



IEEE/PES Substations Committee

Westin Peachtree Plaza

Atlanta, Georgia

May 22-26, 2016

Hosted by:



Southwire®



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On-Site Registration & Support

(The Overlook, 6th Floor)

Saturday: 5:00 PM to 7:00 PM

Sunday: 7:00 AM – 6:00 PM

Monday: 7:00 AM – 5:00 PM

Tuesday: 7:30 AM – 5:00 PM

Wednesday: 7:30 AM – 5:00 PM

Thursday: 7:30 AM – 11:00 AM



uidebook App:

Steps to download this year's program

On your mobile device:

1. Download the Guidebook application on your mobile device
2. Click "Find Guide"
3. Search: "IEEE/PES Substations Committee"



2016 Substation Committee

Main Meeting and Luncheon Agenda

Monday, May 23, 2016

Main Meeting

- 7:00 am to 8:00 am Continental Breakfast
- 8:00 am to 8:40 am Substations Committee Status Report
Markus Etter, Chair - Substations Committee
- 8:40 am to 9:05 am Keynote Address No. 1: **Innovative Solutions for Future Substations**
Werner Hofbauer, PhD; ABB
- 9:05 am to 9:30am Keynote Address No. 2: **Intelligent Grid of the Future: Market Trends**
Mark Lancaster, PE; Southwire Company
- 9:30 am to 9:45am Break
- 9:45 am to 10:15 am Technical Presentation: **Battery Energy Storage System**
Keith Harley, PE; Georgia Power / Southern Company
- 10:15 am to 10:45 am Technical Presentation: **System Reliability: Review of Aging Devices that Make up the Infrastructure**
Nigel Hampton, PhD; Neetrac / Georgia Tech
- 10:45 am to 10:50 am 2017 Substation Committee Meeting (Richmond, Virginia)
- 10:50 am to 11:00 am Close of Meeting, *Markus Etter*
- 11:00 am to 11:55 am [Subcommittee / Working Group Meetings \(See schedule for locations\)](#)

Awards Luncheon

- 12:00 pm to 12:10 pm Welcome and Introductions: Markus Etter, Chair – Substations Committee
- 12:10 pm to 12:40 pm Keynote Address: **Impact of Sustainability**
Rebecca Cranford, Southwire Company
- 12:40 pm to 1:30pm Recognition of Guest Speakers
Werner Hofbauer, Mark Lancaster, Keith Harley, Nigel Hampton, Rebecca Cranford.

IEEE PES Technical Committee Wording Group Recognition Award

Chair: George Becker

Vice Chair: Devki Sharma

Secretary: Patrick Fitzgerald

Members: Arun Arora, Markus Etter, David Giegel, Philip Bolin, John Brunke, Arnaud Ficheux, Peter Grossmann, Ravi Dhara, Noboro Fujimoto, Brent Haag, Charles Hand, Ki Cheong Ho, Allan Jacobs, Richard Jones, Hermann Koch,

Tony Lim, Hua Liu, Jorge Marquez-Sanchez, James Massura, Venkatesh Minisandram, Dave Mitchell, William Munn, Dan Nix, Lynn Sowerbrower, Pravakar Samanta, Steven Scharf, Ryan Stone, Brian Withers, Xi Zhu, Jean-Marc Torres, John Boggess.

In recognition of the dedication and significant contributions of the working group in producing a necessary and comprehensive Guide for Specifications for High- Voltage Gas-Insulated Substations

IEEE PES Technical Committee Distinguished Individual Service Award

Craig Preuss

For his many years of leadership of C0 and growing its working groups

C0 Tribute

Fellows Recognition

Host Committee

Chair: Allison Thrash

Treasurer: Hannah Baldizon

Sponsorships: Brett Kenerly, Kim Knuckles, Dixie Brooks

Guest Speakers: Yuhsin Hawig

Companion Tours: Allee Armstrong

Technical Tours: Jay Stewart and Jim Campbell

Guidebook: Hannah Baldizon

Registration: Emmy Conner

Registration: Chad McBurnett

1:30 pm to 5:00 pm

Subcommittee / Working Group Meeting (See schedule for locations)

