SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

MULTI-STORIED BUILDING

Multi-Storied Building

A multi-storeyed building is defined to be a building which is more than 15 metres in height.

A number of very serious incidents of fire have occurred in these multi-storeyed buildings.

Many of these fires were initiated by faults or in the electrical system. As such, utmost precautions are necessary to be taken in sub-stations and distribution systems etc. for the multi-storeyed buildings.

(a)Sub-station

(1) Power-transformer with oil capacity more than 2000 litres shall not be located in the basement where oil cannot be drained. If it is required to locate a sub-station in the basement, it shall be in a separate fire resistant room of 4 hours fire rating The room shall be at the periphery of the basement.

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- The entrance to the room shall be through a fire resistant door of 2 hour fire rating.
- A curb or still at suitable height shall be provided to prevent the flow of oil from the transformer room to other parts of the basement.
- There shall be an access to the transformer direct from the outside. The switchgear shall be separate from the transformer by installing it in a separate room, the separating wall being of not less than 4 hours fire rating.
- The transformer shall be protected by automatic high velocity water spray system

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Distribution System:

- There shall be atleast two rising mains. Each shall have a change-over switch for connection to either of the mains.
- Independent feeders shall be provided for critical installations like fire pump ete.
- The cable duct shall be closed at every alternate floor with combustible material having the same fire resistance as that of the duct.

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- When the transformer is located at ground-floor level it shall be separated from the building by a wall of 4 hour fire rating.
- Oil filled transformer shall not be located on any floor above the ground floor.
- Where the oil capacity exceeds 2000 litres a soakpit of an RCC construction capable of accommodating entire oil shall be provided.

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- Water mains, telephone mains, intercom lines, gas-pipes or other service lines shall not be laid in the duct for the electric cables.
- Separate circuits from the main switchgear panels shall be provided for water pumps, lifts, staircase and corridor etc.
- These circuits shall be laid in separate conducts so that fire in one circuit will not affect the other.
- The staircase and corridor lighting shall also be connected to alternate sources.

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- Stand-by Generating SetStand-by generating set should be provided to supply the emergency load in case of the failure of mains.
- Emergency load will consist of emergency lighting, fire pump and fire-fighting equipments and other critical loads.
- Fire SafetyFire fighting arrangements as required by relevant regula- tions shall be provided.
- A manually operated electrical fire alarm system shall be installed with one or more call boxes located at each floor. The call boxes shall be so located that they are easily accessible and no occupant is required to travel more than 22.5 metres to reach a call box.

FIRE IN MULTI-STOREIED BUILDINGS

- In a multi-storeied office building, paper files were stocked which were touching the wires in a junction box.
- Some local heat adequate to burn one paper was generated which resulted in fire[.Which burnt the whole building.
- The fire brigade struggled for over 12 hours to put off the fire as the fire detection system as well as the equipment for fire fighting were found not working Proper stocking of the inflammable material away from fire/heat could have prevented this accident.
- Fire detection system and fire fighting equipments should have been checked from time to time.

THANK YOU