SOUTHERN NEVADA AMENDMENTS

TO THE

2011 NATIONAL ELECTRICAL CODE

PREFACE

This document was developed by the Southern Nevada Building Officials' Electrical Code Committee and presents recommended amendments to the 2011 *National Electrical Code* (NEC) as published by the National Fire Protection Association (NFPA).

Participation in the 2012 Electrical Code Committee was open to all interested parties. However, voting on amendment proposals was limited to one vote each for the seven Southern Nevada municipalities (Clark County, Henderson, Las Vegas, North Las Vegas, Boulder City, Pahrump, and Mesquite), the Clark County School District, and three industry representatives. All Electrical Code Committee proceedings were conducted in accordance with Robert's Rules of Order.

The recommended amendments contained herein are not code unless adopted and codified by governmental jurisdictions. These amendments are not intended to prevent the use of any material or method of construction not specifically prescribed herein, provided any alternates have been approved and their use authorized by the Building Official. This document may be copied and used in whole or in part without permission or approval from the organizations listed on the cover page.

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Article 100 Definitions

Add a new definition to article 100, as follows:

Conductors, Abandoned
Installed conductors or cables that are not terminated at both ends at a connector or other equipment and not identified for future use with a tag.

Section 110.12 Mechanical Execution of Work.

Add a new Subsections (C) and (D) to Section 110.12, as follows:

110.12 Mechanical Execution of Work.

(C) Abandoned Conductors and Cables. For those structures regulated by the Building or Swimming Pool Code, no electrical conductors or cables shall be abandoned in place. Such conductors or cables shall be removed from the building or structure unless otherwise approved by the Building Official or designated representative based upon consideration of safety and combustibility.

(D) Used Materials and Equipment. The use of used materials which meet the requirements of this code for new materials is permitted. Used equipment and devices shall not be reused unless approved by the building official. Equipment used in temporary installations, such as power poles, generators, etc. are allowed to be re-used provided they are properly maintained and approved.

Section 210.8(B) Other Than Dwelling Units.

Add a new Subsection (9) to Section 210.8 (B) Other Than Dwelling Unit, as follows:

(B) Other Than Dwelling Units.

(…)

(9) Food and/or beverage serving areas regulated by the Health District.

Section 210.23 Permissible Loads.

Add a new Subsection (E) to Section 210.23, as follows:

(E) Dwelling Branch Circuits

(1) Maximum Number (15-ampere). The maximum number of outlets on a 15-ampere, 125 volt (nominal) luminaire circuit shall be twelve (12) and shall not contain general purpose receptacle outlets.

Exception No. 1: Dedicated branch circuits feeding only IC rated recessed luminaires and/or low wattage energy efficient luminaires may use Article 220.14(D) for computing the maximum number of luminaire outlets.

Exception No. 2: In branch circuits serving smoke detectors the smoke detector outlets need not be counted with other luminaire outlets.

Exception No. 3: As an alternate, receptacles may be included at the discretion of the Building Official subject to approved circuited plans including maximum 5% voltage drop at 80% of overcurrent device rating.

(2) Maximum Number (20-ampere). The maximum number of outlets on a 20 ampere, 125-volt (nominal) circuit used exclusively for receptacles, for luminaire outlets or for any combination of receptacles and luminaire outlets shall be twelve (12).

Exception No. 1: Dedicated branch circuits feeding only IC rated recessed luminaires and/or low wattage energy efficient luminaires may use Article 220.14(D) for computing the maximum number of luminaire outlets.

Exception No. 2: In branch circuits serving smoke detectors the smoke detectors need not be counted with the other luminaire and/or receptacle outlets.

(3) Individual Branch Circuits. The following fastened-in-place appliances are required to have a separate minimum 20-ampere circuit: dishwasher, trash compactor and microwave oven. The required laundry circuit may serve one (1) additional outlet in the laundry area.

Section 210.52(A)(2) Wall Space.

Revise Section 210.52(A)(2), as follows:

(2) Wall Space. As used in this section, a wall space shall include the following:

(1) Any space 600mm (2 ft.) or more in width (including space measured around corners) and unbroken along the floor line by doorways and similar opening, fireplaces, and fixed cabinets

(2) The space occupied by fixed panels in exterior walls, excluding sliding panels. Where panels consist of multiple sliding panels only the first panel in each direction may be excluded.

