



# THE WIRE

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

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www.echlky.com

## SEPTEMBER 2024

### **The Presidents' Letter**

This is the first newsletter for the 2024/2025 season. I hope everyone has had a safe, relaxing, and rewarding summer so far! We start our general membership meetings on Monday September 9, 2024 at the Elks Lodge located at 2824 Klondike Lane.

The work situation in the metro area is still very busy. The electrical contractors that I have spoken with are still in need of qualified electricians. The supply of material has gotten a little better from what I have been told. However, the lead times on large electrical equipment are still staggering.

The Sponsorship Form is on the website. If you know of any company that may be interested in becoming a sponsor, please print off the form and give it out to any prospective sponsor. The cost for a company or organization to become a sponsor is \$100.

Dennis Steier and myself attended a legislative review subcommittee on August 13<sup>th</sup>. This subcommittee was meeting to determine the status of adopting the 2023 National Electrical Code. The adoption passed this subcommittee and will be heard before another committee in the upcoming weeks or months. There were some very important points of interest that transpired during this subcommittee hearing. I will be going over these points of interest at the general membership meeting on September 9<sup>th</sup>. I will explain what sections of the code will be affected when adoption takes place.

Marilyn has begun to mail out invoices for membership dues. We ask that all members pay their invoice in a timely manner. This will greatly help with the financial status of our organization.

As mentioned, our next general membership meeting is scheduled for Monday September 9<sup>th</sup> 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

### **SEPTEMBER 9, 2024 Code Program**

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

The presentation for September will be presented by Steve Willinghurst and will be a review/comparison of the Code updates from 2017 to present.

Feel free to participate by asking questions and voicing your concerns.

Bring a friend and enjoy the program.

Dennis Steier will also go over the Code Questions in the September 2024 Wire.

See you Monday Evening, September 9, 2024, at 6:30pm.

Stay Alert! Work Smart & Stay Informed!

### **Dues Renewal**

September is time to re-new your ECHL membership. Invoices will be included in the September Wire. Your membership is especially important to us, at this time of uncertainty. We are anxious to get back to our monthly routine of providing our members with up to date training.

We encourage you to take part in our meetings by asking questions and voicing your concerns about the Code.

Denise Arnold and I have missed everyone and are looking forward to seeing you!

**!!! Bring a electrical friend with you!!!**

## September Code Questions

1. If you have AA countertop that has a range in the middle and 4 foot of countertop on each side how many receptacle outlet would be required? Where would you find this answer in the 2017 NEC?

A) 4                      C) 1  
B) 2                      D) None of Above

Section \_\_\_\_\_

2. Is a receptacle required at the front and back of a multifamily dwelling? Where would you find this answer in the 2017 NEC?

YES                      NO

Section \_\_\_\_\_

3. Can SJO cord be used in a 480/277 volt application? Where would you find this answer in the 2017 NEC?

YES                      NO

Section \_\_\_\_\_

4. If a Hotel has a meeting area which hold less than 100 people is it governed by Article 518?

YES                      NO

5. Is temporary wiring in exhibition hall required to have GFCI protection if you use flexible hard use cords? Where would you find this in the 2017 NEC?

YES                      NO

Section \_\_\_\_\_

6. Under the definition can you install the drive motor for an elevator control room? Where would this answer in the 2017 NEC?

YES                      NO

Section \_\_\_\_\_

*Submitted by Dennis Steier*

## Code Corner

### Article 242 Overcurrent Protection

First, I hope everyone had a safe, enjoyable and fun summer with their families and friends that is what is really important in our in lives. I know you are all ready to come back the ECHL meetings once again for another year of what I consider great electrical training for a small cost. I would also like to encourage you to bring a friend to the next meeting so they can see what this organization has to offer.

This year we will be moving to the 2023 NEC in the State of Kentucky and bypassing the 2020 NEC. There is going to be some changes in the 2023 that will be delayed but not taken exception to at this time. So, I will be highlighting these change that will and may affect your electrical installation.

In the 2020 NEC Article 242 Overvoltage Protection was added and I think was a very good addition that actually protects the consumer. Think about the electronic device you current have in your home and what it would cost to replace them? This addition would require you to have whole house overvoltage protection on your electrical panel. I like a lot of people have plug in overcurrent on my TV's in my home for protection from overvoltage. By installing an overvoltage device on the panel you would have protection on all electronic devices even the hardwired devices.

Unfortunately this change that is being delayed by request of the Homebuilders who evidently do not care about consumer protection, they say because of the additional cost. These overcurrent protection or surge protection for the whole house are in a price range from \$80.00 to \$150.00, seem like a small cost for protection and peace of mind. These Homebuilders are the same one that will upgrade you to granite countertops at an additional cost which will not protect anything, but look good!

If I was a contractor wiring houses I would suggest to the builder that the overvoltage protection would be a something they should offer to the customers.

*Submitted by Dennis Steier*

### **Top Three Code Violations Louisville Metro Inspections**

**SEPTEMBER 2024**

These violations are costing you time and money.

1. **NEC Article # 110.3(B) - Installation and Use**

Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.

2. **NEC Article # 210.8 - Grounded-Fault Circuit-Interrupter Protection for Personnel**

Ground-fault circuit-interrupter protection for personnel shall be provided as required in **210.8 (A) through (E)**. The ground-fault circuit interrupter shall be installed in a readily accessible location.

