



Southeastern Meter School & Conference

The Hotel at Auburn University
and Dixon Conference Center

Auburn, Alabama

March 19th - 22nd, 2012

Sponsored by the

Southeastern Meter Technical Association

In Cooperation with

Utility Technology Association

General Information

The **2012 Southeastern Meter School and Conference** will be held **March 19th - 22nd** at the Hotel at Auburn University in Auburn, Alabama. The school is sponsored by the **Southeastern Meter Technical Association**. It is held in cooperation with **Utility Technology Association**.

The school provides a forum for electric utility meter personnel to **discuss metering practices, procedures, new technologies, and common problems with peers and representatives from industry**. The school is open to anyone interested and involved in these areas. This year's school will be another outstanding educational event. **Great training and hands on learning opportunities are provided in each of five modules**. The modules are tailored to instruct utility professionals at all levels of experience. **Attend any class from any module**. You pick the class of interest.

Day Participant Program

This provides an opportunity for management (general managers, purchasing agents, operation managers, engineers, etc.) to **attend one day for a reduced fee**. Come on any day and attend a few classes, then enjoy an evening of hospitality in the Exhibit Hall.

Professional Development Hours

Participants attending the entire school will be awarded 18 Professional Development hours.

Location

The **Hotel at Auburn University and Dixon Conference Center** is centrally located three miles from Interstate 85. The Hotel at Auburn University is situated in a charming university campus environment within easy walking distance to many shops and restaurants in the quaint, historical downtown **Auburn, Alabama**. Find out more about the hotel and location at www.auhcc.com.

Hotel Accommodations

A block of rooms has been reserved for attendees at the **Hotel at Auburn University**. Reservations can be made through the hotel by phone at **(800) 228-2876**. Please make your reservations by March 3rd, 2012 to insure availability. **The special room rate is \$119.00 plus tax**. Be sure to **identify yourself as being with the Southeastern Meter School & Conference to get the group rate**. **Room rate will increase after March 3rd**.

Directions

Atlanta to Auburn (110 miles)

Take I-85 South towards Montgomery. Take the Auburn exit (exit 51.)

Birmingham to Auburn (120 miles)

From Birmingham, take US Highway 280 East approximately 110 miles. Take a right onto Highway 147 and follow it 5 miles to Auburn.

Exhibit Hall

The Exhibit Hall will be open **Monday, March 19th through Wednesday, March 21st**. All the suppliers you need to meet will be in one place to answer your questions and demonstrate their products. **Exhibitor Registration Information available on school website**.

Registration

The registration to the 2012 Southeastern Meter School & Conference can be sent by mail, fax or on-line. **Payment can be made with check, purchase order, or credit card**. Invoicing available upon request. **Credit Card payment is only accepted with on-line registration**.

Student Registration: \$325

Participant Fee includes Conference Notebook, Lunch on Tuesday and Wednesday, Dinner on Wednesday, Networking / Hospitality Breaks, and Admission to the Exhibit Hall.

One-Day Student Registration: \$150

One-Day Registration Fee includes conference notebook, one Lunch, Networking / Hospitality Breaks and Admission to the Exhibit Hall.

Presenters: No Charge

Pre-Registration Deadline is March 5th, 2012.

Late and OnSite Registration are subject to an Additional Charge of \$30.

Mail

Southeastern Meter Technical Association
3079- E Crossing Park Norcross, GA 30071

Fax

(770) 662-0277

On-Line

www.semeterschool.com

Cancellation Policy

Refunds, less a \$25 administrative fee, will be made for all cancellations received in writing before March 5th, 2012. No refunds will be made after that date, but a substitution of attendees may be made by notifying the Southeastern Meter Technical Association prior to the conference.

Annual Dinner & Casino Royale

Registration includes a Wednesday evening BBQ Ribs & Chicken dinner. After dinner enjoy an evening at the **Southeastern Meter School Casino Royale**. Network with your peers while playing blackjack, craps, roulette, Texas hold'em or slot machines. Play money will be provided.

Five Modules to Choose From

Module 100: Fundamental Metering

Coordinators: Freddy Morgan, Marietta Power; Mike Chirico, South Alabama Electric Cooperative
Module providing instruction in basic metering theory and application. This module will include topics of single and polyphase theory, instrument transformers, meter sockets, and meter form numbers.

Module 200: Advanced Metering

Coordinators: David Ramsey, Cobb Energy; Ken Waddleton, Snapping Shoals EMC; Tom Woods; Cartersville Electric System
Module on intermediate metering theory and polyphase meter installation. Topics include polyphase applications, reactive metering, troubleshooting with phasors, and pulse metering.

Module 300: Hands On Meter Testing & Safety

Coordinator: Mark Wellden, Georgia Power Company
Module providing both lecture and laboratory experiences on all aspects of meter testing. Session will include hands on experience in testing everything from simple single phase, polyphase and demand to multifunction meters.

Module 400: Utilizing AMI Beyond the Meter Read Case Studies

Coordinators: Jeremy Morgan, Fairhope Utilities; Jeremiah Seal, Southern Pine EPA; Ellery Queen, Q-Tech Professional Services
Module to learn about utilities that have gone beyond the initial automated meter reading of their AMI system. Topics include the applications and integration of OMS, Pre-Paid, Remote Disconnect / Reconnect, GIS, Demand Response, Service Verification, Capacitors, In-Home Displays and SCADA.

Module 500: Meter Programming

Coordinators: Tom Ellis, City of Vero Beach; Nathan Madison, Jr., South Alabama Electric Cooperative
Module providing hands on of programming meters from the metering manufacturers. Classes to gain a better understanding of the personal computer and using it for your metering applications. Laptops will be provided or bring your own.

Exhibit Hall: **Coordinators:** Chip Kanour, Utility Specialists, Inc.; Geri Turner, Tri-State Utility Products, Inc.

Contact Information

Southeastern Meter

Technical Association

Suzanne Powell

(770) 519-1676

semsc@semeterschool.com

Southeastern Meter School & Conference Class Schedule

Monday, March 19th

Time	Module 100	Module 200	Module 300	Module 400	Module 500
10:00 - 1:00	Registration				
1:00 - 1:30	General Session				
1:30 - 3:00	Smart Grid Data Privacy Combined Class				
3:00 - 3:30	Networking and Refreshment Break				
3:30 - 4:30	Meter Safety Combined Class				
4:30 - 6:00	Exhibit Hall / Hospitality				

Tuesday, March 20th

Time	Module 100	Module 200	Module 300	Module 400	Module 500
8:30 - 10:00	Electrical Fundamentals	Power Theory	Intro to Single & PolyPhase Field Meter Testing/ Fundamentals/ Philosophy	AMI Case Study- San Bernard Electric Cooperative	Meter Programming Itron
10:00 - 10:30	Networking and Refreshment Break in Exhibit Hall				
10:30 - 12:00	Single Phase Metering Theory	Principles of Polyphase Metering	Hands On Self-Contained Single & PolyPhase Meter Testing	AMI Case Study - Echo Power Engineering	Meter Programming Itron Continued
12:00 - 1:00	Lunch Provided				
1:00 - 2:30	Polyphase Metering Theory	Polyphase Metering Applications	Hands On Transformer Rated Solid State PolyPhase Meter Testing	AMI Case Study - Flint Energies	Meter Programming Elster
2:30 - 3:00	Networking and Refreshment Break in Exhibit Hall				
3:00 - 4:30	Single Phase Meter Testing	Reactive, KVA, and 4 Quadrant Metering	Meter Testing Program	AMI Case Study - Tri-State EMC	Meter Programming Elster Continued
4:30 - 6:00	Exhibit Hall / Hospitality				