(3) The space afforded by fixed room dividers, such as freestanding bar-type counters or railings

Exception:
As used in this section, wall space shall not include the following:

1. The space behind operable doors

2. Entries, hallways, and similar areas less than 5 ft wide in bedrooms

Section 210.52(F) Laundry Areas.

Add a new exception No. 3 to Section 210.52(F), as follows:

> Exception No. 3: In structures more than four (4) stories in height where the configuration of a laundry area is such that only an electrically heated stackable type washer/dryer unit utilizing 208 volt or 240 volt power can be accommodated, the receptacle may be considered as meeting the laundry circuit requirement.

Section 210.70(A)(1) Habitable Rooms.

Revise Item (1) in Section 210.70(A), as follows:

(1) Habitable Rooms. At least one wall switch-controlled lighting outlet shall be installed in every habitable room and bathroom. Unless prohibited by structural design, a wall switch shall be located within 1.8 m (6 ft) of the point of entry, and shall not be located behind an active door in the fully open position. Doors capable of being fixed in place are not to be considered active doors.

The remainder of this section remains unchanged

Section 210.70(A)(2) Additional Locations.

Revise item (a) in Section 210.70(A)(2):

(2) Additional Locations. Additional lighting outlets shall be installed in accordance with (A)(2)(a), (A)(2)(b) and (A)(2)(c).

> (a) At least one wall switch-controlled lighting outlet shall be installed in hallways, stairways, attached garages, and detached garages with electric power. Hallways of 3.0 m (10 ft) or more in length shall have wall switches at every end. There shall be a wall switch within 1.8 m (6 ft) of each bedroom door unless prohibited by structural design.
>
> *The remaining section is without change.*

Revise item (b) in Section 210.70(A)(2), as follows:

> **(2) Additional Locations.** Additional lighting outlets shall be installed in accordance with (A)(2)(a), (A)(2)(b) and (A)(2)(c).
>
> (b) For dwelling units, attached garages, and detached garages with electric power, at least one wall-switch controlled lighting outlet shall be installed to provide illumination on the exterior side of outdoor entrances or exits with grade level access. A vehicle door shall not be considered as an outdoor entrance or exit. At least one wall switch that controls an interior lighting outlet shall be located at each keyed exterior entry. This switch shall be located within 1.8 m (6 ft) of the latching jamb side, unless prohibited by

structural design, and not behind an active door in the fully open position. Doors capable of being fixed in place are not to be considered active doors.

Section 220.84(C) Calculated Loads.

Delete item (5) in Section 220.84(C), in its entirety and add Section (D)

(D) Heating and Air Conditioning Load. The largest of the following six selections (load in kVA) shall be included:

(1) 100 percent of the nameplate rating(s) of the air conditioning and cooling.

(2) 100 percent of the nameplate rating(s) of the heat pump when the heat pump is used without any supplemental electric heating.

(3) 100 percent of the nameplate ratings of electric thermal storage and other heating systems where the usual load is expected to be continuous at the full nameplate value. Systems qualifying under this selection shall not be calculated under any other selection in 220.84(D).

(4) 100 percent of the nameplate rating(s) of the heat pump compressor and 65 percent of the supplemental electric heating for central electric space heating systems. If the heat pump compressor is prevented from operating at the same time as the supplementary heat, it does not need to be added to the supplementary heat for the total central space heating load.

(5) 65 percent of the nameplate rating(s) of electric space heating if less than four separately controlled units.

(6) 40 percent of the nameplate rating(s) of electric space heating if four or more separately controlled units.

Section 225.32 Location.

Revise Section 225.32 in its entirety, as follows:

225.32 Location. The disconnecting means shall be installed as described in 230.70 of these amendments. For the purposes of this section, the requirements in 230.6 shall be utilized.

Exception No. 1: For installations under single management, where documented safe switching procedures are established and maintained for disconnection, and where the installation is monitored by qualified individuals, the disconnecting means shall be permitted to be located elsewhere on the premises.

Exception No. 2: For buildings or other structures qualifying under the provisions of Article 685, the disconnecting means shall be permitted to be located elsewhere on the premises.

Exception No. 3: For towers or poles used as lighting standards, the disconnecting means shall be permitted to be located elsewhere on the premises.

