



## CITY OF SAN JOSÉ, CALIFORNIA

**San José Fire Department**      **San José International Airport**

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**SAN JOSE  
INTERNATIONAL  
AIRPORT**

# FIRE SPRINKLER MONITORING SYSTEM

## PERMIT APPLICATION, PLAN SUBMITTAL, DESIGN, INSTALLATION AND INSPECTION REQUIREMENTS

(November 30, 2001)

### 1.0 PERMITS

- 1.1 To acquire an installation permit for a fire sprinkler monitoring system, submit the following to the San Jose Fire Department's Bureau of Fire Prevention located at 1732 North First Street, Suite 600, San Jose, California:
  - 1.1.1 A completed Fire Protection and Special Systems Installation Permit – provide all required information and make sure the permit card (manila card) is legible.
  - 1.1.2 A minimum of three sets of shop quality plans and attachments for the proposed monitoring system – one set shall be retained by the BFP.
- 1.2 Permits are required for new installations and any alteration to a fire sprinkler monitoring system. Alteration includes replacement, relocation, addition, and/or deletion of any device and equipment.
- 1.3 The permit fee for the period July 1, 1999 through June 30, 2000 is \$ 285.00 plus \$ 3.10 for every device and piece of equipment that exceeds 50. Permits are valid for one year only. Two plan reviews and two inspections are covered by the permit fees. Additional plan reviews or inspections shall be billed by the amount of time required at the rate of \$110 per hour.
- 1.4 Permit fees will be collected when plans are submitted for review. Additional fees for plan review and/or inspections will be billed at the completion of the permit.
- 1.5 The current goal for review time of plans is two weeks, unless the applicant requests an over-the-counter plan review. Over-the-counter plan review may be scheduled by leaving a message at (408) 277-8755. The message shall have the following information: your name, phone number, and the estimated time required for the plan review. An inspector will call to schedule the time and date of the plan review. Over-the-counter plan review can be usually arranged within one week of request. There are no additional fees required for this service.
- 1.6 The permit applicant shall be the installing contractor. All installing contractors shall have a California Electrical (C-10) Contractor's License, a valid worker's compensation certificate, and a San Jose business license.
- 1.7 Installation of the fire sprinkler monitoring system shall not commence prior to the approval of plans and the issuance of a permit.
- 1.8 The permit card and a San Jose Fire Department (SJFD) approved set of plans shall be kept at the project site until final approval of the permit, after which they shall remain in the possession of the owner.

### 2.0 PLANS

- 2.1 Plans that do not comply with paragraphs 2.2 through 2.7 shall be disapproved.
- 2.2 Plans and attachments shall be clearly labeled and legible.
- 2.3 Plans and all revisions to the plans shall be dated. Provide a revision list with a symbol, date, description, and initials.
- 2.4 Attachments shall include the manufacturer's specification sheets and California State Fire Marshall (CSFM) listing sheets for all equipment and devices requiring listing.

- 2.5 The front sheet (title sheet) of the plans shall contain the following information:
- 2.5.1 Project name and address of the project.
  - 2.5.2 The designer's full name (no initials, pseudonyms, acronyms, or aliases) and signature.
  - 2.5.3 Business name, address, and California Contractor's License number of the installing contractor.  
If the designer of the system is not the installing contractor, the following shall be clearly indicated on the plans:
    - 2.5.3.1 **DESIGNED BY** – followed by the designer's business name, address, designer of record's full name and signature.
    - 2.5.3.2 **INSTALLING CONTRACTOR** – followed by the installing contractor's business name, address and California Contractor's license number.
  - 2.5.4 The zones of annunciation.
  - 2.5.5 The supervising station facility.
  - 2.5.6 Indicate if a combination system is provided. Indicate the system that shares components, circuitry, and wiring with the monitoring system (e.g., burglar alarm).
  - 2.5.7 Provide the model number, manufacturer's name, description, quantity and symbols (legend) for each device, equipment and conductors proposed to be used. Strike out any "typical" symbols that do not pertain. *(Note: The Fire Department reserves the right to disallow any listed product due to past performance).*
  - 2.5.8 A note stating that the design and installation complies with NFPA 72 (1996 edition), the National Electric Code (1999 edition), the California Fire Code (1998 edition), the California Building Code (1998 edition) and the San Jose Fire Department Standards.
- 2.6 The floor Plan shall clearly indicate the following information:
- 2.6.1 The location of all equipment, devices, and appliances.
  - 2.6.2 Scale used and a graphical representation of the scale. The minimum scale for fire sprinkler monitoring system plans is 1" = 50". The location of all equipment, devices, and appliances (including fire sprinkler control and test valves, fire and smoke dampers, HVAC units, magnetic door holders, fire pumps, emergency generators, other suppression systems, etc.) and end-of-line devices.
- 2.7 The Riser Diagram and calculations shall clearly indicate the following information:
- 2.7.1 Single-line wiring diagram (riser diagram) that shows the interconnection of each device/equipment of the whole fire sprinkler monitoring system. Indicate the number of conductors in each wiring segment and the type and size of wire or conductor to be used. The class and style for each circuit.
  - 2.7.2 Secondary power calculations to verify that standby batteries or other approved secondary power source is adequate for 60 hours of standby and five minutes of alarm.

