

***Guidance on Gas Legislation
IGE/GL/2 Edition 2
Communication 1727***

***Planning of transmission and storage
systems operating at pressures
exceeding 16 bar***



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



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SECTION 1 : INTRODUCTION

- 1.1 This Guidance supersedes IGE/GL/2 Edition 1, Communication 1627, which is obsolete.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). 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 Council.
- 1.3 Guidance is provided on the planning of transmission and distribution systems so that, as far as possible, continuity of gas supply is maintained to consumers on the system, and at sufficient pressure that their appliances continue to operate at all times unless load shedding has been initiated.
- 1.4 The guidance raises the lower threshold of maximum operating pressure (MOP) for design purposes from 7 bar to 16 bar, to mirror European legislation and guidance in accordance with IGE/TD/1.
- 1.5 The relevant parts of this Guidance may be cited in the gas transporter's (GT's) safety case, but the Health and Safety Executive (HSE) will need to satisfy itself that the parts are appropriate and have been properly applied in each case.
- 1.6 New terms such as MOP, and "operating pressure" (OP) 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", "shall" and "must" when prescribing particular procedures. Notwithstanding Sub-Section 1.9:
- the term "must" identifies a requirement by law in Great Britain (GB) at the time of publication
 - the terms "shall" prescribes a procedure which, it is intended, will be complied with in full and without deviation
 - 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 Approved Codes of Practice (AcoPs) 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 employer. The fact that certain employees, for example "responsible engineers", 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 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 by "responsible engineers" 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 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 elsewhere as appropriate.

1.10 Requests for interpretation of this Guidance in relation to matters within its scope, but not precisely covered by the current text, should be addressed to IGEM, Technical Services, Holywell Park, Charnwood Wing, Ashby Road, Loughborough, Leicestershire, LE11 3GH. Such requests will be considered by the relevant Committee. Any advice given by or on behalf of IGEM does not imply acceptance of any liability for the consequences and does not relieve the responsible engineer of any of his or her obligations.

SECTION 2 : SCOPE

- 2.1 This Guidance is part of a series of IGEN publications providing practical guidance to support GS(M)R and PSR.
- 2.2 This Guidance contains advice on the planning and design of Natural Gas systems and any associated storage (hereafter referred to as "systems") of MOP exceeding 16 bar. The Guidance does not encompass the availability of gas entering the system. Its purpose is to ensure that there is sufficient transportation capacity.
- Note: Compliance with this Guidance ensures that, as far as is reasonably practicable, a system is able to maintain security of supply under the most onerous combination of flow and pressure on the system and that adequate arrangements are established to minimise the risk of a supply emergency (see Appendix 3).*
- 2.3 This Guidance includes the arrangements and agreements required between different GTs and Network owners at system boundaries, to ensure the continuity of gas flow.
- 2.4 The Guidance is intended to be used by competent persons in the planning of new systems, and for the ongoing monitoring and reinforcement of existing systems, where appropriate.
- 2.5 Systems outside the scope of GS(M)R and those consisting solely of pipelines to dedicated loads are not covered by this Guidance. The planning of such pipelines would not, normally, require detailed analysis, or interact with other system users.
- 2.6 This Guidance does not cover the physical design, construction, operation and maintenance of systems, or any routing and environmental considerations covered by legislation other than that referred to above. Guidance on these matters is contained in IGE/TD/1.
- 2.7 All pressures are gauge pressures unless otherwise stated.
- 2.8 Italicised text is informative and does not represent formal Guidance.
- 2.9 Appendices are informative and do not represent formal Guidance unless specifically referenced in the main sections via the prescriptive terms "should", "shall", or "must".