Sacramento Metropolitan Fire District

Fire Prevention Bureau

3012 Gold Canal Drive · Rancho Cordova, CA 95670 · Phone (916) 859-4330 · Fax (916) 859-3717

KURT P. HENKE
Fire Chief

SACRAMENTO METROPOLITAN FIRE DISTRICT					
FIRE PREVENTION STANDARD					
STANDARD TITLE:	**Installation of Fire Alarm Systems**				
STANDARD NUMBER:	2	EFFECTIVE DATE:	05/06/10	REVISION DATE:	06/07/12

OBJECTIVE

To ensure fire alarm plans submitted for review contain items necessary for approval prior to system installation. Fire alarm systems, plans, and installation shall be in accordance with the National Fire Protection Association (NFPA) 70 and 72, California Fire Code (CFC), and California Building Code (CBC).

This standard shall apply to all new or modified fire alarm systems installed in commercial and apartment buildings, which include State regulated care facilities.

This standard outlines the procedure to be followed when submitting fire alarm plans and defines the District's requirements for fire alarm system installations that may be more restrictive or not included in existing codes.

PROCEDURE

I. PLAN SUBMITTAL

A. Fire Alarm plans for new installations, system upgrades, tenant improvements, etc. may be submitted at any of the following locations:

- Sacramento Metropolitan Fire District
  Fire Prevention Bureau
  3012 Gold Canal Drive
  Rancho Cordova, CA 95670
  (916) 942-3300
  8:00 to 3:00

B. Fees shall be paid at the time of submittal. Additional fees will be assessed for work performed prior to Fire District approval.

C. All fire alarm plans and calculations shall bear the stamp of approval by a fire protection engineer, electrical engineer, civil engineer or C-10 contractor licensed by the State of California.

D. A completed "Fire Alarm Description Worksheet" and "Alarm System Certificate Request" shall be provided for all fire alarm systems requiring UL certification.

E. Manufacturer's specification sheets and current California State Fire Marshal (CSFM) listing sheets shall be provided.

II. CALCULATIONS

A. Voltage drop calculations shall be provided for all notification appliance circuits. Calculations shall be based upon the size and length of conductors used and the maximum alarm current. The maximum voltage drop shall not exceed 10 percent.

B. Standby battery calculations shall be provided to verify standby batteries can provide power to the system in the event of primary power failure. A 20% derating factor shall be included.

III. CIRCUITS

A. When providing a fire alarm circuit in a multiple tenant building (i.e. multiple metering), the circuit shall be energized from the emergency or house panel.

B. When the California Building Code requires a separate source of power (i.e. emergency generator), the fire alarm circuit shall be energized from the emergency panel.

IV. EXISTING SYSTEMS

A. Fire alarm equipment no longer CSFM listed shall not be modified or expanded.

B. Existing sprinklered buildings without fire alarm systems that undergo improvements or modifications shall provide a minimum flow-tamper system.

C. Existing flow-tamper systems within buildings that undergo improvements or modifications shall relocate the audio/visual device and manual pull station to a normally occupied location. In existing multi-tenant buildings, the audio/visual device and manual pull station shall be in the tenant space nearest the fire sprinkler riser.

D. Existing buildings with "total coverage" heat detection systems (i.e. systems installed in accordance with Sacramento County Code 868) that undergo improvements or modifications shall maintain total heat detection coverage throughout. An audio/visual device and manual pull station shall also be provided in a normally occupied location.

V. VOLUNTARY SYSTEMS

A. Voluntary systems shall meet the requirements of this standard and be approved by the District.

B. Voluntary, specific area and/or specific hazard detection coverage shall be per NFPA 72, "selective coverage". "Partial coverage" and "supplemental coverage" detection systems are not permitted.

VI. GENERAL INFORMATION

A. Alarms shall annunciate and transmit to the central station by building, zone, location, and device in plain English.

B. Multi-tenant buildings with multiple fire alarm panels shall provide one main fire alarm panel to which all panels report and through which all signals are transmitted to the Central Station.

C. Fire alarm systems shall not be connected to a security system or any system other than that for the detection of fire and smoke.

Exception: Combination systems (burglar and fire) may be permitted if the system is UL certified and the building is single tenant use.

D. Buildings and/or occupancies requiring detection coverage shall have coverage per NFPA 72, "total coverage".

E. Emergency voice alarm message content shall be in English and approved. If emergency voice alarm messages are desired in additional languages, the message content and translation shall be provided. Any warning tones or alert tones preceding or following the message shall be described as well as the number of times the message will repeat.

VII. REQUIRED INSTALLATIONS

A. Water flow and tamper alarm systems

1. Flow-tamper alarm systems shall include the following:

   a. Smoke detector located above the panel, installed in accordance with NFPA 72.

   b. An exterior alarm bell, visible from the address side of the building.

c. A manual pull station in a normally occupied location. In multi-tenant buildings, the manual pull station shall be in the tenant space nearest the fire sprinkler riser.

d. An audio/visual device in a normally occupied location. In multi-tenant buildings, the audio/visual device shall be in the tenant space nearest the fire sprinkler riser.

e. Smoke detector(s) for HVAC shutdown, fire smoke damper activation, elevator recall and/or door release service.

f. Devices in addition to those listed above shall be installed to provide "selective" or "total coverage". UL certification shall be provided.

B. R-2 Occupancy Systems

1. Fire alarm systems required by the California Building Code for new R-2 occupancies with flow-tamper alarm systems shall be provided with:

a. Fire alarm control panel. A zone and building map shall be provided at the fire alarm panel location.

b. Smoke detector above the fire alarm panel installed in accordance with the manufacturer's specifications.

c. Single manual pull station located within 5-feet of the exit at the Clubhouse or manager's unit.

d. Audible device in each unit.

e. Audible/visual devices in each accessible unit. Smoke detectors located in accessible units shall cause the operation of a visible signal upon initiation.

VIII. SYSTEM ACCEPTANCE

A. Maintenance and testing shall be per the requirements of NFPA 72. A copy of the monitoring and maintenance agreement, signed by the building owner, shall be provided.

B. Record of Completion shall be provided following successful testing witnessed by the AHJ.

C. Decibel meter shall be provided, by the contractor, to verify audible signal.

D. Magnehelic gauge or manometer shall be provided by the contractor to verify airflow at duct smoke detectors.

E. A test of the standby power supply shall be conducted and witnessed by the inspector.

F. A functional test of all new devices shall be conducted and witnessed by the inspector. For existing system modifications, 10 percent of existing devices shall also be tested.

G. Signal initiation and central station retransmission shall be demonstrated. Signal initiation to central station shall not exceed 90 seconds. Retransmission to fire dispatch shall not exceed 60 seconds.

Ray Iverson, AC/Fire Marshal