SOUTHERN NEVADA AMENDMENTS

TO THE

2023 NATIONAL ELECTRICAL CODE

Version Dated: March 27, 2025

Preface

This document was developed by the Southern Nevada Building Officials' (SNBO) National Electrical Code (NEC) Committee and presents amendments to the 2023 NEC as published by the National Fire Protection Association (NFPA).

Participation in the 2023 National Electrical Code Committee was open to all interested parties. However, voting on amendments proposals was limited to one vote each for 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 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

Add a new definition to Article 100, as follows:

Conductor, Abandoned. Installed conductor that is not terminated at both ends at a connector or other equipment and not identified for future use with a tag.

Section 110.12

Add new Subsection (D) to Section 110.12, as follows:

110.12 Mechanical Execution of Work.

> **(D) 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.

Section 110.12

Add new Subsections (E) to Section 110.12, as follows:

110.12 Mechanical Execution of Work.

> **(E) Used Materials and Equipment**. The use of used materials that meet the requirements of this code for new materials is permitted. Used equipment and devices shall not be reused unless in conformance with 110.21(A)(2) or 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 110.12

Add a new Subsection (F) to Section 110.12, as follows:

110.12(F) Testing. All equipment requiring the setting of adjustable values shall be set in accordance with the drawings and specifications or approved shop submittals. All values shall be selected by a licensed professional engineer, or other qualified persons engaged primarily in the design, installation, or maintenance of electrical systems approved by the AHJ. These settings shall be documented, verified, and made available to those authorized to design, install, inspect, maintain, and operate the system.

Required settings documentation shall be displayed at the equipment's location, such as ground fault protection settings (GFPE), arc energy reduction, adjustable trip for circuit breakers, relay,

selective coordination settings, and series-rated equipment. Documentation of settings shall be retained for future use with all assumptions and equipment identified.

Section 110.30

Add new sub-sections (1) through (3) to Section 110.30, as follows:

110.30 General. Conductors and equipment used on circuits over 1000 volts, nominal, shall comply with Part I of this article and with 110.30 through 110.41, which supplement or modify Part I. In no case shall this part apply to equipment on the supply side of the service point.

(1) All permit submittals involving equipment and/or systems 1000 volts or above shall be reviewed and approved by a third-party agency or peer-reviewed by those with experience with these systems prior to submission for approval by the Authority Having Jurisdiction.
(2) All equipment and systems associated with 1000 volts or above shall be inspected by a third party at the expense of the property owner to verify the equipment and system(s) are installed in accordance with the design and equipment listings. The third party shall be approved by the AHJ.
(3) Testing of said equipment shall be completed by an approved testing organization approved by the AHJ. Testing shall be performed as per 235.356. Reports shall be submitted for review and acceptance by the AHJ prior to a permit final being issued.

Section 210.8(B)(16)

Add a new Subsection (16) to Section 210.8(B) Other Than Dwelling Unit, as follows:

210.8 Ground-Fault Circuit Interrupter Protection for Personnel.

(B) Other Than Dwelling Units.

(List items (1) through (15) remain unchanged)

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

Section 210.23(F)

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

210.23 Permissible Loads, Multiple-Outlet Branch Circuits. In no case shall the load exceed the branch-circuit ampere rating. A branch circuit supplying two or more outlets or receptacles shall supply only the loads specified according to its size as specified in 210.23(A) through (F) and summarized in 210.24.

(A) Through (E) -- (remains unchanged)

(F) Dwelling Branch Circuits. Dwelling branch circuits shall be installed as described in 210.23(F)(1) through (3).

(1) Maximum Number (10 or 15-ampere). The maximum number of outlets on a 10 or 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 a maximum 5% voltage drop at 80% of the 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(C)(2)

Revise section 210.52(C)(2), as follows:

210.52(C) Countertops and Work Surfaces.

(2) Island and Peninsular Countertops and Work Surfaces.

