The evolving electrical landscape

What to know about 2026 NEC® updates for commercial and industrial buildings

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Introduction

Introduction

The National Electrical Code® (NEC) installation requirements help protect people and property from electrical hazards. Developed by the National Fire Protection Association (NFPA®), the NEC is updated every three years to reflect the latest safety standards and technological developments in the rapidly evolving electrical industry.

This e-guide explores the key updates impacting the commercial and industrial building segments.

Introduction

Key changes in the 2026 NEC

1. Chapter 1: NEC restructuring allows for code requirements to be better grouped and easier to use. In this update, load calculations and energy management systems (EMS) were moved to Chapter 1. By placing EMS within Chapter 1, alongside general requirements and load calculations (now Article 120), the NEC aims to create a more logical flow for system design and installation, particularly as energy management becomes increasingly integral to electrical systems.

2. The strong bond between EMS and PCS: The 2026 NEC streamlines load calculations by permitting the use of Power Control System (PCS) settings (now detailed in the new Article 130) to determine the actual calculated load for circuits and services in Article 120 (the new home for all load calculations). This means if a PCS actively manages and limits the power drawn by certain loads, those lower, controlled values can be used in the overall electrical demand calculations, potentially allowing for smaller service and feeder sizes.

3. Future organization: As new and evolving technologies continue to grow, the NEC structure will adjust to accommodate and group requirements. This will make the code easier to use and educate new industry members in a digital format. A complete restructuring is planned for the 2029 NEC.

A tip from Schneider Electric: Service Upgrade Avoidance (SUA)

Let's say you want to add 12 EV chargers at a commercial building. In many cases, calculating the additional load (Article 120) would suggest an increase in the utility service, which is often cost prohibitive. However, using a PCS with a setting within the utility service rating would permit this installation without having to upgrade the utility service.

Worker safety

Worker safety

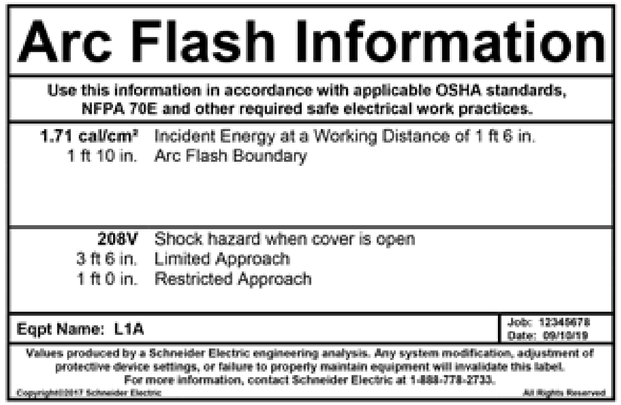
110.16(B) Arc Flash Hazard Marking

Code change: All non-dwelling unit service and feeder equipment will require arc flash marking. Previously, it was only required for service or feeder-supplied equipment rated 1000A or more.

This expands the scope of equipment that must have labels to include switchgear, switchboards, enclosed panelboards, industrial control panels, meter socket enclosures, and motor control centers.

The labels must contain specific safety information about:

- Nominal system voltage
- The arc flash boundary
- Available incident energy or the minimum required level of personal protective equipment (PPE)
- The date the assessment was completed



