

THE 8th ANNUAL | UNIVERSITY OF PITTSBURGH

Electric Power Industry Conference

November 11 & 12, 2013

WELCOME !!

8TH
ANNUAL
PITT



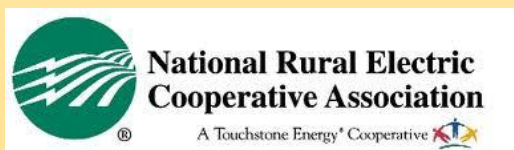
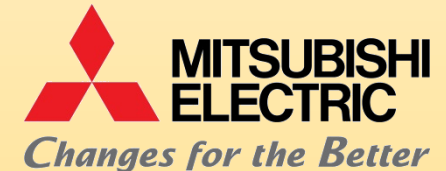
ELECTRIC POWER INDUSTRY CONFERENCE

Presented by the Swanson School of Engineering & the Center for Energy

University Club – Pittsburgh, PA
November 11 and 12, 2013



Thank You to Our Sponsors!





Conference Committee

Danielle Ilchuk

- Registration, Corporate Sponsors, and Exhibits
- Overall Conference Planning and Coordination Activities

Paul Kovach

- Marketing, Communications, and Public Relations

Brandon Grainger

- Technical Programs and Panels, Graduate Student Research Symposium and Poster Sessions

Matt Manzo

- Web Site Development

Kenny Doty

- IT and Technical Support

Monica Bell

- Conference Coordination and Support

Stephanie Aaronson

- Conference Planning and Materials

Wayne Honath and Steve Bossart

- Grid Technologies Workshop Session



Celebrating Veterans

Thank You !



*On this
Veterans Day,*

please join me in thanking all veterans,
especially our Swanson School of Engineering
alumni and students, who have served
honorably in our armed forces.

Sincerely,

Gerald D. Holder
U.S. Steel Dean of Engineering
and the Swanson School of Engineering



Monday Morning Program – November 11

- 10:00 AM Welcome:
Conference Chair – Gregory Reed, PhD
- 10:05 AM Opening Remarks:
Chancellor Mark Nordenberg – University of Pittsburgh
- 11:00 AM Graduate Student Research Symposium:
Moderator:
Brandon Grainger – R.K. Mellon Graduate Research Fellow
- 12:15 PM Swanson School of Engineering Update:
Gerald Holder, PhD – Dean, Swanson School of Engineering
- 12:30 PM Lunch and Conference Keynote Address:
Patricia Hoffman
**– Assistant Secretary, U.S. Department of Energy,
Office of Electricity Delivery and Energy Reliability**



Opening Remarks

Chancellor Mark Nordenberg
University of Pittsburgh





Keynote Address

Patricia Hoffman

**Assistant Secretary,
Office of Electricity Delivery
and Energy Reliability**

U.S. Department of Energy



2013 Center for Energy Highlights

Research Activities

- DoE ARPA-E, \$3.6M “CO₂ Thickening for Enhanced Oil Recovery” (Enick & Beckman)
- DoD AFOR, \$3.7M “Quantum Computing Algorithms for Turbulent Combustion” (Givi)
- DoE NEUP, \$800K “Advanced I&C Small Modular Reactors” (Cole)

Educational Activities

- First Year of RK Mellon Graduate Student Research Fellowships – 4 Recipients
- Over 4,000 enrollments and 400 certificates awarded in energy educational programs (electric power, nuclear, mining) since 2007
- Energy oriented international educational experiences in France, Australia, Brazil, etc.
- Undergraduate student projects: Eaton, Westinghouse, Curtiss Wright, John Swanson

Facilities

- New Center for Energy Offices & Labs – 8th Floor Benedum Hall (‘The Energy Floor’)
- Evaluation of off campus facilities for energy related expansion

Other Activities

- Establishment of the Center for Energy Advisory Council
- Recruitment of First RK Mellon Faculty Fellow in Energy – John Keith, Chemical Engr.

