



## Recommended Amendments to the 2014 National Electric Code

### Part 5 – BUILDING REGULATIONS AND CODES

#### National Electric Code®, 2014 Edition (NEC®, 2014)

#### Part 5, Chapter 4 “*National Electric Code*”

#### NOTICES:

Through its rulemaking process, the City of Choctaw has adopted the first printing of the 2014 edition of the National Electric Code® (NEC®, 2014). Errata found and corrected by the NEC®, if any, in a printing of the code other than the specific printing listed previously in this notice, has not been reviewed or approved by the City of Choctaw, adopted by the City of Choctaw itself, or promulgated as a permanent rule by the City of Choctaw.

The following sections, paragraphs, and sentences of the *2014 National Electric Code* are hereby amended as follows: Standard type is text from the NEC. Underlined type is text inserted. ~~Lined through type is deleted text from NEC.~~

The sections, paragraphs, and sentences are based off the adopting of the State of Oklahoma by the OUBCC (Oklahoma Uniform Building Code Council). **Any text highlighted in YELLOW is a local (City of Choctaw) adoption and reasoning.**

**Article 100 I. General;** add the following to definitions:

#### **Article 100 I. General**

ENGINEERING SUPERVISION. Supervision by a Qualified Oklahoma Licensed Professional Engineer engaged primarily in the design or maintenance of electrical installations.

*(Reason: To better define the qualifications for engineering supervision. This term is used twenty four times in the National Electrical Code.)*

**Article 100 I. General;** add the following to definitions:

#### **Article 100 I. General**

INTERSYSTEM BONDING TERMINATION. A device that provides a means for connecting intersystem bonding conductors for communication systems and



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other systems ~~such as metallic gas piping systems~~ to the grounding electrode system. Bonding conductors for other systems shall not be larger than 6 AWG.

*(Reason: To allow for a termination point for other bonding conductors in addition to communication systems that are required by the various model codes. 6 AWG was chosen to coincide with the minimum size of bonding conductor required to the intersystem bonding jumper.)*

**Article 100 I. General;** add the following to definitions:

## **Article 100 I. General**

NATIONALLY RECOGNIZED TESTING LABORATORY. A testing facility given this designation from the United States Occupational Safety and Health Administration (OSHA) that provides product safety testing and certification services to manufacturers.

*(Reason: Definition of a nationally recognized testing laboratory)*

**Article 110.2 Approval;** change the following to read as follows:

**110.2 Approval.** The conductors and equipment required or permitted by this *Code* shall be acceptable only if approved. Approval of equipment may be evident by listing and labeling of equipment by a Nationally Recognized Testing Lab (NRTL) with a certification mark of that laboratory or a qualified third party inspection agency approved by the AHJ.

**Exception:** Unlisted equipment that is relocated to another location within a jurisdiction or is field modified is subject to the approval by the AHJ. This approval may be by a field evaluation by a NRTL or qualified third party inspection agency approved by the AHJ. Manufacturer's self-certification of any equipment shall not be used as a basis for approval by the AHJ.



*Informational Note No. 1: See 90.7, Examination of Equipment for Safety, and 110.3, Examination, Identification, Installation, and Use of Equipment. See definitions of Approved, Identified, Labeled, and Listed.*

*Informational Note No. 2: Manufacturer's self-certification of equipment may not necessarily comply with US product safety standards as certified by a Nationally Recognized Testing Lab.*

*Informational Note No. 3: NFPA 790 and 791 provide an example of an approved method for qualifying a third party inspection agency.*

*(Reason: To add clarity and provide more positive options for enforcement and approval of unlisted equipment.)*

**Article 110.12(B) Integrity of Electrical Equipment and Connections:** This section has been modified to read:

**110.12 (B) Integrity of Electrical Equipment and Connections.** Internal parts of electrical equipment, including busbars, wiring terminals, insulators, and other surfaces, shall not be damaged or contaminated by foreign materials such as paint, plaster, cleaners, abrasives, or corrosive residues. There shall be no damaged parts that may adversely affect safe operation or mechanical strength of the equipment such as parts that are broken; bent; cut; or deteriorated by corrosion, chemical action or overheating. Damaged materials, equipment, appliances, and devices shall not be reused unless such elements have been reconditioned, tested, and placed in good and proper working condition and approved by a nationally recognized testing laboratory, or by the manufacturer of the equipment. Electrical equipment damaged by natural or man-made events shall be reused only as recommended by the manufacturer of such equipment.