Attend Any Class You Want

Southeastern Meter School & Conference Class Schedule

Wednesday, March 21st

Time	Module 100	Module 200	Module 300	Module 400	Module 500
8:30 - 10:00	Instrument Transformers Combined Class		Testing & Verification of Meter Installation Using Customer Load	AMI Case Study - Hart EMC	Meter Programming Landis + Gyr
10:00 - 10:30	Networking and Refreshment Break in Exhibit Hall				
10:30 - 12:00	Service Voltages/ Types & Form Numbers	Troubleshooting with Phasors	Testing & Verification of Meter Installation Using Customer Load Continued	AMI Case Study - Georgia Power	Meter Programming Landis + Gyr Continued
12:00 - 1:00	Lunch Provided				
1:00 - 2:30	Meter Socket Applications	Distribution Transformer Connections		AMI Case Study - Diverse Power	Meter Programming GE Digital Energy
2:30 - 3:00	Networking and Refreshment Break				
3:00 - 4:30	Demand / Time of Use Metering	Pulse Metering		Utility Roundtable Discussion	Meter Programming GE Digital Energy Continued
5:00 - 6:30	Annual Dinner at Alumni Center				
6:30 - 9:30	Casino Royale in Ballroom A				

Thursday, March 22nd

Time	Module 100	Module 200	Module 300	Module 400	Module 500
8:30 - 9:30	Residential Theft Combined Class				
9:30 - 10:00	Networking and Refreshment Break				
10:00 - 11:00	Commercial Theft Combined Class				
11:00 - 12:00	Closing Session				

Attend Any Class You Want

Opening Session

Smart Grid Data Privacy

Instructor: Kevin Sullivan, *KEMA, Inc.*

There is ongoing debates taking place at the federal and state levels regarding customer privacy and data collected by smart meters. Traditionally, states are the testing ground for policy and regulation with federal institutions exerting influence of policy. Currently, different states are adopting different smart grid data policies. Will an approach emerge that has the consent of utilities, consumers, and regulators?

While much emphasis has been placed on the benefits of AMI / smart grid technology over the past few years, utilities are cognizant that the thorny issue of customer privacy cannot be ignored.

Module 100

Fundamental Metering

Electrical Fundamentals

Instructor: Mike Chirico, *South Alabama EC*

Learn the principles of electricity, AC and DC circuit theory including ohms law and circuit components, along with current and voltage laws. Review of basic meter math skills.

Single Phase Meter Theory

Instructor: Jack Pyburn, *Elster Electricity*

Explanation of the mechanics and electrical theory of single phase meters. Discussion of internal meter components, and how they interact to make the disk turn and register properly. Calculate watt-hour constants and register ratios of selected meters, along with dial multipliers and basic transformer factors.

Polyphase Metering Theory

Instructor: Will Grant, *Itron*

This class will introduce the student to the principles of polyphase metering. Explanations of different configurations and the uses for polyphase meters.

Single Phase Meter Testing/Maintenance Hands On

Instructor: Steve Shaw, *Georgia Power*

What does it mean to “test” a meter? This class includes discussion on testing methods and equipment along with ANSI requirements. Proper repair and maintenance of single phase meters are addressed.

Instrument Transformers

Instructor: David Ward, *GE Digital Energy*

Course is designed to teach the fundamental characteristics of Current and Potential Transformers as they are applied to electric metering. Topics include ratio, rating factor, BIL, burden, polarity and ANSI accuracy class.

Service Voltages / Types & Form Numbers

Instructor: Ken Waddleton, *Snapping Shoals EMC*

Focuses on service voltages and how they relate to meter selection. What is a meter “Form” and how does it relate to the type of service? Learn what does the nameplate information tell you. Overview of how meters, sockets and transformers are wired together? Although concentrating on single phase services, polyphase meter forms are also discussed.

