



THE WIRE

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OCTOBER 2023

The Presidents' Letter

We kicked off the first ECHL 2023/2024 general membership meeting last month. Our attendance was low with only 39 members present. I gave an update on the adoption of the 2023 National Electrical Code and gave a presentation comparing some of the 2017, 2020, and 2023 language. The discussion was good, along with some very pointed questions.

Ed Bornstein won the 50/50 drawing for \$45. The October presentation is going to be a continuing discussion on grounding and bonding. Norb Thorpe gave an excellent presentation on this topic last spring. It generated many questions. So, the October discussion will be a "Part II" of Article 250 Grounding and Bonding.

On another note, it was discussed at the September Executive Board meeting that the ECHL's income is not keeping pace with expenditures. Efforts over the last 2 years have been made to reduce our costs, but the income is not keeping up. Bottom line, we need new members. I am going to bring this up at the October meeting. I hope you plan on attending and if so, please bring some suggestions on increasing our membership.

Our next general membership meeting is scheduled for Monday October 9th 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

October 9, 2023 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 the September presentation on Grounding and Bonding by Steve Willinghurst. Steve will elaborate on the comparisons/differences/proposed changes between the most recent National Electric Code proposals.

I feel confident that Steve will be peak your interest in the overall presentation, he seems to have a way to keep any subject interesting.

We encourage you to ask questions.

Bring a friend and enjoy the program.

Dennis Steier will also go over the Code Questions in the October 2023 Wire.

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. As related to equipotential bonding in an agricultural facility, the term livestock does not include _____. Where would you find this answer in the 2017 NEC?

- A) Cows B) Poultry
B) Horses (D) Sheep

Section _____

2. Can you use temporary wiring to supply to supply power to boats? Where would you find this answer in the 2017 NEC?

Yes No
Section _____

3. If you the area is rated Class II that for which would the area be classified? Which Article covers this in the 2017 NEC?

- A) Flying and Fibers C) Gases and Vapors
B) Combustible Dust (D) Gasoline

Article _____

4. Can EMT with added corrosion protection be installed underground in a commercial garage application? Where would you find this answer in the 2017 NEC?

YES NO
Section _____

5. Would portable X-Ray equipment that is rated at 65 amps be required to be supplied individual branch circuit? Where would you find this answer in the 2017 NEC?

YES NO
Section _____

6. An isolated ground receptable _____ installed within a patient care vicinity. Where would you find this answer n the 2017 NEC?

- A) Shall be C) Shall not be
B) Shall be permitted to be D) Shall be

Section _____

Code Corner

General Wiring Methods and Materials

Under the scope of Article 300 for the 2017 *NEC* it covers general requirements for wiring methods and material for all wiring installations unless modified by other articles in Chapter 3, What prompted to do the Coe Corner on this article was I received a call looking for a metric seal tight connector which is covered under Article 300.

300.2 (A) Voltage limitations. Wiring methods specified in Chapter 3 shall be used for 600vp;ts. Nominal or less where not specifically limited in some sections of Chapter 3. They shall be permitted for over 600 volts, nominal, where specifically permitted elsewhere in this *Code*.

We have become such of a global economy over the years you may be seeing equipment with metric threading on equipment. Table 300.1(C) Metric Designators and Trade Sizes could be useful at some time. There are manufactures that have changeovers from Metric to Standard trade size that we are accustomed to using here in the United States.

There were some revisions and additions to Article 300.1 in the 2011 *NEC*. There was a revision to 300.4 (E) Protection Against Physical Damage, which addresses cables, raceways, or boxes installed under a metal corrugated sheet roofing deck. Which requires you to have a least a one and one- half down from the lowest point on the decking. This was added because of deck screws when re-roofing could possibly penetrate the Cable, Raceway or Box.

300.4 (H) Structural Joints, is new and falls under Protection Against Physical Damage, this section would require you to install a listed expansion or deflection fitting or other approved means shall be used where a raceway crosses a structural joint intended for expansion, contraction or deflection used in building, bridges, parking garages, or other structures.

Article 300 is not an Article you would visit that often but there is information you may need to address possibly

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Top Three Code Violations Louisville Metro Inspections OCTBER 2023

These violations are costing you time and money.

1. NEC Article # 110.2 Approval

The conductors and equipment required or permitted by this *CODE* shall be acceptable only if approved.

2. NEC Article # 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.

3. NEC Article # 200.2 (B) Continuity

The continuity of a grounded conductor shall not depend on a connection to a metallic enclosure, raceway, or cable armor.

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**

Code Corner Cont'd

for information such as I was recently asked regarding a metric connector.

I hope to see you at the next meeting in October.

