28 30 00 – ELECTRONIC DETECTION AND ALARM

28 31 00 - FIRE ALARM SYSTEMS

A. General

1. Design Requirements
   b) Require strict compliance with audibility requirements.
   c) Owner desires to install analog type addressable systems in new buildings and major remodels in existing buildings. Smaller buildings and minor additions to existing systems may still be hard wired. Voice systems are also desired in most new construction. Discuss the basic system type with the Owner prior to design.

2. Materials
   a) University standard fire alarm control panel is Simplex 4100 Series.

3. Preferred Zoning/Annunciation:
   a) Addressable systems:
      1) Annunciate each device or group of devices by room number and room function, on the LCD display.

B. Fire Alarm Control Panel (FACP)

1. Power Supplies:
   a) Primary power source from normal 120 VAC building power with emergency generator backup if available. Secondary power source is an internal battery pack.
   b) Provide adequate internal power supply capacity for 25% future growth.
   c) Furnish a dedicated circuit for each fire alarm control panel.
   d) Provide a convenience receptacle, for service purposes, within 3’ of the FACP.

2. Generally control panels should be located at the fire department “attack” entrance. Discuss locations with Owner’s Representative.

3. Voice Systems:
a) When voice systems are employed, use standard UNI message set with temporal code for evacuation.

b) Discuss the use of messages and their method of initiation with the Owner’s Representative prior to design.

c) Voice systems to use 70 Volt Line.

d) Provide one redundant back up audio amplifier for each system.

e) Total amplifier power should be based on 4 watts per speaker location.

f) Provide a microphone and audio switches at the FACP and at the “attack” entrance annunciator(s).

C. Local alarm panel communication with campus emergency responders.

1. Owner has a Siemens Automation System (BAS) in most campus buildings. Discuss system availability and connection point location with Owner before fire alarm design. Owner prefers a stand alone fire alarm system in each building, with connection to the BAS system indicating:

   a) General alarm (device address when requested)

   b) System trouble

   c) Supervisory alarm (when used).

   d) Special alarms (when used).

2. Provide a ¾” conduit with cables, as required, between the FACP and the nearest building automation panel.

D. Annunciator

1. Provide annunciator at fire department “Attack” entrance(s). LCD type preferred. Mount in shaded location so sunlight will not wash out LCD display.

2. Annunciator type, quantity and location(s) to be discussed with Owner’s Representative at schematic design phase. Graphic annunciator panels will not be used.

3. Operating controls such as reset, acknowledge and smoke control accessible by key only.

E. Auxiliary Systems

1. Fan shutdown equipment:

   a) Provide fan shutdown(s) where required by current codes.

2. Door holders:
a) 24V

3. Smoke elimination:

4. Extinguishing Systems
   a) On Drawings show wiring between any extinguishing systems and the building fire alarm system as well as the contractor responsible for installation.

F. Coiling Doors/Fire Curtains (Roll Up Metal Doors)
   1. The use of this type door is strongly discouraged, and only by specific permission of the Owner’s Representative.

G. Wiring
   1. Mark junction boxes by painting red and stenciling “FA” on cover.
   2. Min. size # 18 AWG with larger sizes as needed (stranded allowed). Fire alarm cable to be plenum rated, even when used in non-plenum areas or in raceway. Type per Simplex approved list.
   3. Complete raceway system required.

H. Job Site Considerations
   1. When working on operating fire alarm systems, only circuits(s) affected may be bypassed or disconnected and only during working hours. Panel must be operational at end of working hours. Disconnections and bypasses to be done only by Owner’s Representative(s).
   2. Detectors in construction areas to be “Bagged” during dust producing operations. Working detectors to be “uncovered” at end of working hours.

I. Testing:
   1. Start up and certification testing to be done by a NICET certified fire alarm technician. Technician’s name and certification number to appear on documents.
   2. Acceptance testing to be witnessed by Owner’s life safety technician.
   3. Test in accordance with NFPA 72 – Chapter 7. Provide documentation per 7-5.