Meter Socket Applications

Instructor: Chip Kanour, *Utility Specialists, Inc.*

A discussion on the components of a meter socket along with the importance of proper torque in electrical connections. Study of various standards and testing procedures on meter sockets.

Demand / Time of Use Metering

Instructor: Jay Gray, *Stuart C. Irby Co.*

Lecture on what “demand” is and why do utilities use demand metering. It will cover different types of demand metering and technologies. This class will also cover “Time of Use” (TOU) metering and related technologies. It will address questions on why we use TOU metering and its benefits.

Module 200

Advanced Metering

Power Theory

Instructor: Lee Allen, *Lanier Technical College*

An expansion of the popular course on the basics of electricity – volts, amps, power factor and all kinds of good stuff. Definition and applications of KW, KVA, power factor, reactive power, and demand. Introduction to complex math and phasors.

Principles of Polyphase Metering

Instructor: Randy Riley, *Landis + Gyr*

Lecture on “What is polyphase metering.” Why does the customer need this type of metering? Evolution of polyphase metering. Polyphase meter wiring connections are discussed.

Polyphase Metering Application

Instructor: Larry Waters, *GE Digital Energy*

A review of delta and wye metering applications, 2,2-1/2 and 3 element meter selection, “multi-form” meters and Blondel’s Theorem. The participant will have the opportunity to work on several meter application problems in order to assess his/her own skill level.

Reactive, KVA and 4 Quadrant Metering

Instructor: Victor Love, *Schweitzer Engineering Labs*

Explore reactive metering concepts and terminology. Look at why reactive measurements are important, their impact on system losses, equipment sizing, and cost of service. Review the mathematical derivation of reactive quantities. Explanation of 4 Quadrant metering.

Instrument Transformers

Instructor: David Ward, *GE Digital Energy*

Combined with Module 100 class

Installation Troubleshooting Using Phasors

Instructor: Larry Waters, *GE Digital Energy*

An introduction to the concept of phasor diagrams – what they represent, how they are developed, and how they may be used as effective diagnostic tools. Working with phasor information provided by new solid state electricity meters to troubleshoot new and Existing metering installations. Includes some interactive exercises diagnosing miswired meters.

Distribution Transformer Connections

Instructor: Tony Kiser, *Georgia Power*

Lecture on the understanding of distribution transformer connections and how to make them. A necessity to a well rounded meter person.

Pulse / Load Profile Metering

Instructor: Frank Lopez, *Electric Supply, Inc.*

What is pulse metering? When, why, and how you would use it in a modern day metering system. Explanations of pulse initiators, isolation relays, and pulse weight calculations.

Module 300

Meter Testing & Safety

Meter Safety

Instructor: Jim Kimberly, *Georgia Power*

The check out procedures for self-contained meter sockets and the results of a fault in a self-contained meter socket. Demonstrations of the proper use of protective equipment and fire retardant clothing while working in reach of an energized circuit. Discussions on various accidents experienced by meterman. Safety precautions while working inside a substation.

Intro to Single Phase and PolyPhase Field Meter Testing / Fundamentals / Philosophy

Instructor: David Philpott, *Georgia Power*

Discussion on the Basic Theory, Philosophy, and ANSI Standards necessary to complete single phase and three phase meter testing. Includes details of phantom load testing and customer load testing.

Hands On Self-Contained Single Phase and PolyPhase Meter Testing

Instructors: Steve Shaw, Tony Moore, Dwayne

Harrington, Jamie Pulliam, *Georgia Power*

Hands on lab allowing students to test mechanical and electronic self-contained watt-hour meters using phantom load and portable watt-hour standard.

Hands On Transformer Rated Solid State PolyPhase Meter Testing

Instructors: Steve Shaw, Tony Moore, Dwayne

Harrington, Jamie Pulliam, *Georgia Power*

Hands on lab allowing students to test electronic transformer rated watt-hour meters. Using phantom load and portable watt-hour standard, three portable watt-hour standards, and newer technology test equipment. Testing from infrared test LED.