2013 Electric Power Program Highlights

Research Program Activities

- **Four new industry research partnerships in 2013:**
 - **Mitsubishi Electric, FirstEnergy, Pitt-Ohio Express, Siemens Energy**
- **Continuing/on-going funded research programs:**
 - **ABB, Eaton, BFTDA, and U.S. Dept. of Energy (OE, EERE, NETL, ARPA-e)**

Educational Program Developments

- **New Electric Power Engineering Graduate/Post-Bacc Certificate Program**
- **Annual Siemens Energy Graduate Student Scholarship in Electric Power**
- **IEEE PES Electric Power Scholarship Plus Award Recipients – 3 Pitt U/G Students**

Laboratory Facilities

- **Electric Power Systems Lab (Eaton-sponsored) – in final completion stages**
- **Electric Power Technologies / Micro-Energy Lab – proposed off-campus facility**

Outreach Activities

- **National Academies of Science & Engineering – Energy Ambassador Program**
- **K-12 STEM course development on “Introduction to Energy & Electricity”**



The Pitt Electric Power Systems Lab (Eaton-sponsored facility)

- **Micro-Grid / Smart Grid environment; AC/DC hybrid systems;**
- **Custom-designed Workbenches; Power Electronics technologies;**
- **Other features – advanced control, communications, relaying, M-G sets, UPS, datacenter, harmonics, loads, surge/sag equip., etc.**



Lab Capacity:

**480-V, 200-A, 30 kW
with PV Solar and Gas-Fired
Generation Integrated
(u-Wind in the future)**

8th Floor, Benedum Hall

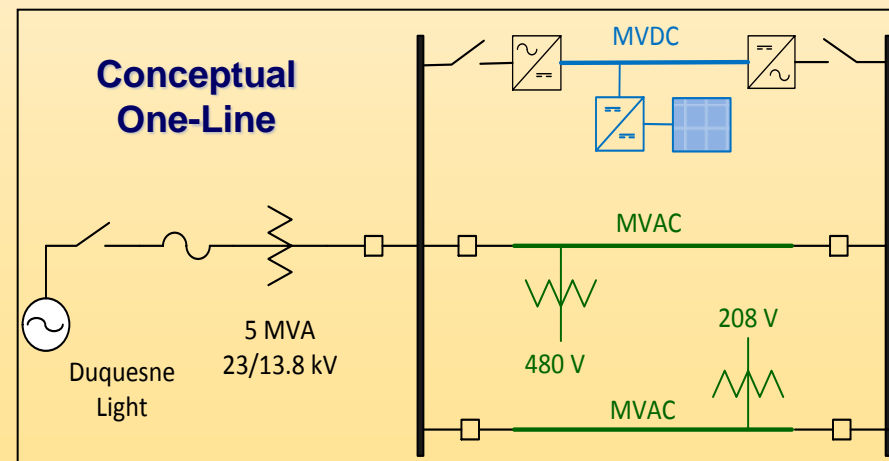
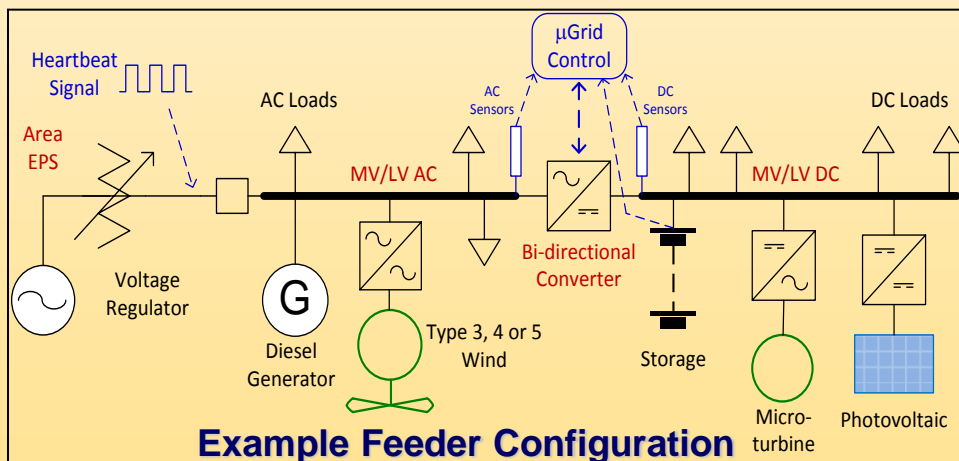
TOURS today at:

**4:10, 4:30, 4:50, and 5:10 PM
(departing from UClub lobby)**



Proposed Electric Power Technologies and Micro-Energy Lab

- Off-Campus Facility; Micro-Energy/Micro-Grid Environments
- Utility Distribution Capacity (15-kVac, 5 MVA / 1-kVdc, 1 MVA)
- University/Government R&D -and- Independent Industry Activities
- AC/DC networks, RTDS, SCADA, DG, Relaying, Automation, Control, Power Electronics, Modeling and Simulation, Prototyping and Testing





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INDUSTRY CONFERENCE

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Electric Power Engineering Program Partners

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Howard Heinz Endowment • Vira L. Heinz Endowment



Evening Session Keynote:

Revathi Advaiti

**President,
Electrical Sector – Americas**

EATON