Receptacle outlets, if installed to serve an island or peninsular countertop or work surface, shall be installed in accordance with 210.52(C)(3). If a receptacle outlet is not provided to serve an island or peninsular countertop or work surface, provisions shall be provided at the island or peninsula for future addition of a receptacle outlet to serve the island or peninsular countertop or work surface. Minimum provisions shall include installing a junction box containing circuit

conductors from one of the small-appliance branch circuits. The junction box shall be accessible and located within the island or peninsular cabinet space.

Section 210.52(F)

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 of washer/dryer combo unit utilizing 208-volt or 240-volt power can be accommodated, the single receptacle for the washer/dryer combo unit may be considered as meeting the laundry circuit requirement.

Section 210.70(A)(1)

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

(1) Habitable Rooms, Kitchen, Laundry Areas, and Bathrooms: At least one lighting outlet controlled by a listed wall-mounted general-use switch shall be installed in every habitable room, kitchen, laundry area, 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)(1)

Revise item (1) in Section 210.70(A)(2), as follows:

210.70 Lighting Outlets Required.

(A) Dwelling Units.

(2) Additional Locations. Additional lighting outlets shall be installed in accordance with the following.

(1) At least one lighting outlet controlled by a listed wall-mounted general-use switch shall be installed in hallways, stairways, attached garages, detached garages, and accessory buildings with electric power. Hallways of 3.0 m (10 ft) or more in length shall have a wall-mounted general-use switch within 1.8 m (6 ft) of each opening or door unless prohibited by structural design.

Section 210.70(A)(2)(2)

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

210.70 Lighting Outlets Required.

(A) Dwelling Units.

(2) Additional Locations. Additional lighting outlets shall be installed in accordance with the following:

(2) For dwelling units, attached garages, detached garages, and accessory buildings with electric power, at least one exterior lighting outlet controlled by a listed wall-mounted general-use switch shall be installed to provide illumination on the exterior side of outdoor entrances or exits with grade level access. A vehicle door in a garage shall not be considered as an outdoor entrance or exit. At least one wall-mounted general-use 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.

Section 220.84

Delete item (5) in Section 220.84(C), and add a new sub-section (D), as follows:

220.84 Multifamily Dwelling.

(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 220.87

Revise Section 220.87, as follows:

220.87 Determining Existing Loads.

In other than *one- and two-family dwellings*, the calculation of a feeder or service load for existing installations shall be permitted to use actual maximum demand to determine the existing load under all of the following conditions:

(1) The maximum demand data is available for a 1-year period.

Exception: If the maximum demand data for a 1-year period is not available, the calculated load shall be permitted to be based on the maximum demand (the highest average kilowatts reached and maintained for a 15-minute interval) continuously recorded over a minimum 30-day period using a recording ammeter or power meter connected to the highest loaded phase of the feeder or service, based on the initial loading at the start of the recording. The recording shall reflect the maximum demand of the feeder or service by being taken when the building or space is occupied and shall include by measurement or calculation the larger of the heating or cooling equipment load, and other loads that might be periodic in nature due to seasonal or similar conditions. This exception shall not be permitted if the feeder or service has a renewable energy system (i.e., solar photovoltaic or wind electric) or employs any form of peak load shaving.

(2) The maximum demand at 125 percent plus the new load does not exceed the ampacity of the feeder or rating of the service.

(3) The feeder has overcurrent protection in accordance with 240.4, and the service has overload protection in accordance with 230.90.

Section 225.31(B)

Revise Section 225.31(B) and Exception No. 4, as follows:

225.31(B) Location. The disconnecting means shall be installed as described in 230.70, as amended. For the purposes of this section, the requirements in 230.6 shall apply.

(Exceptions No. 1-3 remain unchanged)

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

Section 230.11

Add a new Section 230.11, as follows:

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

Section 230.70

Revise Section 230.70 in its entirety, as follows:

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

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

(1) Exterior of the Building. The service disconnecting means shall be installed in a readily accessible exterior location 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 a separate structure.

Exception: This requirement shall not apply to 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 of fire-resistive construction and shall have approved Fire Department access.

Informational Note: In some jurisdictions, a recessed 3200 series Knox Box may be the approved Fire Department access point.

(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.

Informational Note No. 1. The disconnect for alternative energy systems is addressed in Chapters 6 and 7.

(B) Marking.

1. Each service disconnecting means shall be marked with a sign(s).

2. 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 of 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 System disconnects shall be permanently marked with a 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 (3 in.) wide painted yellow stripe on the floor from the entry door(s) to each service disconnect.

3. Other durable means of identification may be used with prior approval by the AHJ.

(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 hazardous location requirements.

Section 235.405(A)

Revise Section 235.405(A), as follows:

235.405 Disconnecting Means.

(A) Location. The service disconnecting means shall be located in accordance with 230.70, as amended.

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 235.405(C), where applicable. The main electrical room is not required to be located on the exterior of the building or other structure.

Section 235.405(C)

Revise Section 235.405(C), as follows:

235.405 Disconnecting Means.

(C) Remote Control. For multibuilding, 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, remote-control 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 240.86

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 approved overcurrent protective device having a higher rating, the circuit breaker shall meet the requirements specified in 240.86(A) or (B), and (C). All the information, including manufacturers and part numbers of each component making up the series combination rating, shall be provided on the submittal drawings for plan examination and permitting. Only those manufacturers and part numbers shall be permitted for the installation.

Section 250.32(A)

Revise Section 250.32(A), as follows:

250.32(A) Grounding Electrode System and Grounding Electrode Conductor. 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. A building(s) or structure(s) supplied by a feeder(s) or branch circuit(s) shall have a grounding electrode system and grounding electrode conductor installed in accordance with Part III of Article 250. Where there is no existing grounding electrode, the grounding electrode(s) required in 250.50 shall be installed.

(The exception remains and is unchanged)

Section 250.50

Revise Section 250.50, as follows:

250.50 Grounding Electrode System. All grounding electrodes, as described in 250.52(A)(1) through (A)(6), that are present at each building or structure served shall be bonded together to form the grounding electrode system. If 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 250.52(A)(3) shall be required for new buildings and structures that are supplied with electrical power and have concrete foundations or footings.

(The exception remains and is unchanged)

Section 250.52(A)(5)

Revise Section 250.52(A)(5), as follows:

250.52 Grounding Electrode System.

(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 15.87 mm (5⁄8 in.) in diameter, unless listed.

Section 250.52(A)(7)

Delete Item (7) Plate Electrode of Section 250.52(A) and renumber Item (8) as Item (7), as follows:

Renumbering will continue with the following:

(7) Other Local Metal Underground Systems or Structures.

Section 250.52(B)

Revise section 250.52(B), as follows:

250.52(B) Not Permitted for Use as Grounding Electrodes.

(Language and list items (1) through (3) remain the same)

(List item (4) is added)

(4) Pipe and plate electrodes

Section 250.53

Revise Section 250.53(A) in its entirety, as noted below:

250.53 Grounding Electrode System Installation.

(A) Rod Electrodes. Rod electrodes shall be free from nonconductive coatings such as paint or enamel. Rod electrodes shall meet the requirements of 250.53(A)(1) through (A)(4).

(1) Below Permanent Moisture Level. If practicable, rod electrodes shall be embedded below permanent moisture level.

(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.

(4) 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.

Section 250.53(B)

Revise Section 250.53(B), as follows:

Grounding Electrode System Installation.

(B) Electrode Spacing. If 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.

Section 250.53(D)(2)

Revise Item (2) in Section 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 as specified in 250.68 (C)(1)

Section 250.53(E)

Revise Section 250.53(E), as follows:

250.53 Grounding Electrode System Installation.

(E) Supplemental Grounding Electrode Bonding Jumper Size. If 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 or copper-clad aluminum wire.

