

## **SPECIAL EDITION**

### **WAC 296-46B Revisions**

This issue is dedicated to a review of the changes to WAC 296-46B. The rulemaking process is complete with an effective date of March 1, 2013. A Technical Advisory Committee made up of a diverse group of electrical industry stakeholders reviewed and approved all of the proposals. On December 10, the department received public comments. The department has considered all of the comments and responded to the commenters. The only variance from the proposed changes was the removal of a proposed definition of “telecommunications” due to numerous stakeholder comments. The director of L&I, Joel Sacks, signed the CR-103P adopting the new rule on January 22, 2013.

Here is a summary of the major changes. For the complete text of the changes, visit the [Rule Development](#) page of our website. A printable version of WAC 296-46B with an effective date of March 1, 2013 will be available on the website soon.

- **WAC 296-46B-010 Adopted standards**

The 2014 edition of the National Electrical Code will be adopted on July 1, 2014. The latest versions of national telecommunications standards are being adopted, and several unnecessary standards were deleted.

- **WAC 296-46B-100 General definitions**

- “Installation” – A sentence was added to state that an installation is not the passive testing or operational programming of an electrical system, component, equipment, or wire. See the new definition below for “passive testing”. This change was made to clarify that passive testing is not regulated by RCW 19.28, which prohibits additional certification by cities, counties, or other entities beyond certification as an electrician (e.g. NICET for fire alarm system installations, etc.)
- “Identification plate” was changed to allow modern adhesive labels to be used with departmental approval.
- New definition – A “jobsite” is a specific worksite having a single address or specific physical location (e.g. a single-family residence, a building, a structure, a marina, an individual apartment building with a specific address, etc.).
- New definition – A “member of the firm” – means the member(s) on file with the Department of Licensing for sole proprietorships/partnerships or with the Secretary of State for corporations.
- New definition - “Passive testing” (e.g. pressing of test buttons, use of testing equipment like voltage testers, clamp-on meters, removal of a device head where the wiring is terminated on a separate base plate, etc.) means testing that does not require any:
  - Physical modification to the electrical system wiring; or
  - Wiring to be disconnected or terminated, except as necessary for an approved electrical testing laboratory or approved engineer performing an equipment evaluation.
- New definition - “Supervision” - For the purpose of supervising electrical trainees means that that the supervising electrician is on the same jobsite as the trainee being supervised. The trainee is not considered to be on the same jobsite if the supervising electrician and the trainee are working:
  - In separate buildings at a single address except for a single-family residence; or
  - On an outdoor project where the trainee is more than 1000 feet from the supervising electrician, or where the trainee is out of sight and more than 200 feet away.

- **WAC 296-46B-225 Outside branch circuits and feeders**

- Number of supplies - This change allows a building/structure that is supplied from a remote service to be supplied by no more than six feeders originating from the service equipment and with each feeder terminating in a single disconnecting means at the building/structure. The service equipment must contain overcurrent protection appropriate to each feeder. The building disconnecting means required by NEC 225.32 must be grouped, within sight, and all be within 10 feet of each other.

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- Location of outside feeder disconnecting means, suitable for use a service equipment – This change adopts department policy for feeders that does not require a service rated disconnecting means when the disconnecting means, including that required by NEC 700, 701, or 702 for a generator, is installed on or within 15 feet of the exterior of the building.

- **WAC 296-46B-250 Concrete encased electrode required**

- Grounding electrodes – This change requires, except for mobile/manufactured homes, a concrete encased electrode to be installed and used at each new building or structure that is built upon a permanent concrete foundation. If the concrete encased grounding electrode is not available for connections, a ground ring must be installed per NEC 250. See the complete text of the rule for alternate inspection methods.

- **WAC 296-46B-336 Power and Control Tray Cable – Type TC**

This change was made to allow the use of Type TC cable in any location allowed for nonmetallic-sheathed cable in NEC 334 if all of the installation requirements in NEC 336, 334, and WAC 296-46B-334 are met. Type TC cable is commonly supplied by manufacturers for use when installing split-system HVAC/R equipment.

- **WAC 296-46B-406 Tamper resistant receptacles**

Tamper resistant receptacles in dwelling units – This change allows five exceptions to the requirements for tamper resistant receptacles. Receptacles in the following locations will not be required to be tamper-resistant.

- Receptacles located more than 5 ½ feet above the finished floor;
- Receptacles that are part of a luminaire or appliance;
- A single receptacle or a duplex receptacle for two appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord and plug connected in accordance with 400.7(A)(6), (A)(7), or (A)(8);
- Nongrounding receptacles used for replacements as permitted in 406.4(D)(2)(a); or
- Receptacles located above a countertop where required by NEC 210.52(C).