Sunday May 22, 2016

	C	D	E Chastain 1	I	CIGRE Chastain 2
7:00 AM					
8:00 AM	Continental Breakfast (The Overlook, 6th Floor)				
9:00 AM			Tutorial - E2 Guide 980 Substation Oil Containment		
10:00 AM					
10:15 AM	Break (The Overlook, 6th Floor)				
12:00 PM			Tutorial - E2 Guide 980 Substation Oil Containment		
1:30 PM	Lunch Break (on your own)				
2:30 PM			Tutorial - E5 Std 1264 Animal Deterrents		Tutorial - CIGRE Air Ins. Subst. Design for Severe Climate Conditions
3:00 PM					
3:30 PM					
3:45 PM	Break (The Overlook, 6th Floor)				
5:15 PM			Tutorial E5 - Std 1264 Animal Deterrents		Tutorial - CIGRE SF6 Application & Responsible Use - Challenges & Options
5:30 PM					
6:00 PM	New Member Orientation (Chastain F, 6th Floor)				
7:00 PM					
7:30 PM	Welcome Reception Sundial (The Bar, 73rd Floor)				
9:30 PM					

Monday May 23, 2016

			B Chastain F	C Chastain I/J	D Chastain 1	E Chastain G	I Chastain H	K Chastain E
6:30 AM	Technical Tours	Companion Tour						
7:00 AM			B0 Admin Sub Cmte.	Continental Breakfast (The Overlook, 6th Floor)				
7:30 AM								
8:00 AM				A0 – Main Substations Committee (Chastain D & E, 6th Floor)				
9:30 AM				Break (The Overlook, 6th Floor)				
9:45 AM				A0 – Main Substations Committee (Chastain D & E, 6th Floor)				
11:00 AM		All About Atlanta - City Tour		C5 - PC37.2 Device Functions and Acronyms	D0 Subcommittee	E0 joint meeting with D0		K0 GIS Subcommittee
12:00 PM				Awards Luncheon (Savannah Ballroom, 10th Floor)				
1:00 PM								
1:30 PM								
2:00 PM				C12 - P1815 DNP3	D5-Direct Stroke Shielding	E5 Animal Deterrents	I0 - High-Voltage Power Electronics Subcommittee	K2 GIS/GIL Tutorial
2:30 PM								
3:00 PM				Break (The Overlook, 6th Floor)				
3:15 PM								
4:00 PM	Tech Tour #1 - The Southwire Energy Center			C2 - P1613 Environmental Requirements	D5-Direct Stroke Shielding	E5 Animal Deterrents	I0 - High-Voltage Power Electronics Subcommittee	K10 GIS Handbook 2nd Ed
4:30 PM								
5:00 PM								
6:30 PM								
			B0 Admin Sub Cmte.					
9:30 PM								

