

REFER TO:

Minutes 5-16-2022

Page \_\_\_\_\_

## City of St. Charles, Illinois

### Ordinance No.: 2022-M-33

**An Ordinance Amending Chapter 15.04 “Building Code”, Section 15.04.040 “National Electrical Code 2020 Regulations Adopted and Modified” of the St. Charles Municipal Code**

**Adopted by the  
City Council  
of the  
City of St. Charles  
May 16, 2022**

Published in pamphlet form by  
authority of the City Council  
of the City of St. Charles,  
Kane and Du Page Counties,  
Illinois, May 23, 2022

*Nancy Garrison*  
City Clerk



(S E A L)

**City of St. Charles, Illinois**  
**Ordinance No. 2022-M-33**

**An Ordinance Amending Chapter 15.04 “Building Code”, Section 15.04.040  
“National Electrical Code 2020 Regulations Adopted and Modified” of the St.  
Charles Municipal Code**

**WHEREAS**, the standard code known as NFPA 70, the National Electrical Code, has been updated by the National Fire Protection Associations, Inc.; and

**WHEREAS**, not less than one (1) copy of said code has been and is on file in the Office of the Clerk of the City of St. Charles, Illinois for more than thirty (30) days prior to the passage and approval of the Ordinance; and

**WHEREAS**, the Building Official has provided notice to the Illinois Building Commission regarding proposed changes to regulations regarding construction related activities within the City of St. Charles, as provided by 20 ILCS 3918/55; and

**WHEREAS**, the City Council finds it to be in the interest of City of St. Charles to periodically update codes regulating building and structures.

**NOW THEREFORE, BE IT ORDAINED** by the City Council of the City of St. Charles, Kane and DuPage Counties, Illinois as follows:

**SECTION ONE:** That Title 15, “Building Construction”, Chapter 15.04 “Building Code” of the St. Charles Municipal Code be and is hereby amended by deleting Section 15.04.040 and substituting the following therefor:

**15.04.040 National Electrical Code 2020 – Regulations Adopted and Modified.**

The provisions of the 2020 Edition of the National Electrical Code, NFPA 70, issued by the National Fire Protection Association, Inc., One Batterymarch Park, Quincy, Massachusetts, 02269 (hereinafter sometimes referred to as the “NEC”) not less than three (3) copies of which have been and are on file in the Office of the Clerk of the City of St. Charles, Illinois, for more than thirty (30) days, together with the amendments listed herein, are hereby adopted.

1. **Article 110 Section 110.5 Conductors:** revise by deleting and substituting the following:  
Other than service conductors provided by the Utility or multiplexed aerial cables as allowed in Article 396 Section 396.2(4) that comply with Article 310, all conductors shall be copper unless otherwise specifically approved by the City of St. Charles Building and Code Enforcement or the City of St. Charles Electric Utility.

