

SGN Third Party Connections Briefing Note 14

(UIP Design submission requirements)

1 Introduction

SGN Third Party Connections appraise Design submissions from both independent Gas Transporters and Utility Infrastructure Providers to ensure that system extensions and CSEP connection fittings adopted by SGN are safe and secure.

Under their respective Gas Transportation Licences, iGTs can own, operate and maintain independent gas networks, supplied from upstream Distribution Network mains. UIPs hold no such licences, therefore UIP-installed asset must be adopted by either an iGT or SGN.

iGT Design appraisal applies to only the connection fitting, connected to SGN Network mains and is considered an '*extension of SGN asset*'.

UIP Design appraisal applies to all elements of adoptable asset and infrastructure installed downstream of and including a connection fitting up to the point of the Emergency Control Valve (ECV), where SGN's jurisdiction ends.

UIP Design appraisal places safety as the primary driver and includes considerations for applicable Industry and SGN Policy, Specification and Regulation documents relating to but not limited to the following:

- Connection fittings
- Mains and Service pipework
- Mains and Service Routes
- Pipeline design pressures
- Pipeline depth of cover
- Pipeline proximities
- Ground types/pipelaying techniques
- Use of Sleeves/Carrier pipes
- Pipe insulation (*joints, fittings, coatings*)
- Valves (*M1, PIV, SIV, SEFV, ECV, IIV, TCO*)
- Meter locations and Service terminations

2 Regulation, Industry Policy and SGN Specification

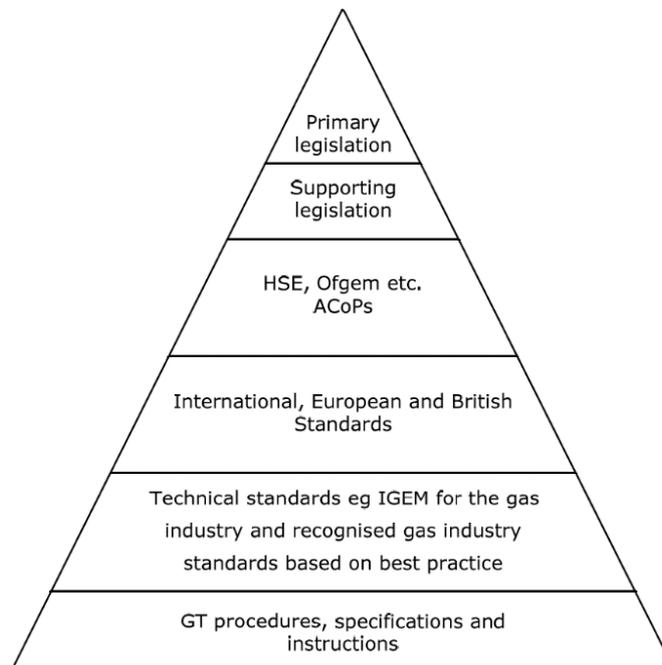
Safety takes the utmost precedence when appraising any design submission therefore a considerable amount of Regulation, Policy and Industry-specific technical standards apply to the location, specification, material and installation of gassed pipework.

Regulation, Policy and Specification documentation traditionally use the following terminology to enforce the severity of a required action or recommendation:

- **Must** – indicates a mandatory requirement.
- **Should** – indicates best practice and is the preferred option. If an alternative method is used, then a suitable and sufficient risk assessment must be completed to show that the alternative method delivers the same, or better, level of protection.

- **Will** – indicates the goal setting nature of the standards. In that context, ‘will’ reflects a statement of intent to meet the standard and is thus a mandatory requirement.

IGEM Technical Document IGE/TD/101 Section 3 outlines the relationship between Legislation, Policy, Specification and Procedure:



2.1 Regulation

Gas Regulation and Legislation are UK Government-approved documents which outline lawful requirements to be enforced relating to the installation and use of pressurised pipework, pressure vessels and associated fittings.

