

2022 Underground School

May 10-13, 2022

There's always something
new to learn & the Underground
School is the perfect venue...
check out the exciting program
we have lined up!



MMUA Training Center - Marshall, MN

2022 Underground School — Class Overview

Take a look at the variety of topics that will be covered in the Multi-Session Class this year!

Plus our Advanced Class will take a deep dive into Underground Distribution Design.

About the **MULTI-SESSION CLASS**

Individuals who register for the Multi-Session Class will rotate through six hands-on training sessions.

Increase your knowledge and hone your skills during these practical sessions that can help improve efficiency and safety. The Multi-Session Class is intended for lineworkers of all experience levels.

Session #1 - Grounding and Use of Phasing Sticks

Everyone understands that working on lines or equipment as deenergized requires testing and grounding. This class offers instruction on the proper methods of grounding lines and equipment. Students will be taught the proper way to utilize phasing sticks in the process of grounding, as well as phasing in cables.

Session #2 - 600-Amp Terminations

This session will help participants gain important knowledge in the process of terminating 500 MCM aluminum wire. Three different types of terminations will be taught. A skirted termination for a riser, 600-amp elbow in a PME switch, and a splice will all be covered. Proper tool selection and grounding will also be covered.

Session #3 - Accident Scenario: Vehicle vs. J-Box

When a vehicle strikes any piece of electrical equipment it poses a variety of threats and challenges. This session will cover the steps that need to be taken—from securing the scene and working with emergency personnel, all the way through to accomplishing the goal of restoring power to those areas affected.

Session #4 - Locating & Fault-Finding on Secondary Wire

This session is designed to give individuals a better understanding of locating URD cables. Participants will work with various brands of locators with the most up to date styles available. Using different techniques in locating will be taught, along with demonstrating and using an A-frame locator for locating faulted secondaries.

Session #5 - Troubleshooting and Fault-Finding Primary Cable

In this session, students will be taught how to isolate and restore power on URD primary systems. Proper use of phasing sticks with DC hi-pot adapters, fault indicators and thumpers will be demonstrated to help students understand and address the issues related to URD faults.



Session #6 - Transformer Connections & Rotation

With the different voltages that are available, it's crucial that every lineworker knows what type of transformer bank will be needed to best fulfill the customer's needs. This class is designed to offer participants hands-on training with transformer connections. Participants will learn about and build wye and delta banks, as well as open wye and open delta banks.



About the **ADVANCED CLASS**

Underground Distribution Design, Protection & Management

(Participants in this class do not rotate.)

Underground distribution design is an extensive and complex capital venture. Understanding proper system layout & design, coupled with critical planning is essential to ensure system reliability, operability and economic return on investment. We will review fundamental principles of proper underground design and other important topics to consider including:



- Financial considerations (can we afford it, how do we pay for it, and why depreciation is an important factor)
- Justify the need; near-term and long-term demands of the electrical system
- Substation expansion and planning
- Feeder capacity & design
- Switchgear and protective schemes; device considerations
- Reliability system: maintenance and future expansion
- Proper transformer sizing for commercial, residential using loss evaluation methods

General Sessions

General Sessions are held the first & last day of the School. You must attend all General Sessions to receive full credit.

Tuesday, May 10

Regulations Pertaining to Temporary and Emergency Installations

This presentation will offer insight on the rules regarding temporary and emergency power. After attending this session lineworkers will have a better understanding of what work can and cannot be performed on low-voltage equipment that is owned by another entity.

Friday, May 13

Cave Ins—One of Safety's Worst Enemies

Cave ins are the #1 killer when it comes to excavations. All excavations, regardless of depth, pose significant risk. Understanding and recognizing the hazards and taking steps to mitigate them can make all the difference to ensure it doesn't happen on your watch. We will cover the proper procedures for a variety of digs and best practices to prevent a cave in.

Optional Evening Activities

Sporting Clay Shoot or Golf

For those who are interested, we will arrange a fun evening of golf at a local golf course or an evening of shooting sporting clays. NOTE: Fees for optional activities are not included in registration fee.

Registration Fee (if registered before April 8)

Member - \$465 per person

Non-member - \$690 per person

Registration fee increases \$50 on April 8. Deadline to register is April 18.

