Protection of rooms with critical IT equipment

What is the hazard?

IT servers are often business critical equipment. Availability of the systems, which run on the servers and the data stored, can be vital to support production equipment, for quality control, servicing customers, etc. Dependencies might not be limited to the facility where the servers are located, but may also include other companies and sites within the group, connected to the servers. IT servers are typically located in a separate room, which is seldom visited. Because the servers are constantly energized, there is always the risk of a fire occurring in the equipment when the buildings are unoccupied. However, fire is not the only hazard to which IT servers can be exposed.

The loss of IT servers can be highly disruptive and affect the ability of a company to supply its customers. In addition to safeguards relating to software, data and power supply, which are covered by the Cyber hazard information sheet, the physical protection of the room should be appropriate for the criticality of the IT servers.

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How to reduce the risk

The knowledge of replacement arrangements for the hardware within the server room should be established and the effects of the delay on the business should be analysed when deciding on the appropriate level of protection. Rooms containing IT servers running critical systems for company activities should be fire rated for at least 60 minutes and be equipped with a high level of detection and protection to minimise the risk of disruption to the business.

In the event of fire, there are several options for managing the risk presented by IT servers. However, handheld extinguishing equipment suitable for electrical equipment should always be available.

• Inert gas

• Water mist

• Oxygen reduction

• High sensitivity smoke detection (such as aspirating systems) may be for 24/7 staffed occupancies.

Where spinkler protection is provided a pre-action system can be specified to reduce the risk of accidental water damage.

The design of the automatic release mechanism and the structure of the server room will be critical in selecting the most appropriate alternative. As an integral part of the acceptance testing, verification that the air flow does not interfere with the functioning of the smoke detection system should be confirmed.

Please contact your local risk engineer at If P&C Insurance to discuss which option would be most appropriate for your situation.

In addition to the risk from fire, there are several other issues relating to water damage, which should be considered:

• Critical IT servers should preferably not be located in basements.

• The servers should be raised above the floor of the room.

• There should be no pipes within the room for water or drains.

Temperature control in the IT server room is important to ensure the optimal performance of the equipment. An alarm indicating high temperature should be provided. If air-conditioning equipment has been installed in the IT server room then the unit should not be installed directly above server equipment. The drain to the air-conditioning should be regularly checked to minimise the risk of water damage from a blocked drain. Water detection, with an alarm to a constantly occupied location should be provided under a raised floor.

IT server rooms should be locked with access restricted to staff who are authorized to be in the room. The room should be kept free from all storage; manuals and other information relating to the hardware and software should be stored outside of the room or in closed metal cabinets if space is only available within the room.

No combustible materials should be stored in the room. Old and reserve equipment should not be stored in the room and there should be no furniture within the IT server room, apart from the racks that contain the servers.

Back-up media for data on the servers should not be stored in the server room, but in a separate fire compartment and preferably in another building.

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