PROTECTION AGAINST ARSON AND OTHER INCENDIARY FIRES

Table of Contents

Page

1.0 SCOPE

This data sheet discusses incendiary fires at industrial and commercial properties and presents recommendations for preventing or lessening the effect of such fires. The primary types of incendiary fires discussed are those started for reasons such as revenge, spite, thrills, vandalism, crime concealment, need for attention, jealousy, hatred, intimidation, extortion, or political activism. Fraud-motivated fires, not a major portion of FM Global loss history, are not specifically covered in this data sheet. However, certain recommendations would apply. Protection against certain terrorist acts will generally require methods beyond the scope of this standard and those of beyond typical building codes.

Major emphasis is placed on the locations most often involved, but general precautions for all properties are also included. The number of repeat incendiary attempts is a significant portion of the loss statistics. Locations having incurred an incendiary fire or a fire of unknown origin should pay particular attention to applicable recommendations in this data sheet. Some of the recommendations may apply to rioting or civil commotion. However, these topics are not specifically addressed.

For additional information on this topic, contact the Fire Prevention Grant Coordinator at the local FM Operations Center.

1.1 Changes

April 2025. Interim revision. Reaffirmed to be techically correct.

2.0 LOSS PREVENTION RECOMMENDATIONS

Use FM Approved equipment, materials, and services whenever they are applicable. For a list of products and services that are FM Approved, see the *Approval Guide,* an online resource of FM Approvals.

2.1 Occupancy

2.1.1 All Properties

2.1.1.1 Strictly control the buildup of trash, soiled work rags, and other combustible debris. Use FM Approved waste cans and empty them at the end of each operating shift. Do not store dumpsters, trash cans, or any combustible trash against buildings or under canopies. Use closeable outside trash containers and ensure they remain closed. Locate outside trash containers at least 30 ft (10 m) away from buildings, and locate trash compactors at least 15 ft (5 m) away from buildings.

2.1.1.2 Keep valuable drawings, records, and similar material in fire-rated, watertight file cabinets, vaults or safes. Use approved record protection equipment (i.e., vault, safe, etc.) rated by a recognized testing facility for the type of media to be protected. (See Section 3.1.4.) When practical, make duplicates and store them in a separate fire area. If possible/necessary, store them off-site.

2.1.1.3 If there is combustible storage not adequately protected by automatic sprinklers, permanently relocate the storage to a protected area, or temporarily relocate it until automatic sprinklers can be installed. If this is not possible, include the area in the rounds of the watch service and restrict access to as few employees as necessary.

2.1.1.4 Closed circuit television (CCTV) can be an alternative to watch service rounds. Provide complete coverage of the area. Locate the monitors in a constantly attended area. Store CCTV footage on site for at least 90 days.

2.2 Protection

2.2.1 All Properties

2.2.1.1 For best protection, fence the entire yard and locate the storage at least 50 ft (15 m) from the perimeter. Arrange yard storage in accordance with Data Sheet 1-20, *Protection Against Exterior Fire Exposure.*

2.2.1.2 If the above is not practical, fence the storage and maintain a clear space of at least 4 ft (1.2 m) between the fence and the storage. While this will not prevent firebombing, it will at least reduce the likelihood of someone reaching through the fence to ignite storage. The clear space should be wide enough to allow passage of patrol vehicles.

2.2.1.3 Provide 7 ft (2.1 m) high fences, with several strands of barbed wire at the top slightly tilted toward the outside. Where local authorities do not allow barbed wire or limit fence heights, use the maximum height allowable and omit the barbed wire.

2.2.1.4 Limit the indoor and outdoor storage of idle pallets as detailed in Data Sheet 8-24, *Idle Pallet Storage.*

2.2.1.5 Lock gates whenever the area is unattended.

2.2.1.6 Light the fence and the ground within 10 feet (3 m) of it.

2.2.1.7 If practical, light the entire yard storage area and remote entrances.

2.2.1.8 Provide hydrants and fixed protection for ignitable liquids tanks, transformers and large lumber stacks in accordance with Data Sheet 7-88, *Ignitable Liquid Storage Tanks*, Data Sheet 5-4, *Transformers* and Data Sheet 7-10, *Wood Processing and Woodworking Facilities*, respectively.

2.2.1.9 Provide hydrant protection for yard storage areas and keep hydrants clear of vegetation and other unnecessary combustibles or obstructions.

2.2.1.10 Keep keys to parked vehicles at a designated location such as the security desk. This will ensure that the vehicles can be moved promptly so as not to hinder fire service personnel.

2.2.1.11 Maintain lighting in all areas having large quantities of combustible storage and for a 10-ft (3 m) radius around exterior entrances and fences.