Primary Regulation documents which both SGN and third party UIPs and iGTs must adhere to are:

- Gas Act 1986 (*amended 1995*)
- Gas Safety (Management) Regulations (*GSMR*) 1996
- The Gas Safety (Installation and Use) Regulations (*GSi&UR*) 1998
- The Pressure Systems Safety Regulations (*PSSR*) 2000
- The Gas Standards of Performance Regulations (*GSPR*) 2005
- Pipelines Safety Regulations (*PSR*) 1996
- General Data Protection Regulations (*GDPR*)
- HSE Health and Safety and Work Act 1974
- Management of Health and Safety at Work Regulations 1999
- Constructions (*Design and Management*) Regulations 2015
- Health and Safety (*Safety Signed and Signals*) Regulations 1996
- Dangerous Substances and Explosive Atmospheres Regulations (*DSEAR*) 2002
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (*RIDDOR*) 2013
- Gas Appliances (*Safety*) Regulations 1995
- Building Regulations and Building Standards (Scotland) Regulations 2004
- Control of Major Accident Hazards Regulations 2015
- Control of Major Accidents & Hazards Regulations (*COMAH*)
- Utilities Act 2000

2.2 Policy

The Institute of Gas Engineers and Managers (*IGEM*) is a British engineering institution which review and publish universal, nationwide gas-specific Policy and Specification documentation which every GDN, iGT and UIP must consider and apply to their work. IGEM publish and review documentation deemed Policy, which ensures compliance to Regulation and Legislation.

IGEM policy documents are broken in different groups and apply to different areas of the industry as per the below:

- Transmission and Distribution (*TD*)
- Gas Measurement (*GM*)
- Utilization (*UP*)
- Guidance Legislation (*GL*)
- General (*G*)
- Safety Recommendations (*SR*)

Primary IGEM Policy documents that both SGN and third party UIPs and iGTs should consider are:

- IGEM/GM/6 - Non-domestic meter installations – Standard Design
- IGEM/GM/7A - Electric Connections for Gas Metering Equipment
- IGEM/GM/7B - Hazardous Area Classification for Gas Metering Equipment
- IGEM/GM/8 - Non-domestic meter installations. >6scmh, not exceeding 38bar
 - Part 1 – Design
 - Part 2 - Location, housings and compounds
 - Part 3 - Fabrication, installation, testing and commissioning
 - Part 4 - Operation & Maintenance
 - Part 5 - Notices & Labels
- IGEM/G/1 - Defining the end of the Network, a meter installation and installation pipework
- IGEM/G/4 - Definitions for the gas industry
- IGE/G/5 - Gas in multi-occupancy buildings
- IGE/GL/5 - Managing New Works, Modifications and Repairs (*Comm 1783*) (*G17 / PS5*)
- IGE/GL/6 – Safe control of operations for gas networks
- IGEM/SR/15 - Integrity of safety-related systems in the gas industry
- IGEM/SR/25 - Hazardous Area Classification for Natural Gas installations
- IGEM/SR/28 - Trenchless Techniques
- IGEM/TD/101 - Management of UIP activities
- IGE/TD/3 - ST & PE Pipelines for gas distribution
- IGE/TD/4 - ST & PE Gas Services & Service Pipework
- IGE/TD/13 - Pressure regulating installations for NG, LPG, LPGA
- IGEM/TD/16 - Biomethane Injection
- IGEM/TD/17 - Steel & PE Pipelines for biogas distribution
- IGEM/UP/6 - Application of compressors to Natural Gas systems

2.3 Specification

SGN publish its own policies, specifications and industry standard documents, derived from relevant industry level policy and regulation. These are unique to SGN and may differ to those of other GDNs but are in place to ensure compliance with regulation and legislation and reinforce SGN's safety case.

SGN Policy, specification documentation and Safety Engineering Instructions and Bulletins are collated on the SGN Safety Management Framework (SMF) and where applicable are warranted, can be requested by Email SGN Third Party Connections.

Primary SGN Policy and specification documents that both SGN and third party UIPs and iGTs should regularly consider are:

- SGN/SP/NP/14 - The Design of System Extensions, Connections and Services <7bar
- SGN/SP/NP/10 - Defining Pipes as Mains, Services or Network Risers
- SGN/PR/NP/38 - Management procedure for below 7bar PRIs
- T/PM/MSL/1 - Management Procedures for Mains & Service Laying
- T/PM/AV/1 - The Assessment and Validation of UIP Designs
- SGN/PM/ECP/2 - Management Procedure for Cathodic Protection of Buried Steel Systems
- SP/C/W/5 - Field Applied External Coatings for Buried Pipework and Systems
- *GDN/PM/GT/1 - Requesting Gas Service Pipe Pressure and Capacity Information from GTs
- *GDN/PM/GT/2 - Requesting a GT to Authorise the setting and sealing of regulators, safety devices, meter bypass & approve meter housing
- *GDN/PM/GT/6 - The Approval of Gas Supply Meter Housings & Accommodations
- SGN/PR/RL/2 - Work Procedure for Network Risers and Lateral Pipework – New Construction, Replacement and Alteration
- T/PR/SL/1 – Work procedure for Service laying up to and Including 63mm Diameter at Pressures up to and including 2 Bar
- SGN/SP/SER/8 - Specification for Service Terminations
- MG/P/S5 - Management Procedure for managing New Works, Modifications and Repairs
- MG/P/S7 - Approved list of design approvers and appraisers

