

Welcome

2023 NEC® Update

Part 3 • Article 400-551

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1

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Adapted from the 2023 NEC® NFPA #70

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Will satisfy 4 hours of electrical code study for renewal of electrical licensing by the State of Minnesota.

The Electrical Association will provide your hours to the State of Minnesota upon completion of this course.



2

General

GUIDELINES

In the interest of time and focusing on major Code changes, not all modifications that occurred have been included in this presentation.

01

Informational Notes, text location changes, and minor text clarifications may have been intentionally omitted.

02

Actual Code articles in their entirety are required to maintain compliance.

03

The AHJ takes precedence over all matters of the NEC.

3

Presentation Method

We'll compare the code changes between the 2020 NEC and the 2023 NEC side by side on each slide.

01

2023 NEC article

02

How the article changed

03

Level of importance (10 is the highest)

04

Paraphrased text

05

Brief explanation

NEC Article 240.4(B)	Type of Change Article Revision	Importance 4
2020 NEC	2023 NEC	
Article 240 240.4(B) Overcurrent Devices Rated 800 Amperes or Less (1), (2), (3) It was not permissible to use an adjustable trip device on an OCP to set the trip level of the device to up to 800 amperes.	Article 240 240.4(B) Overcurrent Devices Rated 800 Amperes or Less Language added to 240.4(B) now allows using an adjustable trip device setting to set the device trip value that does not exceed the next higher standard value above the ampacity of the conductor. Restricted access is required as per 240.6(C). This change promotes flexibility in selection of an OCP device especially when determining protection for parallel conductors.	

4

General

FORMATTING

Changes in the code book are formatted in the four following ways:

- 01 **N** New material is marked in the margin (rather than a vertical line in the margin)
- 02 **•** Where one or more paragraphs have been deleted
- 03 **Δ** Where written content has been changed or deleted
- 04 **text** Where the text has been revised

5

Learning Outcomes

Upon completion of this course, the student should be able to do the following:

- 01 Select a ground fault protective equipment to comply with revised NEC articles.
- 02 Make decisions on requirements for floor receptacles in food service facilities.
- 03 Identify compliant weight supporting ceiling receptacles for bath & shower spaces.
- 04 Correctly position receptacles for newly allowed electric toilet accessories.

01

6

Learning Outcomes

- 05 Produce a panel or switchboard directory based on revised code requirements.
- 06 Select surge protection devices when connecting equipment that protects personnel in industrial control panels.
- 07 Know when equipment under corrugated roof decking is protected from screw penetrations.
- 08 Locate specific requirements for germicidal irradiation luminaires.

02

7

Learning Outcomes

- 09 Identify flexible cords for appliances that are code compliant based of temperature of appliance.
- 10 Recognize the clearance requirements of metal parts of fans over tubs and showers.
- 11 Pick out code compliant locations for equipment requiring servicing so access doors are not blocked.
- 12 Locate information in the NEC for wiring standards over 1000 nominal for motors.

03

8

Learning Outcomes

13 Be able to layout single machine equipment in the vicinity of tubs and showers.

15 Be able to locate changes throughout the code for equipment rated over 1000 V ac, 1500 V dc.

14 Select the correct switch for switching capacitor loads based on ampacity.

16 Identify products that must be listed when used in Class I, Div 1 & 2 locations.

04

9

Learning Outcomes

17 Layout Class 1 & Class II locations associated with cannabis oil equipment.

19 Identify the electrical datum planes located in RV parks.

18 Comply with installation standards of wiring in walls for agricultural buildings.

20 Install code compliant receptacles in RV supply equipment.

05

10

Let's Get Started Article 400

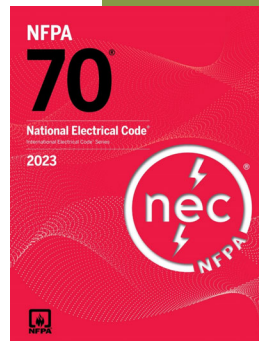
Flexible Cords and Flexible Cables

through

Article 404.30

Switch Enclosures with Doors

Code Updates



06

11

NEC Article:
400

Type of Change:
Part IV Added

Importance:
Minor

2020 NEC

Article 400, Part IV

Not present

In an effort to address portable power feeder cable **over 2000 V**, a new Part IV was added to Article 400.

2023 NEC

Article 400 Flexible Cords and Flexible Cables **Part IV Over 2000 Volts**

Article	Subject	Article	Subject
400.40	General	400.47	Minimum Bending Radii
400.41	Portable Power Feeder Cables	400.48	Fittings
400.42	Uses allowed	400.49	Splices & Terminations
400.43	Uses Not allowed	400.50	Types
400.44	Construction	400.51	Ampacities - Port. Feeder Cables
400.45	Shielding	400.52	Markings
400.46	Equip Grounding Conductor		

07

12

NEC Article: 404.1	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 404 Switches	Article 404 Switches	
404.1 Scope	404.1 Scope	
The article covers switches, switching devices, and circuit breakers used as switches, 1000 V and below.	Additional language was added to this article that addressed wireless control equipment when circuit conductors are not connected to them. This article does not cover wireless control equipment where no circuit conductors are connected. <i>Informational Note:</i> See 210.70 for additional information related to branch circuits that include switches or listed wall-mounted control device. The “Not Covered” and informational note were added.	
		
	08	

13

NEC Article: 404.2(C)	Type of Change: Article Modified	Importance: Major
2020 NEC	2023 NEC	
Article 404	Article 404	
404.2(C) Switches Controlling Lighting Loads	404.2(C) Switches Controlling Lighting Loads	
The grounded circuit conductor must be brought to each switch in listed rooms and areas except under these conditions: (1) Where the switch enclosure is connected by a raceway (2) Where the box enclosing the switch is accessible for the installation of an additional or replacement cable without removing finish materials (3) ... (4) ...	The grounded circuit conductor must be brought to each switch in listed rooms and areas except under these conditions: (2) Where the box enclosing the switch is accessible for the installation of an additional or replacement cable without removing finish materials. CMP Statement: "Although the box may be accessible, the ease of installation of the grounded conductor after the initial installation is likely to be exceedingly more difficult than during the initial installation."	
		09

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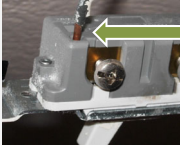
NEC Article: 404.8(A)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 404 Switches	Article 404 Switches	
404.8(A) Accessibility and Grouping	404.8(A) Accessibility and Grouping	
All switches and circuit breakers used as switches shall be located so that they may be operated from a readily accessible place. They shall be installed such that the center of the grip of the operating handle of the switch or circuit breaker, when in its highest position, is not more than 6 ft 7 in. above the floor or working platform.	The text from the 2020 was left, but the exceptions 1 – 3 became part of an itemized requirement. A greater explanation > >	

09

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NEC Article: 404.8(A)	Type of Change: Article Modified	Importance: Minor
2023 NEC		
Article 404 Switches		
404.8(A) Accessibility and Grouping		
(1) On busway installations, fused switches and circuit breakers can to be located at the same level as the busway. You must provide a means to operate the handle of the device from the floor. (2) Switches and circuit breakers installed adjacent to motors, appliances, or other equipment that they supply shall be permitted to be located higher than 6 ft 7 in. and to be accessible by portable means. (3) Hookstick operable isolating switches can be used at greater heights		
		
		09

16

NEC Article: 404.14(D)(3)	Type of Change: Article Modified	Importance: Major
2020 NEC	2023 NEC	
Article 404 404.14 Rating and Use of Switches (D) Alternating-Current General-Use Snap Switches Rated for 347 V. (1) (2) (3) Part 14(D) became 14(E) to make room for the new 14(D).	Article 404 404.14 Rating and Use of Switches (D)(3) NEW Snap Switch Terminations The code making panel introduced language that clearly identified switches using screwless terminations (stab-in) are allowed to be used only with 14 AWG copper wire, 15-amp branch circuits.	
		
	10	

17

NEC Article: 404.16(A)-(D)	Type of Change: New Section in Article	Importance: Minor
2020 NEC	2023 NEC	
Article 404 404.16 Reconditioned Equipment Not present	Article 404 404.16 Reconditioned Equipment (A) Lighting, Dimmer, and Electronic Control Switches Not allowed to be reconditioned (B) Snap Switches Not allowed to be reconditioned	
	>>	
		
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18

NEC Article: 404.16(A)-(D)	Type of Change: New Section in Article	Importance: Minor
2020 NEC	2023 NEC	
Article 404 404.16 Reconditioned Equipment Not present	Article 404 404.16 Reconditioned Equipment (C) Knife Switches, Switches with Butt Contacts, and Bolted Pressure Contact Switches May be reconditioned. If equipment has been damaged by fire, products of combustion, corrosive influences, or water, they must be evaluated by its manufacturer or a qualified testing laboratory prior to being returned to service. (D) Molded Case Switches Not allowed to be reconditioned	
		
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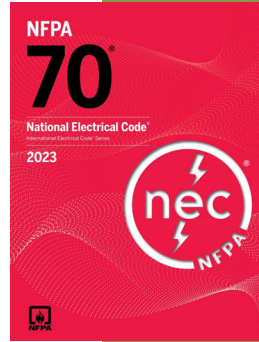
NEC Article: 404.30	Type of Change: New Section in Article	Importance: Minor
2020 NEC	2023 NEC	
Article 404 404.30 Switch Enclosures with Doors	Article 404 404.30 Switch Enclosures with Doors Switch mechanisms mounted inside of enclosures where energized conductors would be exposed when the switch is in the closed (on) position have to require a tool to open the door(s) while energized. If not, an approved design must provide protection from access by unqualified persons. The change will make access difficult for unqualified persons to enter enclosures.	
		
	13	

20

Article 406

Receptacles, Cord Connectors, and Attachment Plugs (Caps)

Code Updates



14

21

NEC Article: 406.2	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.2 Definitions (All definitions here were moved to Article 100). 	Article 406 406.2 Definitions Receptacles, attachment plugs, cord connectors, and flanged-surface devices may not be reconditioned. The change added cord connectors and flanged surface devices to the list of devices that may not be reconditioned from Article 406.7 and relocated the receptacle reconditioning rule from 406.3(A) .	

