

## 2017 SWEMA Meter School

Course 1 Introduction to Electrical Metering Moderator ---	Course 2 Advanced Electrical Metering Moderator ---	Course 3 Complex Electrical Metering Technology Moderator ---	Course 4 National Generation/Transmission Metering (NG&T) Moderator ---
Monday, October 23, 2017	Monday, October 23, 2017	Monday, October 23, 2017	Monday, October 23, 2017
9:00 AM Calculator Training Class until 11:00 10:30 AM Registration in Foyer 1:00 PM General Opening Session Jay Dee Wilkins, SWEMA President 1:30 PM History of SWEMA and Meter School Tom Haenszel, Ev Smith Sales Co., Mike Cleveland TEC 2:00 PM Introduction to DC Circuits Ray Cumpston, Oncor 2:45 PM Break 3:00 PM Introduction to DC Circuits, Cont. Ray Cumpston, Oncor 3:30 PM Introduction AC Power Ray Cumpston, Oncor 5:00 PM Session Ends Tuesday, October 24, 2017 8:00 AM Calculator Use and Meter Math Overview Britt Holley Oncor, Robert Savage CenterPoint Energy 9:30 AM Break 9:45 AM Calculator Use and Meter Math Overview, Cont. Britt Holley Oncor, Robert Savage CenterPoint Energy 11:00 AM Energy versus Power Robert Savage, CenterPoint Energy 11:45 AM Lunch 12:45 PM Visit Manufacturers Exhibits Meter Theory 1:30 PM Meter Theory Billy Williams, Anixter 2:45 PM Break 3:00 PM Meter Theory, cont Billy Williams, Anixter 5:00 PM Session Ends Wednesday, October 25, 2017 8:00 AM Power Triangle and Vector Concepts Loren Brix, Itron 9:30 AM Break 9:45 AM Solid State Metering Jeff Barlow, Honeywell 11:00 AM Visit Manufacturers Exhibits 11:45 AM Lunch 12:45 PM Status of AMR/AMI & Communications/HAN Matt Monroe, Landis+Gyr 1:45 PM Meter Forms and Applications Josh Kovar, TMD 2:45 PM Break 3:00 PM Single-phase Load Characteristics Alan Gilley, CenterPoint Energy 4:00 PM Meter Testing Concepts John Carroll, PowerMetrix 5:00 PM Session Ends Thursday, October 26, 2017 8:00 AM Single-phase Meter Safety, Installation and Removal Britt Holley, Oncor 8:45 AM Hands-on Lab, Meter Installation and Removal Britt Holley, Oncor 9:45 AM Break 10:00 AM Hands-on Lab, Meter Installation and Removal, Cont. Britt Holley, Oncor 11:30 AM Lunch & Arcing Demonstration General Assembly 12:00 PM Electrical Arcing Demonstration David Visconti, CenterPoint Energy 12:45 PM Meter Diversion Detection Martin Magana, AEP Texas 2:00 PM Break 2:15 PM Basic Transformer Theory Ray Cumpston, Oncor 3:45 PM Break 4:00 PM Basic Transformer Theory, Cont. Ray Cumpston, Oncor 4:30 PM Exam Overview - Moderator / Instructional Team 5:00 PM Session Ends Friday, October 27, 2017 At The Brazos Center 8:00 AM Safety Roundtable 9:00 AM Course Exam - Moderator 9:30 AM Facilities and Course Evaluation - Moderator 9:45 AM General Session-Awards, Certificates 10:30 AM Dismissed	9:00 AM Meter Math Class until 11:00 10:30 AM Registration in Foyer 1:00 PM General Opening Session Jay Dee Wilkins, SWEMA President 1:30 PM Review of Electrical Power Concepts Alan Gilley, CenterPoint Energy & Loren Brix, Itron 3:00 PM Distribution Transformer Application and Theory Kyle Heitmiller, Oncor 3:30 PM Break 3:45 PM Distribution Transformer Application and Theory, Cont Kyle Heitmiller, Oncor 5:00 PM Session Ends Tuesday, October 24, 2017 8:00 AM Distribution Transformer Application and Theory, Cont Kyle Heitmiller, Oncor 9:00 AM Metering Misapplication and Metering Errors Josh Kovar, TMD 10:00 AM Break 10:15 AM 4W, 3P Wye Theory and Metering Applications (problem solving) Raymond Cumpston, Oncor (classroom) 11:45 AM Lunch 12:45 PM 4W, 3P Wye Theory and Metering Applications (problem solving), Cont Raymond Cumpston, Oncor (classroom & prepare for labs) 1:30 PM Visit Manufacturers Exhibits 2:15 PM 4W, 3P Wye Theory and Metering Applications (problem solving), Cont Raymond Cumpston, Oncor (labs & classroom question and answer) 5:00 PM Session Ends Wednesday, October 25, 2017 8:00 AM 4W, 3P Delta Theory and Metering Applications (problem solving) Alan Gilley, CenterPoint Energy (classroom) 10:00 AM Visit Manufacturers Exhibits 10:45 AM 4W, 3P Delta Theory and Metering Applications (problem solving), Cont Alan Gilley, CenterPoint Energy (classroom & prepare for labs) 11:45 AM Lunch 12:45 PM 4W, 3P Delta Theory and Metering Applications (problem solving), Cont Alan Gilley, CenterPoint Energy (labs & classroom question and answer) 2:45 PM Break 3:00 PM Distribution level Instrument Transformer Theory, Testing Jeannine Liu, ABB 5:00 PM Session Ends Thursday, October 26, 2017 8:00 AM Instrument Transformer Installation and Metering Applications Robert Savage, CenterPoint Energy 10:30 AM Break 10:45 AM 3W, 1P & 3P Theory and Metering Applications (problem solving) Rick Weitner, Xcel Energy (classroom) 11:30 AM Lunch & Arcing Demonstration General Assembly Electrical Arcing Demonstration David Visconti, CenterPoint Energy 12:45 PM 3W, 1P & 3P Theory and Metering Applications (problem solving), Cont Rick Weitner, Xcel Energy, (classroom & prepare for labs) 2:45 PM Break 3:00 PM 3W, 1P & 3P Theory and Metering Applications (problem solving), Cont Rick Weitner, Xcel Energy, (labs & classroom question and answer) 4:30 PM Exam Overview - Moderator / Instructional Team 5:00 PM Session Ends Friday, October 27, 2017 At The Brazos Center 8:00 AM Safety Roundtable 9:00 AM Course Exam - Moderator 9:30 AM Facilities and Course Evaluation - Moderator 9:45 AM General Session-Awards, Certificates 10:30 AM Dismissed	10:30 AM Registration in Foyer 1:00 PM General Opening Session Jay Dee Wilkins, SWEMA President 1:30 PM Meter Installation Wiring Josh Kovar, TMD & Robert Savage, CenterPoint Energy 3:45 PM Break 4:00 PM Meter Installation Wiring, Cont Josh Kovar, TMD & Robert Savage, CenterPoint Energy 5:00 PM Session Ends Tuesday, October 24, 2017 8:00 AM Reference Standards Traceability Raeann Jackson, Radian 9:00 AM Troubleshooting AMR Devices Rick Weitner, Xcel Energy 10:00 AM Break 10:15 AM Transformer Loss Compensation Mike Bearden, Landis+ Gyr 11:45 AM Lunch 12:45 PM Transformer Loss Compensation, Cont 1:45 PM Break 2:00 PM SCADA Principles Victor Love, SEL 3:00 PM Visit Manufacturers Exhibits 3:45 PM KYZ Metering Bill Brayden, SSI 5:00 PM Session Ends Wednesday, October 25, 2017 8:00 AM Field Testing of Solid State Meters and Devices Raeann Jackson, Radian Research 9:15 AM Visit Manufacturers Exhibits 10:00 AM