

# NATIONAL AGRICULTURAL ELECTRIC CODE SEMINAR

February 15, 2006

and

## 44TH ANNUAL RURAL ENERGY CONFERENCE

February 16-17, 2006

Radisson Hotel La Crosse  
La Crosse, WI



### Sponsored by

Midwest Rural Energy Council  
University of WI, MN and Iowa 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.

## National Agricultural Electric Code Seminar Agenda

### National Agricultural Electric Code Seminar

The Midwest Rural Energy Council, in cooperation with MidWest Plan Service, is sponsoring this seminar to introduce the 2006 edition of MWPS 28, *Farm Buildings Wiring Handbook*. Attendees will receive an advance copy of this handbook. This popular handbook has been updated to reflect requirements for wiring in agricultural buildings in the most recent NEC. The program will review aspects of the NEC that apply to animal confinement and other agricultural buildings as well as a review of materials that comply with the NEC for agricultural applications. Our featured speaker is LaVerne Stetson, USDA-ARS and University of Nebraska professor emeritus.

### Wednesday, February 15

- |       |  |      |   |
|-------|--|------|---|
| 12:00 | Registration, buffet lunch and tabletop displays   | 3:45 | <b>Review of Agricultural Buildings Wiring Issues Being Discussed in the 2008 Code Committee</b><br><i>Barry Bauman</i> , Alliant Energy and ASABE representative to the NEC code panel |
| 1:00  | <b>Review of Updates to MWPS 28 - Farm Buildings Wiring Handbook</b><br><i>LaVerne Stetson</i> , USDA-ARS, University of Nebraska, Emeritus  | 4:30 | <b>Wiring Requirements and Power Quality Issues for Variable Frequency Controllers</b><br><i>Bob Fick</i> , Alliant Energy<br><i>Doug Reinemann</i> , University of Wisconsin-Madison   |
| 2:00  | <b>Review of Bonding and Underground Service Distribution Requirements (NEC articles 230.4, 547.9 and 250.32)</b><br><i>Don Nemeth</i> , Minnesota Department of Labor and Industry Division, Board of Electricity   | 5:00 | <b>Buffet Dinner and Roundtable Discussion of Agricultural Wiring Issues</b>  |
| 3:00  | Break  | 7:00 | <b>Adjourn</b>  |
| 3:15  | <b>Equipotential Planes: NEC Requirements, State Rules and Regulations, Issues from the Field</b><br><i>Mark Cook</i> , Public Service Commission of Wisconsin and Electrical Inspector<br><i>Jim Biesterveld</i> , Dunn County Electric Cooperative<br><i>Mike Stringfellow</i> , PowerCet Engineering<br><i>Don Nemeth</i> , Minnesota DLI |      |   |

**Please note:** The conference and symposium 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

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**Troy Schiltz**, Tri-County Electric Cooperative (MN)\*  
**Tim Weir**, Stearns Electric Association (MN)\*

\* Member of MN Rural Electric Association (MREA)

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

## Conference Agenda

### Thursday, February 16

- 7:30 AM Registration & Continental Breakfast
- 8:00 Welcome and Introductions - *Susan Crane*, WE Energies
- 8:15 **Overview of Transmission Projects in the Upper Midwest**  
*Mark Williamson*, Vice President of Major Projects, American Transmission Company
- 9:15 **Electric Distribution Comparison - US, Europe and the Middle East**  
*Tom Nigon*, Power Plus Engineering
- 10:15 Break
- 10:30 **Transmission and Distribution Technology**  
*Dr. Chris DeMarco*, UW-Madison, Department of Electrical Engineering and Power Systems Engineering Research Center
- 12:00 PM Lunch
- 1:00 **Introduction to Break-out Sessions**
- 1:15 **Break-out Session**
- 2:00 **Break-out Session**
- 2:45 Break
- 3:00 **Break-out Session**
- 3:45 **Break-out Session**
- 4:30 Adjourn
- 5:30 Dinner and Special Evening Program  
**From Lamps and Lanterns to Light Bulbs and Electric Motors**  
*Jerry Apps*, Author, Storyteller and Historian, UW Professor of Agricultural Journalism will deliver a special evening session on the history of rural electrification. Jerry will take us on a tour of the early days of electricity, when some of the grist mills generated electricity for the local villages, when farmers had 32 volt Delco plants or relied on lamps and lanterns, when electricity first came to farm and what was involved in the transition.

