



THE WIRE

*Published by
The Electrical Clearing House of Louisville
Established: 1912*

102 Whirlaway Ct, Cox's Creek, KY 40013
502.528.9319
www.echlky.com

NOVEMBER 2022

The Presidents' Letter

Our October 10th general membership meeting was one of our better meetings. We had an attendance of 42 members that participated with a lot of questions and comments during the presentation. There was nothing new to report in regards to the adoption of the 2020 NEC. The 2023 edition is available for anyone interested.

The presentation for the November 14th meeting will be conducted by Metro Inspector Norb Thorpe regarding common code violations. And for the December 12th meeting we will assemble a code panel to answer code questions that you may have.

The 50/50 drawing was for \$42.00. Don't forget, if you have any suggestions on presentations please get with one of the board members.

As mentioned in the last several newsletters, the Department of Housing, Building, and Construction has gone to a new data base system which will no longer allow users to search for their licenses or their continuing education hours. We have had several members whose hours were not transferred from the old data base into the new one. So, for more information or any problem please call the Department at (502) 573-2002.

Our next general membership meeting is Monday November 14th 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 you will be able to attend. If the opportunity arises, mention the Clearing House to your coworkers. I think they would be pleased with the continuing education presentations.

As Always Stay Safe and Work Safe
Steve Willinghurst
ECHL President

November 14, 2022 Code Program

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

Our November program is being presented by Louisville Metro, Norb Thorpe. Norb will go over NEC Violations that have been presented in the past. Norb will address NEC Violations found during final inspection and go over the NEC Article that addresses the violation.

We encourage you to participate by asking questions.

See you Monday Evening, November 14, at 6:30 pm.

Dennis will go over the Code Questions in the November 2022 Wire.

Stay Alert! Stay Informed! & Work Smart!

Supporting our Industry

**** Electrical Equipment Needed ****

ECHL is committed to supporting the electrical industry and the training required to further the trade. In doing so, we ask for your old equipment / inventory to use for training.

ECHL contractors and or suppliers - if you are cleaning out your old Inventory and have material (electrical equipment) that is taking up space in your warehouse, the Iroquois High School Electrical Program is seeking material that can be used for teaching students about electrical products they may encounter in the field. Educating our future apprentices is the goal.

IEC is the hub for most of the surrounding area's for the electrical trade training schools. She has contacts for Jefferson County, Bullitt County, to Hardin County.

If you would call, Erin Pretorius or Stephanie at 502-493-1590 or email Erin at erin@iec-kyin.com to make arrangements for pick up or delivery.

Old or new! - Thanks for your support!

OCTOBER Code Questions

1. What is the minimum depth of clear working space in a 13,800 volt piece of equipment with live parts on both sides of working Space? Where would you find this answer in the 2017 NEC?

- 'a) 9' c) 6'
'b) 10' d) 12'

Section _____

2. Can a 240 to 208 volt autotransformer supply a branch circuit? Where would you find this answer in the 2017 NEC?

- Yes No

Section _____

3. Can cable tray be used to support the single conductor 500MCM conductors permitted service entrance conductors with other feeder conductors? Where would you find this answer in the 2017 NEC?

- Yes No

Section _____

4. How many amp can a 4/0 THWN carry in an open air application? Where would you find this answer in the 2017 NEC?

Section _____

5. Can USE cable be used for an aboveground installation? Where would you find this answer in the 2017 NEC?

- Yes No

Section _____

6. How high can you install a light switch to center of the operating handle above the floor in a house? Where would you find this answer in the 2017 NEC?

Section _____

Code Corner

Article 110

Article 110 is the **Requirements for Electrical Installation** and has an abundance of needed information and is actually where you should start to make sure your installation will meet the requirements of the *NEC*.

Article 110 is often overlooked and is the **Requirements for Electrical Installations**, most probably only relate this article to Working Space but there is a lot more to this Article than just work space requirements. There were some changes that were made to this Article in the 2017 NEC that will have an impact on your Installation.

The Section that is really important when installing electrical equipment is **110.3(B) Installation and Use**. This Section requires all equipment shall be listed or labeled and used in accordance with any **"INSTRUCTIONS"** included in the listing or labeling. So what is this Section telling us and requiring you to do to keep this product listed? Who do you think writes these instructions the manufacture? No, it is the third party that has listed or labeled that writes these instructions. I know that we all read these instructions before installing the equipment, don't we! If you do not follow this instruction for the installation you could possibly void the listing or labeling of this product.

One of the changes that was made is that has addressed Reconditioned, Refurbished or Remanufactured equipment. If you use any of this type of equipment in your installation you will be required to label that this equipment contains this type of equipment or parts. There are installation that may have equipment that is no longer be manufactured and you would need to use this equipment or have to totally change out the exist equipment which may very costly. Keep this in mind because the AHJ know that this equipment is no longer being produced and any change like this will raise a red flag.

NFPA 70E The Safe Work Practices document has once again influenced changes to NFPA 70 2017 NEC the Electrical Installation document. **110.16 Arc-Flash Hazard Warning**. Was added several Code cycle ago

Top Three Code Violations Louisville Metro Inspections NOVEMBER 2022

These violations are costing you time and money.