Section 250.120(D)

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

250.120 Equipment Grounding Conductor Installation.

(D) Exterior Raceways. All exterior raceways that use compression-type fittings shall contain a wire-type equipment grounding conductor sized per Table 250.122 installed with the circuit conductors.

Exception No. 1: Low voltage, communication and similar type systems shall be permitted to omit the equipment grounding conductor unless required elsewhere in the code.

Exception No. 2: The equipment grounding conductor shall be permitted to be omitted as described in 250.86 Exception No. 2 for short sections of metal enclosures or raceways.

Section 314.5

Revise section 314.5 for screws, as follows:

314.5 Screws or Other Fasteners.
Screws or other fasteners installed in the field that enter wiring spaces shall be as provided by or specified by the manufacturer or shall comply with the following as applicable:

(1) Screws shall be machine type with blunt ends.
(2) Other fasteners shall have blunt ends.
(3) Screws or other fasteners penetrating the wall of a conduit body shall be made flush with the conduit body interior.

Section 314.24

Revise Section 314.24, as follows:

314.24 Dimensions of Boxes. Outlet and device boxes shall have approved dimensions 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) shall be permitted to have more than two extension boxes or one extension box and one plaster ring.

(The remainder remains unchanged)

Section 314.27(C)(2)

Revise section 314.27(C)(2), as follows:

(C) Boxes at Ceiling-Suspended (Paddle) Fan Outlets.

(1) Listed and installed so as to allow direct access through the box to structural framing capable of supporting a ceiling-suspended (paddle) fan without removing the box

Section 352.10(G)

Revise Section 352.10(G), as follows:

352.10(G) Exposed. Where exposed, Schedule 80 PVC conduit shall be required.

Section 358.10 & 358.12

Delete 358.10(B) and (C)

(The remainder of 358.10 is unchanged)

Add the following:

358.12 Uses Not Permitted. EMT shall not be used under the following conditions:

(1) Where subject to severe physical damage.
(2) For the support of luminaires or other equipment except conduit bodies no larger than the largest trade size of the tubing.
(3) Embedded within concrete or masonry in contact with the earth.
(4) Underground installations.
(5) Within earth fills.

Section 422.30

Revise 422.30 to address signage for disconnects, as follows:

422.30 General.

A means shall be provided to simultaneously disconnect each appliance from all ungrounded conductors in accordance with the following sections of Part III. If an appliance is supplied by more than one branch circuit or feeder, these disconnecting means shall be grouped and identified as being the multiple disconnecting means for the appliance. Each disconnecting means shall simultaneously disconnect all ungrounded conductors that it controls. Where multiple disconnecting means are provided, a permanent warning sign shall be provided on or adjacent to each disconnecting means indicating that multiple sources must be shut off to remove all power to the equipment. The sign at each disconnect shall identify the other specific circuits.

Section 514.11(D)

Add a new Section (D) to 514.11, as follows:

(D) Emergency Shutoff or Disconnect(s) Marking.

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 (1/4 inch) stroke permanent lettering describing it as “Emergency Pump Shutoff”.

Section 517.31(G)

Revise Section 517.31(G) add a new Exception No. 3, as follows:

517.31(G)

Exception No. 3: The requirements defined in this section are not required when the essential system was installed prior to the adopted code of record for NEC 2005. For new essential systems

that are supplied from existing essential systems installed prior to the adopted code of record for NEC 2005, the new portion of the design shall be required to comply with this section. The ground fault sensing function of overcurrent protective devices will only be required to selectively coordinate with the ground fault sensing function of other overcurrent protective devices.

Section 600.41(D)

Revise Section 600.41(D), as follows:

600.41(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 620.62

Add new exception to Section 620.62, as follows:

620.62

(Section 620.62 is unchanged; exception 2 is added)

Exception No. 1: Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.

Exception No. 2: The requirements for selective coordination are not required where the elevator power system was installed prior to the adopted code of record for NEC 1996. For new elevator power systems that are supplied from an existing elevator power system installed prior to the adopted code of record for NEC 1996, the new portion of the elevator power system must comply with the requirements of this section. The ground fault sensing function of overcurrent protective devices will only be required to selectively coordinate with the ground fault sensing function of other overcurrent protective devices.