Tuesday May 24, 2016

	Technical Tour	Companion Tour	B - Chastain F	C Chastain I/J	D Chastain G	Cigre Chastain 2	E Chastain 1	I Chastain H	K Chastain E		
6:30 AM--	Technical Tour	Companion Tour	B0 Admin Subcmte	Continental Breakfast (The Overlook, 6th Floor)							
7:00 AM --											
8:00 AM --						E1-Community Acceptance	CIGRE B3.44	E4 - Substation Safety	I5 - Voltage Sourced Converters (SVCs)	K15 Recommend Practices Field Test GIS	
9:45 AM--											
10:00 AM--					Break (The Overlook, 6th Floor)						
10:15 AM--					C4 - PC37.237 COMTAG	D2 - Cable	CIGRE B3.44 Subs servicing & supervision w/ mobile devices and smart sensing	E4 - Substation Safety	I5 - Voltage Sourced Converters (SVCs)	K15 Recommend Practices Field Test GIS	
10:45 AM--				C15 - P2030.100 Implementing IEC 61850							
11:00 AM--											
12:00 PM--					Lunch Break (on your own)						
1:00 PM--				"A Taste of Atlanta: Downtown Southern Food Walking Tour"			D2 - Cable	CIGRE B3.44	E6- Measuring Ground Impedance	I5 - Voltage Sourced Converters (SVCs)	K14 Condition Assessment of GIS/GIL
2:30 PM--											
3:00 PM--											
3:15 PM--	Tech Tour #2 - Georgia Power Customer Resource Center			C6 - P1711.1 SCADA (SSPP)	D2 - Cable	CIGRE B3.44	E6- Measuring Ground Impedance	I5 - Voltage Sourced Converters (SVCs)	K4 Guide for SF6 Gas Handling		
4:00 PM--				C17 - P1711.2 SCADA (SSCP)							
4:30 PM--											
5:00 PM--											
6:00 PM--									K6 GIS Users Group Meeting		
8:00 PM--											

Wednesday May 25, 2016

	Companion Tour	B Chastain F	C Chastain I/J	D Chastain G	D/E Chastain H	D/E Chastain 1	I Chastain 2	K Chastain E	
7:00 AM	Companion Tour								
8:00 AM		B0 Admin Sub Cmte.	Continental Breakfast (The Overlook, 6th Floor)						
9:30 AM	Historic Meets Hip – Roswell "Authentic American South"			D3 - Bus	E7 - Substation Physical Security	D7-Grounding of AC Substations	I9 - Modern Protection System for Static Var Compensators	K13 C37.20.9 MEGIS	
10:00 AM		Break (The Overlook, 6th Floor)							
10:15 AM			C8 - P1615 Network Comms in Substations	D3 - Bus	E7 - Substation Physical Security	E6- Task Force on Surface Material Testing	I9 - Modern Protection System for Static Var Compensators	K18 Mobile GIS	
12:00 PM		Lunch Break (on your own)							
1:00 PM		E2- Oil Containment (Chastain F)		D9 - AC/DC	D1 - Clearances	E9- Permanent Ground Connections	I9 - Modern Protection System for Static Var Compensators	K18 Mobile GIS K17 Physical Security of GIS K16 NCIT in GIS	
2:45 PM		Break (The Overlook, 6th Floor)							
3:00 PM - 3:15 PM		E2- Oil Containment	C3 - PC37.1.1 I/O Requirements for IEDs	D9 - AC/DC	D1 - Clearances	E9- Permanent Ground Connections	I9 - Modern Protection System for Static Var Compensators	K1 GIS Standard	
5:00 PM									
6:30 PM	Social Banquet Atlanta History Center (Meet at the Overlook, 6th Floor)								
10:00 PM									

Thursday May 26, 2016

	C Chastain I/J	D Chastain G	E Chastain H	I Chastain E
7:00 AM	Continental Breakfast (The Overlook, 6th Floor)			
8:00 AM	C20 - PC37.1.2 Databases in SAS	D8 - Turnkey	E3- Fire Protection	I4 - Static Var Compensator
9:00 AM	C19 - PC37.249 Security of Data Files			
10:00 AM--	Break (The Overlook, 6th Floor)			
10:15 AM--	PC37.238 - PTP Power Profile	D8 - Turnkey	E3- Fire Protection	I4 - Static Var Compensator
11:00 AM--	C16 - P2030.102.1 IPSEC			
12:00 PM	Lunch Break (on your own)			
1:00 PM	C18 - PC37.248 COMDEV	D8 - Turnkey	E3- Fire Protection	I4-TF2
2:00 PM				
3:00 PM	Break (The Overlook, 6th Floor)			
3:15 PM	C0 Subcommittee	D8 - Turnkey	E3- Fire Protection	I4-TF2
5:00 PM				

IEEE PES SUBSTATIONS COMMITTEE SOCIAL BANQUET 2016 ATLANTA HISTORY CENTER

The Atlanta History Center is a unique 33-acre oasis nestled among one of Atlanta's most historic neighborhoods. Award-winning exhibitions and interactive experiences truly offer something for everyone looking to explore the region's past.

Tonight's event gives IEEE PES Substations exclusive access to the Center's History Museum and new Atrium.

Motorcoach transfers will be provided to and from the event.



Atlanta History Museum Exhibits Include:

Turning Point: The American Civil War

Explore the most critical conflict in our nation's history through one of the nation's largest exhibitions on the Civil War featuring more than 1,500 original artifacts, photographs, dioramas, videos, and interactive components.

Shaping Traditions: Folk Arts in a Changing South

Trace the unique and evolving character of Southern folk culture through handcrafted pottery, woodworking, basketry, weaving, quilting, metalwork, and oral and musical traditions.

Centennial Olympic Games Museum

Relive the 1996 Centennial Olympic Games and capture the Olympic spirit in one of the world's most significant exhibitions on Olympic sport and history featuring artifacts, photographs, multimedia presentations, interactive displays, and America's only complete collection of Olympic torches and medals.

Down the Fairway with Bobby Jones

Learn the inspiring story of American golf legend Robert Tyre "Bobby" Jones Jr. as well as the evolution of the world-famous Masters Tournament and the development of the modern game of golf.

Mandarin Shutze: A Chinese Export Life

View beautiful displays of porcelain, silver, furniture, rugs, and paintings from the personal decorative arts collection of Philip Trammell Shutze, the man once recognized as America's greatest Classical architect.

<http://www.atlantahistorycenter.com/>



2016 IEEE PES SUBSTATIONS COMMITTEE TECH TOURS - Atlanta

MONDAY, MAY 23

TECH TOUR 1 – THE SOUTHWIRE ENERGY CENTER

2:30-5:00pm

PPE Requirements:

- Closed-toed shoes (no sandals or high heels)
- Other PPE will be provided (safety glasses and ear plugs)

Come take a tour of the past, present and future of energy at the Southwire Energy Center. Designed to be the preeminent manufacturing facility of specialty cable products for intelligent grid systems and renewable power, the Energy Center has become that and so much more.



When you first enter the lobby, you'll be greeted by the facility's dramatic centerpiece: a floor-to ceiling oak tree completely fabricated from the many wires and cables that Southwire manufactures. The walls surrounding the tree recount our storied history, reveal our visionary future and prove our strong commitment to customers in this industry. Topping off the lobby experience is a 60-foot-wide video that takes over the entire back wall, telling the story of how important energy is to our lives, and how important Southwire is to energy.

After the dramatic lobby experience, the tour will introduce you to Southwire's state-of-the-art manufacturing floor, highlighting the production process for control cables—from phase insulation to cabling, shielding and on through to jacketing. You'll also get a glimpse of our comprehensive quality procedures, including in-line inspections, off-line inspections, and a visit to our QA lab. The tour will conclude in the center's Observatory, with its panoramic overlook of the plant floor. Here, we'll reveal some of our latest innovations, give you a peek at those still in development and answer any questions you may have.

Don't miss this opportunity to see the latest Southwire has to offer.

Details:

Tour Starting Point: Westin Peachtree Plaza
Tour Ending Point: Westin Peachtree Plaza
Duration: 2 ½ Hours

TUESDAY, MAY 24

TECH TOUR 2 – GEORGIA POWER CUSTOMER RESOURCE CENTER

2:30-4:30pm

PPE Requirements:

- NA

It's one thing to read about the latest in electric innovations. It's quite another to actually experience them in person. Which is exactly what you'll do when you come tour Georgia Power's one-of-a-kind Customer Resource Center (CRC). Here, you'll experience The Electric Advantage® firsthand, with real-world demonstrations of the latest in electric end-use technology and energy efficiency products, programs and improvements.



The CRC showcases five different sections: Electric Transportation, Electric Comfort Systems, Food Service, Residential and Manufacturing Applications. Each section highlights the different ways electric equipment is helping improve efficiency and productivity. A few highlights of the tour:

- Induction Cooktop
- Electric Fireplace
- Continuous Oil Filtration System Fryer
- Powder Coating and UV Paint Curing
- Infrared Heating Systems
- Induction Heating and Ultrasonic Drying
- Heat Pump and Water Heating Systems
- Electric Car and Battery Technologies
- High-Efficiency Lighting
- Electric Lift Trucks, Cranes, and Conveyors

You don't want to miss this opportunity to experience how the latest in production-grade electric equipment is truly providing The Electric Advantage® to many different arenas that impact our daily lives.

Details:

Tour Starting Point: Westin Peachtree Plaza
Tour Ending Point: Westin Peachtree Plaza
Duration: 2 Hours





Power & Energy Society™

Substations Committee
Annual Meeting
Atlanta, Georgia
May 22 - 26, 2016

Tutorials:

- IEEE Std 980 – Guide for Oil Containment Systems - Sunday May 22 (8:00am – 12:00pm)
 - Tutorial on the 980 Standard which will provide an overview and purpose of the standard as well as revisions and updates made in the 2013 publication. Design concepts and considerations of oil containment in electrical substations will be reviewed along with regulatory requirements of a Spill Prevention Control and Countermeasure Plan. New containment and spill control technologies will be discussed as well as a pictorial account of one utility's SPCC compliance containment retro-fit program.
 - Slated presentors: Mike McNulty, Matthew Bauer, and Dan Koons
- Cigre Tutorial - Sunday May 22 (1:30pm – 3:00pm)
 - **"Air Insulated Substation Design for Severe Climate Conditions"** Presenter: Mark McVey, Dominion Resources. "This tutorial covers the design and life management of electrical installations exposed to severe weather conditions. The content includes experience from a wide range of severe climatic conditions from around the world, and its effect on AIS equipment. The content includes discussion of typical support systems and substation infrastructure employed by those electrical installation owners, operators and equipment providers to mitigate the risk of severe weather conditions. Consideration is given to the short, medium, future and reactive measures, along with associated human performance under such conditions. Case studies are included."
- Cigre Tutorial - Sunday May 22 (3:45pm – 5:15pm)
 - **"SF6 - Application in the Electric Power Industry, and Responsible Use of SF6 - Challenges and Options"** Presenter: Peter Glaubitz, Siemens. "SF6 tightness of electric power equipment is essential for the effective functionality of the equipment itself and for the protection of the environment. This tutorial provides a review of all significant aspects of measuring and ensuring the tightness of electric power equipment containing SF6, as well as information on regulations, manufacturing, and condition assessment. Recommendations are given to users and OEM's how to achieve and maintain a high level of SF6 tightness."
- IEEE Std. 1264 - SUBSTATION ANIMAL DETERRENTS; Sunday May 22, 2016; 1:30pm – 5:30pm
 - Many people may not realize that animals can be a leading cause of electricity outages, which has an adverse impact on overall electric grid reliability. Most electric utilities have experienced the problem of animal intrusions into substations, which has resulted in equipment damage, interruption or loss of service to customers and safety problems for

operating personnel. To address these intrusions from the animal kingdom, IEEE has created the standard IEEE 1264 to guide utilities in deterring animals from causing problems inside substations. This tutorial will explain the information contained within the recently revised standard and provide insights from industry experts. The course material will identify various troublesome animals and the problems caused by their behaviors, while also outlining mitigation methods for both inside and outside the substation fence. In addition, the tutorial describes an example animal mitigation program, documentation methods, recommendations for evaluating effectiveness after the method is applied and past survey findings.

- Slated presentors: John Randolph, Pacific Gas & Electric Company Bruce Dietzman, Oncor Electric Delivery Scott Lehman, Lehman Electrical Resources Don Moore, Vanquish Fencing Diane Watkins, Xcel Energy Vinod Simha, AEP Jim Wilson, Vanquish Fencing