In Service Testing of Instrument Transformers Bert Ackerman, Spinlab Utilities 11:45 AM Lunch 12:45 PM What You Didn't Know About Var Metering Kenneth Grant, Aclara 1:45 PM Break 2:00 PM Billing vs. Metering Accuracy John Carroll, Powermetrix 3:30 PM Grounding Billy Williams, Anixter 5:00 PM Session Ends Thursday, October 26, 2017 8:00 AM Metering and Billing Errors Josh Kovar, TMD 9:30 AM Break 9:45 AM Integrated Communications Jeffrey Barlow, Honeywell 11:30 AM Lunch & Arcing Demonstration General Assembly 12:00 PM Electrical Arcing Demonstration David Visconti, CenterPoint Energy 12:45 PM Ferreresonance & IT's Effects Billy Williams, Anixter 1:45 PM Break 2:00 PM ANSI Standards Russell Thompson, Oncor 3:15 PM Break 3:30 PM The Ins and Outs of VAR Flows Russell Thompson, Oncor 4:30 PM Exam Overview - Moderator / Instructional Team 5:00 PM Session Ends Friday, October 27, 2017 At The Brazos Center 8:00 AM Safety Roundtable 9:00 AM Course Exam - Moderator 9:30 AM Facilities and Course Evaluation - Moderator 9:45 AM General Session-Awards, Certificates 10:30 AM Dismissed	10:30 AM Registration in Foyer 1:00 PM General Opening Session Jay Dee Wilkins, SWEMA President 1:30 PM Gross & Net Generation Metering Mark Hudson, Oncor 2:45 PM Break 3:00 PM Discussion of Deregulated Markets John Adams, ERCOT 4:00pm Understanding One & Three Line Metering Schematics Tony Davis, ERCOT 5:00 PM Session Ends Tuesday, October 24, 2017 8:00 AM Field Testing Facilities and Solid-State Meters and Devices Loren Brix, Itron 9:30 AM Break 9:45 AM Types of Communications in a Transmission Substation Steve Bleier, Ametek 11:45 AM Lunch 12:45 PM Advanced Communications (DNP, MODBUS, TCP_IP, etc) Steve Bleier, Ametek 2:15 PM Visit Manufacturers Exhibits 3:00 PM Advanced Communications (DNP, MODBUS, TCP_IP, etc), Cont Steve Bleier, Ametek 5:00 PM Session Ends Wednesday, October 25, 2017 8:00 AM Instrument Transformers Jeannine Liu, ABB 9:30 AM Break 9:45 AM Safety for High Voltage Substations & Control Rooms Tito Sanchez, CenterPoint Energy 11:00 AM Visit Manufacturers Exhibits 11:45 PM Lunch 12:45 PM Understanding Reactive Meter Measurement Michael Bearden, Landis+Gyr 2:00 PM Break 2:15 PM Advanced Transformer and Line Loss Compensation Theory Carlos Tello, Schneider Electric 5:00 PM Session Ends Thursday, October 26, 2017 8:00 AM Effects of Power Quality on Metering John Carroll, Powermetrix 9:00 AM Break 9:15 AM Advanced SCADA Principles & SCADA Technology Victor Love, SEL 11:30 AM Lunch & Arcing Demonstration General Assembly 12:00 PM Electrical Arcing Demonstration David Visconti, CenterPoint Energy 12:45 PM Engineering Design for Ring Buss and Breaker and a Half Meter Schemes Rhett DeSpain, Xcel Energy 2:30 PM Break 2:45 PM Metering Verification for Ring Buss and Breaker and a Half Meter Schemes Rhett DeSpain, Xcel Energy 4:30 PM Exam Overview - Moderator / Instructional Team 5:00 PM Session Ends Friday, October 27, 2017 At The Brazos Center 8:00 AM Safety Roundtable 9:00 AM Course Exam - Moderator 9:30 AM Facilities and Course Evaluation - Moderator 9:45 AM General Session-Awards, Certificates 10:30 AM Dismissed