



# An overview of significant changes to the National Electrical Code for Dwellings

## 1 GFCI requirements

Class A ground fault circuit interrupter (GFCI) protection includes:

- All receptacles in finished basements
- Appliance receptacles within six feet of a sink, such as an electric stove
- All outlets in laundry areas
- Service receptacle required for mechanical equipment installed in either indoor or outdoors applications
- Outdoor outlets that operate at 150 volts-to-ground or less and rated up to 50 amps, including 250-volt HVAC systems and all outdoor 15 – 50 amp receptacles, with some exceptions.

## 2 Surge protection

Services supplying all dwelling units require surge protection devices (SPDs) located within the equipment or adjacent to it. Both Type 1 SPDs and Type 2 SPDs are acceptable. This requirement includes multi-family services as well. There is an exception allowing an SPD to be installed at each next downstream device if installation at the service is not practical.

In multi-family units, install SPDs at each dwelling's service disconnect.

This requirement extends to include both new construction and replacement equipment, such as service changes or upgrades.



### 3 Arc Energy Reduction — 1200 amps and above

The NEC lists several methods of reducing arc energy, and it now includes fused services. Additionally, there are requirements to provide proof that the chosen reduction method ensure operation below the arcing current. This could include a power systems engineering study or a system analysis.

Also, documentation of on-site testing must be provided after installation to verify the reduction method functions properly.

### 4 Service equipment

Labeled, readily accessible outdoor emergency disconnects are now required for one- and two-family dwellings. These outdoor disconnects allow first responders to shut off power to the dwelling safely. The National Electrical Manufacturers Association (NEMA) standards committee has agreed that one of the following labels is required regardless of the type, manufacturer, or installation of the outside disconnect:

- EMERGENCY DISCONNECT, SERVICE DISCONNECT
- EMERGENCY DISCONNECT, METER DISCONNECT, NOT SERVICE EQUIPMENT
- EMERGENCY DISCONNECT, NOT SERVICE EQUIPMENT

Also, line-side barriers are now mandatory for all service equipment, including:

- Panelboards
- Load centers
- Transfer switches
- Enclosed circuit breakers
- Combination service entrance devices



All-in-one  
Outside



Meter main  
Outside

MLO load center  
Inside



Meter main  
Outside

MLO load center  
Inside



Meter socket  
Outside

MB load center  
Outside

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