Registration fee includes workshop tuition, materials, two lunches, refreshment breaks, and a certificate of attendance.

Cancellations/Refunds

MMUA will issue a refund (less \$30 processing fee per person) provided MMUA is notified of the cancellation by 4:30 pm on April 18, 2022.

Attendance Certificate

Each participant will receive a certificate of attendance indicating the course/hours. Watch for an email from MMUA after the School.

QUESTIONS? Please contact Theresa Neddermeyer by email tneddermeyer@mmua.org or call 763-551-1230.

Schedule

May 10 - Tuesday

12:00 pm Registration/Check In
1:00 pm Welcome
1:15 pm General Session: Regulations Pertaining to Temporary & Emergency Installations
4:00 pm Wrap-up

May 11 - Wednesday

8:30 am Multi-Session Class/Advanced Class
11:45 am Lunch Served
12:30 pm Multi-Session Class/Advanced Class
4:00 pm Wrap-up
5:00 pm Optional activities (at participant's expense): Sporting Clay Shoot or Golf

May 12 - Thursday

8:30 am Multi-Session Class/Advanced Class
11:45 am Lunch Served
12:30 pm Multi-Session Class & Advanced Class
4:00 pm Lineworker Rodeo Mystery Event

May 13 - Friday

8:30 am General Session: Cave Ins—One of Safety's Worst Enemies
10:15 am Q & A
12:00 pm Wrap-up

Schedule/program subject to change.

What To Bring?

Multi-Session Class:

- Hard Hat
- Safety Glasses
- Work Gloves
- Work Boots
- High Visibility Clothing Appropriate for the Weather
- Rain Gear (just in case)

Advanced Class:

- Note Pad & Pen/Pencil
- Calculator
- Hard Hat
- Safety Glasses
- High Visibility Clothing Appropriate for the Weather
- Appropriate Footwear

Hotel Information

Marshall has many options for hotel accommodations. The following offer special pricing for participants (based on availability). Call the hotel directly and be sure to ask for MMUA's reduced rate when making your reservation.

AmericInn by Wyndham

1406 East Lyon Street, Marshall
Phone 507-537-9424

EverSpring Inn (formerly Ramada Inn)

1500 East College Drive, Marshall
Phone 507-532-3221

Sleep Inn

1300 Nwakama Street, Marshall
Phone 507-337-0103

2022 Underground School Registration Form

4413.01

May 10-13, 2022 MMUA Training Center
1004 Michigan Road
Marshall, MN 56258

Attendee Information

This form may be used to register multiple individuals if all are taking the same class.

Name: _____

Email: _____

Indicate Preferred Shirt Size (Small - 3XL): _____

(2) Name: _____

Email: _____

Indicate Preferred Shirt Size (Small - 3XL): _____

(3) Name: _____

Email: _____

Indicate Preferred Shirt Size (Small - 3XL): _____

Indicate Class Selection (select ONE)

_____ Multi-Session Class (participants rotate through sessions)

_____ Advanced Class

Utility/Co. _____

Address: _____

Primary Contact: _____

Email: _____

Phone: _____

Registration Fee (before April 8)

Member Rate - \$465 per person
Non-Member Rate - \$690 per person

Please note:

- Registration fee increases \$50 per person on April 8.
- Registration deadline is April 18.

Registration Fee: \$ _____

x Number of Attendees: _____

Total Due \$ _____

Payment Options

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

If you would like to pay by credit card please contact our office at 763-551-1230.

Or if you prefer that we contact you please indicate the phone number to reach you at:

PHOTOGRAPHS: By registering for this conference, I, the attendee(s) named above, authorize Minnesota Municipal Utilities Association (MMUA) to photograph me at this event and use such photographs in MMUA marketing materials (both electronic and print). I understand that I will not be paid for giving this consent.

REFUND: MMUA will issue a refund (less \$30 processing fee per person) provided MMUA is notified of the cancellation by 4:30 pm on April 18, 2022. *Sorry, no refunds after April 18.*

Ways to Register:

Online: www.mmua.org/event/underground-2022

Email: tneddermeyer@mmua.org

Fax: 763-551-0459

Mail: MMUA

3131 Fernbrook Lane North, Suite 200
Plymouth, MN 55447

Deadline
to Register:
April 18