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Guidance on Fire Precautions at Explosives Sites Licensed by the Health & Safety Executive

Fire Precautions at Licensed Explosives Sites



CFOA
Publications

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Foreword

This guidance has been produced by a joint working party comprising the Chief Fire Officers' Association, the Defence Fire and Rescue Service, the Office of the Chief Fire and Rescue Advisor and the Explosives Industry Group (EIG) of the Confederation of British Industry, in cooperation with the Health & Safety Executive. The EIG is comprised of representatives from fireworks companies, pyrotechnic companies, defence sector companies and the Ministry of Defence.

This guidance describes accepted practice within the explosives industry. By following the guidance, persons would normally be compliant with their legal duties. HSE and the explosives industry may refer to this guidance as illustrating good practice.

Nothing in this guide should be read as setting a higher standard than that required by legislation.

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Abbreviations Used in Guide

In addition to those in common use the following abbreviations are used throughout this guide:

| | | |
|--------------|---|--|
| ACoP | - | Approved Code of Practice |
| DCLG | - | Department for Communities and Local Government |
| DSEAR | - | Dangerous Substances & Explosive Atmospheres Regulations 2002 |
| FSL Guidance | - | Publications from DCLG & Scottish Government on fire safety in factories and warehouses. |
| FSL | - | Fire Safety Legislation |
| GFP | - | General Fire Precautions |
| HSE | - | Health and Safety Executive |
| HSWA | - | Health and Safety at Work etc. Act 1974 |
| L139 | - | Manufacture and Storage of Explosives Approved Code of Practice |
| MHSWR | - | Management of Health and Safety at Work Regulations 1999 |
| MSER | - | Manufacture and Storage of Explosives Regulations 2005. |
| PFP | - | Process Fire Precautions |
| RRO | - | The Regulatory Reform (Fire Safety) Order 2005 in England and Wales and Fire (Scotland) Act 2005 |

Introduction

This guidance is intended for use by: licensees of sites holding explosives licences granted by the Health and Safety Executive (HSE); Fire & Rescue Service fire safety inspectors enforcing Fire Safety Legislation (FSL); and HSE inspectors.

This guidance should be read in conjunction with the following publications:

- i. Department for Communities and Local Government (DCLG) publications 'Fire Safety Risk Assessment - Factories and Warehouses'^[A] applicable for England and Wales; and/or The Scottish Government publication 'Practical Fire Safety Guidance for Factories and Storage Premises'^[B] applicable in Scotland (for convenience these are referred to as the 'FSL Guidance' throughout this document)
- ii. Manufacture and Storage of Explosives Approved Code of Practice (L139)^[C]

The FSL Guidance details a 'benchmark standard' and provides guidance on the level of General Fire Precautions, that factory and warehouse premises should achieve. Whilst there may be more than one way of achieving the required outcome, the solution should give the same level of protection to all relevant persons as that in the FSL Guidance and be reflected in the relevant risk assessment.

The purpose of this document is to highlight the legal position surrounding General and Process Fire Precautions and the interaction between fire safety and health and safety legislation. The FSL Guidance provides advice on General Fire Precautions, which applies to all factories and warehouses including explosives factories and magazines. This supplementary guidance highlights where requirements may differ from that given in the FSL Guidance' in order to cater for the specific circumstances that are unique to buildings and sites where explosives are manufactured and stored.

This guidance aims to:

- Make explicit the appropriate standards of general fire precautions required at explosives facilities
- Describe what these precautions should entail, and
- Give advice on compliance with the law on emergency measures and liaison with the Fire and Rescue Service.

How to Use the Guidance

This guide has been prepared with regards to the hazards associated with explosive substances and explosive articles in premises and buildings. The guidance is a supplement to, and should be used in conjunction with, the FSL Guidance and where applicable, other relevant guidance in the series of publications on fire safety risk assessments.

The supplementary guidance in Sections 3 to 10 of this document is aligned with Part 1 and Sections 1 to 7 of the FSL Guidance. To avoid any misunderstanding, where it is considered that there is no need for supplementary advice on any particular aspect of General Fire Precautions, this is made clear in the relevant sections of this document.

The philosophy for fire safety is somewhat unique for explosives premises because of the very nature of the material involved, in that:

- A higher level of precautions than would normally be found in non-explosives buildings, are taken to eliminate sources of ignition
- These are a fundamental element of day-to-day explosives practices
- Short travel distances to means of escape are the norm, and
- An inherent feature of explosives licences is that the potential for escalation is controlled through separation.

Fires involving explosives are difficult to extinguish safely, because they have their own source of oxygen and the reaction time is so quick. As a general principle, fires involving explosives should not be fought by persons, the building is considered to be expendable. The building design and layout takes this into consideration through the separation of buildings or other means of fire suppression such, as drencher systems where practical.

The HSE is responsible for licensing facilities which are involved in the manufacture of explosives and/or the storage of explosives in excess of 2000 kg. These facilities can range from a single room or compartment where small explosives articles are manufactured, through to large munitions factories handling and storing tonne quantities of high explosives.

Explosives Licences issued by HSE

A key feature of the licences issued by the HSE is the separation distances that are required between buildings on-site and off-site, which effectively compartmentalise where explosives may be present. These distances are aimed at limiting the consequences of any incident, by preventing instantaneous propagation between explosives stored in adjacent or nearby buildings and thereby providing a level of protection to those in and around the site.

The Site Plan at Appendix 1 illustrates the effect of these distances and how it results in buildings sited with free spaces between them. The distances will be specified in the licence that the HSE issues to the operator and will be dependent on:

- The hazard assigned to the explosives present¹
- The quantity of explosives present
- The activity in the building, i.e. storage or processing, and
- What is in the vicinity with respect to:
 - a) other explosives buildings on-site
 - b) other buildings on-site
 - c) footpaths, roads, houses, etc. off-site.

The explosives licensed buildings on-site are categorised as either process buildings or storage buildings. The latter are generically referred to as magazines. The term process building covers all locations where work is being undertaken on explosives, and includes their production from raw materials, assembly from explosive components and their breakdown into component parts.

The buildings on the site that are not permitted to have explosives present will also be identified on the licence. The licence therefore provides useful information on the extent and potential severity of hazards present in the event of an incident.

¹ Details of the hazard categories used in HSE licences can be found in Appendix 2.

Fire Safety Legislation, and as a consequence the requirement for General Fire Precautions, apply to the site as a whole and include all buildings on the site. Process Fire Precautions with respect to the safe handling, storage etc. of explosive material will only apply to explosive storage and processing buildings.

Ministry of Defence (MOD) Establishments

The safety of explosives at any MOD site or whilst military explosives are being transported, together with the fire-fighting recommendations is determined by the Explosives, Storage and Transport Committee of the MOD.

The MOD will provide pre fire action plans for all explosive storage or processing buildings, will liaise closely with local Fire and Rescue Service and will provide the same level of co-operation and information as would be required under the Regulatory Reform (Fire Safety) Order 2005^[C] and Fire (Scotland) Act 2005.^[D]

Part 1

1 Fire Safety Legislation

- 1.1 With the introduction of the Regulatory Reform (Fire Safety) Order 2005^[D] and its equivalent in Scotland, the Fire (Scotland) Act 2005^[E], the enforcement for General Fire Precautions at explosives sites operating under a licence granted by HSE or Local Authority, was transferred to the relevant Fire and Rescue Authority. The background to the legal framework for fire precautions at explosives sites as it applies in Great Britain is outlined in Appendix 3. The responsibility for enforcing Process Fire Precautions remains with HSE or Local Authority
- 1.2 For ease of reference, throughout this document the above enactments are collectively referred to as Fire Safety Legislation (FSL).
- 1.3 This guidance document highlights where the General Fire Precautions at licensed explosives sites may deviate from the standards normally required for industrial premises and promotes a common understanding between the licensee and the regulators on those standards.
- 1.4 The Fire Safety Legislation also require the Responsible Person (normally employer) to appoint one or more 'competent persons'² to assist him in undertaking the preventative and protective measures within the fire risk assessment. Principles of prevention are identified in the FSL, which are similar to those included in generic risk assessment guidance; i.e. the usual hierarchy of controls.

2 Process and General Fire Precautions

- 2.1 It is useful to be able to draw the distinction between General and Process Fire Precautions in a practical way. General Fire Precautions can be thought of as those fire safety measures that you would expect to find in any premises no matter what the premises is being used for. All premises would be expected to have adequate means of escape, and as such this is a General Fire Precaution.
- 2.2 General Fire Precautions do not include special, technical or organisational measures required to prevent the risk of fire, which are required under relevant health and safety legislation. These are referred to as Process Fire Precautions. If, for example, a premises contains a facility used to handle explosives in granular or powder form and as such needs to have special electrical equipment to prevent the ignition of any formation of dust, this protective measure would be regarded as a Process Fire Precaution.

There is a duty on anyone who manufactures or stores explosives to take appropriate measures to prevent fire or explosion, to limit the extent of fire or explosion and to protect persons from the effects of fire or explosion. In protecting people against the effects of fire, the measures that need to be taken can be split into:

- General Fire Precautions to reduce the risk of fire, providing means of escape, arrangements for raising the alarm etc.
- Process Fire Precautions to reduce the risk of a fire with measures that are specific to the process or particular work activity in hand and are required to be taken or observed to ensure compliance with any requirement of health and safety regulations.

² The Responsible Person can nominate himself for this purpose.

- 2.3 Fire Safety Legislation requires the 'Responsible Person' (normally the employer at workplaces) to make a suitable and sufficient assessment of the risks to which employees and relevant persons³ are exposed. The purpose is to identify the General Fire Precautions he needs to take to comply with the requirements and prohibitions imposed on him by the FSL. This is generally referred to as the 'fire risk assessment'.
- 2.4 All Process Fire Precautions measures will form part of the 'preventive and protective measures' required under MSER; see Appendix 3 (A3.5) regarding the interface between Fire Safety Legislation and Health and Safety at Work Act (HSWA) and its associated regulations. Those handling dangerous substances will need to be aware of specific requirements from other health and safety regulations (e.g. DSEAR) and these will be required in addition to the general requirements of the FSL.
- 2.4 Other than those premises/locations listed in Appendix 4 (A4.4), HSE inspectors have no enforcement powers with regard to General Fire Precautions and as such will not target these matters specifically during visits to workplaces; this includes licensed explosives factories, magazines and other buildings on a site. Occasions may arise during the course of visits, however, when inspectors become aware of deficiencies in General Fire Precautions which, in the light of their knowledge of general safety matters or of fire hazards, they consider to be matters of evident concern. Inspectors will bring these to the attention to the licensee for action and to the relevant Fire and Rescue Authority. Formal enforcement will rest with the Fire and Rescue Authority.

3. Risk Assessment (Part 1 of the Fire Safety Legislation Guidance)

- 3.1 Risk assessment is designed to identify what preventive and protective measures are appropriate for the premises and processes carried out. The results of a risk assessment will enable the Responsible Person to demonstrate that effective measures are being taken to a relevant benchmarked standard, and complying with the statutory requirements.

The risk assessment required by FSL should not be carried out in isolation to that required by MSER, DSEAR and MHSWR, as the risk assessment (and the record of the assessment where one is required) will need to take account of any Process Fire Precautions.

An explanation on how to comply with the law relating to Process Fire Precautions and how to carry out a risk assessment can be found in the ACoP to DSEAR (L138) [F]

- 3.2 The risk assessment must take into account the following measures, which collectively comprise General Fire Precautions measures:
- To reduce the risk of fire on the premises and the risk of the spread of fire on the premises
 - In relation to the means of escape from premises
 - For securing, that at all material times, the means of escape can be safely and effectively used
 - In relation to the means of fighting fires on the premises

³ Any person who is lawfully in the premises and any person in the immediate vicinity of the premises who may be at risk from a fire on the premises, but does not include a fire-fighter when dealing with a fire, road traffic accident or other emergency.

- In relation to the means for detecting fire on the premises and giving warning in case of fire on the premises
- In relation to the arrangements for action to be taken in the event of fire on the premises, including measures:
 - a) relating to the instruction and training of employees, and
 - b) to mitigate the effects of the fire.

3.3 Where a dangerous substance is to be present in or on the premises, the risk assessment must consider:

- The hazardous properties of the substance
- Information on safety provided by the supplier, including information contained in any relevant safety data sheet
- The circumstances of the work including:
 - a) the special, technical and organisational measures and the substances used and their possible interactions
 - b) the amount of the substance involved
 - c) where the work will involve more than one dangerous substance, the risk presented by such substances in combination, and
 - d) the arrangements for the safe handling, storage and transport of dangerous substances and of waste containing dangerous substances
- Activities, such as maintenance, where there is the potential for a high level of risk
- The effect of measures which have been or will be taken
- The likelihood that an explosive atmosphere will occur and its persistence
- The likelihood that ignition sources, including electrostatic discharges, will be present and become active and effective
- The scale of the anticipated effects
- Any places which are, or can be connected via openings to, places in which explosive atmospheres may occur, and
- Such additional safety information as the responsible person may need in order to complete the assessment.

3.4 In addition, the risk assessment needs to consider whether there are any specific process related fire safety requirements required to be taken or observed in connection with the carrying on of any 'work process', where those precautions are:

- Designed to prevent or reduce the likelihood of fire arising from such a work process or reduce its intensity, and
- Required to be taken or observed to ensure compliance with any requirement of the relevant statutory provisions within the meaning given by section 53 (1) of Health and Safety at Work etc. Act 1974.

'Work process' means all aspects of work involving, or in connection with:

- The use of plant or machinery, or
- The use or storage of any dangerous substance (as defined under DSEAR).

Examples of Process Fire Precautions are:

- The provision of drencher systems in propellant rolling operations or flare pressing to suppress the extent of an event
- Earth bonding or anti-static precautions for handling explosives which are sensitive to electrical stimulus, and
- The use of non-sparking tools in areas with exposed compositions.

3.5 Process Fire Precautions are covered by MSER and DSEAR, which are enforced by the HSE.

4 Preventative Measures

4.1 No supplementary guidance or additional information is considered necessary for this particular aspect of General Fire Precautions under the Fire Safety Legislation Guidance and that in Paragraphs 87 to 198 of the ACoP to MSER_[F].

5 Fire Detection & Warning Systems, Rendezvous Points (Section 2 of the Fire Safety Legislation Guidance)

5.1 Fire Detection Warning Systems should follow that set out in the FSL Guidance. Due to the nature of the materials involved, however, alternative arrangements may be required (subject to a risk assessment) as detailed below.

In deciding the method for raising the alarm, the general principles to be applied are that all persons who may be affected, either in a building or the immediate vicinity of a building, are alerted that an emergency situation has arisen. For larger sites the risk assessment should be used to identify whether a warning needs to be given to the whole site, part of the site or only to individual buildings.

Magazines

5.2 Explosives magazines are storage buildings for explosives and vary widely in size from the small to very large buildings. Magazines tend to be co-located in one area and can comprise one or two buildings relatively close together through to a collection of buildings covering many acres.

5.3 Smaller buildings or ISO freight containers may not be fitted with electrical alarm systems because they are not usually in constant occupation and only accessed by a few employees. In these situations it may be acceptable to use 'word of mouth' or a manually operated system.

5.4 In larger magazines with multi compartments where word of mouth is unlikely to be effective an electrical or mechanical system will be required. These could range from air-operated horns to an electrical alarm system.

Explosives Process Buildings

5.5 Explosives process buildings can range from a 'small' simple building that can be singular or a collection of small buildings over a small area to larger complex and compartmentalised buildings containing complete process lines.

- 5.6 For the smaller types of buildings, warning systems such as 'word of mouth' or, hand bell would be adequate.
- 5.7 In the larger compartmentalised explosives manufacturing buildings, or where manufacturing buildings are spread over a large area, employees will be working out of immediate contact with others and may not be aware of a fire developing in another part of the building. In these circumstances an electrical warning system would normally be provided.
- 5.8 Fire alarm call points should be positioned on the escape route and exits with an easily activated call point. (Call points that of the type that requires the glass to be physically broken are not acceptable).
- 5.9 The use of automatic devices such as heat or smoke detectors should be considered where;
- A fire can occur undetected which may propagate to an area where explosives are present
 - In complex compartmentalised process buildings where explosives are left unattended and could present a risk to employees if a fire were to develop undetected.
- 5.10 In some cases, emergency telephones can be installed in the area as a means of communicating information about an incident; they should not be used as an alternative to a fire alarm. Where these telephones have been installed they should be in working order and tested weekly. An alert should either be raised as soon as the receiver is lifted or on dialling a unique site emergency number, (e.g.1111) which should be prominently displayed near the telephone.
- 5.11 Where an electrical fire alarm system is installed, it needs to comply with both the requirements of BS5839_[G] and the electrical standards applicable for explosives manufacturing and storage facilities_[H].

6 Fire-fighting Equipment & Facilities (Section 3 of the FSL Guidance)

- 6.1 In explosives premises where events can develop rapidly and whilst an early attack on a fire can prevent or minimise material loss, this should not be at the expense of people's safety. For this reason, first aid fire fighting equipment should not normally be provided inside areas where explosives are present.
- 6.2 Where the risk assessment identifies areas where a fire could be safely fought so as to prevent explosives becoming involved (such as packaging and raw material stores), the provision of the relevant fire-fighting equipment may be appropriate. Fire-fighting equipment will normally need to be provided in non-explosives areas/buildings.
- 6.3 When fire-fighting equipment is provided, relevant employees should be trained in its use and be given clear instructions on when and where the equipment is to be used solely to prevent fire spread to areas containing explosives. The level of training required will, therefore, be higher than that normally provided, in order that employees are able to distinguish between incidents that can be safely tackled, and those that cannot.
- 6.4 The Responsible Person must ensure that any fire-fighting medium is compatible with the substances present, or likely to be present in the building. For example, water type

extinguishers should not be positioned to serve buildings where metal powders or flammable liquids are used or stored.

- 6.5 Fire risks in non-explosive areas and buildings should have the appropriate provision (type and numbers) of first aid fire-fighting equipment in line with the relevant guidance.

7 Escape Routes (Section 4 of the FSL Guidance)

General

- 7.1 This section should be read in conjunction with the guidance given in paragraphs 208 to 220 of the ACoP to MSER.
- 7.2 The purpose of requiring adequate means of escape from premises is to ensure that in the event of an outbreak of fire in any part of the premises, each occupant should be able to reach a place of safety unaided and without being placed at risk whilst doing so. Many people immediately associate the term 'Fire' with flames, but fire also produces smoke and hot toxic gases. A major danger to life is the speed with which smoke and hot toxic gases may spread through the building.
- 7.3 All explosives buildings must be designed to allow people to escape quickly to a place of safety. This is a place that is well away from the fire, or protected by a fire resistant structure with not less than 30 minutes protection. As a general rule, the greater the risk to which people are exposed, the shorter the escape route should be.

Where a higher risk exists, remote operation should be considered. The CBI/EIG publication 'Remote Manufacturing of Explosives Guidance' provides further information [U].

- 7.4 A number of guidance documents such as ACoP MSER require 30 minute standards of fire resistance. Where a protected route is being provided, consideration will need to be given to the nature of any explosive material and fire risk and, as a consequence, may require a higher level of construction than that found in a non-explosives building.

Levels of risk for calculating travel distances

- 7.5 The levels of risk used in the FSL Guidance for fire risk assessment are Higher, Normal, Lower and Special (For Factories and Warehouse Guide see Section 4 page 66).
- 7.6 With regard to the explosive industry, there are certain processes that attract an even shorter travel distance because of the unique nature of the material being worked on. This is reflected in Table 1. Examples include all firework or pyrotechnic manufacture, or processing of primary explosives. Note that work on the primary explosives composition such as filling a percussion cap would fall within this category, but handling the finished article would not.
- 7.7 Special Fire Risk areas are similar to those given in note 2 to Table 2 of the FSL Guide. For the explosives industry this would include any process involving explosives which may result in a rapidly developing fire. Examples of where this could occur include:
- Any procedure where energy is being inputted into the explosive
 - Machining
 - Casting

- Blending
- Cutting
- Decanting propellant.

- 7.8 In addition to the circumstances defined in FSL guidance, for the explosives industry 'higher risk' travel distances should normally be applied to buildings where work is taking place on explosive items or components, e.g. assembly or packaging. Also included within this category are processes which will not result in a rapidly developing fire.
- 7.9 In explosives magazine areas, the explosives contained within the magazine should be packaged and no work undertaken apart from the movement of stock in and out of the building. The spread of fire is likely to start small and take time to develop as long as the packaging is in good condition and a high level of housekeeping is practiced, (i.e. the standard expected). In addition magazines are occupied infrequently for limited periods of time and the history of incidents during normal operations is extremely rare. For these reasons, magazines are treated as normal fire risk areas.

Travel Distances

- 7.10 Travel distance is the actual distance travelled by a person from any point to the nearest place of reasonable safety, having regard to the layout of walls, partitions and fixings.
- 7.11 In explosives, pyrotechnic or firework process areas the spread of fire is likely to be rapid. The travel distance permitted in such cases is accordingly very small with dead ends not normally accepted. The exception where dead end travel is permitted in explosives, pyrotechnic or firework process areas is for cell type construction, when the operator is always positioned between the work bench and the room exit and also when the travel distance to the exit is covered in one or two normal paces. Spread of fire between adjacent cells is prevented by the design and construction of the building.
- 7.12 Mounds present a specific problem when it comes to measuring travel distances. They are a requirement under the explosives legislation to prevent projectile damage in the event of an explosion. For this reason there are a limited number of openings through them. The height and width of mounds is calculated to mitigate the effects of the explosives likely to be inside the building and to be effective there is a maximum distance they can be from buildings. Exits through mounds are designed to ensure no line of sight to neighbouring buildings. Mounds are an integral part of the safety of the site and there is, therefore, a balance to be drawn between short travel distances and ensuring the safety of other persons on the site.
- 7.13 For buildings that are required to be mounded, and in the absence of a protected route or other place of reasonable safety, then the travel distance will be measured to the exit of the mound.
- 7.14 There are a small number of existing explosives licensed buildings that may fall outside of the guidance given above. In these circumstances liaison must take place between the Responsible Person, the Fire and Rescue Authority and the HSE to reach a satisfactory outcome.

Table of Travel Distances
(Supplementing Table 2 of the FSL Guidance)

Table 1 - Travel Distance for Explosives Buildings

| Buildings, rooms and areas where explosives processed or stored | More than one escape route | Dead ends where exit is substantially in one direction |
|--|-----------------------------------|---|
| Process areas for fireworks, pyrotechnic and primary compounds. <i>(no equivalent FSL category)</i> | 6m | 4m No explosive should be present between person and the exit |
| Process areas for secondary explosives and propellant. [see para. 7.7] <i>(Special fire hazard – industrial)</i> | 18m | 9m No explosive should be present between person and the exit |
| Process areas for secondary explosives and propellant. [see para. 7.8] <i>(Higher fire risk area - industrial)</i> | 25m | 12m No explosive should be present between person and the exit |
| Assembly and packaging of explosives items and the storage of explosive components not in its transport packaging. [see para. 7.8] <i>(Higher fire risk area - industrial)</i> | 25m | 12m No explosive should be present between person and the exit |
| Magazine Areas [see para. 7.9] <i>(Normal fire risk area - industrial)</i> | 45m | 25m ⁴ |

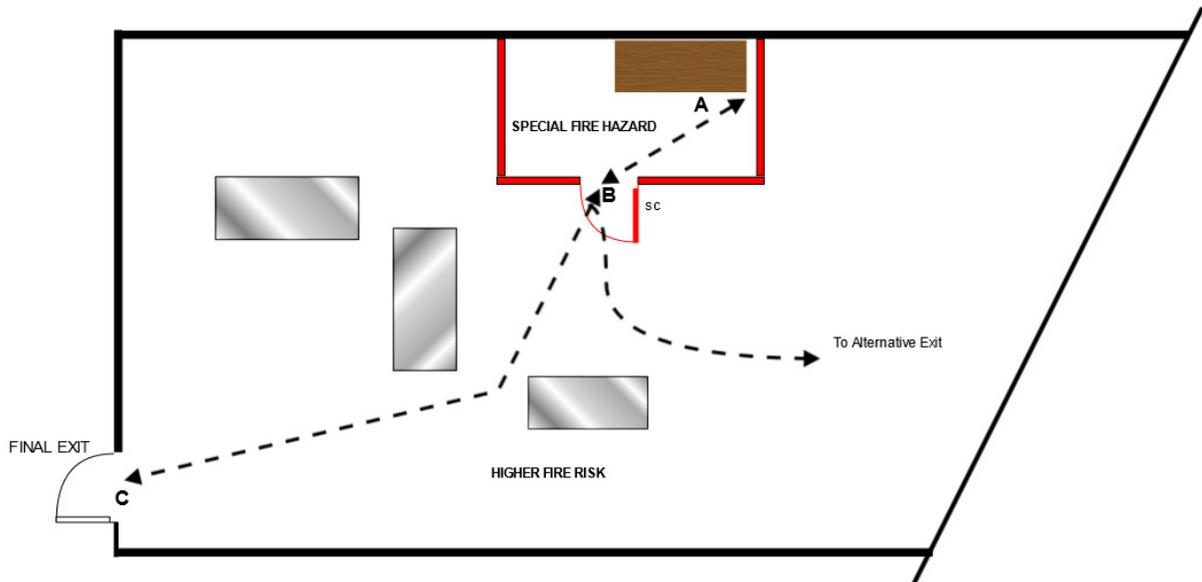
7.15 Where the relevant travel distances provided in Table 2 of the FSL Guidance or Table 1 of this document cannot be achieved, any increased distance must be justified through a suitable and sufficient risk assessment. The justification should take into account:

- The activities being carried out
- The Hazard Type and quantity
- Other measures taken to protect people
- The number of persons likely to be in the building/room, and
- Any ventilation or fire suppression systems.

Measuring escape routes in differing risk areas

7.16 Where the initial escape route is in a special or process area and then continues in an area of different fire risk, then the total travel distance must not exceed that for the appropriate risk. In the diagram below, because escape is available in only one direction then the travel distance A to B should not exceed 9 metres and the total travel distance, A to C should not exceed 25 metres.

⁴ This distance reflects modern standards and differs from that given in the ACoP to MSER (2005). Existing facilities which comply with the previous standard of 30 metres may still be acceptable.



Escape Routes

7.17 The following points should be considered:

- Buildings where explosives are being manufactured, normally require 2 or more exits. The exits must be sited far enough apart so that if one exit is threatened by fire, at least one other exit is available.
- The width of all escape routes in explosives premises should be of adequate dimensions, which should provide unimpeded access at not less than 750mm wide and 2m high
- Escape route doors should be at least 750mm wide and 1960mm high
- Escape route doors should open outwards and be easily pushed open
- There should be a clear flat area of at least 1m² around the outside of the exit door
- Escape doors should be provided with an approved single action quick release fastening (see note below)
- Checks must be made at the start of each shift to ensure fire exit doors remain unblocked inside and outside, and
- Signage should be provided on the outside of external fire exit doors 'Fire Exit Keep Clear'

Note: Where the doors within an explosives building are of the old 'hard-locked' type, (e.g. sliding bolts or bars), where the first action upon entering the building should be to unlock the doors, a risk based programme of improvements should be prepared to replace these devices with an appropriate quick release locking mechanism where it is safe to do so.

7.18 Where an escape route incorporates a ramp it should have appropriate slip resistant covering and be not greater than 1 in 12. Steps (which may cause trips) should not be included within or at either end of such a ramp.

7.19 In addition to the risk of fire, where there is a risk of explosion, plans and arrangements for escape and evacuation from explosives buildings must take into account the fact that workers escaping from a building may still be in immediate danger from blast and

fragments thrown by the exploding building or from a fireball. Issues which need to be taken into account include:

- Escape routes, these should be clearly marked and appropriately lit
- Consideration should be given to 'dog legs' and pressure relief areas to divert blast pressure away from those escaping the building, and
- The location of muster areas must be in a place of total safety, these should be clearly identified. First aid equipment should be readily accessible.

Evacuation plans and procedures will need to take into account the possibility that in the event of a fire in one building, workers in other buildings may be at less risk if they stay indoors.

8 Emergency Escape Lighting (Section 5 of the FSL Guidance)

- 8.1 No supplementary guidance or additional information is considered necessary for this particular aspect of General Fire Precautions. Where electrical emergency lighting is provided in explosives areas it must comply with the CBI/HSE guidance on electrical installations. [H]

9 Signs & Notices (Section 6 of the FSL Guidance)

- 9.1 No supplementary guidance or additional information is considered necessary for this particular aspect of General Fire Precautions.

Part 2

10 Building Regulations

- 10.1 The Manufacture & Storage of Explosives Regulations 2005 amends the Building Standards (Scotland) Regulations 1990 so that "A building the construction of which is subject to the Manufacture and Storage of Explosives Regulations 2005" is exempt from Building Regulations. In addition for England and Wales the Building Regulations 2010 is amended so that the following buildings are exempt from the Building Regulations; "any building in which explosives are manufactured or stored under a licence granted under the Manufacture and Storage of Explosives Regulations 2005."
- 10.2 The Buildings Regulations will apply to non-explosives buildings regardless of whether they form part of the licence issued under the Manufacture and Storage of Explosives Regulations 2005.
- 10.3 In addition to the FSL Guidance, Approved Document B1 (Fire Safety) Volume 2 ^[K] and BS 9999-2008 ^[L] give guidance on the provision of means of escape. Although buildings used for the manufacture or storage of explosives are exempt from Building Regulations, this does not preclude architects/designers/site operators from using Approved Document B1 as guidance in achieving adequate means of escape.
- 10.4 In addition, the Building Regulations covers other areas with regard to building design and construction. The HSE and other Licensing Authorities do not check the design and construction of an explosives building as a Building Control Body would do. Thus whilst the Building Regulations do not apply to explosives buildings they should be used to guide design, except where requirements are not compatible with the use as a licensed explosives building, e.g. blow out panels.

11 Emergency Plans⁵

- 11.1 The following additional guidance is provided to supplement section 7 of the FSL Guidance for buildings where explosives are processed or stored.
- 11.2 An emergency plan **must** be drawn up for the licensed site explaining the actions relevant persons need to take in case of fire, including details of any persons nominated to carry out a particular function in the emergency plan. There needs to be an emergency plan for dealing with any fire situation and the potential consequences of that fire.
- 11.3 The purpose of an emergency plan is to ensure that the people in the premises and immediate vicinity know what to do if there is a fire and that the premises can be safely evacuated. It will also include information for liaising with the emergency services. If the business or organisation employ five or more persons or the premises are licensed, or an alterations notice requiring it is in force, then details of the emergency plan must be recorded.
- 11.4 The emergency plans should be based on the outcome of the fire risk assessment and must be communicated to employees, their representatives (where appointed) and the enforcing authority.

⁵ Particular health and safety regulations (e.g. MSER, DSEAR, COMAH) have specific requirements for an employer to have arrangements in place (emergency arrangements) to deal with accidents, incidents and emergencies which may be in addition to those listed here.

Emergency Information Pack

The responsible person must ensure information is provided to the emergency services responding to an incident, particularly the fire and rescue service. This information is to be provided in order to safeguard those at risk on-site and reduce the risk to fire-fighters and other emergency service personnel so that they are able to deal safely with any incident. This information (the emergency information pack) should be gathered together and kept where it is readily available to the emergency services when they arrive. (Site operators may wish to provide the emergency services with a copy and have further copies to hand).

11.5 This information for manufacturing and storage would include:

- Location of the explosives
- Explosives hazard types that may be present
- The quantities of each held on site and in each location. In the absence of this information then the maximum quantities should be used from the site licence
- Construction type of manufacturing and storage buildings; features or structural hazards which may have a profound effect on fire fighting or rescue operations, including:
 - a) potential for rapid fire spread or production of large columns of smoke and toxic products;
 - b) lack of compartmentation
 - c) unprotected shafts or openings
 - d) substantial basement areas, and
 - e) high potential for structural collapse.

Site plans are often a good method of capturing this information.

11.6 Information for fire-fighting/search and rescue should:

- Address access/egress safe routes within the establishment and boundary, in particular for aerial appliances and other specialised vehicles, giving consideration to available headroom, width, ground clearance, hard standing turning circles and load restrictions;
- Provide travel distances from access points to various points in the building or around the grounds
- Detail fixed fire protection installations e.g. ventilators, sprinklers, drenchers, fire shutters, any back-up installations etc.
- Identify safe areas where fire-fighting operations can be undertaken
- Identify communication dead spots
- Identify water supplies, hydrants, open and tanked
- Show distances from water sources and information about quantity, pressures and flows that may be available, and
- Show designated rendezvous points for initial emergency service attendance.

Note Consideration needs to be given to the safety of responding services and the suitability of rendezvous points in relation to foreseeable accident scenarios, where necessary suitable alternatives should be considered.

- Explain how explosives transported around the site
- Explain security regimes employed by the duty holder e.g. electrified fences, guard dogs etc. which might impact upon operational tactics
- Identify if/where the use of mobile communication equipment would create a hazard; if so alternative equipment is to be provided
- Collate any technical data that gives general information on the properties and physical nature of substances and articles.

11.7 Hazard zones and evacuation distances:

- Identify safe distances to establish notional Hazard Zones associated with the permitted quantity, Hazard Type etc.
- Anything that has projectile hazard in the event of an explosion e.g. walls, and
- Evacuation distances for when explosives are involved in fire.

11.8 Other hazards will include:

- Large above or below ground oil or gas pipelines serving the establishment, or supplying products for storage or process
- Compressed gases
- Electrical transformers, sub-stations etc.
- Environmental consequences – identify watercourses, interceptors and plant drainage systems etc., and
- Equipment required to mitigate environmental impact.

11.9 Information on the Licensee covers:

- Who is the responsible person for the site and contact details for normal and out of hours
- Access to a current copy of the emergency procedures given to employees, and
- COMAH Sites on and/or of site plans.

11.10 Fire Safety Legislation⁶ imposes various duties on the employer to make sure that employees and other relevant persons are safe in the event of an accident or emergency involving dangerous substances. The definition of relevant persons means any person (including the responsible person) who is or may be lawfully on the premises and any person in the immediate vicinity of the premises who is at risk from a fire on the premises. In the case of an accident or emergency involving dangerous substances the immediate vicinity could be quite wide, it is not defined in the FSL as it will vary from building to building.

11.11 Following a fire involving dangerous substances the responsible person must also ensure:

⁶ Article 16 of the Regulatory Reform (Fire Safety) Order 2005 and Part 3 of the Fire Safety (Scotland) Regulations 2006^(M) requires the site operator to make additional emergency measures (emergency arrangements) in respect of the presence of any dangerous substances.

- That immediate steps are taken to mitigate the effects of the fire
- That the situation is restored to normal
- That relevant persons, who may be affected, are informed
- That only those persons who are essential for the carrying out of repairs and other necessary work are allowed in to the affected area.

Pre Incident Liaison with the Fire and Rescue Service

- 11.12 The Fire and Rescue Service may wish to visit an explosive site to gather information for planning. The Fire and Rescue Services Act 2004 and the Fire (Scotland) Act 2005 give the Fire and Rescue Service the power to do this. It is essential that site operators liaise with the Fire and Rescue Service so that they can undertake information-gathering visits. This will give them the ability to gather information on the most hazardous sites in their area. A close and effective working relationship should be adopted to ensure that information about the movement, storage and use of explosives is made available to responding emergency services. This will also help site operators formulate their emergency plan and so be able to provide the Fire and Rescue Service with full, accurate and timely information at an incident.
- 11.13 Effective formalised systems for liaison should be in place to identify what information Fire and Rescue Service's require and the arrangements for updating that information at regular intervals.
- 11.14 It is expected that on a regular basis, appropriate exercises are undertaken with other emergency services responders and site personnel to ensure that 'response plans' are fully understood.

12 Fire-fighting Incidents Involving Explosives

- 12.1 In general, all personnel, including emergency service personnel must withdraw to a safe distance if the fire has spread to a building known to contain explosives, or other similarly hazardous materials. If there is any doubt about the nature or location of the explosives involved, the fire must not be fought and the fire service should withdraw to a safe distance. Fires that have spread to buildings or areas holding Hazard Type 1, Hazard Type 2 or Hazard Type 3 explosives must not be fought.
- 12.2 The Approved Code of Practice (ACoP) to MSER provides guidance to on-site fire teams on the expected standards for dealing with fire related incidents involving explosives. This should be incorporated into any risk assessments for the site and also form part of the training for all staff on site. Site Operators should be aware that Fire and Rescue Service will follow the guidance in the Department for Communities and Local Government publications 'Generic Risk Assessment 5.7 – Explosives' ^[N] and Hazardous Materials: - operational guidance for the fire and rescue service ^[P]
- 12.3 Where explosives have been confirmed as not being involved then, fire-fighting action should initially be aimed at preventing the fire spreading to buildings or areas containing explosives and controlling the fire. When deciding on action in a response to an incident, fire-fighters need to bear in mind that should explosives become involved effects could quickly escalate and potentially burn to detonation.
- 12.4 The response following explosion or similar event requires careful liaison and planning to take into account the risk of secondary explosions or displaced explosives being

scattered around the site. This must take place before any fire-fighting of secondary fires or damping down takes place.

- 12.5 A key requirement is knowledge/explosives expertise to tackle each individual fire; most incidents will have individual characteristics based on location/explosive content/weather/time factors. The information in the emergency information pack should provide the basic knowledge of the location, type, quantity and stand off distances for fire personnel.
- 12.6 The licensee/site operator needs to ensure, as part of his emergency plans that a competent person is available to liaise with the emergency services when they arrive at the site, so as to assist them with any directions and queries or interpretation of the information in the emergency information pack. For sites that are unattended an appropriate 'call-out' system for a competent person needs to be in place and detailed in the emergency plan.

Appendix 1

Example of a Typical Site Plan



Note on this example, the red line indicates the extent of the licensed site, the blue line indicates buildings licensed for the presence of explosives and the letters refer to building details that would be contained within a separate schedule.

Appendix 2

Explanation of Hazard Categories (Hazard Type) used in HSE Licences.

- A2.1 Hazard Type (HT) is the basis of the licensing system for manufacture and storage of explosives in the United Kingdom. Hazard Type categorises the hazards presented by explosives under the conditions they are being processed or stored. These conditions can have an impact on the effects seen in the event of an ignition.
- A2.2 A formal definition of Hazard Types is provided in the Manufacture and Storage of Explosives Regulations 2005 (MSER).
- A2.3 It is the responsibility of the licence holder to ensure that they characterise the hazards presented by the explosives they handle at any specific time. Where explosives are being kept in their transport packaging, a direct read across from Hazard Division (HD) to HT (e.g. HD 1.1 to HT 1) may be appropriate, but in other circumstances this read across cannot be necessarily made. No automatic read across from HD to HT should be assumed.
- A2.4 Gunpowder provides a good example of the difference between HD used for transport and HT. When packaged for transport it is classified as HD 1.1 and when ignited in bulk or in a container it will explode and present a HT1 affect. However, when spread out thinly and ignited in the open it produces a fireball HT 3.
- A2.5 The hazards presented by explosives can be affected by confinement or by 'boostering' by higher energy explosives. Hence, where there is a mixture of hazard types in one place, the highest hazard (lowest number) is applied when assessing the overall hazard.

Appendix 3

Background to Legal Framework

A3.1 The following text gives a background to the fire safety legislation and the legislation requiring the provision of emergency plans and procedures applicable to premises and sites where explosives are manufactured and/or stored.

Fire Safety Legislation

A3.2 The Regulatory Reform (Fire Safety) Order 2005 in England and Wales and Fire (Scotland) Act 2005 came into force on 1 October 2006.

For ease of reference, these enactments are collectively referred to as Fire Safety Legislation (FSL) throughout this guide.

A3.3 The objective of the FSL was to consolidate in one place the general fire safety precautions requirements of the provisions of existing legislation, including the Fire Certificate (Special Premises) Regulations 1976 which applied to explosives facilities licensed by HSE.

A3.4 In general terms the FSL places responsibility for enforcing all general fire precautions with the relevant enforcing authority. They build on the requirements of the (revoked) Fire Precautions (Workplace) Regulations 1997 (FWP Regulations) whereby the employer had a duty to assess the fire risks in premises and facilities so as to demonstrate that the fire safety precautions are adequate. Responsibility for enforcement of process fire precautions remains with the Health & Safety Executive (HSE).

Interface with the Health and Safety at Work etc. Act 1974 (HSWA)

A3.5 To avoid duplication with FSL, there are provisions contained in article 47 of RRO⁷ and section 70 of F(S)A to disapply the HSWA and any Regulations made under HSWA insofar as the Act or Regulations relate to any General Fire Precautions requirements. Also, A43 and S71 of F(S)A have the effect of suspending any terms or conditions of a licence concerning General Fire Precautions; an exception to the latter is where the licensing authority is also the enforcing authority for the FSL.

Note: Explosives licences granted by the HSE do not normally have any conditions attached that cover General Fire Precautions.

A3.6 A42 of RRO makes special provisions in respect of premises that are subject to a licensing regime such as that imposed by regulations 10 and 11 of MSER. The FSL place a legal obligation on the licensing authority to ensure that the local Fire and Rescue Service is given the opportunity to make representations before a licence is granted, renewed, transferred or varied. The Fire and Rescue Service is also under an obligation to notify the licensing authority of any action it intends to take in relation to licensed premises.

Note: The obligation on the HSE to notify the Fire and Rescue Service before granting a licence etc. is over and above the Assent procedure of MSER.

⁷ A47 does not apply in relation to sites to which the Control of Major Accident Regulations 1999 applies.

Building Regulations 2010

A3.7 In general, the Building Regulations (for England and Wales) [Q] do not apply to Class 1 Buildings; these are buildings controlled under other legislation. Class 1 includes any building in which explosives are manufactured or stored under a licence granted under MSER⁸. For the construction or alteration of Class 1 exempted building, an application for Building Regulation approval is not required.

The Manufacture & Storage of Explosives Regulations 2005 (MSER)

A3.8 MSER_[R], as the title implies, covers the manufacture and storage of explosives for work and non-work purposes. As MSER applies to both work and domestic premises, such as recreational clubs⁹ and dwelling houses where the explosives are kept for private use, there is no specific requirement in the regulations to carry out a risk assessment. For workplaces, the statutory obligations to carry out risk assessments are the requirements of the Management of Health and Safety at Work Regulations 1999 (MHSWR)_[S] and the Dangerous Substances & Explosive Atmospheres Regulations 2002_[T].

The Dangerous Substances & Explosive Atmospheres Regulations 2002 (DSEAR)

A3.9 DSEAR_[T] is a set of regulations concerned with the protection against risks from fire, explosion and similar events arising from dangerous substances (other than explosives) used or present in the workplace. The regulations, which cover process fire precautions, apply to employers and the self-employed. Under regulation 2 (Interpretation) of DSEAR, explosives fall within the meaning of 'dangerous substance'.

Emergency Arrangements

A3.10 DSEAR (regulation 8) requires employers to assess the likelihood, and scale or magnitude of the effects that may result from any foreseeable accident, incident, emergency or other event involving dangerous substances present at the workplace. On the basis of this assessment, employers should put in place appropriate emergency arrangements to safeguard people on their premises, mitigate the effects of any such event and restore the situation to normal. The precautions to deal with accidents, incidents and emergencies are without prejudice to the control measures to prevent fires and explosions.

A3.11 The employer has a duty to make the information on the emergency arrangements available to employees and the emergency services.

A3.12 A16 of Regulatory Reform (Fire Safety) Order and Part 3 of the fire safety (Scotland) Regulations 2006 also requires emergency arrangements to be in place where there is a dangerous substance present on the premises. However the FSL override of HSWA will only apply in respect of the General Fire Precautions element of the emergency arrangements; i.e. it will only apply to fires and not other accidents or emergencies.

A3.13 For those premises/sites subject to the provisions of Control of Major Accident Hazards Regulations 1999 (COMAH), top tier operators are required to prepare on and off-site emergency plans and lower tier sites are required to have arrangements in place for dealing with emergencies.

⁸ As amended by Schedule 2(43) of MSER.

⁹ Where the members undertake any necessary maintenance or service work on a voluntary (unpaid) basis; i.e. no person is employed to work.

Fire & Rescue Services Act 2004, Fire Scotland Act 2005

A3.14 Section 7(2)(d) of Fire and Rescue Services Act^[W] and Section 9 of Fire (Scotland) Act^[E] places an obligation on Fire and Rescue Authorities to make provision for extinguishing fires in their areas and to protect life and property in the event of fires in their areas.

Section 7 also requires Fire and Rescue Authorities to make arrangements for obtaining information needed for the purposes of extinguishing fires and protecting life and property.

Appendix 4

Liaison between Enforcement Authorities

A4.1 Enforcement responsibility for Process Fire Precautions in places of work and in premises where explosives (dangerous substances) are kept and lies with HSE or such other enforcing authorities as determined by the Health and Safety (Enforcing Authority) Regulations 1998 and the Manufacture and Storage of Explosives Regulations 2005.

Definition of enforcement responsibility under the relevant legislation

A4.2 The prime enforcement responsibility for General Fire Precautions in the majority of places of work rests with the local Fire and Rescue Authority (as defined in Section 1 of the F&RSA (for England and Wales) and in Section 1 of the FSA (for Scotland).

Note: Privately owned fire services such as can be found in some ports and airports are not Fire and Rescue Authorities and in consequence are not responsible for enforcement of General Fire Precautions under the FSO or the F(S)A.

A4.3 In the case of Crown premises, the Crown Premises Inspection Group (CPIG) is responsible for enforcement of General Fire Precautions in England and Wales, in Scotland it is the Scottish Fire & Rescue Service. At MOD sites the enforcing authority is the Defence Fire Risk Management Organisation (DFRMO).

A4.4 For the following premises/locations the HSE or Local Authority (LA) will enforce FSL:

- Any premises for which a licence is required in accordance with section 1 of the Nuclear Installations Act 1965 or for which a permit is required in accordance with section 2 of that Act
- Any premises which would, except for the fact that it is used by, or on behalf of, the Crown, be required to have a licence or permit in accordance with the provisions referred to in the subparagraph above
- A ship, including a ship belonging to Her Majesty which forms part of Her Majesty's Navy, which is in the course of construction, reconstruction or conversion or repair by persons who include persons other than the master and crew of the ship
- Any workplace which is or is on a construction site as defined in regulation 2(1) of the Construction (Design and Management) Regulations 2007^[X] or to which those Regulations apply, other than construction sites referred to in regulation 46(1) of those Regulations, and
- Certain sports grounds and certain stands at sports grounds (Local Authority only).

HSE and Local Authority Inspectors

A4.5 The fire safety legislation is not a relevant statutory provision under HSW Act therefore HSE/Local Authority inspectors with enforcement responsibilities under the FSL (as specified above) must ensure that they obtain the appropriate warrant from their relevant authority.

Balance of Enforcement Responsibilities

- A4.6 The terms 'General Fire Precautions' and 'Process Fire Precautions' overlap and may affect each other in practice. For example, the means for fighting fire required in connection with the keeping and use of dangerous substances will also form part of the General Fire Precautions for the workplace. Similarly, the General Fire Precautions in the workplace may be affected by the presence of the dangerous substances and, for example, improved means of escape in case of fire may be necessary. In most cases it will be clear who should give advice and, if appropriate, take enforcement action. The following examples are given to assist inspectors determine enforcement responsibility.
- A4.7 For example plant may be provided with fixed and/or inbuilt fire fighting equipment primarily to limit loss rather than necessarily contribute to life safety. This may be regarded as part of the process fire precautions. Examples include automatic gas flooding systems (e.g. CO₂), which may introduce a risk of suffocation in the event of discharge. It would therefore normally be for HSE to check that this risk is addressed in such installations. Where changes are considered necessary to guard against such risk with equipment required under FSL, these should be sought in consultation with the Fire and Rescue Service.
- A4.8 Conversely, a Fire and Rescue Service may assess standards of separation from means of escape for the storage of flammable materials. In such cases the following may be used as a guide to the relative responsibilities of health and safety enforcing authorities and Fire and Rescue Services:
- If separation or containment of stored materials is required to safeguard the means of escape in case of fire, enforcement will largely be a matter for the Fire and Rescue Service.
 - If separation or containment of stored materials is required specifically under a relevant statutory provision of HSWA or more generally for fire precautions not directly related to means of escape (e.g. for fire prevention and process control or prevention of the spread of fire), enforcement will be a matter for the authority enforcing HSWA.
- A4.9 Other than those premises/locations listed in A4.4 HSE/Local Authority inspectors will not normally inspect General Fire Precautions during visits to workplaces. However, occasions will arise during the course of visits when inspectors become aware of deficiencies in General Fire Precautions, which in the light of their knowledge of general safety matters or of fire hazards, are matters of evident concern to them. See section 2 and Appendix 5.6
- A4.10 Because of the nature of some sites licensed by HSE, details of the site layout, building details etc. could be classified as secret and restricted in their circulation. All HSE inspectors have the necessary security clearance and facilities to store such information.
- A4.11 Because of the duties imposed by the relevant FSL, when it is necessary for the HSE to consult the Fire and Rescue Service and the contents of that consultation are restricted, then the HSE will notify the relevant Fire and Rescue Service of this fact and it will be the responsibility of that Fire and Rescue Service to ensure that the officer dealing with the consultation has the necessary security clearance to view any relevant information. Because of the security issues around the storage of plans etc., copies will not normally be sent to the Fire and Rescue Service for file. Notwithstanding this fact, it will remain the responsibility of the Fire and Rescue Service to gather such information as is necessary to fulfil its duties with regard to section 7(2)d of the Fire & Rescue Services Act and ensuring firefighter safety.

A4.12 Where inspections of sites under the FSL are carried out and that site has buildings/areas that are restricted, then inspections must still be carried out, however the Fire Safety Officer must have the necessary security clearance. Where an Fire and Rescue Service does not have competent Fire Safety Officers with the necessary security clearance, then consideration should be given to working in partnership with Services that do.

Appendix 5

Powers of Fire and Rescue Service Fire Safety Inspectors

A5.1 Fire safety inspectors are appointed by the Fire & Rescue Authority; they have the powers:

- To enter, inspect and make enquiries at any premises to which the Order applies
- To require the production of records and plans and to take copies
- To require facilities and assistance from the employer or some responsible person so as to enforce the Order
- To take samples of any articles/substances for ascertaining fire resistance or flammability, and
- Where there is an article or substance that appears to have caused danger, or is likely to cause danger to 'relevant persons'¹⁰ to cause it to be dismantled or subjected to any process or test.

Note: the 'at any reasonable time' caveat applies to the above powers.

Alterations Notice

A5.2 Where it is considered by the Fire and Rescue Service that a premises has a serious risk to relevant persons, the Fire and Rescue Service can issue an 'alterations notice' that requires the responsible person (employer) to notify the Fire and Rescue Service before any changes are made to the premises or the way they are used.

Enforcement Notice¹¹

A5.3 Where the Fire and Rescue Service is of the opinion that a responsible person has failed to comply with any provision of the order, then they can issue an 'enforcement notice' requiring steps to be taken to remedy the failure. The enforcement notice must state why the requirement(s) of FSL has/have not been met; it may also give directions on the measures considered necessary to comply with the law. The enforcement notice will specify a period (not less than 28 days) for the failures to be remedied.

Prohibition Notice⁴

A5.4 The Fire and Rescue Service can issue a 'prohibition notice' where it is considered that the use of premises involves or will involve a risk so serious to relevant persons. The matters to be considered include anything affecting means of escape in case of fire.

¹⁰ Any person who is lawfully in the premises and any person in the immediate vicinity of the premises who may be at risk from a fire on the premises but does not include a fire-fighter when dealing with a fire, road traffic accident or other emergency.

¹¹ Unlike improvement and prohibition notices issued under S21 and S22 HSWA, appeals against enforcement and prohibition notices issued under the Orders are dealt with by the Magistrates' Court in England and Wales.

Statutory Consultation

A5.5 With regards to an enforcement notice, FSL places an obligation on the Fire and Rescue Service to consult with the HSE Explosives Inspectorate only where an alteration to a premise is required, prior to serving the notice.

Article 42 of the Order places an obligation on Fire and Rescue Services to notify the HSE Explosives Inspectorate in the case of the issue of alteration notices and prohibition notices,

Although there is only an obligation to notify the HSE when issuing a prohibition notice and accepting that there will be a degree of urgency involved, wherever practicable the Fire and Rescue Service should notify the HSE Explosives Inspectorate (where the prohibition affects a building, room or area where explosives are processed or stored), before issuing the notice. This is to ensure that the prohibition does not introduce any adverse safety risks; if this is not practicable the Fire and Rescue Service should notify HSE as the earliest possible time after issuing the notice.

Matters of Evident Concern

A5.6 Procedures are in place for HSE/Local Authority inspectors and Fire and Rescue Service inspectors to liaise, when necessary, on fire precautions matters with regard to their respect of their roles of enforcing Process Fire Precautions and General Fire Precautions.

A5.7 These procedures, detailed in the HSE's Operational circular OC 217/06 [M], cover situations where HSE/Local Authority inspectors come across matters of 'evident concern' with respect to General Fire Precautions that they must bring to the attention of the Fire and Rescue Service. Likewise matters that the Fire and Rescue Service inspectors that must be brought to the attention of the HSE/Local Authority inspector.

A5.8 Matters of Evident Concern in connection with General Fire Precautions that the HSE/Local Authority Inspector would bring to the attention of the Fire and Rescue Service.

Means of escape in case of fire:

- Fire exits which cannot be easily and immediately opened from the inside by panic bolts, or other suitable emergency fastening
- Significantly obstructed exit doors, passageways, gangways or staircases
- Open stairways in multi-storey buildings containing significant quantities of flammable materials
- The keeping of dangerous substances, e.g. flammable materials in locations or circumstances such that they may prejudice the means of escape in case of fire, and
- Significant breaches of fire-resisting enclosures, such as missing or permanently open fire doors on escape routes.

Means for fighting fire:

- The absence, or clearly inadequate provision or maintenance, of fire extinguishers or other equipment for general fire-fighting purposes.

Fire alarms:

- Lack of a fire alarm in a large building or in a building where there are significant quantities of explosive or highly flammable materials where the building, or a substantial part of it, is not licensed by HSE under the Manufacture and Storage of Explosives Regulations 2005
- Fire alarms that are not in working order.

Fire routine and staff training and fire risk assessments:

- Absent, or clearly inadequate, fire routine procedures and staff training in the actions to take in the event of fire, and
- Absent or clearly inadequate fire risk assessments.

A5.9 Matters of Evident Concern in Connection with Process Fire Precautions. These examples are illustrative of deficiencies involving dangerous substances on which Fire and Rescue Service inspectors must bring to the attention of the HSE/Local Authority inspectors:

- Changes to building size or use that would impact on separation distances
- Concern over standard of intrinsically safe electrical equipment
- Poor housekeeping such as build up of dust or accumulation of waste in explosive process buildings
- Storage of flammable or explosive materials not in keeping with the licence
- Non operability or testing of specific fixed fire safety systems such as drenchers
- Flammable liquids: clearly unsatisfactory conditions of storage or use, lack of control of solvent fume, poor control of sources of ignition and substantial spillages of any highly flammable liquid
- Gas cylinders containing flammable gases: clearly unsatisfactory conditions of storage or use; poor control of sources of ignition; substantial escape of any flammable gas
- Hot work on vessels which have contained dangerous substances and which have not been adequately cleaned
- Hot work in explosive buildings where precautions do not appear to be appropriate
- Flammable gas generation or compression plant situated inside buildings
- Substantial quantities of flammable materials in workrooms
- Excessive deposits of combustible solids or liquids
- Radioactive substances, unsatisfactory conditions of storage and use. This category might include certain highly flammable liquids which have radioactive properties.

Appendix 6

Glossary

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|--|--|
| Exit | Exit signifies a specified opening in a wall, partition or fence with or without a door or gate. |
| Magazine | The term magazine covers places where explosives are to be kept; other than moving the explosives in or out of the building no other work is allowed in a magazine. |
| Protected Route | An escape route which is adequately protected from the rest of the building by fire resisting construction. |
| Place of Reasonable Safety | <p>In a non-explosives building the meaning of place of reasonable safety is the definition in the FSL Guide.</p> <p><i>“a place within a building or structure where, for a limited period of time, people will have some protection from the effects of fire and smoke. This place, usually a corridor or stairway, will normally have a minimum of 30 minutes fire resistance and allow people to continue their escape to a place of total safety.”</i></p> <p>For buildings containing explosives, it should be either an <u>exit</u> from a building (including its mound where present) or a place within the building where, for a limited period of time, people will have some protection from the effects of fire, smoke and <u>radiated heat</u>. This place must have suitable fire resistance to allow people to continue their escape to a place of total safety.</p> |
| Place of Total Safety | <p>In a non-explosives building the meaning of place of total safety is the definition in the FSL Guide.</p> <p><i>“a place, away from the premises, in which people are at no immediate danger from the effects of the fire”</i></p> <p>For buildings containing explosives, in addition to the above, it includes a place, away from the building, in which people are at no immediate danger from the effects of the fire <u>or potential explosion</u>.</p> <p><i>It should be noted that for explosive sites, the place of total safety is not the same as the “Minimum Hazard Zones” identified within the Operational Guidance for Fire Service ^{IM}</i></p> |
| Primary explosives, propellant, pyrotechnic and fireworks process areas | Areas where there are loose exposed primary explosives, pyrotechnic or firework compositions and filling of containers or fireworks either manually or by attended machine. |
| Relevant Persons | Any person lawfully on the premises and any person in the immediate vicinity, but does not include fire-fighters carrying out fire fighting duties. |
| Travel Distance | Travel distance is the actual distance travelled by a person from any point to the nearest place of reasonable safety, having regard to the layout of walls, partitions and fixings. |

For further guidance on definitions not listed above refer to the FSL guidance

Appendix 7

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Further Guidance:

Regulatory Reform (Fire Safety) Order 2005 – Guidance Note 1: Enforcement
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IRMP Guidance Note 4 - A risk assessment based approach to managing a fire safety inspection regime.

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