Part V. Service Equipment — General

230.62 Service Equipment — Enclosed or Guarded. Energized parts of service equipment shall be enclosed as specified in 230.62(A) or guarded as specified in 230.62(B).

(A) Enclosed. Energized parts shall be enclosed so that they will not be exposed to accidental contact or shall be guarded as in 230.62(B).

(B) Guarded. Energized parts that are not enclosed shall be installed on a switchboard, panelboard, or control board and guarded in accordance with 110.18 and 110.27. Where energized parts are guarded as provided in 110.27(A)(1) and (A)(2), a means for locking or sealing doors providing access to energized parts shall be provided.

(C) Barriers. Barriers shall be placed in service equipment such that no uninsulated, ungrounded service busbar or service terminal is exposed to inadvertent contact by persons or maintenance equipment while servicing load terminations with the service disconnect in the open position.

If disconnecting or de-energizing the service conductors supplying a service panelboard, switchboard, or switchgear is infeasible, it might be necessary for a qualified person (according to NFPA *70E®, Standard for Electrical Safety in the Workplace®*) to work on that equipment with the load terminals de-energized but with the service bus still energized. Barriers provide physical separation (adequate distance or an obstacle) between load terminals and the service busbars and terminals. This provides some measure of safety against inadvertent contact with line-energized parts during maintenance and installation of new feeders or branch circuits. Barriers are not necessary in most multi-section switchboards and switchgear because the line-side conductors and busbars are not in the same section as the load terminals.

230.66 Marking.

(A) General. Service equipment rated at 1000 volts or less shall be marked to identify it as being suitable for use as service equipment. All service equipment shall be listed or field evaluated.

"Suitable for Use as Service Equipment (SUSE)" is a common marking found on equipment that can be used at the service location. The marking indicates that the equipment meets service equipment suitability requirements in the applicable product standard (i.e., panelboard, switchboard, enclosed switch, or other equipment product standard). The marking "Suitable Only for Use as Service Equipment" indicates that the grounded conductor or neutral terminal bus is not able to be electrically isolated from the metal equipment enclosure. That inability precludes most feeder applications for this equipment where the equipment grounding terminals and the grounded conductor terminals are required to be electrically isolated.

(B) Meter Sockets. Meter sockets shall not be considered service equipment but shall be listed and rated for the voltage and current rating of the service.

Exception: Meter sockets supplied by and under the exclusive control of an electric utility shall not be required to be listed.

230.67 Surge Protection.

(A) Surge-Protective Device. All services supplying the following occupancies shall be provided with a surge-protective device (SPD):

(1) Dwelling units
(2) Dormitory units
(3) Guest rooms and guest suites of hotels and motels
(4) Areas of nursing homes and limited-care facilities used exclusively as patient sleeping rooms

Informational Note: See 517.10(B)(2).

Sensitive electronics and systems found in modern appliances, safety devices [e.g., arc-fault circuit interrupters (AFCIs), ground-fault circuit interrupters (GFCIs), and smoke alarms], and other equipment used in dwellings warrant protection by surge-protective devices. Additionally, the increased use of distributed energy resources within electrical systems creates more opportunity for the introduction of or greater exposure to surges in the system.

Δ **(B) Location.** The SPD shall be an integral part of the service equipment or shall be located immediately adjacent thereto.

Exception: The SPD shall not be required to be located at the service equipment as required in 230.67(B) if located at each next level distribution equipment downstream toward the load.

(C) Type. The SPD shall be a Type 1 or Type 2 SPD.

(D) Replacement. Where service equipment is replaced, all of the requirements of this section shall apply.

N **(E) Ratings.** SPDs shall have a nominal discharge current rating (In) of not less than 10kA.

Part VI. Service Equipment — Disconnecting Means

230.70 General. Means shall be provided to disconnect all ungrounded conductors in a building or other structure from the service conductors.

(A) Location. The service disconnecting means shall be installed in accordance with 230.70(A)(1), (A)(2), and (A)(3).

(1) Readily Accessible Location. The service disconnecting means shall be installed at a readily accessible location either outside of a building or structure or inside nearest the point of entrance of the service conductors.

No maximum distance between the point of entrance of service conductors to a readily accessible location for the installation of a service disconnecting means is specified. The authority enforcing the *NEC®* is responsible for the decision on how far inside the