

***IGEM/GL/6 Edition 3
Communication 1814***

Safe Control of Operations for Gas Networks



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



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SECTION 1 : INTRODUCTION

- 1.1 This Standard supersedes IGE/GL/6 Edition 2, Communication 1747, which is obsolete.
- 1.2 This Standard 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), Gas Safety (Installation and Use) Regulations (GS(I&U)R) and the Pipelines Safety Regulations (PSR). It has been drafted by an IGEM Panel appointed by IGEM's Gas Transmission and Distribution Committee, and has been approved by IGEM's Technical Co-ordinating Committee on behalf of IGEM's Council.
- 1.3 This Standard contains requirements for all those organisations working on and or maintaining pipelines, pipework and associated gas installations. It includes requirements for formal written procedures for working or maintaining a gas supply. The Standard applies irrespective of pressure and, in circumstances in which they are required, their content, consideration of technical and human factors, preparation, approval and authorisation and monitoring of their application. Where relevant, it is to be read in conjunction with the following Health & Safety Executive (HSE) guidance publications:
- HSG250 (Guidance on Permit to Work Systems)
 - HSG253 (The safe isolation of plant and equipment)
 - HSG47 (Avoiding Danger from Underground Services) and
 - HSG48 (Reducing Error & Influencing Behaviour).
- 1.4 This Standard has adopted a risk based approach aligning it to the goal setting nature of UK Health and Safety Law that has evolved since the Robens Report of 1972. By embracing the proportionality through "reasonable practicability", it avoids the difficulties that would otherwise arise from a more prescriptive approach. Goal setting law demands a higher level of competence of duty holders. It means that Gas Transporters (GT) focus resources on the activities that are to be carried out to eliminate or reduce risk as low as reasonably practicable.
- Goal setting safety legislation introduced in the 1980's in the gas industry for pressure systems enabled a move towards maintenance and operational strategies based on the risk and consequence of failure.
- A risk assessment was conducted (using methodology from HSE's Five Steps to Risk Assessment (INDG163)) to determine low to high Safe Control of Operations (SCO) risks activities and their associated control measures. This provided a method to balance controls appropriately to the activity risk level. The process has also been supported by a review of operational techniques, competence requirements and innovation when working on or maintaining a gas supply. The results of the risk assessment provide the basis for this document and are held by IGEM.
- 1.5 The relevant parts of this Standard may be cited in a GT's safety case, but the HSE will need to be satisfied that they are appropriate and have been properly applied in each case.
- 1.6 Terms such as maximum operating pressure (MOP) are included to reflect gas pressure terminology used in European standards.
- 1.7 This Standard makes use of the terms "must", "shall" and "should". Notwithstanding clause 1.9,

- the term “must” identifies a requirement by law in Great Britain (GB) at the time of publication
- the term “shall” prescribes a requirement which, it is intended, will be complied with in full and without deviation
- the term “should” prescribes a requirement 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 Approved Code of Practice (ACoP) or guidance, and reference needs to be made to such statutory legislation or official guidance for information on legal obligations.

- 1.8 The primary responsibility for compliance with legal duties rests with the company and employees. The fact that certain employees, for example “Responsible Engineers”, are allowed to exercise their professional judgement does not allow companies to abrogate their primary responsibilities. Companies must:
- have done everything to ensure, so far as is reasonably practicable, that there are no better protective measures that can be taken other than relying on the exercise of professional judgement by “Responsible Engineers”
 - have done everything to ensure, so far as is reasonably practicable, that “Responsible Engineers” 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 is subject to appropriate monitoring and review
 - not require “Responsible Engineers” 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 Engineers” can exercise their professional judgement. When “Responsible Engineers” are asked to undertake tasks which deviate from this they should refer the matter for higher review.
- 1.9 Notwithstanding clause 1.7, this Standard does not attempt to make the use of any requirement obligatory against the judgement of the Responsible Engineer.
- New and improved practices may be adopted prior to this Standard being updated. Amendments to this Standard will be issued when necessary and their publication will be announced in the Journal of IGEM and elsewhere as appropriate.
- 1.10 Requests for interpretation of this Standard in relation to matters within its scope, but not precisely covered by the current text, are to be addressed to Technical Services, IGEM, IGEM House, 26-28 High Street, Kegworth, Derbyshire, DE74 2DA or technical@igem.org.uk. Such requests will be submitted to the relevant Committee. Any advice given by or on behalf of IGEM does not imply acceptance of any liability, and does not relieve any party of their obligations.
- 1.11 This Standard was published in November 2018.

SECTION 2 : SCOPE

- 2.1 This Standard applies to the Safe Control of Operations Systems (SCOS) for the safe flow of gas, in pipelines, installation pipework and associated equipment/installations intended to convey primarily Natural Gas (NG), a 2nd family gas as defined by BS EN 437 Specification for test gases, test pressures and categories of appliance, for gas appliances and includes the following types of permitry:
- Permits to Work (PtW)
 - Non-Routine Operation (NRO)
 - Routine Operation (RO)
 - Form of Authority (FoA)
 - Safety & Engineering Procedures.
- 2.2 This Standard primarily addresses NG (in either gaseous or liquid state). However, the items of legislation under Section 3 do not have similar scopes with respect to gases covered. For example, GS(M)R address NG only whereas GS(I&U)R cover virtually all fuel gases. This Standard applies in full for NG (and similar unconventional gases).
- 2.3 The intent of this Standard is to 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 NG.
- 2.4 For gases other than NG the majority of this Standard is appropriate. However, due account may need to be taken of differences in gas properties and legislative requirements.
- 2.5 This Standard applies to:
- licensed gas transporters (GTs and IGTs)
 - Utility infrastructure providers (UIPs)
 - gas conveyors
 - LPG network owners
 - operators of other gas networks downstream of the meter, such as Universities, Hospitals, dock yards etc. Where the risks are similar to operating a conventional gas network
 - gas users who have their own network on a private site.
- Note: GTs responsibilities extend to the end of the network i.e. the outlet of the Emergency Control Valve (ECV). Definition of Network, ECV and Meter Installation are provided in IGEM/G/1.*
- 2.6 This standard applies to any activity in the vicinity of electrical installations/cables which comes under IGEM/GL/6. Operations on electrical installations are covered under Electricity at Work Regulations.
- 2.7 This standard applies to all following sites:
- continuously manned Sites 24/7 e.g. terminals
 - daily Manned Sites, (during normal working hours) e.g. compressors
 - unmanned Sites, e.g. above ground installation (AGI's), pipelines.
- 2.8 The principles contained within this Standard can be applied wherever written procedures are required and Appendices 5 to 8 provide suitable examples of templates that could be used.

- 2.9 All pressures are gauge pressures unless otherwise stated.
- 2.10 Italicised text is informative and does not represent part of a formal Standard.
- 2.11 Appendices are informative and do not represent part of a formal Standard unless specifically referenced in the main sections via the prescriptive terms "must", "shall" or "should".
- 2.12 Individual organisations, for example GTs may have designated titles for roles, such as Responsible Engineer (RE), Network Controller (NC), Site Controller (SC) (see the note below), Authorising Engineer (AE) and Competent Person (CP). These roles are defined in either IGEM/G/4 or Appendix 1.

Note: The roles of Network and SC are fundamentally the same (see Sub-Section 11.1 for roles descriptions). The NC refers to the control of work on a pipeline network and the SC refers to the control of work on a manned site. For the purposes of this document the term NC is used throughout but, with some sensible interpretation, can also be read as SC.