

i-PCGRID Workshop 2014

Innovations in Protection & Control for Greater Reliability Infrastructure Development

Journey in Modernizing the Grid for the 21st Century

2.4 Continuing Education Units (CEU) available this year

Program

March 26 – March 28, 2014

245 Market Street, Auditorium, San Francisco, California, USA

You are cordially invited to attend the Eleventh Annual Workshop in Innovations in Protection and Control for Greater Reliability Infrastructure Development (i-PCGRID) hosted by Pacific Gas and Electric Co. (PG&E) and organized by PG&E, Mississippi State University (MSU) and Quanta Technology (QT).

2014 is a critical year world-wide for addressing better system resiliency, sustainability concerns worldwide, and address regulatory and society drivers. Initiatives we take now will affect how the grid is operated years from now. Benchmarking, Lessons Learned, and Sustainability Programs are critical in the current dynamic environment. Mutual participation efforts will help alleviate the growing pains in our journey together towards more reliable and sustainable systems in the near future. The 2014 Workshop will emphasize strategies and operational aspects of managing grid system and equipment assets to build a more resilient grid. Practical solutions and innovations are discussed by **Experienced Industry Navigators** (utilities, vendors, consultants, regulators, and academics, with international reputations) joined in a shared vision to craft a steady course towards higher levels of reliability and energy efficiency.

Core Program discussions focus on **Past, Present and Future Power Systems** in complex interconnected grid environments from around the world. **IN-DEPTH** featured topics dive into managing global grid resiliency and modernization efforts in Europe, Africa, Asia, and the Americas. These worldwide sustainability roadmaps and efforts to improve the performance of electric utility systems and address the energy needs of society improve offer many **lessons learned and winning strategies** to others embarking on new projects or seeking expertise at different stages of modernization undertakings.

Supplemental Power System discussions include Sustainable T&D Reliability, Microgrids, Electric Vehicles, Advanced Monitoring, Protection and Control Technologies, Security and Communication, and optimized management of Aging Assets. It will showcase endeavors and findings by practitioners navigating the Frontiers of the Grid, Balancing Operational Readiness, Energy Mix Strategies, and Implementing Advances in Technology. It addresses regulatory drivers, such as FERC 1000 Right-of-First Refusal elimination.

The PG&E hosted workshops are one way for fostering a vision and to set the foundation for a transition to a Modern Grid. These workshops are a forum to discuss industry trends and challenges, exchange ideas, and to help prioritize directions. Participation in this process will enable stakeholders to shape the direction of this critical program and maximize benefits from the program achievements. The ultimate goal of this effort is to foster best practices and provide a collaborative approach.

On-line Registration: https://www.cavs.msstate.edu/iPCGRID_Registration/registration.htm

To register by phone, please contact Gail Jackson: gail@cavs.msstate.edu

Center for Advanced Vehicular Systems

Box 5405
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Overnight Shipping address:

200 Research Boulevard
Starkville, MS 39759

On-site registration is available during the Event. Partial registration is not available.

Should you have any questions, please feel free to contact us:

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Day 1 - Wednesday, March 26, 2014		
Time	Item	Presenter
7:15 AM	Registration & Refreshments - Vahid Madani -PG&E	<i>Executive Greeter:</i> Nick Younan –MSU <i>Session Coordinator:</i> Trevor Hall-QT
8:00 AM	Introductions and Welcome	Jonathan Sykes – PG&E
8:05 AM	Vitality of Power Supply - Case Profile of Security and Measures for Compromised System	Ken Wells – PG&E
8:30 AM	Infrastructure Revitalization in India	V.K.Agrawal –Power System Operation,India
8:55 AM	Embracing a Smarter Grid	Henry Chao - NYISO
9:20 AM	Technology Innovations (IT and OT Partnership)	Kip Morrison – BC Hydro
9:45 AM	High-Performance Computing and the Smart Grid	Roger King – MSU
10:10 AM	Break	<i>Coordinators:</i> Reza Nasri –QT, Lise Phan–PG&E
10:25 AM	Integration of Distributed Energy Resources on Distribution System	Vic Romero – San Diego Gas & Electric
10:45 AM	Utility’s Greatest Challenge: Knowing what it is	Merwin Brown - CIEE
11:05 AM	Sustainable Energy Trends	Damir Novosel – QT, Vahid Madani– PG&E
11:30 AM	Knowledge Extraction from Power Systems Measurements by Principal Component Analysis	Alfredo Vaccaro –Univ. of Sannio, Italy Claudio Canizares – Univ. Waterloo, Ontario
11:55 AM	NASPI Update	Jeff Dagle – Pacific Northwest Nat’l Lab
12:10 PM	Lunch <i>Session Coordinators</i>	Jenny Rios – PG&E, Yujie Yin - GE
1:00 PM	The Synchronphasor Metrics & Benefits	Joe Gracia – ORNL
1:20 PM	NIST Framework for Smart Grid Interoperability Standards - Overview of PMU Performance Testing	Gerald FitzPatrick – NIST
1:40 PM	Marquee Event Energy Supply Reliability & Resiliency	Erich Gunther – EnerNex
2:00 PM	Power Plant Model Validation	Steve Yang – BPA, Pavel Etingov - PNNL
2:20 PM	Aging Generation Risk Management	James Mearns – PG&E
2:40 PM	Lessons from System Restoration of NE Blackout	Robert Stuart
3:05 PM	Break	<i>Session Coordinator:</i> John Randolph – PG&E
3:20 PM	Real-time Solutions for Power System Reliability	James Gotesky – PG&E
3:45 PM	Keys to Managing Technical and Business Visions - Sustainability Factors	Luther Dow – QT, James Barich – PG&E, John Wulf – ALSTOM
4:15 PM	Synchronphasor System Life Cycle Performance	Mark Adamiak - GE
4:35 PM	NERC PRC and WECC Updates RAS, SPS, UVLS	Gene Henneberg – NV Energy Jonathan Sykes – PG&E
4:55 PM	Smart Power Scheduling: A System of Systems Framework	Yong Fu - MSU
5:15 PM	Day 1 Closeout – Adjourn	<i>Vahid Madani, Damir Novosel, Roger King</i>

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Day 2 - Thursday, March 27, 2014

Time	Item	Presenter
7:30 AM	Registration and Refreshments	<i>Executive Greeter:</i> Nick Younan –MSU <i>Session Coordinator</i> Tommy Morris - MSU
7:55 AM	Introduction	Jonathan Sykes – PG&E
8:00 AM	Elevating our Transmission Operations	Gregg Lemler – PG&E
8:25 AM	The Future of Grid R&D	David Ortiz – Department of Energy
8:50 AM	Here’s What I See	Larry Bekkedahl – BPA
9:15 AM	A Case for Stronger Partnerships	Doug Macdonald - ALSTOM
9:40 AM	Breaking Barriers in Development of Smart Grid & Advanced Technology	S. Ali Yari – SDG&E
10:00 AM	Break	<i>Coordinator:</i> Anthony Boardingham –CDWR
10:15 AM	Transmission Line Parameter Estimation and Vulnerability Analysis of Distance Relays Using Synchronphasors	S. A. Soman – IIT-Bombay - India
10:35 AM	Evolution of the Digital Substation	Steven A. Kunsman – ABB
11:00 AM	Power System Resiliency and Technology Role	Vahid Madani–PG&E, Damir Novosel–QT
11:25 AM	Oscillation Monitoring of Large Power Systems	Mani Venkatasubramanian - WSU
11:50 AM	Trends, Lessons & Benchmarks Worldwide	Alex Apostolov – Omicron / PACWorld
12:05 PM	Lunch	<i>Session Coordinators</i> Michael Zhang-PG&E, Patrick Sorrells- SMUD
1:00 PM	<ol style="list-style-type: none"> 1. Preliminary Lessons Learned for Transmission Station Compliance with CIP Version 5 2. Cyber Security – Overview of User Perspective 3. Cyber Security Implications of Synchronphasor Applications 4. A Cyber-Physical Test Bed for Intrusion Detection 5. Substation Cyber Security in IEC 61850 	<ol style="list-style-type: none"> 1. Scott Mix – NERC 2. Ben Tatera – PG&E 3. Tommy Morris – MSU (<i>Moderator</i>) 4. Jeff Dagle – PNNL 5. Eric MacDonald – GE & Mike Ahmadi – Granitekey
2:30 PM	Enhanced Performance & Security in GNSS Master Clocks	Bill Dickerson – Arbiter
2:50 PM	A Vision for the Supervision and Control Systems Based on Synchronphasor Technology	Nohemi Arboleda and Ramon Leon - XM Columbia
3:10 PM	Break	<i>Session Coordinators:</i> Ben Tatera & Chase Sun – PG&E
3:15 PM	Implementation of New Relay Based Under Voltage Load Shedding Scheme to Prevent Voltage Collapse	Sharma Kolluri – Entergy
3:35 PM	Wide-Area Volt-VAR Control for Trans. System	Frank Ashrafi – SCE
3:55 PM	Voltage Stability Management	<ol style="list-style-type: none"> 1. Ron Markham, Ronnie Lau – PG&E, Manu Parashar–ALSTOM, F. Rahmatian – QT 2. D. Sobajic - NYISO
4:30 PM	Development and Testing of Phasor Protocol Standards	Ritchie Carroll – GPA, Herb Falk - Sisco Systems, Christoph Brunner – IT4Power
5:00 PM	Big Data Platform Technology for PMU	Yutaka Kokai & Shinji Fujiwara – Hitachi, Japan
5:20 PM	Day 2 – Adjourn	<i>Roger King – MSU</i>