Meter Testing Program

Instructor: Cliff Hand, *Georgia Power*

Discussion on the benefits of a Meter Testing Program. Discussion will include ANSI Standards, Maintaining Compliance, Revenue Optimization and Trending Data. In addition, discussion will include how AMI meters have changed shop testing requirements.

Testing and Verification of Meter Installation Using Customer Load

Instructors: Dwayne Harrington, Jamie Pulliam
Georgia Power

Demonstration on how to properly check your overall meter installation and be assured of accurate billing. Class will include vector analysis, voltage measurement, CT burden verification and verifying CT ratios using latest test equipment and classroom discussion.

Residential Theft

Instructor: Greg Lee, *Georgia Power*

The loss of revenue through unsecured meters, the use of tap detectors, the use of check meters and other methods of theft detection, the meterman's role in revenue protection, and how investigations are completed after a theft case is discovered.

Commercial Theft

Instructor: Greg Lee, *Georgia Power*

Detection of loss of revenue due to theft on Commercial accounts. Ways to prevent loss of revenue due to theft of services on Self Contained Polyphase and Instrument Transformer Rated accounts.

Module 400

Utilizing AMI Beyond the Meter Read Case Studies

AMI Case Study - San Bernard Electric Cooperative

Instructor: Doug Lambert, *San Bernard EC, Steve Collier, Milsoft*

This case study will cover the utilities integration of AMI to Outage Management and CIS using the MultiSpeak Protocol. There will be a few videos demonstrating the end-user's experience with using the integration for better customer service and more accurate reporting of outages. Also show how the utility is using tamper alarms (coming into the Outage system through MultiSpeak) to discover possible theft of service. A discussion on how they have saved money and wasted trips by determining, through the integration, that the member's breaker was tripped and there was not a legitimate outage. Utility will also show how they are plotting the data to their field map viewers for helping the technicians in the field with streamlining the deployment process and CSR's with answering questions to the public about the progress of the deployment. Also show how the utility is using an interactive map on the utility website to inform the public about the progress of the AMI deployment. Will show the customer web presentation of

energy usage using a MDMS. A discussion on how they keep their databases (CIS,AMI, and OMS) synchronized with MultiSpeak requiring less data entry (no duplication of processes) and minimizing the opportunities for human error in input.

AMI Case Study - ECHO Power Engineering

Instructor: Scotty Carrol, *ECHO Power Engineering*

ECHO Power recently completed a distributed metering project for NASA's Marshall Space Flight Center in Huntsville, AL. The project used thirty-five meters on the medium and low voltage distribution system to compute a single bill, including 30 minute demand and time-of-use billing for over 200 facilities. The meters communicate wirelessly to two independent SCADA systems and the billing is automated using a mix of off-the-shelf and custom software. This session will explain the approach used to solve this complex metering application, including the hardware and software that made it all possible.

AMI Case Study - Flint Energies

Instructor: Ty Diamond, *Flint Energies*

Remote meter reading and Smart Meters have taken on various meanings over the past few years. This presentation will present the different benefits a utility can receive from an intelligent smart meter system. Areas discussed will include load management, meter reading, outage management, engineering analysis, voltage surveys, theft detection, etc. What a Smart Metering System will normally interface with inside the utility. The advantages and pitfalls of installing a system from a user's standpoint along with a discussion of the Smart Grid demonstration project going on at Flint Electric Membership Corporation will be presented.

AMI Case Study - Hart EMC

Instructor: Russell Shirley, *Hart EMC*

Now that the meter has been transformed into a communication platform what will you do with that data? This session will show what one Cooperative has done with some of that data and how they turned data into information. The focus will be on outage detection and restoration but time permitting other topics such as line loss will be discussed. To use the meter for OD (outage detection) in a way that gives your utility a positive return on the investment in time and money it takes careful preparation and ongoing maintenance to any AMI deployment. It is hoped that this session will help you create your roadmap to OD success.