### 3.0 DESIGN AND INSTALLATION

- 3.1 Fire Sprinkler Monitoring Systems shall be designed and installed in accordance with the California Fire Code (1998 edition), the California Building Code (1998 edition), NFPA 72 (1996 edition), the National Electrical Code (1999 edition), and the SJFD ordinances and standards.
- 3.2 There shall be no more than one monitoring system in a building. Likewise, there shall be no more than one supervising station providing service to a building.
- 3.3 All valves controlling the water supply to fire sprinkler systems and all water-flow switches on fire sprinkler systems shall be electrically monitored where the number of sprinklers is:
- 3.3.1 Twenty or more for Group I, Divisions 1.1 and 1.2 Occupancies.
  - 3.3.2 One hundred or more for all other occupancies.
- 3.4 Valve monitoring (supervisory), water-flow alarm and trouble signals shall be distinctly different and shall be automatically transmitted to an approved central station, remote station, or proprietary monitoring station as defined by the national standards, or when approved by the Building Official with the concurrence of the Chief or Fire Department, sound an audible signal at a constantly attended location. Waterflow alarm-initiating devices shall initiate an alarm signal within 90 seconds of flow of water equal to the flow from a single head of the smallest orifice size installed *(Note: SJFD requirement is at around 45 seconds).*

- 3.5 Fire sprinkler system control valves shall initiate an off-normal signal (supervisory) **within two revolutions** of the hand wheel or **one-fifth of the travel distance** of the valve. Restoration shall be initiated only when the valve is back to its normal position.
- 3.6 Provide automatic smoke detection at the control panel location to provide notification of fire at that location.
- 3.7 Provide a bell at the exterior of the building. Also, provide a visual and audible notification (horn/strobe) device in the interior of the building at a normally occupied space. For “speculative” buildings, the horn/strobe shall be installed at the main entrance to the building closest to the control panel.
- 3.8 At least one manual pull box shall be provided. The manual pull box shall be installed in the same location as that of the horn.
- 3.9 Fire and smoke dampers, air moving systems with capacities greater than 2000 CFM, fire pumps, emergency generators, other fire suppression, other smoke control systems, and elevator recall (vertical travel distance of 25 feet or more) shall be monitored as required by NFPA standards or the SJFD. Please see the SJFD “Fire Alarm Systems” handout.
- 3.10 Duct detectors shall be accessible for cleaning and maintenance. “Accessible” means admitting close approach - not guarded by locked doors, elevation, or other effective means. The location of duct detectors in air duct systems shall be permanently and clearly identified and recorded. Permanent labels or placards outside the first point of access shall be installed to indicate that a detector is accessible from that point. Also, when duct detectors are installed in concealed locations, more than 10 feet above the finished floor, or in arrangements where the detector’s alarm indicator is not readily visible, the detectors shall be provided with a clearly labeled remote alarm indicator in a readily accessible location.
- 3.11 Battery Capacity - standby batteries shall be adequate to provide 60 hours of standby requirements and five minutes of alarm condition. The total ampere-hour requirement shall be based on the summation of two calculations, i.e., supervisory non-alarm and alarm-load condition. When a combination (e.g., fire and burglar alarm) system is involved, any non-fire alarm appliances which derive their power from the control panel shall be included in the supervisory and alarm load calculations.
- 3.12 Voltage Drop - the maximum voltage drop in any notification circuit shall not exceed **10 percent**.
- 3.13 Power Service - the power service to the control unit and all power supply units shall be on a dedicated branch circuit. The circuit and connection shall be mechanically protected. The circuit disconnecting means shall have a red marking, be accessible only to authorized personnel, and be identified as “FIRE ALARM CIRCUIT CONTROL.” **The location, panel and circuit number of the circuit disconnecting means shall be permanently identified at the fire alarm control unit and power supply units.**

#### 4.0 INSPECTIONS

- 4.1 Field inspections shall be scheduled only after a permit has been issued.
- 4.2 The installing contractor shall schedule inspections only. When scheduling for inspection, request for sufficient time to complete a thorough inspection of the work performed.
- 4.3 The installing contractor shall conduct a complete test of the system **prior** to the SJFD inspection date.
- 4.4 Allow at least one week when requesting an inspection. Inspections may be scheduled by leaving a message at (408) 501-0936. The message shall have the following information: the project name and address, the fire sprinkler monitoring system permit number, the amount of time required for the inspection, and the name and telephone number of the person requesting the inspection. A SJFD inspector will return your call to schedule the time and date of the inspection.
- 4.5 Missed inspections or inspections canceled within 24 hours shall be counted as one inspection or, when two or more inspections have been conducted, billed for the amount of time allotted for the inspection.

- 4.6 During inspection, there shall be a minimum of two technicians. One technician will be at the control panel while the other will be testing the devices. Two-way radios shall be provided and the technician at the panel shall communicate to the SJFD inspector which devices are activated on the panel.
- 4.7 Necessary coordination shall be made such that representatives of other contractors whose equipment are involved in the testing are present (i.e., fire smoke dampers, air handlers, elevator, fire pumps, emergency generators, other fire suppression systems, etc.).
- 4.8 After final completion and acceptance of the project, the contractor shall provide the following to the owner:
  - 4.8.1 All literature and instructions provided by the manufacturers describing proper operation and maintenance of all devices and equipment,
  - 4.8.2 A copy of the approved plan and as-built plan, if applicable, and
  - 4.8.3 The signed and finalized permit card.

**5.0 DOCUMENT REVISION**

- 5.1 This document is subject to revisions. For general information and to be sure that you are reading the most current document, please call (408) 501-0936.