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Day 3 - Friday, March 28, 2014

Time	Item	Presenter
7:30 AM	Registration and Refreshments	<i>Session Coordinator: Scott Hayes – PG&E</i>
8:00 AM	Day 3 Introduction	Vahid Madani - PG&E
8:05 AM	Microgrid Deployment Experiences and Lessons	Shay Bahramirad – ComEd
8:25 AM	PMU Conformance Test Results and Accuracy <ul style="list-style-type: none"> • How tests are done • TVE (actual phasor are calculated) • Show test results 	Tom Nelson – NIST Allen Goldstein – NIST
8:50 AM	Achieving Measurement Accuracy for Revenue Metering	Gert Rietveld – National Metrology Institute, Netherlands
9:10 AM	Emerging Transmission Issues on DG & Renewable Integration	Chifong Thomas – Smart Wire Grid, Inc.
9:25 AM	Improving Fault Location and Distance Protection Using Accurate Line Parameters	Demetrios Tziouvaras – SEL
9:45 AM	1. DER Grid Integration with IEC 61850 2. Applying IEC 61850 for multivendor systems	Christoph Brunner – IT4Power
10:05 AM	Break	<i>Session Coordinator: Luther Dow – QT Shirin Tabatabai – PG&E</i>
10:20 AM	Panel Session - FERC Order 754, Single Point Failure Protection Systems Moderator: Alex Apostolov - Omicron	Sharma Kolluri – Entergy Davis Erwin – PG&E Solveig Ward – QT Phil Tatro – NERC
11:15 AM	Double-ended Fault Location Using PMUs	Mark Adamiak – GE
11:35 AM	NERC PRCs Standards and Compliance Incorporating Rapid Evolving Technologies & Change Management	Jerry Timiraos – PG&E
11:55 AM	Modeling of Geomagnetically Induced Currents	Pat Donohoe - MSU
12:10 PM	Lunch <i>Session Coordinators</i>	Carmen Contreras - PG&E
12:55 PM	Funding California IOUs Smart Grid Technologies & Project Deployments	Wendy Al-Mukdad – CPUC
1:10 PM	Update on Dynamic State Estimation Based Protection - Results from field demonstration	Sakis Meliopoulos – Georgia Tech Paul Myrda – EPRI
1:30 PM	1. End of Life Assessment for P&C Devices 2. Protective Relay Self-Monitoring Capabilities	Bob Beresh – Hydro One Networks Inc.
1:50 PM	Mitigation of Microgrid Power Oscillations Using PMU Signals	Raymond A. de Callafon – UC San Diego Chuck Wells – OSI Soft
2:10 PM	Smart Grid Activity - Simulation Volt Var Testing	Neelofar Anjum – PG&E
2:30 PM	Technical Requirement Recommendations for Smart Inverters in Distributed Energy Resources	Jamie Ormond – California PUC Chase Sun – PG&E
2:50 PM	Break	<i>Session Coordinator: Trevor Hall - QT</i>
3:05 PM	Advanced Sensors Calibration & Testing	Farnoosh Rahmatian - QT
3:25 PM	Experiences in Situational Awareness and Data Visualization from Various Industries	Mark Walker – Ureason The Netherlands & North America
3:45 PM	Real-time Operation Experiences	Enrique Martinez – CFE, Mexico
4:00 PM	Wrap-up / Topics for 2014 - Adjourn	<i>V. Madani, R. King, D. Novosel</i>