

FIRE PROTECTION

The greatest threat to any public facility is FIRE. Regardless of the presence of around-the-clock security, video surveillance systems, intrusion detection systems, or sound preventive measures, an undetected fire will destroy the facility and everything in it. It is therefore a primary consideration to understand and evaluate the facility's ability to detect fire sources at the earliest possible time, alert proper agencies, and/or automatically suppress fires.

In evaluating facilities throughout the country, we find these common faults:

1. Failure to properly inspect, clean, test and service fire detection or suppression systems.
2. Inadequate or improper detection systems.
3. Extinguishers have never been used by staff in a live fire exercise.
4. Fire drills are conducted without full staff participation or visitors present.
5. Reliance on fire *suppression* (sprinkler) systems, without any consideration of **detection**.

Institutions involved in construction projects, expansion projects, or new construction normally leave the determination for fire detection and suppression systems up to the architect, general contractor, or electrical contractor. These professionals may recommend, select, or install systems that meet the National Fire Alarm Code, or NFPA 72A (Installation, Maintenance and Use of Local Protective Signaling Systems) requirements. However, there are special and unique requirements for the protection of valuable collections, and the life safety issues brought about by the presence of minor children.¹

There is a perpetual question and common misunderstanding regarding fire *suppression*, and fire *detection*. Administrators often feel that when a building is equipped with an automatic suppression or *sprinkler* system, they have no need to be concerned about fire issues. Others feel that the use of automatic sprinkler systems should not be used to protect library or museum collections because of the potential for water damage. Since this manual is intended to emphasize cultural property *security*, we will not get into a lengthy discourse on sprinklers or other suppression methods. We will state, however, that the activation of an automatic sprinkler system means that a fire, or extreme heat, is present in the facility. The source of the fire might well have been detected *before* extreme heat or flame was generated, if a proper early warning or *smoke detection* system was present.

In protecting any cultural property, regardless of size or type of construction, we recommend the following preventative measures:

1. Perform an objective fire protection survey which includes a complete physical inspection of the facility, audit of existing systems, inspection of service records, evaluation of all suppression systems or devices (extinguishers), review of evacuation and emergency preparedness plans, and coordination with local emergency fire response agencies. The survey should be performed by a fire protection specialist (CFPS), or non-product affiliated fire protection consultant.

¹ See NFPA 910, 911, 913 (Libraries, Museums, Historic Structures)

2. Review staff awareness policies and procedures that enhance reasonable prevention measures. Appoint at least one responsible staff member as *fire warden* to regularly tour the entire facility and document potential hazards.
3. At least annually, provide **hands-on** fire extinguisher training for **all staff members**, using your available extinguishers on a live fire. This training should be provided by, or coordinated through, the local fire department.
4. Coordinated an annual training exercise with the participation of the fire department, emergency medical services, and law enforcement agencies, during which an evacuation of the facility and special training for disabled person evacuations are included.
5. Assure that every staff member, volunteer, and long-term contractor is familiar with and understands his or her role in a fire situation and emergency evacuation.
6. Require that all fire detection devices be scheduled for annual cleaning, testing and maintenance by licensed or qualified professional. Require direct documentation for each service call, cleaning, or system maintenance performed.
7. Post fire evacuation routes in conspicuous locations throughout the building.
8. Require the fire warden to schedule regular inspections of exit routes, lighted exit signs, emergency lighting, emergency power supplies, fire extinguishers, and disabled evacuation equipment.
9. Devise an emergency plan that provides for the removal, transportation, off-site storage, and protection of all collections and other valuable assets.
10. Determine that fire alarm signals initiated at your facility are transmitted by an uninterrupted system using AA Grade transmission lines, independent leased lines, or a redundant system with cellular or radio transmitted backup capability.

Do not ignore this critical aspect of your institution's protection. Most fires are preventable. After-hours inspection by walking patrols and/or automated detection equipment is essential. Do not assume that your buildings are properly protected, just because you have a sprinkler system, chemical system, or a smoke detection system. Regular inspections, maintenance, and servicing are imperative.

You should be able to retrieve information about service calls, alarm activations, and regular service work, without digging through the files. Fire alarm and fire suppression equipment records should be catalogued and available for review at any time.

Construction and renovation periods are of special concern. Many fires are initiated by improper or unsupervised use of welding equipment, temporary heaters, or others spark producing equipment. In any project, assure that **you** control the operation of this equipment. If, at any time, it is necessary to disable fire detection or suppression equipment, schedule the presence of a *live* security person for the entire time the alarms are disabled.

FIRE PROTECTION CHECKLIST

A Guideline for Security Patrols for both daytime and after hours patrol rounds

Security Patrols are the best chance of finding conditions that enhance or cause fires in any public or private facility. Keen observation, detailed documentation, and when necessary, immediate notification, all contribute to a strong prevention program. Officers should not hesitate to take corrective actions where fire prevention is concerned. The following checklist includes typical items to be noted or checked. It is not all inclusive, but a guideline for completing patrol procedures:

Fire Extinguishers – Should be mounted on metal hangers or contained in properly marked case. Check to see that pressure gauge needle is in the green and there are no signs of leakage around upper seals. Inspection tag should show inspection within past 12 months.

Fire Exit Signs – There are a variety of signs to include reflective, lighted, or other technology that causes sign to be visible in low light conditions. Signs should designate fire exit route and be posted in conspicuous manner, either above door, or at side of door 8” off the floor.

Fire Exit Routes – Route should be clear of any obstructions to include furniture, empty boxes, shipping crates or other material. Temporary storage along fire exit routes is not acceptable. Signs should be posted along exit routes clearly showing direction to nearest fire exit. Check to assure signage is readable, not faded or otherwise difficult to be of any use in an emergency.

Smoke Detectors – Not all detectors are visible. Some have blinking LCDs. Others do not. Patrols should observe detectors to determine if there is an accumulation of visible dirt, dust, sawdust, or other airborne elements. Special attention should be paid to detectors in workshop or construction areas. Detectors covered for nearby construction or painting should be uncovered after hours. Where most detectors display blinking red light...ALL detectors should display blinking red light. Locked on LCD usually indicated detector is in alarm.

Hose cabinets – Where hose cabinets and standpipe connections are in use, check to see that hose is in cabinet, appears serviceable, and has been recently inspected. Standpipe connections should be free of any obstacles or obstruction.

Sprinkler system main valves – Control valves for water suppression systems should be identified and tagged with current inspection tag. A plastic or low tensile strength metal chain should act as a seal to show that main valve remains open. Sprinkler valves should not be obstructed in any way.

Small appliances – Coffee Pots, floor heaters, crockpots, soup heaters or any other small appliance should be unplugged after hours. Timers on coffee pots are not reliable. Electrical appliances are the cause for many commercial fires.

Overloaded outlets – use of extension cords and multi-plug sockets to connect tools, office equipment, or other electrical appliances should be discouraged. Officers should note location and include in patrol report. If sockets are hot or smoldering, they should be unplugged immediately. **Flammables** – Where do janitors and shop workers store flammable products? Gasoline, cleaning products, paint or anything marked “FLAMMABLE” should be stored in a properly ventilated and properly identified flammable storage container. Janitor’s closets are not proper storage areas for flammables. Lawn mowers, snow blowers, or other gasoline operated equipment should not be stored indoors unless in remote area away from other storage and with proper ventilation.

Flickering fluorescent lights – Indicative of possible shorts or other electrical problems. Any indication of power fluctuation, flickering lights, or irregular power to any electrical appliance should be properly noted. Where appropriate, the appliance should be disconnected.

Just because an area was checked once doesn’t guarantee a condition hasn’t developed since that time. These items warrant consistent and repetitive checking, even though nothing has changed in the time between patrol rounds.

