

## Frequently Asked Questions Regarding New Requirements in the 2014 NEC & the Minnesota Electrical Act

### 120-volt Receptacles at Services

**1. Question:** Does the requirement in NEC Section 210.64 for at least one 15- or 20-amp 120-volt receptacle outlet within 50-feet of an electrical service apply to outdoor service equipment?

**ANSWER: No**

This change was meant to address the use of extension cords to power various apparatus for testing and monitoring electrical service equipment which are routed down hallways, through doorways and across rooms creating slip, trip and fall hazards. Therefore this is applicable only to indoor electrical service areas, not those located outdoors.

### AFCI in Kitchens

**2. Question:** Are GFCI receptacles installed within 6-feet of the kitchen sink and located in the cabinet under the sink or installed in the cupboard above the microwave considered readily accessible?

**Answer: Yes**

Access to the GFCI receptacles located inside a cabinet below a kitchen sink or in the cupboard above the microwave is considered readily accessible, similar to electric service equipment located behind a locked door.

### AFCI in Laundry Area

**3. Question:** If the laundry for a dwelling is located in the basement do all the branch circuits in the basement require AFCI protection?

**Answer: No**

Although not specifically defined, a laundry area would only encompass that part or section of the basement that has the specific laundry function.

### TSC License for Low-Voltage Suspended Ceiling Lighting

**4. Question:** New Article 393 has the requirements for Low-Voltage Suspended Ceiling Power Distribution Systems. Can this work be performed by licensed or supervised registered unlicensed employees of a technology system contractor?

**Answer: Yes.**

LVCDS as defined in Article 393 are supplied by class 2 power supplies. Class 2 circuits and systems fall within the definition of technology circuits or systems and may be installed by licensed electrical or technology system contractors.

## Garage Branch Circuit

**5. Question:** Per NEC Section 210.52(G)(1) the branch circuit supplying a garage is not permitted to supply outlets outside of the garage. Can the receptacles or luminaires mounted on the exterior of the garage be supplied by this branch circuit?

**Answer: Yes**

Electric vehicles (EV) and plug-in hybrid electric vehicles (PHEV) are popular; however the use of an electric vehicle is not mandatory. Requiring an individual circuit that may never be used does not address an electrical safety concern. The individual branch circuit supplying the garage receptacle(s) is not permitted to serve outlets aside from those at the garage. Additional receptacles and luminaires installed inside or on the exterior of garage walls may be supplied by the individual branch circuit supplying the garage receptacle(s).

## Central Heating Equipment:

**6. Question:** Is it permitted to supply central heating equipment from a multiwire branch circuit?

**Answer: No**

NEC 422.12 states in pertinent part that central heating equipment shall be supplied by an individual branch circuit. The phrase "individual branch circuit" is specifically defined in Article 100 as a branch circuit that supplies only one utilization equipment. Auxiliary equipment that is directly associated with the central heating equipment is also permitted to be supplied by the same individual branch circuit (e.g. condensate pumps, valves, humidifiers, electrostatic air cleaners, etc.)

## GFCI Protection for Dishwashers:

**7. Question:** With respect to receptacles that are installed to serve kitchen countertop surfaces, the commentary for NEC 210.8(A)(6) in the 2014 NEC handbook states that receptacles installed for disposers, "dishwashers" and trash compactors are not required to be GFCI protected. Is this a correct statement?

**Answer: No**

NEC 210.8(D) is new in the 2014 NEC and . It states that GFCI protection shall be provided for outlets that supply dishwashers installed in dwelling unit locations. The GFCI protection is required whether the dishwasher is permanently connected or cord-and-plug connected.

## Minor Repair Work (Electrical):

**8. Question:** Is a Request for Electrical Inspection (i.e. electrical permit) required to be filed for "minor repair work" such as replacing a defective receptacle outlet?

**Answer: No.**

M.S. 326B.36, Subd. 1 [INSPECTION] states in pertinent part that every new electrical installation shall be inspected "except for minor repair work as the same is defined by rule".

The definition in MN Rules Chapter 3800.3500, Subp. 10 states that "Minor repair work" means the adjustment or repair or replacement of worn or defective parts of electrical equipment and

replacement of defective receptacle outlets and manual switches for lighting control. (The key words are “worn or defective parts of electrical equipment” and “defective receptacle outlets and manual switches”). Wholesale or extensive replacement of receptacle outlets, manual switches, luminaire retrofits and similar electrical renovations are not considered “minor repair work”. Replacing luminaires or other types of utilization equipment or electrical apparatus in their entirety is not considered “minor repair work”.

- Even though minor repair work may be exempt from electrical inspection, it is NOT exempt from electrical licensing.
- Also, minor repair work is also required to comply with the NEC, even though it may not be inspected.

What was once a simple task of replacing a defective receptacle outlet is more complicated today – NEC 406.4(D) outlines the criteria for equipment grounding, GFCI protection, AFCI protection, tamper-resistant functionality, weather-resistant functionality, etc.