2. **Article 110 Section 110.13 (A) Mounting:** Add a new paragraph to read as follows:  
(A) Mounting. All electric panels mounted on concrete or masonry walls that are either exterior walls or below grade, shall have a minimum of 1/2 inch plywood installed behind the panel, or the panel shall be mounted to structural mounting channel that provides a minimum 1/2 inch airspace between the panel and the wall, for the purposes of support and to help prevent moisture entering the panel. Such mounting shall allow panel replacement if required.
3. **Article 210 Section 210.70 Lighting Outlets Required:** Add a new paragraph to read as follows:  
(D) Illumination of Mechanical Equipment. All occupancies shall have luminaries installed within four (4) feet of the front of all electric panels and within four (4) feet of all mechanical equipment to enable servicing the equipment.
4. **Article 225 Outside Branch Circuits and Feeders**
  - a. **Section 225.30 Number of Supplies:** Add a new paragraph to read as follows:  
(G) Everything in this complete section applies only to feeders and branch circuits, and not Electric Utility services.
5. **Article 230 Services Part 1 General**
  - a. **Section 230.2 Number of Services:** revise by adding the following language:  
All new construction, as well as One and Two-Family Attached (two units) and Detached dwellings that are rebuilt or added onto from the foundation or partial foundation upward, are required to have an underground electrical service.
  - b. **Section 230.2 Number of Services, (B) Special Occupancies:** By special permission, which means written consent and approval by the City of St. Charles Municipal Electric Utility, additional services shall be permitted for either of the following:
    - (1) Multiple-occupancy buildings where there is no available space for service equipment accessible to all occupants
    - (2) A single building or other structure sufficiently large to make two or more services necessaryAdd new paragraph to read as follows:
    - (3) Multiple-occupancy buildings will have either an external building main disconnect, a key operated shunt trip main disconnect, or parallel key operated shunt trip main disconnects for all services supplied to the building. Parallel shunt trip key operated main disconnects must be provided and installed in a manner approved by the City St. Charles Municipal Electric Utility
  - c. **Section 230.3 One Building or Other Structures Not to be Supplied Through Another:** revise by deleting and substituting the following:  
230.3 One Building, or Other Structure, or Tenant Space, Not to be Supplied Through Another. Service conductors, feeders, or branch circuits of one building, or other structure, or tenant space, shall not pass through the interior of another building, or structure, or tenant space.

- d. **Section 230.6 Conductors Considered Outside the Building:** Add new paragraph to read as follows:  
(6) Where installed in any “common area” (hallway, corridor or common space accessible to multiple premises) that meets the construction requirements of a one-hour fire rating. Conductors shall be installed in solid metal raceway conduit within “common areas” and shall have a label every five (5) feet identifying the conductors within the conduit.
- e. **Section 230.43 Wiring Methods for 1000 volts, nominal, or Less:** revise by deleting the list of approved methods and substituting the following:
  - (1) Rigid Metal Conduit (RMC)
  - (2) Intermediate Metal Conduit (IMC)
  - (3) Rigid Polyvinyl Chloride Conduit (PVC)- but only for underground installations with conversion to RMC or IMC above grade if exposed.
- f. **Section 230.44 Cable Trays: Delete entire section**
- g. **Section 230.46 Spliced and Tapped Conductors:** revise by deleting and substituting the following:  
230.46 Spliced Conductors- : Splices in service entrance conductors, other than those installed by the Electric Utility, are not allowed. Taps on the line side of the service main disconnect are not allowed.
- h. **Section 230.70 General (A) Location, (1) Readily Accessible Location:** revise by deleting and substituting the following:
  - (1) Readily Accessible Location. Service disconnecting means shall be provided either outside the building or through a shunt trip main with remote control at the Fire Control Panel and shall have provisions to allow the service to be locked open. Each building/tenant space shall have a main disconnect incorporated within the main distribution panel inside the space in addition to any external main or building shunt trip main for multiple occupancy buildings.
- i. **Section 230.70 General (A) Location: (3) Remote Control:** revise by deleting and substituting the following: Where remote control devices are used to actuate the service disconnecting means, the service conductors installed inside a building without over current protection shall not exceed five (5) feet in length.
- j. **Section 230.71 Maximum Number of Disconnects:** revise by deleting the entire section and substituting the following:  
All buildings are limited to one (1) electric service in accordance with 230.2 and one (1) electric service disconnect. Exceptions are as listed in 230.2; single family residences are limited to one (1) service; two family duplex residences are limited to two (2) services; townhomes of three to six residences are limited to three (3) to six (6) services; and multi-tenant buildings must have one (1) building service disconnect which is ahead of all tenant metered services.
- k. **Section 230.79 Rating of Service Disconnecting Means (C) One- and Two-Family Attached (two units) and Detached Dwelling:** revise by deleting and substituting the following:  
**(C) One-and Two-Family Attached (two units) and Detached Dwelling:** All electric panel installations for new single-family dwellings and remodel/additions of existing dwellings that rebuild from the foundation or any part thereof upward

shall be a minimum of 200-ampere rated. The main service disconnecting means (circuit breaker or fused switch) shall be 200-ampere rated.