Exception No. 4: For accessory buildings to one and two-family dwellings the disconnecting means may be installed either inside or on the exterior of the accessory structure.

Section 230.11 Location of Customer Owned Service Lateral or Drop.

Add a new Section 230.11, as follows:

230.11 Location of Customer Owned Service Lateral or Drop. All conductors shall traverse only the property to be served except through recorded power easements.

Section 230.70 General.

Revise Section 230.70, in its entirety.

230.70 General. Means shall be provided to disconnect all ungrounded service entrance conductors to a building or structure.

(A) Location. The service disconnecting means shall be installed in accordance with 230.70(A)(1), (2), (3), (4) and (5).

(1**) Exterior of the Building.** The service disconnecting means shall be installed in a readily accessible exterior location and within 3.7 m (12 ft.) of the building or structure. Where the distance is greater than 3.7 m (12 ft.) from the building or structure the service disconnecting means shall be considered as a separate structure.

Exception No1: *A fire pump and its associated electrical equipment.*

(2**) Electrical Equipment Room.** The service disconnecting means may be installed within a dedicated electrical equipment room with a readily accessible direct access on the exterior of a building or structure. Such rooms shall be separated from all other rooms or spaces within the building by a minimum of one (1) hour fire resistive construction and shall have approved Fire Department access.

(3**) Bathrooms.** Service disconnecting means shall not be installed in bathrooms.

(4**) Remote Control.** Where a remote control device(s), required by another code such as in a fire command center, is used to actuate the service disconnecting means, the service disconnecting means shall be located in accordance with 230.70(A)(1) or (2). The remote control device shall be supervised by a local signaling service that causes an audible signal and illumination of an amber visual signal at the Fire Command Center and at each auxiliary location required for the Life Safety System.

(5**) Emergency Systems, Information Technology Equipment and Uninterruptible Power Supplies (UPS).** Emergency Systems driven by prime movers and UPS Systems shall have separate disconnecting means with separate identification. Information Technology Equipment rooms complying with Article 645.2 shall be permitted to have their disconnecting means installed per article 645.10 and 645.11 if identified at the same location as the "Service Disconnect."

(B) Marking. Each service disconnecting means shall be marked with a sign(s). When located in a dedicated electrical room the exterior door(s) providing access to the disconnecting means located in a dedicated electrical room shall be permanently marked with a sign(s). Each sign shall be a minimum 0.093sq.m (1 sq. foot), colored yellow with 25.4mm (1 inch) high, 6.35 mm (¼ inch) stroke raised or engraved letters and/or numbers indicating the address or unit it

serves and be identified as the "Electrical Service Disconnect(s)" and/or "Electrical Service Disconnect(s) Inside." Emergency Systems disconnects shall be permanently marked with sign(s), identified as "Emergency Electrical Disconnect(s)" and/or "Main Emergency Electrical Disconnect(s) Inside." When the service disconnecting means is located inside a dedicated electrical room and it is not the first service disconnect encountered or there are multiple service disconnects there shall be a directional 75mm (3inch) wide painted yellow stripe on the floor from the entry door(s) to each service disconnect. Other durable means of identification may be used with prior approval by The Authority Having Jurisdiction.

Exception: *One and two family dwelling units and their associated accessory structures.*

(C) Suitable for Use. Each service disconnecting means shall be suitable for the prevailing conditions. Service equipment installed in hazardous (classified) locations shall comply with the requirements of Articles 500 through 517.

Section 230.202 Service-Entrance Conductors.

Add a new Subsection (C) to Section 230.202.

(C) Conductors Considered Outside the Building. Service-entrance conductors shall be installed in accordance with Article 230.6.

Section 230.205(A) Location.

Revise Section 230.205(A), as follows:

(A) Location. The service disconnecting means shall be located in accordance with 230.70. For either overhead or underground primary distribution systems on private property, under single management with a Life Safety System, Fire Command Center and 24 hour on-site qualified maintenance personnel, the service disconnect shall be permitted to be located in a location that is not readily accessible, if the disconnecting means can be operated by mechanical linkage from a readily accessible point, or electronically in accordance with 230.205 (C), where applicable. The main electrical room is not required to be located on the exterior of the building or other structure.

Section 230.205(C) Remote Control.

