

Southern Nevada Amendments

To The

2002

National Electrical Code

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Preface

This document comprises the Southern Nevada Amendments to the 2002 National Electrical Code as published by the National Fire Protection Association. It was developed by the jurisdictions listed on the cover page as a document to be adopted by reference. These provisions 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 alternate has been approved and its use authorized by the Building Official (Authority Having Jurisdiction). This document is available to be adopted as code by any jurisdiction without permission or approval from the jurisdictions listed.

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Article 80

80 Administration and Enforcement.

Delete article 80 in its entirety

Chapter 1 General

110.12 Mechanical Execution of Work.

Add a new Subsection (D) to Article 110.12 to read as follows:

(D) Abandoned Conductors and Cables. No electrical conductors or cables shall be abandoned in place. Such conductors or cables shall be removed from the building or structure back to the panel board unless otherwise approved by the Building Official or designated representative based upon consideration of safety and combustibility.

Add a new Subsection (E) to Article 110.12 to read as follows:

(E) Old, Used or Damaged Material and Equipment. Old, used or damaged materials or equipment shall not be installed or used in any work without the prior approval of the Building Official or designated representative.

Chapter 2 Wiring and Protection

210.8 Ground-Fault Circuit-Interrupter Protection for Personnel.

Add a new Subsection (4) and Exception to Article 210.8(B) to read as follows:

(4) Outdoors.

Exception to (4): Receptacles dedicated for appliances.

Add a new Subsection (C) to Article 210.8 to read as follows:

(C) All Occupancies.

(1) All 125-volt, single-phase, 15-and 20-ampere receptacles installed within 1.8 m (6 ft) of sinks or basins shall have ground-fault circuit-interrupter protection for personnel.

Exception: Receptacles dedicated for appliances.

- (2) All luminaires (lighting fixtures) permitted to be installed within the zone defined in Article 410.4(D) shall be ground-fault circuit-interrupter protected.

210.12 Arc-Fault Circuit-Interrupter Protection.

Add the following sentence to the end of Article 210.12(B)

Smoke detectors shall not be included in arc-fault circuit-interrupter protection of dwelling unit bedroom branch circuits.

210.23 Permissible Loads.

Add a new Subsection (E) to Article 210.23 to read as follows:

(E) Dwelling Branch Circuits.

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

Exception No 1: Dedicated branch circuits feeding only IC rated recessed fixtures may use Article 220.3(B)(4) for maximum number of lighting outlets.

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

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

Exception No 1: Dedicated branch circuits feeding only IC rated recessed fixtures may use Article 220.3(B)(4) for maximum number of lighting outlets.

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

- (3) No more than four (4) duplex receptacle outlets serving the required counter top receptacles shall be installed on any small appliance branch circuit.

Exception: Receptacles installed to provide power for electric ignition systems or clock timers for gas-fired ranges, ovens or counter-mounted cooking units.

- (4) The following fastened-in-place appliances are required to have a separate minimum 20-ampere circuit: dishwasher, trash compactor, microwave oven, range hood, clothes washer and hydromassage bathtub. The clothes washer circuit may serve one (1) additional outlet in the laundry area.

210.52 Dwelling Unit Receptacle Outlets.

Add the following to the end of Subsection (C)(2) of Article 210.52:

This outlet shall serve the first 1.22 m (4 ft), of counter space, measured horizontally, in the long dimension. An additional outlet shall be required to serve each additional 1.22 m (4 ft) or fraction thereof, of counter space in the long dimension.

Add the following to the end of Subsection (C)(3) of Article 210.52:

This outlet shall serve the first 1.22 m (4 ft), of counter space, measured horizontally, in the long dimension. An additional outlet shall be required to serve each additional 1.22 m (4 ft) or fraction thereof, of counter space in the long dimension.

Add a new Subsection (I) to Article 210.52 to read as follows:

- (I) **Stairwell Landings.** Stairwell landings, which are 3.66 m (12 ft) or more from a receptacle outlet, shall have at least one receptacle.

210.62 Show Windows.

Add the following to the end of 210.62 to read as follows:

The receptacle outlet shall be located within 450mm (18 inches) of the top of the show window. Show windows that exceed 3.0 m (10 feet) in height shall require a receptacle at the first available structural member above the height of 3.0 m (10 feet) measured from the floor.

