

Question of the Month – According to the 2020 National Electrical Code (NEC), how many receptacle outlets are required for the countertop surface of an island measuring 4 feet by 8 feet? *See correct answer on Page 2.*

Attention Trainees – Beginning July 1, 2020, You Must Complete Classroom Training to Renew your Certificate.

The recent [WAC 296-46B](#) revisions contain an important change regarding renewal of electrical training certificates. We have found the current practice of allowing trainees to renew without completing their classroom training is in violation of the electrical laws – [RCW 19.28.161](#)(2), which requires holders of training certificates to renew every two years. At the time of renewal, the law requires trainees to provide proof of [approved classroom training](#) covering RCW/WAC, national electrical code, or electrical theory. Rules regarding renewal of training certificates are specified in [WAC 296-46B-942](#)(6) – (14). The current practice of allowing trainees to renew without having completed the required classroom training and placing their certificate into inactive status will continue until July 1, 2020, at which time renewal candidates must show proof of classroom training to renew.

Another change to align department rules with the law has to do with submission of affidavits of experience at the time of renewal of a training certificate. We published this change several times beginning in the [October 2018](#) Electrical Currents newsletter. Within one-hundred eighty days after the expiration date of an electrical training certificate, the individual, if not enrolled in a department approved apprenticeship program, must submit a completed, signed, and notarized affidavit(s) of experience for all hours of experience gained since the individual's last training certificate was effective.

2020 National Electrical Code (NEC) is published – Effective in Washington July 1, 2020

The National Fire Protection Association (NFPA) has published the 2020 NEC. Copies are available for purchase on the [Buy NFPA 70, National Electrical Code \(NEC\)](#) page of NFPA's website. You can also view the 2020 NEC by selecting the free access button on the [NFPA 70](#) page.

Washington has adopted the 2020 NEC with an effective date of July 1, 2020. Installations covered by all permits purchased beginning on that date must comply with the 2020 edition as modified by WAC 296-46B.

We have delayed the effective date until next July to give the department and electrical program stakeholders a chance to review the 2020 NEC. The department may be open to consideration of amendments. Now would be the time to do a thorough review of the 2020 NEC and think about any proposals that you may wish to submit should that happen. Watch future editions of this newsletter for further information about whether additional changes will be considered to WAC 296-46B regarding the 2020 NEC.

Ground-Fault Protection in Marinas

[WAC 296-46B-555](#) gives requirements for ground-fault protection in marinas, which modifies the 2017 NEC requirements in Article 555. Beginning September 1, 2019, ground-fault protection for marinas, boatyards, and commercial and noncommercial docking facilities are as published in the 2020 NEC. Article 555 has changed significantly in the 2020 edition. Ground-fault protection requirements are now found in NEC 555.35. Because the 2020 NEC is not effective until July 1, 2020, only the ground-fault protection requirements in 2020 NEC 555.35 will be effective now. Here is a summary of the new requirements:

Safety Tip of the Month

Back-to-school season is here again! Be on the lookout for children not only in school zones, but also in residential areas, playgrounds, and parks. Children are unpredictable and often take risks, ignore hazards, and fail to look both ways before crossing the street.

Give them a brake.

- Receptacles Providing Shore Power. Receptacles shall have individual ground-fault protection of equipment (GFPE) set to open at currents not exceeding 30 milliamperes.
- GFCI Protection for Personnel. All 125-volt, single-phase, 15- and 20-ampere receptacles for other than shore power shall have ground-fault circuit interrupter (GFCI) protection in accordance with NEC 210.8.
- Feeder and Branch-Circuit Conductors with GFPE. Feeder and branch-circuit conductors that are installed on docking facilities shall be provided with GFPE set to open at currents not exceeding 100 milliamperes. Coordination with down-stream GFPE shall be permitted at the feeder overcurrent protective device.

Notice the 2020 NEC 555.35(B) will require a leakage current measurement device to be available for use where more than three receptacles supply shore power to boats. This will allow users to determine when an individual boat has defective wiring or other problems contributing to hazardous voltage and current.

While a properly installed and maintained ground-fault protection system may reduce the likelihood of hazardous stray currents in the water in a marina, swimming in and around a marina where electricity is present should never be permitted.

Assisting a Householder with Electrical Wiring

Generally, electrical wiring must be performed by persons that are qualified to make safe installations and businesses that are licensed and bonded. The law provides for some exceptions, which allows property owners and their employees to perform work on property they own. Another exemption allows anyone to assist a “householder” with wiring on a single-family residence provided the householder is present while the person is assisting them and the person assisting does not receive money or other forms of compensation for their assistance. This exemption is found in [WAC 296-46B-925](#)(14) and is based on [RCW 19.28.261](#)(6). Often, this exemption is abused when a person who is being paid by the property owner performs electrical wiring and claims they are “assisting” the owner using the owner’s electrical permit. A person or company may be on-site performing a related construction project for which they are being paid and, in addition, they choose to or are asked by the customer to perform electrical wiring for the customer. It is not likely in this scenario that they are assisting the householder. They are being paid to perform the entire project. Anyone performing electrical wiring on a project where they are being paid is in the business of performing electrical installations. In this case, they must be a certified electrician working for a licensed electrical contractor under that electrical contractor’s permit.

Normal Electrical Inspection of Equipment and Machinery

[RCW 19.28.010](#)(1) requires all materials, devices, appliances, and equipment used in electrical installations to be of a type that conforms to applicable standards or be indicated as acceptable by the established standards of any electrical product testing laboratory which is accredited by the department. The National Electrical Code is the primary standard used by electrical inspectors to evaluate installation of electrical materials and devices. It is generally not applicable to evaluate electrical appliances or equipment due to the various methods and materials used.

There is a provision in [WAC 296-46B-903](#)(5)-(6) that allows normal department inspection for industrial control panels and utilization equipment. Successful “normal department inspection” of the electrical system of unlisted equipment or machinery requires all the equipment’s electrical system components and materials to be listed and labeled and installed in conformance with the NEC. The electrical system of unlisted equipment is usually not constructed to the NEC and must be field evaluated by an [approved testing laboratory](#) or, for industrial control panels and industrial utilization equipment only, [engineering evaluated](#).

When an electrical contractor connects a piece of unlisted equipment so it can be energized, the contractor’s actions create a potential safety hazard. Until the equipment is proven safe through field or engineering evaluation, the contractor shares responsibility with the equipment owner to correct the potential hazard.

Ugly Picture of the Month: *If viewing this document online, click on the picture to open a larger image.* Yes, those are plumbing “Y” fittings, and no, this is not acceptable. Creative though!

Answer to Question of the Month: Two. 2020 NEC 210.52(C)(2) – At least one receptacle outlet shall be provided for the first 9 ft², or fraction thereof, of the countertop or work surface. A receptacle outlet shall be provided for every additional 18 ft², or fraction thereof, of the countertop or work surface.



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