

Question of the Month – You are installing a new feeder to supply eight nonmotor generator arc welders. Each welder is rated 240 volts, single phase, 32 amperes primary, and operated at 50% duty cycle. What is the load in volt-amperes, the minimum size feeder conductors using copper type THWN conductors and the maximum size overcurrent protective device for the feeder? – See correct answer on page 2.

Department to Seek Public Input for Revision of Electrical Rules

In the coming months, the department will be seeking public input regarding proposed changes to [WAC 296-46B](#) Electrical Safety Standards, Administration and Installation. The process of updating the National Electrical Code® is nearly complete. The revisions are posted in a second draft on the National Fire Protection Association’s website. If you would like to search the second draft for revisions to specific articles, you may do so on the [NFPA 70 Revision cycle information](#) page of their website. Select “Second Draft Report” and you will be taken to a page where you may log in or create an account. It is free and available to the public. The final version of the 2017 NEC® will be published shortly.

Watch for an announcement in an upcoming edition of the Electrical Currents newsletter with instructions for submitting a proposal, applying to serve on a Technical Advisory Committee (TAC), and a proposed timeline for the rule revision process. Please be thinking about any proposals that you feel would have support of stakeholder groups and improve the electrical rules, remembering the goal of ensuring safe electrical installations for the citizens of Washington. Proposals will not be accepted until the time specified in an upcoming special edition of the newsletter.

Electrical Inspectors Teaching Continuing Education and Basic Trainee Classes

As some may know, the department has had a policy prohibiting L&I electrical inspectors from having outside employment teaching electrical continuing education and basic trainee classes. This policy was put in place to remove any real or perceived conflict of interest. A revision to this policy has been reviewed and approved by the Executive Ethics Board allowing department electrical inspectors to have outside employment as instructors or teachers under certain conditions.

Here are the specific conditions of employment that must be met:

- A third-party training vendor must employ the electrical inspector. Training is provided (advertised, scheduled, etc.) by an entity that exists independently of the instructor. The entity must be a nationally recognized contractor, labor, or electrical industry association; Washington State registered apprenticeship program; or accredited trade school as defined in [WAC 296-46B-971](#).
- Compensation to the inspector for providing instruction must be a flat or hourly rate, not a per-student rate, and must be considered reasonable by industry standards.
- Training materials, sign-in sheets, etc. must include a statement that the instructor is not representing the Department of Labor & Industries.
- Inspectors are prohibited from performing any outside teaching activities using any state-owned or provided transportation, equipment, supplies, or other resources, including printed or electronic resources.
- Inspectors are responsible for notifying their supervisors if a real or potential conflict of interest exists because of their teaching activities.

Safety Tip of the Month

School’s out for summer. Pay attention! Put the phone down and be alert for children, pedestrians, skateboarders, and cyclists. Summer brings many new safety concerns for drivers and pedestrians.

This is good news for many electrical program stakeholders as well as our inspectors, who will now be able to share their knowledge and provide the training the electrical industry and stakeholders are asking for while continuing to deliver the quality electrical services our customers deserve.

Electric Sign and Luminaire Retrofit Certification Requirements

An article published in the [May 2016](#) Electrical Currents newsletter described the importance of using lighting retrofit kits that have been certified as meeting appropriate electrical product safety standards. The same requirements apply to retrofitting electric signs. Any modification of a listed luminaire or sign must be made using certified (listed or classified) retrofit kits. NEC® 410.6 and 600.3 require all luminaire and sign retrofit kits to be “listed”. The NEC® definition of “listed” says, the product must be included on a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

According to Underwriters Laboratories, retrofit kits bearing the “Classified” mark meet the NEC® definition of “Listed”. The [UL White Book](#) indicates that classified products do receive follow-up service as an audit of the manufacturing process to ensure the continued compliance of the product and suitability for a specified purpose under conditions described in the classification. The UL “Recognized Component”  mark is not acceptable. The White Book specifically states that the Recognized Component mark does not provide evidence of listing or labeling.

As stated in the May 2016 article, all certified (listed or classified) retrofit kits contain manufacturers’ installation instructions, which must be followed. Certified kits will include required labeling of the sign or luminaire to alert those working on it in the future of the modifications. Inspectors are finding many retrofits requested for inspection where the manufacturer’s instructions are not available for the inspector and the labeling required by those instructions has not been affixed. Help your inspector quickly approve your installation by leaving a copy of the installation instructions behind for them to consult if they have any questions.

Electrical Product Testing Laboratories

[RCW 19.28.010](#) requires all materials, devices, appliances, and equipment under the jurisdiction of the electrical law to be “of a type that conforms to applicable standards or be indicated as acceptable by the established standards of any electrical product testing laboratory which is accredited by the department.” The requirement that electrical equipment be manufactured to appropriate safety standards has been in Washington law for over forty years. OSHA and most states have similar requirements. There is a common misconception that products must be “UL listed”. This is not quite correct. Underwriters Laboratories, Inc. (UL) is one of twenty-four product-testing laboratories accredited by the department. The [Product Testing Laboratory](#) page of our website lists all of the accredited laboratories. Laboratories are accredited for product listing, field evaluation, or both. Each laboratory has its own mark that they affix to products indicating whether the product has met appropriate electrical safety standards. For those laboratories that OSHA has designated as Nationally Recognized Testing Laboratories (NRTL), marks can be found on OSHA’s website [here](#).

Ugly Picture: *If viewing this document online, click on the picture to open a larger image.* Have you ever done this? This electrician was routing a nonmetallic-sheathed cable in a kitchen island cabinet. The energized end of the cable contacted his ring. The circuit breaker tripped immediately. This is a good reminder to make sure the circuit you are working on is in an electrically safe condition and as a precaution remove metal jewelry and watches, and wear protective gloves while doing electrical work.



Answer to Question of the Month: 32,444 volt-amperes, 1/0 copper THWN, 300-ampere overcurrent device. NEC® 630.11(B) and 630.12(B).

This document may contain hyperlinks to internet web pages. To access this PDF document online, go to:

<http://www.ElectricalCurrents.lni.wa.gov>

Electrical Section Internet Address: <http://www.ElectricalProgram.Lni.wa.gov/>

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