Guidance for Responsible Persons on False Alarm Management of Fire Detection and Alarm Systems

FIA Guidance for the Fire Protection Industry

This Guidance Note is intended as a general guidance and is not a substitute for detailed advice in specific circumstances. Although great care has been taken in the compilation and preparation of this publication to ensure accuracy, FIA cannot in any circumstances accept responsibility for errors, omissions or advice given or for any losses arising from reliance upon information contained in this publication.

Fire Industry Association
Tudor House
Kingsway Business Park
Oldfield Rd
Hampton
Middlesex
TW12 2HD
Tel: +44 (0)20 3166 5002
Fax: +44 (0) 20 8941 0972
e-mail: info@fia.uk.com

Guidance for RP on False Alarm Management of FD&A	
Issue V1 b	February 2010
Issue V2	December 2012

Copyright:
The contents of this guidance note are copyright of Fire Industry Association Limited. Reproduction or publication in whole or part without prior permission is expressly forbidden.

Contents

FIA Guidance on False Alarm Management of Fire Detection and Alarm Systems

1. Objective

To provide a generic guideline, for the end user or 'Responsible Person', to manage and ultimately reduce false alarms from a building's fire detection and alarm system.

This guide is, by necessity, somewhat formal, and is intended to help the Responsible Person to understand that there is a lot that can be done to manage and reduce the incidence of false alarms in buildings.

The Responsible Person has a legal responsibility to manage the fire protection measures in a building, and failure to do so competently can lead to prosecution.

Since the introduction of the Regulatory Reform (Fire Safety) Order 2006 (RRO) in England & Wales, the Fire in Scotland Act 2005 and Northern Ireland FRS, Fire Safety Regulations, the definition of who is the Responsible Person* is much clearer from an end users perspective with regard to their legal responsibilities for ensuring the provision and management of fire protection measures within a building.

Therefore besides the advice given in this Guide we recommended reading the relevant guide to the legislation to ensure that your legal responsibilities are fully understood.

* Note:
UK fire safety legislation has slight regional variations which result in different terms used for the person on whom the legislation imposes fire safety duties. In England and Wales this person is known as the 'Responsible Person', in Scotland the term 'Duty Holder' is often used, while the term 'Appropriate Person' is often used in Northern Ireland. In this guide we will refer to this person as the 'Responsible Person'. Other differences on requirements of the legislative regimes are discussed in this guide.

2. Causes and classification of false alarms

Most false alarms are caused by poor building management, poor fire alarm system design, or poor maintenance; examples of each of these are as follows:

- **Poor Building Management** - for example a contractor is allowed to undertake work in an area which may cause smoke, dust of fumes without the fire detection being disabled
- **Poor Fire System Design** - a room being used as a kitchen has a smoke detector installed
- **Poor Maintenance -** a smoke detector has not been maintained correctly and is over sensitive

False alarms will fit into one of four categories and when they occur should be recorded within the system log book under the following descriptions

- **Unwanted alarms** – a incident like burning toast or steam that has produced fire like phenomena that a fire detector has mistaken as the indication of a real fire
- **Equipment false alarms** – an alarm generated by a piece of equipment that is faulty
- **Malicious false alarms** –i.e. someone deliberately breaking a manual call point
- **False alarms with good intent** –i.e. someone smelling smoke or sensing a possible fire

Within the CFOA Policy once a false alarm is transmitted from the site to the Fire and Rescue service it is referred to as an unwanted fire signal

Annex A attached provides more detail on some of the more likely causes of alarms with along with some of the more common fire detectors that are on the market today.

The questions that follow lead into the issues that need to be considered to ensure that systems are in optimum condition and hence have a low likelihood of producing false alarms.

3. Is the System Compliant?

Is the system installed within the property compliant to the current standards, and does it provide the level of protection demanded by current legislation?
The following guidance is given in BS 5839-1: Fire detection and fire alarm systems for buildings; Code of practice for system design, installation, commissioning and maintenance

Have you the correct documentation that should include;

- A current Risk Assessment
- A log book that records the date and time of the weekly tests, any faults or false alarms and any service undertaken and by whom.
- A BS 5839-1 G1 Design certificate, with Specification, Fire Plan or cause and effect, a set of drawings that clearly states the category or level of protection, plus any variations that have been agreed with interested parties such as Fire & Rescue Service (F&RS), the Insurers or Building Control.
- A BS 5839-1 G2 Installation certificate, including a set of 'as fitted' drawings.
- A BS 5839-1 G3 Commissioning certificate, equipment manuals with user instructions.
- Alternatively a G5 certificate in place of the G1, G2 & G3 that includes all the additional material listed above.
- A BS 5839-1 G4 Acceptance certificate that confirms the date of handover
- A BS 5839-1 G6 Inspection & Servicing certificate(s) that record all tests and checks made at each service visit since original installation – handover.
- A BS 5839-1 G7 Modification certificates identifying any work undertaken on the system since the date of handover.