Revise 230.205(C), as follows:

(C) Remote Control. For multi-building, industrial installations under single management, the service disconnecting means shall be permitted to be located at a separate building or structure. In such cases, the service disconnecting means shall be permitted to be electrically operated by a readily accessible device. The remote control device shall be supervised by a local signaling device that causes an audible signal and the illumination of an amber visual signal at the Fire Command Center and at each auxiliary location required for the Life Safety System.

Section 240.6 Standard Ampere Ratings.

Revise Section 240.6(B) and delete subsection (C), as follows:

(B) Adjustable-Trip Circuit Breakers. The rating of adjustable-trip circuit breakers having external means for adjusting the current setting (long-time pickup setting), shall be the maximum setting possible.

Section 240.86 Series Ratings.

Revise Section 240.86, as follows:

240.86 Series Ratings. Where a circuit breaker is used on a circuit having an available fault current higher than the marked interrupting rating by being connected on the load side of an acceptable overcurrent device having a higher rating, the circuit breaker shall meet the requirements specified in (A) or (B), and (C). All of the information including manufacturers and part numbers of each component making up the series combination rating shall be provided on the submittal drawings for plans examination and permit. Only those manufacturers and part numbers shall be permitted for the installation.

Section 250.32(A) Grounding Electrode.

Revise Section 250.32(A), as follows:

(A) Grounding Electrode. For the purposes of this section all buildings or structures not joined by a continuous concrete foundation or footing and roof shall be considered as separate buildings or structures. Building(s) or structure(s) supplied by feeder(s) or branch circuit(s) shall have a grounding electrode system installed in accordance with Part III of Article 250. The grounding electrode conductor(s) shall be connected in accordance with 250.32 (B) or (C). Where there is no existing grounding electrode, the grounding electrode(s) required in 250.50 shall be installed.

Section 250.50 Grounding Electrode System.

Revise Section 250.50, as follows:

250.50 Grounding Electrode System. All grounding electrodes as described in 250.52(A)(1) through (A)(7) that are present at each building or structure served shall be bonded together to form the grounding electrode system. Where none of these grounding electrodes exist, one or more of the grounding electrodes specified in 250.52(A)(4) through (A)(7) shall be installed and used. The concrete-encased electrode described in Article 250.52(A)(3) shall be required for new buildings and structures that are supplied with electrical power and have concrete foundations or footings.

> **Exception:** Concrete-encased electrodes of existing buildings or structures shall not be required to be part of the grounding electrode system where the steel reinforcing bars or rods are not accessible for use without disturbing the concrete.

Section 250.52(A)(5) Rod Electrodes.

Revise Item (5) of Section 250.52(A), in its entirety, as follows:

(5) Rod Electrodes. Rod electrodes shall not be less than 2.44 m (8 ft) in length and shall consist of stainless steel and copper or zinc coated steel and shall be at least 15.875mm (5/8 in.)in diameter, unless listed.

Section 250.52(A) Electrodes Permitted for Grounding.

Delete Item (7) of Section 250.52(A), in its entirety and renumber the subsequent items sequentially, as follows:

(7) Other Local Metal Underground Systems or Structures.

The remainder of this section remains unchanged

Section 250.53 Grounding Electrode System Installation.

Revise Section 250.53(A), as follows:

250.53 Grounding Electrode System Installation

Informational Note: See 547.9 and 547.10 for special grounding and bonding requirements for agricultural buildings.

(A) Rod Electrodes. Rod electrodes shall meet the requirements of 250.53(A)(1) through (A)(3).

(1) Below Permanent Moisture Level. If practicable, rod electrodes shall be embedded below permanent moisture level. Rod electrodes shall be free from nonconductive coatings such as paint or enamel.

(2) Supplemental Electrode Required. A single rod electrode shall be supplemented by an additional electrode of a type specified in 250.52(A)(2) through (A)(7). The supplemental electrode shall be permitted to be bonded to one of the following:

(1) Rod electrode
(2) Grounding electrode conductor
(3) Grounded service-entrance conductor
(4) Nonflexible grounded service raceway
(5) Any grounded service enclosure

Exception: *If a single rod grounding electrode has a resistance to earth of 25 ohms or less, the supplemental electrode shall not be required.*

(3) Supplemental Electrode. If multiple rod electrodes are installed to meet the requirements of this section, they shall not be less than 1.8 m (6 ft) apart.