3. **NEC Article # 210.64 - Electrical Service Areas.**

At least one 125-volt, single-phase, 15- or 20-ampere-rated receptacle outlet shall be installed in an accessible location within 7.5 m (25 ft) of the indoor electric service equipment. The required receptacle outlet shall be located within the same room or area as the service equipment.

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 money.

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*

### **LG&E NEWS**

Connecting Permanent Services

Just a reminder for you when your job is inspected. When Louisville Gas & Electric crews come to connect your permanent service to the project, if there is something being fed from the temporary pole to the house such as (A furnace to keep the house warm) the crew is not allowed to disturb that connection and “WILL NOT” connect the permanent service. Thus, your hook up time will be delayed for another day or so, Please make sure nothing is connected or give the impression that something is in order to prevent any delays.

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

### **What types of receptacle outlets are required by the code?**

There are all kinds of receptacle outlets on the market with added features like USB charging ports, surge protection, night lights, tamper-resistance, weather resistance, combination receptacle and switch devices, and more. While these features might serve a special purpose or convenience, they are not required by the code. In order to pass your next electrical inspection, here are the main categories of receptacles you need to know about:

**Grounding-Type Receptacles:** All new receptacles have to be the three-prong grounding type (there are some exceptions and alternatives when it comes to replacing old two-prong non-grounding type receptacles in older homes).

#### **Ground-Fault Circuit-Interrupter Receptacles**

**(GFCI):** The electronics in a GFCI receptacle monitor the flow of current in the circuit and will trip open in less than 5 milliseconds if there is a ground-fault condition, such as a faulty appliance. The quick-acting GFCI receptacle is intended to stop the flow of current before it causes your heart to go into defibrillation, thus preventing a fatal electrical shock.

**Arc-Fault Circuit-Interrupter Receptacles (AFCI):** Similar to a GFCI receptacle, AFCI receptacles have sophisticated electronics that monitor the flow of current. AFCIs look for abnormal arcing signatures in the circuit, and they will trip open and stop the flow of current to prevent the arc from starting a fire.

**Tamper-Resistant Receptacles (TR):** All 15- and 20-ampere receptacles in a home are now required to be tamper-resistant. Tamper-resistant receptacles have built-in shutters that prevent children from inserting foreign objects in the receptacle slots. The vast majority of electrical burns and shocks occurred among children 6 years of age or less. [Where are tamper resistant outlets required?](#) Tamper-resistant receptacles are also now required in hotel rooms, child care facilities, preschools, elementary education facilities, waiting areas in medical and dental clinics, dormitories, and waiting areas in any place of assembly, anywhere children may not be closely supervised.

**Weather-Resistant Receptacles (WR):** All [15- and 20-ampere](#) receptacles installed in damp or wet locations are now required to be approved and marked as weather-resistant (WR). Compared to standard-grade receptacles, weather-resistant receptacles have extra corrosion protection, resistance against ultraviolet light (UV), and they withstand impact and abuse in cold weather. A damp location is protected from the weather and not subject to saturation with water but is subject to moderate degrees of moisture, such as under a canopy or open porch. A wet location is anywhere subject to saturation with water, such as the exterior of a home.

### **NEC: Air-Conditioning and Refrigerating Equipment**

Art. 440, Part I provides the NEC general requirements for air-conditioning and refrigerating equipment. This article has an unusual aspect to it, compared to other NEC articles — it's essentially a supplement to Art. 430 (motors). It covers a special type of motor, namely ones that are hermetically sealed. They are hermetically sealed because they are immersed in the refrigerant the motor-compressor system is pumping. So, you won't find all the hermetic motor requirements in Art. 440. Because they are motors, they are covered by Art. 430, more or less. You apply Art. 430, except as amended by Art. 440.

Always look at the nameplate before installing; it will provide information such as the following [440.4]:

- Manufacturer's name, trademark, or symbol.
- Identifying designation.

Phase, voltage, and frequency.

The motor nameplate should also show the rated-load current (in amperes). If it does not, then look at the nameplate of the equipment in which the motor compressor is used. You will need this value to determine the rating of the disconnecting means, branch-circuit conductors, controller, branch-circuit short circuit and ground-fault protection, and the separate motor overload protection [440.6(A)].

You will find other useful information on these nameplates. It's a good idea to photograph them and attach the images to the work report. The manufacturer also must mark the motor controllers with information [440.5]; the requirements echo those of 440.4.

To size the conductors, use Table 310.16 through 19, or calculate per 310.14 as applicable [440.6].

What if you have more than one motor in the system? Do you use the highest-rated motor rule, as in Art. 430? Yes, use the hermetic motor with the highest rated-load current [440.7]. But how do you identify the largest motor that isn't hermetic? Use the full-load current corresponding to the motor horsepower rating selected from Table 430.248, 430.249, or 430.250.

Many HVAC units are installed on a roof. All such units must have an equipment grounding conductor of the wire type in outdoor portions of metallic raceway systems that use compression fittings [440.9]. If the building has a lightning protection system, these units must also be bonded to it to prevent flashovers.

There's a condition under which you cannot install motor controllers or industrial control panels of multimotor and combination-load equipment. The condition is the available fault current exceeds that equipment's short-circuit current rating per 440.4(B).