1. NEC Article # 300.9 Raceways in Wet Locations abovegrade

Where raceways are installed in wet locations abovegrade, the interior of the raceways shall be considered to be a wet location. Insulated conductors and cables installed in raceways in wet locations abovegrade shall comply with 310.10(C).

2. NEC Article # 300.13(B) Device Removal

In multiwire branch circuits, the continuity of a grounded conductor shall not depend on device connections such as lampholders, receptacles, and so forth, where the removal of such devices would interrupt the continuity.

3. NEC Article # 300.11(B) Wiring Systems Installed Above Suspended Ceilings

Support wires that do not provide secure support shall not be permitted as the sole support. Support wires and associated fittings that provide secure support and that are installed in addition to the ceiling grid support wires shall be permitted as the sole support. Where independent support wires are used, they shall be secured at both ends. Cables and raceways shall not be supported by ceiling grids.

Please review the NEC articles above. Each of these articles are associated with a violation. Please keep in mind to follow through with the current approved CODE..

Being Turned down on a project, you lose money and time required to return to the job site for repairs to correct the violation.

We hope this will help save you time and money on inspection fees by reviewing the articles and making sure you have not violated the code before calling for the initial inspection.

**Submitted by Arnold Hornback
Assistant Chief Electrical Inspector
Louisville Metro Dept. of Codes and Regulations**

Code Corner Cont'd

and has been expanded and changed every cycle since. 110.16(B) has required labeling on 1,200 amps or more other than dwelling units of the available fault current now will require you to include the Clearing Time of the overcurrent device, this is how long it takes to open in a short circuit condition. This will require you to get this information from the manufacturer or learn to read the curves that are available on their website or literature.

Submitted by Dennis Steier

LG&E NEWS

Turn Downs

LG&E desires to do everything in our power to connect customer's services in a timely and efficient manner. Unfortunately, it is not always possible due to problems discovered during the connection phase of the project.

The contractor crews used by the Company must turn down several services a week due to insufficient issues. The most common problems are nicked cables, leads that are too short to reach the termination points to the underground transformer or splice box and debris that covers up or hinders the contractors from getting to our equipment.

This is just a reminder to monitor your job site to make sure there are no obstructions and the wires are long enough to reach the points to energize your service. We understand that time is money, however, safety is of the utmost importance to our crews as well as our customers.

Please help us resolve these issues so that every customer is a happy one.

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

NEC Article 625 and Electric Vehicles

The NEC, National Electric Code, is part of the National Fire Code and is mandated by most state or local law in the USA. The code covers all wiring in and around structures.

The NEC article 625 covers the wires and equipment used to supply electricity for charging an electric vehicle. The 2008 version does not cover motorcycles, industrial trucks, or golf carts. It covers the charging process to the end of the connector that plugs into the vehicle. It does not cover whatever happens with that power once it enters the vehicle.

1999 was the first edition of NFPA 70 the National Electric Code (published by the National Fire Protection Association) to include article 625 about Electric Vehicle Charging. Coincidentally, this is the first edition after the introduction of the GM EV1 vehicles. Minor changes have been made over the years. The following notes are based on the 2008 edition.

If the charging power source is 120 volts and is powered by a 15 or 20 amp standard ground fault protected outlet NEC article 625 has no other requirements... The 120 Volt power and lower power is safer and allows emergency charging anywhere. The switch for the outlet is an extra level of safety. The switch for the outlet is turned off when not in use, before the extension cord is connected to the vehicle and before the extension cord is disconnected from the vehicle. It improves safety in a potentially wet environment.

If the voltage or current exceeds 120 volts or 20 amps, the other requirements of NEC article 625 apply.

There are requirements for the connector:

- It must be polarized
- It cannot be interchanged with any standard connector
- It must be touch safe when in use and not in use.
- It must have a latch to prevent unintentional disconnection
- It must have a grounding connection that makes first and brakes last.

All of these requirements are covered by using a [SAE J1772 compliant connector and communications \(click for information page\)](#)

NEC Article 625 & EV - Cont'd

The charging equipment must be:

- Marked with the intended use (electric vehicle charging) and if the location has ventilation required for some battery types.
- The cable used between the equipment and vehicle can only be one of several types specifically designed for EV charging, all types have the first two letters in the wire type as EV.
- There will be an interlock that only supplies power to an electric vehicle.
- Power will automatically disconnect if the cable is disconnected.
- Power will automatically disconnect if the cable pulled on (tension) before it separates or fails.
- There will be over current protection
- Ground fault protection is required
- There are requirements about storing the cable between used 18-48 inches above the floor
- There are other requirements for very high power charging systems and interactive system beyond the scope of these notes.
- For indoor sites, there are requirements for batteries that could produce flammable gasses (flooded lead acid) and require ventilation that is beyond the scope of these notes

Outdoor charging is permitted.

I have provided this as an introduction to article 625. You need to consult an actual copy of the current NEC and determine what is correct for your application. Contacting a professional electrical engineer or an electrical contractor may help but for most people this is all very new. Your local building department may also be able to help.

Minor changes are going to appear in the 2011 edition of the NEC, National Electric Code which will be published in November. The main change is said to include motorcycles and plug-in hybrids which were not previously covered.