2.2.2 Vacant Buildings

2.2.2.1 If it is impractical to maintain sufficient building heat to avoid freezing, arrange the automatic sprinkler system for cold weather operation in accordance with the relevant FM data sheets. ***Do not drain the system and put it out of service***.

2.2.2.2 Protect vacant and idle buildings in accordance with Data Sheet 9-1, *Supervision of Property*, and other applicable sections of this data sheet.

2.2.3 Social or Political Targets

2.2.3.1 Completely enclose the facility with a ‘‘person-proof’’ fence. Install a fence that is at least 7 ft (2.1 m) high, or the maximum allowed by local authorities, and have several strands of barbed or razor wire at the top, slightly tilted toward the outside. Some jurisdictions may have a restriction on the use of barbed or razor wire.

2.2.3.2 Lock the gates in the fence unless there is an entrance guard in attendance.

2.2.3.3 Light the area within 10 ft (3 m) of the fence. Arrange the lights so that they will not blind guards who are inside the protected area.

2.2.3.4 Patrol the fenced perimeter frequently. Make a complete tour each hour, but the specific spacing of each round and the route taken should be varied enough to avoid predictability. If the perimeter is too long for foot patrol, use motorized transportation.

2.2.3.5 As an alternative to patrols, install perimeter fence alarms and contact alarms on exterior building doors. Monitor these at a constantly attended location or with an audible bell if guards are present. Another alternative is to provide CCTV with the capacity to provide complete coverage. Monitor the CCTV at a constantly attended location.

2.3 Operation and Maintenance

2.3.1 All Properties

2.3.1.1 Unload all loaded trucks or railroad cars as soon as possible after arrival. Vehicle loading should take place the same day the vehicle is scheduled to leave. When this is impractical, store trailers indoors or protect them as yard storage discussed above. Securely lock vehicles when left unattended.

2.3.2 Vacant Buildings

2.3.2.1 Maintain the exterior of the buildings and the adjacent grounds. In particular, repair or board over broken windows, and adequately secure all doors. For buildings expected to be vacant long-term, consider constructing substantial barriers to inhibit vehicle entry to the adjacent property grounds.

2.4 Human Element

2.4.1 All Properties

2.4.1.1 Lock, maintain and inspect sprinkler control valves per the recommendations in Data Sheet 2-81, *Fire Protection System Inspection, Testing and Maintenance and Other Fire Loss Prevention Inspections*.

2.4.1.2 Maintain a well-trained emergency response team on all shifts (see Section 3.1.3).

2.4.1.3 For manufacturing and warehousing facilities, require employees to remain in their own work areas as much as is practical. Allow travel to other areas only for valid work-related reasons.

2.4.1.4 At nonmanufacturing and nonwarehousing facilities (e.g., hotels/motels, schools/universities, apartment complexes) where public access is a business necessity, permit nonemployee access to public building areas only. Restrict storage rooms and other nonpublic areas from public access.

2.4.1.5 At properties employing more than 100 people and at which public access is not necessary for the conducting of business, use identification (ID) cards, badges or some equivalent system to monitor access to the facility. In the case of ID cards, security personnel should check the employees' identification as they enter the building or property. The system should be capable of identifying former employees. In the case of ID cards, arrange to have such cards returned to management upon termination of employment.

2.4.1.6 At manufacturing and warehousing facilities, continuously monitor all nonemployees. An acceptable system is to require visitors to sign in and out, wear a distinctive badge, and be accompanied by facility personnel whenever possible. Require such a system of vendors and service people.

2.4.1.7 Check exterior doors weekly to ensure they are in good repair and their locks are operating properly.

2.4.1.8 Close and lock all exterior doors subject to unauthorized entry. Equip all exterior doors not designated emergency exits with dead bolt locks having a throw of at least one inch (25 mm). Arrange emergency exits to prevent outside entry. Make an end-of-the-day check of all possible entrances. This should include exterior doors, windows, roof hatches, fences and gates. At locations operating 24 hours, seven days a week, do a check during one shift per day and before scheduled shutdowns.

2.4.1.9 Randomly check the yard area on an unscheduled basis. At a minimum, make checks daily.

2.4.1.10 As an alternative, use intrusion alarms. These may consist of CCTV, perimeter fence alarms or beam-type detectors designed for outdoor use. The detectors should completely encircle the area and be supervised at a constantly attended location or connected to an audible bell if guards are present.

2.4.1.11 Without exceeding legal restrictions, do pre-employment screening for potential employees. This is particularly important for sensitive positions. Carefully choose security guards, maintenance personnel, and any others who will have relatively unsupervised access to the facility. (See Section 3.1.6.)

