



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 2023

The Presidents' Letter

I hope everyone is doing well and getting ready for the cold weather. The demand for electrical work is exceptionally high, while the supply of electricians is not keeping up with this demand. The electrical trade is a wonderful profession. In some cases, an apprentice can complete their apprenticeship with absolutely no cost incurred. Compare that to college!

On another note, the board of directors met this past month. The financial report was very dismal. As I mentioned in my previous letter, our revenues are not keeping pace with expenditures. On top of that, the attendance at our first two general membership meetings has been unusually low. We averaged about 30 people between the two meetings. Low numbers like we are experiencing makes it difficult to acquire guest speakers to put on a presentation. We have around 50 dues paying members. Quite honestly that number is not anywhere close to keeping the ECHL afloat.

I reported at the October meeting that the Commissioner for Housing, Building, and Construction has made the decision to pursue the adoption of the State Building Code before any effort is made to adopt the 2023 National Electrical Code. This decision was made without consulting any organization associated with the electrical industry. In fact, the Advisory Committee did not have an opportunity to discuss the Commissioner's decision. This is very disheartening. Yet few people in our industry seem upset.

Nick Jewell, with L.G. & E., will be giving the November 13th presentation. He will be discussing electric vehicle usage projections and technologies. Nick is an excellent speaker and his EV presentation will be very helpful to any contractor looking at getting into this niche.

Continued on page 3

November 13, 2023 Code Program

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

Our November program will be presented by Nick Jewell, with L.G. & E.. He will be discussing electric vehicle usage projections and technologies. Nick is an excellent speaker and his EV presentation will be very helpful to any contractor looking at getting into this niche.

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.

See you Monday Evening, May 8th, at 6:30 pm.

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!

NOVEMBER Code Questions

1. You are working in a plant that produces acetylene, what Class and Group would this be considered? Where would you find this answer in the 2017 NEC?

Class ____ Grp ____

Section _____

2. The coal handling yard at a powerhouse, what would be the class and Group be? Where would you find this answer in the 2017 NEC?

Class ____ Grp ____

Section _____

3. Can you use a dust tight disconnect switch in a Class 2 Division 2 environment and be in compliance with the 2017 NEC? Where would you find this answer in the 2017 NEC?

YES NO

Section _____

4. If you have a junction box that has a termination inside the enclosure in a Class 1 Division 2 environment, are you required to install seal offs? Where would you find this answer in the 2017 NEC?

YES NO

Section _____

5. Does a Boundary seal of leaving a Class 1 Division 2 area need to be explosion proof? Where would you find this answer in the 2017 NEC?

YES NO

Section _____

6. Are you required to install seal offs in a Class 2 environment? Where would you find this answer in the 2017 NEC?

YES NO

Section _____

Code Corner

Explosion Proof?

I represented several different companies that specialize in Explosionproof and Hazardous Location products over the past forty years and have heard about every term possible when a customer is working in these types of environments. It is always an explosion proof environment when they call, and not all environments are not made the same.

According to the definition in Article 100 **Explosionproof Equipment**. *Equipment enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor that may occur within it and prevent the ignition of specified gas or vapor surrounding the enclosure by sparks, flashes or explosion of the gas or vapor within, and that operates at such and extreme temperature that a surrounding flammable atmosphere will not be ignited thereby.* This would be covered under Article 501 which covers Flammable gases or vapors or flammable liquids and considered an explosion proof environment. There is also an Informational Note on this definition regarding the UL Standard 1203-2009 for clarification.

There is another definition in Article 100 **Dust-Ignition proof. [as applied to Hazardous (Classified) Location]**. *Equipment enclosed in a manner that excludes dust and does not permit arcs, sparks, or heat otherwise generated or liberated inside of the enclosure to cause ignition of exterior accumulations or atmospheric suspension of a specified dust on or in the vicinity of the enclosure.* This type of environment is covered under Article 502 which covers combustible dust. There is also an Informational note that refers you to UL Standard 1203-2013 for clarification.

These Classes are further broken down into Divisions 1 or 2 and there is a major difference in the material need for Division 1 over Division 2. In a Division 1 environment the gas vapor or dust is in the atmosphere during normal operating conditions. Division 2 it would be in the environment under an abnormal condition. It is important to know which division you may be working in when requesting material for the project. There is a big material price difference between Div.1 and 2.