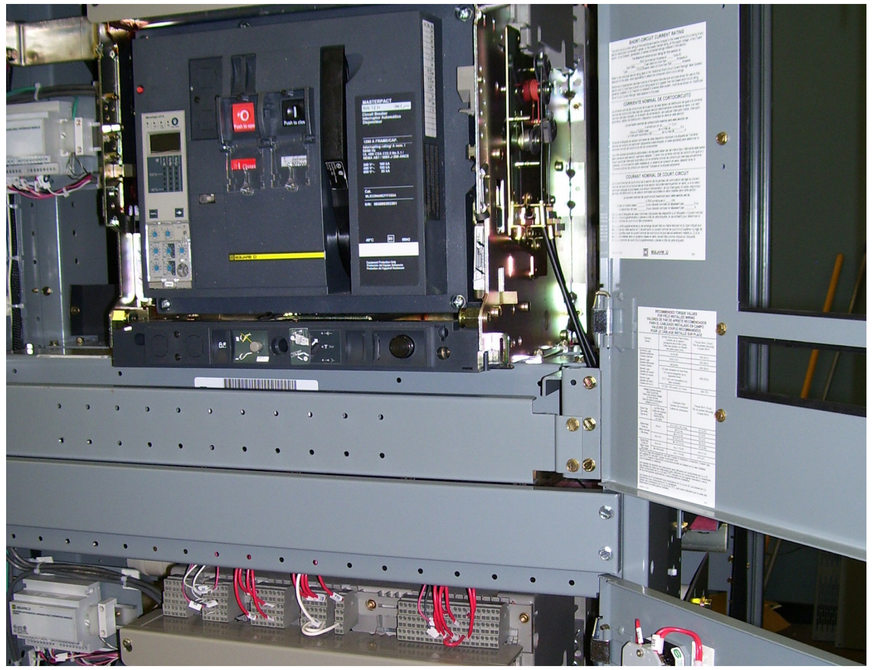
The biggest takeaway is that NEC is aligning with NFPA 70E to ensure that arc-flash labels include this critical, actionable information to qualified personnel.

Worker safety

Article 110.26: Equipment Working Space

Code change: Previously, the entrance and egress to the working space required for electrical equipment was considered to be impeded if less than 24 inches of entrance/egress was provided with the equipment door(s) open to the maximum angle. This change will determine if the doors impede the entrance/egress when set at 90 degrees regardless of the maximum door opening angle. This now applies to all electrical equipment, not just "large equipment."

The code requires that there are no obstructions in the working space in front of electrical equipment. This means no fixed cabinets, walls, partitions, or storage of any kind for items such as mops or boxes.



This update makes sure there's always enough clear, safe space around electrical equipment for workers to operate and exit quickly if needed, even if equipment doors are open.

Worker safety

210.8(F) Exception for GFCI Protection for Outdoor Outlets Serving HVAC

New Code: The current exception allowing many outdoor HVAC units to operate without ground fault circuit interrupter (GFCI) protection is set to expire on Sept. 1, 2026.

For any new outdoor HVAC installations after Sept. 1, 2026, contractors will need to incorporate GFCI protection for HVAC units. This implementation of GFCI will provide protection against the electrocution deaths involving HVAC equipment.

The industry has learned that HVAC systems with variable speed motors or inverter based systems on mini-splits or heat-pumps can be challenging on standard GFCI devices. These AC systems that include power conversion (variable speed or inverter based) should use a new High Frequency (HF-rated) GFCI, which is a new provision in the UL 943 product standard. The exception will now be expiring and GFCI protection on the HVAC circuit will be common and provide key safety against electric shock.

How does HF-rated GFCI impact the installer?

HF-Rated GFCIs were developed specifically for systems which include power conversion and provide confidence in performance. Contractors should be aware of the requirement and ready to look for HF-rated GFCI's, especially if the system is variable speed or inverter based.

Worker safety

404.30 Switch Enclosures with Doors

Code change: This new section aims to restrict access to energized (live) parts within switch enclosures that have doors.

Switches mounted within enclosures with doors or hinged covers shall be dead front unless access to the interior requires the use of a tool.

This aligns with existing construction requirements for switches. Switch enclosures that are in public spaces or accessible to unqualified personnel should be locked for electrical safety.

Equipment and system safety

Equipment and system safety

215.18(A) & 230.67(A) Feeder Surge Protection for Sleeping Quarters

Code change: The Feeder Surge Protection has been expanded to include areas that are similar to a bedroom.

The revised language brings the terms in alignment with building codes and other standards.

Surge protection is now required for areas that are designed as sleeping quarters, such as in:

- Fire stations
- Police stations
- Ambulance stations
- Ranger stations
- Dormitories

This enhances protection for sensitive electronics and safety devices (like an arc-fault circuit interrupter (AFCI), GFCI, and smoke alarms), especially when they are supplied by feeders that run a significant distance from the main electrical service.