2.4.1.12 Closely supervise security personnel. Audit records periodically to reduce the risk of incendiarism from someone with relative freedom throughout the property.

2.4.1.13 Keep a record of all false burglar and fire alarms. Record the cause, if determined. Audit these records after each false alarm to see if a pattern is apparent.

2.4.1.14 Where a watch service is recommended, refer to Data Sheet 9-1, *Supervision of Property,* for recommended duties and location of watch stations.

2.4.1.15 Notify the local police and fire service immediately upon receipt of a bomb threat or after a bombing.

2.4.1.16 Designate a person-in-charge and assign the duties outlined in Section 3.1.5.2. Develop an action plan. It may or may not contain all the components of Section 3.1.5.2.

2.4.1.17 When a bomb threat is received, obtain key information outlined in Section 3.1.5.1 if possible.

2.4.1.18 Strictly control access to areas containing ignitable liquids and, if practical, keep access doors locked.

2.4.1.19 Coordinate interim and permanent protection programs with the local police and public fire service. High-profile inspections by the fire service can be an effective deterrent.

2.4.1.20 Occasionally spot check normally unattended areas containing combustible storage or ignitable liquids during working hours. Two or three checks per shift are normally sufficient, but randomly select the time to avoid setting a predictable pattern. Do these spot checks as openly as possible and record them.

2.4.1.21 As an alternative, use a burglar alarm system. In most cases contacts on doors, connected to a loud local bell, will be sufficient. If a constantly attended watch station is provided, CCTV connected to monitors in the watch station are an acceptable alternative.

2.4.2 Locations Having Incurred an Arson Fire

2.4.2.1 Evaluate access to the facility. Employ entrance guards to check the identification of employees and visitors.

2.4.2.2 Check sprinkler control valves daily at random times.

2.4.2.3 Check all entrance points daily to ensure locks, hinges, contacts, and other intrusion protection, frames, and the doors and windows themselves are in good repair. This should include skylights, roof hatches, fences, and gates. Pay particular attention to openings leading to areas having large quantities of combustibles or areas that cannot be readily observed by the public or facility employees.

2.4.2.4 If the fire occurred in a locked area and there was no sign of forced entry, re-key the locks.

2.4.2.5 Provide temporary watch service if warranted by unfavorable factors (high crime-rate areas, remote locations, more than one previous incendiary attack, etc.). Check the facility exterior and all interior areas at least hourly. Periodically, evaluate the location of key stations and the path taken during watch rounds to ensure all areas are checked and a predictable pattern has not emerged. Areas containing ignitable liquids or combustible storage should also have an interim check each hour or on an unscheduled basis.

2.4.2.6 If automatic sprinkler protection is provided where needed, and Class VI alarm supervision is provided, the use of an FM Approved burglar alarm system is a satisfactory alternative to watch service. It should either cover all entrance points or all floor areas. Supervise the alarm system at either an Approved central station or a constantly attended location, or someone should be present to respond at all times.

2.4.2.7 Unless it has been determined conclusively that the fire was set by someone not employed at the facility, employees may be suspected; restrict their movement within the facility to immediate work areas. Provide additional supervisory personnel as needed to check the whereabouts of all employees at all times.

2.4.3 Locations with Ongoing Labor Problems

2.4.3.1 Inspect all sprinkler control valves daily. If the inspection would draw unwanted attention, the check may be done visually from a reasonable distance. Otherwise, closely examine valves daily and physically try them at least weekly.

2.4.3.2 Check all entrances daily to ensure locks, hinges, frames, doors, and windows are in good repair. This should include skylights, roof hatches, fences, and gates. Pay particular attention to openings leading to areas having large quantities of combustibles. If striking or laid-off employees have had access to keys to any entrances or sprinkler control valves, re-key the locks.

2.4.3.3 Implement a temporary watch service. Checks of storage areas and areas containing ignitable liquids should average two per hour. Rounds through other facility and yard areas should average one per hour. Vary both the timing and order of rounds as much as possible to avoid setting an easily predicted routine. As an alternative, use existing FM Approved burglar alarms or CCTV, provided the area is adequately sprinklered with supervised waterflow alarms.

2.4.3.4 At strikebound facilities, assign and train available personnel to perform the major duties of the emergency response team (ERT). At facilities experiencing layoffs, review the ERT and make new assignments as needed. Recognize that temporary personnel are likely unfamiliar with the sprinkler system operation and other duties normally assigned to the ERT.

2.4.3.5 At strikebound facilities, have plant management involve union leaders in the interim protection program. They will sometimes allow union personnel to perform vital nonproduction duties which, in itself, may help to discourage an incendiary attempt.

