



THE WIRE

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JANUARY 2024

The Presidents' Letter

I hope you and your family had a great and relaxing Christmas and that you have a safe and healthy New Year. Electrical work is at an all time high, which for the most part is a blessing. However, contractors and industry are still experiencing a shortage of qualified labor and some materials are still hard to acquire.

The December meeting covered some of the changes in the 2023 National Electrical Code. It was done in an "open" format which generated a lot of questions and discussion. I had several attendees comment that they liked this type of presentation. We will certainly consider doing more of these for 2024.

Dennis Steier will be hosting the January 8th presentation. He will covering wiring methods for hazardous (classified) locations. We regularly receive questions regarding these locations, especially with an uptick in distillery work.

Elections for the ECHL officers will be conducted at the February 12th meeting. A list of candidates can be found in this edition of the *Wire*. If any one else is interested in being a candidate for a position, please contact one of the current board members or simply come to the next meeting in January.

Also, the ECHL is sponsoring a six-hour continuing education class for contractor license renewal on Saturday February 10th at the Elks Lodge located at 2824 Klondike Lane. The class starts at 8:00 am with sign-ins beginning at 7:30 am. The cost is \$75 for members and includes coffee and doughnuts for the morning and a plate lunch for the afternoon.

Our next general membership meeting is scheduled for Monday January 8th at the Elks Lodge located at 2824 Klondike Lane. The meeting starts at 7:00 pm with sign-ins beginning at 6:30 pm. Hope to see you there.

As Always Stay Safe and Work Safe
Steve Willinghurst
ECHL President

January 8th, 2024, Code Program

Sign-in 6:30 P.M. - Program at 7:00 P.M.
ELKS LODGE # 8 - 2824 KLONDIKE LN -

Our January program will be presented by Dennis Steier . He will cover wiring methods for hazardous (classified) locations. We regularly receive questions regarding these locations, especially with an uptick in distillery work.

We encourage you to ask questions.

See you Monday Evening, January 8, at 6:30 pm.

Stay Alert! Stay Informed! & Work Smart!

Slate of ECHL Officers—2023-2024

Its that time of year. Election of our Officers. If anyone is interested and would like to serve on our Board of Officers, please notify one of the Officers. Slate of Officers is inserted in this publication and will be voted on at the February 12, 2024 General Membership Meeting,

**** ECHL Contractor Class ****

Our Contractor Class is scheduled for February 10, 2024. Application is included in this Wire. Applications will also be available at the General Membership meetings or call Denise Arnold or Marilyn Boudreaux.

NEWS FROM FRANKFORT

I attended the Department of Housing, Building and Construction Advisory Committee meeting on Tuesday December 19th. It was decided that the Department will begin the process to adopt the 2023 National Electrical Code. This will be a lengthy process as a result of legislative adoption guidelines. Barring any major hurdles, it will most likely be September of 2024 before the new code can go into effect. As discussed at the December General Membership meeting, the electrical industry is beginning to feel the impact of being so far behind with the electrical code. More updates will follow.

Steve Willinghurst

JANUARY Code Questions

1. I am installing a Grounding Ring as my grounding electrode, how deep does this ring need to be buried? would you find this answer in the 2017 NEC?
A) 24" C) 30"
B) 18" D) 12"
Section _____
2. What is the smallest size AWG allowed for individual conductor allowed in flexible cord or cable? Where would you find this answer in the 2017 NEC?
A) 16 C) 27
B) 18 D) 20
Section _____
3. I have a portable motor that has a 1/2 horsepower rating are you allowed to connect this with a plug and receptacle? Where would you find this answer in the 2017 NEC?
Yes No
Section _____
4. You have an installation that requires you to use individual open conductors that will be carrying 480 volt and will be installed inside a building feeding equipment, what is the minimum clearance between conductors? Where would you find this answer in the 2017 NEC?
A) 6" C) 2 1/2"
B) 12" D) 1"
Section _____
5. What is the minimum ampere rating of a service disconnecting means for Two-Circuit installations? Where would you find this answer in the 2017 NEC?
A) 60 C) 20
B) 30 D) 100
Section _____
6. You have to install a 89 AWG grounding electrode conductor on your project, would this require you to provide protection from physical damage? Where would you find this answer in the 2017 NEC?
TRUE FALSE
Section _____

Code Corner

Article 328

The language in the definition of a qualified person changed NEC over the years and you will see that it requires you to have the proper training to perform certain installations in the field.