Equipment and system safety

230.70(A)(1) One- and Two-Family Dwellings Readily Accessible Location

Code change: This update now requires service disconnects to be installed in a readily accessible outdoor location, either on the dwelling unit or within sight of the dwelling unit.

This removes the allowance for the service disconnect to be inside the nearest point of entrance of the service conductors.

A new exception was added for feeder-supplied dwellings if an emergency/service disconnect is installed in accordance with 225.41.

What about the emergency disconnect?

For one and two-family dwellings, the service disconnect and emergency disconnect requirements have been merged. The service disconnect will also serve as the emergency disconnect.

Equipment and system safety

230.70(B)(2) One and Two Family Dwellings Service Disconnect Marking

This revision correlates with 230.70(A)(1), which requires the service disconnect to be outdoors.

The outside front of the service disconnect enclosure must be marked "Emergency Disconnect."

This also clarifies that the marking "Service Disconnect" should be on or adjacent to the service disconnect.

For one and two-family dwellings, the service disconnect and emergency disconnect requirements have been merged. This removes the multiple variations and confusion around the outside disconnect installation and associated marking found in the 2020 and 2023 editions of the code.

Equipment and system safety

230.70(E) One and Two Family Dwellings Service Equipment Replacement

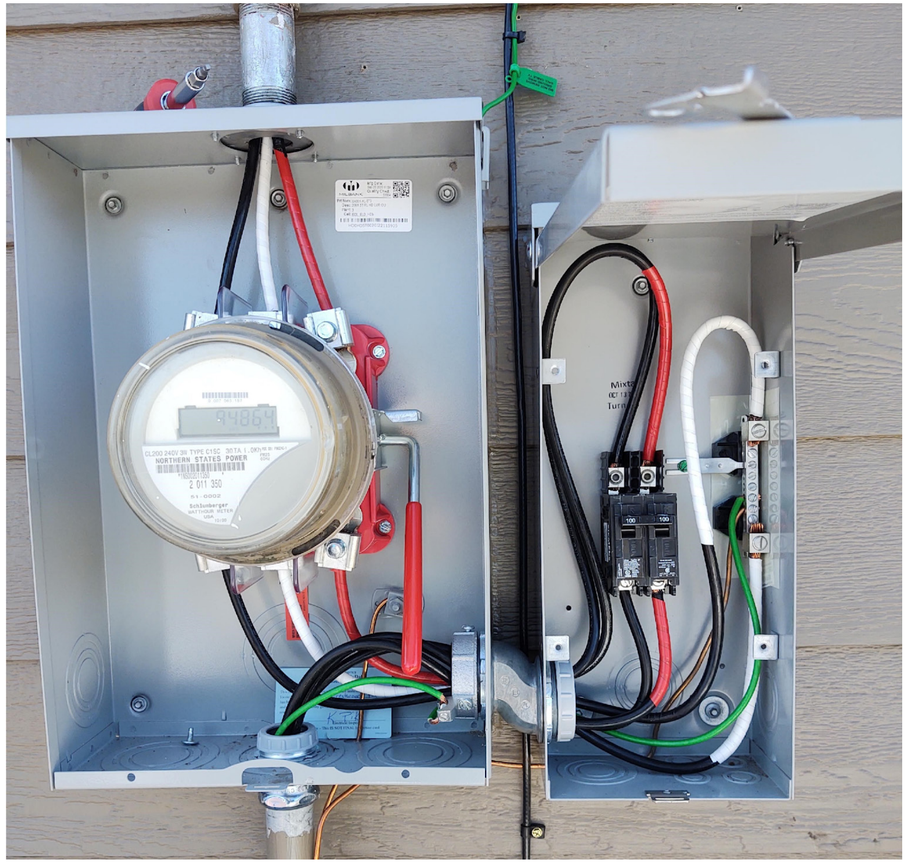
New code: This section now requires that the emergency/service disconnect must be outdoors, and Emergency Disconnect and Service Disconnect marking provided when the service equipment is replaced.

This requires compliance with 230.70(A), 230.70(B), and 230.70(C).

An exception was added if only the meter socket, service entrance conductors, or related raceways are replaced.

Can a remote control device qualify as a service disconnect?