Exceptions to any of the above conditions should be noted on the patrol report, and where appropriate, as a special incident report.

FIRE PROTECTION DURING CONSTRUCTION

Fire is still the greatest threat to your facility. Fires happen with more frequency than all of incidents of theft, assault, terrorism, or any other threatening act. Most cultural facilities take reasonable measures to protect their facilities. During periods of construction, renovation, or expansion, collections are most vulnerable to the threat of fire. This is often due to the deactivation, disconnection, or destruction of elements of fire systems, which often means no mechanical or electronic means of detecting smoke or fire.

At the same time, intrusion detection and video surveillance systems may be inoperative. Numerous people, including contractors, architects, construction workers, and other involved with the project may be found on the property. Major construction clutter may also contribute to the potential for fire.

In order assure of consistent protection throughout the period of construction, it is necessary to formulate a reasonable prevention plan. It begins with determining the final schedule for important events:

- Project Initiation – When does actual construction/demolition/renovation actually begin?
- Power Cut-Off – When may utilities be shut off or disabled?
- Telephone Service – Will there be any interruption of telephone service at the site?
- Lighting – Will any exterior or interior lighting be disabled or re-located?
- Art Shipment or Movement – When and where will collections be removed from safe storage or exhibit space? Where will collections be relocated? What are the security measures in place or planned for the new space?
- Building Penetrations – At what point and what locations will building penetrations take place? How will these points be secured?
- Special arrangements should now be made to compensate for each of the vulnerabilities identified. Remember that many normal functions may be interrupted during the period of construction, and personnel normally tasked with protection duties may be reassigned, laid off, or otherwise unavailable.
- Security Reporting – Where do contractor personnel, contract security personnel, or other staff report security problems?
- Security Communications – What are the available means of communication?
- Security Scheduling – What arrangements have been made to reschedule personnel to include around the clock patrols in areas where a “fire watch” is required?
- Post Orders – Specific post orders for each area assigned security coverage need to be published and disseminated.

- **Police Response/Coordination** – Do not assume that law enforcement has any knowledge of changes in access or conditions that would directly affect their response. Close coordination to include tours of the property at various stages should be conducted.
- **Fire Response/Coordination** – This element of the plan is critical. Not may be critical...IS critical. Regular patrols of the property must replace the protection normally provided by smoke detection, fire suppression, or video surveillance. Patrols must be properly trained, equipped, and monitored...24 hours daily.
- What is the reality of these recommendations?
- **Fire Watch** – You need 24-hour Fire Watch.
- **Contractor Entry/Exit** – You need to designate one or more locations where contractors are required to enter and leave the property, under the close scrutiny of assigned security officers.
- **Package Inspection** – You **must** inspect all outgoing toolboxes, parcels, containers.
- **Security Reporting** – Regardless of whether the contract brings their own security, you have hired contract security for the project, or proprietary security is utilized, definite lines of communication that keep the institution involved need to be established.
- During construction, conditions change daily. You need to know exactly how the building will be secured, especially where building penetrations take place. When systems are disabled or interrupted, you need to know in advance, and as these events occur. Updates may be necessary hourly.
- **Alarm System Continuity** – You cannot depend on the architect, general contractor, or even the alarm system vendor to determine how and when systems should be disrupted, moved, duplicated, or re-installed. A qualified person not affiliated with any security service or vendor should lay out the steps in this procedure.
- **Contract Security** – Construction sites are dusty, dirty environments, often without the benefit of heat or cooling. Officers need to be on constant patrol, not sitting or locked in a guard shack. Communications with a reliable dispatch need to be initiated. Officers must be properly uniformed and equipped for the job. This includes a flashlight that works, reliable two-way radio, and foul weather gear. Direct supervision needs to check and re-check on patrols, especially in the hours of darkness.
- **Emergency Coordination** – Play the “what if” game. If you haven’t made arrangements for each contingency, in advance, you can’t rely on proper response.