Informational Note: The paralleling efficiency of rods is increased by spacing them twice the length of the longest rod.

Revise Section 250.53 (B), as follows:

(B) Electrode Spacing. Where more than one of the electrodes of the type specified in 250.52(A)(5) are used, each electrode of one grounding system (including that used for strike termination devices) shall not be less than 1.83 m (6 ft) from any other electrode of another grounding system. Two or more grounding electrodes that are bonded together shall be considered a single grounding electrode system.

Revise Sections 250.53(D)(2,) as follows:

(2) Supplemental Electrode Required. A metal underground water pipe shall be supplemented by an additional electrode of a type specified in 250.52(A)(2) through (A)(7). If the supplemental electrode is of the rod type, it shall comply with 250.53(A). The supplemental electrode shall be bonded to one of the following:

(1) Grounding electrode conductor
(2) Grounded service- entrance conductor
(3) Nonflexible grounded service raceway
(4) Any grounded service enclosure
(5) As provided by 250.32(B)

Exception: *The supplemental electrode shall be permitted to be bonded to the interior metal water piping at any convenient point as specified in 250.68(C)(1), Exception.*

Revise Sections 250.53(E), as follows:

(E) Supplemental Electrode Bonding Connection Size. Where the supplemental electrode is a rod electrode, that portion of the bonding jumper that is the sole connection to the supplemental grounding electrode shall not be required to be larger than 6 AWG copper wire or 4 AWG aluminum wire.

Revise Section 250.53(G), as follows:

(G) Rod Electrodes. The electrode shall be installed such that at least 2.44 m (8 ft) of length is in contact with the soil. It shall be driven to a depth of not less than 2.44 m (8 ft) except that, where rock bottom is encountered, the electrode shall be driven at an oblique angle not to exceed 45 degrees from the vertical or, where rock bottom is encountered at an angle up to 45 degrees, the electrode shall be permitted to be buried in a trench that is at least 750 mm (30 in.) deep. The upper end of the electrode shall be flush with or below ground level unless the aboveground end and the grounding electrode conductor attachment are protected against physical damage as specified in 250.10.

Delete (H) of Section 250.53, in its entirety.

Section 250.94 Bonding for Other Systems.

Add new Items (7) & (8) to Section 250.94, as follows:

(7) A set of listed terminals shall be permitted to be connected to the concrete-encased electrode as defined in Article 250.52(A)(3).

(8) A set of listed terminals shall be permitted to be connected to the concrete-encased electrode conductor as defined in Article 250.24(D), 250.30(A)(3), 250.30(A)(4), 250.30(B)(1) and 250.32(E).

Section 250.120(D) Equipment Grounding Conductor

Add a new Subsection (D) to Section 250.120, as follows:

(D) Equipment Grounding Conductor. All raceways installed on roofs shall contain an equipment grounding conductor sized per Table 250.122 installed with the circuit conductors.

> ***Exception No. 1:*** *Low voltage, communication and similar type systems unless required elsewhere in the Code.*
>
> ***Exception No. 2:*** *As permitted by Article 250.86 for short sections of metal enclosures or raceways.*

Section 310.15(B)(3)(c) Circular Raceways Exposed to Sunlight on Rooftops.

Revise code section 310.15(B)(3)(c), as follows:

(c) ***Circular Raceways Exposed to Sunlight on Rooftops*****.** Where conductors or cables are installed in circular raceways exposed to direct sunlight on or above rooftops, one of the following conditions shall be met:

(1) All conductors shall have an insulation rating of 90 degree C and the conduits shall be installed at least 3 ½" above the roof surface.

(2) The adjustments shown in Table 310.15(B)(3)(c) shall be added to the outdoor temperature to determine the applicable ambient temperature for application of the correction factors in Table 310.15(B)(2)(a) or Table 310.15(B)(2)(b).

Informational Note: One source for the average ambient temperatures in various locations is the ASHRAE Handbook—*Fundamentals*.

Section 314.24 Minimum Depth of Boxes for Outlets, Devices, and Utilization Equipment.