2.4.4 Social or Political Targets

2.4.4.1 Patrol building areas containing ignitable liquids or combustible storage on an unscheduled basis averaging at least once per hour.

2.4.4.2 As an alternative, use an FM Approved burglar alarm or CCTV system if it covers all entrance points or all floor areas and the area is completely sprinklered with adequate alarm supervision.

2.4.4.3 Investigate even ″minor fires″, especially if of suspicious origin.

3.0 SUPPORT FOR RECOMMENDATIONS

3.1 Commentary on Incendiary Fires

3.1.1 General

Arson fires are unlike most other fires. They are, by nature, intentional. This sets them apart from other fires. Electrical short circuit, failure of equipment, spontaneous combustion and lightning are all common ignition sources that are generally random occurrences and are unaimed. Arson fires, for whatever reason, are intentional and aimed at a certain property. Consequently, a different approach is needed to prevent these fires.

The importance of automatic sprinkler protection where needed cannot be overstressed. Since incendiary fires are the result of a conscious act, it is possible and perhaps likely that the incendiarist will start the fire in an area with combustibles but lacking in adequate sprinkler protection. If such an area is not available, an attempt may be made to put the sprinkler system out of service by closing a sprinkler control valve. Locking of sprinkler control valves is not an invincible deterrent. However, this relatively inexpensive obstacle may mean the difference between a fire controlled by sprinklers or a fire that goes unchecked.

Primary emphasis should be placed on maintaining the sprinkler system, controlling ignitable liquids and combustibles and limiting opportunities for the incendiarist. This includes controlling access to the property at all times. The majority of incendiary fires occur during weekends or from 6 p.m. to 6 a.m. on weekdays. However, incendiary fires also occur during normal working hours.

Trash accumulations and electrical boxes are common ignition points. The incendiarist will often make one of these selections since the fire will seem accidental. The more sophisticated incendiarist may choose valuable drawings or records that are not properly safeguarded.

A well-trained and staffed emergency response team can be very effective in responding to an incendiary fire. A quick response can significantly reduce the potential for fire damage even if that response is limited to notifying the fire service.

Some degree of protection against incendiary fires is needed at all locations. ***Any location may be subject to incendiary attack.*** Some locations have a higher probability of experiencing an incendiary attack and increased protection is warranted. These locations are called *target properties*. Even so-called ″minor fires″ should be investigated, especially if of suspicious origin. This event may indicate the presence of an arsonist who may strike again. Suspicious fires at neighboring properties also indicate the presence of an arsonist in the area who may strike at an insured property.

3.1.2 Target Properties

Statistics show that unhappy or former employees make up a significant number of arsonists. Employees who have a real or imagined grudge against the company are particularly dangerous. They have knowledge of the most critical areas of their place of employment and the most accessible points of entrance, and can generally move about with some immunity to suspicion. Therefore, plants having labor problems such as layoffs, strikes, or threatened strikes are particularly vulnerable.

Locations in economically depressed areas have a higher incidence of arson fires. Facilities located in urban areas having a high incidence of vandalism. Areas where there are many vacant or abandoned buildings are also extremely vulnerable. Run-down buildings with numerous missing or broken glass windows are an inviting target.

Vacant or idle buildings, especially those that still contain combustible occupancies, present easy as well as tempting targets. The incendiarist often rationalizes that no one is losing anything when these buildings burn.

Facilities linked with social and/or political causes are also targets. These locations are generally involved in some operation which is in disfavor with various radical groups. These targets change periodically.

Another common target is yard storage of combustibles, due to easy access and unlikely detection. While any facility with such storage could be vulnerable, the previously described types of facilities are especially exposed. There have also been instances of gas-fired equipment being sabotaged, resulting in a fuel-air explosion in a building.

Once a target property is identified, the most seriously exposed area can then be determined. *Statistics overwhelmingly indicate that the fire will be started in a storage area.* If the area is unsprinklered, the odds are even higher. Storage areas tend to house few employees and the stacks of combustibles provide plenty of fuel and a place for the arsonist to hide from view. Mercantile and retail areas are also vulnerable due to the easy access by outsiders. Manufacturing areas that contain little combustible storage are very seldom chosen.

3.1.2.1 Locations Having Incurred an Arson Fire

Experience indicates that if an unsuccessful arson fire has occurred (one that is quickly extinguished or not of major proportions), a repeat attempt is likely unless the arsonist is prevented. National statistics indicate that repeat arson fires may be as high as 25% of the total in this category. This figure may be conservative due to the number that remain undetected.

Arsonists usually have a motive. Therefore, if their initial attempt fails, they will very often return to try again. It is a statistical fact that facilities that have incurred one arson fire are much more likely to have others.

