

# 56th Annual Rural Energy Conference

February 15-16, 2018  
and

## Advanced Stray Voltage Investigation Workshop

February 14, 2018

Radisson Hotel  
La Crosse, Wisconsin



### Sponsored by

Midwest Rural Energy Council  
University of Wisconsin, Minnesota, Iowa and South  
Dakota State Extension  
University of Wisconsin Biological Systems  
Engineering Department  
University of Minnesota Bioproducts and Biosystems  
Engineering Department  
Iowa State University Agricultural and Biosystems  
Engineering Department  
South Dakota State University Department of Agricultural  
and Biosystems Engineering

## Workshop Agenda - Advanced Stray Voltage Investigation



This advanced course is designed to develop analytic skills of the experienced stray voltage investigator, including detailed technical information for a complete investigation, determination of sources, and mitigation methods. The program draws on extensive field experience gained by the Public Service Commission of Wisconsin, electric power suppliers, and nationally recognized experts. This course combines an online study component with classroom work. Upon enrollment you will be sent instructions to access the web-based course modules so you can study them and take the quizzes prior to February 14, 2018. In class, you'll work in small groups with an experienced investigator to do a case study using the analysis tools; performing a circuit analysis and evaluation of actual data. Students will receive hands-on experience with the latest electrical test equipment for high frequency measurements. The final exam will be taken online. The course will be presented by Tom Seidl and Michael Haas of We Energies, Robert Fick and Brian Costello of Alliant Energy, Paul Ortmann of Idaho Power, and Doug Reinemann of the University of Wisconsin-Madison.

### Wednesday, February 14

#### Course Schedule:

7:30 am. Registration and Breakfast.

8:00 am - 5:00 pm. Course instruction including lunch and two breaks. Dinner is on your own.

#### Course Topics Include:

- Utility Service Transformations
- Factors Contributing to Stray Voltage from Utility Systems
- Electrical Code Update for Agricultural Buildings
- Factors Contributing to Stray Voltage from the Farm Wiring System
- Advanced Measurement Techniques and Source Determination
- High Frequency Measurement Equipment and Methods
- Special Stray Voltage Mitigation Techniques
- Review of Research including International
- Case Studies and Discussion
- Review of Animal Research

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

## MREC Officers, Executive Committee and Board of Directors

### Officers

President - Kelly Dybdahl, Lyon-Lincoln Electric Co-op (MN)\*  
Vice President - Reggie Gassman, Sioux Valley Energy (SD)<sup>+</sup>  
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Secretary (Ex-officio) - Doug Reinemann, University of Wisconsin-Madison

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Troy Schiltz, Tri-County Electric Co-op (MN)\*  
Mark Weber, Whetstone Valley Electric Co-op (SD)<sup>+</sup>

### Board of Directors

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Chuck Clanton, University of Minnesota (MN, Ex-officio)  
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Kevin McLean, Minnesota Power (MN)

Jerry Sorenson, Riverland Energy (WI)\*\*  
Steve Stackhouse, Oconto Electric Co-op (WI)\*\*

\* Member of MN Rural Electric Association (MREA)

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

<sup>+</sup> Member of SD Rural Electric Association (SDREA)

## Conference Agenda

This year's annual conference will focus on energy issues in agriculture. All of the breakouts will be presented twice so that you can choose from both tracks to design your own conference agenda.

### Thursday, February 15, 2018

- 7:30 AM Registration & Breakfast  
8:00 **Welcome and Conference Overview** - Kelly Dybdahl, Lyon-Lincoln Electric Coop, MREC President  
8:15 **Workplace Safety: Preparing for Hostile Events** - Stefan Salmonson, PROtective Services  
10:00 Break  
10:15 **Grid-Interactive Electric Thermal Storage (GETS) Big Picture** - Paul Steffes, Steffes, LLC  
11:00 **Overview of Robotic Milking Technology and Adoption** - Doug Reinemann, University of Wisconsin-Madison  
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 Buffet Dinner and Round Table  
**Discussion of Current Issues**

**Exhibits and posters** will be on display all day Thursday. Presenters will be available during breaks.

### Friday, February 16, 2018

- 7:30 AM Breakfast  
8:00 **MREC Business Meeting** - Reggie Gassman, Sioux Valley Energy, MREC Vice President  
8:15 **Dangers in the Air on Farms: Manure Gas, Silo Gas, etc.** - John Shutske, University of Wisconsin-Madison

### Friday, February 16 (continued ...)

- 9:00 **Data from Cow Activity Monitors** - John McBride, VES Environmental Solutions  
10:00 Break  
10:30 **View from the Farm** - Pam Jahnke, Wisconsin Farm Report Radio  
11:30 AM **Adjourn**

## Thursday Breakout Sessions

#### Track 1: Energy Issues on the Farm

- LED Lighting: Where are We Going From Here?**, Fred Daniels, Franklin Energy Services
- Energy Efficiency and Renewables Incentive Programs**, Gary Gilles, GDS Associates
- Developing Community & Utility-Scale Solar Projects**, Joe McDonald, Vernon Electric Cooperative
- Brown County Digester Project**, Speaker TBA

#### Track 2: Farm Wiring and Electrical Safety

- Fault Calculations, Equipment Protection and Arc Flash**, Dan Neeser, Eaton's Bussman Business
- Workplace Safety Discussion**, Stefan Salmonson, PROtective Services
- Biosecurity: Understanding its Importance when Working on Livestock Farms**, Kevin Janni and Abby Neu, University of Minnesota Extension
- Grid-Interactive Electric Thermal Storage (GETS), Specific Applications**, Paul Steffes, Steffes LLC



## Registration

Please refer to the registration panel for workshop and conference fees. **Advanced Stray Voltage Investigation Workshop fee includes** materials, breakfast, lunch and breaks (dinner is on your own). Hotel accommodations are not included in the fee.

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

**Make check payable to:** UW-Madison

**Mail or fax to:**

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 on or before February 2, 2018. If you fail to cancel by February 2, the full fee will apply. Substitutions are welcome at any time.

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

## Location and Lodging

A confirmation notice will be mailed 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 13, 2018 (or until all rooms are reserved, whichever comes first) for conference participants at the nightly rate of \$129/one king bed-city view or \$139/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

56th Annual Rural Energy  
Conference & Workshop  
February 14-16, 2018

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

Early registration deadline is February 2, 2018

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Daytime Phone \_\_\_\_\_

E-mail \_\_\_\_\_

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

**Advanced Stray Voltage Investigation Workshop - February 14**

\$ 215 (\$240 received after February 2)

**Rural Energy Conference - February 15-16**

\$ 365 (\$390 received after February 2)

\_\_\_\_\_ 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/>