**CHESHIRE FIRE AND RESCUE SERVICE FIRE SAFETY GUIDANCE NOTE 34 - PREVENTION AND CONTROL OF ARSON IN INDUSTRIAL AND COMMERCIAL PREMISES**

## 1. INTRODUCTION

1.1 Arson is an increasingly significant factor in fire losses and industrial and commercial buildings are major targets for arsonists. Although the public perception is that arson is a crime against property rather than the person and that the insurer will pay, the losses due to arson fires are not simply financial, they can also involve:

- Deaths and injuries to staff and firefighters.
- Business interruption, or even closure of the company.
- Loss of jobs.
- Loss of facilities or amenities for the community.
- Illegal pollution of the air by smoke and possibly water pollution as a result of the run off of water used in the fire fighting operations.
- Loss of our industrial heritage.

**FIGURE 1: THE INCIDENCE OF FIRES IN INDUSTRIAL, AGRICULTURAL, COMMERCIAL AND PUBLIC PREMISES**

| Year | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 |
|---|---|---|---|---|---|---|---|
| Number of Deliberate Primary Fires | 16,026 | 15,867 | 15,616 | 15,032 | 14,332 | 11,920 | 12,939 |
| Number of Deliberate Fires in "other buildings" | 4,439 | 4,582 | 4,454 | 3,640 | 3,880 | 2,726 | 3,100 |
| Percentage | 27.70% | 28.88% | 28.52% | 24.22% | 27.07% | 22.87% | 23.96% |

Source: Fire statistics data tables 2022

1.2 Arson fires tend to be much more serious than accidental fires because:

- Life can be put at significant risk.
- They are often started with multiple points of ignition.
- They may be assisted with flammable liquids.

- They may be lit in vulnerable points in the building.

- They may be lit when few people are around, resulting in a delay in the fire being discovered.

- Attempts may be made to sabotage the fire protection systems.

- Fire doors may be wedged open allowing the fire to spread rapidly.

## 2. WHEN ARSON OCCURS

2.1 Arson accounted for 45.7% of all fires attended in 2021/22 by Fire and Rescue Services in England, Scotland and Wales. Most arson attacks are unplanned and opportunist crimes.

2.2 Arsonists, in common with other criminals, do not like to be seen. They often attack at night, under the cover of darkness. Arson also often occurs at tea or lunch break times, when few staff are present - again reducing the likelihood of the arsonist being seen.

2.3 Security lighting has been reported to be a cost effective way of reducing the incidence of arson attacks. In some premises such lights may be operated by passive infra-red detectors and so can produce an element of surprise, as well as being rather more acceptable in built up areas.

2.4 Making the arsonist visible is also an important element in other forms of security precautions. For example, palisade or welded mesh fencing is preferable to a wall or solid fence, as intruders inside the grounds are rendered visible.

## 3. MANAGEMENT ACTION

3.1 The occurrence of arson can be reduced and its effects controlled if consideration is given in advance to identifying potential threats and effective protection measures. An arson risk assessment should be carried out as part of the fire risk assessment procedure required by the Regulatory Reform (Fire Safety) Order 2005. As arson attacks are so common, such an exercise is a vital element of the fire risk assessment that is required by this legislation.

3.2 The management plan to combat arson will include the following elements:

- The arson risk assessment.

- Security measures.

- Passive and active fire protection measures.

- Fire safety management procedures.

## 4. SECURITY MEASURES

4.1 Effective security measures make a positive contribution to reducing the threat of arson attack. The security measures that should be assessed in Step 5 of the arson risk assessment (Figure 2) include:

- Perimeter protection.
- The strength of the building envelope.
- Access control.
- The detection of intruders.
- Security lighting.
- CCTV systems.
- Staff relations.
- Awareness of activities of pressure groups who could target the premises.

## 5. PASSIVE AND ACTIVE FIRE PROTECTION MEASURES

All measures that are taken to protect a building from accidental fires have a part to play in reducing the effects of a deliberately started fire. These measures include:

- The division of the building into individual fire compartments and the construction and lining of these using materials of suitable fire resisting properties. This is known as passive fire protection.
- The provision of appropriate and cost effective equipment to detect and fight fires. This is referred to as active fire protection.

## 6. FIRE SAFETY MANAGEMENT PROCEDURES

6.1 Many fires are started deliberately in areas with a known history of vandalism or fire setting and are lit using available combustible materials including rubbish that has been removed from a building. Rubbish should be removed regularly and placed outside in a secure closed metal container positioned, wherever possible, at least 10 metres from buildings and plant.