Continued on page 3

Top Three Code Violations Louisville Metro Inspections NOVEMBER 2023

These violations are costing you time and money.

1. 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.

2. NEC Article # 110.25 Lockable disconnecting Means

If a disconnecting means is required to be lockable open elsewhere in this Code, it shall be capable of being locked in the open position. The provisions for locking shall remain in place with or without the lock installed.

3. NEC Article # 110.24 Available Fault Current
NECV 110.24(A) Field Marking

Service equipment at other than dwelling units 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.

You lose money when you are turned down on a project. It also costs you time, when you have to return to the job site to make the necessary changes to correct the violation, that too, costs 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

If you are working in this type of environment, ask the painter for what the area is classified, that area has been classified by an underwriter do not take on that liability.

.Submitted by Dennis Steier

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

Presidents' Letter - Cont'd

Our next general membership meeting is scheduled for Monday November 13th 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

What Electrical Contractors Need To Consider for Their Next EV Charging Project

Electric vehicles (EVs) have been a hot topic at NECA 2023 in Philadelphia. Attendees walking the show floor had the opportunity to check out the latest EV technology on display or attend informative seminars. They also had the opportunity to sit in on the “Simplifying EV Charging Deployment Through Integrated EV Charging” session by Joseph Cappeta of Eaton. His presentation offered contractors advice on what to consider when designing an electrical system to support electric vehicle charging.

Consider the client’s needs

As part of his presentation, Cappeta stressed how important it is to understand the client's needs before the beginning of a project. Before installing EV charging equipment, it’s important to gather information. Key considerations are:

- What is the customer use case? Is it for commercial, multi-family, workplace, etc.?
- What features are important?
- How many chargers?
- What type of charger?

Consider dwell time and power management

Another point Cappeta wanted to make his audience aware of was that, before implanting EV chargers for clients, the “dwell time” should be considered. Dwell time is the amount of time the electric vehicle will remain in place. Cappeta explained that a Level 2 charger is typically enough power for most needs. For example, if an EV will be parked for a substantial amount of time while at work or at home overnight, a faster charger is not necessary. “A lot of times people want to compare to a DC fast charger because bigger is better,” Cappeta said. “However, many times the larger power they put out is not necessary.”

To maximize the capacity available rather than upgrade infrastructure, contractors should steer their clients to power management to better distribute power for charging needs. There are technologies available that can, according to Cappeta, offer their clients up to \$400k in savings compared to the costs of infrastructure upgrades.

By utilizing power management, active load balancing

adjusts the output amperage based on the number of vehicles charging and the amount of power they’re consuming. Additionally, most power management software allows the owner to view power allocation and usage directly and offers flexibility while they scale.

Consider the 2023 NEC

Because a variety of factors can impact EV charging times, load management is key. This is why the 2023 NEC had several revisions related to EVs. First, Art. 625 covers the electrical conductors and equipment connecting an electric vehicle to premises wiring for the charging, power, export, or bidirectional current flow.

In addition to Art. 625 as a whole, Sec. 625.42 covers EV charging loads considered continuous loads for service and feeder calculations unless the overall rating can be limited by Sec. 625.42(A) or (B). In addition, Sec. 625.43 requires readily accessible disconnect for EVSE rated greater than 60A or 150V to ground. Sections 625.46, 48, 49, and 60 each address bi-directional power flow as well. Finally, Sec. 625.54 covers requirements for GFCI protection for receptacles installed for the connection of an EV charger. Cappeta emphasized that it’s important for contractors to be aware of these Code rules as well as local regulations. Specifically, California has gone above the international and national codes to adopt additional policies such as the California Type Evaluation Program (CTEP) and the California Public Utilities Commission. Cappeta said that anyone working in the EV space will want to keep an eye on California as what they implement may be adopted by the rest of the country later on.

Consider Open Charge Point Protocol (OCPP)

Cappeta also discussed OCPP noting several benefits such as:

- Provides common and open communication protocol
- Offers consistency with how charging stations work on multiple networks
- Reduces the risk of stranded assets and vendor lock-in OCPP version 1.6 is the most common in use, but OCPP 2.0 will be the future

As NECA 2023 rolls on, EV charging will continue to be a hot topic and something that electrical contractors should keep an eye on.

Source: EC&M Email: Michael Morris article dated October 1, 2023. Joseph Cappeta of Eaton Offers electrical contractors key considerations for EV charging from the show floor on day 2 Of NECA 2023.