**(D) All Others:** revise by deleting and substituting the following:

(D) Multi-family and Single-family Attached Dwellings. All apartment or dwelling unit electric panel installations for new multi-family dwellings and new single family attached six (6) or less dwelling units shall be a minimum of 100-ampere rated. The occupancy main service disconnecting means (circuit breaker or fused switch) for each apartment or dwelling unit shall be a minimum of 100-ampere rated.

(E) All Others. For all other installations, the service disconnecting means shall have a rating of not less than 60-ampere, unless approved by the City of St. Charles Municipal Electric Utility.

l. **Section 230.82 Equipment Connected to the Supply Side of Service**

**Disconnect:** revise by deleting all and substituting the following:

Only the following equipment shall be permitted to be connected to the supply side of the service disconnecting means:

(1) Cable limiters- only allowed when reviewed and approved by the Electric Utility.

(2) Meters and meter sockets nominally rated not in excess of 1000 volts, if all metal housings and service enclosures are grounded in accordance with Part VII and bonded in accordance with Part V of Article 250.

Equipment and interconnections cannot be installed on the supply side of the service meter/main.

m. **Section 230.85 Emergency Disconnects:** revise by deleting all and substituting the following:

“Emergency Disconnect-Not Service Disconnect” installations are not allowed. Residential services 1-2-3-4-5-6 family installations (single family, duplexes, townhomes for 3-6 units) allowed to have a single service to the building with separate meter/mains for each occupancy, with required labeling. All other buildings are to have an exterior service main disconnect or an exterior key operated switch to disconnect an interior shunt-trip service main disconnect.

6. **Article 242 Overvoltage Protection:**

a. **Section 242.12 Type 1 SPDs (A) Installation (1):** revise by deleting and substituting the following:

(1) Equipment and connections to the supply side of the service disconnect are not allowed.

b. **Section 242.12 Type 1 SPDs (B) At the Service:** revise by deleting and substituting the following:

(1) Equipment grounding terminal in the service equipment.

7. **Article 250 Grounding and Bonding**

- a. **Section 250.24 Grounding of Service-Supplied Alternating-Current Systems (A) System Grounding Connections (1) General:** revise by deleting and substituting the following:

The grounding electrode conductor connection from each grounding electrode shall be made at a single point at the terminal or bus to which the grounded service conductor is connected at the service disconnecting means.

- b. **Section 250.25 Grounding Systems Permitted to be Connected on the Supply Side of the Disconnect:** revise by deleting and substituting the following:

Grounding electrode conductors and equipment grounding conductors are not allowed to be connected on the supply side of the service main disconnect.

- c. **Section 250.28 Main Bonding Jumper and System Bonding Jumper (A)**

**Material:** revise by deleting and substituting the following:

Main bonding jumpers and system bonding jumpers shall be of copper. Main bonding jumpers and System bonding jumpers shall be copper conductors or factory supplied or approved bus.

- d. **Section 250.50 Grounding Electrode System:** revise by deleting and substituting the following:

All grounding electrodes as described in 250.52(A)(1) through (A)(7) that are present at each building or structure served shall be utilized for grounding the electric service at the first point of disconnect only, and all grounding electrode conductors and their respective raceways must be installed directly from the grounding electrode in a dedicated raceway.

