



## ● New Electrical Examination Information

Beginning on March 1, 2010:

- All electrical examinations will be based on the 2008 National Electrical Code, WAC 296-46B, and 19.28 RCW. This applies for all examination candidates even if they started the examination process before March 1, 2010.
- The examination will be offered at the following Washington PSI testing sites: Spokane, Pasco, Yakima, East Wenatchee, Burlington, Everett, Seattle, Tacoma, Olympia and Vancouver. The examination is also available nationwide at over 200 PSI testing sites.

### Safety Tip of the Month!

Tough economic times are pressuring everyone to do more with less

Everyone deserves to have their loved ones home safely at the end of the day.

Never compromise safety for any reason.

Make safety your priority!

Electrical examinations occurring before March 1, 2010, must be scheduled by contacting PSI at: 1-800-211-2754.

If you are planning on taking an electrical examination on or after March 1, 2010, you may schedule for an examination with PSI using one of the following methods:

- Via the Internet 24 hours a day at [www.psiexams.com](http://www.psiexams.com)
- Using a touch-tone phone, call PSI 24 hours a day at (800) 733-9267
- With a PSI registrar at (800) 733-9267, available Monday through Friday, between 4:30 am and 5:00 pm and Saturday, between 8:00 am and 2:00 pm, Pacific Time.

In order to ensure that the appropriate person is taking the examination, each time you take an electrical exam from L&I's examination contractor, PSI, you will need to **provide two forms of identification** before being allowed to test.

One must be a VALID form of government issued identification (e.g. driver's license, state ID, passport, etc.). The second must have your signature and preprinted legal name (e.g. employee ID, credit/debit card, etc.). Identification must match the name on the registration form.

Do not schedule for an examination unless you have the required identification or have made special arrangements three weeks prior to your exam date with PSI.

## ● Electrical Program Staff Reductions

The nationwide downturn in construction continues to adversely affect the electrical industry in Washington State. Electrical permit sales remain sluggish. As a result, reductions in staffing are again necessary to assure that the electrical program expenditures do not deplete the dedicated electrical fund. Just like our stake holders, the electrical program has to live within their means.

- Staff reductions amounting to 35 electrical inspectors and 5 regional customer service specialists occurred at this time last year.
- This year's reductions include 1 field supervisor, 6 lead inspectors, 6 inspectors and 6 licensing and technical staff – 19 additional positions. The staff cuts will be effective March 31, 2010.

The electrical program continues to seek out and implement every process improvement possible to help us continue to provide high quality service. Just like our stakeholders, our remaining inspectors will have more area to cover after March 31<sup>st</sup>. You will likely see some changes in our inspection practices and in some instances our ability to quickly respond to inspection requests.

Please help us to serve you better by making certain you have:

- Entered the correct address and posted it plainly at the jobsite.
- Entered complete directions on the permit application so we can easily find the jobsite.
- Provided a detailed description of the work that was done
- Given us any information we might need to gain access on every trip to do your inspection.
- Talked directly with your inspector in advance of needing an urgent or scheduled inspection.
- Committed to inspection timelines with your customer that we are aware of and able to meet.

**● Where Are Tamper Resistant Outlets Required In Dwelling Units?**

NEC 406.11 requires that all required dwelling unit receptacle outlets required by NEC 210.52 must be tamper resistant. However, there are exceptions – Receptacle outlets that are part of a luminaire or appliance, or controlled by a wall switch in accordance with 210.70(A)(1), Exception No. 1, or located within cabinets or cupboards, or located more than 1.7m (5 1/2 ft) above the floor installed in addition to those required by NEC 210.52 are not required to be tamper resistant.

**● Permitted Uses Expanded For Multiconductor Type TC Cable**

The permitted uses for tray cable are found in NEC 336.10. In addition to those permitted uses, Type TC multiconductor cable will be permitted to be used in all building classifications where Type NM cable is allowed by WAC 296-46B-334. Type TC cable is arguably more durable than Type NMB. The jacket on a NM cable usually is 20 mils thick with a 10 mil paper covering under it. The protective jacket of Type TC cable must be at least 45 mils thick.

When Type TC cable is used in NEC 334 applications, it must be installed in strict conformance with Part II of NEC Article 334 and the bending radius requirements of NEC 336.26 or adhere strictly to the requirements of NEC Article 336.

**● Concrete Encased Electrodes - Materials, Installation And Inspection**

Concrete encased electrodes are defined in NEC 250.52(A)(3) as an acceptable electrode permitted for grounding. The electrode must be encased by at least 2 inches of concrete, located within and near the bottom of a concrete foundation or footing that is in direct contact with the earth. In addition the electrode must be made of at least 20 feet of one or more bare or zinc galvanized or other electrically conductive steel reinforcing bars or rods of not less than ½ inch in diameter or consisting of at least 20 feet of bare copper conductor not smaller than 4 AWG. Numerous studies have shown that a properly installed concrete encased electrode system will maintain a resistance of four ohms or less to ground for the life of the foundation.

In order to ensure that the concrete encased electrode functions properly, reinforcing bars or rods encapsulated with non-conductive coating such as epoxy cannot be used. The required 20 feet of reinforcing bar or rod may be made of multiple pieces joined together by tie wire to satisfy the length requirement. The concrete encased electrode is not required to be connected to the rest of the rebar in the footings and walls; but that connection is recommended so that the electrode is as large as possible. In addition, vapor barriers or insulating material are not allowed between the concrete footing/foundation and the earth.

Three inspection possibilities for concrete encased electrodes exist in [WAC 296-46B-250\(2\)](#):

- 1) At the time of inspection of other work on the project, providing the concrete-encased electrode is accessible for visual inspection.
- 2) At the time of the service inspection providing the installer has provided a method so the inspector can verify the continuity of the electrode conductor along its entire length. This can be accomplished by attaching a length of copper wire to one end of the electrode that reaches the location of the grounding electrode conductor that will enable the inspector to measure the resistance of the required 20 feet of rebar with a standard resistance tester.
- 3) Other methods when prior approval, on a jobsite basis, is given by the inspector.

**● Electrical Question of the Month**

**This Month's Question:** How much money can you save by renewing your journeyman or specialty electrician certificate using the online web process? **A)** \$2.57, **B)** \$4.26, **C)** \$6.80, **D)** \$5.00.

Hint: [WAC 296-46B-909](#)

Save money by renewing online at: <http://lni.wa.gov/TradesLicensing/LicensingReq/Legal.asp>

**Last Month's Question:** The output of a utility interactive inverter in an interconnected electric power production system may be connected to \_\_\_\_\_ of the service disconnecting means. **A)** the line side, **B)** the load side, **C)** only the load side, **D)** the line or load side The answer is: **D)** See NEC 705.12.