



# THE WIRE

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## DECEMBER 2024

### **The Presidents' Letter**

Our November meeting had 43 people in attendance. The presentation on significant changes to the 2023 National Electrical Code went well. There was much discussion followed with good questions. Dennis Steier will continue with 2023 code changes for the December 9<sup>th</sup> meeting. Congratulations to Mike Noplis on winning \$42 from the 50/50 pot.

As far as I know, the 2023 National Electrical Code is still on track to be adopted and go into effect on January 1, 2025. A letter went out from the Department of Housing, Building, and Construction dated September 4, 2024 stating that unless the administrative regulations are delayed or found deficient, mandatory enforcement of the 2023 NEC will begin January 1, 2025.

The letter also stated that NEC Sections 210.52(C), 230.67, and 314.27(C) are not mandatory until July 15, 2026. In addition, the requirement for GFCI protection for personnel for receptacles over 125-volt listed in the 2023 NEC Section 210.8(A) and the requirement for GFCI protection listed in 210.8(D) (8), (9), (10), and (11) is not mandatory until UL Standards 943 and 101 are revised. **Make sure you check with your respective electrical inspector before you do any installation covered by these sections!**

After July 2024, any license renewals for contractor, master, or electrician licenses will be for two years. With this next renewal, you will pay a fee for two years. When you renew again two years later, you will be required to have 12 hours of continuing education for each license that is being renewed and will pay a fee for two years. Call the department at (502) 573-2002 with any questions.

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.

Marilyn has mailed out invoices for membership dues. We ask that all members pay their invoice in a timely

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### **December 9, 2024 Code Program**

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

The program for December will be a continuation of the October, Code Updates. The presentation will be directed by Dennis Steier and cover the Code Sections that will be enforced beginning on January 1, 2025. Dennis will also touch some of the Code Articles that are being delayed. This presentation will be a review/comparison of each section 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 November 2024 Wire.

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

Stay Alert! Work Smart & Stay Informed!

### **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*

## DECEMBER Code Questions

1. If you have install a seal off in the conduit in a classified area can you used the 40% fill for the cross sectional area of the conduit? Where would you find this answer in the 2017 NEC?

Yes No

Section \_\_\_\_\_

2. Can 18 gauge conducts be paralleled in a traveling cables lighting circuit in a elevator installation? Where would you find this answer in the 2017 NEC?

Yes No

Section \_\_\_\_\_

3. How many foot pounds of torque is required on a screw type terminal on a motor control circuit using 14 AWG or smaller? Where would you find this answer in the 2017 NEC?

Section \_\_\_\_\_

4. You have a large MCC that require 3 parallel 250 MCM for the feed, can you use Table in 430 for minimum wire bending space at the terminals of the enclosed MCC? Where would you find this answer in the 2017 NEC?

Yes No

Section \_\_\_\_\_

5. Can you use a multioutlet assembly in a hoist ways of an elevator? Where would you find this answer in the 2017 NEC?

Yes No

Section \_\_\_\_\_

6. Is the allowable cable fill area for multiconductor cables in ladder and solid bottoms cable tray the same fill rate? Where would you find this answer in the 2017 NEC?

Yes No

Section \_\_\_\_\_

## Code Corner

Article 220

Submitted by Dennis Steier

Article 220 is Branch Circuit, Feeder, and Service Load Calculations, there was a new sub section added in the **2023 NEC, 220.5(C) Floor Areas**, This change was made by Code Making Panel 2 and this change now requires you add the garage, or unused or unfinished space(s) to the square footage when calculating the load for the dwelling unit.

Previously the text included language that may be considered subjective such as “not adaptable for future use.” Additionally , garages and other spaces. Previously exempted from the square footage calculations , often are used as ancillary space to be habitable portions of the dwelling and as such should be included in dwelling, building or other space square foot calculations.

You need to be aware of this change when and if you are doing a load calculation on a dwelling unit, some of the bigger home may have a 3, 4 or 5 car garage. If they do have a 3 car garage it would easily add an additional 800 square feet to the calculation. At 3va per square foot that would be an additional 2,400va to your calculation.

Will be addressing more changes in the 2023 NEC in the upcoming Wires the rest of the year. Hope you all had a wonderful Thanksgiving with your family and friends, wish you and yours a Merry Christmas and a very Prosperous New Year!

*Submitted by Dennis Steier*

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

**DECEMBER 2024**

These violations are costing you time and money.

1. **NEC Article # 110.12 Mechanical Execution of Work**

Electrical equipment shall be installed in a neat and workman like manner.

2. **NEC Article # 110.24 Available Fault Current.**

Service Equipment at other than selling unit shall be legibly marked in the field with the maximum available fault current. The field marking(s) shall include the date the fault-current calculation was performed and be of sufficient durability to withstand the environment involved. The calculation shall be documented and made available to those authorized to design, install, inspect, maintain, or operate the system.

