



THE WIRE

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

OCTOBER 2022

The Presidents' Letter

Our September 12th general membership meeting was very lively with a lot of excellent discussion. It was reported under new business that the 2020 NEC was not going to be adopted any time soon, if at all. The 2023 edition will be available in October of this year. Consequently, a motion was made and seconded to appoint an ECHL committee to press the adoption of the 2020 NEC with the Kentucky Department of Housing, Building and Construction and the Kentucky State Legislators. The ECHL committee would work to get other organizations (i.e. the IEC, IBEW, NECA, IAEL, fire fighters, and insurance carriers) to meet and develop a strategy to assist in the effort. Motion passed.

The continuing education presentation regarding Article 480 *Storage Batteries*, Article 690 *Solar Photovoltaic (PV) Systems*, and Article 705 *Interconnected Electric Power Production Sources* also had a lot of good discussion with excellent questions. I presented about a third of the information and it was decided to continue with this presentation for the October 10th meeting. The November 14th meeting will be conducted by Metro Inspector Norb Thorpe regarding common code violations. And the December 12th meeting will have a code panel assembled to answer code questions you may have run into on the job.

We had 47 members present. Charles Arnold won \$55 with the 50/50 drawing.

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 October 10th at the Elks Lodge 2824 Klondike Lane.

October 10, 2022 Code Program

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

Our October program will be a continuation of September's program on NEC Article #480, Storage Batteries, #690 Solar Photovoltaic (PV) Systems, and #705 Interconnected Electrical Power Productions Sources.

We encourage you to participate by asking questions.

See you Monday Evening at 6:30 pm.

Bring a Friend!!

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

Stay Informed, Work Smart & Stay Alert!

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. Is skeleton tubing required to be guarded when it is readily accessible? Where would you find this answer in the 2017 NEC?

YES NO

Section _____
2. Can a motor have a non-metallic terminal housing? Where would you find this answer in the 2017 NEC?

YES NO

Section _____
3. How many amps can a 3 conductor #18 ETT Flexible cord allowed to carry? Where would you find this answer in the 2017 NEC?

A) 10 C) 5
B) 7 D) None of above

Section _____
4. If you would be required to install a pulling point in a run 4" conduit which 4 – 500 MCM is it, how long would that be to meet the 2017 NEC?

A) 24" C) 32"
B) 36" D) 40"

Section _____
5. What percentage will you have to de-rate the ampacity with 8 conduct in the conduit? Where would you find this answer I n the 2017 NEC?

A) 70 C) 40
B) 50 D) None of above

Section _____

Code Corner

After a golf game several weeks ago the discussion in the club house after the round over a few cold ones turned to Electric Vehicles and how my partner would ever own one. I had to voice my opinion on this believe or not! Someday maybe in not my lifetime the automotive industry will no longer make a vehicle with an internal combustion engine. I can remember heating my parent house with coal before natural gas; gasoline will someday be just like coal heated the home and no longer used for to power your vehicles.

The NFPA which put together the National Electric Code which we use to provide safe and reliable electrical installation does use a little foresight when it comes to new technology and addresses the advancement. That is why Article 625 was added in the 1996 Code cycle, which was 26 years ago, now electric vehicle are becoming more prevalent and charging stations are starting to pop up and are going to continue to grow. So we need to become more familiar with Article 625 because you may be installing one in the near future.

One of the concerns that was expressed by my partner was the demand these chargers were going put on our electrical grid and I countered with Table 220.12 in the 2020 which Kentucky did no adopt was less VA per square foot when calculating the load for a building has dropped, simply because of energy saving products that are now available.

This Article was introduced in 1996 and you may have never thought would be something you would have to deal with, but with all of the advancement in technology it has become a reality and will continue in to the future. So please familiarize yourself with Article 625 because you may be requested to install some type of electrical charging system in the very near future.

Submitted by Dennis Steier

Top Three Code Violations Louisville Metro Inspections OCTOBER 2022

These violations are costing you time and money.

1. NEC Article # 250.80—Service Raceways and Enclosures

Metal enclosures and raceways for service conductors and equipment shall be connected to the grounded system conductor if the electrical system is grounded or to the grounding electrode conductor for electrical systems that are not grounded.

2. NEC Article # 250.64(B)(2) - Exposed to Physical Damage

A 6 AWG or larger copper or aluminum grounding electrode conductor exposed to physical damage shall be protected in rigid metal conduit (RMC), intermediate metal conduit (IMC), rigid polyvinyl chloride conduit (PVC), reinforced thermosetting resin conduit Type XW (RTRC-XW), electrical metallic tubing (EMT), or cable armor.