A section of this new code clarifies that remote control devices are not considered as a service disconnect. The outside emergency/service disconnect provides a readily accessible means for first responders to turn off power for their safety.



Equipment and system safety

245.2 Overcurrent Protection for Systems Rated Over 1000 Volts ac, 1500 Volts dc

Code change: The update takes into account medium voltage (MV) and high voltage (HV) systems. This is part of a structural reorganization to address gaps in the requirements for systems over 1000 volts ac, 1500 volts dc, and provides an easier path for approval from the authority having jurisdiction (AHJ).

For OCPDs rated 15,000 volts or less, the listing applies to ac and dc devices. It does not go into effect until Jan. 1, 2029.

This focus reflects the increasing use of systems operating at over 1000 volts, including renewable energy installations, industrial facilities, datacenters and commercial settings.

How this impacts code inspections

Many products in this space have focused on utility installations where the technical performance is assured with manufacturer-supplied data versus a third-party listing. The effective dates provided allow time for manufacturers to complete the listing process.

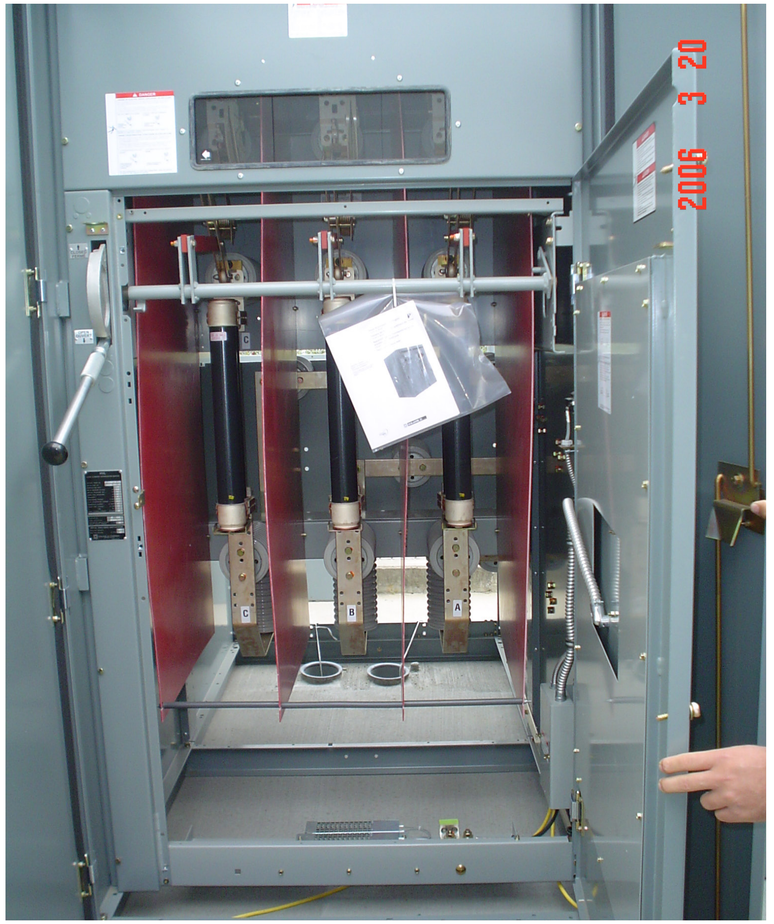
Equipment and system safety

268.2 Listing Requirements for Services Over 1000 Vac, 1500 Vdc, Nominal

New code: MV service equipment must now be listed or field evaluated (such as UL). This aligns with similar requirements for service equipment under 1000 Vac, 1500 Vdc, nominal and solidifies the intent to provide clear, dedicated sections within the code for MV and HV installations.

Previously, requirements for these higher voltage services were found within Article 235, which was deleted and its content redistributed.

The examination of electrical equipment for safety is a crucial part of the installation review by the AHJ. Equipment that has been listed as suitable for the application allows the inspection process to focus on other aspects of the installation such as the wiring methods, conductor terminations, and environmental ratings. MV service equipment was traditionally focused on utility requirements. This change recognizes the expansion of MV installations and will assist with AHJ review and approval.