The likelihood of a second attempt is highest in the first few weeks following the initial fire and slowly diminishes thereafter.

Subsequent incendiary attempts will often be more successful since the attacker will have learned from the first failure. Follow-up attempts will usually include the use of accelerants, multiple fires, or shutting of sprinkler control valves.

Therefore, after a fire of suspicious origin, a temporary increase in the level of protection and security is warranted.

3.1.2.2 Locations with Ongoing Labor Problems

When businesses are subject to extended strikes, work stoppages, slowdowns, layoffs, or other labor problems, the likelihood of an arson fire is increased. These attacks can be difficult to prevent because intruders usually have knowledge of the facility layout, security arrangement, and the location of combustibles and accelerants. They may also be familiar with the operation of fire protection systems, have keys to locked areas, or know of entrances that are inadequately secured.

At strikebound facilities, most of the personnel in attendance will be of management level. They may be unfamiliar with the operation of the sprinkler system and the other duties normally assigned to the emergency response team (ERT).

Similarly, when layoffs occur, members of the ERT may be lost. A review of assignments is needed prior to layoffs to make certain that replacements are appointed and trained.

3.1.2.3 Vacant Buildings

Vacant buildings are a frequent target for fires by juveniles, vandals, vagrants, and pyromaniacs. If left totally unsupervised, the buildings often are used for playgrounds or sleeping quarters, leading to either accidental or intentional ignition. The threat of a fire started by a juvenile is particularly high at vacant buildings. Studies have shown that the vast majority of incendiary fires are started by males between the ages of 12 and 25.

If the exterior of the building and the adjacent grounds are allowed to deteriorate, the probability of arson is increased. A badly run-down appearance may cause the incendiarist to rationalize that no one will lose anything from a fire.

3.1.2.4 Social or Political Targets

Types of facilities that fall in the category of social or political targets change from year to year, depending upon political, social, or economic factors. The need for increased protection and the manner in which the protection is designed will therefore also change. Past examples of groups in this category are defense and energy-related industries. In addition to direct burning, the attack may include bombing or some form of sabotage. Therefore, while sprinkler protection is still important, strict control of unauthorized access is a critical factor. For social or political targets, being discrete and keeping a low profile is always sound advice.

Many facilities in this category are highly automated and function with a staff that is small in relation to property size. The sprawling construction, often windowless buildings, and high noise level combine to make detection of intruders difficult. Therefore, a high level of intrusion security is warranted.

Control of access can be best attained by a combination of fencing, lighting, and guard control.

3.1.2.5 Yard Storage

Yard storage, including ignitable liquids tanks and natural gas equipment, whether associated with a target or not, is exposed to incendiary fires. If the facility is a target property, the storage is especially vulnerable and should be protected as both a target property and susceptible yard storage. Idle pallet storage in the yard can be a perfect means of fire spread, especially if it is adjacent to a building.

These areas often present easy accessibility and easy escape. If the storage is located near property lines, the arsonist can commit the attack without entering the property. If the area is not supervised, children may use it as a playground and may cause an accidental fire. The combination of combustible storage and lack of a fixed protection system can result in a rapidly spreading fire. In most cases, the entire area will be involved within five to ten minutes. Therefore, a quick response by the emergency response team is essential.

Loaded trucks or railroad cars on the premises are also easy targets. Even when the contents are noncombustible, they can be severely damaged if the vehicle's fuel tank explodes. Unloading trucks or cars as soon as a delivery arrives and only loading vehicles on the same day as the delivery are therefore good practice.

3.1.3 Emergency Response Teams

The definition of a well-trained emergency response team (ERT) can be explained by listing the duties to be performed (where applicable). Essential duties of a well-trained ERT are as follows:

1. Detecting fire and notifying the fire service.
2. Checking control valves for automatic sprinklers in the fire area (if any) to ensure they are in the full open position.
3. Ensuring that fire pumps (if any) are operating.
4. Closing fire doors (if any).
5. Incipient firefighting with available equipment (i.e., fire extinguishers, small hoses).
6. Directing firefighters to the scene.
7. Conducting salvage operations during and after the fire.

The ERT should be made up of members assigned to specific duties and a person responsible for coordinating these efforts. At locations with only a few employees or with special staffing problems, it is acceptable for one person to be responsible for more than one duty. This should not be done for duties that cannot be adequately done at the same time. For example, it would be acceptable for the ERT coordinator to also be responsible for notifying the fire service. It would not be acceptable for the fire pump operator to also be responsible for incipient firefighting or incipient salvage operations. These duties can not be done simultaneously and the delay of either may reduce the effectiveness of the ERT.

