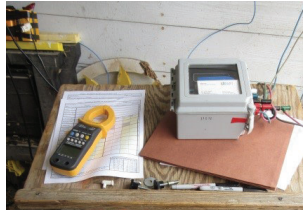


## Introduction to Stray Voltage

Tuesday, May 6, 2025

## Stray Voltage Testing

Wednesday, May 7 - Thursday, May 8, 2025



Arlington Ag Research Station  
Public Events Building  
N695 Hopkins Road  
Arlington, WI 53911

### Developed by

Midwest Rural Energy Council

University of Wisconsin Biological Systems Engineering  
Department

Public Service Commission of Wisconsin

Wisconsin Department of Agriculture, Trade and Consumer  
Protection



The series of stray voltage investigators' courses has been redesigned to reduce time in the classroom and improve knowledge retention by combining web-based instructional modules with our classroom sessions. You will review basic materials at home before attending the course. You will be sent instructions on accessing the web-based instructional material. You will need to successfully complete these instructional modules before attending the classroom session. Each instructional module will have a short quiz to test your knowledge. After the classroom session, you will take a final exam online.

**An Advanced Level Class will be held October 15-16 in Madison, Wisconsin.**

### Course Organizers and Instructors:

**Anthony Cook** is an experienced Stray Voltage Consultant and Electrical Testing specialist with over 12 years in the utility industry, specializing in engineering systems and electrical design. With a background as a Master Electrician and Commercial Electrical Inspector, he has expertise in residential, commercial, and industrial wiring. Additionally, he is a licensed and insured drone pilot. Anthony holds an Associate of Science in Electronics, a Bachelor of Science in Technology Management, and an MBA.

**Michael Haas, P.E.**, is a Lead Engineer in the Power Quality & Distributed Generation department at Alliant Energy. In the last 18+ years he has had a wide variety of responsibilities ranging from performing numerous stray voltage investigations to working as an expert witness. Michael's responsibilities include investigating and identifying solutions to power quality issues, as well as working cooperatively with Alliant Energy Agriculture, Engineering Solutions, and Design Teams. He was asked to serve as an advisor to the Public Service Commission of Wisconsin through its stray voltage committee and sub-committee.

**Paul Ortmann, P.E.**, is a Principal Electrical Engineer with Idaho Power Company. He has been involved in the investigation of stray voltage for approximately 21 years, and has taught classes on stray voltage in Wisconsin, Minnesota, and Idaho. Paul has also been involved in the development of stray voltage rules and investigation protocols and is on the standard committee for IEEE -1695; the IEEE Guide to Understanding, Diagnosing, and Mitigating Stray and Contact Voltage.

**Douglas J. Reinemann, PhD** is professor of Biological Systems Engineering at the University of Wisconsin-Madison and Associate Dean for Extension and Outreach in the College of Agricultural and Life Sciences at the University of Wisconsin-Madison. He has Extension, research and teaching appointments in the areas of machine milking and rural energy issues. Reinemann has been working at the interface between energy and agricultural systems for over 32 years. He leads the UW 'green cheese' team who are investigating synergies between dairy and biofuels production systems in Wisconsin. He has conducted research and educational programs on stray voltage since 1990.

## Introduction to Stray Voltage Tuesday, May 6, 2025

The introductory course is for those new to the topic of stray voltage. It is designed to give dairy producers and agricultural professionals a basic understanding of stray voltage sources and solutions and includes a demonstration of simple spot check measurements for stray voltage.

### COURSE TOPICS INCLUDE:

- Basic Electrical Knowledge
- Utility and Farm Circuits
- Review of Animal Research
- Stray Voltage Rules and Regulations
- Voltage Spot Checks

### COURSE SCHEDULE:

Tuesday, May 6: 8:00 am - 5:00 pm - Lunch and Dinner included

## Stray Voltage Testing Wednesday, May 7 - Thursday, May 8, 2025

The testing course is designed to give the professional stray voltage investigator the tools required to collect the data required for a complete stray voltage investigation. Students will gain an understanding of the farm and utility circuits associated with stray voltage and measurement techniques to determine the sources of voltage and current on a farm. This course includes farm visits and a hands-on exercise during which the student will work with an experienced stray voltage investigator and perform all of the standard measurements of a stray voltage investigation.

