 2015

7:30 – 8:30 Registration & Breakfast - Exhibit Hall

8:30 – 8:40 Welcome Address

*Jerry Lepka, CEATI Intl.*

## Session 1: Protection Design & Maintenance

8:40 – 9:10 End-of-Useful-Life Criteria for Modern Protection and Control Equipment

*Amin Zamani, Kinectrics*

9:10 – 9:40 Avoiding Potentially Dangerous Relay Testing Practices

*Drew Welton, Omicron*

9:40 – 10:10 Generic Requirements for Multifunctional Protection Relay Settings Database and Data Management

*Juergen Holbach,  
Quanta Technologies*

10:10 – 10:40 Morning Refreshment Break - Exhibit Hall

10:40 – 11:10 Modern Applications of Digital Relays in Distribution Systems

*Schweitzer Engineering  
Laboratories*

11:10 – 11:30 Question & Answer Period: Protection Design & Maintenance

The steadily increasing processing power of new generation of protective relays, combined with vast increase in bandwidth offered by modern networking technologies provide opportunities for design of more sophisticated and faster protection schemes. This conference session will focus on the benefits and justification of introducing new technologies, planning and staging changes of standard design, facilitating substation automation and implementing maintenance practices which would ensure regulatory compliance.

## Session 2: IEC 61850 Applications

11:30 – 12:00 Challenges with Cost/Benefit Analyses for "Green" and "Brown" Field Projects Design Implementing IEC 61850 Protocol

*Deepak Maragal, New York  
Power Authority*

12:00 - 1:00 Lunch - Exhibit Hall

1:00 – 1:30 Practical Example Testing Protection Scheme Performance based on IEC 61850

*Nestor Casilla, Doble  
Engineering*

1:30 – 2:00 Special "Power System Integrity Protection" Using IEC 61850 Communication Protocol and New VLAN Architecture

*Sohail Nejat & Matt Efremov  
Hydro One*

2:00 – 2:45 Entergy Experience with IEC 61850 Implementation & Demonstration of a Test Relay Panel for IEC 61850 Application

*Chan Wong, Entergy*

2:45 – 3:15 Afternoon Refreshment Break - Exhibit Hall

3:15 – 3:45 Efficient Testing of IEC 61850 Based Digital Substations

*Alex Apostolov, Omicron*

3:45 – 4:00 Question & Answer Period: IEC 61850 Applications

IEC61850 is an important new international standard for substation automation that will have a very significant impact on how electric power systems are designed and built in the future. Use of this standard will enable incorporation of much higher levels of functionality, with potential to significantly reduce the implementation costs of substation automation, and in turn positively impact the system operating and maintenance costs, reduce outage response time and improve the overall quality of power. This session is designed to share current experiences with IEC 61850 applications.

## Session 3: Arc Flash Mitigation

4:00 – 4:30 Ontario Power Generation's Approach to Identifying and Mitigating Arc-Flash Hazards

*Jay Wehrstedt, Ontario  
Power Generation*

4:30 – 5:00 Arc Flash & Transient Voltage Considerations Based on OSHA 269

*Baldwin Yeung, Leidos*

5:00 – 5:20 Question & Answer Period: Arc Flash Mitigation

5:20 – 5:30 Day 1 Concluding Remarks

*Jerry Lepka, CEATI Intl*

The goal of this conference session is to discuss the protective relaying techniques designed to minimize the fault clearing times, yet maintain the selective coordination with downstream protection for external faults.

**Reception 6:00 pm - 7:30pm**

# DAY 2 • November 19, 2015

7:30 – 8:30 Registration & Breakfast - Exhibit Hall

## Session 4: Distributed Generation (DG) & Microgrids

The session is intended to provide information about issues and utility experiences with integration of DG to transmission and/or distribution systems, as well as issues and technical requirement for operation of autonomous, but system connectible microgrids.

Evaluation of Bidirectional Digital Tap-Changer Controllers for Voltage Regulation in Distribution Systems with DG  
*Mansour Jalali & Amin Zamani, Kinectrics*  
8:30 – 9:10

Direct Experiences with DGs and Microgrids  
*TBA*  
9:10 – 9:50

9:50 – 10:20 Morning Refreshment Break - Exhibit Hall

State of the Art Islanding Detection and Decoupling Systems for Utility and Industrial Power Systems  
*Schweitzer Engineering Laboratories (TBC)*  
10:20 – 10:50

Protection Considerations for Installation of Distributed Energy Resources  
*Todd Martin, Basler Electric Co.*  
10:50 – 11:30

Question & Answer Period: Distributed Generation & Microgrids  
11:30 – 12:00

## Session 5: Generation Related Topics

This session is intended to provide information about the utility practices and new developments in design of protection and control systems for large electric power generators and their auxiliary systems.