6.2 Staff should be trained in the action to take in the event of fire. Everyone should be familiar with the sound of the fire alarm, the escape routes and, where appropriate, the use of the firefighting equipment.

Some or all of the staff will also need to be trained to call the Fire & Rescue Service. Some members of staff may also need to be trained so as to help colleagues or members of the public with disabilities in the event of a fire.

6.3 Close down procedures. Staff should made aware of the procedures required at the end of each period of working to ensure that the premises are secure, there are no unauthorised persons remaining in the buildings and that all processes have been shut down safely.

6.4 Control of combustible materials. Staff should be aware of the reasons for waste materials to be removed to a safe storage area regularly and be encouraged to act responsibly in this respect themselves. Similarly, staff should be made aware of the flammability or combustibility of the materials with which they work and any relevant measures that should be observed regarding their storage and handling.

6.5 Awareness of the threat of arson. All staff need to be given, as part of their training programme, instruction as to the hazards and consequences of an arson attack. These include the potential threat to life, loss of jobs and disruption to the continuity of the business.

## FIGURE 2: AN ARSON RISK ASSESSMENT METHOD

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| **Step 1:**<br>Study the vulnerability of the building:<br>a) Externally<br>b) Internally |
| **Step 2:**<br>Identify the fire hazards:<br>a) All possible sources of ignition.<br>b) Flammable liquids and gases, combustible materials (including waste), furniture or furnishings and combustible elements of the structure.<br>c) Structural features that could lead to the spread of fire. |
| **Step 3:**<br>Identify people who could start fires deliberately: intruders, visitors and members of staff. |
| **Step 4:**<br>Eliminate, control or avoid the threat. |
| **Step 5:**<br>Consider whether the existing security provisions are adequate or need improvement. |
| **Step 6:**<br>Consider whether the existing fire safety provisions are adequate or need improvement. |
| **Step 7:**<br>Allocate the risk category and record the findings. |
| **Step 8:**<br>Prepare a business continuity plan. |
| **Step 9:**<br>Carry out a periodic review of the assessment |

**FIGURE 3: THE ACTION PLAN**

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| **Step 1:**<br>Look at the building and what goes on within it. Note the possible ways in which fires could be started deliberately. Identify the vulnerable points both inside the buildings and in the external areas. In addition, consider the area in which the business is located in order to assess the likelihood of an arson attack in the neighborhood. |
| **Step 2:**<br>A key element of the arson risk assessment is to identify, and reduce as far as is practicable, the sources of ignition and combustible materials that are available to the opportunist arsonist. Although it is recognised that these cannot be eliminated completely, steps can be taken to eliminate or reduce the threat (see Step 4). Steps should also be taken to identify voids, unprotected ducts, unstopped gaps around services and similar features. |
| **Step 3:**<br>All staff should receive appropriate training so as to be aware of the danger of arson, and the threat that it presents to life and jobs. Everyone should take part in regular fire drills and be aware of the need to assist people with any form of disability. |
| **Step 4:**<br>Where possible, action should be taken to remove potential sources of ignition, flammable liquids and combustible materials from the workplace. It may be possible, for example, to replace a flammable solvent with a non-flammable one with similar properties. Checks of the premises should be made last thing at night, especially when contractors have been present. A fire risk assessment should be undertaken and appropriate action taken as necessary. |
| **Step 5:**<br>Ensure that the best use is made of existing security measures before considering new complex or expensive installations or procedures. For example, many intruders enter buildings through windows or doors that are left insecure so ensure that a check is made at the end of each day. |
| **Step 6:**<br>Much can be done, often at little cost, to reduce the threat of arson and limit the horizontal and vertical spread of fire; effective compartmentation is a key element in reducing the damage caused by any fire. The installation of a sprinkler system that will not only sound the alarm but will automatically fight the fire is a further advance in protection. |
| **Step 7:**<br>Allocating the risk category need not involve complex mathematical formulations. A simple low, medium or high categorization for each part of the premises may be sufficient. |
| **Step 8:**<br>The business continuity plan should have a clearly defined purpose. Key members of staff should be identified and their roles defined. Key contractors should be listed with their contact points. Provision should be made for staff welfare as well as practical steps to ensure that the effect on business operations is minimized. A copy of the plan should be kept off the site. |
| **Step 9:**<br>The assessment should be reviewed if the nature of the business, the number of staff, the materials used or the character of the neighbourhood changes significantly. |