

Ron Fuller, Chief Electrical Inspector

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Question of the Month

Why did Mr. Ohm marry Mrs. Ohm? - See correct answer on Page 2.

Note From The Chief

The department is nearing the public comment phase of WAC rule making. The 30-day window for written comments will begin sometime in October. The public hearing will be in November. The exact dates for both are yet to be set; but, if you are a member of the Electrical Program's automatic email notification system, we will send you a notification, including the exact dates. You may join the [Email Notification System](#) by selecting *Join Email List* on the [Electrical](#) page on our website.

The Technical Advisory Committee and the Electrical Board have reviewed the changes and both groups were in support of moving forward with the proposal.

Use the public comment period and hearing to provide your feedback on the proposal – supportive or unsupportive.

You may find a draft version of the proposed changes on the [Rule Development](#) page on our website.

Remember to attend a stakeholder meeting to receive the latest information on the Electrical Program and for a chance to provide feedback to the Department. You can find a list of meeting locations in the [September 2012 Electrical Currents](#) or by visiting the [Electrical Calendar](#) page on our website.

No Inspections on October 30 - 31

On October 30 – 31, all of the electrical inspectors will be in required training. No electrical inspections will be performed for these two days. Be sure to plan ahead and notify your customers to help minimize delays in their job schedules.

Electric Vehicle Supply Equipment Load Calculations

NEC 625.14 requires that Electric Vehicle Supply Equipment (EVSE) must have sufficient rating to supply the load served and considers electric vehicle charging loads as continuous loads. The NEC requires continuous loads to be calculated at 125% of the nameplate rating of the EVSE when determining service and feeder size. The addition of an EVSE load to an existing electrical service may result in the overload of the premises wiring system based on NEC calculations.

Many EVSE systems incorporate “smart” technology or load management systems, which will sequence the load(s) based on actual vehicle charging demand. These systems limit the total load applied to the premises wiring system.

Code Making Panel 12 processed a tentative interim amendment, [TIA 11-3](#), which became effective in November of 2011. The amendment added another sentence to NEC 625.14. It states, “Where an automatic load management system is used, the maximum electric vehicle supply equipment load on a service or feeder shall be the maximum load permitted by the automatic load management system.” The department will allow this method for calculating EVSE loads.

When performing an installation or inspection of EVSE, consult the manufacturer's instructions and the equipment nameplate to determine if the equipment has an automatic load management system. If it does, you may calculate the feeder or service load using the maximum load permitted by the load management system.

Replacement of Alarm And Security Devices Requires a Permit

WAC 296-46B-901(8)(b)(i) contains the Class A basic electrical work list which is exempt from permits and inspections. It includes the like-in-kind replacement of a: “Contactor, relay, timer, starter, circuit board, or similar control component; household appliance; circuit breaker; fuse; residential luminaire; lamp; snap switch; dimmer; receptacle outlet; thermostat;

Safety Tip of the Month!

Are you sure that circuit you are about to touch is dead? Do not trust your life to a switch or circuit breaker that is marked off. Always verify the circuit is off by using a tester. Test your tester on a known live circuit, then test the circuit you are working on to make sure it is really off before locking it out and touching it.

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Page 1 of 2

heating element; luminaire ballast with an exact same ballast; component(s) of electric signs, outline lighting, skeleton neon tubing when replaced on-site by an appropriate electrical contractor and when the sign, outline lighting or skeleton neon tubing electrical system is not modified; ten horsepower or smaller motor;...

...Unless specifically noted, the exemptions listed do not include: The replacement of an equipment unit, assembly, or enclosure that contains an exempted component or combination of components (e.g., an electrical furnace/heat pump, industrial milling machine, etc.) or any appliance/equipment described in this section for Class B permits."

The term "similar control component" has caused some confusion. The Class A list of permit exempt items does not include devices like fire/smoke and burglar alarm detection and signaling devices, nurse call stations, security cameras, etc. These items are not exempt from permit requirements.

Air Conditioner/Heat Pump Compressor Replacement – Permit Required?



Occasionally, installers ask if a permit and inspection is required to replace an air conditioner or heat pump compressor. You can find requirements for electrical permits in [WAC 296-46B-901](#). Paragraph (8)(b)(i) contains the list of "Class A basic electrical work" that is exempt from permit requirements. The like-in-kind replacement of a 10 horsepower or smaller motor is on the list and no permit is required for this work.

Hermetic refrigerant motor-compressors are considered motors for the purpose of permit requirements. They are not marked with horsepower ratings, so you must determine what the equivalent horsepower of the motor is. NEC 440.12(A)(2) gives the method for determining equivalent horsepower for sizing the disconnecting means, and you may use this method to determine if a permit is required. You must select the horsepower rating from Tables 430.248,

430.249, or 430.250 corresponding to the rated-load current or branch-circuit selection current, whichever is greater; or Table 430.251(A) or (B) corresponding to the locked-rotor current. For currents that do not correspond to those shown in the table, you must select the next higher horsepower rating.

Electrical Licensing/Certification Requirements - Working On or Near Exposed Energized Parts

An article appeared in the [January 2004 Electrical Currents](#) entitled "Who May Remove Electrical Wiring and Equipment?" The article stated, "Un-trained workers are typically unaware of the potential electrical hazards they often leave behind when disconnecting or abandoning electrical wiring and equipment. Until a licensed electrical contractor properly disconnects and properly terminates circuits being abandoned or demolished, all work on the electrical circuit(s) is considered electrical maintenance and appropriate licenses and certificates are required from anyone working on the circuit(s)...Non-electrical contractors or individuals are not allowed to perform any type of work inside energized electrical enclosures (e.g. panels, switches, junction boxes, etc.)".

The passive testing of electrical systems and equipment as described in the [April 2010 Electrical Currents](#) newsletter is not considered electrical work for the purposes of electrical licensing and certification of workers. Workers without electrical certification may perform passive testing on energized or potentially energized electrical systems.

Even though electrical licensing/certification may not be required for passive testing, employers and employees must comply with the requirements of [Chapter 296-45 WAC: Safety standards for electrical workers](#). Persons working on or near exposed energized parts operating at 50 volts or more must be "qualified employees" in accordance with [WAC 296-45-325 Safety Standards for Electrical Workers](#). A qualified person or employee, as defined in [WAC 296-45-035: Definitions](#), and NEC 100 is a person who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved.



Ugly Installations

Online readers - click on the picture to open a larger image in another window.

Violations: NEC 110.12, 110.14, 110.26(A) 200.6, 200.7, 240.4, 250.24(A)(5), 250.110, 300.3(A), 300.12 300.20, 312.5(C), 334.15, 334.30, 408.41 (There are probably others)

Answer to Question of the Month: Because he could not resistor. ☺

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