3. **NEC Article # 110.22 (A) Identification of disconnecting means.**

**110.22 (A) General**

Each disconnecting means shall be legibly marked to indicate its purpose unless located and arranged so the purpose is evident. The marking shall be of sufficient durability to withstand the environment involved.

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*

### **Presidents' Letter Cont'd**

manner. This will greatly help with the financial status of our organization. Local Union 369 and the National Electrical Contractors Association are sponsoring a dinner for our December 9<sup>th</sup> meeting. If you plan on attending this meeting and you haven't signed the attendance list, please contact Marilyn so that we can have an accurate count for food and drink.

Again, our next general membership meeting is scheduled for Monday December 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*

### **Purchase your 2023 Code Book**

The 2023 Code was adopted and will be enforced beginning January 1, 2025. ECHL will be selling 2023 Code Books. Denise has secured a discount for ECHL Members, (see pricing listed below). If you would like one, call Denise at 491-5010, place your order, and pay for the book with a credit card and it will be ready for you at the next meeting, November 11, 2024. She will also have a few books the meeting for sale, but you need to write a check payable to CED for the cost. CED has a limited amount of code books available and this price is only while supplies last.

Regular 2023 Code Book \$117.00 (includes tax)  
Hardback 2023 Code Book \$265.00 (includes tax)

You can only use a credit card if you call Denise at CED and pay in advance, and we will have the book at the meeting. If you want a book at the meeting, you will need to make a check payable to CED.

If you have any questions, please feel free to call Denise, 502-491-5010.

## **WHAT IS THE DIFFERENCE BETWEEN ABOVE GROUND AND BELOW GROUND CONDUIT?**

The main difference is fire resistance. Above ground conduit has fire resistance per UL2515 and CSA C22.2 No. 2515 standards, meaning the conduit will self-extinguish within 15 seconds after each of five successive flame applications per the UL 2515 flame test standard.

Below Ground conduit meets UL94 HB (horizontal burn) requirements, which aren't as stringent as vertical burn requirements. This also means that conduit manufactured and labeled for "above ground" applications can be used for "below ground" applications.

### ***Digging Deeper into Direct Burial Conduit***

Direct buried conduit is a type of conduit used in below ground installations of electrical systems in commercial and industrial construction projects. Typically direct burial conduit is used in applications where there will be minimal digging after installation, as digging has the potential to disrupt and damage conduit (and the cable) buried beneath,

Direct burial serves to protect electrical systems from environmental factors such as trees, branches, wind, and fire plus it can also be an aesthetic solution that hides overhead power lines. Additionally, direct burial conduit is often a solution when electrical systems use cross roadways because it offers less disruption to traffic patterns. Specifically, direct burial is often used in applications such as data centers, waste water treatment facilities and utilities.

Direct buried (DB) conduit must have mechanical strength to withstand the load of the soil that's packed over it. DB quality applications should utilize UL Listed conduit. We typically recommend using our Standard Wall for ¾" – 4" in diameter, and Medium Wall for 5" and 6" (UL designates Champion Fiberglass MW for 5" and 6" as SW). For very deep trenches, special soil conditions or where high rate of compacting can be expected, and even heavier wall should be selected.

### ***Key Considerations for Direct Burial Cable and Conduit in Industrial Construction Projects***

When determining whether your below ground conduit installation requires direct burial quality, there are several factors to consider:

**Volatility of the environment.** Soil types and load as well as the mechanical strength of the conduit must be considered here. Frost and settlement can impact the stability of direct burial conduit. Corrosion from soil can compromise the conduit as well.

**Compacting of soil.** This is an important factor in direct burial conduit. For very deep trenches, special soil conditions or where a high rate of compacting can be expected, a heavier wall conduit should be selected ***Contact Champion Fiberglass to answer any questions above the leveling of compacting in a project.***

**Ease of access for later service.** Using conduit will allow you to more easily locate and repair cables down the road with less risk of damage to the conduit. Consider a conduit's coefficient of friction to evaluate for ease of pulling as well as cable fault resistance, which allows a cable to be easily pulled through for repair and replacement.

**Project complexity.** Challenging installations can benefit from the efficiency that carefully planned conduit use can provide for cable runs.

**Local regulations.** While NEC (National Electrical Code) may approve a conduit (also referred to as "duct" or "pipe") use for direct burial, local regulations may call for more stringent installations techniques such as dictating how deep the conduit must be buried.

**Future landscaping.** It is important to consider whether future landscaping projects may disrupt direct buried conduit and put the conduit at risk for damage

Electrical conduit provides additional protection for cables in industrial construction projects.

### ***Selecting a Conduit Type***

For projects requiring direct burial conduit, Selecting the best underground conduit for the job is important. You'll want to also consider the costs associated with each type of conduit's raw materials as well as installation, the long-term financial impacts of a conduit's durability, as well as availability for your substrate of choice. Commonly used conduits for underground applications include traditional metal conduits such as RMC (rigid metal conduit) or EMT (electrical metallic tubing). Fiberglass (RTRC) Conduit and PVC Conduit.