Energy management

Energy management

NEC has new locations in Chapter 1 for load calculations and energy management systems. The restructuring allows for code requirements to be better grouped and easier to use.

- Article 120: The fundamental principles and methodologies for calculating electrical loads will now be found in Article 120. This includes requirements for energy management systems which provide monitoring and control to prevent overload, power control systems (PCS).

- Article 130: This article now covers Energy Management Systems (the old article 750). It provides clearer guidance on how EMS impact load calculations and how they can be used to potentially reduce required service/feeder sizes by dynamically managing loads.

This change recognizes that load calculations apply to the entire installation and addresses the impact of the portions controlled by an EMS/PCS on the calculation.

The restructuring will support future innovation as EMS is expected to become a common feature of modern power systems with on-site generation.

Energy management

120.7 Power Control Systems (PCS) Load Calculations

New code: This code reinforces how power control systems should factor into loading of branch circuits, feeders, or the service.

An EMS that provides an overload control function will be designated using the term PCS.

For projects incorporating PCS, contractors will need to thoroughly understand how these systems affect load calculations. Properly applying the rules could potentially lead to more efficient system sizing, but incorrect application could lead to overloaded systems and tripping of overcurrent protective devices.

Energy management

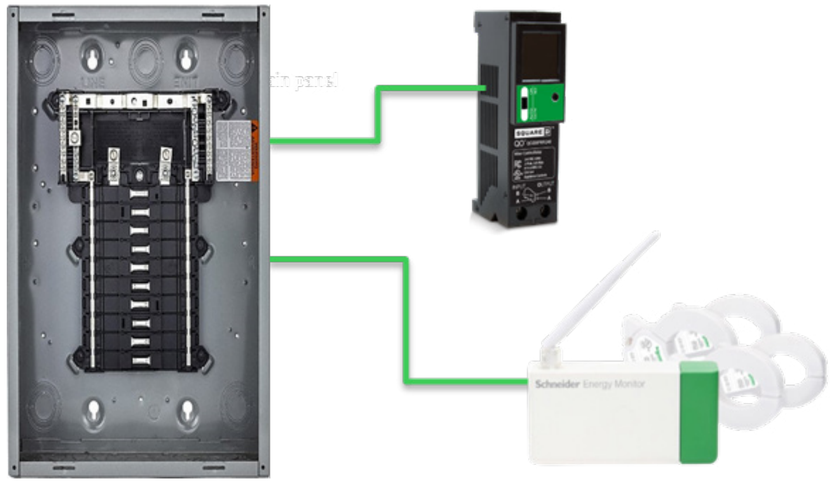
130.60 Conductors and Equipment

New code: This change sets requirements for energy management systems that prevent overload of conductors, power sources, and power distribution equipment associated with the PCS.

It requires automatic controls and monitoring, and allows a system malfunction to transition to a controlled state versus complete shutdown.

Integrating EMS with smart buildings

As EMS/PCS become more sophisticated — integrating with building automation, controlling loads, distributed energy resources, and smart grids — it will be paramount to understand the code's requirements for their associated energy sources, conductors and equipment. These requirements include ensuring power to critical loads, preventing overload of power and control wiring, actively managing on-site energy sources, and the transfer of loads based on user priorities.



Energy management

130.70 PCS Settings

New code: This change includes requirements for how an EMS/PCS is configured and calibrated to perform its intended functions, such as demand-side management, load shedding, or integration with renewable energy sources. Here are three important results from this change:

- Access to adjustable overload control settings has been simplified and is no longer limited to a specific list of options.
- PCS Control Setting is considered as a continuous load.
- Control setting access is limited to qualified persons using methods provided in the product standard and verified through listing. The importance of restricting access to PCS settings is maintained and now verified through the product certification.

Electric vehicles

Electric vehicles

625.43(E) Emergency Shutoff of EV Power Transfer Systems

New code: This update ensures emergency shutoffs are available at EV chargers at commercial, fleet, and public charging installations.

For other than one- and two-family dwellings, all permanently connected EV supply equipment, including Wireless Power Transfer Equipment, shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects.

