See also

230.95 for further commentary on ground-fault protection of services

517.17, which requires an additional level of ground-fault protection for health care facilities

700.31 for the different ground-fault protection requirements for emergency feeders covered within the scope of Article 700

Exception No. 2: This section shall not apply if ground-fault protection of equipment is provided on the supply side of the feeder and on the load side of any transformer supplying the feeder.

Ground-fault protection installed in equipment supplying the primary of a transformer will not function to protect equipment supplied by the secondary of the transformer. If the equipment supplied by the secondary of the transformer meets the parameters under which ground-fault protection of equipment (GFPE) is required by 215.10, protection must be installed to protect the equipment supplied by the secondary of the transformer.

Exception No. 3: If temporary feeder conductors are used to connect a generator to a facility for repair, maintenance, or emergencies, ground-fault protection of equipment shall not be required. Temporary feeders without ground-fault protection shall be permitted for the time period necessary but shall not exceed 90 days.

215.11 Circuits Derived from Autotransformers. Feeders shall not be derived from autotransformers unless the system supplied has a grounded conductor that is electrically connected to a grounded conductor of the system supplying the autotransformer.

Exception No. 1: An autotransformer shall be permitted without the connection to a grounded conductor where transforming from a nominal 208 volts to a nominal 240-volt supply or similarly from 240 volts to 208 volts.

Exception No. 2: In industrial occupancies, where conditions of maintenance and supervision ensure that only qualified persons service the installation, autotransformers shall be permitted to supply nominal 600-volt loads from nominal 480-volt systems, and 480-volt loads from nominal 600-volt systems, without the connection to a similar grounded conductor.

215.12 Identification for Feeders.

(A) Grounded Conductor. The grounded conductor of a feeder, if insulated, shall be identified in accordance with 200.6.

(B) Equipment Grounding Conductor. The equipment grounding conductor shall be identified in accordance with 250.119.

(C) Identification of Ungrounded Conductors. Ungrounded conductors shall be identified in accordance with 215.12(C)(1) or (C)(2), as applicable.

EXHIBIT 215.3 The different colors identify each ungrounded line or phase conductor of a nominal voltage system. Marking of the armor can also be applied. *(Courtesy of AFC Cable Systems, a Part of Atkore International)*

Parallel with the requirement for ungrounded branch-circuit conductors in 210.5(C), 215.12(C) requires identification of ungrounded feeder conductors by system and phase where there is more than one nominal voltage supply system to a building, structure, or other premises.

For ac circuits, the identification scheme is not specified, but whatever is used is required to be consistent throughout the premises. A permanent legend or directory indicating the feeder identification system for the premises is required to be posted at each point in the distribution system from which feeder circuits are supplied, or the identification scheme is to be described in a facility log or other documentation and made readily available. Exhibit 215.3 is an example of the use of different colors to identify each ungrounded line or phase of a nominal voltage system.

(1) Feeders Supplied from More Than One Nominal Voltage System. Where the premises wiring system has feeders supplied from more than one nominal voltage system, each ungrounded conductor of a feeder shall be identified by phase or line and system at all termination, connection, and splice points in compliance with 215.12(C)(1)(a) and (C)(1)(b).

(a) *Means of Identification.* The means of identification shall be permitted to be by separate color coding, marking tape, tagging, or other approved means.

(b) *Posting of Identification Means.* The method utilized for conductors originating within each feeder panelboard or similar