Washington State Department of Labor & Industries

Electrical Currents

Newsletter from the Office of the Chief Electrical Inspector

Wayne Molesworth, Chief Electrical Inspector **Vol. 24 No. 2** **February 2021**

Question of the Month – How quickly is a ground-fault circuit-interrupter (GFCI) designed to trip? *See correct answer on Page 2*

Safety Tip of the Month

According to *OSHA*, an average of 15 workers are killed on the job every day. Excluding highway collisions, the four leading causes of construction worker fatalities are:

- Falls
- Struck by an object
- Electrocutions
- Caught in or between objects

Please watch for and eliminate these "Fatal Four" hazards in your workplace.

Legislative Update

This year's regular session began January 11, and is scheduled to end April 25, 2021. Lawmakers are considering bills that may affect you. Of the bills introduced so far this session, two affect the electrical industry. The bills are not sponsored by L&I.

Review the bills and comment if you desire. A comment button is located below the bill number on the webpages linked below. You may also share your opinion by contacting your legislator through the legislative website at: *http://www.leg.wa.gov/LIC/Pages/hotline.aspx*.

Senate Bill 5267 – Requires electrical work associated with flipping property to be done by licensed electrical contractors and certified electricians. Generally, property owners are exempt from electrical licensing and certification laws in accordance with *RCW 19.28.261*. This bill modifies that exemption for persons or companies that are in the business of obtaining, upgrading, and selling the property within 2 years of purchase. This change aligns electrical laws with existing laws that require property flippers to be registered construction contractors or hire one to superintend any construction work.

House Bill 1187 – Expands the work scope for HVAC/refrigeration specialty electrical contractors and electricians (06A and 06B). This would allow them to install, repair, replace, or maintain branch circuits between outdoor units and indoor units of split ductless HVAC systems in dwelling units.

Rule Making Updates

WAC 296-46B-995 Electrical Board – Appeal Rights and Hearings - On December 1, 2020, L&I filed a CR-101 to begin the rule making process for amending *WAC 296-46B-995* in response to a petition for rule making. The petition seeks to clarify, simplify, and make the procedures for appeals to the board easier to understand and navigate, as well as to help reduce confusion for those that appeal decisions to the board.

Increase Electrical Fees? – Fees have remained unchanged for the last four years. To keep up with higher costs associated with inspection and licensing services, we are considering rule making to propose a fee increase equal to OFM's 5.79% *fiscal growth factor* projections.

A fee increase enables the program to continue providing quality and timely services to assure safe electrical installations and inspections in homes, businesses, industry, and institutions to protect people and property from electrical hazards.

Watch for more information about this rule making in the coming months. You can find more information about these and other rule making activities on the Rule Development tab of our *Electrical Laws, Rules, and Policies* web page.

Training Certificate Renewal Requirements – Important Things to Know

Trainees who are coming up for renewal need to be aware of some important items. Please share this information with all electrical trainees.

Basic Classroom Training Required – Before you can renew your training certificate, you must have completed 48 hours of basic classroom education since your certificate became active. If your education requirement is not complete by the expiration date of your certificate, you cannot renew it and you cannot work in the electrical construction trade. If you do not renew by your expiration date, you will have to pay a late renewal fee. To assist trainees during the Covid-19 pandemic, the department has made some temporary allowances:

- Basic classroom instruction providers may temporarily conduct classes with virtual methods using internet-based platforms under specified conditions. We published details in the *August 2020 newsletter*. Check with course providers for more details. You can find a list of classes on the *basic classroom instruction* page of our website.
- To allow additional time for trainees to complete basic classroom education required to renew, trainees may work with an expired certificate for 90 days after their certificate expires. This temporary allowance was made last year due to decreased availability of classes and will continue until further notice. Watch this newsletter for updates.

Submit Affidavits of Experience On Time – Trainees who are not registered in an approved apprenticeship have 180 days after the expiration date of their training certificate to submit affidavits of experience to receive credit for hours worked since their last training certificate was effective – see *WAC 296-46B-942*(d). This applies even if you cannot renew due to lack of completion of basic trainee education. You can get a copy of the affidavit of experience form by visiting the *Electrical Trainee* page of our website.

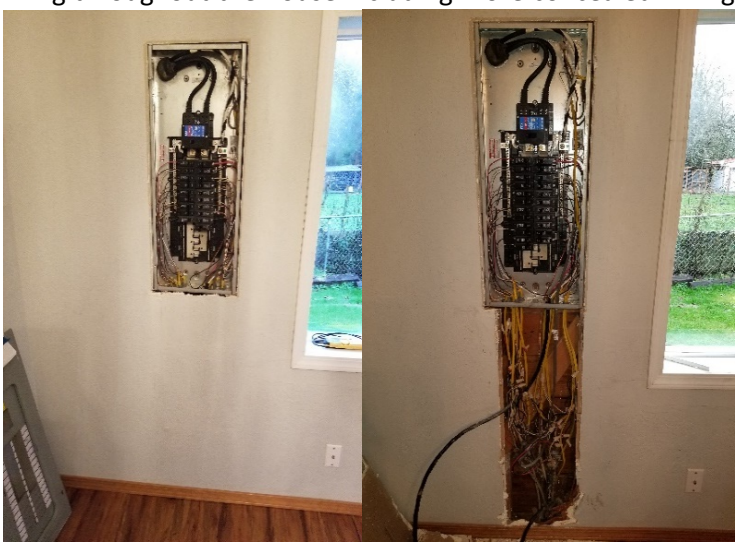
Installation Methods – Power and Control Tray Cable: Type TC

Manufacturers of ductless split-system HVAC systems typically specify Type TC cable for the branch-circuit wiring between outdoor and indoor units. *WAC 296-46B-336* allows the use of Type TC cable in any location allowed for nonmetallic-sheathed cable in NEC 334 when installation requirements in NEC 336, 334, and WAC 296-46B-334 are met.

Pay close attention to cable installation and cable marking requirements for particular applications in NEC 336.10. For exposed runs, the cable must be marked Type TC-ER. In one- and two-family dwelling units, Type TC-ER-JP (joist pull) must be used where pulled through building framing. You can find cable marking information in UL's *Wire and Cable Marking Guide*.

It is never appropriate to support branch-circuit cables by attaching them to mechanical piping such as HVAC line sets. Exposed cables must be installed and protected from physical damage in accordance with NEC 334.15 and secured and supported by the building structure in accordance with NEC 334.30 and 110.12(C). Review these articles before installing Type TC cable for branch-circuits.

Ugly Picture of the Month: *If viewing this document online, click on the picture to open a larger image.* The electrical panel pictured is new and was installed by a property flipper. The wiring below was covered prior to being inspected as shown on the left. Open splices had been concealed within the wall under the panel creating a potential extreme fire hazard. Further inspection found hazardous wiring throughout the house including more concealed wiring splices and open single conductors supplying receptacles.



Answer to Question of the Month: 1/40th or 0.025 of a second. In a properly operating circuit, the electrical current going to and returning from an electrical device is equal. If it is not equal, current is flowing back to the source on a return path that it should not be, possibly through a person. A GFCI will sense this unbalance and disconnect power from the circuit. A difference of current as small as four milliamperes (mA) will cause a GFCI to trip in as little as 1/40th of a second.