

RISK COMMUNIQUÉ

Large Supervisory Control and Data Acquisition (SCADA) Operation Centers and Major Computer Room Protection Guide

The following guidelines will provide installation and construction guidance for new or upgraded installations of significant Electronic Data Processing (EDP) or large SCADA centers. They are designed to provide suggestions and guidance in developing satisfactory fire protection for these facilities; protection for smaller computer and SCADA equipment installations is also discussed. These guidelines are generic in nature and are not intended to circumvent or offset any local, state, or governmental code or regulation. As an official fire protection reference, NFPA 75 should be used.

Large SCADA & EDP Center Fire Protection Guide

1. Important, costly, or large SCADA centers and computer room installations should be built in fire-resistive or non-combustible structures. Ideally, structures should be fully protected by sprinkler systems.
2. Rooms should be cut off from adjacent areas by a minimum one-hour fire-rated construction.
3. The interior finish should be limited to a flame spread rating of 25 or less. Material smoke developed rating should also be low.
4. Rooms should not be installed in below-grade areas where there is potential water damage.
5. If the room includes a raised floor (panel) installation, suitable floor lifters should be made available. There should be no under-floor storage.
6. A total flooding (Halon alternative – FM 200 type) suppression system should protect the computer/SCADA room. A cross-zoned detection unit design should be used to actuate the system (above and below raised floor). Suppression system protection should be provided above and below the raised floor areas and serviced by a licensed contract firm twice yearly. Manual activation and abort switches should also be installed.
7. A pre-action automatic sprinkler system should serve as a backup to the suppression system. The system should be installed in accordance with the most recent edition of NFPA 13, and testing should be conducted as specified in NFPA 25.

Note: All fire protection system equipment should be UL- and FM-approved. All fire alarms (detection, sprinkler, or suppression) should be monitored by a recognized proprietary or listed central station alarm service.

This is a sample guideline furnished to you by Glatfelter Public Practice. Your organization should review it and make the necessary modifications to meet the needs of your organization. The intent of this guideline is to assist you in reducing risk exposure to personnel. For additional information on this topic, you may contact your GPP Risk Control Representative.

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8. If applicable or warranted, an Uninterruptible Power Supply (UPS) or battery system for backup power for the computer equipment should be installed to allow for safe shutdown of the equipment or to provide full power backup. The UPS room should have a two-hour fire-rated separation construction. The UPS room should have suppression and pre-action sprinkler system coverage and protection.

Note: Power disconnect switches for all equipment power should be installed and readily available and identifiable.
9. A leak and water detection system should be used. Alarms should respond to a constantly attended location.
10. All general storage, disk storage, tape libraries, printing equipment, and miscellaneous combustible materials should have a minimum one-hour fire-rated separation.
11. No flammable or combustible liquids should be stored in the room, and overall combustible loading should be kept to a minimum.
12. Access to the room should be controlled.
13. Computer or other important data should be backed up daily and stored weekly (or more frequently if warranted) in an offsite tape storage facility.
14. Readily available duplicates should be available for all critical software (SCADA and others).

Small Server or SCADA Installation Applications

It is recommended that the small server or SCADA equipment installations be housed in a physically cut-off room. A fire-rated enclosure is desirable; however, this is not a necessity.

Sprinklers and smoke detectors provide a significant fire protection advantage. Alarms should respond to a central station or proprietary monitoring entity.

The fire extinguishers should be Halon 1211 units.

The server room (or area) should be as free of combustible material (papers, books, and other readily burnable items) as possible. There should be no flammable or combustible liquid storage.

Computer or other important data should be backed-up daily and stored weekly (or more frequently if warranted) in an offsite tape storage location. Readily available duplicates should be available for all critical software (SCADA and others).

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