The definition in Article 100 of a Qualified Person is: One who has the skills and knowledge related to the construction and operation of electrical equipment and installation and has received safety training TO RECOGNIZE AND AVOID the hazards involved.

Section 328.14 was added in 2011 NEC that would fall under the definition of a Qualified Person. Section 328.14: **Installation. (Medium Voltage Cable: Type MV)** States that: Type MV cable shall be installed, terminated and tested by a **qualified person**.

This section was added because the previous additions of the NEC did not require the MV cables to be installed by qualified personnel. With the deregulation of electrical utilities over the past several Code cycles, the NEC has seen the need to provide new language and guidance for installation that were previously were under the authority of licensed utilities (typically above 600 volts) and under the supervision of the engineering community. The new language they felt as needed to heighten the awareness to the installers and AHJs concerning the inherent dangers with such installation of these higher voltages that may not be apparent to the untrained eye. MV cables are required to be installed with more per caution than lower voltage cable or it could lead to serious mishaps in the field.

Terminating Medium Voltage was at one time was difficult and required skills that are not as needed when terminating these cables today. There are manufactures of MV terminating and splicing products that will provide this training to the contractor and most of the time it is at no charge and after the training will certify you to install there products. They offer this service and classes to you just lets them introduce you to their products and what is now available.

NFPA 70E also falls under this definition and have you received training, which would also require (CPR and AED required annually) and be certified to do energized over 50 volts to work under the requirements of 70E

.Submitted by Dennis Steier

Top Three Code Violations Louisville Metro Inspections NOVEMBER 2023

These violations are costing you time and money.

1. NEC Article # 110.14(A) Terminals

Connection of conductors to terminal parts shall ensure a thoroughly good connection without damaging the conductors and shall be made by means of pressure connectors (including set-screw type), solder lugs, or splices to flexible leads. Connection by means of wire-binding screws or studs and nuts that have upturned lugs or the equivalent shall be permitted for 10 AQG or smaller conductors.,

Terminals for more than one conductor and terminals used to connect aluminum shall be so identified.

2. NEC Article # 445.16 Bushings

Where field-installed wiring passes through an opening in an enclosure, a conduit box, or a barrier, a bushing shall be used to protect the conductors from the edges of an opening having sharp edges. The bushing shall have smooth, well-rounded surfaces where it may be in contact with the conductors., If used where oils, grease, or other contaminants may be present, the bushing shall be made of a material not deleteriously affected.

3. NEC Article # 410.36(B) Suspended Ceilings

Framing members of suspended ceiling systems used to support luminaires shall be securely fastened to each other and shall be securely attached to the building structure at appropriate intervals. Luminaries shall be securely fastened to the ceiling framing member by mechanical means such as bolts, screws, or rivets. Listed clips identified for use with the type of ceiling framing member(s) and luminaire (s) shall also be permitted.

You lose money when you are turned down on a project. It also cost you time, when you have to return to the job site to make the necessary changes to correct the violation, that too, cost you money. Time is mon-

LG&E NEWS

Service Locations

Upon doing service changes and upgrades LGE requires a meter location prior to the electrical work being done. This is important as codes typically change over the time from which the service was originally installed. By contacting the LGE locator first, the contractor knows what is needed to meet the new code and prevent reinstallation otherwise. Most important is that downtime and interruptions for the customer is kept to a minimum.

As for the operations within LGE, our locators' goal is to make call backs within 24hours. If you don't feel that is happening please contact the supervisor Joel McCauley at 502-364-8367. Our goals are the same, to provide the most timely and efficient service we can for the customer.

*Submitted by Joel McCauley
Team Leader Electric Design Svcs
LG&E and KU Energy LLC*

NFPA 70E: Electrical Safety for Portable Cord- and Plug-Connected Electric Equipment

Portable equipment and portable cords are designed/ built to be used with many safety considerations in mind because (among other reasons) materials have their limits.

Take, for example, the common practice of lowering an impact driver or other power tool from a ladder by its cord, which is banned by Sec. 110.9(A). This appears to cause no harm. The cord didn't come apart and looks the same as before. But it's not the same as before. The cord actually stretches due to the weight, and this stretching reduces the integrity of the insulation. Maybe the effect is insignificant the first time, but keep doing this and you will have a cord with significantly compromised insulation. Remember, a portable cord is not a utility rope.

Another effect that occurs is when the "careful" worker (who is not depending on the plug of the tool to stay inserted into the cord receptacle) wraps the cord around the tool. And if he's really "careful," he ties that cord

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NFPA 70E: Electrical Safety - Cont'd

into a knot. This exceeds the bend radius of the cord, permanently damaging it. A few microtears here and there, and the cord is not nearly as safe as it should be. Use a properly tied rope, a rope and carabiner system, or a lanyard of suitable length to lower the tool.

Another “safety” practice is to secure a cord with staples or wrap it around a structural member to keep it out of the way. The main problem with this “safety” practice is it ensures you damage the cord. This practice is also banned by Sec. 110.9(A).

But the idea of securing a cord out of the way so that it's not a tripping hazard, and it's not damaged by being walked on is a good idea. Others have had this idea too, which is why there are products made specifically for routing, securing, and protecting portable cords. If you are going to work in areas with foot traffic or vehicular traffic, obtain such products ahead of time. Keep in mind also that if you are using an overhead solution, you will need to allow for two vertical runs of cord length to accommodate that. Don't try to use a 50 ft. cord with cord trees if the work location is 40 ft. from the receptacle. The same logic applies to routing around the perimeter of a room or other area. Don't plan in terms of straight line distance, plan in terms of the route the cord will take — it's similar to planning what length of conductor you need for a branch circuit.

When purchasing portable cords, always purchase a contractor-grade (e.g., heavy-duty) cord, and ensure it has a grounding conductor. This last bit will ensure you always comply with Sec. 110.9(B), which requires using a cord with a grounding conductor any time you use grounding-type equipment. If you don't have a cord without a grounding conductor, then you can never choose the wrong cord.

Before putting a cord away, visually inspect it for external defects, such as loose parts or a chunk missing from the jacket. Also inspect it for signs of internal damage; if the jacket is pinched or crushed, the cord probably has internal damage. Performing these inspections before using the cord is required [110.9(C)(a)]. But by performing them after use, you have time

to address any issues before you need a cord again — and it's the only one you have.

One incorrect way to fix a cord with damaged insulation is to wrap phasing tape around it and call it good. That is not a good way to fix a cord. First of all, phasing tape doesn't offer the same protection that the jacket insulation does. And if the insulation is damaged, you should assume that what's under it is damaged also. There are only two correct solutions:

1. Remove the cord from service [110.9(C)(b)], and discard it.

Remove the cord from service [110.9(C)(a)], cut and remove the damaged part, and attach new ends (male and female connectors) to the remaining pieces if they are long enough to be useful.

How should you store portable cords? Tossing one into the bottom of a gangbox is an obvious mistake. A great solution is to use portable cord spools. These properly wrap the cords in a way that doesn't exceed their bend radius, and they allow for easy cord laying because there are no knots or tangling.

Another solution is to use an “air spool”; you simply make cord loops on the floor. How big should the loops be? Just let the cord relax as you make these and you won't exceed the bend radius. If you go this route, consider putting the cord into a suitably sized drawstring bag. In all cases, keep the cord loose. Binding it with cable ties, even if you do so in figure eight fashion, can damage the insulation. Binding it with any kind of tape could leave a conductive film on it while also leaving the cord sticky.

Source: Email EC&M Code Watch - Jan. 20, 2023- Portable equipment powered via plug and cord is often abused and mishandled. By [Mark Lamendola](#)