Submitted by Dennis Steier

LG&E NEWS

Transformer Supply

This is a reminder of the distribution transformer supply issue that continues to exist. For the past year, electric utilities, including LG&E, have had difficulties obtaining transformers. In an effort to reduce the number of transformers used, LG&E has chosen to no longer install distribution transformers for the sole purpose of providing temporary electric service. This practice will remain in place for the foreseeable future. Doing so allows us to continue providing safe, reliable service for permanent electric service. However, if a transformer is in the vicinity of the construction site, please contact the appropriate electric locator to discuss possibilities.

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

Three Steps to Capitalize on the Electrification Opportunity

How to prepare for a new future in the electrical industry

Affordable, reliable, and safe electricity is fundamental to modern life. Dating back to the 1880s, Thomas Edison's light bulb was one of the first applications of electricity — it radically challenged the status quo by introducing people to an entirely new type of energy. This new energy fostered many industries required to generate, transmit, and use the electricity fueling the economy and our livelihoods for the decades that followed.

The latest trend toward electrification — a shift in spending from high- to low-emissions assets — could create one

Three Steps to Capitalize - Cont'd

of the largest reallocations of capital in a century and present massive opportunities for the electrical industry. As the Inflation Reduction Act (recognized as the largest investment in climate action in United States history) gains momentum, pressure mounts to better understand how to take advantage of new capital to effectively compete. Electrification in this era will demand new power generation, transmission, and distribution to support the growth of various trends like transportation electrification, onshoring and the requirements for more reliable and renewable energy. Preparing for this shift and meeting the demands of this latest trend is causing the electrical community uncertainty at a time when it's already facing pressures from continued labor shortages and supply chain disruptions. Skilled labor shortages and the volatile supply chain will be the larger headwinds that could throttle growth, but perhaps the largest headwind will be the industry's ability to implement.

How is this wave of electrification different from the past? And how should electrical contractors, engineers, and plant personnel capitalize on opportunities? In this article, we will demystify "electrification" and outline three key steps to prepare for increased capital and support incremental people/process changes to become more resilient and successful as electrification evolves.

Market drivers shaping change

The world's energy diet is changing. For more than a century, fossil fuels (e.g., coal, oil, natural gas) have powered the world and generated electricity. Electrification (as defined today) refers to replacing technologies that use fossil fuels with technologies that use electricity as the energy source. Think of how internal combustion engines (ICE) are being supplanted by electric vehicles (EVs), commercial buildings are looking for more resilient and renewable power sources like solar, or how your household weed wacker is now battery-powered. The bottom line is the way in which power is generated, distributed, stored, and consumed is being reinvented.

To support this shift in the market, we will need dramatically more electricity that will have to be both more resilient and sustainable. According to the [World Nuclear Association](#), projections are for electrical demand to grow two times from what it is today. This demand will be driven by several market drivers that are significantly different from the electrification efforts of

the past, including:

- A wide range of international country, state, and local legislation and mandates require low-carbon solutions.
- Various ESG and sustainability initiatives for numerous companies.

The Infrastructure and Investment and Jobs Act (IIJA) passed in 2021 and Inflation Reduction Act (IRA) passed in the summer of 2022 have nearly \$2 trillion in funding to reduce the cost of low-carbon technologies.

These tailwinds will fuel the growth of this new era of electrification and should present exciting opportunities for electrical contractors. To help you capitalize on these opportunities, here are three key steps to consider:

1. Proactive project planning is essential to success.

With massive capital flowing into electrification efforts, the number of new opportunities will likely increase exponentially. The wide variety of large capital projects (like new manufacturing plants, large-scale solar projects, and electrifying fleets of vehicles) will change project scales and scopes unlike anything before. This will challenge contractors to strategically consider how to manage multiple, diverse project plans simultaneously to ensure success. Proactive project planning and supply chain execution have never been more essential to success.

2. Manufacturing and supplier ecosystem is the lynchpin to securing materials and executing at scale.

With continued strains on the supply chain, electrical contractors should exercise prudence when considering how to tackle new projects and take the long view when managing large-scale, multi-year jobs. Long gone are the days of short-term planning — not to mention having transformers, gear, and balance-of-system components readily available. Consider the current supply chain landscape and how to rely on your network of manufacturing/supply partners to reliably source and secure the materials needed to execute at scale.

3. New era of construction will pave the way to hone a specialized skillset.

While daunting, this move toward electrification presents new, exciting opportunities for electrical contractors. Consider how you can sharpen specialized, high-valued skills to support this continued trend and position yourself as an expert. From EV charging systems and equipment to solar and battery energy storage to microgrids, the electrical industry is poised for great growth and transformation in the short term. How will you capitalize on these opportunities to set the foundation for long-term success?

Source: email EC&M Code Watch – 1/23/2023 Article by Nelson Squires