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22

NEC Article: 406.3(D)(3)	Type of Change: New Section	Importance: Major
2020 NEC	2023 NEC	
Article 406 406.3(D) Isolated Ground Receptacles (1) Isolated Equipment Grounding Conductor Required (2) Installation in Nonmetallic Boxes Part 406.3(D) became 406.3(E) to make room for new 406.3(D). 	Article 406 406.3(D) Isolated Ground Receptacles (3) NEW Receptacle Terminations The code making panel introduced language that clearly identified receptacles designed to connect wiring with out screw terminations (push-in connections) are allowed to be used only with 14 AWG copper wire , 15 A branch circuit, unless listed and marked for other conductors. >>	

16

23

NEC Article: 406.3(D)(3)	Type of Change: New Section	Importance: Major
2020 NEC	2023 NEC	
Article 406 406.3(D) Isolated Ground Receptacles (1) Isolated Equipment Grounding Conductor Required (2) Installation in Nonmetallic Boxes Part 406.3(D) became 406.3(E) to make room for new 406.3(D). 	Article 406 406.3(D) Receptacle Terminations (3) NEW Receptacle Terminations Conductor terminations of aluminum, copper, or copper-clad aluminum are permissible on receptacles identified as CO/ALR . This requirement was also made of switches in 404(14)(D) . Isolated Receptacles were moved to 406.3(E) .	

17

24

NEC Article: 406.4(D)(3)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.4(D)(3) Receptacle Replacement GFCIs When a receptacle is replaced in an area requiring GFCI protected receptacles elsewhere in the NEC, the replacement receptacle shall be GFCI protected. 	Article 406 406.4(D)(3) Receptacle Replacement GFCIs When a receptacle is replaced in an area required to be GFCI protected elsewhere in the NEC, the replacement receptacle shall be GFCI protected. The GFCI receptacle shall be listed. The 2023 NEC now requires listing of GFCI receptacle replacements	18

25

NEC Article: 406.4(D)(5)(1)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.4(D)(5) Receptacle Replacement Tamper Resistant Listed tamper-resistant receptacles must be provided where replacements are made at receptacle outlets that are required to be tamper-resistant, except where a non-grounding receptacle is replaced with another non-grounding receptacle	Article 406 406.4(D)(5) Receptacle Replacement Tamper Resistant The information remained the same from one cycle to another, but the article was split between (D)(5)(1) & (D)(5)(2) The text for the change is easy to follow and appropriately grouped for locating. 	19

26

NEC Article: 406.4(D)(5)(2)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.4(D)(5) Receptacle Replacement Tamper Resistant No reference to conductor type was made for wire terminations for tamper resistant receptacles in 406.4(D)(5) 	Article 406 406.4(D)(5) Receptacle Replacement Tamper Resistant Listed tamper-resistant receptacles shall be provided where replacements are made at receptacle outlets that are required to be tamper-resistant elsewhere in this Code, except (2) Where aluminum branch-circuit conductors are directly terminated on a CO/ALR receptacle, installed as replacement This is the second half of the article that was modified	19

27

NEC Article: 406.4(D)(8)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.4(D) Receptacle Replacement (8) Ground-Fault Protection of Equipment (GFPE) Not Present 	Article 406 406.4(D) Receptacle Replacement (8) Ground-Fault Protection of Equipment (GFPE) Receptacles that are replaced in areas that require GFPE protection but may not already have such protection must be upgraded to meet the code in effect at the time of replacement. If a receptacle is replaced in area that would require GFPE for receptacles, the branch circuit supplying that replaced receptacle must meet the NEC if GFPE is required to be in place for protection of equipment. The CMP reason this was added: "(GFPE)" in the title, was added for clarity and to differentiate from 406.4(D)(3) GFCIs. This requirement is very similar to (3) of this section providing the GFPE protection when modifications are made. Areas such as marinas where GFPE protection has been recently expanded must be afforded protection as the system ages and modifications are made per 2020 NEC Style Manual.	18

28

NEC Article: 406.4(G)(1)-(2)	Type of Change: New Subsection	Importance: Major
2020 NEC	2023 NEC	
Article 406 406.4(G) Protection of Floor Receptacles 	Article 406 406.4(G) Protection of Floor Receptacles Floor receptacles shall be protected so: (1) The operation of floor cleaning equipment can not damage floor receptacles based on their design. (2) All 125-volt, 15- and 20-ampere floor receptacles in food courts and waiting spaces of passenger transportation facilities where food or drinks are allowed must be GFCI protected.	
		21

29

NEC Article: 406.6(D)	Type of Change: New Article Section	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.6(D) Receptacle Faceplate (cover plates) with Integral Night Light and/or USB Charger A flush device cover plate that has a night light and/or Class 2 output connector(s) must be listed and the night light and/or Class 2 circuitry is part of the flush device cover plate. 	Article 406 406.6(D) Receptacle Faceplate (cover plates) with Integral Night Light and/or USB Charger The original article text was not changed, but the following statement was added: Listed receptacle faceplates with integral night light, USB charger, or both, that rely on spring-tensioned contacts must be connected to only brass or copper alloy receptacle terminal screws and must be rated 1 watt or less. >>	
		22

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NEC Article: 406.6(D)	Type of Change: New Article Section	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.6(D) Receptacle Faceplate (cover plates) with Integral Night Light and/or USB Charger A flush device cover plate that has a night light and/or Class 2 output connector(s) must be listed and the night light and/or Class 2 circuitry is part of the flush device cover plate. 	Article 406 406.6(D) Receptacle Faceplate (cover plates) with Integral Night Light and/or USB Charger <i>Exception:</i> Effective January 1, 2026, spring-tensioned contact connections to steel receptacle terminal screws must be allowed if the receptacle faceplate is specifically listed and identified for connection to steel receptacle terminal screws.	
		23

31

NEC Article: 406.9(A)&(B)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.9(A)-(B) Receptacles in Damp or Wet Locations Hinged covered boxes were not addressed in this code article. 	Article 406 406.9(A)-(B) Receptacles in Damp or Wet Locations Both 406.9(A) Damp Locations and 406.9(B) Wet Locations were modified to require hinged covers of outlet box hoods to fully open if the cover is not able to open 90°, from the closed to open position, after it's installed.	
		24

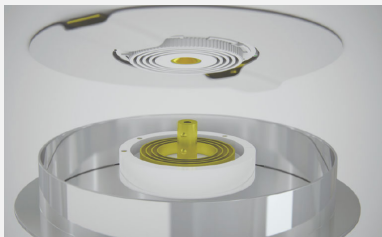
32

NEC Article: 406.9(B)(2)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.9(B)(2) Receptacles in Damp or Wet Locations (9)(B)(2) called out the need for weather proof enclosures when a receptacle is installed in a damp or wet location, but not to be weather resistant rated. 	Article 406 406.9(B)(2) Receptacles in Damp or Wet Locations All other receptacles installed in a wet location shall be listed weather-resistant type, and installation shall comply with 406.9(B)(2)(a) or (B)(2)(b).	24

33

NEC Article: 406.9(C)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.9(B)(2) Receptacles in Damp or Wet Locations Receptacles shall not be installed within a zone measured 3 ft horizontally and 8 ft vertically from the top of the bathtub rim or shower stall threshold.	Article 406 406.9(B)(2) Receptacles in Damp or Wet Locations Receptacles shall not be installed inside of the tub or shower or within a zone measured 3 ft horizontally from any outside edge of the bathtub or shower stall, including the space outside the bathtub or shower stall space below the zone. The zone also includes the space measured vertically from the floor to 8 ft above the top of the bathtub rim or shower stall threshold. The clearance measurement is permitted from the floor in this change	24

34

NEC Article: 406.9(C) Exc. 3	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 406 	Article 406 406.9(C) Bathtub and Shower Space Receptacles in bathrooms. New Exception No. 3: Weight supporting ceiling receptacles (WSCR) can be installed for listed luminaires that have a weight supporting attachment fitting (WSAF) in damp locations complying with 410.10(D). An exception in 210.8(A) allows this style of receptacle installed in a bathroom to NOT be GFCI protected.	25

35

NEC Article: 406.9(C) Exc. 4	Type of Change: Article Modification	Importance: Major
2020 NEC	2023 NEC	
	Article 406 406.9(C) Bathtub and Shower Space Receptacles in bathrooms. New Exception No. 4: In a home, a single receptacle can be installed for an electronic toilet or personal hygiene device. The receptacle must be readily accessible and can't be located in the space between the toilet and the bathtub or shower. The change made it not permissible to locate the receptacle between the toilet and a tub or shower.	26

36

NEC Article: 406.12(1)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.12(1) Tamper-Resistant Receptacles Listed T/R receptacles have to be installed in these locations identified in subsection (1): <i>Dwelling units, including attached and detached garages and accessory buildings to dwelling units, and common areas of multifamily dwellings specified in 210.52 and 550.13</i> 	Article 406 406.12(1) Tamper-Resistant Receptacles All dwelling units, boathouses, mobile homes and manufactured homes, including their attached and detached garages, accessory buildings, and their common areas require T/R receptacles. <i>In lieu of stating TR receptacles are required in Article 550.13 locations, the term mobile homes was used.</i> <i>Bold print items above were added to 406.12(1)</i>	27

37

NEC Article: 406.12(5)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.12(5) Tamper-Resistant Receptacles Listed T/R receptacles have to be installed in these locations identified in subsection (5): <i>Business offices, corridors, waiting rooms and the like in clinics, medical and dental offices, and outpatient facilities</i> 	Article 406 406.12(5) Tamper-Resistant Receptacles Within clinics, medical and dental offices, and outpatient facilities, the following spaces: a. Business offices accessible to the general public b. Lobbies, and waiting spaces c. Spaces of nursing homes and limited care facilities covered in 517.10(B)(2) <i>A minor text revision and limited care facilities added</i>	27

38

NEC Article: 406.12(8)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.12(5) Tamper-Resistant Receptacles Listed T/R receptacles have to be installed in these locations identified in subsection (8): <i>(8) Assisted living facilities</i> 	Article 406 406.12(8) Tamper-Resistant Receptacles (8) Residential care/assisted living facilities, social and substance abuse rehabilitation facilities, and group homes <i>The bold face print indicates areas that were added since the 2020 NEC</i>	27

39

NEC Article: 406.12(9)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 406 406.12(5) Tamper-Resistant Receptacles Listed T/R receptacles have to be installed in these locations identified in subsection (8): <i>(9) Not Present</i> 	Article 406 406.12(8) Tamper-Resistant Receptacles (9) Foster care facilities, nursing homes, and psychiatric hospitals <i>All of these locations were added to the areas / facilities required tamper resistant receptacles.</i>	27

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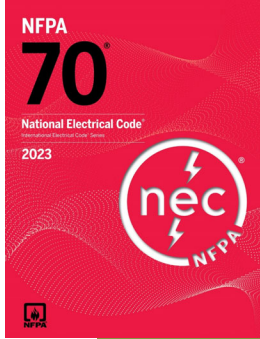
NEC Article: 406.12(9) & (10)	Type of Change: Article Modification	Importance: Major
2020 NEC	2023 NEC	
 <i>IN No. 3: Areas of agricultural buildings are occasionally converted to hospitality areas. These areas can include petting zoos, stables, and buildings used for recreation or educational purposes where receptacles are installed.</i>	Article 406 406.12 Tamper-Resistant Receptacles Added to those areas requiring tamper-resistant receptacles: (9) Foster care facilities, nursing homes, and psychiatric hospitals (10) Areas of agricultural buildings accessible to the general public and any common area.	