- e. **Section 250.53 Grounding Electrode System Installation (D) Metal Underground Water Pipe (2) Supplemental Electrode Required:** revise by deleting and substituting:

A metal underground water pipe shall be supplemented by an additional electrode of a type specified in 250.52 (A) (2-8). If the additional electrode is a rod type as specified in 250.52 (A) (5), then that electrode must also have a supplemental additional electrode of a type specified in 250.53 (A) (2), unless as noted in 250.53 (D) (2) Exception that the first supplemental electrode has a resistance to earth of 25 ohms or less as evidenced by a fall-of-potential test witnessed by the City of St. Charles Municipal Electric Utility. All supplemental electrodes shall be connected with a grounding electrode conductor to the grounded service-entrance conductor at the service main disconnecting means, except that a 250.52 (A) (5) supplemental ground rod electrode may connect to the first additional electrode if it is also a ground rod.

- f. **Section 250.62 Grounding Electrode Conductor Material:** revise by deleting and substituting the following: All grounding electrode conductors shall be copper, and the installation of the conductor shall protect against corrosion. Conductors of the wire type shall be solid or stranded, and insulated, or covered, or bare.

- g. **Section 250.64 Grounding Electrode Conductor Installation:** Section 250.64 installations must be in accordance with Section 250.50.

**(A) Aluminum or Copper-Clad Aluminum:** revise by deleting and substituting the

following:

All grounding electrode conductors shall be copper only.

**(B) Securing and Protecting Against Physical Damage:** revise by deleting and substituting the following:

All grounding electrode conductors shall be installed in an independent and dedicated raceway directly from the grounding electrode to the service single first point of disconnect.

**(C) Continuous:** revise by deleting and substituting the following: Grounding electrode conductor(s) shall be installed in one continuous length without a splice or joint.

**(E) Raceways and Enclosures for Grounding Electrode Conductors. (1)**

**General:** revise by including additional language as follows:

Ferrous metal raceways and enclosures for grounding electrode conductors shall be electrically continuous from the point of attachment to cabinets or equipment to the grounding electrode and shall be securely fastened to the ground clamp or fitting. Ferrous metal raceways and enclosures shall be bonded at each end of the raceway or enclosure to the grounding electrode or grounding electrode conductor. All grounding electrode conductor raceways that are exterior and exposed above grade shall be ferrous metal RMC or IMC conduit. Schedule 40 rigid PVC conduit is permitted for grounding electrode conductor raceways installed both above grade and underground in the interior of a building, as well as exterior underground if the entire raceway is completely below grade. Schedule 40 rigid PVC grounding electrode conductor raceways are not required to be electrically continuous.

**(F) Installation to Electrode(s).** revise by deleting and substituting the following:

Unless granted a specific exemption by the City of St. Charles Municipal Electric Utility, all grounding electrode conductors and raceways must be installed separately and continuously from each grounding electrode to the service grounded conductor (neutral) grounding/bonding termination point at the service main disconnect.

- h. **Section 250.68 Grounding Electrode Conductor and Bonding Jumper Connection to Grounding Electrodes (C) Grounding Electrode Connections:**

revise by deleting (1), (2) and (3) and substituting the following:

The metal structural frame of a building can only be used as a bonding conductor for a grounding electrode conductor by specific approval of the City of St. Charles Municipal Electric Utility.

- i. **Section 250.118 Types of Equipment Grounding Conductors:** revise by deleting and substituting the following:

The equipment grounding conductor must be a separate copper conductor run with the circuit conductors unless given exemption by the City of St. Charles Municipal Electric Utility which may require approved certified testing.

8. **Article 300 General Requirements for Wiring Methods and Materials**

- a. **Section 300.1 Scope (A) All Wiring Installations:** add new paragraph to read as follows:

(1) With the exception of one and two family dwellings, all current carrying conductors exceeding 50 volts shall be installed in rigid metal conduit, intermediate metallic conduit, electrical metallic tubing, flexible metallic tubing,

MC cable, or AC cable, with the exception that PVC conduit may be used with the approval of the City of St. Charles Building and Code Enforcement Department for corrosive or other special application areas.

- b. **Section 300.5 (C) Underground Installations:** delete Exception No. 1 and delete Exception No. 2
- c. **Section 300.5 Underground Installations, (D) Protection from Damage, (3) Service Conductors:** revise by deleting and substituting the following:  
(3) Service Conductors. Single and two family dwelling underground service conductors shall be installed in minimum 3" Schedule 40 PVC. All other underground service conductors shall be installed in RMC, IMC, or Schedule 40 PVC conduit that is encased in concrete unless given exemption by the City of St. Charles Municipal Electric Utility.
- d. **Table 300.5 Minimum Cover Requirements, 0 to 1000 Volts, Nominal, Burial in Millimeters (Inches):** delete the third row table entries related to Under a Building.
- e. **Table 300.5 Minimum Cover Requirements, 0 to 1000 volts, Nominal, Burial in Millimeters (Inches):** revise by deleting the fourth row and substituting the following fourth row description to read as follows:  
Table 300.5 Minimum Cover Requirements, 0 to 1000 Volts, Nominal, Burial in Millimeters (Inches). Under minimum of 102 mm (4 inch) thick concrete interior or exterior slab with no vehicular traffic and the slab extending not less than 152 mm (6 inch) beyond the underground installation.

**9. Article 310 Conductors for General Wiring**

- a. **II Installation: Section 310.10 Uses Permitted (G) Conductors in Parallel (3) Separate Cables or Raceways:** revise by deleting and substituting:  
Where run in separate cables or raceways, the cables or raceways with conductors shall have the same number of conductors and shall have the same electrical characteristics. All conductors of a circuit shall have the same physical and electrical characteristics.
- b. **Section 310.3 Conductors (B) Conductor Material.** Revise by deleting and substituting the following:  
(B) Conductor Material. Other than service conductors provided by the Utility, or multiplexed aerial cables as allowed by Section 396.2 (4) that comply with Article 310, all conductors shall be copper unless otherwise specifically approved by the City of St. Charles Building and Code Enforcement Department or the City of St. Charles Municipal Electric Utility.

**10. Article 314 Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; Fittings; and Handhole Enclosures:**

- a. **Section 314.28(E):** add to description- Power Distribution Blocks are not allowed on the supply side of a service disconnect.
- b. **Section 314.3 Nonmetallic Boxes.** Delete this section.
- c. **Section 314.43 Nonmetallic Boxes.** Delete this section.

**11. Article 334 Nonmetallic-Sheathed Cable: Types NM, NMC, and NMS**

- a. **Section 334.40 Boxes and Fittings (A) Boxes of Insulating Materials.** Revise by deleting and substituting the following:  
Nonmetallic outlet boxes are only permitted for use in corrosive applications as determined and approved by the City of St. Charles Building and Code Enforcement Department.
- b. **Section 334.40 Boxes and Fittings (B) Devices of Insulating Materials:** Delete this section.

**12. Article 625 Electric Vehicle Power Transfer System**

- a. **Section 625.1 Scope:** revise by adding the following:  
EV Power Transfer Systems require an electric service application and permitting through the Building and Code Enforcement Division. All permits will be reviewed for impacts to the Customer's service and the Utility Distribution System.

**13. Article 695 Fire Pumps**

- a. **Section 695.3 Power Source(s) for Electric Motor-Driven Fire Pumps, (B) Multiple Sources (2) Individual Source and On-Site Standby Generator :** add a new paragraph to read as follows:  
Signage- where a generator provides a secondary source for a fire pump, and the generator feeds other systems, clearly marked key operated shunt trip switches must be provided at the fire panel allowing Fire Department personnel the ability to open main breakers to panels not feeding the fire pump.

**14. Article 700 Emergency Systems**

- a. **Section 700.16 Emergency Illumination:** Add new paragraph to read as follows:  
(1) Additional spaces that require emergency lighting shall include all restrooms and mechanical rooms.