3. NEC Article # 250.50 - Grounding Electrode System

All grounding electrodes as described in 250.52(A)(1) through (A) (7) that are present at each building or structure served shall be bonded together to form the grounding electrode system. Where none of these grounding electrodes exist, one or more of the grounding electrodes specified in 250.52(A)(4) through (A) (8) shall be installed and used.

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*

The Presidents Letter Cont'd

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

LG&E NEWS

Hook up delays

Louisville Gas & Electric Company is committed to giving the customer the best experience possible in providing service to their project. One of the problems that continually hinder our ability to connect underground services in a timely manner is obstructions preventing access to the pad mount transformer and/or splice box.

The crews often arrive to discover debris such as dirt, rocks or discarded building material piled up blocking the area needed to connect the service. When you know service is about to be connected, make sure the area is clear and free of any hazards. We will not move any of the objects.

Also make sure there is no silt fencing in the way as well. Our crew will not be able to return the same day to connect the service. This means a several day delay in returning.

Submitted by Joel McCawley

The Road Ahead for Electric Vehicles

The Copper Development Association's recent conference, EVs: Navigating the Road Ahead, offered attendees a mind-bending update on the potential and challenges ahead for widespread implementation of electric vehicles.

While electrical folks think of the electric vehicle market in terms of the sales opportunities for electrical products needed for the installation of commercial fast-charging stations or adding 240V circuits in homes for those overnight charges, other presenters and attendees at the Copper Development Association's recent conference, EVs: Navigating the Road Ahead, conference had different interests in the market. Presenters at the CDA event included representatives from auto companies; state public transportation systems and other state agencies; the Southern Co. electric utility; and trade groups including the National Electrical Manufacturers Association (NEMA); Edison Electric Institute (EEI); Energy Storage Association, and the Alliance to Save Energy.

All had slightly different takes on how electric vehicle are impacting their interests in the energy market. Some panelists are most interested in the combination of public and private investment that will be necessary to build out a nationwide network of charging stations to support the millions of electric vehicles expected to hit the roads over the next few years. State officials had concerns about ensuring that the charging infrastructure would be installed in all areas of their cities, from low-income neighborhoods to high-rises.

Technologists on the panel expressed interest in seeing how and if owners of electric vehicles could make money by selling the unused electricity their batteries produce back to electric utilities and other power producers. One panelist used the example of fleets of electric school buses that sit dormant during the summer, but could generate electricity to be sold on the grid — producing an additional revenue stream for schools.

Because of its interest in new markets for copper, event sponsor Copper Development Association (CDA) is also a big believer in electric vehicles because of how much copper they require for motors, batteries, inverters, wires and charging stations. According to CDA data, a battery for an electric vehicle contains an estimated 183 lbs of copper, while the battery necessary to power an electric bus weighs in at 814 lbs.

The first session at the conference, held Dec. 11 in Wash-

Electrical Vehicles - Cont'd

ington, D.C., explored the various public policy decisions at the local, state and federal level that must be made to support and fund the installation of thousands of public charging stations across the nation. These charging stations will be needed to help get folks over their "range anxiety" (running out of charge before they find a charging station), and to attract the interest of the general public or commercial interests beyond the early adopters. Jason Hartke, president of the Alliance to Save Energy, said the scope of this build-out will need to be similar to the construction of the Interstate Highway System started by President Eisenhower in the 1950s.

The Electrify America initiative to install thousands of fast-chargers across the United States is impressive in its scope and potential. Wayne Killen, the Electrify America representative on the panel, said his group is in the process of installing 2,000 chargers at 484 stations around the United States. The 350 kW chargers being installed are capable of recharging an electric vehicle very quickly — providing 200 miles of vehicle driving range in just 10 minutes. That's super-fast when compared to the overnight charging often required in residential installations that utilize Level 1 (120V) or Level 2 (240V) EV chargers. According to Electrify America's website, its DC (direct current) Fast EV charging stations will be located along high-traffic corridors in 39 states, including two cross-country routes. "Locations will accommodate between four and ten chargers, with charging power levels up to 350kW available at every station, capable of adding 20 miles of range per minute to a vehicle," it said. "Nationally, each planned station site will be located no more than 120 miles apart and, on key East and West Coast highways, planned locations average only 70 miles apart."

Panelists tossed around a variety of estimates on just how much the EV market is expected to grow over the next few years. The Edison Electric Institute estimates that more than 1 million EVs are now on the road, and that by 2025 that number will grow to 8 million. While those numbers sound impressive, they still account for a small percentage of the 260 million-plus passenger cars registered in the United States through 2016, according to www.statistica.com, and most likely an equally small percentage of trucks, buses and other commercial vehicles.

Source: *Internet—Electrical Construction & Maintenance*
<ecm@news.ecmweb.com> Article January 11, 2019