Revise Section 314.24, as follows:

314.24 Minimum Depth of Boxes for Outlets, Devices, and Utilization Equipment. Outlet and device boxes shall have sufficient depth to allow equipment installed within them to be mounted properly and without likelihood of damage to conductors within the box. All boxes for outlets, devices, utilization equipment or junction boxes less than 200 mm (8 inches) in any dimension, shall have no more than two extension boxes or one extension box and one plaster ring.

> ***Exception:*** *Listed unit(s) or assembly(s).*

Section 352.10(F) Exposed.

Revise Section 352.10(F), as follows:

(F) Exposed. PVC conduit shall be permitted for exposed work. PVC conduit used exposed in areas of physical damage shall be Schedule 80 and listed as sunlight resistant.

Informational Note: PVC Conduit, Type Schedule 80, is identified for areas of physical damage.

Section 358.12 EMT - Uses Not Permitted.

Add new items (7), (8) and (9) to Section 358.12, as follows:

(7) Embedded within concrete or masonry in contact with the earth
(8) Underground installations
(9) Within earth fills

Section 514.11(A) General.

Revise Section 514.11 (A) Circuit Disconnects-General, as follows:

(A) General. Each circuit leading to or through dispensing equipment, including all associated power, communications, data, and video circuits, and equipment for remote pumping systems, shall be provided with a clearly identified and readily accessible switch or other approved means, located remote from the dispensing devices, to disconnect simultaneously from the source of supply, all conductors of the circuits, including the grounded conductor, if any. Single-pole breakers utilizing handle ties shall not be permitted. The switch shall be a momentary contact type. The disconnect station sign shall be 0.093 sq. m (1 ft square), colored yellow and have black, 25.4 mm (1 inch) high, 6.35 mm (¼ inch) stroke permanent lettering describing it as "Emergency Pump Shutoff".

Section 600.4(C) Visibility.

Revise as follows:

(B) Visibility. The markings required in 600.4(A) and listing labels shall not be required to be visible after installation but shall be permanently applied in a location visible during servicing. At least one label must be visible at the time of inspection.

Section 600.41(D) Protection.

Revise Section 600.41(D), as follows:

(D) Protection. Field-installed skeleton tubing shall not be subject to physical damage. Where the tubing is readily accessible to other than qualified persons, field-installed skeleton tubing shall be provided with suitable guards or protected by other approved means. Installations less than 2.44 m (8 ft.) above finished grade or floor level shall be considered as readily accessible.

Section 680.42(B) Bonding.

Add Exception No. 2 to Section 680.42(B), as follows:

680.42(B) Bonding.
Bonding by metal-to-metal mounting on a common frame or base shall be permitted.

> **Exception No. 1:** The metal bands or hoops used to secure wooden staves shall not be required to be bonded as required in 680.26.
>
> **Exception No. 2:** A listed self-contained spa or hot tub that meets all of the following conditions shall not be required to have equipotential bonding of perimeter surfaces installed as required in 680.26(B)(2):
>
> (1) Is installed in accordance with manufacturer's instructions on or above grade.
> (2) The vertical measurement from all permanent surfaces within 30 horizontal inches (76 cm) of the spa to the top rim of the spa is greater than 28 inches (71 cm).

Article 682 Natural and Artificially Made Bodies of Water.

Delete Article 682 in its entirety

Section 700.1 Scope.

Revise Section 700.1, as follows:

700.1 Scope. For the purposes of this section, items considered as meeting the requirements for high rise applications (i.e. buildings with an occupied floor located more than 17 m (55 ft) above the lowest level of fire department vehicle access) to be placed on the emergency distribution system may include: Emergency illumination, exit signage, electric fire pumps, fire jockey or makeup pumps, fire alarm equipment, smoke control equipment, one elevator per bank of elevators, cooling and heating equipment for emergency electrical rooms and elevator machine rooms, FAA required obstruction lighting, battery chargers for emergency generating equipment, heating equipment for freeze protection of fire sprinkler systems, telecommunications equipment (i.e. for 911 applications) fire command center loads such as monitoring and display equipment and other equipment approved by the Authority Having Jurisdiction that will enhance the survivability of life safety systems.

The provisions of this article apply to the electrical safety of the installation, operation, and maintenance of emergency systems consisting of circuits and equipment intended to supply, distribute, and control electricity for illumination, power, or both, to required facilities when the normal electrical supply or system is interrupted.

