

WORKING WITH OSCILLOSCOPES WORKSHOP

February 29, 2012

and

50TH ANNUAL RURAL ENERGY CONFERENCE

March 1-2, 2012

Radisson Hotel
La Crosse, Wisconsin



Sponsored by

Midwest Rural Energy Council
University of WI, MN, Iowa and South Dakota State
Extension
University of WI Biological Systems Engineering Dept.
University of MN Biosystems and Agricultural
Engineering Dept.
Iowa State University Agricultural and Biosystems
Engineering Dept.
South Dakota State University Agricultural and
Biosystems Engineering

Workshop Agenda

Working with Oscilloscopes

Instructors: Paul Ortmann, Tom Seidl
and Bob Fick

The morning session will provide an overview of oscilloscopes and their use in a stray voltage investigation. Examples of the proper use and common miss-uses of oscilloscope measurements will be presented.

The afternoon session will be broken into four small groups for hands on work with an instructor. The four groups will be arranged according to your experience with an oscilloscope: 1.) no experience, 2.) limited experience, 3.) some field experience, and 4.) advanced users. Please bring your own oscilloscope. A limited number of scopes will be available for those without their own scope.

Wednesday, February 29

7:00 AM Registration and Breakfast
8:00 **Working with Oscilloscopes**
12:00 PM Lunch
1:00 **Hands-on Learning with Your Oscilloscope**
5:00 Dinner

Please note: The conference and workshop are two different events. You can register for either one or both. Please see the registration panel.

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Mark Schoon, Madison Gas & Electric Company (WI)
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* Member of MN Rural Electric Association (MREA)

** Member of WI Electric Co-op Association (WECA)

Conference Agenda

This year's annual conference will again feature two tracks, one focused on agricultural wiring, electrical distribution and stray voltage issues and the other on energy efficiency and renewable energy development in agricultural operations. All of the breakouts will be presented multiple times so that you can choose from both tracks to design your own conference agenda.

Thursday, March 1

- 7:00 AM Registration & Breakfast
8:00 **Welcome and Conference Overview** - *Corey Kuchta*, Wisconsin Public Service Corporation, MREC President
8:15 **50 Years of Farm Wiring** - *LaVerne Stetson*
9:15 **50 Years of Rural Electrification: The Redwing Project** - *Bob Gustafson*
10:15 Break
10:30 **Human Contact Voltage Detection Protocols** - *David Kalokitis*, Power Survey Company
11:15 **DG Interconnection and Net Metering** - *Lise Trudeau*, Minnesota Department of Commerce, Division of Energy Resources
12:00 PM Lunch
1:00 **Breakout Session 1**
2:00 **Breakout Session 2**
3:00 Break
3:15 **Breakout Session 3**
4:15 **Breakout Session 4**
5:30 Dinner and 50th Anniversary Program

Friday, March 2

- 7:00 AM Breakfast
8:00 **Introduce New MREC Officers and Recognize Past Officers**

Friday, March 2 (continued ...)

- 8:15 **Electric Cars and the Electric Power Industry** - *Mike Moore*, Wisconsin Public Service Corporation
9:00 **CAPX 2020 Transmission Projects** - *Darrin Lahr*, Xcel Energy
9:45 Break
10:15 **Modern Dairy Management: Understanding Physiological Stresses on the High Producing Dairy Cow and How Have Things Changed in the Last 50 Years** - *Roger Mellenberger*, Professor Emeritus, Michigan State University
12:00 PM **Adjourn**

Break-out Sessions

- Track 1:** Farm Wiring, Stray Voltage, and Electrical Distribution
- E-field Detection and Harmonic Based Decision Making** - *David Kalokitis*, Power Survey Company
 - VFD Interference Issues with Milking Machines** - *Kyle Knoff*, GEA Farm Technologies
 - Wind Energy and Stray Voltage - New MREC Publication** - *Jenny Heinzen*, Lakeshore Technical College
 - Working with Fluke Oscilloscopes** - *Tom Seidl*, WE Energies
- Track 2:** Energy Efficiency and Renewable Energy
- The Food Versus Fuel Debate** - *Jack Buchanan*, UW MREC Scholar
 - Geothermal Heat Pump Applications** - *Brian Urlaub*, Enertech, Inc.
 - Co-generation Opportunities at Ethanol Plants** - *Vance Morey*, University of Minnesota
 - Renewable Energy Options for Farms and Value-Added Food Producers** - *Nick Hylla*, Executive Director MREA



Registration

Please refer to the registration panel for workshop and conference fees. The **Working with Oscilloscopes Workshop fee includes** materials, breakfast, breaks, lunch and dinner. Hotel accommodations are not included in the fee.

The **Conference registration fee includes** materials, breakfast, breaks, lunch, reception, and dinner Thursday. Breakfast and a break is included on Friday. Hotel accommodations are not included in the fee.

Make check payable to: UW-Madison

Mail or fax to (please note change of address):

CALS Conference Services, 640 Babcock Drive
Madison, WI 53706; Fax: (608) 262-5088

Or register on-line at: <http://www.mrec.org/>

Cancellations: In order to receive a full refund, you must cancel by contacting CALS Conference Services at (608) 263-1672 prior to February 16. If you fail to cancel by February 16, the full fee will apply. Substitutions are welcome at any time.

Questions: Call CALS Conference Services at (608) 263-1672.

Location & Lodging

A confirmation notice will be emailed upon receipt of registration. The conference will be held at:

The Radisson Hotel La Crosse
200 Harborview Plaza, La Crosse, WI 54601
Phone: (608) 784-6680 or (800) 333-3333

A block of rooms has been reserved until January 26, 2012 for conference participants at the nightly rate of \$115/one king bed-city view or \$125/two queen beds-river view, plus 13.5% taxes. Be sure to mention that you are attending the *MREC Rural Energy Conference* to receive the special rate.

Registration Form

50th Annual Rural Energy Conference & Workshop February 29 - March 2, 2012

Complete a separate registration form (or copy) for each registrant or register on-line at:
<http://www.mrec.org/>

Early registration deadline is February 16, 2012

Name _____

Company _____

Address _____

City/State/Zip _____

Daytime Phone _____

E-mail _____

The workshop and conference are separate events. You can register for one or both.

Working with Oscilloscopes Workshop - February 29

\$ 150 (\$175 received after February 16)

Rural Energy Conf. - March 1-2 (includes dinner)

\$ 275 (\$300 after February 16)

Dinner Only - March 1 (dinner is already included for conference registrants)

\$ 25 Dinner Ticket Only

_____ **Total Enclosed**

Payment must be made at time of registration.

Enclose fee. Checks payable to **UW-Madison**

Check enclosed

Please charge on the following account

VISA Master Card American Express or
 Discover

Card Number _____

Exp. Date _____ Name on Card _____

Signature _____

Register on-line at:
<http://www.mrec.org/>