**These GT documents have been taken into the remit of the Energy Networks Association, but processes are still reviewed and owned by respective GDNs.*

The aim of UIP Design appraisal is to reinforce SGN's safety case of limiting the amount of uncontrolled gas on a service pipe, that being inlet pipework, upstream of an ECV.

3 SGN Design Appraisal

3.1 iGT design submission

Pipelines downstream of a CSEP connected onto SGN's network are owned and operated by an iGT, but SGN will still undertake design appraisal of the site before approving the works.

The only element of the site that SGN will own is the physical connection fitting at the CSEP, as this is connected onto the existing Network and is deemed an extension of SGN's asset.

To this end, NP/14 tables A.9 and A.10 must be used by a third party to identify a suitable connection type for the CSEP, with any connections used that are outside the remit of NP/14 requiring confirmation via a 'Kitemark' certificate and approval for use by an SGN Policy Engineering Manager, in line with Gas Industry Standard documents GIS/PL2 (1-8).

See SGN Third Party Connections Briefing Note 26 (*Non-Standard connections*) for further information.

SGN advise on the minimum '*offtake*' pipe sizes that an iGT should use for their CSEP site as per NP/14 table A.4, based on the pressure tier and the load. Figures shown in Table A.4 are however only mandatory for SGN-adoptable asset, should an iGT decide to increase or decrease their offtake size, this is done so at their own commercial risk and SGN cannot stop the connection proceeding.

3.2 UIP Design submission

UIP Design appraisal is the most involved and nonlinear process which SGN Third Party Connections undertake and requires a number of industry standards, specifications, policies and regulatory documents to be applied.

SGN Management Procedure AV/1 '*The Assessment and Validation of Data and Information Provided by Utility Infrastructure Providers for New Mains and Services*' outlines the requirements for approving a UIP design submission as fit for purpose and therefore adhering to relevant regulation, policy and gas safety specifications.

AV/1 section 5 states:

'Fit for purpose at the submission stage includes, but is not limited to, the following:

- *Assessment of the pipe layout (including sizes, lengths and materials)*
- *Risk assessment of the design (including route, service entry, demand assumptions)*
- *Assessment of method statements, quality assurance procedures, safety management systems where the UIP is not registered under the Industry Registration Scheme'*

'Risk Assessment of the design' relates to the application of relevant Regulation, Policy and Specification documents by SGN Third Party Connections to UIP Design submissions, as listed in this Briefing Note.

It is recommended that UIPs specify applicable Policy and Specifications considered for design submissions, with supporting evidence included on the design drawing.

IGEM Specification TD/101 section 6 '*Detailed Design*' should be used by third parties to ascertain requirements of Design submissions and the relevant Specification documents that apply to the specific elements of a design.

NP/14 is the main SGN specification document used to appraise the basic composition of a UIP design - See SGN Third Party Connections Briefing Note 4 for further guidance.

Full design submissions should accompany FM138a Fastrack Requests. FM138 Non-Fastrack Requests should accompany the submission of a Quotation Acceptance – Design Submissions which accompany FM138 Non-Fastrack Requests may not be approved upon issuance of a Quotation, due to outstanding information, only available as part of a formal Quotation (*Connection source pressure, viability of connection point location, Ramp Rate, Reinforcement or alternative connection point requirement*)

3.2.1 Restrictions

SGN do not adopt >7bar High Pressure Transmission infrastructure.

Where works are to connect onto >2bar, Intermediate Pressure systems, SGN Management procedure PS/5 must be followed – See SGN Third Party Connections Briefing Note 20 for further guidance.

SGN do not permit installation of dual Medium Pressure services, nor can Medium or Intermediate Pressure services terminate internally to an occupied building.

Risers, Laterals and Manifolds which rise above ground cannot be Polyethylene.

