**Question of the Month** – What is the penalty for the first-time offense of causing or failing to correct a serious violation? (A serious violation is, among other things, one that creates a hazard of fire or danger to life safety). See correct answer on Page 2.

**TIA 17-15 Issued by the NFPA - NEC Article 555**

To help reduce Electric Shock Drowning (ESD) hazards, the NEC has specified ground-fault protection requirements for marinas in Article 555 since the 2011 edition. Recently, the NFPA added definitions to NEC 555.2 and revised NEC 555.3 through issuance of Tentative Interim Amendment (TIA) 17-15. The TIA clarifies application of Article 555 and allows coordination with downstream ground-fault protection at the feeder overcurrent device (i.e., by coordinating trip time settings so the downstream device trips first). The NEC requires all overcurrent devices supplying a docking facility to have ground-fault protection set to open when leakage current to ground (or water) exceeds 30-milliamperes. See WAC 296-46B-555 for amended feeder ground-fault protection levels.

For more information about ESD, visit www.electricshockdrowning.org.

**Marina Feeder Ground-Fault Protection Rule Adopted**

The department has adopted changes to WAC 296-46B-555 effective July 1, 2018. The revised rule amends the ground-fault protection levels specified in NEC 555.3 to allow 100-milliamperes protection for feeders not supplying primary windings of transformers. On September 1, 2019, the ground-fault protection requirements will be as published in the 2020 NEC. More information about rulemaking and the revised rule language can be found by visiting the Rule Development page of our website.

**Inspector Training Milestone – 100 Inspectors Trained**

Anticipating significant turn over in our inspector ranks, succession hiring and training began in 2013. A full-time trainer was established in 2014. Trainer Dennis Straley and a host of others have been busy providing formal training to newer inspectors. 100 inspectors have now completed basic inspector training since 2013.

Training is essential to ensuring statewide consistency. Over half of our 133 inspectors have less than 5 years’ experience with the department. Of those, about 40 percent have less than two years’ experience. All new inspectors must complete a two-year training program. We appreciate your patience and training assistance during this challenging transition.

We are hiring! If you would like to become an electrical inspector, visit the Find a Job at L&I page of our website and search “inspector”. Applications are taken on a statewide basis to fill vacancies as they occur.

**All Exams Based on the 2017 NEC after June 30, 2018**

After June 30, 2018, all electrical examinations will be based on the 2017 NEC, WAC 296-46B, and RCW 19.28. The Electrical Board, having responsibility for establishing and administering electrician examinations, endorsed this change.

Like the codes, laws, and rules they are based on, exam questions do not change significantly over time. All examinations are open-book and exam candidates can bring any original copyrighted reference material into the exam with them. Copies of RCW 19.28 and WAC 296-46B may be used. For more information about the exams, you can refer to WAC 296-46B-960 or visit the Electrical Exam Information page of our website.
Identification of Emergency System Circuits

WAC 296-46B-700(4) requires all boxes and enclosures for Article 700 NEC systems larger than 6 inches by 6 inches, including transfer switches, generators, and power panels for emergency systems and circuits to be permanently identified with an identification plate that is substantially orange in color. In existing health care facilities, the existing nameplate identification color scheme can be retained for transfer switches, generators, and power panels for existing emergency systems that are not being replaced or modified. All other device and junction boxes for emergency systems and circuits must be substantially orange in color, both inside and outside.

2017 NEC 700.10(A) expanded the requirements for identification of emergency system wiring to include identification of exposed cable or raceway systems as components of an emergency circuit or system at intervals not to exceed 25 feet where boxes or enclosures are not encountered. It also added a requirement that receptacles supplied from the emergency system shall have a distinctive color or marking on the receptacle cover plates or the receptacles.

For consistency, the department will require all of the above identification means to be substantially orange in color.

Generator Prime Mover (Engine) Shutdown Requirements

Disconnecting requirements for generators were reorganized for the 2017 NEC and requirements for shutdown of the prime mover (typically an engine) were added. The requirement for a disconnecting means to simultaneously open all ungrounded conductors associated with the generator in NEC 445.18(A) is essentially the same as in the 2014 edition.

2017 NEC 445.18(B) requires generators to have provisions to shut down the prime mover (i.e., kill the engine). The means of shutdown must comply with the following:

1. Be equipped with provisions to disable all prime mover start control circuits to render the prime mover incapable of starting.
2. Initiate a shutdown mechanism that requires a mechanical reset.

The provisions to shut down the prime mover shall be permitted to satisfy the requirements of 445.18(A) where it is capable of being locked in the open position in accordance with 110.25.

Generators rated greater than 15 kW shall be provided with an additional means to shut down the prime mover located outside the equipment room or generator enclosure and shall also meet the requirements of 445.18(B)(1) and (B)(2). The department will require shutdown means not attached to generators to have an identification plate to clearly indicate its purpose in accordance with NEC 110.22(A). See WAC 296-46B-100 definition of “identification plate”.

Where a generator is installed in parallel with other generators, the provisions of 445.18(A) shall be capable of isolating the generator output terminals from the paralleling equipment. The disconnecting means shall not be required to be located at the generator.

Ugly Picture: If viewing this document online, click on the picture to open a larger image. The open splice in this picture is intended by the installer to be concealed behind sheetrock and the luminaire base is not connected to the equipment grounding conductor. This is a good example of a serious violation, which would carry a substantial penalty and may result in suspension or revocation of the installer’s certificate of competency.

Answer to Question of the Month: $1000 - WAC 296-46B-915(13) specifies the penalty amounts for this violation. Second offense is $3000 and the third offense is $5000. WAC 296-46B-990 defines serious violation, which includes wiring that presents an imminent danger to the public by being installed in such a condition that a fire-hazard or a life-safety hazard is present. Examples include, but are not limited to, installing a shortened rod/pipe grounding electrode, improper splicing of conductors in conduits/raceways or concealed within walls, or installing a fake equipment grounding conductor. An act of serious noncompliance may also result in suspension or revocation of an electrical contractor’s license or an electrician’s, administrator’s, or master electrician’s certificate.