210.70 Lighting Outlets Required.

Add the following sentence at the end of Article 210.70(A)(1):

Unless prohibited by structural design, this wall switch shall be located at the point of entry, and shall not be located behind an active door in the fully open position.

Add a new Subsection (A)(4) to Article 210.70 to read as follows:

(4) Closet. All walk-in closets or storage areas of 1.86 sq. m (20 square feet) or more in floor area shall contain a light fixture controlled by a wall switch.

Add a new Subsection (D) to Article 210.70 to read as follows:

(D) Mini Storage. All mini storage units shall have illumination as required in the Building Code for egress illumination.

220.5 Calculated Loads.

Add a new Article 220.5 to read as follows:

220.5 Calculated Loads. The calculated load of a new single family dwelling service shall allow a minimum of 20-amperes for future expansion. These 20-amperes shall be added to the total net computed load.

220.31 Optional Calculations for Additional Loads in Existing Dwelling Unit.

Delete article 220.31 in its entirety.

220.32 Optional Calculation – Multifamily Dwelling.

Delete article 220.32 in its entirety.

220.33 Optional Calculation – Two Dwelling Units.

Delete article 220.33 in its entirety.

225.32 Location.

Delete "either inside or" from the first sentence of Article 225.32.

Add new Exception Nos. 5 and 6 to read as follows:

Exception No. 5: For accessory buildings to single family dwellings, the disconnecting means may be installed either inside or outside of the accessory structure.

Exception No. 6: For all buildings or structures (other than accessory buildings to single family dwellings) the disconnecting means shall be installed as described in Article 230.70 of these amendments.

230.11 Location of Customer Owned Service Lateral or Drop.

Add a new Article 230.11 to read 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.

230.70 General.

Amend Article 230.70 to read:

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 location on the exterior of the building or structure.

Exception: 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. The service disconnecting means shall be located adjacent to the exterior door. Such rooms shall be of a minimum of one (1) hour fire resistive construction and shall have approved Fire Department access.

FPN: A recessed 3200 series Knox Box may serve as the approved Fire Department access in some jurisdictions.

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

(4) Remote Control. Where a remote control device(s) is used to actuate the service disconnecting means, the service disconnecting means shall be located in accordance with 230.70(A)(1) or (2).

(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 Main Electrical Disconnect.

(B) Marking. Each service disconnecting means and the exterior door providing access to the disconnecting means located in an approved 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 " Main Electrical Disconnect" and/or "Main Electrical Disconnect Inside." Emergency Systems disconnects shall be permanently marked with sign(s), identified as "Emergency Electrical Disconnect" and/or Main Emergency Electrical Disconnect Inside."

(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.

240.6 Standard Ampere Ratings.

Delete "not meeting the requirements of 240.6(C)," from Subsection (B) of Article 240.6.

Delete Subsection (C) from Article 240.6.

240.24 Location in or on Premises.

Delete "such as in clothes closets" from Subsection (D) of Article 240.24.

250.50 Grounding Electrode System.

Add a new paragraph at the end of Article 250.50 to read as follows:

The concrete-encased electrode described in Article 250.52(A)(3) shall be the main grounding electrode for new buildings and structures that are supplied by electrical power.

250.52 Grounding Electrodes.

Delete Subsections (A)(5) and (A)(6) of Article 250.52 and add a new Subsection (A)(5) to read as follows:

(5) Rod Electrodes. Rod electrodes shall not be less than 2.44 m (8 ft) in length and shall consist of the following materials and installed according to Article 250.53 (G).

Electrodes shall be copper clad or their equivalent and shall be not less than 15.875 mm (5/8 inch) in diameter, or listed non-ferrous rods or their equivalent and not less than 12.7 mm (½ inch) in diameter.

250.53 Grounding Electrode System Installation.

Delete ", Pipe and Plate " from the title and both sentences in Subsection (A) of Article 250.53.

Delete "or (A)(6)" from the first sentence in Subsection (B) of Article 250.53.

Delete "and Pipe " from the title of Subsection (G) of Article 250.53.

Delete Subsection (H) of 250.53

250.56 Resistance of Rod, Pipe, and Plate Electrodes

Delete "Pipe, and Plate" from the title and in both sentences in Article 250.56.

250.118 Types of Equipment Grounding Conductors.

Delete Subsection (5), (6) (7) and (9) of Article 250.118.