Section 695.6(A)(2)(4)

Revise 695.6(A)(2)(4) for concrete encasement, as follows:

(2) Feeders.

Fire pump supply conductors on the load side of the final disconnecting means and overcurrent device(s) permitted by 695.4(B) or conductors that connect directly to an on-site standby generator shall comply with all of the following:

(List items (1) through (3) remain unchanged)

(4) *Inside of a Building.* Where routed through a building, the conductors shall be protected from fire for 2 hours using one of the following methods:
a. The cable or raceway is encased in concrete with a minimum thickness of 127 mm (5 in.) measured from each point on the surface of the cable or raceway.

Exception No. 1: Cables and raceways installed underground shall not be considered to be inside the building.

Exception No. 2: Alternative thicknesses of concrete shall be permitted to be selected by a licensed professional engineer qualified in such design. The selection shall be documented and stamped by the professional engineer.

Informational Note: See Fire Protection Research Foundation Report FPRF-2018-16, "Fire Resistance of Concrete for Electrical Conductors," for information about concrete fire resistance.

(Remainder of this section is unchanged)

Section 700.1

Revise Section 700.1, as follows:

700.1 Scope. This article applies 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.

For the purposes of this section, items considered as meeting the requirements for high-rise applications (high rise as defined in the AHJ's building code) 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 and other emergency communications), fire command center loads such as monitoring and display equipment and other equipment approved by the AHJ that will enhance the survivability of life safety systems.

(The remainder is unchanged)

Section 700.10(D)(1)

Revise Section 700.10(D)(1), as follows:

700.10(D)(1) Occupancies. Emergency systems shall meet the additional requirements in 700.10 (D)(2) through (D)(4) in the following occupancies:

(1) Assembly occupancies for not less than 300 persons

(2) Buildings defined as high-rise per the AHJ's building code

(3) Educational occupancies with more than 300 occupants

(4) Health care occupancies where persons are not capable of self-preservation

Section 700.10(D)(2)(5)

Revise 700.10(D)(2)(5) for concrete encasement, as follows:

(2) Feeder-Circuit Wiring.

Feeder-circuit wiring shall meet one of the following conditions:

(List items (1) through (4) remain unchanged)

(5) The cable or raceway is encased in concrete with a minimum thickness of 127 mm (5 in.) measured from each point on the surface of the cable or raceway.

Exception No. 1: Cables and raceways installed underground shall not be considered to be inside the building.

Exception No. 2: Alternative thicknesses of concrete shall be permitted to be selected by a licensed professional engineer qualified in such design. The selection shall be documented and stamped by the professional engineer.

Informational Note No. 3: See Fire Protection Research Foundation Report FPRF-2018-16, "Fire Resistance of Concrete for Electrical Conductors," for information about concrete fire resistance.

Section 700.12(B)

Revise Section 700.12(B)

700.12(B) Equipment Design and Location. 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(C) through (G) shall be installed either in spaces fully protected by approved automatic fire suppression systems (such as sprinklers and carbon dioxide systems) or in spaces with a 2-hour fire rating where located within the following:

(1) Assembly occupancies for more than 300 persons
(2) Buildings defined as high-rise per the AHJ's building code with any of the following occupancy classes – assembly, educational, residential, detention and correctional, business, and mercantile
(3) Educational occupancies with more than 300 occupants.
(4) Health care occupancies where persons are not capable of self-preservation.

(The remainder is unchanged)

Section 700.12(D)(5)

Add a new Subsection 5 to Section 700.12(D), as follows:

700.12(D)(5) Location. Where 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 that has no openings and is equal to the highest fire rating within the building. It shall be installed within an approved enclosure and protected from physical damage. Where 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 700.32(C)

Add new Exception No. 2 to Section 700.32(C), as follows:

700.32(C) Modifications

Exception No. 1: Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.