This emergency shutoff must be:

- Readily accessible
- In sight of the equipment
- Within specific distance requirements
- Equipped with a manual intervention to reset

Most home EV charging will not be impacted

These new emergency shutoff requirements do not apply to EV charging equipment installed at one- and two-family dwelling units. Permanently wired EVSE installations must provide a disconnect in compliance with 625.43(D).

Electric vehicles

625.44 Equipment Connection for EV Power Transfer Systems

Code change: This modification provides more clarity and broader options for how EV Supply Equipment (EVSE) can be connected to a building's electrical system.

Revisions to the product safety standard for receptacles were made to address overheating events.

Portable or hand-fastened charging equipment, and wireless power transfer equipment that are connected to premise wiring using a receptacle outlet rated 30, 50, or 60 amperes must use a receptacle listed for EVSE or Wireless Power Transfer Equipment (WPTE) use.

A 50A rated receptacle can no longer be installed on a 40A branch circuit as previously allowed.

Contractors also have more guidance on whether an EV charger needs to be hardwired or can be plugged into an outlet, expanding the plug-in options.

Microgrids

Microgrids

705.11(C) Source Connections to a Service, Overcurrent Protection

Code change: This addresses where and how overcurrent protective devices (OCPDs) must be installed when a power production source connects to existing utility service conductors or equipment inside a building or structure.

Connections have distance limitations since the conductors are not protected by an overcurrent device. Any unprotected conductor length inside a building is a significant fire hazard. The maximum conductor length depends on the occupancy, with dwellings limited to 10 feet and all others limited to 16.5 feet. There is also an allowance for a conductor length up to 66 feet based on the use of cable limiters under engineering supervision and the service does not exceed 1000 volts.

Integrating power production sources

The determination on when to incorporate on-site power sources into the ground fault protection required for services and feeders has been a source of industry confusion. It's now clear that the rating of the overcurrent protection devices for a power source's main disconnect determines whether GFPE is necessary.

Microgrids

705.20 Source Disconnecting Means

Code change: This change now permits a single system disconnect when multiple power sources are combined before connecting to the premises wiring system.

Source connections to a service are also addressed, so that a single disconnect can serve as the service disconnect and the source system disconnect.

Every power production source must have a means of isolation for maintenance and service activities.

The primary goal is for maintenance personnel and emergency responders to be able to quickly and safely isolate any power production source that could pose a shock hazard. A means to isolate equipment for maintenance and servicing is still required but allowing a single source disconnect facilitates separation of on-site sources from the premises wiring.

What microgrid elements does this apply to?

This update relates to generators, batteries, photovoltaic (PV), fuel cells, and wind power by providing a unified and comprehensive set of rules for their individual disconnection.