AMI Case Study - Georgia Power

Instructors: Mitch Cason, Van Holsenbeck
Georgia Power

There are many additional benefits that can be realized using the AMI meter data. Topics of this presentation will be on: Using voltage

data to 1) ensure the correct meter is set in the socket 2) it's wired properly 3) transformer failure (high/low voltage). Also a discussion on using lost phase voltage alarms to identify revenue loss and tamper alarms. The utility is also testing load profile and encryption with some good results. An additional presentation topic will be adapting standard AMI meters to monitor the health of capacitor banks.

AMI Case Study - Diverse Power

Instructor: Randy Shepard, *Diverse Power*

Since the implementation of a single power line carrier solution, the utility has utilized the system well beyond the "billing reads" capability. From the beginning, they have read every meter, every hour of every day. This allows significant data to do the following items: 1) Tamper detection, 2) Transformer loading, 3) Engineering load studies, 4) Load balancing 5) Outage analysis and restoration verification, and 6) High bill resolution. Experiences will be shared about the system along with the development and use of the systems that have been put into place to work with the data.

AMI Case Study - Tri-State EMC

Instructor: David Lewis, *Tri-State EMC*

This session highlights value added benefits of an AMI system that go far beyond remote meter reading. Learn how Tri-State EMC was awarded a U.S Department of Energy Smart Grid Investment Grant and completed a \$2.4 Million AMI project that allows them to offer customers usage monitoring, pre-pay metering, and Time of Use metering. Discussion about how their AMI system helps with outage detection/management as well as reduce operating costs through remote disconnects/reconnects, theft detection, and improved power quality monitoring.

Utility Round Table Discussion

This will be an open forum for metering technicians, engineers and managers to discuss the status of the electric metering industry. Be ready to share your issues with peers of the utility industry. This session will be open to only utility personnel.

Module 500

Meter Programming

Overview and hands on programming of manufacturers metering software. You will be creating and editing meter programs.

Laptop computers are provided but students can bring their own.

Meter Programming – Elster

Meter Programming – GE Digital Energy

Meter Programming – Itron

Meter Programming – Landis + Gyr

Student & Presenter Registration Form

Southeastern Meter Technical Association

The Southeastern Meter Technical Association subscribes to the art of metering electric energy and power, and to the purpose of keeping abreast of new developments and techniques in the practice of this technology, and the sponsorship of educational programs and training for electric meter personnel.

The purpose is to organize an annual electric Meter School for the benefit of the attending employees in the electric utility industry.

Day Participant Program

This provides an opportunity for management (general managers, purchasing agents, operation managers, engineers, etc.) to **attend one day for a reduced fee**. Come on any day and attend a few classes, then enjoy an evening of hospitality in the Exhibit Hall. Lunch is provided for Day Participants.

Cancellation Policy

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The Hotel at Auburn University, Auburn, Alabama

First Name	Last Name	

Badge Name (if different from above)		

Title		

Company		

Address		

City	State	Zip Code
_____	_____	_____
Work Phone	Mobile Phone	
_____	_____	
Email		

Registration Fees

- _____ \$ 325 **Student** Registration Fee includes Conference Notebook, Lunch on Tuesday and Wednesday, Dinner on Wednesday, Networking / Hospitality Breaks, and Admission to the Exhibit Hall.
- _____ \$ 150 **One-Day Student** Registration Fee includes conference notebook, one lunch, and admission to the Exhibit Hall.
- _____ \$ NC **Presenter** - No Charge - All Presenters Must Register

Pre-Registration By March 5th, 2012

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Payment Methods

Check Payable to **Utility Technology Association** enclosed for \$ _____

Please Invoice _____ Purchase Order Number _____

Credit Card Payments accepted only with On-Line Registration

Return Registration Form To

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