Washington State Department of Labor & Industries

Electrical Currents

Newsletter from the Office of the Chief Electrical Inspector

Stephen Thornton, Chief Electrical Inspector **Vol. 19 No. 11** **November 2016**

Exam Question Confidentiality and Cheating

Recently, two separate incidents of cheating on electrical certification examinations have been discovered. In both cases, the exam proctor caught the individuals copying questions. In the latest incident, the individual was taking an 03 pump and irrigation specialty electrician exam for the fourth time. During the investigation, we discovered the contractor who certified his experience has been over-reporting hours, and now his approval for examination is under review. The department takes cheating on an exam very seriously. ***WAC 296-46B-960***(12) and (13) discuss cheating on an examination and question confidentiality. Anyone found cheating on an examination, attempting to bribe a proctor or other agent involved in administering an examination, or using inappropriate materials/equipment during an examination will be required to wait at least eleven months before being allowed to reexamine. All such reexaminations will be administered by the department in Tumwater, and the candidate will be required to apply and schedule for the examination with the chief electrical inspector.

Safety Tip of the Month

A fall from a ladder could kill you or disable you permanently.

- Always use the right ladder for the job. A chair is not a ladder!
- Get help with heavy or long ladders.
- Make certain your footing is solid. If outdoors, check for concealed holes left by moles and gophers. Avoid ice, mud, and other slippery conditions.
- Review the OSHA ladder bulletin at: ***https://www.osha.gov/Publications/OSHA3625.pdf***

Examination candidates and persons who have taken an examination are not allowed to copy or otherwise make note of or share examination content, in any manner. Examination candidates must agree, prior to beginning an examination, to keep all examination content confidential. The department may also file a civil penalty action under chapter 19.28 RCW. The civil penalty for cheating on an examination is $250 for a first time violator.

Information about the open book, multiple choice examinations including materials and equipment that may be taken into the examination can be found in ***WAC 296-46B-960***, and in the ***Exam Information Bulletin*** provided by PSI, the department's exam contractor.

Question of the Month –

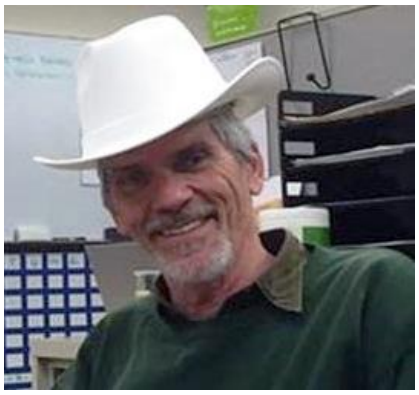
See correct answer on page 2. The picture at right (Click on it to enlarge) was taken by an electrical inspector performing an inspection after a generator load bank test was performed. This is the disconnect and overcurrent protection for the permanently installed generator. Notice the wire in the lower left (red arrow) that is not connected. It runs out the back of the enclosure and connects to the generator frame. How would you determine if this wire should or should not be connected to the grounded conductor terminal bar above it?

Revised Policy For Weatherproof Receptacle Covers on Temporary Construction Services

Effective January 1, 2017, the department will begin enforcing the requirements of 2014 NEC® 590.4(D)(2) for temporary construction services. All 15- and 20-ampere, 125- and 250-volt receptacles installed in a wet location must comply with NEC® 406.9(B)(1), which requires these receptacles to have an enclosure that is weatherproof whether or not the attachment plug cap is inserted. An outlet box hood installed for this purpose shall be listed and shall be identified as "extra duty." All 15- and 20-ampere, 125- and 250-volt nonlocking-type receptacles shall be listed weather-resistant type.

This requirement supersedes a department policy established in an Electrical Currents newsletter article from ***July 2004***. When "bubble covers" were first introduced in the 2002 NEC®, the quality of some covers was not good and many temporary power receptacles ended up with no protection from the weather due to broken bubble covers. Substantial improvements have been made, and the requirement for these covers to be identified as "extra duty" will prevent the problem the previous policy sought to correct. When temporary power equipment is relocated, it must be updated to comply with the new requirements.

Electrical Inspector Chuck Paul Passes Away



Sadly, we have lost another friend and co-worker. Chuck Paul, a recently retired Lead Inspector from the Tacoma office, tragically lost his life in a kayak accident in early October. Chuck had just retired in July after 28 years with the department. His passion for the outdoors and his boys shaped an adventurous and exciting life. He was always comfortable and friendly with everyone he met. Chuck was well versed in so many areas because of his avid love of reading and his unquenchable thirst for knowledge. His love and selflessness was felt by all around him. His genuineness in his faith built his Godly character that touched everyone's life. His life was a great example for all of us. Chuck was loved and respected by all who knew him and will be greatly missed. You can leave a comment for Chuck's family and friends at ***http://chuckpaul.com/***.

Manufacturers of Electrical/Telecommunications Products – Limited Exemption

In general, all installation or maintenance of electrical wiring and equipment must be done by licensed electrical contractors and certified electricians. Several exemptions are listed in ***RCW 19.28.091***, ***RCW 19.28.261***, and ***WAC 296-46B-925***. Recently, many questions have been asked about the exemption for manufacturers of electrical or telecommunications products in ***WAC 296-46B-925***(22). This is a very limited exemption allowing manufacturers to utilize the manufacturer's authorized factory-trained technicians to perform initial calibration, testing, adjustment, modification incidental to the startup and checkout of the equipment, or replacement of components within the confines of the specific product, without permit or required licensing provided the product: 1) Has not been previously energized; or 2) Has been recalled by the Consumer Product Safety Commission; or 3) Is within the manufacturer's written warranty period; or 4) The manufacturer is working under the written request and supervision of an appropriately licensed electrical contractor.

Except for the replacement of individual components, as allowed above, this exemption does not include the initial installation, removal, or replacement of the electrical product. Modifications to the equipment, as designated above, must not include any changes to the original intended configuration nor changes or contact with external or field-connected components or wiring.

The intent of this exemption is to allow manufacturers to perform limited startup and checkout of a product, or to replace defective components within the confines of the product under the conditions described above. No installation work may be performed. For example, if a product is assembled in a factory, then dismantled and shipped to the jobsite in pieces, all electrical work associated with putting the pieces together and making the wiring connections between them (even if custom wire harnesses or cable assemblies with connectors are used) is considered installation and must be done by properly licensed electrical contractors and certified electricians. Installation and connection of accessories in or on the product is also an installation and not allowed under this exemption.

Answer to Question of the Month: You would need to look at the transfer switch to determine if the generator is a separately derived system (See Informational Note 1, NEC® 250.30). If the neutral is switched with the phase conductors in the transfer switch, the generator is a separately derived system. It must be grounded in accordance with NEC® 250.30 in the same way a typical transformer is grounded. The wire that is disconnected in the picture would be the system bonding jumper and must be connected to the generator neutral bar, along with a grounding electrode conductor connected to the building electrode system. If the transfer switch has a solidly connected neutral bar (connecting the normal, load, and generator neutrals together), the generator is a non-separately derived system. In this case, the wire in the picture must not be connected to the neutral bar. Doing so would create a parallel path for neutral current and violate NEC® 250.24(A)(5). More information about grounding permanently installed generators can be found in the ***June*** and ***July 2012*** Electrical Currents newsletters.