Microgrids

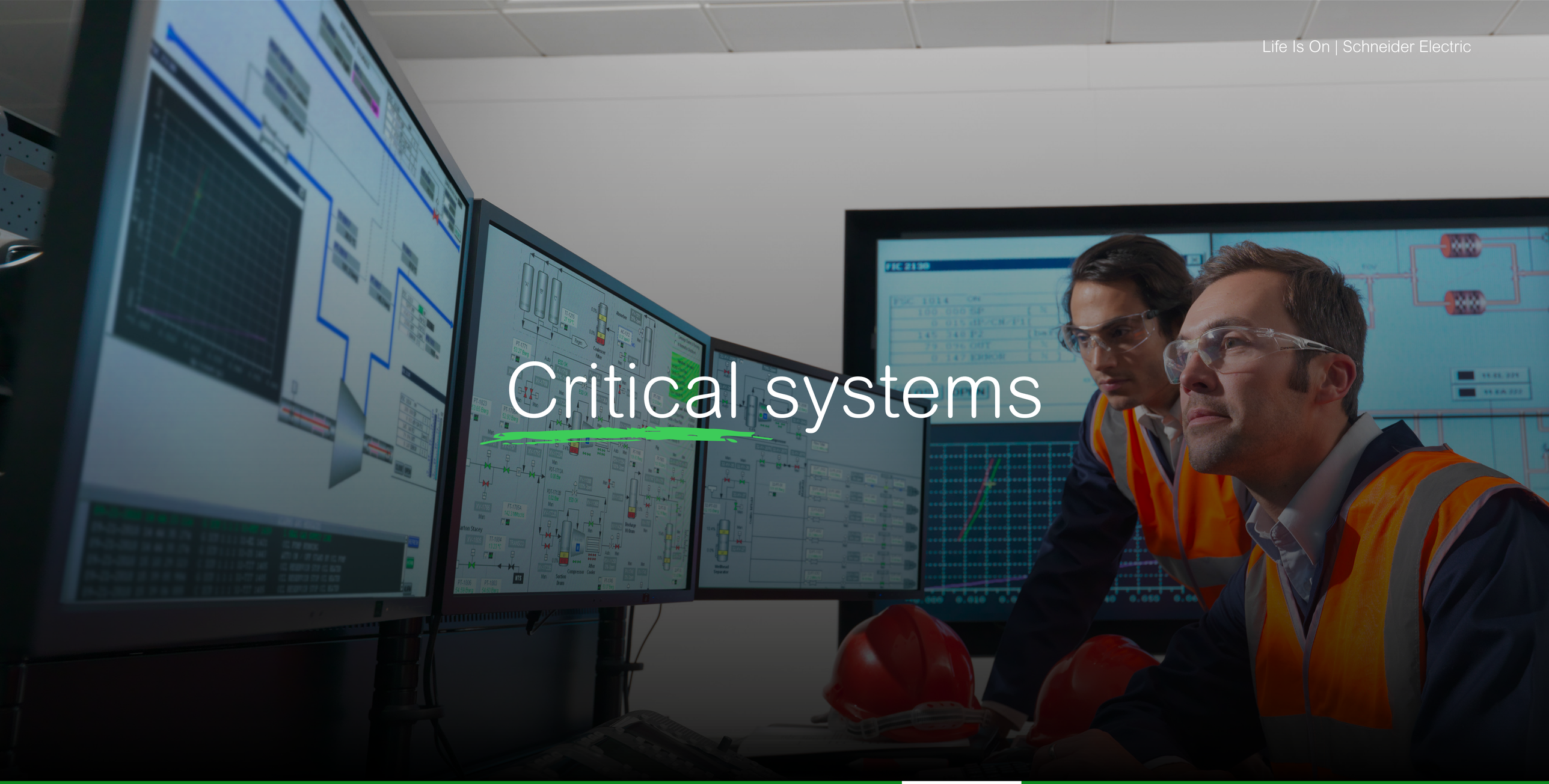
705.32 Ground Fault Protection in Interconnected Electric Power

Code change: This clarification refines existing requirements, particularly concerning the interaction between power production sources (like PV systems) and service disconnect ground-fault protection.

The connection of sources on the load side of the service or feeder ground-fault protection of equipment (GFPE) can impact the GFPE performance. System modifications and additional ground fault current sensors may be required.

Where GFPE is installed and a power source capable of providing ground-fault current is installed on the load side, the design of the protection must include this source and the whole setup tested together as one complete system.

This is an ongoing effort to address the complexities that arise in providing ground fault protection when integrating additional power sources.



Critical systems

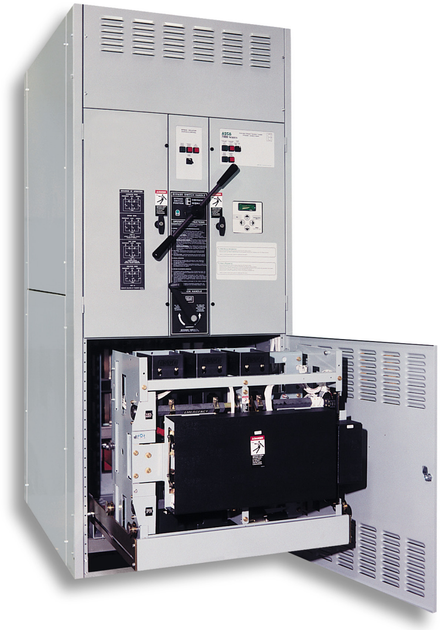
Critical systems

700.6(C) Bypass and Isolation of Transfer Equipment for Emergency Systems

Code change: These changes provide the ability to safely take transfer switches out of service for maintenance or testing without interrupting the critical power supply to emergency loads. This is needed when critical or emergency loads are supplied by a single feeder. The list of exceptions was removed with the requirement now applying to assembly occupancies, educational occupancies, and high-rise buildings.

