
WAC 296-46B Electrical Rule Revisions – Public Hearing
The proposed rule revision to WAC 296-46B regarding adoption of the 2017 National Electrical Code® (NEC®) is nearly complete. The department is responding to comments received during the public comment period and public hearing. There were very few comments in opposition to the proposed rules. The tentative rule filing date is May 23, and the effective date of the new rules will be July 1, 2017. All installations where the permit is purchased on or after July 1 must be in accordance with the new rules and the 2017 NEC®. You can review a copy of the proposed rules on the Rule Development page of our website. Soon, a special edition Electrical Currents newsletter will be published which will highlight the significant changes.

Typically, electrician examination questions do not change significantly with adoption of new versions of the NEC®. All electrical examinations will continue to be based on the 2014 edition of the NEC® until the exams are revised later next year. This will allow those who have been learning the trade to use their 2014 copy of the NEC® to take their exam.

If you have not done so, now is a great time to take advantage of a 2017 NEC® update class. You can find approved continuing education and basic classroom training classes on the Educational Requirements page of our website.

Where Are “Hospital Grade” Receptacles Required?
To adequately protect patients, health care facilities have very specific standards of installation that are often substantially different from a typical electrical installation. National Electrical Code® (NEC®) 517, Health Care Facilities, has special requirements for “patient care” spaces (e.g. redundant grounding/bonding, insulated copper equipment grounding conductors in metal raceways, MC or AC cables suitable for health care facility use, receptacle requirements, etc.).

NEC® 517.18(B), and 517.19(B) and (C) require that listed “hospital grade receptacles” be used in general and critical care space patient bed locations, and operating rooms. Critical care locations must be identified by the facility operator. On plan reviewed jobs, these will be identified on the approved plans. On jobs not requiring plan review, the inspector will ask the facility operator if the facility has any critical care procedure tables or patient bed locations.

NEC® 517.2 defines a “patient bed location” as the location of a patient sleeping bed, or the bed or procedure table of a critical care space. NEC® 517.2 also defines “critical care space” as an area where a patient is subjected to an invasive procedure and connected to a line-operated electromedical device. The definition describes operating rooms, delivery rooms, etc. Although not included in the NEC examples, dental chairs and other locations where an invasive procedure is performed and the patient is connected to a line-operated electromedical device are considered to be “critical care.”

Installers should also be aware the medical equipment manufacturers may also have specific requirements. Examination tables and dental chairs, for example, often have a manufacturer requirement that a “hospital grade” receptacle supply power to the table or chair.

WAC 296-46B-230(6) Marking of Service Conductor Ampacity on Service Equipment
Generally, service conductors must have overcurrent protection not greater than the ampacity of the conductors. NEC 230.90(A) specifies overcurrent protection requirements for ungrounded service conductors. As you can see, there are 5

Safety Tip of the Month
The amount of electricity required to kill a person is very small. According to the OSHA publication Controlling Electrical Hazards, 50 to 150 milliamperes of electricity will cause extreme pain, respiratory arrest, severe muscular contractions and possible death. Use extreme caution, follow all safety procedures, and use required personal protective equipment while working on or near energized circuits.
exceptions listed, which if the conditions are met, allow an overcurrent device to be larger than the ampacity of the service conductors. These include allowances for higher overcurrent protective device ratings for motor-starting currents, next higher standard size for devices rated 800 amperes or less, main lug service equipment up to six disconnects, fire pump supply conductors, and residential services that supply the entire load of a dwelling. **WAC 296-46B-230(6)** requires an identification plate showing the ampacity of the service conductors to be installed on the service equipment if the conductors have a lesser ampacity than the overcurrent protection permitted by NEC® 230.90 or 310.15, or the equipment rating that they terminate in or on. The identification plate is required to alert installers of future increased electrical loads of the limiting factor of the ampacity of the service conductors even though the overcurrent device or equipment rating may appear to allow increased load.

The department will not require the identification plate to be installed for one- or two-family dwelling services rated up to 400 amperes, where the service conductors are protected in accordance with NEC® 230.90(A) including exceptions.

**Underground Low-Voltage Landscape Lighting and Sprinkler System Control Requirements**

We have been asked to clarify the intent of the rules relating to licensing, certification, permits, and inspections for the installation of specific types of underground low-voltage landscape lighting, and sprinkler control systems. **WAC 296-46B-925(8)** establishes an exemption for specific types of work and states “The electrical failure of these systems does not inherently or functionally compromise safety to life or property.”

The rule exempts thermocouple derived circuits and low-voltage systems for built-in residential vacuum systems, underground landscape sprinkler systems, underground landscape lighting, and residential garage doors. However, for these types of systems to be considered exempt, the following conditions must be met:

- The power supplying the installation must be derived from a listed Class 2 power supply (This must be marked on the power supply along with the mark of the accredited testing laboratory. Most larger commercially available systems do not meet this requirement);
- The installation and termination of line voltage equipment and conductors supplying these systems is performed by appropriately licensed electrical contractors and certified electricians;
- The conductors of these systems do not pass through fire-rated walls, fire-rated ceilings or fire-rated floors in other than residential units; and
- Conductors or luminaires are not installed in installations covered by the scope of Article 680 NEC (swimming pools, fountains, and similar installations).

All other landscape lighting systems, and sprinkler control systems supplied by other than listed Class 2 power supplies must be done by licensed electrical contractors and certified electricians. Electrical permits and inspections are required for all systems that do not meet the specific allowances for exemption listed above.

The rules have another exemption from licensing for firms that install certain cord and plug connected equipment in WAC 296-46B-925(10) provided “The equipment must be a single manufactured unit, including the plug and cord, that does not require any electrical field assembly except for the installation of the plug and cord and is allowed to be plug and cord connected by the NEC.” Field installation of low-voltage landscape lighting systems do not qualify for this exemption, even if the power source happens to be cord and plug connected.

**Ugly Picture:** If viewing this document online, click on the picture to open a larger image. This “water cooled” electrical panel was discovered on a dock in Seattle. Thanks to an alert electrical contractor, the installation was corrected.

**Answer to Question of the Month:** July 1, 2017. All installations where the permit is purchased on or after this date must comply with the 2017 NEC® and 2017 WAC 296-46B.