Since a majority of arson fires occur between 6 p.m. and 6 a.m., it is important that ERT duties can be performed at all times. In the case of a facility operating on a 24-hour basis, each shift should be staffed with members of the ERT. At locations not occupied at certain times, this is not intended to recommend additional staffing. When a location is occupied only by maintenance personnel or security, they should be trained to perform the essential duties such as notifying the fire service.

Annual training and/or education should be provided for members of the ERT. This is particularly important for new members and members involved in incipient firefighting or salvage operations. As occupancies, commodities, and equipment (firefighting and other equipment) change, firefighting and salvage techniques may need to be modified.

The emphasis of an ERT should be put on maintaining any fire protection systems (automatic sprinklers, halon, etc.) and salvage activities. The duties of the ERT do not have to be limited to such activities. Activities can be expanded to include loss prevention functions. This could include, but not be limited to, housekeeping inspections and inspections of fire suppression equipment. For additional information, see Data Sheet 9-1, *Supervision of Property*.

3.1.4 Record Protection Equipment

Record protection equipment is usually classified by the type of material it is designed to protect. The amount of protection needed varies with the media on which the information is stored.

File cabinets, safes, and vaults used for paper storage are tested in a furnace using a standard time-temperature curve and must maintain an interior temperature of 350°F (177°C) or less for whatever hourly rating is needed. This equipment would then be rated as Class 350-1 hr. or Class 350-½ hr, depending on how long the test was run and when the interior temperature exceeded 350°F (177°C). Record protection equipment is available for magnetic tape and photographic film and is rated as Class 150. Equipment used to protect computer disks and other heat-susceptible records is rated Class 125.

3.1.5 Bombs and Explosives

The attack on property using bombs or other explosives is a form of arson. Law enforcement and fire service agencies are best able to deal with this problem and should be notified immediately upon receipt of a threat.

Any location can experience an attack; however, factors that make a property especially vulnerable are as follows:

1. Environment. Large corporations or high-profile companies that are active in a local community are vulnerable. This factor is magnified if the location maintains a high visibility and is involved in controversial areas (hazardous materials, high pollution levels, nuclear activity, etc.).

2. Proximity to a scene of radical activity or social unrest.

3. Active involvement in social issues or political activities (regardless of which side of the issue is represented).

The potential is greatest when radical groups and/or terrorists are involved.

Security plays the largest role in deterring the bomb threat/attack. Fencing and lighting property, increased security rounds, and personnel control are the most effective measures.

Regardless of measures taken to prevent a bomb or other incendiary device from being placed at a facility, procedures for handling such incidents or threats of bombing are needed. Planning can help prevent needless and extensive disruption of business. The following example procedure can be tailored to any industry or facility.

3.1.5.1 The Threat

The first line of defense against bomb threats will be the person receiving the threat, which is usually received by telephone. Switchboard operators, receptionists and other employees who regularly handle outside calls should be thoroughly trained in the proper response to threats. The person receiving such a call should remain calm. The information that can be derived from even a short phone call can be vital. In addition, it must be stressed that each threat, until proven otherwise, should be handled according to procedures and viewed very seriously.

The following is a list of things the employee should listen for and try to determine when a threat is received by phone:

1. Background noises (traffic, music, laughter, etc.). This could help determine the location from which the call is made.

2. Characteristics of the caller. An attempt should be made to estimate the age, sex, race, voice, and accent of the caller.

3. Time, location, reason. The person receiving the threat should attempt to determine the time the bomb is scheduled to explode, the location of the bomb, and the possible reason for the bombing.

All of the above information should be written down immediately to aid in evaluating and investigating the threat. A form can be developed to aid employees. The capability of recording the telephone call can be a useful tool in mitigating the possible damage and loss of life.

3.1.5.2 Person-In-Charge

The person receiving the threat should notify a designated person-in-charge who has the authority to make necessary decisions. This person may be in charge of security or emergency response team.

The person-in-charge should:

1. evaluate the information received and notify the fire service and police.

2. determine whether complete or partial evacuation of the premises is necessary.

3. coordinate search procedures pending arrival of police or fire units.

The evacuation procedure should be essentially the same as that used for fire. The only change is that evacuation routes should be cleared before evacuation to prevent accidental detonation of an explosive device by employees. Refrain from using two-way radio communications if possible as such signals could activate certain types of detonation devices.

Anything that does not need to be touched, after the threat is known, should not be touched. If the lights in an area are off, leave them off; if the main switchgear or circuit breakers are off, do not activate them; if the telephone rings, do not answer it. All of these have been used to detonate explosives.

If a suspicious container is found, do not touch it. Evacuate the area, contact fire or police personnel and await their arrival.

When bombs have been found, most have been near an exit. Some possible locations are: restrooms, fire hose cabinets, equipment rooms, closets, electrical panels, air-conditioning ducts, return air ducts, wastebaskets, elevator pits (penthouses), mail rooms, telephone booths, and machine rooms.

Contingency planning should be done to reduce business interruption as much as possible. While it is probably impossible to eliminate interruption of business if a facility must be partially or totally evacuated, certain steps can be taken to minimize loss of production. If areas of a facility can be searched and designated as being clear of any explosive devices, it may be possible to resume production in those areas provided they are not exposed by uncleared areas. This may be possible with off-site or detached shipping and receiving warehouses, or widespread campus settings.

3.1.6 Pre-Employment Screening

Pre-employment screening is a broad term that includes everything from an interview to drug testing and extensive background investigations. The quality of a company's employees can affect all phases of the business, including loss prevention aspects such as an emergency response team. Establishing a comprehensive hiring policy is often the first step in determining the methods of screening that are appropriate.

The policy should be clearly communicated to all employees and prospective employees. Working with employees will help instill a sense that management is concerned about their safety as well as about loss prevention.

Since arson is often used to destroy evidence of a crime (possibly employee theft), dealing with the source of the problem can reduce the possibility of arson. The source is the firesetter. Studies done by and for the U.S. Federal Bureau of Investigation indicate that individuals convicted of arson often have a long history of setting fires dating back to preadolescence. A background investigation can often uncover details that may have a direct bearing on the suitability of an individual for a particular position.

There are a number of possible pre-employment screening methods: applications, interviews, honesty tests, police record checks, background investigations, urinalysis, hair analysis, and polygraph tests. Before

applying any of these methods, check with local and state authorities that may restrict their use. Polygraph tests and disclosure of police records may not be permitted in some jurisdictions.

3.2 Loss History

The severity of incendiary fires, according to FM loss statistics, has increased steadily over time. For the period of 1988 to 2012 the number of incendiary fires has accounted for 14% of the total number of all fires and 11% of the total cost of fire loss. Only fires of electrical origin accounted for a greater number of fire losses.

Incidents involving storage or warehousing businesses represent the greatest number of arson fire losses. A warehouse area houses a significant combustible load, as well as hiding places for an intruder, which a knowledgeable arsonist can utilize to inflict maximum fire damage. Mercantile/business locations have also experienced a significant number of arson fires.

3.3 FM Fire Prevention Grant Program

FM funds a worldwide Fire Prevention Grant Program to assist agencies in their efforts to prevent arson-related fires, as well as supporting other fire prevention related programs and activities. This program had formerly been called the FM Arson Grant Program and was established in 1976. In 2007 the scope of the program was expanded to include other fire prevention efforts. The program is designed to provide seed money to assist in the development of arson prevention and other fire prevention programs. Much of the seed money in the past has been targeted to just North America as this is where many of the grant requests were received from, but aggressive efforts are being made to offer this support on a worldwide basis. Grants are awarded quarterly to the various agencies, with funds earmarked for purchasing investigative tools and equipment, training, publications, and juvenile firesetter programs. Agencies apply for merit-based fire prevention grants by going to www.fmglobal.com/grants. Grant requests are reviewed by a local FM fire prevention program coordinator, as well as by an FM grant review committee.

4.0 REFERENCES

For more information, please refer to the following data sheets as cited in the text.

4.1 FM

Data Sheet 1-20, *Protection Against Exterior Fire Exposure*
Data Sheet 2-81, *Fire Protection System Inspection, Testing and Maintenance and Other Fire Loss Prevention Inspections*
Data Sheet 5-4, *Transformers*
Data Sheet 7-0, *Causes and Effects of Fires and Explosions*
Data Sheet 7-10, *Wood Processing and Woodworking Facilities*
Data Sheet 7-88, *Ignitable Liquid Storage Tanks*
Data Sheet 8-24, *Idle Pallet Storage*
Data Sheet 9-1, *Supervision of Property*
Data Sheet 9-16, *Burglary and Theft*
Reducing the Arson Threat (P7721)
Pocket Guide to Arson and Fire Investigation (P7923)

4.2 NFPA Standards

The information in this data sheet is not specifically covered by any one NFPA standard nor does it conflict with any NFPA standard.

4.3 Public and Private Resources

Arson fires tend to draw attention from many different groups. The fire service and police often have investigators specifically trained and equipped to investigate arson.

In addition to fire and police personnel, there may be other agencies (local, state, and federal) that are interested in arson.