The ability to perform service to transfer equipment must be provided with permanently installed equipment that isolates the transfer equipment and bypasses power to ensure continuity of power. The 2023 NEC required redundant transfer equipment which does not ensure that the emergency transfer equipment is isolated properly for service and maintenance activities. This potentially puts electrical workers at risk by not removing all power from the equipment.

For emergency systems, the need to maintain continuous power to critical loads makes bypass-isolation paramount. This capability is crucial for life safety, as emergency systems provide power for exit signs, emergency lighting, fire pumps, and other critical equipment that must remain operational during a normal power outage.



This is an ongoing effort to address systems where needed service and maintenance activities are difficult due to the need for critical power.

Critical systems

700.12(F) Microgrid Systems

Code change: The update requires interconnection equipment listed for emergency use to separate or isolate the emergency system or legally required standby system from the normal power for the building or structure.

Microgrids and Distributed Energy Resource (DER) systems include sources which are normally operational. Traditional standby systems are idle until called to supply power. If the normal power is available, the DER sources operate in parallel and support loads based on the system design. Emergency interconnection equipment steps in to isolate or remove non-emergency loads from the emergency power if the normal power is lost. This action also separates the DER sources from the utility and prevents the export of power into the utility system.

This allows flexibility and benefits in the use of energy storage, fuel cell, generator, and other distributed energy sources.

This is part of a broader effort to recognize and provide guidelines for emerging and increasingly common microgrid technologies in critical applications.

Critical systems

701.9 Surge Protection for Legally Required Standby Systems

Code change: The alteration adds surge protection to the requirements for legally required standby systems.

A listed Surge Protection Device, typically a Type 1 or Type 2, must be integrated with or immediately adjacent to all legally required standby system switchgear, switchboards, panelboards, and electrical system gear designed to provide power for essential functions during an outage.

Legally required standby systems often include elements like ventilating systems, smoke control systems, or communication systems that are crucial for public safety and order during an outage.

This recognizes that these systems are essential for fire service and hazard abatement operations and warrant protection from surge events.

Critical systems

Fire Protection of conductors: Two-hour protection inside a building
695.7(A)(2)(d) Fire Pump - Feeders
695.14(F) Fire Pump - Generator Control Wiring
700.10(D)(2) Emergency Systems – Feeder Circuit Wiring
700.10(D)(4) Emergency Systems – Source Control Wiring
708.10(C)(2) Critical Operations Power Systems – Fire Protection for Feeders

Code change: The concrete encasement for conductors within buildings is increasing from 2 inches to 5 inches based on test data showing that circuit integrity was not maintained for 2 hours with an encasement of 2 inches. Since the formulation of concrete varies, an allowance for 2 inch concrete encasement was added where the 2 hour rating is documented by a licensed professional engineer.

Other acceptable two-hour rated compliance paths include:

- Cable or raceway installed in areas fully protected by an automatic fire sprinkler system.
- The cable or raceway is part of a listed fire-resistive cable system.
- The cable or raceway is protected by a listed electrical circuit protective system.

This update significantly raises the bar for the fire protection of essential electrical circuits vital for life safety and critical operations, including Fire Pump Feeders, Fire Pump Generator Control Wiring, and Emergency Systems.

Next steps

Next steps

It’s essential for electrical professionals and specifiers to understand the 2026 NEC and the timeline for its adoption in their local jurisdictions.

Staying current with the latest NEC ensures electrical professionals adhere to current safety standards. It also helps them avoid potential code violations, leading to fines, project delays, and injuries or property damage.

Schneider Electric’s team of application engineers and service consultant experts can assist with ensuring your facilities meet the 2026 NEC guidelines.

We have free access to online tools, and in some cases, preliminary coordination studies can be requested.

To learn more about the 2026 NEC updates, visit se.com/us/codes

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