

2016 Substation School

April 19-21, 2016

**City of Shakopee Fire Station 1
2700 Vierling Drive East
Shakopee, Minnesota**

MMUA, APPA, MREA and Shakopee Public Utilities are pleased to be partners in presenting and hosting the 2016 Substation School. This class will offer a wide variety of training with six different presenters.



Please take time to review all of the information provided. It contains everything you need to register and make lodging accommodations in Shakopee.



Minnesota Municipal Utilities Association

3025 Harbor Lane North,
Suite 400
Plymouth, MN 55447
www.mmua.org
Phone: 763-551-1230
Fax: 763-551-0459

Who Should Attend

This school is designed to benefit the substation technician as well as the lineworker that is learning more about substations.

What to Bring

Most of the session will be taught in a classroom setting, however, the following items will be needed for the station tour on Tuesday:

- Hard Hat
- Safety Glasses
- Safety Shoes (not required)
- Appropriate Work Clothes
- Appropriate Outerwear for the Weather

2016 Substation School

What You Will Learn

Tuesday, April 19

Substation Inspections and Maintenance

by Jeff Kranz, Rochester Public Utilities

Proper operation and maintenance of your substation is the heartbeat of your power distribution system. It is also key to reliability to your customer base. Jeff will cover the industry's best practices with a variety of operational concepts and maintenance issues.

Shakopee Substation Tour

Led by Shakopee Public Utilities staff

Wednesday, April 20

Fundamentals of Substation Equipment and Control Systems

by Andrew Kachmarksy, Senior Engineer, Power Systems Engineering

Andrew will cover a number of topics to help you understand many different aspects of working with a substation such as:

- Safety on the Job
- Codes: NESC, NEC, NEMA & more
- RUS 1724E-300
- Symbols and Designations: General Symbols, IEEE Device Function Numbers
- Drawings
- Major Equipment
- Associated Equipment
- Protective Relaying and Control: System Protection, Control Center

The 'Ins and Outs' of Substations

by Dave Thom, East Central Energy

- You will get a hands-on approach to the inner working of substations and equipment, from a lineman's perspective. Receive several demonstrations of tools, hardware, and SCADA systems.

CERTIFICATE OF ACHIEVEMENT

Participants earn hours for attendance and a certificate of achievement will be available online. Watch for an email notification from MMUA.

Thursday, April 21

LTC and Regulator Theory, Proper Settings and Operations

by David Aldrich, Beckwith Electric Company

Substation transformer control is a major factor when it comes to the power quality of your transmission and distribution systems. The spotlight of this class will be the operations and maintenance of the components within your LTC transformer controls, regulators, capacitor banks controls and monitoring equipment.

Substation Demo and Replacement

by Joe Adams, Shakopee Public Utilities, Kevin Favero, Leidos Engineering

The group will go through a very challenging and interesting Shakopee Public Utilities project. The project involved the demolition of a combination Xcel Energy/SPU substation and the construction of a new, modern, high-tech, SPU substation.

Topics to be covered:

- Substation Planning & Design
- Old Substation Demolition Challenges
- Design Considerations
- Equipment Considerations
- Arc Flash Considerations

SCHEDULE

TUESDAY, APRIL 19

12:00-1:00	Registration
1:00-3:00	Substation Inspections & Maintenance
3:30-4:30	Shakopee Substation Tour

WEDNESDAY, APRIL 20

8:30-12:00	Fundamentals of Substation Equipment and Control Systems
12:00-1:00	Lunch (provided)
1:00-4:00	The 'Ins and Outs' of Substations

THURSDAY, APRIL 21

8:30-10:00	LTC and Regulator Theory, Proper Settings and Operations
10:00-11:30	Substation Demo and Replacement
11:30	Closing Comments & Wrap-Up

2016 Substation School

MMUA Registration Information

Registration Fee

Members: \$440 per student on or before April 5, 2016

Non-Members: \$690 per student on or before April 5, 2016

All fees will increase \$50 on or after April 6, 2016.

Fee includes: Tuition, materials and supplies, noon lunch on Wednesday, refreshment breaks and certificate of achievement.

Refunds

A refund (minus \$25 per person processing fee) will be given on advance registrations if the MMUA office is notified by 4:30 pm on **April 5, 2016**.

Class Location

The location for the Substation School will be in Shakopee, at the city's Fire Station 1. Address is [2700 Vierling Drive](#), located east off of 169 and Eagle Creek Blvd.



Lodging Information

Available accommodations in the Shakopee area near class include:

[Holiday Inn Express Hotel & Suites](#)
[4550 12th Avenue East, Shakopee](#)
952-445-2244
Ask for MMUA's discounted room rate of \$99 per night.

[AmericInn Lodge & Suites](#)
[4100 12th Avenue East](#)
[Shakopee, MN](#)
952-445-6775

[America's Best Value Inn & Suites](#)
[1244 Canterbury Road](#)
[Shakopee, MN](#)
952-445-3644

[Hampton Inn Minneapolis/Shakopee](#)
[4175 Dean Lakes Boulevard](#)
[Shakopee, MN](#)
952-641-3600

[Super 8 of Shakopee](#)
[581 South Marschall Road](#)
[Shakopee, MN](#)
952-445-4221

[Best Western Plus Shakopee Inn](#)
[511 South Marschall Road](#)
[Shakopee, MN](#)
952-445-9779

[Country Inn & Suites](#)
[1204 Ramsey Street](#)
[Shakopee, MN](#)
952-445-0200

[Sandalwood Studios & Suites](#)
[3910 12th Avenue East](#)
[Shakopee, MN](#)
952-277-0100

Questions?

If you have questions about the workshop, please contact Mike Willetts at 612-802-8474 or email mwilletts@mmua.org.

If you have any questions or problems with your registration, please contact Theresa Neddermeyer at MMUA for assistance. You can reach her by phone at 763-551-1230 or email tneddermeyer@mmua.org.

2016 Substation School Registration Form

4410

Date: April 19-21, 2016
Location: City of Shakopee Fire Station 1
2700 Vierling Drive East
Shakopee, Minnesota 55379



Minnesota Municipal Utilities Association
3025 Harbor Lane North, Suite 400
Plymouth, MN 55447
Phone 763-551-1230
Fax 763-551-0459
www.mmua.org

Attendee Information

1. Name: _____

Email: _____

2. Name: _____

Email: _____

3. Name: _____

Email: _____

Utility: _____

Address: _____

City/State/Zip: _____

Primary Contact: _____

Email: _____

Phone: _____

PHOTOGRAPHS: By registering for this conference, I authorize Minnesota Municipal Utilities Association (MMUA) to photograph me at this event and use such photographs in MMUA marketing pieces (both electronic and print).

Registration Fees Increase April 6, 2016. Registration Deadline April 12.

Register by e-mail: tneddermeyer@mmua.org

Register by mail: Minnesota Municipal Utilities Association
3025 Harbor Lane North, Suite 400
Plymouth, MN 55447

Register by phone: 763-551-1230

Register by fax: 763-551-0459

Registration Fees

Members:

\$440 on or before **April 5, 2016**

\$490 on or after **April 6, 2016**

Non-Members:

\$690 on or before **April 5, 2016**

\$740 on or after **April 6, 2016**

(of Attendees) _____

x (Registration Fee) _____

Total Due \$ _____

Payment

- Check Payable to MMUA
- Bill Utility/Company
 - Purchase order _____
- Credit Card
 - Visa MasterCard Discover

Name as it Appears on Card

Cardholder's Signature

Credit Card Number

Expiration Date

Card Code on Back