Section 700.10(D) Fire Protection.

Revise Section 700.10(D), as follows:

(D) Fire Protection. Emergency systems shall meet the additional requirements in (D)(1) through (D)(3) in any occupancy(s) of 300 or more persons or in buildings with an occupied floor located more than 17 m (55 ft) above the lowest level of fire department vehicle access.

Section 700.10(D)(2) Feeder-Circuit Equipment.

Revise Section 700.10(D)(2) and add a new exception, as follows:

(2) Feeder-Circuit Equipment. Equipment for feeder circuits (including transfer switches, transformers, and panelboards) shall be located either in spaces fully protected by approved automatic fire suppression systems (including sprinklers, carbon dioxide systems) or in spaces with a 2-hour fire resistance rating. This equipment shall meet one of the following requirements:

1. Be rated NEMA 3R
2. Be located in room(s) dedicated to this equipment
3. Be separated from normal power equipment by double the working clearance required by Table 110.26(A) or Table 110.34(A) in any direction

Exception: *System components described in Article 701 may occupy the same space as emergency systems.*

Section 700.12 General Requirements.

Revise Section 700.12, as follows:

700.12 General Requirements. Current supply shall be such that, in the event of failure of the normal supply to, or within the building or group of buildings concerned, emergency lighting, emergency power, or both shall be available within the time required for the application but not to exceed 10 seconds. The supply system for emergency purposes, in addition to the normal services to the building and meeting the general requirements of this section, shall be one or more of the types of systems described in 700.12(A) through (E). Unit equipment in accordance with 700.12(F) shall satisfy the applicable requirements of this article.

In selecting an emergency source of power, consideration shall be given to the occupancy and the type of service to be rendered, whether of minimum duration, as for evacuation of a theater, or longer duration, as for supplying emergency power and lighting due to an indefinite period of current failure from trouble either inside or outside the building.

Equipment shall be designed and located so as to minimize the hazards that might cause complete failure due to flooding, fires, icing, and vandalism.

Equipment for sources of power as described in 700.12(A) through 700.12(E) shall meet the following additional requirements in any occupancy(s) of 300 or more persons or in buildings with an occupied floor located more than 17m (55 ft) above the lowest level of fire department vehicle access. This equipment shall be installed in spaces fully protected by approved automatic fire suppression systems (sprinklers, carbon dioxide systems, and so forth) or in spaces protected by a fire-rated assembly listed to achieve a minimum fire rating of one-hour.

Informational Note No. 1: For the definition of *Occupancy Classification*, see Section 6.1 of NFPA *101*-2009, *Life Safety Code*.

Informational Note No. 2: Assignment of degree of reliability of the recognized emergency supply system depends on the careful evaluation of the variables at each particular

installation. For further information, see ANSI/IEEE 493-2007, *Recommended Practice for the Design of Reliable Industrial and Commercial Power Systems.*

Section 700.12(B)(7) Location.

Add a new Subsection 7 to Section 700.12(B), as follows:

(7) Location. The emergency generator shall not be located more than 17 m (55 ft) above the lowest level of fire department vehicle access. When the generator set is located inside a building it shall be located in a room dedicated to the Emergency Power Supply System. This room shall be separate from the interior of the building by a minimum of two-hour resistive construction or shall be in room(s) fully protected by approved automatic fire suppression systems. Unless otherwise required by Building Codes openings for generator cooling and exhaust shall not be required to be fire-resistive construction.

When a generator set is located within 1.5 m (5 ft) of a building it shall be separated from the building with a rated separation wall equal to the highest fire rating within the building that has no openings. It shall be installed within an approved enclosure and protected from physical damage.

When a generator set is located more than 1.5 m (5 ft) from a building it shall be installed within an approved enclosure and protected from physical damage.

Section 800.24 Mechanical Execution of Work.

Add section (A) to Section 800.24

800.24 Mechanical Execution of Work. Communications circuits and equipment shall be installed in a neat and workman like manner. Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be secured by hardware, including straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also conform to 300.4(D) and 300.11.

(A) Low voltage cabling installed in a concealed space of a Type I or Type II building shall be non-combustible (plenum rated), or installed in a metal raceway. Cables installed without raceways shall be installed per the manufacturer's installation instructions.