

(B) Power Supplies. Power shall be supplied to low-voltage equipment from one of the following:

- (1) An individual portable isolating transformer (autotransformers shall not be used) connected to an isolated power circuit receptacle by means of an appropriate cord and attachment plug
- (2) A common low-voltage isolating transformer installed in an unclassified location
- (3) Individual dry-cell batteries
- (4) Common batteries made up of storage cells located in an unclassified location

(C) Isolated Circuits. Isolating-type transformers for supplying low-voltage circuits shall have both of the following:

- (1) Approved means for insulating the secondary circuit from the primary circuit
- (2) The core and case connected to an equipment grounding conductor

(D) Controls. Resistance or impedance devices shall be permitted to control low-voltage equipment but shall not be used to limit the maximum available voltage to the equipment.

(E) Battery-Powered Appliances. Battery-powered appliances shall not be capable of being charged while in operation unless their charging circuitry incorporates an integral isolating-type transformer.

(F) Receptacles or Attachment Plugs. Any receptacle or attachment plug used on low-voltage circuits shall be of a type that does not permit interchangeable connection with circuits of higher voltage.

Informational Note: Any interruption of the circuit, even circuits as low as 10 volts, either by any switch or loose or defective connections anywhere in the circuit, may produce a spark that is sufficient to ignite flammable anesthetic agents.

Part V. Diagnostic Imaging and Treatment Equipment

517.70 Applicability. Nothing in this part shall be construed as specifying safeguards against possible radiation or magnetic fields.

Informational Note No. 1: Radiation safety and performance requirements of several classes of X-ray equipment are regulated under Public Law 90-602 and are enforced by the Department of Health and Human Services.

Informational Note No. 2: Information on radiation protection by the National Council on Radiation Protection and Measurements is published as *Reports of the National Council on Radiation Protection and Measurement*. These reports are obtainable from NCRP Publications, P.O. Box 30175, Washington, DC 20014.

Informational Note No. 3: Examples of diagnostic imaging equipment can include, but are not limited to, the following:

- (1) General radiographic (X-ray) equipment (mobile and fixed)
- (2) General fluoroscopic equipment (mobile and fixed)
- (3) Interventional equipment (mobile and fixed)
- (4) Bone mineral density equipment
- (5) Dental equipment
- (6) Computerized tomography (CT) equipment
- (7) Positron emission tomography (PET) equipment
- (8) Nuclear medicine equipment
- (9) Mammography equipment
- (10) Magnetic resonance (MR) equipment
- (11) Diagnostic ultrasound equipment
- (12) Electrocardiogram equipment

Informational Note No. 4: Examples of treatment equipment can include, but are not limited to, the following:

- (1) Linear accelerators
- (2) Gamma knife
- (3) Cyber knife
- (4) Proton therapy
- (5) Tomotherapy

517.71 Connection to Supply Circuit.

(A) Fixed and Stationary Diagnostic Imaging and Treatment Equipment. Fixed and stationary diagnostic imaging and treatment equipment shall be connected to the power supply by means of a wiring method complying with applicable requirements of Chapters 1 through 4 of this *Code*, as modified by this article.

Exception: Equipment properly supplied by a branch circuit rated at not over 30 amperes shall be permitted to be supplied through a suitable attachment plug and hard-service cable or cord.

(B) Portable, Mobile, and Transportable Diagnostic Imaging and Treatment Equipment. Individual branch circuits shall not be required for portable, mobile, and transportable medical diagnostic imaging and treatment equipment requiring a capacity of not over 60 amperes.

(C) Over 1000-Volt Supply. Circuits and equipment operated on a supply circuit of over 1000 volts shall comply with Parts I through IV of Article 490.

517.72 Disconnecting Means.

(A) Capacity. A disconnecting means rated for at least 50 percent of the input required for the momentary rating or 100 percent of the input required for the long-time rating of the diagnostic imaging and treatment equipment, whichever is greater, shall be provided in the supply circuit.

(B) Location. The disconnecting means shall be operable from a location readily accessible from the control location.

(C) Portable, Mobile, and Transportable Diagnostic Imaging and Treatment Equipment. For equipment connected to a 120-volt branch circuit of 30 amperes or less, a grounding-type