DESIGN GUIDELINE SBA 5.11
FIRE COMMAND CENTER

Scope

This design guideline clarifies how certain Michigan Building Code (MBC) requirements for Fire Command Centers are to be applied on University of Michigan projects.

Related Sections

Design Guideline Technical Sections:
DG101400 – Signage
DG230900 – Mechanical System Controls
DG263000 – Engine-Generator System
DG273523 – Emergency Responder Radio Coverage
DG283100 – Fire Detection and Alarm

U-M Master Specifications:
MS263000 – Engine-Generator System
MS283100 – Fire Detection and Alarm System

References:

NFPA 72, "National Fire Alarm and Signaling Code"

Fire Command Center Room

Locate the Fire Command Center (FCC) on the ground floor and near the building entrance designated for first response by the Division of Public Safety and Security (DPSS) and the Ann Arbor Fire Department. Provide access to the room from the interior of the building. If possible, also provide access directly from the exterior of the building. Provide room dimensions and fire separation as required by the Michigan Building Code.

Using the room to incorporate other building functions such as a reception desk, security office, or DPSS mini-station shall be reviewed with the U-M Fire Marshal and the State of Michigan Bureau of Fire Safety (if applicable). The layout, location and features of the FCC shall be reviewed with the U-M Fire Marshal to obtain approval of the room and the locations of the various control panels to be located in the room.

Connect safety-related equipment, lighting, and duplex receptacles within the room to the building's emergency power system.

Arrange for the Key Office to key the interior door lock for a special machine room series key. Arrange for the building's Facilities Manager to receive a copy of this special machine room series key. This will enable the DPSS and Plant Operations Shop personnel with machine room master key as well as the Facilities Manager to have immediate access to the room.

If there is an exterior door into the FCC, equip it with a card reader. Arrange for the Key Office to key the exterior door lock for a restricted access series key.

Provide signage at each door with "Fire Command Center" in 1" high, bold red letters. Provide an additional ceiling or wall mounted sign above the door that is clearly visible from the exterior entrance when the FCC is not directly adjacent to the entrance.

Provide a control switch for simultaneously unlocking stairway doors. The control switch shall not unlock exit discharge doors to the outside that are locked by the card access control system.

Provide as-built building floor plans marked by the Architect to indicate the code-required building features. Provide a drawing hanging flat file stand on wheels with a minimum of eight clamp-type drawing sticks.

Provide a Building Information Card containing all the information required by the MBC.

Fire Alarm Control Unit

Locate the fire alarm control unit (FACU) in the FCC. Specify the following FACU features in accordance with NFPA 72 and Specification MS283100:

- An emergency voice/alarm communication system control unit. If the fire alarm system includes building-wide mass notification, also specify pushbuttons capable of initiating the mass notification tones and alert messages.
- A fire department two-way communications system including six pluggable portable handsets, except if the building contains Emergency Responder Radio Coverage (ERRC), do not specify a fire department two-way communications system.
- The FACU's digital annunciator shall display the status of sprinkler valves and waterflow detectors.
- The FACU's digital annunciator shall display the status of the fire pump.
- If the building contains ERRC, the FACU's digital annunciator shall display the status of the ERRC.
- The FACU's digital annunciator shall store and display several hundred past events. No printer is required.

Generator Supervision Requirements

Provide a generator remote annunciator panel and a generator manual start and transfer panel. The generator manual start and transfer panel may be manufactured by the automatic transfer switch (ATS) vendor or field fabricated, and shall include the following:

- A green "normal power" and a red "generator power" indicating light for each emergency and standby power ATS to indicate the position of the ATS. Label each pair of lights to indicate the generator and ATS equipment numbers and whether the loads connected to the ATS are emergency or standby.
- One Plexiglas guarded, two position, maintained contact, non-keyed "AUTO-RUN" selector switch to manually start all generators and enable all ATSs to transfer.
    - The selector switch shall have one Form-C maintained contact for each ATS (except do not provide a contact for a fire pump ATS that is integral to the fire pump controller).

- Provide control wiring from each switch contact to its ATS.
- In the "AUTO" position, each switch contact shall place its associated ATS in normal stand-by mode.
- In the "RUN" position, each switch contact shall simulate a loss of normal power to its ATS. This shall cause each ATS to start its generator and then transfer to generator power when its generator reaches proper voltage and frequency. However, if the building has multiple generators and paralleling switchgear, the generators shall start but the ATSs shall not transfer until normal power is lost.

- A nameplate identifying the panel as "Generator Manual Start and Transfer".

Fire Fighter's Smoke Control Panel

Include in the design documents, a diagram of the fire fighters smoke control panel face. This diagram shall include:

- Schematic diagram of the smoke control system showing all related exhaust fans, air handlers, dampers, actuated doors, etc. with graphical indication of the building area served by each smoke control component. Example: indicate which stair a stairwell pressurization fan serves.
- A legend for the various components on the panel face diagram.
- Labeling required for each component, e.g. SEF-1, West Fire Shutter, etc.
- Location of all switches on the panel face and required labeling, e.g. "OFF-AUTO-ON".
- Location and color of all indicator lights.
- A simplified sequence of operation for the smoke control system(s).
- A clear indication of the direction of airflow.
- The relationship of components relative to one another.

Air Distribution Supervision Requirements (Equipment not associated with smoke control)

To meet the MBC requirements for "Status indicators and controls for air distribution systems" in the FCC, provide the following as a separate DDC building automation system panel:

- Provide a separate air distribution system status panel that shows graphically the location and operating condition of the major air handlers serving the building (not associated with building smoke control). Show the air handler status with two indicating lights - Red and Green.
  1. Air handler is off - the status red light is on.
  2. Air handler is on - the status green light is on.
- Label the air handlers, and depict graphically the area served.
- Provide "OFF-AUTO" switches to turn the air handlers off.

Small air handling equipment such as that serving substation and emergency generator rooms, fan coils, toilet exhaust fans, etc., typically are not required to be included on the status panel. The building automation system will provide the signaling necessary to control the air distribution supervision status lights and switches. The air distribution supervision status panel should be shown as part of the control drawings.