

OFCR, OFNG, OFCG, OFN, and OFC shall be permitted under raised floors.

- (2) Where the air space under a raised floor is not protected by an automatic fire suppression system, only optical fiber cables installed in accordance with 770.113(C) shall be permitted under raised floors.

Δ (F) Securing in Place. Power-supply cords; communications cables, connecting cables, interconnecting cables, and associated boxes, connectors, plugs, and receptacles that are listed as part of, or for, information technology equipment shall not be required to be secured in place where installed under raised floors.

Informational Note: See 300.11 for securement requirements for raceways and cables not listed as part of, or for, information technology equipment.

(G) Abandoned Supply Circuits and Interconnecting Cables.

The accessible portion of abandoned supply circuits and interconnecting cables shall be removed unless contained in a raceway.

(H) Installed Supply Circuits and Interconnecting Cables Identified for Future Use.

(1) **Cable Identification Means.** Supply circuits and interconnecting cables identified for future use shall be marked with a tag of sufficient durability to withstand the environment involved.

(2) **Cable Tag Criteria.** Supply circuit tags and interconnecting cable tags shall have the following information:

- (1) Date identified for future use
- (2) Date of intended use
- (3) Information relating to the intended future use

645.10 Disconnecting Means. An approved means shall be provided to disconnect power to all electronic equipment in the information technology equipment room or in designated zones within the room. There shall also be a similar approved means to disconnect the power to all dedicated HVAC systems serving the room or designated zones and to cause all required fire/smoke dampers to close. The disconnecting means shall comply with either 645.10(A) or (B).

Exception: These requirements shall not apply to installations complying with Article 685.

(A) Remote Disconnect Controls.

(1) **Emergency Access.** Remote disconnect controls shall be located at approved locations readily accessible in case of fire to authorized personnel and emergency responders.

(2) **Disconnect Identification.** The remote disconnect means for the control of electronic equipment power and HVAC systems

shall be grouped and identified. A single means to control both systems shall be permitted.

(3) **Fire/Smoke Zone Isolation.** Where multiple zones are created, each zone shall have an approved means to confine fire or products of combustion to within the zone.

Δ (4) System Operation Continuity. Additional means to prevent unintentional operation of remote disconnect controls shall be permitted.

Informational Note: See NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, for further information.

Typically, the circuit supplying the ITE and the circuit supplying the HVAC system will be controlled through separate disconnecting means. However, operation of these disconnecting means can be accomplished through the use of a single remote control, such as one pushbutton. The disconnecting means is required to disconnect the conductors of each circuit from their supply source and close all required fire/smoke dampers. (See the definition of the term *disconnecting means* in Article 100.) The disconnecting means is permitted to be remote-controlled switching devices, such as relays, with pushbutton stations at the principal exit doors.

Δ (B) Critical Operations Data Systems. Remote disconnecting controls shall not be required for critical operations data systems when all of the following conditions are met:

- (1) An approved procedure has been established and maintained for removing power and air movement within the room or zone.
- (2) Qualified personnel are continuously available to advise emergency responders and to instruct them of disconnecting methods.
- (3) A smoke-sensing fire detection system is in place.

Informational Note: See NFPA 72, *National Fire Alarm and Signaling Code*, for further information.

- (4) An approved fire suppression system suitable for the application is in place.
- (5) Cables installed under a raised floor, other than branch-circuit wiring, and power cords are installed in compliance with 645.5(E)(2) or (E)(3), or in compliance with Table 645.10(B).

Only those data systems designated as critical in function based on the definition of *critical operations data system* found in Article 100, are permitted to implement the provision for not installing the remote disconnect control covered in 645.10(A).

Δ 645.11 Uninterruptible Power Supply (UPS). UPS systems installed within the information technology equipment room and their supply and output circuits shall comply with 645.10, except for the following installations and constructions: