

Exhibit J

Recommended Amendments to the 2020 National Electrical Code City of Amarillo, Texas

The following articles, paragraphs, and sentences of the 2020 National Electrical Code (NEC) 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.~~ A double asterisk (**) at the beginning of an article identifies an amendment carried over from the 2014 edition of the code and a triple asterisk (***) identifies a new or revised amendment with the 2020 code.

*****Article 90.4 Enforcement; add Section 90.4.1 with the following language:**

90.4.1 Supervision of Work. In the actual work of installing, maintaining, altering or repairing any electrical conductors or equipment which requires a permit, apprentice electricians shall be directly supervised by a higher grade classification of electrical license as described in Subchapter A, Section 1305.002 of the TDLR Texas Electrical Safety and Licensing Act when electrical work is being performed.

Informational Note No. 1: As defined by the State of Texas in Title 8, Occupational Code Chapter 1305 administered by the Texas Department of Licensing and Regulation for the proper grade classifications of electrical license.

****Article 100; add the following to definitions:**

Engineering Supervision. Supervision by a Qualified State of Texas 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 several times in the 2020 National Electrical Code.)

*****Article 100; remove the amendment to the following definition:**

Intersystem Bonding Termination. A device that provides a means for connecting intersystem bonding conductors for communication systems ~~and 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: Remove the above amendment. Updates to the 2020 National Electrical Code Article 250.94(A) only accommodate connecting communication systems to an intersystem bonding termination device, but Article 250.94(B) provides an alternative or other means.)

****Article 110.2; 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 U.S. product safety standards as certified by an NRTL.

Informational Note No. 3: National Fire Protection Association (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 210.52(G) (1) Garages: remove the amendment that deleted the following:**

(1) Garages. In each attached garage and in each detached garage with electric power, ~~The branch circuit supplying this receptacle(s) shall not supply outlets outside of the garage. At least one receptacle outlet shall be installed for each car space.~~

(Reason: Updates to this section in the 2020 National Electrical Code provided relief by removing "shall not supply outlets outside of the garage.")

*****Article 230.71(A); remove the amendment that added the following exception:**

~~Exception: Multi-occupant buildings. Individual service disconnecting means is limited to six for each occupant. The number of individual disconnects at one location may exceed six.~~

(Reason: This is below the minimum standard of the 2020 National Electrical Code adopted by the State of Texas.)

*****Article 300.11; remove the amendment that added the following exception:**

~~Exception: Ceiling grid support wires may be used for structural supports when the associated wiring is located in that area, not more than two raceways or cables supported per wire, with a maximum nominal metric designation 16 (trade size 1/2").~~

(Reason: This is below the minimum standard of the 2020 National Electrical Code adopted by the State of Texas.)

*****Article 310.15(B) (7); remove the amendment that changed the following to read as follows:**

~~**(7)** This Article shall not be used in conjunction with 220.82.~~

(Reason: Upon review of the 2014 and 2020 code-making panel 6 and in conjunction with the wire manufacturing industry, based on the diversification of loads in modern construction, this amendment becomes irrelevant.)

****Article 500.8 (A) (3); change 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. Explosion proof or dust-ignition proof 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; or,
- (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 Texas.

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

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

****Article 505.7 (A) changed to read as follows:**

505.7 Special Precaution.

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 a qualified persons Registered licensed Professional Engineer in the State of Texas.

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

*****Article 517.3031 Essential Electrical Systems for Hospitals; remove the amendment that created a new (H) and added the following language:**

(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.~~

~~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: Due to no action by the 2020 code-making panel 15 and NFPA 99, this amendment is not applicable.)

*****Article 600.6(A) (1) At Point of Entry to a Sign; Exception 1 changed to read as follows:**

Exception No.1: A disconnect shall not be required for branch circuit(s) or feeder conductor(s) passing through the sign where enclosed in a Chapter 3 listed raceway or metal-jacketed cable identified for the location. The conductor(s) shall not serve the sign body or sign enclosure where passing through.

*****Article 600.6(A) (1) At Point of Entry to a Sign; create a new Exception No. 2 to add the following language:**

Exception No. 2. A disconnect shall not be required at the point of entry to a sign body, sign enclosure, or pole for branch circuit conductor(s). The conductors shall be enclosed in a Chapter 3 listed raceway or metal-jacketed cable identified for the location. The conductor(s) shall be routed to a device box which contains the disconnect. A field-applied permanent warning label that is visible during servicing shall be applied to the raceway at or near the point of entry into the sign enclosure or sign body. The warning label shall comply with 110.21(B) and state the following: "Danger. This raceway contains energized conductors." The marking shall include the location of the disconnecting means for the energized conductor(s). The disconnecting means shall be capable of being locked in the open position in accordance with 110.25.

*****Article 600.6(A) (1) At Point of Entry to a Sign; move the original Exception 2 to create a new Exception No. 3 and add the following language:**

Exception No. 3: A disconnect shall not be required at the point of entry to a sign enclosure or sign body for branch circuit(s) or feeder conductor(s) that supply an internal panelboard(s) in a sign enclosure or sign body. The conductors shall be enclosed in a Chapter 3 listed raceway or metal-jacketed cable identified for the location. A field-applied permanent warning label that is visible during servicing shall be applied to the raceway at or near the point of entry into the sign enclosure or sign body. The warning label shall comply with 110.21(B) and state the following: "Danger. This raceway contains energized conductors." The marking shall include the location of the disconnecting means for the energized conductor(s). The disconnecting means shall be capable of being locked in the open position in accordance with 110.25.

(2020 Code) Informational Note: The location of the disconnect is intended to allow service or maintenance personnel complete and local control of the disconnecting means.

(Reason: This is a modification of the nationwide sign manufacturing practice that was standard before the 2014 Code revision. It is more reasonable but not less than the current Code requirements. It provides local control of the disconnect by service personnel as the informational note suggests, while requiring a sign disconnect to be at or within sight of the sign. This also allows sign designers more flexibility in the placement of the disconnecting means in relation to the location of the sign.)

*****Article 680.25(A) remove the amendment that added the following language and exception:**

680.25 Feeders.

These provisions shall apply to any feeder on the supply side of panelboards supplying branch circuits for pool equipment covered in Part II of this article and on the load side of the service equipment or the source of a separately derived system.

(A) Wiring Methods.

(1) Feeders. Feeders shall be installed in rigid metal conduit, or intermediate metal conduit. The following wiring methods shall be permitted if not subject to physical damage:

- (1) Liquidtight flexible nonmetallic conduit
- (2) Rigid polyvinyl chloride conduit
- (3) Reinforced thermosetting resin conduit
- (4) Electrical metallic tubing where installed on or in a building
- (5) Electrical nonmetallic tubing where installed within a building
- (6) Type MC Cable where installed within a building and if not subject to corrosive environment
- ~~(7) Nonmetallic-sheathed cable~~
- ~~(8) Type SE cable~~

~~Exception: A feeder within a one-family dwelling or two-family dwelling unit between remote panelboard and service equipment shall be permitted to run in flexible metal conduit or an approved cable assembly that includes an insulated equipment grounding conductor within its outer sheath. The equipment grounding conductor shall comply with 250.24(A) (5).~~

(Reason: Updates to this section in the 2020 National Electrical Code provided relief by recognizing these wiring methods.)

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