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Fire Protection for UPS (Uninterruptible Power Supply) Systems

Most fires that damage computer systems do not start in the systems themselves, but in ordinary combustibles in the computer room. Thus, the primary control method for computer facilities, including dedicated UPS systems, is the elimination of non-essential combustibles (i.e., paper, records, and office supplies) in the computer room.

The area(s) for the computer and UPS systems should be separated from all other areas by fire-rated walls, floors and ceilings. These areas should be provided with at least 1-hour fire-rated separations and an automatic suppression system. Penetrations through these separations should be sealed with a fire resistive compound having an equal or greater fire rating. Additionally, raised floors (with computer cabling underneath) should be fire stopped. The use of carpeting, wall decorations, and upholstered furniture should be avoided in these areas.

Extinguishing systems protecting these areas can vary. Automatic sprinkler systems are effective in combating fire in these exposures, but can lead to extensive damage to the electrical equipment. Often combinations of heat/smoke detection and deluge sprinklers are used to protect computer and UPS systems. When the

detection system is activated, it first interrupts the system power, and then activates the deluge system. This approach can reduce damage from short-circuiting of electrical equipment. Another option is the use of gaseous extinguishing systems, such as carbon dioxide, to protect sensitive electronic equipment. These systems suppress fires by interruption of the chemical reaction and/or exclusion of oxygen. These systems typically produce less equipment damage than automatic sprinklers, but are substantially more expensive.

For additional information on protecting electronic equipment, see ISO Services Properties Fire Protection Report FP-23-02, *Clean Agent Extinguishing System*.

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