

**Gas Legislation Guidance**  
**IGE/GL/8 Edition 2**  
**Communication 1721**

***Reporting and investigation of gas-  
related incidents***



*Founded 1863  
Royal Charter 1929  
Patron: Her Majesty the Queen*



**Gas Legislation Guidance**  
**IGE/GL/8 Edition 2**  
**Communication 1721**

***Reporting and investigation of gas-  
related incidents***

Price Code: T4  
© The Institution of Gas Engineers and Managers  
Charnwood Wing  
Holywell Park  
Ashby Road  
Loughborough, Leics, LE11 3GH  
Tel: 01509 282728  
Fax: 01509 283110  
Email: [general@igem.org.uk](mailto:general@igem.org.uk)



**CONTENTS**

<b>SECTION</b>	<b>PAGE</b>	
1	Introduction	1
2	Scope	3
	• 2.1 Legislation	3
	• 2.2 Substances	3
	• 2.3 Incidents	3
	• 2.4 General	4
3	Reporting methods and identification of types of incident	5
	• 3.1 Statutory reporting – RIDDOR, GS(M)R and COMAH	5
	• 3.1.1 General under RIDDOR	5
	• 3.1.2 Dangerous occurrences and gas incidents causing death or major injury under RIDDOR	6
	• 3.1.3 Incidents under GS(M)R	6
	• 3.1.4 Incidents under COMAH	7
	• 3.1.5 Gas fittings found to be dangerous under RIDDOR	7
	• 3.1.6 Maintenance of records	8
	• 3.2 Non-statutory reporting	8
4	Investigations	9
	• 4.1 Arrangements for investigations	9
	• 4.1.1 Incident investigation policy	9
	• 4.1.2 Safety management system	9
	• 4.1.3 Incident classification	10
	• 4.1.4 Objectives of incident investigation	10
	• 4.1.5 Targets of incident investigation	10
	• 4.1.6 Analysis of incident data	10
	• 4.2 Carrying out investigations	11
	• 4.2.1 General	11
	• 4.2.2 Network incidents	11
	• 4.2.3 Explosions causing damage to property	13
	• 4.2.4 Suspected CO poisonings	15
	• 4.2.5 Other gas-related incidents	16
	• 4.3 Reports and statements	16
	• 4.3.1 General reporting of an investigation	16
	• 4.3.2 Report to HSE	16
	• 4.3.3 Report to inquests and inquiries	16
	• 4.3.4 Witness Statements to regulatory authorities	16
	• 4.3.5 Expert witnesses	17
	• 4.3.6 Downstream Incident Data Report (CO incidents)	18
 <b>APPENDIX</b>		
1	Glossary, acronyms, abbreviations and units	19
2	References	22
3	Submitting reports to HSE and other authorities under RIDDOR	24
4	Examples of dangerous occurrences applicable to the gas transportation and supply industry and reportable under RIDDOR	27
5	Submitting reports of incidents under GS(M)R	30

6	Examples of gas fittings found to be dangerous and flammable gas incidents which HSE suggests may be reportable under RIDDOR	32
7	Examples of specific areas of network investigations	36
8	Checklist for the conduct of on-site explosion incident investigations (for GS(M)R purposes)	38
9	Checklist for the conduct of on-site investigations into suspected CO poisonings	43
10	Analysis of immediate and underlying causes	50
11	Example pro-forma for GS(M)R reporting – reg 7(12) (gas releases downstream of the ECV)	55
12	Example pro-forma for GS(M)R reporting – reg 7(13) (gas releases upstream of the ECV)	56

## **TABLES**

1	RIDDOR report forms	24
2	Examples of dangerous gas fittings (not exhaustive)	32

## **FIGURES**

1	Flowchart. How to make a RIDDOR report to HSE ICC	25
2	Flowchart. How to make a downstream incident report under GS(M)R – reg 7(12)	30
3	Flowchart. How to make an upstream incident report under GS(M)R – reg 7(13)	31
4	Flowchart. How to make a report on actual or suspected CO poisoning	35
5	Flowchart. On-site investigation. Flueless appliances	48
6	Flowchart. On-site investigation. Flued appliances	49
7	Incident analysis based on HS(G)65, Appendix 5	54

## SECTION 1 : INTRODUCTION

- 1.1 This Guidance supersedes IGE/GL/8 Edition 1, Communication 1633, which is obsolete.
- 1.2 This Guidance is part of a series of Institution of Gas Engineers and Managers (IGEM) publications providing practical guidance to support the Gas Safety (Management) Regulations (GS(M)R) and the Pipelines Safety Regulations (PSR). IGE/GL/8 also supports certain requirements under the Gas Safety (Installation and Use) Regulations (GS(I&U)R). It has been drafted by an IGEM Panel appointed by IGEM's Gas Safety and Environment and Gas Utilization Committees, and has been approved by IGEM's Technical Co-Ordinating Committee on behalf of the Council.
- 1.3 This Guidance is for gas transporters (GTs), gas suppliers, gas operatives and others and covers reporting and investigating incidents and dangerous occurrences (including gas fittings found to be dangerous) associated directly with the supply and use of fuel gases.
- 1.4 The principles of sound health and safety management need to be taken into account to ensure the gas system can be constructed, operated and maintained safely and effectively.
- Guidance on such principles is set out in HS(L)21.
- 1.5 The relevant parts of IGE/GL/8 may be cited in a GT's safety case, but the Health and Safety Executive (HSE) will need to be satisfied that they are appropriate and have been properly applied in each case.
- 1.6 New terms such as maximum operating pressure (MOP) have been introduced to reflect gas pressure terminology used in European standards. These terms will arise in all relevant IGEM technical publications in future and, possibly, in other standards.
- 1.7 This Guidance makes use of the terms "should" and "must" when prescribing particular procedures. Notwithstanding Sub-Section 1.8:
- the term "must" identifies a requirement by law in Great Britain (GB) at the time of publication
  - the term "should" prescribes a procedure which, it is intended, will be complied with unless, after prior consideration, deviation is considered to be acceptable.
- Such terms may have different meanings when used in legislation, or HSE ACoPs or Guidance, and reference needs to be made to such statutory legislation or official guidance for information on legal obligations.
- Note: Increasingly, GB gas legislation is being adopted in such as Northern Ireland. Although any differences may be few, the relevant equivalent legislation outside GB will need to be consulted for use outside GB.*
- 1.8 Notwithstanding Sub-Section 1.7, this Guidance does not attempt to make the use of any method or specification obligatory against the judgement of the responsible engineer. New and improved practices may be adopted prior to this Guidance being updated. Amendments to this Guidance will be issued when necessary, and their publication will be announced in the Journal of the Institution and other publications, as appropriate.
- 1.9 The primary responsibility for compliance with legal duties rests with the employer. The fact that certain employees, for example "responsible persons",

are allowed to exercise their professional judgement does not allow employers to abrogate their primary responsibilities. Employers must:

- have done everything to ensure, so far as it is reasonably practicable, that "responsible persons" have the skills, training, experience and personal qualities necessary for the proper exercise of professional judgement
- have systems and procedures in place to ensure that the exercise of professional judgement by "responsible persons" is subject to appropriate monitoring and review
- not require "responsible persons" to undertake tasks which would necessitate the exercise of professional judgement that is not within their competence. There should be written procedures defining the extent to which "responsible persons" are asked to undertake tasks which deviate from this, they should refer that matter for higher review.

1.10 It is now widely accepted that the majority of accidents in industry are in some measure attributable to human as well as technical factors in the sense that people's actions initiated or contributed to the accidents or people might have acted better to avert them.

It is therefore necessary to give proper consideration to the management of these human factors and to the control of risk. To assist in this, it is recommended that due cognizance should be taken of HS(G)48.

1.11 Requests for interpretation of this Guidance in relation to matters within its scope, but not precisely covered by the current text, should be addressed in writing to Technical Services, IGEM, Charnwood Wing, Holywell Park, Ashby Road, Loughborough, Leicestershire, LE11 3GH and advice, but in the context that the final responsibility is that of the responsible person concerned. If any advice is given by or on behalf of IGEM, this does not relieve the responsible person of any of his or her obligations.

## **SECTION 2 : SCOPE**

### **2.1 LEGISLATION**

Relevant legislation addressed by this Guidance is:

- Health and Safety at Work etc. Act (HSWA)
- Gas Safety (Installation and Use) Regulations (GS(I&U)R)
- Gas Safety (Management) Regulations (GS(M)R)
- Pipelines Safety Regulations (PSR)
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
- Control of Major Accident Hazard Regulations (COMAH).

### **2.2 SUBSTANCES**

2.2.1 This Guidance primarily addresses Natural Gas (in either gaseous or liquid state). However, the items of legislation under Sub-Section 2.1 do not have similar scopes with respect to gases covered. For example, GS(M)R address Natural Gas only whereas GS(I&U)R cover virtually all fuel gases. As the legislation listed covers Natural Gas, this Guidance applies in full for Natural Gas.

The intent is to also provide appropriate guidance for Liquefied Petroleum Gas (LPG) which is not covered by, for example, GS(M)R. However, for most issues, the guidance (as opposed to the legislation) is the same for LPG as for Natural Gas. Where there is a difference, LPG is mentioned specifically.

2.2.2 For gases other than Natural Gas and LPG, for example LPG/air, the majority of this Guidance is appropriate but due account may need to be taken of differences in gas properties and legislative requirements.

### **2.3 INCIDENTS**

#### **2.3.1 General**

For the purposes of this Guidance, "incidents" and "dangerous occurrences" are often termed collectively as "incidents".

This Guidance covers the reporting and investigation of incidents and dangerous occurrences associated directly with the supply and use of gas (see Sub-Section 2.2).

2.3.2 This Guidance covers onshore incidents:

- on gas supply networks, for example loss of gas or ingress of water
- on gas storage sites, for example loss of gas
- on any gas pipework involving explosions that cause damage to property
- involving carbon monoxide (CO) poisoning arising from the burning of gas.

2.3.3 With respect to RIDDOR, this Guidance covers onshore:

- dangerous occurrences - reg 3(1)
- gas incidents causing death or major injury – reg 6(1)
- gas fittings found to be dangerous – reg 6(2).

2.4 **GENERAL**

2.4.1 Guidance on carrying out investigations into the causes of incidents is given in Section 4.

For a fire or explosion resulting from a gas escape from a gas fitting downstream of an emergency control valve (ECV), the scope of the investigation has to be sufficient to identify, as far as is practicable, whether the gas escape was from installation pipework or from an appliance and, if the latter, which appliance. Natural Gas suppliers are responsible for initiating investigations of incidents involving death or major injury as a result of CO poisoning.

2.4.2 Recognised good practice in managing safety involves the sharing of information about accidents and incidents so that the most effective action can be taken to try to prevent their recurrence. Advice is given within clause 4.1.2 on sharing information.

There also has to be a system for reporting and investigating "near miss" incidents.

2.4.3 All pressures are gauge pressures unless otherwise stated.

2.4.4 *Italicised text is informative and does not represent formal Guidance.*

2.4.5 Appendices are informative and do not represent formal Guidance unless specifically referenced in the main sections via the prescriptive terms "should" or "must".