DH Department of Health

Firecode – fire safety in the NHS
Health Technical Memorandum 05-03: Operational provisions

Part F: Arson prevention in NHS premises

ISBN 0-11-322765-5

9 780113 227655

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Policy	**Estates**
HR / Workforce	Performance
Management	IM & T
Planning	Finance
Clinical	Partnership Working

Document Purpose	Best Practice Guidance		
ROCR Ref:		**Gateway Ref:**	7366
Title	HTM 05-03: Part F - Arson prevention in NHS premises		
Author	Estates & Facilities		
Publication Date	Dec 2006		
Target Audience	PCT CEs, NHS Trust CEs, SHA CEs, Care Trust CEs, Foundation Trust CEs , Directors of Estates & Facilities, Trust Fire Safety Advisers, Strategic Estates Advisers		
Circulation List			
Description	Guidance on reducing the risk of arson in NHS premises.		
Cross Ref	N/A		
Superseded Docs	Fire Practice Note 6		
Action Required	N/A		
Timing	**N/A**		
Contact Details	Paul Roberts Estates & Facilities Quarry House, Quarry Hill Leeds LS2 7UE 0113 254 6881		
For Recipient's Use			

Firecode – Fire safety in the NHS
Health Technical Memorandum 05-03: Operational provisions

Part F: Arson prevention in NHS premises

This document replaces Fire Practice Note 6

London: The Stationery Office

Published by TSO (The Stationery Office) and available from:

Online
www.tsoshop.co.uk

Mail, Telephone, Fax & E-mail
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PO Box 29, Norwich NR3 1GN
Telephone orders/General enquiries 0870 600 5522
Fax orders 0870 600 5533
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Textphone 0870 240 3701

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16 Arthur Street, Belfast BT1 4GD
028 9023 8451 Fax 028 9023 5401
71 Lothian Road, Edinburgh EH3 9AZ
0870 606 5566 Fax 0870 606 5588

TSO@Blackwell and other Accredited Agents

ISBN 0-11-322765-5
978-0-11-322765-5

First published 2006

Printed in the United Kingdom for The Stationery Office

The paper used in the printing of this document (Revive Silk) is 75% made from 100% de-inked post-consumer waste, the remaining 25% being mill broke and virgin fibres. Recycled papers used in its production are a combination of Totally Chlorine Free (TCF) and Elemental Chlorine Free (ECF). It is recyclable and biodegradable and is an NAPM and Eugropa approved recycled grade.

Executive summary

The effects of fire in any premises can be serious. However, in the case of hospitals and other healthcare premises, fires have even greater significance due to the presence of large numbers of in-patients. The primary remit of healthcare organisations with regard to fire safety in all premises for which they are responsible, whether owned or occupied by them, is the safety of all the patients, visitors and health service staff in the premises. In attempting to prevent, control and detect arson, healthcare organisations will need to select a combination of measures to produce an effective policy, taking the following into account:

- this Health Technical Memorandum;
- other documents of Firecode cited by this Health Technical Memorandum;
- all statutes, regulations and guidance referred to within Firecode documents;
- the NHS Security Management Manual;
- the advice of the local fire and police authorities;
- the advice of staff in the healthcare organisation (estates staff, hospital fire safety, security, and building control advisers, etc).

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1 Introduction and scope

General application

1.1 This Health Technical Memorandum provides guidance in respect of additional fire and other safety precautions which may be necessary to prevent, control and detect arson in NHS premises. Much of the guidance is intended to prevent life- threatening fires occurring in clinical areas of hospitals. However, the principles apply equally to all parts of hospitals, and to other healthcare premises where the act of intentionally setting them or their contents on fire would pose serious threats to life, undermine their strategic importance and effectiveness, or incur high financial loss.

1.2 The recommendations of this Health Technical Memorandum should be considered during the initial planning stage of new hospitals and healthcare premises, and major extensions to existing premises. In all existing premises, a review should be undertaken of the potential for arson and its consequences. Using risk management techniques, vulnerable locations should be selected for prompt attention in accordance with the guidance in this Health Technical Memorandum. Advice should be sought from local fire and police authorities and, where appointed, the hospital security adviser, on how best to take account of the threat of arson when preparations are being made for new premises and for the refurbishment of existing ones.