4.3.1 North America

Bureau of Alcohol, Tobacco and Firearms (ATF)
99 New York Avenue, NE
Washington, DC 20226

Canadian Association of Fire Investigators
310 - 1390 Prince of Wales Drive
Ottawa, ONT K2C 3N6

Federal Bureau of Investigation (FBI)
9th Street and Pennsylvania Avenue, N.W.
Washington, DC 20535

Federal Emergency Management Agency (FEMA)
United States Fire Administration
16825 S. Sexton Avenue
Emmitsburg, MD 21727

Federal Insurance Administration (see FEMA)
International Association of Arson Investigators (IAAI)
2111 Baldwin Avenue, Suite 203
Crofton, MD 21114

Fire Commissioner
1109 - 10155 102st. NW
Edmonton, AB T5J 4L4

Fire Commissioner, Province Of Manitoba
510 - 401 York Avenue
Winnipeg, MAN R3C OP8

Insurance Crime Prevention Bureaux (Canada)
P.O. Box 919, Station U
365 Evans Avenue
Toronto, ONT M8Z 5P9

International Association of Fire Chiefs
4025 Fair Ridge Drive, Suite 300
Fairfax, VA 22033

National Association of State Fire Marshals
5113 Ridge Road, Suite 2
Cheyenne, WY 82003

National Fire Protection Association (NFPA)
1 Batterymarch Park
Quincy, MA 02169

Office of the Fire Commissioner
200 - 645 Tyee Road
Victoria, BC V9A 6X5

Office of the Ontario Fire Marshall
5775 Yonge Street, 7th Floor
North York, ONT M2M 4J1

Ville de Montreal
Section de la Recherche des Causes d’Incendies
200 rue de Bellechasse Est
Montreal, Quebec

4.3.2 Outside North America

Australia:	Insurance Council of Australia (ICA) Level 4 56 Pitt Street Sydney, NSW 2000
Belgium:	ANPI Rue Granbonpre 1 B-1348 Louvain-la-Neuve, Belgium
Denmark:	Dansk Brandvaerns Komite Jernholmen 12 2650 Hvidovre, Denmark
Finland:	Suomen Palontorjuntaliitto Iso Roobertinkato 7A SF 00120 Helsinki
France:	Assemblee Pleniere Des Societes D'Assurances 11 Rue Pillet-Will Paris, 75009
Germany:	Vereinigung zur Forderung des Deutschen Brandschutzes Postfach 1231, 48338 Altenberge
Holland:	Ministry Of Home Affairs P.O. Box 20011 The Hague, 2500 EA
Hong Kong:	Director Of Fire Services Fire Services Department Headquarters Building No. 1 Hong Chong Road Tsim Sha Tsui, Kowloon
Netherlands:	Nationaal Brandpreventie Instituut
Norway:	Norsk Brannvern Forening Ensjoveien 16 Pb 6754 Etlerstad N-0609 Oslo
Portugal:	Associacao Portuguesa de Seguaradores
Spain:	Centro Nacional de Prevencion de Danos y Perdidas Sagasta 18 28004 Madrid
Sweden:	Swedish FPA SE - 115 87 Stockholm
Switzerland:	Brand-Verhutungs-Dienst fur Industrie und Gewerbe Nuschelerstrasse 45, CH-8001 Zurich
United Kingdom:	Fire Protection Association 140 Aldersgate Road, London, EC1A 4DD Arson Prevention Bureau 140 Aldersgate Road, London, EC1A 4DD Northern Ireland Fire & Rescue Service 1 Seymour Street Antrim, Northern Ireland BT27 4SX

APPENDIX A — GLOSSARY OF TERMS

FM Approved: References to "FM Approved" in this data sheet mean the products and services have satisfied the criteria for FM Approval. Refer to the *Approval Guide,* an online resource of FM Approvals, for a complete listing of products and services that are FM Approved.

APPENDIX B — DOCUMENT REVISION HISTORY

The purpose of this appendix is to capture the changes that were made to this document each time it was published. Please note that section numbers refer specifically to those in the version published on the date shown (i.e., the section numbers are not always the same from version to version).

April 2025. Interim revision. Reaffirmed to be techically correct.

October 2013. Loss history was updated, and several recommendations were clarified. Public and private resources were also updated.

April 2012. Terminology related to ignitable liquids has been revised to provide increased clarity and consistency with regard to FM Global's loss prevention recommendations for ignitable liquid hazards.

September 2007. This data sheet has been renumbered as Data Sheet 10-6, formerly labeled Data Sheet 9-17. General Loss History information has been updated.

May 2003. Minor editorial changes were made for this revision.

July 1999. This revision of the document was reorganized to provide a consistent format.