41

Article 408

Switchboards, Switchgear, and Panelboards

Code Updates



42

NEC Article: 408.2(A) & (B)	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
Article 408 408.2 Reconditioned Equipment Not present	Article 408 408.2 Reconditioned Equipment The article was relocated from 408.8 to 408.2 to maintain Style Manual consistency. Certain verbiage from Part (A) & (B) were removed indicating some criteria associated with repair/ reconditioning. (A) Panelboards may not be reconditioned (B) Switchboards and switchgear, or sections of switchboards or switchgear may be reconditioned.	

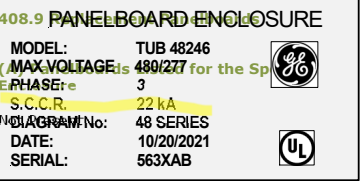
43

NEC Article: 408.4(A)(6)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 408 408.4 Descriptions Required (A) Circuit Directory or Circuit Identification Abbreviations or symbols used to identify circuits were not addressed.	Article 408 408.4 Descriptions Required (A) Circuit Directory or Circuit Description The requirements for circuit directories was placed in list format. Item 6 was added (6) Required explaining abbreviations and symbols when used. Examples from typical circuit directories  = receptacle circuit rec. = receptacle	

44

NEC Article: 408.4(B)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 408 408.4(B) Source of Supply (B) Circuit Directory or Circuit Identification All switchboards, switchgear, and panelboards supplied by a feeder(s) in other than one- or two-family dwellings shall be permanently marked to indicate each device or equipment where the power originates. The label shall be permanently affixed, of sufficient durability to withstand the environment involved, and not handwritten.	Article 408 408.4(B) Source of Supply (B) All switchboards, switchgear, and panelboards supplied by a feeder(s) in other than one- or two-family dwellings shall be permanently marked in accordance with the following: (1) With the identification and physical location of where the power originates (2) With a label that is permanently affixed and of sufficient durability to withstand the environment involved (3) Using a method that is not handwritten Great Clarity added in this change to eliminate confusion.	

45

NEC Article: 408.9(A)	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
Article 408 408.9 PANELBOARD ENCLOSURE MODEL: TUB 48246 MAX VOLTAGE: 480/277 PHASE: 3 S.C.C.R.: 22 kA DIAGRAM No: 48 SERIES DATE: 10/20/2021 SERIAL: 563XAB	Article 408 408.9 Replacement Panelboards (A) Panelboards Listed for the Specific Enclosure If a replacement panelboard is listed for the specific enclosure identified by either catalog number or dimensional information, the panelboard can maintain its original short circuit rating. This change is a new article that incorporates information found in Article 408.8(A) that was removed.	

46

NEC Article: 408.9(B)	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
Article 408 	Article 408 408.9 Replacement Panelboards (B) Panelboards Not Listed for the Specific Enclosure If the available fault current (AFC) is greater than 10kA, the panelboard must be field labeled. If the AFC is <10 kA, the replacement panelboard must be identified for the application. This change is a new article that incorporates information found in Article 408.8(A) that was removed.	

47

NEC Article: 408.38	Type of Change: Modified Article	Importance: Minor
2020 NEC	2023 NEC	
Article 408 408.38 Enclosures Panelboards shall be mounted in cabinets, cutout boxes, or identified enclosures and shall be dead-front.	Article 408 408.38 Enclosures Panelboards must be mounted in cabinets, cutout boxes, or identified enclosures and have to be dead-front. If the available fault current (AFC) is greater than 10,000 A, the panelboard and enclosure combination shall be evaluated for the application. Addition of the AFC value requiring listing ensures a safe installation.	

48

NEC Article: 408.43	Type of Change: Modified Article	Importance: Minor
2020 NEC	2023 NEC	
Article 408 408.43 Panelboard Orientation The position of a panelboard may not be mounted face up.	Article 408 408.43 Panelboard Orientation The position of a panelboard may not be mounted face up or face down The code making panel agreed that the panelboards may no longer be mounted face up when they are installed or "face down" due to working space concerns.	

49

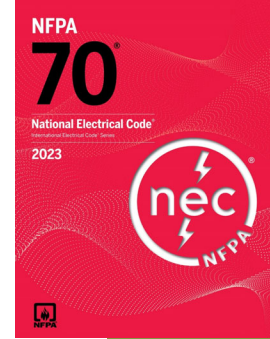
Article 409

Industrial Control Panels

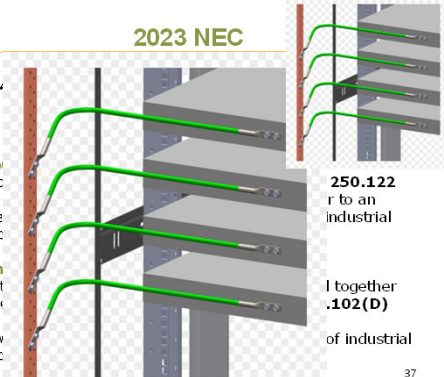
Article 410

Luminaires, Lampholders, Lamps

Code Updates



50

NEC Article: 409.60(A)&(B)	Type of Change: New Subsections	Importance: Minor
2020 NEC	2023 NEC	
Article 409 Industrial Control Panels 409.60 Grounding Multisection industrial control panels must be bonded together with an equipment grounding conductor or an equivalent bus sized IAW Table 250.122. Equipment grounding conductors must be connected to this equipment grounding bus or to an equipment grounding termination point provided in a single-section industrial control panel.	Article 409 409.60 (A) Grounding. An equipment grounding conductor must be bonded to the equipment control panel. (B) Bonding. Multisection industrial control panels must be bonded together with an equipment grounding conductor or an equivalent bus sized IAW Table 250.122. Clarity with respect to industrial control panels.  250.122 (D) Industrial control panels must be bonded together with an equipment grounding conductor or an equivalent bus sized IAW Table 250.122.	

51

NEC Article: 409.70	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
Article 409 409.70 Surge Protection 	Article 409 409.70 Surge Protection Circuits that provide safety features in equipment that protect personnel that may be damaged by electrical surge occurrences must have a surge protective device installed within or adjacent to the control panel. Article added to enhance equipment safety for personnel for industrial control panels.	

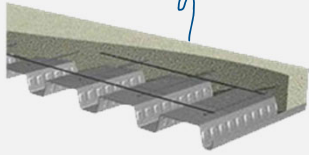
52

NEC Article: 410.2	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
Article 410 Luminaires, Lampholders, Lamps 410.2 Definitions Not 	Article 410 Luminaires, Lampholders, Lamps 410.2 Reconditioned The following equipment is not allowed to be reconditioned: LED's, drivers, lamps, retrofit kits, ballasts, lamp holders, and luminaires. If a retrofit kit is installed in a luminaire in accordance with the installation instructions, the retrofitted luminaire is not considered reconditioned. Article 410.2 added ballasts, drivers, lamps, and retrofit kits to "items not allowed to be reconditioned."	

53

NEC Article: 410.10(D)(1)	Type of Change: Modified Article	Importance: Minor
2020 NEC	2023 NEC	
Article 410 410.10(D) Bathtub & Shower Areas (1) No luminaires, track lighting, pendants, or ceiling-suspended (paddle) fans can be located within 3 ft horizontally and 8 ft vertically from the top of the bathtub rim or shower stall threshold.	Article 410 410.10(D) Bathtub & Shower Areas (1) No luminaires, track lighting, pendants, or ceiling-suspended (paddle) fans with luminaires (light kits) can be located within 3 ft horizontally and 8 ft vertically from the top of the bathtub rim or shower stall threshold. Paddle fans with light kits were added to the prohibited items within 8' over tubs and showers. 	

54

NEC Article: 410.10(F) Exc	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 410 410.10(F) Exc Not present 	Article 410 410.10(F) Exc Luminaires installed under roof decking that are subject to physical damage, must be installed so there is at least 1½" measured from the lowest surface of the roof decking to the top of the luminaire. An exception was added negated this requirement if the decking was covered by at least 2" of concrete. This exception was added to recognize the additional protection provided by a concrete slab.	

55

NEC Article: 410.16(D) Exc	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 410 Luminaires, Lampholders, and Lamps 410.16(D) Not present	Article 410 410.16(D) Exc The minimum clearance between luminaires installed in clothes closets and the nearest point of a clothes closet storage space shall be as follows: (1) 12 in. for surface-mounted incandescent or LED luminaires with a completely enclosed light source installed on the wall above the door or on the ceiling. (2) 6 in. for surface-mounted fluorescent luminaires installed on the wall above the door or on the ceiling. (3) 6 in. for recessed incandescent or LED luminaires with a completely enclosed light source installed in the wall or the ceiling. (4) 6 in. for recessed fluorescent luminaires installed in the wall or the ceiling.	

56

NEC Article:	Type of Change:	Importance:
410.16(D) Exc	Article Modified	Minor
2020 NEC	2023 NEC	
Article 410 Luminaires, Lampholders, and Lamps 410.16(D) Not present	Article 410 410.16(D) Exc Item 1,2,3, & 4 of this article were previously listed in 410.16(C) 1-5 of the 2020 NEC. In the 2023 NEC they became 410.16(D) 1-4. The exception- "Surface-mounted fluorescent or LED luminaires shall be permitted to be installed within the clothes closet storage space where identified for this use." Was previously item 5 in Article 410.16(C) The Style Manual requirements caused this change.	

57

NEC Article:	Type of Change:	Importance:
410.71	New Content	Minor
2020 NEC	2023 NEC	
Article 410 410.71 Disconnecting Means for Fluorescent or LED Luminaires that Utilize Double-Ended Lamps Not present The NEC 2020 contained most of this information in Article 410.130(G)(1).	Article 410 410.71 Disconnecting Means for Fluorescent or LED Luminaires that Utilize Double-Ended Lamps In indoor locations other than homes, fluorescent or LED luminaires that have double-ended lamps and contain ballast(s) or LED driver(s) that can be serviced in place must have a disconnecting means either internal or external to each luminaire. For existing installed luminaires without disconnecting means, at the time a ballast or LED driver is added or replaced, a disconnecting means must be installed. The text of New 410.71 was previously located at 410.130(G)(1) LED's were added.	

58

NEC Article:	Type of Change:	Importance:
410.184	Exception Added	Minor
2020 NEC	2023 NEC	
Article 410 410.184 Ground-Fault Circuit-Interrupter Protection Lighting for horticultural use and employing flexible cord(s) with separable connector(s) or attachment plug(s) must be supplied by lighting outlets protected by a listed GFCI.	Article 410 410.184 Ground-Fault Circuit-Interrupter (GFCI) Protection and Special Purpose Ground-Fault Circuit-Interrupter (SPGFCI) Protection Lighting for horticultural use and employing flexible cord(s) with separable connector(s) or attachment plug(s) must be supplied by lighting outlets protected by a listed GFCI. Exception: Circuits exceeding 150 volts to ground must be protected by a listed SPGFCI . The exception was added.	

59

NEC Article:	Type of Change:	Importance:
410, Part XVII	New Article	Minor
2020 NEC	2023 NEC	
	Article 410, Part XVII Special Provisions for Germicidal Irradiation Luminaires Part XVII was added to provide code guidance on the installation of germicidal irradiation luminaires. 410.190 General 410.191 Listing 410.193 Installation 410.195 Locations not allowed 410.197 Germicidal Irradiation Systems	

60

Article 422

Appliances

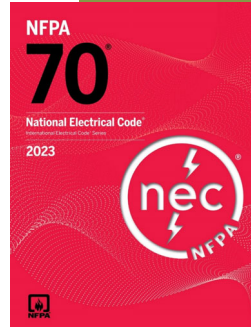
Article 424

Fixed Electric Space-Heating Equipment

Article 426

Fixed Outdoor Electric Deicing and Snow-Melting Equipment

Code Updates



45

61

NEC Article:
422.16(A)(3)

Type of Change:
Article Modification

Importance:
Minor

2020 NEC**Article 422 Appliances****422.16(A)(3) Flexible Cords**

Special Note The following sections were deleted from the NEC because they are redundant, unnecessary, or were covered by their listing: 422.3, 422.4, 422.15, 422.23, 422.46, and 422.50

2023 NEC**Article 422 Appliances****422.16(A)(3) Flexible Cords**

(3) All electrically operated appliances that reach temperatures over 250°F on their surface where the power cord is likely to make contact must be supplied with one of the types of heater cords found in Table 400.4.

Section 422.43 was moved to new 422.16(A)(3) to consolidate all flexible cord requirements into **422.16**. Changes were also made to ensure that necessary requirements were not lost.

46

62

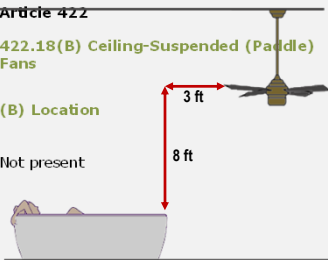
NEC Article:
422.18(B)

Type of Change:
Article Modification

Importance:
Minor

2020 NEC**Article 422****422.18(B) Ceiling-Suspended (Paddle) Fans****(B) Location**

Not present

**2023 NEC****Article 422****422.18(B) Ceiling-Suspended (Paddle) Fans****(B) Location**

Metal parts of ceiling fans over a tub or shower space have to be at least 8' vertically and 3' horizontally over the tub rim or shower threshold.

The section was broken into parts **(A) Support** and **(B) Location**, and **metal parts** was added for clarity.

47

63

NEC Article:
424.48

Type of Change:
New Section

Importance:
Minor

2020 NEC**Article 424 Fixed Electric Space-Heating Equipment****424.48 Installation of Cables in Walls**

Not present

Infrared Lamp Industrial Heating Appliance that was previously found here was moved to **422.48**.

2023 NEC**Article 424 Fixed Electric Space-Heating Equipment****424.48 Installation of Cables in Walls**

This is a new section that provides 5 itemized standards for this type installation.

It is a relatively new concept, which will not be effective until **01/01/2026**.

48

64

NEC Article: 424.66	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 424 424.66 Installation Duct heaters...Sufficient clearance must be maintained to permit replacement of controls and heating elements and for adjusting and cleaning of controls and other parts requiring such attention. See 110.26.  36 in.	Article 424 424.66 Installation Duct heaters..... Working space must be maintained in accordance with 110.26(A)(4)(4) and must be adequate for replacement of controls and heating elements and for adjusting and cleaning of controls and other parts requiring such maintenance. The addition of (A)(4)(4) to Article 110.26 clarifies space requirements about duct heaters for ample access to equipment.	49

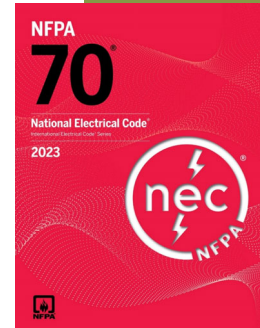
65

NEC Table 426.3	Type of Change: New Table	Importance: Minor				
2020 NEC	2023 NEC					
Article 426 Fixed Outdoor Electric Deicing and Snow-Melting Equipment 426.3 Application of Other Articles Cord-and-plug-connected fixed outdoor electric deicing and snow-melting equipment intended for specific use and identified as suitable for this use shall be installed according to Article 422.	Article 426 Fixed Outdoor Electric Deicing and Snow-Melting Equipment Table 426.3 Other Articles <u>Table 426.3 Other Articles</u> <table><tr><td><u>Equipment</u></td><td><u>Article</u></td></tr><tr><td><u>Appliances</u></td><td><u>422 (Parts I, II, III, IV, V)</u></td></tr></table> The text was revised by removing “the applicable provisions of” to comply with the NEC style manual. The word “also” was changed to “additionally” for consistency with other article changes. The table was revised to specify the applicable parts of Article 422	<u>Equipment</u>	<u>Article</u>	<u>Appliances</u>	<u>422 (Parts I, II, III, IV, V)</u>	
<u>Equipment</u>	<u>Article</u>					
<u>Appliances</u>	<u>422 (Parts I, II, III, IV, V)</u>					

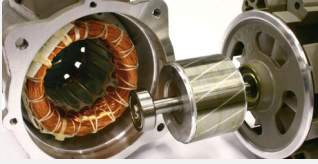
66

NEC Article: 426.28	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 426 Fixed Outdoor Electric Deicing and Snow-Melting Equipment 426.28 Ground Fault Protection of Equipment (Fixed Outdoor Electric Deicing and Snow-Melting Equipment) Ground fault protection must be provided for fixed outdoor electric deicing and snow melting equipment. 	Article 426 Fixed Outdoor Electric Deicing and Snow-Melting Equipment 426.28 Ground Fault Protection of Equipment (Fixed Outdoor Electric Deicing and Snow-Melting Equipment) Ground-fault protection of equipment must be installed for fixed outdoor electric deicing and snow-melting equipment. The trip level of ground fault protection is to be specified by the manufacturer. The text has been revised to allow the ground fault trip level to be specified by the manufacturer. This protection is level in milliamps is often above the values of a class A device.	50

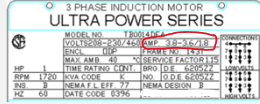
67

Article 430 Motors, Motor Circuits, Controllers Code Updates		51
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68

NEC Article: 430.2	Type of Change: New Section	Importance: Major
2020 NEC	2023 NEC	
Article 430 430.2 Reconditioned Motors Based on the Style Manual 2.2.2.2.2, all definition previous found here were moved to Article 100. 	Article 430 430.2 Reconditioned Motors Motor may be reconditioned if the reconditioning has been completed as per the manufacturer's instructions. If no instructions for reconditioning are available, the criteria for reconditioning must be based on a nationally recognized standards. Reconditioned motors identified for use in hazardous (classified) locations must be listed as reconditioned if installed in hazardous (classified) location.	52

69

NEC Article: 430.6(A)(2)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 430 430.6(A)(2) Nameplate Values Separate motor overload protection shall be based on the motor nameplate current rating. 	Article 430 430.6(A)(2) Nameplate Values Motor nameplate current values are to be used for determining the following (1) Separate overload protection (2) For motors built for low speeds (less than 1200 RPM), high torques, canned pumps, or multispeed motors, use the nameplate value for the following: (a) Motor ampacity of conductors (b) Current rating of switches, Branch circuit, short circuit and ground faults amps (3) Large motors exceeding values in Part XIV- Use name plate for motor conductors. The change was made to improve clarity and usability	53

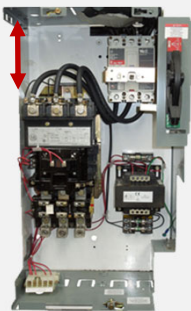
70

NEC Article: 430.113	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 430 Motors 	Article 430 Motors 430.113 Energy from More Than One Source Motor and motor-operated equipment receiving electric energy from more than one source shall be provided with disconnecting means from each source of electric energy. 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. The change called out certain signage verbiage	52

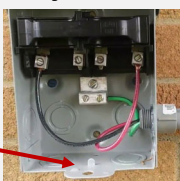
71

NEC Article: 430.201-208	Type of Change: Article Modification	Importance: Minor																								
2020 NEC	2023 NEC																									
Article 430 Over 1000 V, Nominal 430.201 - 430.208 Not present	<table border="1"> <thead> <tr> <th>2022</th><th>Article 430, Part XI. Over 1000 Volts, Nominal</th><th>2023</th></tr> </thead> <tbody> <tr> <td>430.221</td><td>General</td><td>430.201</td></tr> <tr> <td>430.222</td><td>Marking on Motor Controllers</td><td>430.202</td></tr> <tr> <td>430.223</td><td>Raceway Connection to Motors</td><td>430.203</td></tr> <tr> <td>430.224</td><td>Size of Conductors</td><td>430.205</td></tr> <tr> <td>430.225</td><td>Motor-Circuit Overcurrent Protection.</td><td>430.206</td></tr> <tr> <td>430.226</td><td>Rating of Motor Control Apparatus</td><td>430.207</td></tr> <tr> <td>430.227</td><td>Disconnecting Means</td><td>430.208</td></tr> </tbody> </table> Part XI renumbering was necessary to accommodate additional changes for future revisions. The controller definition has been updated changing controller to motor controller.	2022	Article 430, Part XI. Over 1000 Volts, Nominal	2023	430.221	General	430.201	430.222	Marking on Motor Controllers	430.202	430.223	Raceway Connection to Motors	430.203	430.224	Size of Conductors	430.205	430.225	Motor-Circuit Overcurrent Protection.	430.206	430.226	Rating of Motor Control Apparatus	430.207	430.227	Disconnecting Means	430.208	53
2022	Article 430, Part XI. Over 1000 Volts, Nominal	2023																								
430.221	General	430.201																								
430.222	Marking on Motor Controllers	430.202																								
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430.225	Motor-Circuit Overcurrent Protection.	430.206																								
430.226	Rating of Motor Control Apparatus	430.207																								
430.227	Disconnecting Means	430.208																								

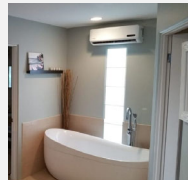
72

NEC Article:	Type of Change:	Importance:
430.204	New Article	Minor
2020 NEC	2023 NEC	
Article 430 430.204 Wiring Bending Space at Terminals Not present	 Article 430 430.204 Wiring Bending Space at Terminals Wire bending space at terminals inside of the enclosure must be provided for motor controllers that are rated over 1000 volts . The dimensions of the space must meet the requirements of Table 305.5. The new article aligns wire bending space at terminals with another new Article 305.5 that provides the standards for wire bending space for conductors in systems of over 1000 Volts, nominal.	
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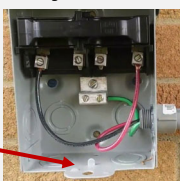
73

NEC Article:	Type of Change:	Importance:
440	Article Modification	Minor
2020 NEC	2023 NEC	
Article 440 440.11 General-Disconnection Means Part II requires a disconnecting means capable of disconnecting air-conditioning and refrigerating equipment, including motor-compressors and controllers from the circuit conductors.	 Article 440 440.11 General-Disconnection Means When unqualified persons have ready access to the disconnecting means, the enclosure cover shall require a tool to open it or be capable of being locked. This change helps protect unqualified persons from shock hazards.	
		57

74

NEC Article:	Type of Change:	Importance:
440.8	Article Modification	Major
2020 NEC	2023 NEC	
Article 440 AC & Refrigeration Equipment 440.8 Single Machines An air-conditioning or refrigerating system is considered a single machine based on 430.87, Exception No. 1, and 430.112, Exception. The motors can be located remotely from each other.	 Article 440 AC & Refrigeration Equipment 440.8 Single Machines Air-conditioning and refrigeration equipment must not be installed within 3 ft horizontally or 8 ft vertically from the top of a bathtub rim or shower stall threshold. As split-mini units become more prevalent in installations, they are being installed in bathtub and shower spaces due to lack of wall space. The added text prevents installation in certain spaces because of the hazards.	
		56

75

NEC Article:	Type of Change:	Importance:
440.11	Article Modification	Minor
2020 NEC	2023 NEC	
Article 440 440.11 General-Disconnection Means Part II requires a disconnecting means capable of disconnecting air-conditioning and refrigerating equipment, including motor-compressors and controllers from the circuit conductors.	 Article 440 440.11 General-Disconnection Means When unqualified persons have ready access to the disconnecting means, the enclosure cover shall require a tool to open it or be capable of being locked. This change helps protect unqualified persons from shock hazards.	
		55

76

NEC Article: 440.14	Type of Change: Article Modification	Importance: Major
2020 NEC	2023 NEC	
Article 440 440.14 Location The disconnecting means can be installed on or within the air-conditioning or refrigerating equipment. 	Article 440 440.14 Location The disconnecting means for air-conditioning and refrigeration equipment must comply with clearances identified in article 110.26(A). Language was introduced that made it well defined that clearance is required in front of A/C's and refrigeration equipment which includes disconnects.	

77

NEC Article: 445.18(A)	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 445 Generators 445.18(A) Disconnection Means Generators, (not cord-and-plug-connected portable generators) must have a disconnecting means. Each disconnecting means must be lockable open in accordance with 110.25. 	Article 445 Generators 445.18(A) Disconnection Means Added The disconnecting means may be located within the generator enclosure behind a hinged cover, door, or enclosure panel. When the disconnecting means is located in the generator enclosure behind a door, a label that meets requirements of 110.21(B) must be provided indicating the location of the disconnecting means. Additional modifications were made to clarify the allowed locations for emergency shutdown devices and required marking. This is usually provided by the manufacturer.	

78

NEC Article: 445.19(A)	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
	Article 445 445.19(A) General Generators must have provisions to shut down the prime mover. The means of shutdown must: (1) Disable all "start" control circuits. (2) Start a total shutdown that requires a manual reset to occur. The ability to shut down the prime mover must meet the requirements of 445.18(A) when it can be locked in an open position IAW 110.25. The information is not new, only moved from 445.18(B) 2020 NEC to 445.19(A) 2023 NEC.	

79

NEC Article: 445.19(B) & (C)	Type of Change: New Articles	Importance: Minor
2020 NEC	2023 NEC	
Article 445 445.19(B) Remote Emergency Shutdown 445.19(C) Emergency Shutdown in One- and Two-Family Dwelling Units Not present 	Article 445 445.19(B) Remote Emergency Shutdown 445.19(C) Emergency Shutdown in One- and Two-Family Dwelling Units These articles were moved from 445.18(C) and 445.18(D) to 445.19 (B) & (C), the following requirement was added to each: An emergency shutdown device mounted on the exterior of the generator enclosure will satisfy the requirements of this section. The shutdown device must be marked as the Generator Emergency Shutdown and the label must comply with 110.21(B).	

80

Article 450

Transformers and Transformer Vaults (including Secondary Ties)

Code Updates



62

81

NEC Article:	Type of Change:	Importance:
450.1	Article Modified	Minor
2020 NEC	2023 NEC	
Article 450 Transformers and Transformer Vaults 450.1 Scope This article covers the installation of all transformers. Eight various exceptions followed with listing transformers that were not covered by Article 450.1 Scope.	Article 445 transformers and Transformer Vaults 450.1 Scope This article covers the installation of all transformers other than the following: >> The section is rewritten to meet the requirements of the Style Manual. The last two sentences of the section were removed based on the application of 90.3	
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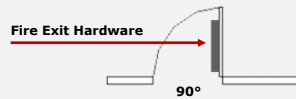
82

NEC Article:	Type of Change:	Importance:
450.1	Article Modified	Minor
2023 NEC		
Article 445 transformers and Transformer Vaults 450.1 Scope The eight exceptions from the 2020 NEC became the eight rules. The reference in each was removed		
(1) Current transformers (2) Dry-type transformers that constitute a component part of other apparatus and comply with the requirements for such apparatus (3) Transformers that are an integral part of an X-ray, high-frequency, or electrostatic-coating apparatus (4) Transformers used with Class 2 and Class 3 circuits (5) Transformers for sign and outline lighting (6) Transformers for electric-discharge lighting (7) Transformers used for power-limited fire alarm circuits (8) Transformers used for research, development, or testing, where effective arrangements are provided to safeguard persons from contacting energized part		
		63

83

NEC Article:	Type of Change:	Importance:
450.2(B)	Article Modified	Minor
2020 NEC	2023 NEC	
Article 450 Transformers and Transformer Vaults 450.3 Transformers 1000 Volts, Nominal, or Less (B) Overcurrent protection shall be provided in accordance with Table 450.3(B). Exception: Where the transformer is installed as a motor control circuit transformer in accordance with 430.72(C)(1) through (C)(5)	Article 445 Transformers and Transformer Vaults 450.2 Transformers 1000 Volts, Nominal, or Less Overcurrent protection shall be provided in accordance with Table 450.3(B) unless the transformer is installed as a motor control circuit transformer in accordance with 430.72(C)(1) through (C)(5). >> The exception was removed and combined with the rule. The Article was also moved to 430.2(B) because part 02 "definitions" was removed.	
		63

84

NEC Article: 450.43(C)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 450 450.43(C) Locks Transformer vault doors must be kept locked to disallow entry of unqualified persons. The door(s) must open in the direction of egress and have listed fire-exit hardware. 	Article 445 450.43(C) Locks Transformer vault doors must be kept locked to disallow entry of unqualified persons. The door(s) must open in the direction of egress and have listed fire-exit hardware. These doors must be capable of opening at least 90° in direction of egress. The 90° minimum opening dimension was added to the 2023 NEC.	

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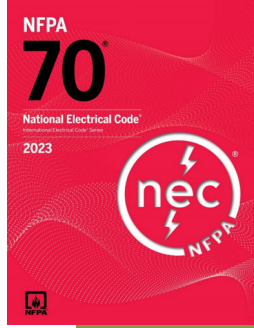
Article 460

Capacitors

Article 470

Resistors and Reactors

Code Updates



86

NEC Article: 460.24(A)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 460 Capacitors 460.24 Switching (Over 1000 V) (A) Load Current Group-operated switches must be used for capacitor switching and must be able to do the following: (1-4) 	Article 460 Capacitors 460.24 Switching (Over 1000 V) (A) Load Current Switches must be rated for switching of capacitive loads. The capacitor switching operation must open all ungrounded conductors and the switch must be able to do the following: (1-4) A clarification was added indicating switch attributes for capacitors and they must open all ungrounded conductors	

87

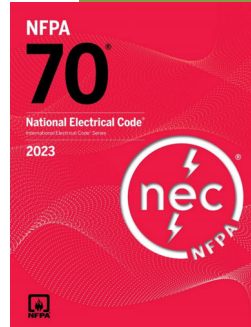
NEC Article: 470.2(A)&(B)	Type of Change: New Section	Importance: Minor
2020 NEC	2023 NEC	
Article 470 Resistors & Reactors 470.2 Reconditioned Equipment  NOTE: In the 2020 NEC 470.2 cover Locations requirements for resistors and reactors. It was moved to 470.10	Article 470 Resistors & Reactors 470.2 Reconditioned Equipment (A) Resistors Not allowed not be reconditioned. (B) Reactors Allowed to be reconditioned. Resistors are not allowed to be reconditioned because the reconditioning requires welds to be broken and replaced and ceramic spacers (and other components) to be inspected by a qualified individual. Reconditioning of reactors may be done but only at the discretion of the manufacturer.	

88

Article 495

Equipment Over 1000 V ac,
1500 V dc, Nominal

Code Updates



67

89

NEC Article:	Type of Change:	Importance:
495. 1 & 2	New Article	Minor
2020 NEC	2023 NEC	
Article 495 Equipment over 1000 Volts ac, 1500 Volts dc Not present NOTE: Article 490 was deleted, and its applicable contents entered into portions of Article 495 of the 2023 NEC.	Article 495 Equipment over 1000 Volts ac, 1500 Volts dc 495.1 Scope This article includes requirements for equipment operating at greater than 1000 volts ac, 1500 volts dc, nominal. 495.2 Reconditioned Equipment Unless modified within this article, reconditioned equipment is not allowed.	

68

90

NEC Article:	Type of Change:	Importance:
495 Part II	New Article	Minor
2020 NEC	2023 NEC	
Article 495, Equipment over 1000 V ac, 1500 V dc, Nominal	Part II: Equipment, Specific Provisions	
Not present	New Article	
	495.22	Isolating Means
	495.23	Voltage Regulation
	495.24	Minimum Space Separation
	495.25	Backfeed

69

69

91

NEC Article:	Type of Change:	Importance:
495 Part III	New Article	Minor
2020 NEC	2023 NEC	
Article 495, Equipment over 1000 V ac, 1500 V dc, Nominal	Part III: Equipment, Switchgear & Industrial Control Assemblies	
Not present	New Article	
	495.30	General
	495.31	Arrangement of Devices in Assemblies
	495.32	Guarding of High Voltage Live Parts in a Compartment
	495.33	Guarding of Live Parts Less than 1kV in a Compartment
	495.34	Clearance for Cable Conductors Entering Enclosure
	495.35	Accessibility of Energized Parts
	495.37	Equipment Grounding Connections
	495.38	Door Steps and Cover Plates
	495.39	Gas Discharge from Interrupting Devices
	495.40	Visual Inspection Windows

92

NEC Article:	Type of Change:	Importance:
495 Part III	New Article	Minor
2020 NEC	2023 NEC	
Article 495, Equipment over 1000 V ac, 1500 V dc, Nominal	Part III: Equipment, Switchgear & Industrial Control Assemblies	
Not present	New Article	Part III continued...
	495.41	Location of Industrial Control Equipment
	495.42	Interlocks – Interrupter Switches
	495.43	Stored Energy for Opening
	495.44	Fused Interrupter Switches
	495.45	Circuit Breakers - Interlocks
	495.46	Circuit Breaker Locking
	495.47	Switchgear Used as Service Equipment
	495.48	Substation Design, Documentation & Required Diagram
	495.49	Reconditioned Switchgear
	71	

93

NEC Article:	Type of Change:	Importance:
495 Part IV	New Article	Minor
2020 NEC	2023 NEC	
Article 495, Equipment over 1000 V ac, 1500 V dc, Nominal	Part IV: Mobile and Portable Equipment	
Not present	New Article	
	495.61	General
	495.62	Overcurrent Protection
	495.63	Enclosures
	495.64	Collector Rings
	495.65	Power Cable Connections to Mobile Machines
	495.66	High-Voltage Portable Cable for Main Power Supply
	72	

94

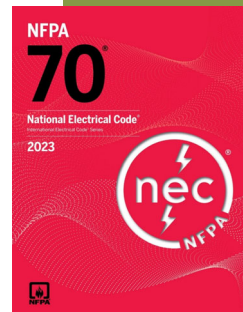
NEC Article:	Type of Change:	Importance:
495 Part V	New Article	Minor
2020 NEC	2023 NEC	
Article 495, Equipment over 1000 V ac, 1500 V dc, Nominal	Part V: Boilers	
Not present	New Article	
	495.70	General
	495.71	Electrical Supply System
	495.72	Branch-Circuit Requirements
	495.73	Pressure and Temperature Limit Control
	495.74	Bonding
	73	

95

Chapter 5, Articles 500-551

Special Occupancies

Code Updates



The image shows the cover of the NFPA 70 National Electrical Code, 2023 edition. It features a red background with the NFPA logo and the text 'NFPA 70 National Electrical Code 2023'.

75

96

NEC Article: Article 100	Type of Change: New Definition	Importance: Minor
2020 NEC	2023 NEC	
Chapter 1, Article 100 Definitions Restricted Industrial Establishment Not present	Chapter 1, Article 100 Definitions Restricted Industrial Establishment Establishment with restricted public access, where the conditions of maintenance and supervision ensure that only qualified persons service the installation. This is a global change that applies throughout Chapter 5 .	74

97

NEC Article: Article 500.1(B)	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
Article 500 Hazardous Locations, Classes I, II, III, Div 1-2 500.1 Scope (Articles 500-504) (B) Not Covered Not present	Article 500 Hazardous Locations, Classes I, II, III, Div 1-2 500.1 Scope (Articles 500-504) (B) Not Covered This article does not cover electrical and electronic equipment and wiring rated at all voltages for the following: (1) Zone 0, Zone 1, or Zone 2 locations (2) Zone 20, Zone 21, or Zone 22 locations (3) Locations for hazards explosives, pyrotechnics, and blasting agents (4) Locations where pyrophoric materials are handled (5) Components of equipment that are nonelectrical sources of ignition (e.g., couplings, pumps, gearboxes, brakes) Change: "Scope" never included "Not Covered" locations and equipment.	76

98

NEC Article: Article 500.4	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 500 500.4 Documentation Areas of a structure that are declared a hazardous location must be documented. Those who are authorized to design, install, operate, maintain, and inspect electrical equipment in these locations must have access to the documentation.	Article 500 500.4 Documentation Areas of a structure that are declared a hazardous location must be documented. The authority having jurisdiction , and those who are authorized to design, install, operate, maintain, and inspect electrical equipment in these locations must have access to the documentation. The authority having jurisdiction was added to the list of those required to have access to documentation associated with hazardous locations.	77

99

NEC Article: Article 500.8	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 500 500.8 Equipment Articles 500-504 takes into account requirements that equipment construction and installation standards ensure safe performance.	Article 500 500.8 Equipment Explosionproof or dust-ignition proof equipment must not be allowed for use at temperatures lower than -13°F unless they are identified for low-temperature service. Text has been revised to provide mandatory language and comply with 4.1.4 of the NEC Style Manual. Additionally, information noted in IN No.3 from the 2020 section relating to temperature restrictions is moved to the 500.8.	78

100

NEC Article:	Type of Change:	Importance:
Article 501.30	Article Modified	Minor
2020 NEC	2023 NEC	
Article 500 501.30 Grounding & Bonding All electrical systems, wiring and equipment in Class I, Division 1 and 2 locations must be grounded IAW Article 250 and with the requirements of 501.30(A)-(B).	Article 500 501.30 Grounding & Bonding The 2020 NEC Style Manual prohibits references to an <i>entire article</i>. This made it necessary to modify this article in the 2023 NEC as follows: (A) Grounding Wiring systems and equipment must be grounded in accordance with <i>Part I and Part VI</i> of Article 250, as applicable. (B) Bonding Bonding must comply with <i>Part I and Part V</i> of Article 250, as applicable, and 501.30(B)(1) and (B)(2). This applies to 502.30, 503.30 & 504.30, 505.30 & 506.30 Universal Change	

101

NEC Article:	Type of Change:	Importance:
Article 501.145	Article Modified	Minor
2020 NEC	2023 NEC	
Article 501 Class I Locations 501.145 Receptacles and Attachment Plugs, Class I, Div 1 & 2 The requirements for listing were not provided in the opening sentence. 	Article 501 Class I Locations 501.145 Receptacles and Attachment Plugs, Class I, Div 1 & 2 Receptacles and attachment plugs must be listed for the location, except as allowed by 501.105(B)(6). In the previous code, this article did not specifically call out a requirement for listing for receptacles and attachment plugs, Class I, Divisions 1 and 2.	

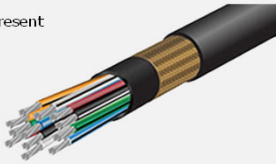
102

NEC Article:	Type of Change:	Importance:
Article 502.10(A)(1)(1)	Article Modified	Minor
2020 NEC	2023 NEC	
Article 502 Class II Locations 502.10(A)(1) General These wiring methods are allowed in Class II, Div 1: (1) Threaded rigid metal conduit (RMC) or threaded intermediate metal conduit (IMC). 	Article 502 Class II Locations 502.10(A)(1) General These wiring methods are allowed in Class II, Div 1: (1) Threaded rigid metal conduit (RMC) or threaded intermediate metal conduit (IMC), including conduit systems with supplemental corrosion protection coatings. <u>Underlined text was added to allow supplemental coatings on conduit for corrosion protection. Note: This applies to both Division 1 & 2 wiring methods for Class 2.</u>	

103

NEC Article:	Type of Change:	Importance:
Article 502.15(5)	Article Modified	Minor
2020 NEC	2023 NEC	
Article 502 502.15 Sealing, Class II, Div 1 & 2 If a raceway provides a path between an enclosure required to be dust-ignition proof and one that is not, a method to prevent the entrance of dust into the dust-ignition proof enclosure through the raceway must be established by one of these methods: (5) Not Present 	Article 502 502.15 Sealing, Class II, Div 1 & 2 If a raceway provides a path between an enclosure required to be dust-ignition proof and one that is not, a method to prevent the entrance of dust into the dust-ignition proof enclosure through the raceway must be established by one of these methods: (5) Electrical Sealing Putty (added in 2023) Previously, electrical sealing putty was listed as a sealing method in an informational note.	

104

NEC Article: Article 503.10(A)(1)(6)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 503 Class III Locations 503.10(A)(1) General In Class III, Division 1 locations, the following wiring methods must be allowed: (1)-(5) (6) Not Present 	Article 503 Class III Locations 503.10(A)(1) General In Class III, Division 1 locations, the following wiring methods are allowed: (6) In restricted industrial establishments, listed Type P cable with metal braid armor, with an overall jacket, that is terminated with fittings listed for the location. [see 503.10(A)(1)(6) for additional information] Item (6) - Type P cable has been added as an acceptable wiring method in Class III, Division 1 locations	83

105

NEC Article: Article 504.30(A)(2)(4)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 504 Intrinsically Safe Systems 504.30 Conductors Separation of Intrinsically Safe Conductors (A) From Nonintrinsically Safe Circuit Conductors (2) Within Enclosures Conductors of intrinsically safe circuits must be secured so that no conductor that might come loose from a terminal is likely to come into contact with another terminal. The conductors have to remain separated from conductors of nonintrinsically safe circuits by one of the following methods: (1)-(4)  Only four methods were present.	Article 504 Intrinsically Safe Systems 504.30 Conductors Separation of Intrinsically Safe Conductors (A) From nonintrinsically Safe Circuit Conductors (2) Within Enclosures (2) Conductors of intrinsically safe circuits must be secured so that no conductor that might come loose from a terminal is likely to come into contact with another terminal. The conductors have to remain separated from conductors of nonintrinsically safe circuits by one of the following methods: (1)-(5). A additional item was added (4) Use of separate wiring compartments for intrinsically safe and nonintrinsically safe terminals was added	84

106

NEC Article: Article 505.9(C)(2)	Type of Change: Article Modified/Table Added	Importance: Minor
2020 NEC	2023 NEC	
Article 505 Zone 0, 1, 2 Locations 505.9 Equipment (C) Marking (2) Zone Equipment Equipment that meets one or more of the protection techniques must be marked with all of the following in the order displayed: In item (2), Table 505.9(C)(2)(4) Equipment Suitability.	Article 505 Zone 0, 1, 2 Locations 505.9 Equipment (C) Marking (2) Zone Equipment Equipment that meets one or more of the protection techniques must be marked with all of the following in the order displayed: In item (2), Zone Equipment, (4) A new Table 13 in Chapter 9 "Equipment Suitable for Hazardous (Classified) Locations" was referenced instead of the original.	85

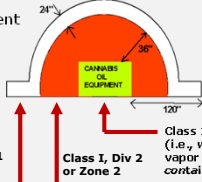
107

NEC Article: Article 505.16(B)(3)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 505 505.16 Sealing and Drainage (B)(3) Raceway seals must be installed in each conduit entry into a pressurized enclosure where the conduit is not pressurized as part of the protection system. They must be installed within 18" from the pressurized enclosure. 	Article 505 505.16 Sealing and Drainage (3) Raceway seals must be installed in each conduit entry into a pressurized enclosure or <u>pressurized room</u> where the conduit is not pressurized as part of the protection system. They must be installed within 18" from the pressurized enclosure or pressurized room. <u>Pressurized rooms</u> were added to areas requiring sealing	86

108

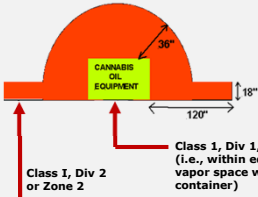
NEC Article: Article 512.1	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
	Article 512 Cannabis Oil Equipment and Cannabis Oil Systems Using Flammable Materials 512.1 Scope The scope covers associated equipment wiring, hazardous locations resulting from the extraction of plant oils.	
	87	

109

NEC Article: Article 512.3(A)(1)	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
Article 512.3(A)(1) Classification for Equipment and Systems Other than Booths, Where Flammable Gases or Vapors Are Released 512.3 Classified Locations Not present  Class I, Div 1 or Zone 1 Class I, Div 2 or Zone 2 Class I, Div 1, or Zone 0 (i.e., within equipment or vapor space within a container) Article 512 512.3 Classified Locations Cannabis oil equipment and systems that can release flammable materials during operation are classified in accordance with 512.3(A) and (B) (A) Cannabis Oil Equipment & Systems Other Than Booths (1) Where Flammable Gases or Vapors Are Released For sources of gases or vapors from a flammable material, the location must be classified in accordance with the drawing. Verify locations from text when determining actual hazardous locations.		

88

110

NEC Article:	Type of Change:	Importance:
Article 512.3(A)(2)	New Article	Minor
2020 NEC	2023 NEC	
Area Classification for Equipment and Systems Other than Booths, Where Flammable Gases or Vapors Are Not Released  Article 512 512.3 Classified Locations Cannabis oil equipment and systems that can release flammable materials during operation are classified in accordance with 512.3(A) and (B) (A) Cannabis Oil Equipment & Systems Other Than Booths (1) Where Flammable Gases or Vapors <u>Are</u> Released (2) Where Flammable Gases or Vapors Are Not Released, Except During Disconnection or Opening.		
		89

111

NEC Article: 512.0-.32	Type of Change: New Article	Importance: Minor														
2020 NEC	2023 NEC															
Article 512.10-.32	Article 512 Cannabis Oil Equipment and Cannabis Oil Systems Using Flammable Materials															
Not present	<table><tr><th>New Article</th><th></th></tr><tr><td>512.10</td><td>Wiring Installation and Operation</td></tr><tr><td>512.13</td><td>Wiring Installation Above Hazardous Locations</td></tr><tr><td>512.20</td><td>Equipment and Systems</td></tr><tr><td>512.22</td><td>Equipment Installed in Hazardous Locations</td></tr><tr><td>512.30</td><td>Equipment Installed Above Hazardous Locations</td></tr><tr><td>512.32</td><td>Marking</td></tr></table>		New Article		512.10	Wiring Installation and Operation	512.13	Wiring Installation Above Hazardous Locations	512.20	Equipment and Systems	512.22	Equipment Installed in Hazardous Locations	512.30	Equipment Installed Above Hazardous Locations	512.32	Marking
New Article																
512.10	Wiring Installation and Operation															
512.13	Wiring Installation Above Hazardous Locations															
512.20	Equipment and Systems															
512.22	Equipment Installed in Hazardous Locations															
512.30	Equipment Installed Above Hazardous Locations															
512.32	Marking															

90

112

NEC Article: Article 514.7	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 514 Motor Fuel Dispensing Facilities 514.7 Wiring and Equipment Above Hazardous (Classified) Locations Equipment above a Class I location as identified in 514.3 must comply with 511.7. This section referred to: (A) Wiring in spaces above a Class 1 Location (B) Electrical Equipment Installed Above Class I Locations 	Article 514 Motor Fuel Dispensing Facilities 514.7 Wiring and Equipment Above Hazardous (Classified) Locations Wiring and equipment above hazardous locations must be one or more of the following: Nine wiring methods from Commercial Garages, Repair, and Storage - Article 511.7(A)(1) – (1-9) were listed individually in this modified article, with minor adjustments to (1), (2), (7), & (8).	91

113

NEC Article: Article 515.10	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 515 Bulk Storage Plants 515.10 Special Equipment—Gasoline Dispensers All wiring associated with flammable gases dispensed at bulk station must conform to Article 514. 	Article 515 Bulk Storage Plants 515.10 Special Equipment—Gasoline Dispensers Dispensers for gasoline or other volatile flammable liquids or liquefied flammable gases must conform to the requirements for motor fuel dispensing facilities, except as modified by this article. The reference to Art. 514 has been removed. Article 514 referred to motor fuel dispensing facilities . Bulk storage plants differ in that they are not typically used by the public and not all rules apply.	92

114

NEC Article: Article 517.1	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 517 Health Care Facilities 517.1 Scope (second paragraph) The requirements in Parts II and III not only apply to single-function buildings but are also intended to be individually applied to their respective forms of occupancy. 	Article 517 Health Care Facilities 517.1 Scope (second paragraph modified) This article specifies the installation standards and wiring methods that minimize electrical hazards that could injure a patient. The scope of Article 517 was revised to incorporate the text formally found in 517.11 in the 2020 NEC. The revised scope provides a clearer view of installation standards not found in the previous code. INs were also revised.	93

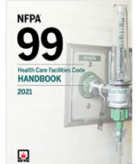
115

NEC Article: Article 517.6	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
Article 517 517.6 Patient Care-Related Electrical Equipment Not present	Article 517 517.6 Patient Care-Related Electrical Equipment Patient care electrical equipment may be reconditioned. Informational notes were added: <i>Informational Note No. 1:</i> Patient care-related electrical equipment is different from electrical equipment referenced in 110.21(A)(2). <i>Informational Note No. 2:</i> If patient care-related electrical equipment is relocated, it is expected to be recommissioned or recertified in accordance with the U.S. Federal Food, Drug, and Cosmetic Act.	94

116

NEC Article: Article 517.10(B)(3)(e)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 517 517.10(B)(3) Wiring & Protection Not Covered Areas used only for any of the following purposes are not covered as patient care space: - Intramuscular injections (immunizations) - Psychiatry and psychotherapy - Alternative medicine - Optometry Not present	Article 517 517.6 Patient Care-Related Electrical Equipment Pharmacy services not contiguous to health care facilities. Pharmacies were added to space not requiring wiring methods to align with health care wiring	

117

NEC Article: Article 517.30(A)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 517 517.30(A) Two Independent Power Sources Essential electrical systems must have a minimum of the following: Two independent sources of power: - a normal source generally supplying the entire electrical system and - one or more alternate sources available when the normal source is interrupted.	Article 517 517.30(A) Two Independent Power Sources Essential Electrical Systems (EES) must have two or more independent on-site sources. One has to be on site that is sized to supply the entire EES. The other must be sized to supply the entire EES and can be located on-site or off-site. The changes were made to correlate with NFPA 99. Article 517.41 also invokes this change because of a need to correlate with NFPA 99.	

118

NEC Article: Article 517 Part V	Type of Change: Global Change	Importance: 2Minor
2020 NEC	2023 NEC	
Article 517 Part V – Global Change	Article 517 Part V – Global Change Where the wording X-Ray occurred or was referred to, the new wording Diagnostic Imaging and Treatment Equipment replaced it.	

119

NEC Article: 518.2(A)	Type of Change: New Article	Importance: Minor	
2020 NEC		2023 NEC	
Article 518 Assembly Occupancies 518.2(A) Assembly occupancies include:		Article 518 Assembly Occupancies 518.2(A) Assembly occupancies include:	
Armories	Exhibition Halls	Armories	Exhibition Halls
Assembly Halls	Gymnasiums	Assembly Halls	Gymnasiums
Auditoriums	Mortuary Chapels	Auditoriums	Mortuary Chapels
Bowling Lanes	Multipurpose Rooms	Bowling Lanes	Multipurpose Rooms
Club Rooms	Museums	New: Casinos & Gaming Facilities	Museums
Conference Rooms	Places of Transport Waiting	Club Rooms	Places of Transport Waiting
Court Rooms	Places of Religious Worship	Conference Rooms	Places of Religious Worship
Dance Halls	Pool Rooms	Court Rooms	Pool Rooms
Dining & Drinking Facilities	Restaurants	Dance Halls	Restaurants
	Skating Rinks	Dining & Drinking Facilities	Skating Rinks

120

NEC Article: Article 518.4(B)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 518 518.4 Wiring Methods (B) Nonrated Construction Part (B) and all subsequent subsections, moved down to make room for new part (B)... 	Article 518 518.4 Wiring Methods NEW (B) Communications, Signaling Systems, Data Systems, Fire Alarm Systems, and Systems Less Than 120 V, Nominal. Permanent (fixed) wiring methods are to be as follows: (1) Audio IAW 640.9 (2) Communications IAW 805 & 840 (3) Class 2 & 3 IAW 725 Part III (4) Class 2 that transmit power data or both to powered devices The article was reformatted for clarity.	99

121

NEC Article: Article 518.5(A,B,C)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 518 518.5 Supply The 2020 NEC version of this article addressed certain requirements for portable switchboards and portable power distribution equipment. This included power outlets, OCPD and provisions for connecting. It also focused on feeder wiring requirements. 	Article 518 518.5 Supply The portable switchboards and portable power distribution equipment section was revised into list format with additional information provided for each these subsections: (A) Power Outlets and Commercial Appliance Outlet Centers (B) Portable Switchboards and Portable Power Distribution Equipment (C) Neutral Conductor of Feeders Supplying Solid State Dimmer Systems The additional information will enhance the understanding of the article requirements.	100

122

NEC Article: Article 520.53(C)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 520 Theaters, Motion Picture & Television Studios & Audience Areas 520.53(C) Single-Pole Separable Connectors Single-pole separable connectors must comply with 406.13. Sections 400.14, 406.7, and 406.8 don't apply to listed single-pole separable connectors. 	520.53(C) Single-Pole Separable Connectors The article was reduced to: Following the standards of 406.13. Sections 400.14, 406.7, and 406.8. These articles were already in place and addressed the requirement of single-pole separable connectors as well as portable cord connections of equipment. In the 2020 NEC, single-pole separable connectors moved to 406.13. Therefore, it is not appropriate for the general requirements of single-pole separable connectors to also appear in Article 520. Only Article 520-specific requirements for these devices appear in Article 520.	101

123

NEC Article: Article 530	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 530 Motion Picture and Television Studios and Similar Locations 	Article 530 Motion Picture and Television Studios and Similar Locations 520.53(C) Single-Pole Separable Connectors Because of very few changes to electrical equipment used in the movie industry, few changes to the code resulted. However, in recent years, many technological advancements occurred as equipment became more advanced and automated. These many changes resulted in a need to totally reorganize Article 530 and made it necessary to ensure that safety was of utmost importance. Review all requirements of Art. 530 for additional information.	102

124

NEC Article:	Type of Change:	Importance:
Article 547	Article Modified	Minor
2020 NEC	2023 NEC	
Article 547 Agricultural Buildings	Article 547 Agricultural Buildings	
547.1 Scope 547.2 Definitions 547.3 Other Articles 547.4 Surface Temperatures 547.5 Wiring Methods 547.6 Switches, Receptacles, Circuit Breakers, Controllers, Fuses 547.7 Motors 547.8 Luminaires 547.9 Elec Supply to Buildings/Structures from a Distribution Point 547.10 Equipotential Planes & Bonding of Equipotential Planes	A significant reorganization occurred for additional articles and more clarity. It was split into three parts: Part I General 547.1 – 547.4 Part II Installations 547.20 – 547.31 Part III Distribution 547.40 – 547.44	
		103

125

NEC Article:	Type of Change:	Importance:
Article 547.26	Article Modified	Major
2020 NEC	2023 NEC	
Article 547	Article 547	
547.5(E) Physical Protection	547.5(E) Physical Protection	
All electrical wiring and equipment, where subject to physical damage, must be protected. 	All electrical wiring and equipment, where subject to physical damage, must be protected. Nonmetallic cables can not be concealed in walls and above ceilings of buildings (i.e., offices, lunchrooms, ancillary areas, etc.) or portions thereof, which are connected with or physically adjoined to livestock confinement areas. <i>Informational Note: Rodents and other pests are common in such installations and will damage NM cables by chewing the cable jacket and conductor insulation concealed within walls and ceilings of such locations in agricultural buildings</i>	
		104

126

NEC Article:	Type of Change:	Importance:
Article 547.44(B)	Article Modified	Major
2020 NEC	2023 NEC	
Article 547	Article 547	
547.44(B) Bonding	547.44(B) Bonding	
Equipotential planes must be connected to the electrical grounding system. The bonding conductor must be solid copper, insulated, covered or bare, and not smaller than 8 AWG. 	Equipotential planes must be bonded to the grounding electrode system or an equipment grounding terminal in any panelboard of the electrical grounding system associated with the equipotential plane. <i>This change clarifies the point of bonding for equipotential plane ground conductor.</i> <i>Article 547.10 became 547.44 as the articles were repositioned for clarity</i>	
		105

127

NEC Article:	Type of Change:	Importance:
Article 550.32(A)	Article Modified	Minor
2020 NEC	2023 NEC	
Article 550 Mobile Homes, Manufactured Homes, Mobile Home Parks	Article 550 Mobile Homes, Manufactured Homes, Mobile Home Parks	
550.32(A) Mobile Homes and Manufactured Homes	550.32(A) Mobile Homes and Manufactured Homes	
No reference to the required, external emergency disconnect was made in Article 550.32. 	The mobile home service disconnect can be used as the emergency disconnect in accordance with 230.85. <i>A clarification was provided indicating an external disconnect on a mobile home qualifies as the emergency disconnect.</i> <i>The disconnect would require marking as per 230.82(E)(1).</i>	
		106

128

NEC Article: Article 551.3	Type of Change: New Article	Importance: Minor
2020 NEC	2023 NEC	
	Article 551 Recreational Vehicles & RV Parks 551.3 Electrical Datum Plane Distances (A) The electrical datum plane for land areas subject to tidal fluctuation is 2' above the highest water level under normal conditions (B) The electrical datum plane for land areas not subject to tidal fluctuation is 2' above the highest water level under normal conditions	
	 107	

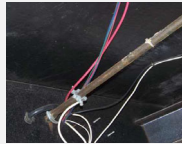
129

NEC Article: Article 551.30(A)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 551 551.30 Generator Installations (A) Mounting Generators must be mounted in such a way to ensure the frame is effectively bonded to the recreational vehicle chassis.	Article 551 551.30 Generator Installations (A) Mounting Generators must be mounted in so that the frame is effectively bonded to the recreational vehicle chassis. The connection of the electrical system produced by the generator must create an effective ground-fault return path when the generator is running.	
	 The second sentence was added because it is important that the connection of the generator to the electrical system continue to provide a ground-fault return path so that protection is maintained whether the unit is supplied by RVSE or by the generator.  108	

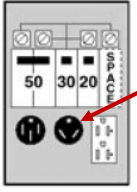
130

NEC Article: Article 551.40(D)	Type of Change: Article Modified	Importance: Major
2020 NEC	2023 NEC	
Article 551 551.40(D) Reverse Polarity Device A reverse polarity device was required in RV's to alert the user that a power source had been compromised and had a reverse grounded neutral conductor and ungrounded conductor.	Article 551 551.40(D) Loss of Ground Device This listed ground monitor device will be required to be permanently installed and interrupt current when sensing an open ground from the source. It will be required in RVs after 01/01/26. RV manufacturers will most likely install these devices. The 2020 NEC part D of this article is removed .	
	 109	

131

NEC Article: Article 551.47(N)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 551 551.47 Wiring Methods (N) Moisture & Physical Damage Where outdoor or under-chassis wiring is 120 volts, or over and is exposed to moisture or physical damage, the following wire methods are required: RMC, IMC, EMT, RNC, or Type MI Cable.	Article 551 551.47 Wiring Methods (N) Moisture & Physical Damage (1) Where outdoor or under-chassis line-voltage (120 V or over) wiring is exposed, it must be safeguarded by a conduit or raceway listed for use in wet locations. The conductors must be listed for use in wet locations.	
	under chassis view:  The change does not limit listed and identified wiring methods as required in 551.40(A) and 551.40(B) or create unintentional design restrictions.  110	

132

NEC Article: Article 551.71(B)	Type of Change: Article Modified	Importance: Major
2020 NEC	2023 NEC	
Article 551 551.71 Receptacles Provided (B) 30-Ampere 70% of RV sites with electrical supply must have a 125-volt receptacle, 30 amperes.	Article 551 551.71 Receptacles Provided (B) 30-Ampere In addition to the 70% of sites requiring 30 amp receptacles, the 125V, 30A receptacles must be weather-resistant receptacle conform to this 30 ampere, 125-volt configuration. (Figure 551.46(C)(1) in the NEC)	
		This change was made to enhance safety and the WR type receptacle is available. WR receptacles, <u>50A</u> , will be required after 01/01/2026.
		111

133

NEC Article: Article 551.72(D)	Type of Change: Article Modified	Importance: Minor
2020 NEC	2023 NEC	
Article 551 551.72 Distribution Systems (D) Neutral Conductor Neutral conductors can be reduced in size below the required size of the ungrounded conductors for 240-volt, line-to-line, permanently connected loads only.	Article 551 551.72 Distribution Systems (D) Neutral Conductor A sentence was added to the 2020 text: The neutral conductors can not be reduced in size below the ungrounded conductors for the site distribution. CMP-7 made a clarification that a 50-amp circuit to a pedestal is not site distribution but a feeder. Therefore, this permitted a reduced neutral. A site distribution may be two of three legs of a 3Ø service, therefore negating neutral reduction.	
		112

134

NEC Article: Article 551.77	Type of Change: Article Modification	Importance: Minor
2020 NEC	2023 NEC	
Article 551 551.77 Recreational Vehicle Site Supply Equipment Not present	Article 551 551.77 Recreational Vehicle Site Supply Equipment Recreational vehicle site supply equipment must be listed for use as recreational vehicle site supply equipment and must comply with 551.77(A)-(F). A requirement was added that all RVSE must be listed.	
		113

135

This completes 2023 NEC Code Updates – Part 3 (4 hours CE)

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136