Exception No. 2: The requirements for selective coordination are not required where the emergency system was installed prior to the adopted code of record for NEC 2005. For new emergency systems that are supplied from an existing emergency system installed prior to the adopted code of record for NEC 2005, the new portion of the emergency system must comply with the requirements of this section. The ground fault sensing function of overcurrent protective devices will only be required to selectively coordinate with the ground fault sensing function of other overcurrent protective devices.

Section 701.32(C)

Add new Exception No. 2 to Section 701.32(C), as follows:

701.32(C) Modifications

Exception No. 1: Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.

Exception No. 2: The requirements for selective coordination are not required where the legally required standby system was installed prior to the adopted code of record for NEC 2005. For new legally required standby systems that are supplied from an existing legally required standby system installed prior to the adopted code of record for NEC 2005, the new portion of the legally required standby system must comply with the requirements of this section. The ground fault sensing function of overcurrent protective devices will only be required to selectively coordinate with the ground fault sensing function of other overcurrent protective devices.

Section 705.12(A)(4)

Revise 705.12(A) to add a new subsection (4), as follows:

(4) Taps or interconnections made with power distribution block connectors, split bolt connectors, piercing tap connectors, high-pressure crimp connectors, pre-insulated multitap cable connectors, or similar connectors shall be made in a dedicated, approved junction box, pull box, or wireway of not less than 1650 cm^3 (100 $in.^3$) that complies with (a) through (f):

(a) Installation.
Connectors shall be listed.

(b) Installation Instructions.
In addition to the overall size requirement in the first sentence of 705.12(A)(4), the connectors shall be installed in a junction box, pull box, or wireway that has dimensions not smaller than any dimensions specified in the installation instructions.

(c) Wire Bending Space.
Wire bending space at the terminals of connections shall comply with 312.6.

(d) Live Parts (Energized)
There shall be no energized, uninsulated parts left exposed within the junction box, pull box, or wireway, whether or not the cover is installed.

(e) Marking.
The junction box, pull box, or wireway shall be marked, WARNING PHOTOVOLTAIC POWER SOURCE INTERCONNECTION by means of a permanently affixed label or other approved permanent marking.

(f) Grounding.
Where the enclosure is metal, it shall be grounded in accordance with 250.148(C).

Section 708.54(C)

Add new Exception No. 2 to Section 708.54(C), as follows:

708.54(C) Modifications

Exception No. 1: Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.

Exception No. 2: The requirements for selective coordination are not required where the COPS system was installed prior to the adopted code of record for NEC 2005. For new COPS systems that are supplied from an existing COPS system installed prior to the adopted code of record for NEC 2005, the new portion of the COPS system must comply with the requirements of this section. The ground fault sensing function of overcurrent protective devices will only be required to selectively coordinate with the ground fault sensing function of other overcurrent protective devices.

Section 800.24(C)

Add Subsection (C) to Section 800.24, as follows:

800.24 Mechanical Execution of Work.

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

Section 800.179(E)

Add list item (4) to 800.179(E), as follows:

800.179(E) Circuit Integrity (CI) Cable, Fire-Resistive Cable System, or Electrical Circuit Protective System.

Cables that are used for survivability of critical circuits under fire conditions shall be listed and meet either 800.179(E)(1), (E)(2), (E)(3) or (E)(4).

(List items (1) through (3) remain unchanged)

(4) Concrete Encasement
The cable or raceway is encased in concrete with a minimum thickness of 127 mm (5 in.) measured from each point on the surface of the cable or raceway.

Exception No. 1: Cables and raceways installed underground shall not be considered to be inside the building.

Exception No. 2: Alternative thicknesses of concrete shall be permitted to be selected by a licensed professional engineer qualified in such design. The selection shall be documented and stamped by the professional engineer.

Informational Note No. 3: See Fire Protection Research Foundation Report FPRF-2018-16, "Fire Resistance of Concrete for Electrical Conductors," for information about concrete fire resistance.