- **WAC 296-46B-550 Mobile homes, manufactured homes and mobile home parks**

Mobile/manufactured homes – inspection. This change aligns the electrical and factory assembled structures sections and clarifies permitting requirements. All alterations to the mobile/manufactured home electrical system must be permitted and inspected as follows:

- Any circuit or feeder that is fed from the pedestal or panel from an outbuilding feeding the mobile/manufactured home requires a permit from the electrical section.
- Any circuit or feeder that originates from the mobile/manufactured home's (i.e. red Factory Assembled Structures label) panel and feeds an addition or equipment that is attached (e.g. garage, heat pump or air conditioning unit) requires an FAS alteration permit.
- Any circuit or feeder that originates in the mobile/manufactured home panel and feeds an unattached structure or equipment (e.g. detached garage, hot tub, pool, well, septic system, yard lighting or generation equipment, etc.) requires two inspections. An FAS permit is required for the circuit or feeder from the panel and must terminate in a J-box located under the home's exterior wall near the rim joist. A second permit is required from the electrical section for electrical work from the J-box to the equipment or structure.

- **WAC 296-46B-600 Electric signs and outline lighting**

- Markings - When neon channel signs are retrofitted from neon to an LED light source, a licensed electrical contractor may make the retrofit with the channel(s) in place so long as all the retrofit components are listed and the manufacturer's instructions for making the retrofit are available for the inspector's use at the time of the inspection and physical access is provided to allow the inspector access to all components of the retrofit. A new listing mark must be applied to the sign by the electrical contractor or a field evaluation label must be applied by an approved electrical testing laboratory.
- Grounding and Bonding - Remote metal parts of a section sign or outline lighting system only supplied by a remote Class 2 power supply that is listed or is a recognized component in a listed section sign or outline lighting is not required to be bonded to an equipment grounding conductor.

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- **WAC 296-46B-680 Hydromassage bathtubs**

- For hydromassage bathtubs, the ground fault circuit interrupter device must be identified as to use and not located in a building or tub cavity, crawlspace, or attic.
- For hydromassage bathtubs, all electrical equipment installed to support the bathtub (e.g. disconnecting means, motor, etc.) must be accessible at the same grade level as the tub or from a landing on the exterior of the building without the use of a ladder or other access device.

- **WAC 296-46B-690 Solar photovoltaic systems**

A change to this section defines building integrated photovoltaic modules, panels, or arrays that are integrated into the outer surface or structure of a building (e.g. roofing, skylights, windows, or facades). The entity placing a building integrated cell, module, panel, or array is not subject to the requirements for electrical inspection, licensing, or certification so long as the work is limited to the placement and securing of the device and an electrical work permit has been previously obtained for the electrical work related to the equipment by an entity authorized to do that electrical work. All electrical work, including wiring installation, terminations, etc., necessary to complete the electrical installations must be completed by an entity authorized to do the electrical work (i.e. owner or appropriate electrical contractor).

- **WAC 296-46B-800 Communications systems – Communications circuits**

Chapters 1 through 7, NEC, supplement and modify the requirements of Chapter 8, NEC. If there are specific requirements or exceptions described in Chapter 8, NEC, that are different from those in Chapters 1 through 7, NEC, Chapter 8 will prevail. This change replaces WAC 296-46B-300(1) for communications systems and allows other important NEC requirements to apply to communications systems such as requirements to follow a manufacturer’s instructions found in Chapter 1 and the burial depth requirements for outdoor installations found in Chapter 3.

- **WAC 296-46B-901 Electrical work permits**

- Posting of permits – The vast majority of electrical permits are purchased online. This change allows, in lieu of posting a printed copy of the permit, for the permit number to be conspicuously posted on the jobsite. If posting the permit number, it must be identified as the electrical work permit number and be posted on or adjacent to the electrical service or feeder panel supplying power to the work prior to beginning any electrical work and at all times until the electrical inspection process is completed.
- The Class A list of like-in-kind replacement work that is exempt from permitting requirements was expanded to include multiples of most items and to include replacement of a single battery smaller than 150 amp hour. It also clarifies that, for the purposes of like-in-kind replacement of circuit breakers, “circuit breaker” means a circuit breaker that is used to provide overcurrent protection only for a branch circuit, as defined in NEC 100.
- Electrical work permits will expire one year after the date of purchase unless permission is granted by the Chief Electrical Inspector or when the permit is closed or completed by the inspector.
- Posting of corrections – A printed copy of the correction notice will only be posted at the jobsite by the inspector for permits not purchased electronically. Online permit purchasers have the ability to view all corrections online.

- **WAC 296-46B-908 Class B permits**

Significant changes are being made to the Class B permit section. The labels, manner of validation, and posting requirements will change for all Class B permits purchased after February 28, 2013.