The certificates may not have the "G" reference which is the number recommended by the British Standard BS 5839-1, but you should ensure that certification is in place covering these subjects as identified in BS 5839-1. If there is inadequate certification available you are recommended to obtain a Verification Certificate (G5) from a competent maintainer as detailed below.

In premises where the fire detection and alarm systems have been installed for some time, these certificates and documents may not be available. In this case it is recommended that the system is assessed by a competent service provider who can issue a G5 Verification certificate together with supporting documentation covered under G1, G2 and G3 certificates.

To recognize who is competent to carryout work on a fire alarm system we would expect them to hold either a BAFE SP203 or LPS1014 certificate that details their capability to Design, Install, Commissioning and/or Maintain a fire alarm system. http://www.bafe.org.uk/

It is also important to ensure this service provider is competent to advise you of any potential sources of false alarms and advise on corrective action.

4. Who is Responsible?

Is there a person or persons, specifically responsible for managing the fire detection system, recording events, be they genuine alarms, false alarms, faults and tests etc.? This may not necessarily be the person defined as the 'Responsible Person' within the legislation, however a person or persons who have been delegated certain duties.

- Is this person(s) known to people who staff the building and have they been trained to use the system?
- Are they carrying out awareness training to ensure all occupants of the building know what to do in the event of a fire warning?
- Who is the key holder, and have they also been trained to use the system?
- Is this person fully conversant with Sections 3 & 7 of the current version of BS 5839-1 that explains what their responsibilities are particularly in respect to false alarm management?
- Do they know how to correctly categorise a false alarm?
- Does this person have the authority to instigate investigation procedures and carryout actions to reduce false alarms?
- Is this person consulted before any building work that could lead to false alarms is undertaken? This would include decorating, welding, extensions, internal alterations etc.

5. Is a Fire Action Plan followed in the event of an alarm?

When the fire alarm sounds, everyone in the building should immediately follow the fire action plan [this plan must be well publicised within your building]. A trained member of staff may then find out if there is a fire [you should have arrangements in place so that you will know quickly whether an alarm is genuine or false].

If your system has an automatic connection to the Fire & Rescue Service, they will be called immediately or after a certain time has elapsed. If you do not have a direct connection someone has to call 999 to summon the Fire Service attendance.

Do not call the Fire & Rescue Service if you know for certain that it was a false alarm.
It may be helpful to refer to the CFOA Policy for the Reduction of False Alarms & Unwanted Fire Signals for guidance on how Fire & Rescue Service handles unwanted fire signals. This can be found online at www.**cfoa**.org.uk/download/17553.
Your local Fire & Rescue Service will have a department dedicated to unwanted fire signals

If it is a false alarm, and they have already been summoned, tell the Fire and Rescue Service why it is a false alarm and be prepared to show them the cause. This will help them to deal with the situation in the shortest possible time.

If you cannot find the cause of the false alarm, follow the procedure described below.

1. Silence the fire alarm but do not reset the control panel as this will erase the information needed to investigate the cause of the false alarm.

2. Check the message on the control panel and find out where in the building the false alarm came from.

3. As soon as possible after the false alarm, visit that area and locate the manual call point or fire detector that set off the alarm.

4. Try to find out why the manual call point or detector was triggered. The information in Section 5 may help you, but you may need to investigate further to find out the real cause [for example, vandalism or accidental damage to a manual call point or steam or burnt food in a smoke detector].

5. If you are having difficulty finding the detector that was triggered, it may be in a duct or above a false ceiling. If a plan showing where all detectors are is available, use it to find the detector. Manual call points should be easier to find as they should be in clearly visible positions.

6. If you cannot locate the source of the alarm then call in the maintenance company as they should know where detectors are within the fire detection system.

7. If the control panel does not show where the relevant detector is, or if no detector was triggered, call in the maintenance company as the problem may be due to faulty equipment.

8. Accurately record all the information about the false alarm in the system log book. This is very important as you may need the information at a later date and it will help you to identify the causes of repeated false alarms.

9. If false alarms continue and you cannot find the cause or the action you take is unsuccessful, analyse when the false alarms happen and where they come from. This will help you to see if there is any pattern that may help you to identify the cause [for example, cooking before meal times or a boiler switching on early in the morning]. However, a competent fire detection maintenance contractor will be able to identify the cause.

10. Your investigations should show that the false alarms are the result of a either, a malicious act, human error with good intent, faulty equipment or an activity near a detector that has resulted in a unwanted alarm. (See description of false alarm categories previously mentioned).

6. Are Records kept?

Are records being kept on the details of the false alarms, identifying the following information; date/time, location, reason, category of false alarm, activity in area and action taken?

- The log book should record the category, date and time of the false alarms plus, if known, an explanation of why the false alarm occurred. Also, a note of who attended the site after a false alarm occurred and what details were evident on the control panel should be made
- If investigation and remedial work is undertaken then the details should be recorded within the log book.

Note: Appropriate log books are available from FIA member companies. To find your nearest FIA member visit the FIA website.

7. Is there a competent maintenance company appointed to maintain the system?

Regular servicing and maintenance is an important part of limiting the false alarms that may occur on a system. BS 5839-1 Section 6 gives recommendations for periodic inspection and test of the system. Tests for detectors (all types) should ensure that products of combustion are capable of passing into the sensing chamber of the detector and this testing should be carried out by a competent person.

The period between successive inspection and servicing visits should be based upon a risk assessment, taking into account the type of system installed, the environment in which it operates and other factors that may affect the long term operation of the system. The recommended period between successive inspection and servicing visits should not exceed six months. If this recommendation is not implemented, it should be considered that the system is no longer compliant with BS 5839.

Some issues to check:

- Are contact details of the maintenance company available?
- Does the maintenance company hold an LPS1014 certificate or BAFE SP203 Maintenance Certificate?
- Are they providing the correct BS 5839-1 G6 Inspection and Service certificate after each service visit?
- Further guidance on maintaining your system, together with guidance on reducing false alarms, can be found in sections 3 and 6 of BS 5839-1

8. Is there a system to constantly monitor and reduce false alarm signals?

Is there a process in place to investigate and rectify systems that repeatedly give false alarms?

- The process should be implemented when the following criteria is reached
  - Exceeded the rate of at least one false alarm per 25 detectors per annum
  - Eleven or more false alarms have occurred since previous service visit
  - Two or more false alarms have risen from a single MCP or detector since the last service visit
  - Or any persistent cause of false alarms has been identified.

- These criteria are detailed within the British Standard BS 5839-1 along with a suggested process to carryout corrective action to rectify problem. Please see Annex B attached.

9. Where can you go for more help

If you have followed this guidance paper and false alarms are still causing a problem, the FIA and your local Fire and Rescue service can give you advice. You should also ask the company that supplied, installed or maintains your system to investigate the matter and take appropriate action. The relevant company's contact details should be on or next to the fire detection and fire alarm system control panel or printed in the system log book. If you cannot find their contact details, the FIA can recommend suitable organisations.

If your fire detection and fire alarm system has been provided as a condition of any fire safety legislation you may have to consult your local Fire and Rescue Service before you make any changes to your system.

10. Useful Contacts and Further Information

Fire Industry Association (FIA) Tel 020 8549 5855 www.fia.uk.com
Chief Fire Officers Association (CFOA) Policy on False Alarm Management www.cfoa.org.uk
Your local Fire and Rescue Service
Your fire alarm maintenance company

Reducing false alarms will save you and the Fire and Rescue Service money, will reduce wasted effort and may save lives. Ultimately it may also save you from legal action by the Fire Service.

Annex A: Causes of false alarm signals

Smoke Detectors

Smoke detectors respond to smoke and any similar pollutants in the air. If you have smoke detectors in your building, you must make sure the people in the building know about them.

False alarms triggered by smoke detectors are often caused by

- cooking
- making toast
- insects, particularly in the summer months
- welding, soldering or similar activities
- candles and open fires
- Steam
- Dust
- Aerosols
- a lack of effective maintenance

Heat Detectors

These are generally used in kitchens, boiler rooms and similar areas where smoke detectors may be too sensitive and likely to false alarm. They are set to allow for expected temperature levels in the protected area, and will trigger an alarm if the temperature goes above the expected level.
It is important at the design stage to select the correct heat detector as there are many different temperature limits and therefore should be selected based on the ambient conditions within the protected area .
False alarms may be caused by high temperatures in the protected area or sudden increases in temperature.

Manual Call Point

'Manual Call Points (MCP) do not usually cause false alarms as a result of faulty equipment. However, the glass can be broken deliberately or by accident.

If you think there is a high risk of this because of vandalism or where the MCP is, they can be fitted with a transparent flap or cover that has to be lifted before the glass can be broken.

Annex B: System to monitor and reduce false alarm signals