



ELECTRICAL CURRENTS

Newsletter from the Office of the Chief Electrical Inspector

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Vol. 12 No. 5

May 2009

● Administrative Changes Only To The WAC In 2009

L&I has begun the process to change several administrative sections of WAC 296-46B. At their April meeting, the Electrical Board approved the department's recommended changes. Because the proposed changes are of an administrative nature, and to avoid the expense and stress on the program's resources the Technical Advisory Committee will not be convened. Stakeholders can comment on proposed changes during the public comment period and hearing.

● Requirements For Electrical Equipment

RCW 19.28.010(1) requires all electrical equipment to be manufactured to an applicable electrical safety standard. WAC 296-46B-010(8) clarifies that electrical equipment must be:

- Manufactured to applicable electrical safety standards recognized by the department (Note: A variance request must be submitted for this approval. Manufacturer documentation of standards for each component will be required before approval will be granted.); or
- Approved by listing or field evaluation by an L&I approved electrical testing laboratory. Contact information for all approved electrical testing laboratories is available on our website at:

<http://www.lni.wa.gov/TradesLicensing/Electrical/Install/ProdTest/default.asp>.

There is a difference between a 'Listed' and 'Recognized' mark. The marks to the right are some of the more common 'Listing' marks used in Washington. A listing mark will always be accompanied by the product name (e.g. 'portable lamp', 'industrial control panel', etc.) to help you in ensuring that the listing is appropriate to the use of the product.

You may find that some of the individual components within a listed product have an Underwriters Laboratories (UL) recognized component mark (backwards *UR* shown below). UL says, "Some manufacturers may claim

that because the components are UL recognized, the product in which they are assembled meets all the necessary requirements. But that's not necessarily the case, because the UL Recognized Component Mark means that the component alone meets the requirements for a limited, specified use...UL's Component Recognition Service covers testing and evaluation of component products that are

incomplete or restricted in performance capabilities. These components will later be used in complete end-user products or systems Listed...These components are not intended for separate installation in the field. They are intended for use as components of complete equipment...Component/end-product compatibility is the critical link between certification of a component and certification of the end-product in which the component is used."

● Air Compressor Marking Requirements

Air compressor manufacturers do not typically list their products to the UL 1450 standard for compressors. They often use a mix of listings, recognized components, and other standards when building their equipment. UL 1450 is an encompassing standard that can be used for listing or field evaluating an air compressor.

But because compressors are often manufactured in multiple configurations (e.g. tank mounted, skid mounted, and with multiple accessories, etc.) only a very few manufacturers use UL 1450. If the compressor is not listed to UL 1450 by an approved electrical testing laboratory, the inspector has only two options available. The equipment must either be approved by field evaluation or by a variance request certifying that all of the compressor's components have been manufactured and installed in accordance with all applicable standards. All variance requests will be evaluated on a case-by case basis

Safety Tip of the Month!

Outdoor electrical cord connected power tools and other appliances should only be used when you have ensured that all of the flexible cords are free of cuts and abrasions that may expose live conductors. GFCI protection is essential outdoors.

Please don't let warm outside weather diminish your electrical safety judgment.



before approval. A variance request is site specific. Variances cannot be applied to multiple installations. Listing is always the preferred method of documentation that the equipment is appropriate.

● A Third Engineering Evaluation Firm Has Been Accredited To Review Industrial Equipment And Wind Turbines

David Picatti of Picatti Bros. Inc. is now approved to perform the evaluation/review of unlisted industrial utilization equipment. Mr. Picatti joins the other two approved engineers: Arthur Stokes of Parker Messina & Associates and C. Sankaran of Power Science Engineering who are both based in the Seattle/Tacoma area.

While all approved engineers are able to work anywhere in the state, David Picatti, who is located in Yakima, is the first engineer based in Eastern Washington to seek and attain approval. Contact information for all the approved engineers can be found at:

<http://www.lni.wa.gov/TradesLicensing/Electrical/Install/ProdEngineer/default.asp>

● When Will The Electrical Exams Be Revised To The 2008 National Electrical Code?

We are asked this question on a regular basis. Late summer 2009 is the current target date for implementing electrical exams based on the 2008 NEC. If you are an exam candidate, this will not affect your exam preparations. Certification exam questions do not change much with a new NEC edition. We make every effort to remove questions from examinations that are Code version dependent. New or altered NEC definitions or load calculation details are exceptions that may be version dependent.

All exam questions are based on basic safety, code, electrical theory, and state electrical law and rules. We expect electrician exams to verify entry-level ability to work without supervision. This skill includes the ability to use the installation standards (open-book use of the NEC, law, and rules) to solve problems that may be outside the worker's actual hands-on experience. We intentionally do not load certification exams with brand new 2008 Code revisions. In our system, staying current on new NEC changes is not dependent solely upon the certification exams, but is continued by mandatory continuing education for electricians.

Most changes in the exam database are reference updates for specific questions that are relocated within the code. We are being especially careful in modifying questions and references this Code cycle because we are migrating all of the data from the old LaserGrade system into the new PSI test platform. PSI acquired LaserGrade last year and we have been gradually making the complete transition to the more advanced PSI system.

When the transition is complete, the administrator and electrician exams will have the same basic "blueprint" as the current exams and the exam "time allowed" will remain the same. The similarities then end. The questions in the item bank will be statistically analyzed and the PSI system will be able to generate a unique, randomized, test for each candidate while maintaining standards of content and psychometric equivalence.

A fixed number of exam forms with static question items on each will become obsolete in the electrical program exams. People who "harvest" questions from exams to sell to individuals who fear exams will soon have to memorize all of the several thousand questions in our database. In our open-book exam format any exam candidate should do better if they primarily spend their time learning to effectively navigate the NEC, WAC, and RCW. For most of us, our preparation for our first electrical certification exam becomes the foundation on which we build our careers as safe, competent, professional electrical workers.

● Electrical Question of the Month

This Month's Question: Which of the following types of electrical installations are covered by the NEC? **A)** ships, **B)** above-ground mining machinery, **C)** railway rolling stock, **D)** none of the answers.

Last Month's Question: Conductor fill including splices cannot exceed ___% of the area within a surface non-metallic raceway where the cover is accessible and capable of being opened in place after installation. **A)** 53%, **B)** 60%, **C)** 75%, **D)** 0% The answer is: **C) 75%** [NEC 388.56].