The Future of P&C Systems for Large Electric Power Generators and Their Auxiliary Systems  
*Alex Apostolov, Omicron*

Hydroelectric Generator Protection Upgrades: Common Practices & Lessons Learned  
*Kirk Chen, USACE*

Protection trips & Oscillations on Generator Exciter/Governor Upgrades in New York Power Authority: Experiences & Solutions  
*Deepak Maragal, New York Power Authority*

A New Performance Metric for Motor Bus Transfer Relays at Generating Plants  
*Murty Yalla & Tom Beckwith, Beckwith Electric*

Question & Answer Period: Generation Related Topics

## Session 6: Relay Firmware Updates

12:00 – 1:00 Lunch - Exhibit Hall

1:00 – 1:30 Relay Firmware Updates – SEL Perspective  
*Schweitzer Engineering Laboratories*

1:30 – 2:10 New Firmware Management System  
*Steve Greey, S&C Electric & Bob Hay, EPB*

2:10 – 2:40 Relay Firmware presentation  
*TBA, Entergy*

2:40 – 3:00 Question & Answer Period: Relay Firmware Updates

3:00 – 3:30 Afternoon Refreshment Break - Exhibit Hall

Unlike many consumer devices where firmware changes may never occur during their economic lifetime, protective relays are subject to periodic firmware changes intended to correct operational deficiencies, address security issues or add new features to the relays. This session will provide information on the effective ways of managing firmware changes, such as which are mandatory vs discretionary, function testing requirements, effective communication and record keeping, etc. from both utility and relay manufacturers perspectives.

## Session 7: New & Emerging Technologies

3:30 – 4:00 Implementation of Travelling Wave – Based Transmission Line Protection Based on Modification of SEL 411L Relays  
*TBA, Entergy & Schweitzer Engineering Laboratories*

4:00 – 4:30 Transmission Lines Corridors Intrusion Detection Based on Monitoring EMF  
*John Puryear, ABS Consulting*

4:30 – 4:50 Question & Answer Period: New & Emerging Technologies

4:50 – 5:00 Closing Remarks  
*Jerry Lepka, CEATI Intl.*

The information presented in this session is intended to introduce new technologies, either available or in various stages of development, that can be used for such applications as detection of high-impedance faults, fully automatic feeder restoration, accurate fault location, micro-grid operation, and other technologies aimed at improving power system security and automation.



# Registration Form

## 3rd Annual Protection & Control Conference



November 18-19, 2015 ~ New Orleans, Louisiana

You may also register online at [www.ceati.com/register/PC2015](http://www.ceati.com/register/PC2015)

### Your Information

Name	<input type="text"/>
Title	<input type="text"/>
Organization	<input type="text"/>
Street Address	<input type="text"/>
City, Province/State	<input type="text"/>
Country	<input type="text"/>
Postal/Zip Code	<input type="text"/>
E-mail	<input type="text"/>
Phone	<input type="text"/>
Fax	<input type="text"/>

### Payment Options

<input type="checkbox"/> Visa		<input type="checkbox"/> Mastercard	
Card No.	<input type="text"/>		
Expiry Date	<input type="text"/> / <input type="text"/>		
Signature	<input type="text"/>		
Cardholder	<input type="text"/>		

### Location Information

**Hyatt Regency New Orleans**  
601 Loyola Avenue  
New Orleans, LA 70113  
Phone: +1 504 561 1234



All conference guests are eligible for a discounted rate of **\$189 (USD)** subject to availability. Mention "CEATI International PCTF" when reserving. Reservations must be made prior to **October 6, 2015**.

### Registration Fees & Discounts

**Register by July 30, 2015 and save \$50.**

- ☐ \$955 USD Standard Registration
- ☐ \$675 USD CEATI Participant Registration
- ☐ \$475 USD Academia/ Speaker Registration
- ☐ Free PCTF Members\*

\* PCTF participating organizations receive 2 complimentary registrations.

**Contact [events@ceati.com](mailto:events@ceati.com) for exhibitor and sponsorship opportunities!**

### Important Information

Registration fees include proceedings package, breakfast, breaks, lunches and reception where indicated on the schedule.

- ☐ Please check if you wish to be contacted about allergies or other dietary requirements.

Prices are in USD. Charges will appear as 'CEATI International Inc' and are subject to applicable taxes and fees.

All cancellations received at least 30 days prior to event will be subject to a \$200 processing fee. There will be no refunds granted after this date. Delegate substitution is permitted at no extra cost.

Please note that all names completing this form will be added to CEATI's mailing list. If you do not wish to be included in this electronic outreach, please click the "unsubscribe" button in the email to remove yourself.

Completed registration forms can also be sent by **email** to **[events@ceati.com](mailto:events@ceati.com)** or by fax to **(514) 904-5038**