*This evening program is included in your registration for the conference and is also available for a special reduced fee for friends and guests of MREC and all those interested in the history of the rural Midwest.*

### Friday, February 17

- 7:00 AM Breakfast
- 8:00 **MREC Business Meeting**
- 8:30 **EPRI Stray Voltage Programs**  
*Doug Door*, EPRI-PEAC
- 9:30 **Interconnecting Distributed Generation to the Grid in Wisconsin**  
*Paul Helgeson*, Senior Engineer, Renewables and Small Scale Generation, PSCW
- 10:30 Break
- 11:00 **From Biomass to Hydrogen to Electrons: MG&E Pilot Project**  
*Randy Cortright*, Virent Energy Systems
- 12:00 PM **Adjourn**

### Break-out Sessions

- 1. Medium Scale Wind Generation Distribution Interconnect Case Study**, *Tom Nigon*, Power Plus Engineering
- 2. Energy Conservation in Grain Handling and Food Processing Plants**, *Mark Kingland*, Alliant Energy
- 3. Integrating Wisconsin's Biofuels and Dairy Industries: A Win-Win Scenario**, *Jennifer Hermans*, UW-Madison Graduate Research Assistant
- 4. Power Systems Engineering Research**, *Chris DeMarco*, UW-Madison, Electrical Engineering
- 5. Stray Voltage Test Analysis - Phase II Update**, *Tom Seidl*, We Energies
- 6. PMI Meter - Software and User Update**, *Bob Fick*, Alliant Energy
- 7. Stray Voltage Database Review**, *Dick Reines*, Public Service Commission of Wisconsin
- 8. DC Voltage Issues**, *Mike Stringfellow*, PowerCet Engineering



### Registration

Please refer to the registration panel for seminar and conference fees. The **National Agricultural Electric Code Seminar fee includes** materials, breaks, and lunch. Hotel accommodations are not included.

The **Conference registration fee includes** materials, continental breakfast, breaks, lunch, reception, and dinner Thursday. Breakfast and break is included on Friday. Hotel accommodations are not included in the fee. The evening program From Lamps and Lanterns to Light Bulbs and Electric Motors is included in your registration for the conference and is also available for a special reduced fee for friends and guests of MREC and all those interested in the history of the rural Midwest.

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

**Mail or fax to:**

CALS Conference Services, 620 Babcock Drive  
Madison, WI 53706; Fax: (608) 262-5088

**Or register on-line at:** <http://www.peopleware.net/2723>

**Cancellations:** In order to receive a full refund, you must cancel by contacting CALS Conference Services at (608) 263-1672 prior to February 9. If you fail to cancel by February 9, 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 and map will be mailed upon receipt of registration. The conference will be held at:

**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 15, 2006 for conference participants. Two types of rooms are available: Riverview room with two double beds for \$105.00/night single or double occupancy; or Cityview room with one king bed for \$95/night single or double occupancy plus taxes. Be sure to mention that you are attending the *MREC Rural Energy Conference* to receive the special rate.

### Registration Form

#### 44th Annual Rural Energy Conference & Seminar February 15-17, 2006

Complete a separate registration form (or copy) for each registrant or register on-line at <http://www.peopleware.net/2723>

**Early registration deadline is February 1, 2006**

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Circle one: Home or Business

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

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

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

The seminar, conference and special evening program are separate events. You can register for one or all.

**National Agricultural Electric Code Seminar**

\$ 95 (\$110 received after Feb. 1)

**Rural Energy Conference (includes dinner program)**

\$ 195 members\* (\$210 received after Feb. 1)

\$ 225 non-members\*\* (\$250 after Feb. 1)

**From Lamps and Lanterns to Light Bulbs and Electric Motors Dinner and Program**

\$ 35 (\$45 received after Feb. 1)

\_\_\_\_\_ **Total Enclosed**

\* Members include employees of IOUs and Co-ops that are Full members; and Corporate Affiliate and Affiliate members.

\*\* Includes an Affiliate membership to MREC.

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

Check enclosed

Purchase order number # \_\_\_\_\_

Please charge on the following account

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Signature \_\_\_\_\_

**Register on-line at: <http://www.peopleware.net/2723>**