### **GFCI Protection for Refrigerators:**

**9. Question:** Certain diagrams and commentary in the 2014 NEC Handbook appear to illustrate and explain that GFCI protection is not required for a receptacle outlet that is installed behind a refrigerator that is installed within 6 feet of a kitchen sink. Is GFCI protection required for a receptacle outlet that is installed behind a refrigerator and within 6 feet of the kitchen sink?

#### **Answer: Yes**

NEC 210.8(A)(6) requires GFCI protection for kitchen receptacle outlets that are installed to serve the countertop spaces. The receptacle outlet for the refrigerator is not installed to serve the countertop space, so initially one could be lead to believe that GFCI protection is not required for this particular receptacle outlet.

However, 210.8(A)(7) requires GFCI protection for all receptacle outlets that are installed within 6 feet from the outside edge of dwelling unit sinks.

It's important to remember that NEC Handbook commentary and illustrations are intended to be informational only. If there is a discrepancy, the actual NEC code language takes precedence. It's also important to know that commentary and illustrations in the NEC Handbook may only be outlining a specific code rule, and the illustrations and commentary may not be inclusive of all overlapping, adjoining or related code rules.

### **Portable appliances**

**10. Question:** “Dwelling Unit” is defined in NEC Article 100 as “A single unit, providing complete and independent living facilities for one or more persons, including permanent provisions for living, sleeping, cooking, and sanitation.” Is a microwave oven, toaster oven, hotplate, toaster, griddle, grill, waffle iron, skillet or similar portable electrical appliance considered to be permanent provisions for cooking?

#### **Answer: No**

Cord-and-plug connected electrical appliances that are not fastened in place (portable) are not considered as permanent provisions for cooking.

## Guest rooms and Guest suites

**11. Question:** NEC 210.18 states that guest rooms and guest suites that are provided with permanent provisions for cooking shall have branch circuits installed to meet the rules for dwelling units (guest rooms and guest suites are defined in Article 100 as accommodations combining living, sleeping, sanitary and storage facilities within a compartment). Does this mean that a guest room with permanent provisions for cooking is considered to be a dwelling unit and it must comply with all of the applicable dwelling unit rules in Article 210?

**Answer: No**

Guest rooms and guest suites that are provided with permanent provisions for cooking are required to have the *branch circuits* outlined in NEC 210.11(C); two 20-ampere small-appliance branch circuits, one 20-ampere bathroom branch circuit and one 20-ampere laundry branch circuit. Additional rules for guest rooms and guest suites are found in 210.60(A) and (B) (number of receptacle outlets and placement), 210.70(B) (required lighting outlets) and 406.12(B) (tamper-resistant receptacles). The requirements in 210.12 for arc-fault circuit-interrupter protection are not applicable to guest rooms and guest suites because such rooms and suites are not dwelling units.

## Minor repair work (electrical)

**12. Question:** Is a Request for Electrical Inspection (electrical permit) required to be filed for *minor repair work*, such as replacing a defective receptacle outlet?

**Answer: No**

M.S. 326B.36, Subd. 1 [INSPECTION] states “except for minor repair work as the same is defined by rule,” every new electrical installation shall be inspected.

The definition in Minn. Rules Chapter 3800.3500, Subp. 10 states that “Minor repair work” means the adjustment or repair or replacement of **worn or defective parts** of electrical equipment and replacement of **defective** receptacle outlets and manual switches for lighting control. Wholesale or extensive replacement of receptacle outlets, manual switches, luminaire retrofits and similar electrical renovations are not considered minor repair work. Likewise, replacing luminaires or other types of utilization equipment or electrical apparatus in their entirety is not considered minor repair work.

While minor repair work is exempt from electrical inspection, it is not exempt from electrical licensing.

Minor repair work is required to comply with the NEC, even though it may not be inspected. What was once a simple task of replacing a single defective receptacle outlet is more complicated today – NEC 406.4(D) outlines the criteria for equipment grounding, GFCI protection, AFCI protection, tamper-resistant functionality, weather-resistant functionality, etc. All electrical installations are required by law to comply with the NEC, whether or not they are subject to mandatory inspection.

## Wind turbines

**13. Question:** Are wind turbines required to be listed and labeled?

**Answer: Yes**

In addition to other technical revisions in the 2014 NEC, Article 694 is now applicable to all wind electric systems; a 100kW threshold has been removed. NEC 694.7(B) states that wind electric systems shall be listed and labeled by a Nationally Recognized Testing Laboratory (NRTL). A wind electric system is comprised of many components, including generators, alternators, inverters, controllers and other apparatus; the listing requirement is applicable to the entire wind electric system, not just individual components.

There are three main documents that are used for certifying wind electric systems: Underwriters Laboratories (UL) UL Subject 6140, UL Subject 6141 and UL Standard 6142. Unlisted wind electric systems installed in Minnesota are required to be field evaluated and third-party certified in accordance with Minn. Rules Chapter 3801.3619 and 3801.3620.