- The new Class B labels will no longer have two portions (jobsite and contractor). Instead of sending the contractor portion to the department, the purchaser must validate the label prior to use by entering the jobsite information into the department’s online Class B system using [SecureAccess Washington](#). If the posting occurs on a weekend or a federal/state holiday, the information must be entered no later than the next business day.
- Prior to beginning the installation, the person identified as the installer on the Class B label is responsible for posting the label in a conspicuous permanent manner, at the:
  - Main service/feeder location supplying the structure or system; or
  - Purchaser’s equipment, or on the equipment conductors if the equipment is not in place.
- Class B labels will still be sold in blocks of twenty and are non-refundable and non-transferable.
- A separate label is required for each line item in the list of eligible Class B work listed in WAC 296-46B-908(10).
- An entity using Class B labels is restricted to using no more than two labels per week per jobsite.

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- All Class B work must be completed within fifteen days after the label is validated. If the work is not completed, another Class B label may be validated and posted. Exception: In a one- or two-family residential structure, a label is valid for ninety days after the label is validated, so long as all work described on the label is performed by the purchaser.
- The list of eligible Class B work was modified and in most cases, expanded:
  - Like-in-kind replacement of an individually controlled electric room heater, air conditioning unit, heat pump, or refrigeration unit was expanded to include units up to 40 minimum circuit amperes.
  - Installations of Class 2 or 3 low voltage and telecommunications wiring is limited to 5000 square feet.
  - Added the like-in-kind replacement of up to twenty: paddle fans, luminaires not exceeding two hundred seventy-seven volts and twenty amperes; snap switches, dimmers, receptacle outlets, line voltage thermostats, heating elements, luminaire ballasts, circuit breakers, contactors, relays, timers, starters, circuit boards, fuses, or similar control components.
  - Added the replacement of not more than two luminaires with paddle fans if a listed fan box has been previously installed to support the luminaires.
  - Added the replacement of not more than four batteries rated not larger than 150 amp hours each that supply power to a single unit of equipment ( e.g. uninterruptable power supply, photovoltaic storage system, control panel, etc.).
  - Added the installation or repair of equipment powered by a standalone solar photovoltaic source where the:
    - (i) Electrical equipment requires no field assembly except for the attachment and electrical connection of the solar photovoltaic source to the equipment, the installation and attachment to a grounding electrode, and the placement of the equipment on a pad, pole, or other structure;
    - (ii) Solar photovoltaic source and the equipment operates at less than 15 volts DC;
    - (iii) Solar photovoltaic source is the only source of external power; and
    - (iv) Equipment and the solar photovoltaic source are appropriately labeled as a single unit. The label must be by an approved electrical testing laboratory or for equipment used for traffic control, labeled according to WAC 296-46B-010(21).

● **WAC 296-46B-940 and WAC 296-46B-942 Electrician certificate of competency and training certificates**

In accordance with Substitute House Bill 1055 which was passed by the legislature in the 2009 session, electricians and trainees are now going to be required to wear, and visibly display on the front of the upper body a valid certificate while performing electrical installation work requiring certification.

The certificate may be worn inside the outer layer of clothing when outer protective clothing (e.g. rain gear when outside in the rain, arc flash, welding gear, etc.), is required. The certificate must be worn inside the protective clothing so that when the protective clothing is removed, the certificate is visible. A cold weather jacket or similar apparel is not protective clothing.

The certificate may be worn inside the outer layer of clothing when working in an attic or crawl space or when operating equipment (e.g. drill motor, conduit threading machine, etc.) where wearing the certificate may pose an unsafe condition for the individual.

The certificate must be immediately available for examination at all times.

When working as a certified electrician, the electrician must not display a training certificate.

When supervising a trainee(s), the supervising electrician's certificate must be appropriate for the work being performed by the trainee(s).

Any person working as an electrician or trainee must also possess government issued photo identification and immediately present that identification when requested by the inspector.

● **WAC 296-46B-945 Qualifying for master, journeyman, specialty electrician examinations**

Effective July 1, 2013, in accordance with Senate Bill 6133, which was passed by the legislature in the 2012 session, all applicants for master, journeyman, or specialty electrician examinations must demonstrate completion of basic trainee classes based upon the number of hours of work experience required to qualify for the examination.

- Twenty-four hours where 2,000 or more; but less than 4,000 hours of work experience is required.
- Forty-eight hours where 4,000 or more; but less than 6,000 hours of work experience is required.
- Seventy-two hours where 6,000 or more; but less than 8,000 hours of work experience is required.
- Ninety-six hours where 8,000 or more hours of work experience is required.

Currently, basic trainee classes are required to be completed only for renewal of a training certificate. This change will require all applicants for examinations to demonstrate that they have completed all of the required classes.

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