250.120 Equipment Grounding Conductor Installation.

Add a new Subsection (D) to Article 250.120 to read as follows:

(D) Equipment Grounding Conductor. All raceways installed on roofs with a slope less than 102 mm per 306 mm (4 inches per 12 inches) 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.

Chapter 3 Wiring Methods and Materials

300.1 Scope.

Add a new Subsection (D) to Article 300.1 to read as follows:

(D) Wiring of Buildings.

(1) Wiring installed in the construction of buildings and structures shall be contained in a raceway or cable tray system.

Exception No. 1: MI cable, MC cable and AC cable. Articles 332, 330, & 320 respectively.

Exception No. 2: Special alarm sensing cable.

Exception No. 3: Where NM, NMC or NMS cable is permitted by this code. Article 334.

Exception No. 4: Low voltage wiring when installed exposed on walls and ceilings. Limited to Articles 725, 770, 800, 810, 820 and 830.

Exception No. 5: Any listed under-carpet system. Article 324.

Exception No. 6: Per Article 645.

Exception No. 7: Listed Neon Cable Assemblies providing the equivalent mechanical protection of Liquid Tight Flexible Conduit.

(2) Raceway systems for buildings and structures of Type I or Type II A construction as defined in the Building Code shall be of metallic non-combustible materials and cable trays shall be of the fully enclosed type.

Exception No. 1: Non-metallic raceways encased in concrete, or masonry, or underground or solid grouted building components that are in compliance with the Building Code.

Exception No. 2: Liquid-tight flexible conduit in lengths of 1.8 m (6 ft) or less which comply with NEC Articles 350 and 356.

310.5 Minimum Size of Conductors.

Add a new sentence to Article 310.5 to read as follows:

Aluminum and copper clad aluminum conductors smaller than No. 6 AWG shall not be used.

314.24 Depth of Outlet Boxes.

Add the following to the end of Article 314.24:

All outlet, switch or junction boxes less than 200 mm (8 inches) in any dimension, shall have no more than any combination of two extension boxes and/or plaster rings.

Exception: Listed unit or assembly.

334.10 Uses Permitted.

Delete Subsection (3) of Article 334.10 and add a new Subsection (3) to read as follows:

- (3) Group R-1, R-2, R-3 and R-4 occupancies permitted to be Types III, IV, and V construction as defined in the Building Code and in buildings with accessory uses, such as : pool houses, recreation buildings, guard houses, garages, laundry rooms and offices except as prohibited in Article 334.12.

Conversions from R-3 to B occupancy as defined by the Building Code, Type NM and NMC cables may remain, provided the equipment grounding conductors are sized in accordance with Table 250.122 and are installed in accordance with this Code, or meet the requirements of Article 406.3(D).

334.12 Uses Not Permitted.

Add a new Subsection (11) to Article 334.12(A) to read as follows:

- (11) In Type I or Type II construction as defined in the Building Code.

352.10 Uses Permitted.

Add a new Subsection (I) to Article 352.10 to read as follows:

- (I) **Exposed to Direct Sunlight.** Rigid non-metallic conduit shall be a minimum Schedule 80 and identified for such use.

358.12 Uses Not Permitted.

Add new Subsection (6), (7) and (8) to Article 358.12 to read as follows:

- (7) In concrete or masonry in contact with earth.

- (8) Underground.
- (9) In earth fills.

Chapter 4 Equipment for General Use

408.15 Number of Overcurrent Devices on One Panel Board.

Add the following paragraph to the end of Article 408.15 to read as follows:

Each panel board or load center installed in a new one and two-family dwelling shall have a capacity for a minimum of two (2) additional full-size single pole overcurrent devices on adjacent opposite poles for expansion.

410.4 Fixtures in Specific Locations.

Add the following sentence to the end of Subsection (D) of Article 410.4:

All luminaires (lighting fixtures) permitted to be installed in this zone shall be ground-fault circuit-interrupter protected.

Chapter 5 Special Occupancies

514.11 Circuit Disconnects.

Add the following to the end of Subsection (A) of Article 514.11:

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".

Delete Subsection (B) in its entirety.

Delete the words "Unattended Self-Service" from the title of Subsection (C).

550.30 Distribution System.

Add the following to the end of Article 550.30:

Electrical service to all mobile home parks and to all lots (sites, spaces, etc.) in mobile home parks, shall be provided by the franchised serving utility unless approved otherwise by the Building Official or designated representative.

