

## Clemson PSC 2007

Tuesday, March 13<sup>th</sup>, 2007

Clemson University, Madren Center – Ballroom C

8:00AM – 5:00PM

GE Multilin & GE Energy present

### A special GE seminar - "Advanced T & D Solutions"

- *LATEST INTEGRATION AND AUTOMATION SOLUTIONS: SYNCHROPHASOR APPLICATIONS*
- *UNIFIED CAPACITOR PROTECTION & CONTROL WITH AUTOTUNING*
- *WIRELESS COMMUNICATIONS AND APPLICATIONS*
- *ADVANCED POWER TRANSFORMER PROTECTION & DIAGNOSTICS*
- *CONCEPTS AND APPLICATIONS COST REDUCED POWER AUTOMATION*

Join us to explore communication, automation, protection and diagnostic applications that enhance Power Delivery, Asset Preservation, Power System Operations and SCADA

#### INTRODUCTIONS – WHAT'S NEW

- Analog Data Transmission
- Math Functions
- Synchrophasor Availability in UR and UR<sup>Plus</sup>
- New Solutions for Protection Betterment

#### ADVANCED CAPACITOR PROTECTION & CONTROL

##### Introduction of Newest UR Family Member – C70

- Review of capacitor bank configurations per C37.99, Guide for the Protection of Shunt Capacitor Banks
- How to meet any challenge per C37.99 or faults and unbalances (maximize reliability and security)
- Advanced sensitivity through unique auto-tuning / setting (maximize sensitivity, minimize calculation work)
- Automatic Control through:
  - PF/VAr with voltage override (optimize reactive support)
  - Time of day (meet legacy control requirements)
- Manual/Remote Control (maximize application flexibility and safety)

#### WIRELESS COMMUNICATIONS & APPLICATIONS

- Wireless communication basics
- Radio types & bands

- Relay interfaces options
- Performance expectations

### **SYNCHROPHASOR SYSTEM CONFIGURATION & APPLICATIONS**

- Performance / Data format configuration
- Time Synchronization Requirements
- Record Triggering
- Data Streaming Options

### **ADVANCED POWER TRANSFORMER PROTECTION AND MONITORING**

- **Improving Protection and Operations of Power Transformers**
  - Basics of transformer design and transformer operation
  - Thermal overload protection of transformers to prevent transformer failure
  - Monitoring winding temperatures and loss-of-life to manage transformers
  - Where to monitor temperature and loss-of-life in the transformer
  - Monitoring the insulating oil to manage transformers
  - Managing the data from transformer protection and monitoring equipment
- **Understanding the Power Transformer**
  - Understanding the chemistry and physics of the insulation system of power transformers
  - How moisture in the insulation system (oil and paper) affects the operating condition of power transformer
  - How data is translated into actual transformer information using 'models'
  - How to calculate the financial benefits (because money always talks)

### **SUBSTATION AUTOMATION TECHNIQUES AND APPLICATIONS**

- Where are you in the Distribution Automation Continuum?
- BPL (broadband powerline carrier) for data communications within your substation yard
- Hardened substation HMI platform for reliability and optimized cost
- Secure Substation Automation Architectures

***Continental Breakfast (7:30-8:30A), Breaks with Refreshments  
and Lunch (12:00-1:00P) Provided***

#### ***Tutorial presented by:***

- Mark Adamiak (GE-Multilin)
- Rich Hunt (GE Multilin)
- Bill Whitehead (GE Energy)
- Al King (GE MDS)
- Wayne Hartmann (GE-Multilin)

#### ***For questions, please contact:***

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