# 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 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 BFS (if applicable). The layout, location and features of the fire command center shall be reviewed with the U-M Fire Marshal to obtain approval of the room and the design of the various control panels to be located in the room.

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

Key the interior door locks with a "BA" machine room series lock that is different from the other "BA" series locks in the building. Arrange for the building's Facilities Manager to receive a copy of this unique BA series key. This will enable the DPSS and Plant Operations Shops personnel with BA master keys as well as the Facilities Manager to have immediate access to the room. If there is an exterior door into the fire command center it shall be equipped with a card

reader.

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 fire command center is not directly adjacent to the entrance.

A control switch for simultaneously unlocking all non-exit discharge stairway doors that are locked from the stairway side. Do not unlock exit discharge doors 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.

Fire Alarm Control Panel

Locate the fire alarm control panel in the FCC. Specify the following control panel 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, do not specify a fire department two-way communications system. The control panel's digital annunciator shall display the status of sprinkler valves and waterflow detectors.
- The control panel's digital annunciator shall display the status of the fire pump.
- The control panel'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 manual start and transfer panel. Provide a green "normal power" and a red "generator power" indicating light for each emergency and standby power automatic transfer switch (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.

Provide one Plexiglas guarded, two position (non-keyed), "Auto-Run" selector switch to manually start all generators and enable the ATS's to transfer. The selector switch shall have the following features:

- 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 generator will start but the ATS will not transfer until normal power is lost.

- A nameplate identifying the selector switch 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 ON-AUTO-OFF.
- 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 code requirements for "Status indicators and controls for air distribution systems" in the fire command center, 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 indication 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 AUTO-OFF 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.