Purpose of this Health Technical Memorandum

1.3 This Health Technical Memorandum provides sufficient general information and technical and management guidance to ensure that when new, extended or altered healthcare premises are being designed, suitable means for preventing arson may be incorporated within them.

1.4 The recommendations of this Health Technical Memorandum cannot take account of all the circumstances which may be found in any particular hospital or healthcare premises. They are intended to highlight those which will normally need to be considered.

Management

1.5 Chapter 3 of this Health Technical Memorandum refers to the managerial and organisational arrangements necessary to ensure that the potential for arson is recognised and taken fully into account in new schemes. In addition, as circumstances permit, the aim should be to use the guidance to improve standards in existing premises. The guidance should form an important part of the overall fire safety strategy for hospitals and other healthcare premises, and when properly applied with that of the other Firecode documents, will reduce the number, consequences and cost of arson attacks.

1.6 The contents of this Health Technical Memorandum should be applied in such a way that straightforward "good housekeeping" measures and improved management of security arrangements are implemented as quickly as possible. No waste material should be allowed to accumulate anywhere in the premises. Well-constructed metal waste bins with metal lids should be located in safe areas, and waste should be collected regularly and placed in covered metal skips outside the building prior to its disposal. Some items or raw materials are easily ignitable, and special precautions should be taken to store these in areas with maximum surveillance, preferably protected by an automatic extinguishing system. Hazardous materials and substances will also require particular safety/ security actions. Measures needing technological resolution and the allocation of resources must be prioritised in the usual way as part of the healthcare organisation's annual business plan.

1.7 Arson prevention, control and detection must form an essential element of the fight against crime in all NHS premises. The subject should receive regular attention, and it must form a routine part of all

training given to staff in accordance with the training requirements of Health Technical Memorandum 05-01 – 'Managing healthcare fire safety' and Health Technical Memorandum 05-03 Part A – 'General fire precautions' (see References).

1.8 Other Firecode documents, listed in the References, make provision for securing means of escape, in case of fire, from healthcare premises. It is emphasised that any arrangements for improving the security of premises must not in any way, or at any time, subvert the safety provisions for fire escape routes and fire exits.

2 The extent of the problem and the motivation for arson

The increasing problem of arson in all healthcare premises

2.1 During the period 1994–2005, deliberate fires were the largest cause of fires in the NHS, averaging 29%. This is a significant rise over previously published data in 1994 (Fire Practice Note 6), when 21% of fires were due to arson (see Health Technical Memorandum 05-03, Part L – 'NHS fire statistics 1994/95–2004/05').

2.2 The Criminal Damage Act 1971 preserves the common law offence of arson in Section 1 (iii), and defines it as "the unlawful damage, by fire, of property belonging to another". In this Health Technical Memorandum, the term is used to cover all cases of wilful or deliberate fire-raising.

2.3 Many fires started in healthcare premises occur in parts of the building used for storage, where the materials or commodities stored provide a ready means for the arsonist. Premises of this type, where fewer people may be encountered, present attractive targets. Other premises which are unoccupied or infrequently visited, for example by night, allow the arsonist to practise undisturbed and undetected. However, fires from arson in hospitals and similar healthcare premises are not confined to these locations or times, and the determined arsonist may strike when presented with a suitable opportunity. An arsonist may seem to have good reason to be on the premises, for example as a patient, a member of staff, or member of the public.

2.4 Fires started by arsonists may involve use of a flammable liquid as an accelerant, or merely the fuel or combustible materials available at the location. In some cases, the fire may exhibit multiple points of origin often closely related in time, either within a localised area, or in various vulnerable parts of a building.

2.5 Appendix 1 shows the proportion of fires in hospital premises caused by deliberate action. These figures probably understate the problem, as many small outbreaks of fire are quickly extinguished by hospital staff using first aid fire-fighting equipment, without the need to summon the assistance of the fire and rescue service.

2.6 The presence of well-trained in-house staff is essential in the case of hospitals, as increases in incidents of maliciously started fires also point to lapses in effective security measures. This results, in the main, from the "open-door" policy of many healthcare premises, a policy which is now being closely examined as part of an overall review of security.

Factors which may provide the motivation for arson

2.7 A number of factors, taken individually or collectively, may provide the drive for a person or group to undertake an act of arson. The most common of these are reviewed.

Mental instability

2.8 Arson associated with mental instability is a relatively frequent occurrence in hospital units accommodating people with mental illness, and is due to:

a. a desire to attract attention;

b. revenge, hatred or jealousy;

c. frustration or sexual perversion;

d. pyromania.

Pyromaniacs are often motivated by the spectacle of a large fire, from the thrill of seeing it develop, and from witnessing the arrival of the fire-fighters and their subsequent activities. Pyromaniacs may sometimes take part in fighting the fires they start because of the enjoyment and the feeling of fulfilment it imparts.

Grievances

2.9 Arson stimulated by a grievance can take on several forms. By its nature it may be common to a wide

range of premises. Workplace-related factors can include:

- dismissal, fear of unemployment or job relocation;
- revenge against a colleague, superior, or the employer, perhaps due to personality conflicts, or as a response to public humiliation, or to jealousy;
- lack of advancement or appreciation of effort, and failure to achieve promotion or better pay.

Economic or political objectives

2.10 The targets for these arson attacks may be selected to demonstrate the reasons for the form of protest, for example:

- pressure-group action (for example animal rights, nationalist causes, terrorist acts);
- strikes or industrial sabotage.

Related criminal activities

2.11 Arson may be associated with further criminal acts, for example:

- to conceal a burglary or break-in, or fraudulent activities;
- to disguise sabotage;
- as part of an attempt at blackmail;
- vandalism (often associated with alcohol or drugs).

Arson by children

2.12 Children are able to gain entry to all types of premises subject to lapses in security, and may start fires, sometimes to conceal theft. Bored visiting children or inadequately supervised paediatric patients can wander into unauthorised parts of hospitals and start fires.

Fraud

2.13 Senior managers should be aware that arson is often employed as a means of destroying evidence of internal fraud or misappropriation of stock.

3 The responsibilities of management in preventing and controlling arson

Firecode responsibilities

3.1 Health Technical Memorandum 05-01 – 'Managing healthcare fire safety' states that the overall responsibility for having an effective fire safety policy with satisfactory fire precautions devolves on, as appropriate, the chief executive or whomever has overall management responsibility for the healthcare premises. They must have, for each of their premises, an ongoing programme, agreed with the local fire authority, for introducing and maintaining an adequate level of fire precautions, including fire alarm and detection systems, and for training staff in first aid fire-fighting and evacuation procedures. Other Firecode documents provide detailed guidance in support of these responsibilities, and these are listed in the References.

Management strategy

3.2 Management's plan for combating arson must be part of its overall strategy for dealing with fire safety issues. It has the responsibility for delivering healthcare, and this must be maintained whatever the threat to this objective. Arson, from whatever quarter or motive, should be viewed as preventable – if not in its entirety, then to a degree such that its effects are minimised. Prior attention to the threat from arsonists will limit their ability to dislocate services, damage property and waste scarce resources.

3.3 A management plan to combat arson, as a minimum, will need to address topics which will include:

- risk management;
- security arrangements;
- systems for fire alarm and detection;
- fire containment and extinguishment;
- general fire safety policies and precautions.

Clear guidance in respect of the last three of these topics is given within:

- Health Technical Memorandum 05-02 – 'Guidance to support functional provisions for healthcare premises';
- Health Technical Memorandum 05-03, Part B – 'Fire detection and alarm systems'; and
- Health Technical Memorandum 87 (soon to be superseded by Health Technical Memorandum 05-03, Part C – 'Textiles and furnishings').

However, further consideration is necessary in this Health Technical Memorandum, with regard to certain factors having a bearing on arson. Although security arrangements are not specific to Firecode, security is an important component in combating the arsonist. It is also a complex subject, much of which is too extensive to be addressed by this Health Technical Memorandum. Some guidance on security is given in paragraphs 3.8–3.14, with reference to other literature which contains detailed information. Improved security is an essential prerequisite as a means for combating arson (see the References and Appendix 1).

Risk management

3.4 Healthcare premises, particularly hospitals and their externally and internally located storage areas, are vulnerable to arson attacks from intruders, patients with disturbed patterns of behaviour, employees and others who may enter sites, including contractors. Stores, including those with pharmaceuticals, may be targets for theft, and fires may be started to conceal the theft.

3.5 Isolated or disused premises, and premises situated in troublesome areas or near sports grounds etc where large crowds circulate or disturbances occur, may be particularly vulnerable. Special attention is necessary where the location has a history of criminal activity.

3.6 The arsonist is assisted by one or more of the following factors:

a. site accessibility, often spanning 24 hours;

b. the dispersed nature of many sites;

c. the multiplicity of points of access and egress to and from buildings;

d. once entered, the potential for unrestricted passage to other buildings on a number of levels, including services tunnels, plantrooms and underground walkways;

e. the ever-changing nature of the hospital population – patients, visitors and staff;

f. easy opportunities for theft and pilfering and the accessibility of combustible materials and flammable liquids;

g. bad "housekeeping" measures, for example poor management of waste collection, storage and disposal;

h. the introduction of commercial enterprises, particularly shops, into hospitals, with their stocks of combustible materials.

3.7 The security of premises with regard to fire safety should be assessed to take account of these circumstances. Premises accommodating vehicles such as ambulances, animals and medical research facilities etc are known targets for arsonists and protest groups, and require particular attention. Central warehousing at particular premises amasses strategic resources, and their loss or contamination through arson and fire-fighting measures may have a serious effect on the delivery of healthcare over a wide area.

Security arrangements

3.8 Attention to security arrangements can make a very positive contribution to the prevention of arson. NHS trusts who insure their premises in the insurance market should be aware that their security arrangements will be of importance when their premises are assessed. Generally, security can be much improved by:

a. keeping unauthorised persons out of vulnerable locations;

b. quickly detecting intruders who may gain access to these locations;

c. training staff on the need to challenge unauthorised visitors, particularly in isolated, infrequently visited or vulnerable locations.

Limitation of access

3.9 This procedure involves a variety of measures, such as:

- physical security, that is, creating zones which are secure and strictly "off limits" to all but a few authorised personnel;
- a graded system of access control (filtering out the "no-goes" from one or more of the controlled zones);
- identification and tagging of legitimate visitors and control of their access to, and egress from, designated zones (particularly contractors and servicing personnel).[1]

Security controls

3.10 Any security programme must include a strictly controlled system providing accountability for all keys, swipe-cards, codes, identification passes etc. As part of normal close-down procedures for each day or other specified period, consultation by a nominated person of a properly maintained register, which may be manually or electronically managed, should initiate a search for non-returned keys, passes etc.

Detection of intruders

3.11 Intrusion detection equipment will detect the presence of fire-raisers, in addition to other intruders, and may be essential for vulnerable parts of premises which are generally unattended, or with reduced surveillance for long periods (overnight, weekends etc). Equipment must be sited in order to ensure optimum protection against sabotage, and monitored to ensure its continuing effectiveness. Technical guidance about suitable equipment is not given in this Health Technical Memorandum, but see the References.

Security patrols

3.12 Frequent but irregularly timed visits by security staff both during and outside normal hours to vulnerable parts of premises will help to deter arsonists and can lead to the discovery of preparations for an attack. Patrols are particularly important at the onset of "silent hours", at close of

1 Authorised persons who are cleared for access to designated zones may need further special permission to work on particular plant or equipment by means of "permits to work", etc. Work practices involving the use of concentrated heat or naked flames need special attention

work or overtime working, especially by contractors etc.

Precautions with personnel

3.13 A most effective defence against the arsonist is a well-briefed and alert workforce. All staff should be instructed during fire safety training to challenge strangers politely and, if necessary, to report their presence, particularly in isolated, infrequently visited, strategically important or vulnerable locations.

Staff selection

3.14 Evidence from attacks of arson in NHS premises shows that some arsonists are, or have been, members of the workforce. This should be borne in mind by management, whose staff selection processes should enquire into the past history of staff, particularly those who will work without supervision for long periods, at night or in other similar circumstances. So far as is practicable, new employees, temporary staff, cleaners and contractors should be under regular surveillance and should not be left to work in isolation, undisturbed.

Reporting of fires and reporting procedures

3.15 Health Technical Memorandum 05-01 (Chapter 11) requires all outbreaks of fires attended by the fire and rescue service to be reported to the Department of Health via the efm-information online reporting system (http://www.efm.ic.nhs.uk). There is no mandatory requirement for NHS Foundation Trusts to report incidents to the Department. This includes fires occurring in suspicious circumstances. Immediately following a fire started in suspicious circumstances, a fire which is suspected as arson, or one observed as being wilfully started, line managers should ensure that material evidence in any form is safeguarded, and that the person discovering the outbreak can be made immediately available for interview by the fire and rescue service and police, as required. In such cases, it would be helpful if the results of any police investigations into the fire could be forwarded to the Fire Policy Lead, DH Estates and Facilities Division, Quarry House, Quarry Hill, Leeds LS2 7UE for purposes relevant to Chapter 11 of Health Technical Memorandum 05-01 – 'Managing healthcare fire safety'.

Attendance of security personnel at a fire

3.16 Where a 24-hour security service exists at a healthcare premises, security personnel should normally arrive quickly at the scene of a fire. It is expected that their training as observers will enable them to identify and preserve any suitable evidence for further evaluation by specialists, when arson is suspected. In premises having a fire response team, consideration should be given to including a member of the security staff within the fire team.

4 Technical details of security equipment and other measures to combat the arsonist

Security of access

4.1 The selection and installation of particular security measures and the technical details of equipment capable of providing high levels of security against intruders and arsonists are beyond the scope of this Health Technical Memorandum (see the NHS Security Management Manual).

Security of automatic fire alarm and extinguishment systems

Automatic fire detection

4.2 Health Technical Memorandum 05-03, Part B – 'Fire detection and alarm systems' recommends the use of analogue addressable automatic fire detection and alarm systems for new hospital installations, and when upgrading existing ones. These are a current design which makes use of microprocessor-controlled technology. The use of such systems will improve the reliability, speed and accuracy of discovery of fire, particularly in those parts of hospitals that may be infrequently visited or unmanned at night. This more precise information can then be passed to the fire brigade, as and when it is called to attend.

Automatic fire extinguishment

4.3 Automatically operated sprinkler installations are recommended (see Health Technical Memorandum 05-02 – 'Guidance to support functional provisions for healthcare premises') for certain high-risk areas in hospitals, such as underground car parks, certain stores and other locations needing this form of protection. It is not general policy at this time to install sprinkler systems in the patient care areas of hospitals. However, in a small number of cases fast response sprinklers have been used in these areas for purposes of life, rather than property, protection.

The potential for sabotage of automatic fire alarm and extinguishment systems by arsonists

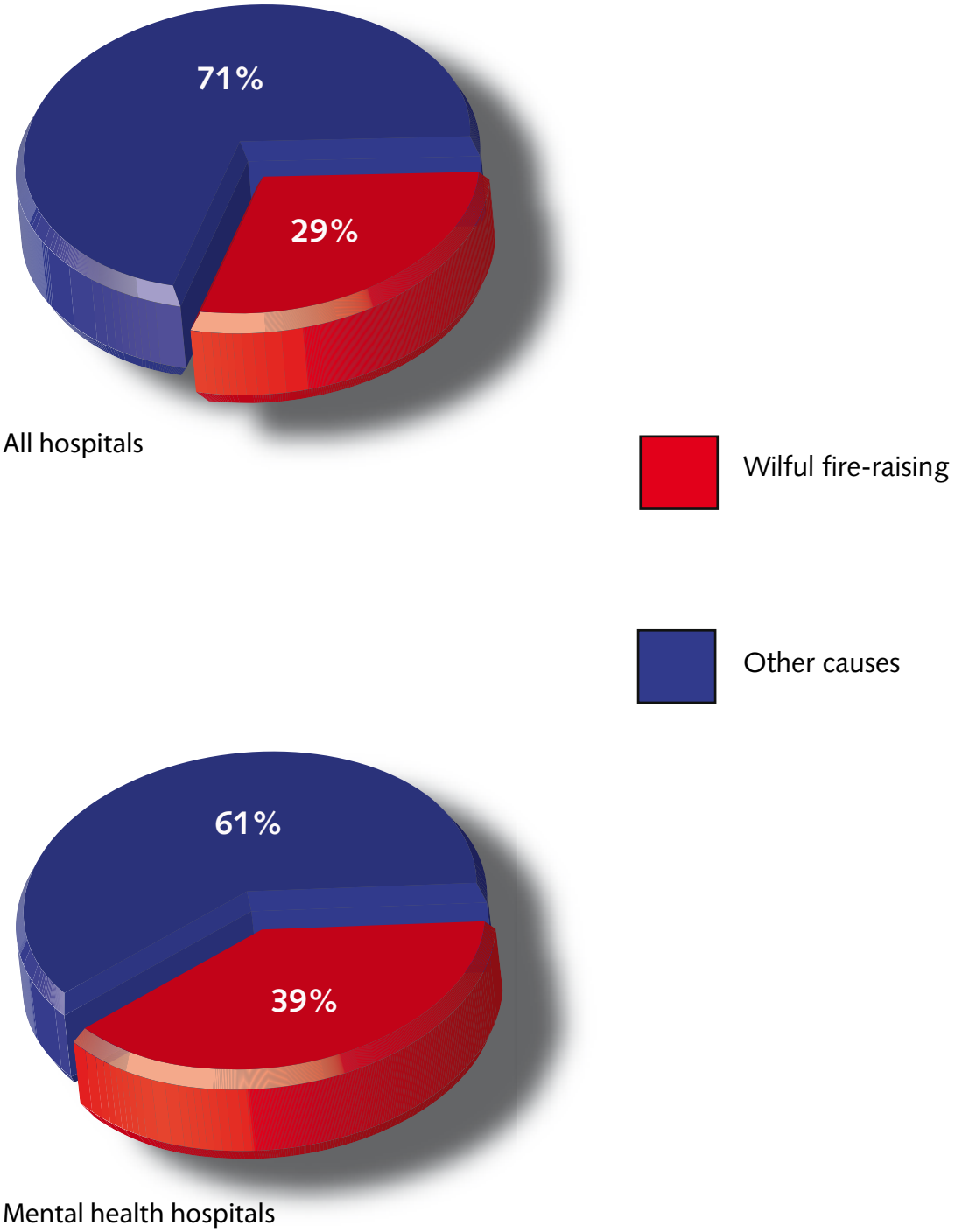
4.4 There are two main possibilities in the event of an arson fire. The first is that the arsonist has made no prior attempt to sabotage the fire protection equipment. In this case the equipment would be expected to perform as it should during an accidental fire. However, if an arsonist by the use of accelerants starts fires in several places in quick succession, without the benefit of an automatic sprinkler installation a serious and widespread fire may occur. This multi-seated fire may also jeopardise the evacuation strategy by reducing the opportunities for using alternative designated escape routes.

4.5 The installation of fire alarm and detection systems which are self-monitoring is encouraged, as they routinely indicate any detector or system failures. Because of their high mounting positions, masking of detector heads by arsonists is not considered likely. Central control and indicating panels for fire alarm systems are normally accommodated in telephone switchrooms with their attendant security arrangements, and are therefore subject to constant surveillance. However, in the case of remotely monitored systems, steps must be taken to ensure that the location's housing equipment, cabling, etc are permanently inaccessible to unauthorised persons.

4.6 The second possibility is that the arsonist may have sabotaged fire protection equipment in some way, either partly or wholly. Consideration here is given only to the case of premises with automatically operated sprinkler systems, where parts of the system may be vulnerable to unwanted attention. Such systems do not normally have any intrinsic protection or monitoring capability. Therefore, security arrangements against intrusion must be applied to give mechanical or structural protection to the whole of the system. This will include the water supply system, internal and external control

valves, and the entire pumping system, including the main and standby electrical supplies, and their controlling equipment. The operating positions of all control switches and valves must be legibly and durably marked and, whenever possible, switches and valves must be locked in their operational modes. Remote monitoring of the control positions of important installations must be considered, as must the monitoring of the means of access to such installations.

Appendix 1 – Fires in UK hospitals



Source: Health Technical Memorandum 05-03: Part L – 'NHS fire statistics 1994/95–2004/05'

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