*(Reason: to allow for the reuse of existing electrical equipment, rather than requiring new replacements when certain conditions are met.)*

**Article 210.19 (A)(4) Other Loads.** This section has been modified to read:

**Section 210.19 (A)(4) Other Loads.** Branch-circuit conductors that supply loads other than those specified in 210.2 and other than cooking appliances as covered in 210.19 (A)(3) shall have an ampacity sufficient for the loads served and shall not be smaller than 14 AWG. 20 ampere general-purpose branch circuits for dwellings shall supply a maximum of 10 outlets. 15 ampere general-purpose branch circuits for dwellings shall supply a maximum of 8 outlets. 20 ampere general-purpose branch circuits for other than dwellings shall supply a maximum of 8 outlets.



*{The rest of the section is to be unchanged}*

*(Reason provide adequate loads per circuits.)*

**Article 230.70(A) (1) Readily Accessible location;** Modified to read as follows:

- (1) Readily Accessible Location.** The service disconnecting means shall be installed at a readily accessible location either outside of a building or structure or inside ~~nearest the point of entrance~~ within 5 feet of the service conductors.

*(Reason For Change: To limit the distance of unfused wire)*

**Article 500.8 (A) (3) Suitability;** changed to read as follows:

**500.8 Equipment.** Articles 500 through 504 require equipment construction and installation that ensure safe performance under conditions of proper use and maintenance.

*Informational Note No. 1: It is important that inspection authorities and users exercise more than ordinary care with regard to installation and maintenance.*

*Informational Note No. 2: Since there is no consistent relationship between explosion properties and ignition temperature, the two are independent requirements.*

*Informational Note No. 3: Low ambient conditions require special consideration. Explosionproof or dust-ignitionproof equipment may not be suitable for use at temperatures lower than -25°C (-13°F) unless they are identified for low-temperature service. However, at low ambient temperatures, flammable concentrations of vapors may not exist in a location classified as Class I, Division 1 at normal ambient temperature.*

**(A) Suitability.** Suitability of identified equipment shall be determined by one of the following:

- (1) Equipment listing or labeling
- (2) Evidence of equipment evaluation from a qualified testing laboratory or inspection agency concerned with product evaluation
- (3) Evidence acceptable to the authority having jurisdiction such as a manufacturer's self-evaluation or ~~an owner's engineering judgment~~, an engineering judgment signed and sealed by a qualified ~~Registered~~ licensed Professional Engineer in the State of Oklahoma.

*Informational Note: Additional documentation for equipment may include certificates demonstrating compliance with applicable equipment standards, indicating special conditions of use, and other pertinent information. Guidelines for certificates may be*



*found in ANSI/ISA 12.00.02, Certificate Standard for AEx Equipment for Hazardous (Classified) Locations.*

*(Reason: Carry over from previous amendment with change to better define the qualifications for an engineering judgment.)*

**Article 505.7 Special Precaution.** Modified to read as follows:

Article 505 requires equipment construction and installation that ensures safe performance under conditions of proper use and maintenance.

Informational Note No. 1: It is important that inspection authorities and users exercise more than ordinary care with regard to the installation and maintenance of electrical equipment in hazardous (classified) locations.