**15. Article 701 Legally Required Standby Systems: 1- General**

- a. **Section 701.5 Transfer Equipment (A) General :** add new paragraph to read as follows:  
Transfer Equipment Requirements: Open type transfer switches are the only approved method for connection of standby systems. All transfer switch connections shall be "break before make" to insure the complete separation from the utility system and the generator supply. No parallel operation with the utility system shall be allowed. A minimum time delay of three (3) seconds and a maximum of ten (10) seconds after loss of utility power should be established before starting the generator. Utilization of Kirk Key systems or other mechanical means of isolating generating sources from the utility source are not allowed.
- b. **III Sources of Power, Section 701.12 (B) Equipment Design and Location Set:** add new paragraph to read as follows:  
Generator Noise Output. The maximum noise level allowable within ten (10') feet of transformer, switchgear, or other specified equipment as required and operated by the City of St. Charles Municipal Electric Utility (SCMEU) is 80dB (decibels). Sound enclosures or sound barrier walls or other sound mitigation may

be required if the noise level near SCMEU equipment exceeds 80dB. Analysis of the need for sound abatement equipment will be performed by the City of St. Charles Municipal Electric Utility personnel after the generator is installed and tested.

**16. Article 702 Optional Standby Systems**

- a. **Section 702.5 Transfer Switches (B) Meter Mounted Transfer Switches:**  
delete

**17. Article 705 Interconnected Electric Power Production Sources**

- a. **Section 705.11 Supply Side Source Connections:** delete  
b. **Section 705.12(B)(3) Bus bars (6):** delete

**SECTION TWO:** That all ordinances and resolutions, or parts thereof, in conflict with the provisions of this Ordinance are, to the extent of such conflict, expressly repealed.

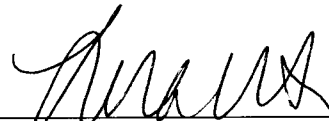
**SECTION THREE:** That after the adoption and approval hereof, this Ordinance shall be printed or published in book or pamphlet form, published by the authority of the City Council.

**SECTION FOUR:** That this Ordinance shall be in full force and effect on July 1, 2022.

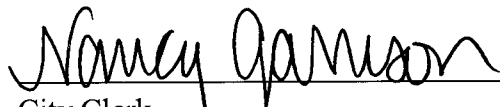
**Presented** to the City Council of the City St. Charles, Illinois, this 16<sup>th</sup> day of May, 2022.

**Passed** to the City Council of the City St. Charles, Illinois, this 16<sup>th</sup> day of May, 2022.

**Approved** by the Mayor of the City St. Charles, Illinois, this 16<sup>th</sup> day of May, 2022.

  
\_\_\_\_\_  
Lora Vitek, Mayor

ATTEST:

  
\_\_\_\_\_  
City Clerk

COUNCIL VOTE:

Ayes: 0

Nays: 0

Abstain: 0

Absent: 0



State of Illinois )  
 ) ss.  
Counties of Kane and DuPage )

## Certificate

I, NANCY GARRISON, certify that I am the duly elected and acting Municipal City Clerk of the City of St. Charles, Kane and DuPage Counties, Illinois.

I further certify that on **May 16, 2022** the Corporate Authorities of such municipality passed and approved Ordinance No. **2022-M-33** entitled:

**An Ordinance Amending Chapter 15.04 “Building Code”, Section 15.04.040  
“National Electrical Code 2020 Regulations Adopted and Modified” of the St.  
Charles Municipal Code.**

which provided by its terms that it should be published in pamphlet form.

The pamphlet form of Ordinance No 2022-M-33, including the Ordinance and a cover sheet thereof was prepared, and a copy of such Ordinance was posted in the municipal building, commencing on **May 23, 2022**, and continuing for at least ten days thereafter. Copies of such Ordinance were also available for public inspection upon request in the office of the municipal clerk.

**DATED** at St. Charles, Illinois, this **16th** day of **May 2022**.

*Nancy Garrison*  
Municipal Clerk

(S E A L)

