

THE BUZZ



Electrical Training Institute Newsletter

February 2016

Industry Training Partners

We have developed relationships with many industry partners in the electrical industry. This relationship benefits our membership by providing access to the latest tools and materials available for our industry. We have been able to expand our meter and test instrument curriculum due to donations from our partners.



Milwaukee as a training partner

We have had great success with Milwaukee tools in the training center. Our power tools get used by classes of 10-15 apprentices on a daily basis. Our tool room was stocked with Milwaukee power tools at no cost to the training center. Over the past couple of years, we have received support from Milwaukee in the form of battery drills, sawzalls, band saws, and other specialty tools such as knockout sets and cable cutters.

Fluke as training partner

Ask just about any electrician and they will tell you Fluke test equipment is the standard for test instrument quality. Fluke has been a great training partner, donating multimeters, documenting process calibrators, cable analyzers, and power logging equipment. Our apprentice curriculum now requires every apprentice to complete hand-on testing using a Fluke 117 multimeter.



Congratulations to our recent graduates

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From the Director's Desk

Happy New Year to All, let's hope 2016 is a safe and prosperous year for all of us in the union electrical construction industry.

2015 was a really good year at the Electrical Training Institute, we had over 200 journeymen take a range of classes that included:

BICSI Installer level certifications

EPRI Level A classes

EPRI level B certifications

Telecom Refresher

OSHA 10 & 30 classes

Masters Prep classes

NFPA 70 E

National Electrical Code refresher classes

Confined Space Training & certifications

In this newsletter you will see journeymen improvement classes that are going to be offered once again this spring with the scheduled dates, as the need arises we may add additional classes.

In May 2015 OSHA submitted their final rules for confined space training and the onus lies directly with the contractors. All of our apprentices are receiving confined space training now as part of their curriculum. In this newsletter we have included FAQ's for OSHA's final ruling. More information is available for you on the OSHA website at: <https://www.osha.gov/confinedspaces/index.html> The Confined Space training can be done in conjunction with the OSHA 30 classes or we can do stand-alone training in a 16 hour class.

I would like to take this opportunity to thank the National Joint Apprenticeship Training Committee for their generous donation of building automation equipment to our training center. We have incorporated some of the new equipment into the existing curriculum and are working hard to enhance the curriculum that we have already developed with the NJATC's donation. Again, our apprentices take an introductory class in building automation but BA classes are available for our Journeymen too.

After being in the training center for 15 years, this past summer we began retrofitting the lighting at the Electrical Training Institute. We have taken out all of the old inefficient T-8 Fluorescent lighting and replaced the fixtures with new LED lights inside, and replaced all of the HID outside façade lighting with LED lights as well. Prior to the replacement of the fixtures one of our apprentice building automation classes did a month long energy audit of the building with a donated Fluke 1735 power logger. Beginning with the new semester of classes we have begun with another energy audit and are anxious to compare the before and after results. Fluke has agreed to publish the results in their national newsletter. We will keep you posted on our findings!

Sincerely

Jim Patterson

Confined Space for Construction based on Subpart AA of 29 CFR 1926

OSHA's final rule for confined space in construction was submitted on May 4, 2015. The following is a list containing frequently asked questions from the osha.gov website and a few other items which are pertinent to the conversation.

Who is affected by Subpart AA?

All construction employers whose workers may be exposed to confined space hazards.

How does the new final rule differ from the rules that previously applied to construction work performed in confined spaces?

The rule requires employers to determine what kinds of spaces their workers are in, what hazards could be there, how those hazards should be made safe, what training workers should receive, and how to rescue those workers if anything goes wrong.

When did the new rule go into effect?

August 3, 2015 - *Employers had until October 3rd to train all affected employees*

Do I need to do anything if there are permit spaces at the worksite, but my employees will not need to enter the permit space?

Yes, you must take effective steps to prevent your employees from entering the space.

Do employers have to have a written confined space program?

Yes, if workers will enter permit spaces.

Is training required?

It is difficult for employees to determine what the OSHA requirements for a confined space are (Permit vs. Non-Permit) without sufficient training and education.

What is a permit required space?

A Permit-Required space includes confined spaces with potentially hazardous atmospheres or any other serious safety or health hazard (energized electrical parts).

Do I need to test a non-permit confined space?

A Non-Permit space cannot be determined without testing.

What is the penalty for noncompliance?

The potential for contractor liability is high if current work practices are continued.

OSHA Statistics

The "Fatal Four" for construction workers are responsible for more than 50% of work related construction worker deaths.

The Fatal Four

Falls accounted for 39.9% of deaths in 2014

Electrocutions accounted for 8.5% of deaths in 2014

Struck by Object accounted for 8.4% of deaths in 2014

Caught-in/between accounted for 1.4% of deaths in 2014



Disconnecting means for multiwire branch circuits

The 2008 NFPA 70 code cycle added language that requires simultaneous disconnecting of all ungrounded conductors on a multiwire branch circuit.