Informational Note No. 2: Low ambient conditions require special consideration. Electrical equipment depending on the protection techniques described by 505.8(A) may not be suitable for use at temperatures lower than -20°C (-4°F) unless they are identified for use at lower temperatures. However, at low ambient temperatures, flammable concentrations of vapors may not exist in a location classified Class I, Zones 0, 1, or 2 at normal ambient temperature.

**(A) Implementation of Zone Classification System.** Classification of areas, engineering and design, selection of equipment and wiring methods, installation, and inspection shall be performed by ~~qualified persons~~ Registered a licensed Professional Engineer in the State of Oklahoma with expertise in Hazardous (Classified) locations and Zone Systems. The installation of equipment and wiring methods, and inspections shall be performed by qualified person.

*(Reason: require a registered professional engineer to engineer and design, and select the equipment and wiring methods for classification areas. It allows for the installation of the equipment, wiring methods and inspections to be performed by qualified persons.)*

**Article 506.7 (A) Implementation of zone classification system.** This section has been modified to read:

**506.7 (A) Implementation of zone classification system.** Classification of areas, engineering and design, selection of equipment and wiring methods, shall be performed by a Registered Professional Engineer with expertise in Hazardous (Classified) Locations and Zone Systems. The installation of equipment and wiring methods and inspection shall be performed by qualified persons.

*(Reason: This section has been modified to require a registered professional engineer to engineer and design, and select the equipment and wiring methods for classification areas. It*



*allows for the installation of the equipment, wiring methods and inspections to be performed by qualified persons)*

**Article 511.2 Definition - Major Repair Garage.** This section has been modified to read:

## **511.2 Definition**

**MAJOR REPAIR GARAGE.** A building or portions of a building where major repairs, such as engine overhauls, painting, body and fender work, ~~and repairs that require draining of the motor vehicle fuel tank are performed on motor.~~ maintenance or repairs that require open-flame cutting or welding, and repairs that require draining of the motor vehicle fuel tank are performed on motor vehicles, including associated floor space used for offices, parking, or showrooms.

*(Reason: This section has been modified to include maintenance or repairs that require open-flame cutting or welding as part of the definition of a major repair garage.)*

**Article 517.30 Essential Electrical Systems for Hospitals;** create a new (H) and add the following language to (G):

**(G) Coordination.** Overcurrent protective devices serving the equipment branch of the essential electrical system shall be coordinated for the period of time that a fault's duration extends beyond 0.1 second.

Exception No. 1: Between transformer primary and secondary overcurrent protective devices, where only one overcurrent protective device or set of overcurrent protective devices exists on the transformer secondary.

Exception No. 2: Between overcurrent protective devices of the same size (ampere rating) in series.

*Informational Note: The terms coordination and coordinated as used in this section do not cover the full range of overcurrent conditions.*

**(H) Selective Coordination.** Overcurrent protective devices serving the life safety, and critical branches of the essential electrical system shall be selectively coordinated with all supply-side overcurrent protective devices.

Exception No. 1: Between transformer primary and secondary overcurrent protective devices, where only one overcurrent protective device or set of overcurrent protective devices exists on the transformer secondary.



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Exception No. 2: Between overcurrent protective devices of the same size (ampere rating) in series.

Informational Note: The terms coordination and coordinated as used in this section do not cover the full range of overcurrent conditions.

(Reason: New addition of section 517.30(G) for “Coordination” instead of using selective coordination, has diminished the reliability of the “Life Safety and Critical Branches of the Essential Electrical System” to deliver power to vital loads. By providing only “coordination,” the instantaneous portion of the time-current curve has been eliminated from the overcurrent device settings.)

**Article 680.23 (A)(4) Voltage Limitations.** This section has been modified to read:

**680.23 (A)(4) Voltage Limitations.** No luminaries shall installed for operation on supply circuit ~~over 150 volts between conductors~~ above the low voltage contact limit as defined in Section 680.2.

*(Reason: Prohibit the use of underwater luminaries if they operate above the low voltage contact limit as defined in Section 680.2.)*