### COURSE TOPICS INCLUDE:

- Review of Electrical Calculation Methods
- Stray Voltage Circuits and Sources
- Agricultural Electrical Code
- Customer Relations
- Stray Voltage Measurement Tools
- Measurement Techniques and Data Recording
- Hands-On Stray Voltage Investigation in Small Groups, and Data Quality Analysis

### COURSE SCHEDULE:

Wednesday, May 7: 8:00 am - 5:00 pm - Lunch included

Thursday, May 8: 8:00 am - 3:00 pm - Box Lunch included

## General Information

### REGISTRATION FEES:

#### Introduction to Stray Voltage \$200

**\$225 if registered after April 22, 2025**

Fee includes registration, materials, breaks, lunch and dinner.

#### Stray Voltage Testing \$385

**\$435 if registered after April 22, 2025**

Fee includes registration, materials, breaks, lunch on Wednesday and Thursday

An **Advanced Level Class** will be held  
October 15-16, 2024 in Madison, Wisconsin.

**Make checks payable to:** Conference Management-  
MREC Stray Voltage

**Mail to:** Wisconsin Union, Conference Management,  
800 Langdon Street, Madison, Wisconsin 53706.

### ONLINE:

<https://uwmadison.eventsair.com/2025-sv/reg>

Please email [conferences@union.wisc.edu](mailto:conferences@union.wisc.edu) with any dietary or special accommodations.

### COURSE LOCATION:

Arlington Ag Research Station, Public Events Building,  
N695 Hopkins Road, Arlington, WI 53911

### LODGING OPTIONS:

**Please make your own hotel reservations by calling the hotel of your choice.**

Holiday Inn Express,  
7184 Morrisonville Road, DeForest, WI 53532,  
(608) 846-8686

Comfort Inn & Suites,  
5025 County Highway V,  
DeForest, WI 53532, (608) 846-9100

**CANCELLATIONS/REFUNDS:** All cancellations must be made in writing to [conferences@union.wisc.edu](mailto:conferences@union.wisc.edu) by Monday, April 14, 2025 in order to receive a partial refund. A \$75 process and handling fee will be assessed to any cancellation made by the deadline. Cancellations after Monday, April 14, 2025 will not receive a refund. WU Conference Management may require up to 10 business days to process and issue a refund.

## Registration Form

### Introduction to Stray Voltage

May 6, 2025

### Stray Voltage Testing

May 7-8, 2025

**MAIL TO:** Memorial Union Conference Management

800 Langdon Street  
Madison, Wisconsin 53706  
Email: [conferences@union.wisc.edu](mailto:conferences@union.wisc.edu)

### ONLINE:

<https://uwmadison.eventsair.com/2025-sv/reg>

Fill out a **separate** registration form (or copy) for each registrant. *Print clearly or type*

Name \_\_\_\_\_

Company \_\_\_\_\_

Job Title \_\_\_\_\_

Address \_\_\_\_\_

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

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

Email address to access coursework:  
\_\_\_\_\_

Introduction to Stray Voltage \$200  
**\$225 if registered after April 22, 2025**

Stray Voltage Testing \$385  
**\$435 if registered after April 22, 2025**

Enclose fee. Payment must be made at time of registration.

Make checks payable to: Conference Management  
- MREC Stray Voltage

Please charge to the following account:

Visa  MC  AMEX  DISC

Expiration Date \_\_\_\_\_

Credit Card # \_\_\_\_\_

Name on Card \_\_\_\_\_

Signature \_\_\_\_\_