This means that an installation using circuits 1-3-5-N would require either a three pole circuit breaker or three single pole breakers. The 2011 code cycle added the requirement of an "identified handle tie" for single pole breaker installations .

The following picture shows a violation. A piece of copper wire was used instead of a code approved identified handle tie.



National Electric Code Corner

What is a multiwire branch circuit?

Multiwire branch circuits are defined in Article 100 of NFPA 70 as "a branch circuit that consists of two or more ungrounded conductors that have a voltage between them, and a grounded conductor that has equal voltage between it and each ungrounded conductor of the circuit". We also call them a "family" or a "shared neutral circuit".

Why are multiwire branch circuits useful?

The most common branch circuit system uses a 120/208 3 phase 4 wire wye connection. The neutral carries only the unbalanced load of the three phases when serving linear loads. Assume you need to pull (9) 20 amp circuits to a conference room for receptacles and lighting. The installation would require (9) phase conductors, (3) neutral conductors, and (1) grounding conductor. Article 310.15(B)(5) tells us that a neutral that carries "only the unbalanced current" is not required to be counted as current carrying conductors. In addition, the grounding conductor is not required to be counted as a current carrying conductor. With (9) THHN conductors derated per 310.15(B)(3)(a), all 9 circuits are permitted to be installed in a single conduit. If dedicated neutrals were provided, they must be counted as current carrying conductors. This requirement limits the number of circuits in the conduit to 4. This installation would require additional conduits, raising material and labor costs.

What special precautions should be used for nonlinear loads?

Article 210.4(A) Informational Note issues a caution when nonlinear loads are present due to harmonic currents. Examples of nonlinear loads include electronic equipment, electric-discharge lighting, and adjustable drive systems. The excess current on the neutral can cause heat and insulation breakdown.

2014 NEC June 6 through 16 on Mon/Thurs from 4:30-8:30 P.M.

This is a refresher class for the NEC. The topics covered include: Code layout, conductor ampacity, sizing boxes and raceways, and changes to the code. Participants must have a copy of the 2014 NEC.

Instructor: Mike Hopkins Class Fee: \$25 + \$71 for 2014 NEC

EPRI A April 11 through May 19 on Mon/Thurs from 4:30-8:30 P.M.

The EPRI journeyman instrumentation class is for individuals who intend to sit for the written exam. You may visit the Electrical Training Alliance [website](#) for more information on certification guidelines.

Instructor: Paul Meyers Class Fees: \$95 BICSI CEC's: 48

EPRI B Testing January through December 2016 — by appointment

The Electrical Training Institute is an EPRI Certified Testing Facility with all the test instruments and equipment necessary to offer certification in EPRI B instrumentation.

Instructor: Paul Meyers Class Fees: \$25

Building Automation March 7 through 16 on Mon/Wed from 4:30-8:30 P.M.

This class will cover the installation, integration and commissioning of a LonWorks based device network. Applications include lighting, access control, security, HVAC, and network cabling. Participants will complete an installation and perform all programming using the LonMaker network integration tool.

Instructor: Jeremy Orcutt Class Fees: \$25

OSHA 30 Feb 9, 10, 15, 16, 17, 18 from 4:30-10:30 P.M.

This OSHA 30 hour training course is designed for journeyman, foreman, and field supervisors involved in the construction industry. Topics include HAZCOM, fall protection, confined spaces, ladders, and many more. **Any member wanting OSHA 10 can attend the first two sessions for certification.**

Instructor: Jeremy Orcutt Class Fees: \$30 BICSI CEC's: 30

Telecom Refresher April 5 through April 21 on Tues/Thurs from 4:30 – 8:00 P.M.

This newly created course is designed to meet the CEC requirements for existing BICSI Technicians. This course will involve both copper and fiber terminations in addition to review of new standards and codes as it applies to the telecommunication fields.

Instructor: Andre Grocox Class Fees: \$55 BICSI CEC's: 18

Welding Feb 18 through April 14 on Thurs from 5:30-8:30 P.M.

This class will be held at the UA Local 440 training center and will cover basic welding skills. Visit our [website](#) and log into the members section to view the welding course equipment requirements.

Instructor: Local 440 Member Class Fees: \$275

Contact Us

Give us a call for more information about our training opportunities

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Visit us on the web at
www.iejatc.org

Class Reimbursement

Members who are currently out of work and on Book One can apply for class fee reimbursement through the union hall.

Go to IBEW481.org and log in as a member. Under the members section, the necessary form is available.

Need CEC's for BICSI?

We have many classes that are BICSI approved for CEC's. Contact our office to schedule your class today.