Chapter 6 Special Equipment

600.9 Location.

Add a new sentence to the end of (B) to read:

(B) All electrical wiring and neon tubing shall be completely enclosed within an approved material or barrier to prevent physical contact up to a height of 2.44 m (8 ft) above finished grade or floor level.

Chapter 7 Special Conditions

700.9 Wiring, Emergency System.

Change 1000 person to 300 persons and change 23 m (75 ft) to 17 m (55 ft) in Subsection (D) of Article 700.9.

Change "buildings" to "spaces" in Subsection (D)(1)(1) of Article 700.9.

Change 700.9(D)(2) Feeder-Circuit Equipment to read:

Equipment for feeder circuits (including transfer switches, transformers, panelboards and switchboards) shall be located in dedicated spaces either:

- (1) Fully protected by approved automatic fire suppression system (including sprinklers, carbon dioxide systems) and be a minimum one-hour fire-resistive construction, or
- (2) Separated from the remainder of the building by a minimum of two-hour fire-resistive construction when an approved automatic fire suppression system is not installed.

Feeder-circuit equipment installed in a space that is protected by an approved automatic fire sprinkler system shall be suitable for outdoor use.

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

700.12 General Requirements.

Change 1000 person to 300 persons and change 23 m (75 ft) to 17 m (55 ft) in the forth paragraph of 700.12

Add a new Subsection (B)(7) to Article 700.12 to read as follows:

(7) The emergency generator shall not be located more than 17 m (55 ft) above the lowest level of fire department vehicle access. The generator set shall be located in a service room solely dedicated to the Emergency Power Supply System. The generator set shall be located in dedicated space either:

(1) Fully protected by approved automatic fire suppression system (including sprinklers, carbon dioxide systems) and be a minimum one-hour fire-resistive construction, or

(2) Separated from the remainder of the building by a minimum of two-hour fire-resistive construction when an approved automatic fire suppression system is not installed.

Exception No. 1: A generator set located a minimum of 1.5 m (5 ft) from the building(s) shall be enclosed within an approved structure of one-hour fire-resistive construction.

Exception No. 2: A generator set located a minimum of 6 m (20 ft) from the building(s) shall be within an approved enclosure.

FPN: It is not the intent of these exceptions to require a roofed structure.

700.16 Emergency Illumination.

Add the following to the end of the first sentence of Article 700.16:

Electrical rooms, fire control rooms, fire pump rooms, PBX rooms, public restrooms and generator rooms shall require emergency illumination.

Exception: Public restrooms with a floor area of less than 5.9 square meters (64 square feet) shall not require emergency illumination.

701.10 Wiring Legally Required Standby Systems.

Add a new Subsection (A) to Article 701.10 to read as follows:

(A) Fire Protection. Equipment for feeder circuits (including automatic transfer switches, transformers, switchboards and panelboards) shall be located in a dedicated space either:

(1) Fully protected by approved automatic fire suppression system (including sprinklers, carbon dioxide systems) and be a minimum one-hour fire-resistive construction, or

(2) Separated from the remainder of the building by a minimum of two-hour fire-resistive construction when an approved automatic fire suppression system is not installed.

Exception No. 1 Transfer equipment located a minimum of 1.5 m (5 ft) from the building(s) shall be enclosed within an approved structure of one-hour fire-resistive construction.

Exception No. 2: Transfer equipment located a minimum of 6 m (20 ft) from the building(s) shall be within an approved enclosure.

Exception No. 3: Legally Required Standby Systems may occupy the same dedicated room as Emergency Systems.

FPN: It is not the intent of these exceptions to require a roofed structure.

701.11 Sources of Power.

Add a new Subsection (G) to Article 701.11 to read as follows:

(G) Location. The legally required standby power source shall be located in a dedicated space either:

(1) Fully protected by approved automatic fire suppression system (including sprinklers, carbon dioxide systems) and be a minimum one-hour fire-resistive construction, or

(2) Separated from the remainder of the building by a minimum of two-hour fire-resistive construction when an approved automatic fire suppression system is not installed.

Exception No. 1: A generator set located a minimum of 1.5 m (5 ft) from the building(s) shall be enclosed within an approved structure of one-hour fire-resistive construction.

Exception No. 2: A generator set located a minimum of 6 m (20 ft) from the building(s) shall be within an approved enclosure.

FPN: It is not the intent of these exceptions to require a roofed structure.

Notes: