



ONR GUIDE			
THE REGULATION OF LIFE FIRE SAFETY ON NUCLEAR LICENSED SITES			
Document Type:	Nuclear Safety Technical Inspection Guide		
Unique Document ID and Revision No:	NS-INSP-GD-073 - Issue 1		
Date Issued:	April 2021	Review Date:	March 2023
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Record Reference:	2021/12525		
Revision commentary:	New document issued		

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1. INTRODUCTION

- 1.1 Responsibility for the regulation of site safety, including fire safety provisions, on nuclear sites is a core purpose of ONR under the Energy Act 2013. The relevant statutory provisions for Life Fire Safety (LFS) are contained within the Regulatory Reform (Fire Safety) Order 2005 (FSO) [1] and the Fire (Scotland) Act 2005 (FSA) [2]. Therefore, ONR has a regulatory requirement to ensure that the nuclear industry is taking appropriate measures to control all risks to life from fire arising from their undertakings.
- 1.2 Life Fire Safety is linked to, but differs from, Process Fire Safety (PFS) ,which requires adequate arrangements to protect engineering systems, process systems, and safety equipment from damage by fire in order to safeguard against the possibility of a release of radiation. Guidance relating to ONR's expectations for these arrangements can be found in ONR's Safety Assessment Principles for Nuclear Facilities 2014 edition Revision 1 – January 2020. [3]
- 1.3 This Technical Inspection Guide therefore provides guidance to all ONR Inspectors on the arrangements for the regulation of life fire safety on ONR's sites (GB nuclear licensed sites, new nuclear build, and authorised defence sites)

2. PURPOSE AND SCOPE

- 2.1 The guide describes the role of ONR in the regulation of conventional fire safety (life safety).and describes certain activities of the LFS discipline of ONR's Nuclear Internal Hazards and Site Safety (NIHSS) Specialism in its delivery of strategic proactive and reactive regulation of the management of CFS at GB nuclear sites. It does not describe the full range of ONR's LFS regulatory activities (such as the inspection of management systems which overlaps with work of the HOC Specialism) but seeks to draw the attention of all ONR Inspectors to activities on site where they may need to take action. This includes advice to ONR inspectors encountering matters of evident concern, matters of potential major concern and other matters concerning fire safety statutory compliance on ONR's sites as described in ONR Guide NS-INSP-GD-51 Dealing with Matters of Evident Concern and Potential Major Concern. [4] See section 5 and Annex A for further information.
- 2.2 ONR has a statutory obligation to regulate life fire safety arrangements on nuclear licensed sites by virtue of the Regulatory Reform (Fire Safety) Order 2005, and the Fire (Scotland) Act, as amended by the Energy Act 2013. This responsibility, delivered by specialist inspectors within the NIHSS Specialism, is independent of nuclear safety requirements or site licence conditions, and is cross-cutting across all ONR divisions including New Reactors. However, where LFS requirements overlap with requirements for other ONR core purposes, disciplines, and Specialisms, NIHSS inspectors will engage with other ONR Specialists as necessary.

3. ARRANGEMENTS

- 3.1 ONR specialist inspectors regulate LFS adopting a strategic approach to proactive regulatory interventions, including the licensee's fire safety management arrangements, to ensure systems are robust and comply with the law. Inspectors will identify any underlying issues to secure sustained compliance. Where duty holders are non-compliant with statutory requirements, ONR will consider appropriate and proportionate action in accordance with ONR's Enforcement Policy Statement [5] and Enforcement Management Model to secure compliance. [6]

- 3.2 ONR expects the provision of such general fire precautions as will ensure, so far as is reasonably practicable (SFAIRP), the safety of all employees, and all relevant persons who may be present on a licensed site, including any appropriate fire precautions as may also be reasonably required on a site, appropriate to risk, to ensure that premises are safe. Furthermore, ONR expects the use of effective internal assurance of these provisions by the industry.
- 3.3 The principal purpose of LFS specialist inspectors is to support ONR's operational divisions to deliver effective LFS regulation according to agreed work-plans, and to support other regulatory work as appropriate. This work includes:
- Post-fire investigations, and notifiable events,
 - The provision of general fire safety advice to sites upon request, in order to ensure compliance with relevant regulations,
 - Engaging with industry stakeholders on design proposals for new build projects,
 - Consulting with local authority building control authorities or approved inspectors to assess compliance with relevant UK Building Regulations for new build proposals or significant alterations to existing non-nuclear buildings. [7]
[8]
 - LFS requirements are also considered as part of ONR's Generic Design Assessment (GDA) process, and specialist inspectors provide advice and assessment to ONR's New Reactors Programme.
 - The selection and investigation of workplace concerns and whistleblowing (protected disclosure). Details can be found in ONR-ENF-GD-005-Revision 3: Process for Conducting Investigations. [9]

The integration and alignment of ONR divisional and LFS strategies, and the provision of specialist LFS resource to divisional teams, continues and enables the prioritisation and targeting of the holistic risk profile across ONR sites.

- 3.4 Any ONR inspector undertaking work on ONR sites involving specific LFS topics, or matters where LFS has 'cross-cutting' potential, should liaise with the relevant specialist inspectors who will seek to provide advice, assistance, and support as necessary.
- 3.5 All ONR inspectors are expected to respond to Matters of Evident Concern (MEC), and Potential Major Concern if observed on site (see section 5).
- 3.6 Any identified LFS issues should be referred to ONR specialist LFS inspectors who undertake regulatory activities in relation to life fire safety, including the approval of building design, PMPs, the assessment of site specific fire risk assessments and expert assessment of fire incident investigations. They can provide advice on process fire precautions, site exercises and emergency response capabilities. They also provide life safety fire assessments to GDA, and fire safety guidance in the licensing and construction of new reactor sites.

4. ENFORCEMENT AND MATTERS OF EVIDENT & POTENTIAL MAJOR CONCERN

- 4.1 Enforcement decisions relating to LFS matters on an ONR site must involve prompt consideration of any potential implications for ONR core purposes, including nuclear safety, arising from the proposed action; all inspectors must consult with the appropriate ONR Divisions and any relevant specialisms.

- 4.2 All ONR warranted Inspectors are required to deal with any significant Site Safety Hazards they observe (or are made aware of), that have the potential to cause death or serious injury on any ONR regulated site, as matters of evident and potential major concern. For further guidance see HSE's Operational Circular OC 18/12 [10], and also paragraphs 7.7 to 7.19 of ONR Guide ONR-GD-064 Revision 5: 'General Inspection Guide'. [11] For guidance on matters of evident concern and matters of potential major concern specific to life fire safety, see Annex A of this guide.
- 4.3 In circumstances where an ONR Inspector is of the opinion that a work activity is being undertaken (or likely to be undertaken) on an ONR site by, or under the control of a nuclear licensee, contractor or other person, involves (or will involve) a risk of serious personal injury, the ONR inspector should take appropriate action to eliminate or reduce the risk to an acceptable level. If the ONR Inspector is unsure of the appropriate action they should seek advice from LFS/NIHSS Specialist inspectors. If no advice is available, the ONR inspector should stop the activity giving rise to serious risk either by verbal advice or, where there is risk of serious personal injury as described above, by the service of an immediate Prohibition Notice. The inspector's line manager should be informed of the enforcement action as soon as possible.
- 4.4 If a matter is brought to the attention of an ONR inspector by safety representatives or workers, the ONR inspector should investigate the matter to establish the seriousness of the potential hazard and, if a risk is identified which meets the criteria in paragraph 5.3 above and Annex A.
- 4.5 Matters of evident and potential major concern are set out in Annex A to this guidance.

5. REFERENCES

1. The Regulatory Reform (Fire Safety) Order 2005
https://www.legislation.gov.uk/ukxi/2005/1541/pdfs/ukxi_20051541_en.pdf
2. The Fire (Scotland) Act 2005 (Part 3)
<https://www.legislation.gov.uk/asp/2005/5/contents>
3. ONR Safety Assessment Principles for Nuclear Facilities 2014 edition (Revision 1 – January 2020)
<http://www.onr.org.uk/saps/saps2014.pdf>
4. ONR Guide NS-INSP-GD-051 Revision 8: Dealing with Matters of Evident and Potential Major Concern <http://onr.org.uk/>
5. ONR-ENF-POL-001 Revision 1: ONR Enforcement Policy Statement:
<http://www.onr.org.uk/documents/enforcement-policy-statement.pdf>
6. ONR Guide ONR-ENF-GD-006 Revision 3: Enforcement Management Model
<http://www.onr.org.uk/operational/investigations/onr-enf-gd-006.pdf>
7. The Building Regulations 2010
<https://www.legislation.gov.uk/ukxi/2010/2214/contents>
8. The Building (Scotland) Regulations 2004
<https://www.legislation.gov.uk/ssi/2004/406/made>
9. ONR Guide ONR-ENF-GD-005 Revision 3: Process for Conducting Investigations <http://www.onr.org.uk/operational/investigations/onr-enf-gd-005.pdf>
10. HSE Operational Circular OC 18/12 Version 4 - Matters of Evident Concern and Potential Major Concern
https://www.hse.gov.uk/foi/internalops/ocs/001-099/18_12.htm
11. ONR Guide ONR-INSP-GD-64 Revision 5: General Inspection Guide
http://www.onr.org.uk/operational/tech_insp_guides/onr-insp-gd-064.pdf

6. ANNEX A – MATTERS OF EVIDENT AND POTENTIAL MAJOR CONCERN

Definitions

1. A **Matter of Evident Concern (MEC)** is a matter that creates a risk of serious personal injury or ill-health and which are observed (i.e. self-evident) or brought to the attention of an ONR inspector.
2. A **Matter of Potential Major Concern (MPMC)** is a matter which has a realistic potential to cause either multiple fatalities or multiple cases of acute or chronic ill-health.

Indicative issues to consider.

Potential for Fire and Explosion / Inadequate Means of Escape

1. Blocked or obstructed means of escape, for example: locked fire doors, fire doors blocked by equipment.
2. Open or defective fire doors on any escape route, for example: doors wedged or held open, defective, or missing self-closing devices, fire doors fail to close fully, final exit doors fail to open.
3. Defective or isolated fire alarm systems.
4. Regular false fire alarms.
5. Defective emergency lighting systems.
6. Inadequate emergency signage.
7. Inadequate testing and maintenance arrangements for fire alarms, emergency lighting, fire-fighting equipment.
8. Inadequate Fire Risk Assessments.
9. Inadequate staff training, for example: Infrequent fire drills, absence of Personal Evacuation Plans (PEEPs) for occupants requiring assistance to evacuate the premises.
10. Accumulations of flammable materials in escape routes, for example: corridors and stairways.
11. Combustible materials being stored in non-designated laydown areas.
12. Uncontrolled Hot Work with the potential to cause fire.
13. Poor storage of highly flammable liquids (HFLs) and flammable solids.
14. LPG storage and associated pipework, for example: underground pipework, the security of the store, proximity of vehicles.
15. Building modifications which have not been assessed by SQEP fire engineer.
16. Construction processes without a suitable & sufficient risk assessment.