3.2.1 UIP New Supply Design submissions

Design Submissions for new Mains and Service installations should consider all applicable policies, specifications and industry standard documents. At a minimum, New Supply Design submissions should include the following:

- Industry standard scaled Design drawing (A4 or A3)
 - North Point
 - Existing SGN Infrastructure
 - GIS Geographical data (*permanent structures, roads, scalable reference points*)
 - Connection Point location, Easting and Northings
 - Route of Main and Service Pipework
 - Sleeves, protective plates location and BS standards details, if applicable
 - Meter/Kiosk locations and specifications (*either Kingsley Plastic or non-standard*)
 - Kiosk or meter room ventilation details
 - Internal meter room details (*to comply with IGEN GM/8 and GM/7*)
 - Meter Kiosk protective measures, and BS standards details
- Pressure Drop details for all connections and pipework (*Mains, Risers, Services, Laterals*)
- SR/25 Hazardous Area Classification drawings, if applicable
- Identification of Atypical Load or Booster/Compressor information, in the form of NP/14 C.1 and C.2 tables, if applicable

Where required, SGN Easement proformas and Land Registry-compliant drawings should accompany UIP design submissions – See SGN Third Party Connections Briefing Note 18 for further guidance.

3.2.2 UIP Disconnection/Alteration Design submissions

Design Submissions for Service Alterations and Disconnections should consider all applicable policies, specifications and industry standard documents. At a minimum, Alteration and Disconnections Design submissions should include the following:

- Industry standard scaled Design drawing (A4 or A3)
 - North Point
 - Existing SGN Infrastructure
 - GIS Geographical data (*permanent structures, roads, scalable reference points*)
 - Disconnection/Alteration Point location, Easting and Northings

- Entire length of service *'hatched'* to show the disconnection route, to the parent main or point of alteration.
- MPRNs for all supplies to be Disconnected or Altered
- Details of existing supply demand, if applicable

The Gas Safety Installation & Use Regulation GSI&UR (*Part C*) states that service pipework should be disconnected *'as near as is reasonably practicable to the main or storage vessel and that any part of the pipe or pipework which is not removed is sealed at both ends with the appropriate fitting.'*

Should a service be required to be partially disconnected and reused for a future development, it should be made clear on the Disconnection Design drawing that the intention is to reutilise the supply at a later date, within at least 12 Months (*as per GSI&U Regulations*). The disconnection submission should preferably be submitted in conjunction with a new supply, extending from the *'cap end'* left as part of the disconnection.

4 Pressure Regulating Installations (*PRI*) commissioning

Utility Infrastructure Providers (*UIPs*) accredited under the Gas Industry Registration Scheme (*GIRS*) are permitted to Design, Construct, Connect and Commission Mains and Services to SGN's <7bar Network and where applicable, can install Pressure Regulating Installations (*PRIs*) but cannot undertake PRI commissioning.

Should a design submission for adoptable asset incorporate a PRI, the works must be passed to SGN Maintenance to liaise with the UIP and SGN Network Control to commission the PRI.

It is expected in the instance of an iGT CSEP Connection, that any PRI will be located downstream of the CSEP Connection point and therefore owned and operated by the adopting iGT, however where SGN are to adopt a PRI; the inlet, PRI and a small section of at least 10M of PRI outlet pipework will be adopted by SGN which will undergo relevant procedures as per SGN Management Procedure SGN/PM/NP/38 and must be commissioned by SGN.

Third Parties must provide full schematics of proposed PRI installations and complete their requirements under NP/38.

The cost for SGN to commission a PRI is currently £0

Where a PRI is proposed to be adopted by SGN, the third party should provide specifications and drawings of the governor and completed Risk Assessment checklists to enable SGN to commission the PRI, as per SGN Management Procedure NP/38. The Project Managing UIP, under GIRS, will be acting as the *'Project Planner'* as specified in NP/38 Appendix B.

The UIP is expected to have satisfied the following requirements of SGN Management Procedure SGN/PM/NP/38 Appendix C before submission of a Formal Design:

- Acquire Easement for an Operational Site
- PRI Design Sheet
- PRI Site Selection Risk Assessment
- Risk Assessment for Vehicle Impact Damage
- Vehicle Protection Data Capture Form

Third Parties can acquire relevant Forms for the above from the Third Party Connections Documents ZIP File available from www.sgn.co.uk.

Note - it is recommended that in the instance of a Non-Fastrack Submission, a Design Submission and relevant completed NP/38 Forms accompany Formal Acceptance of a Quotation, submitted to SGN Third Party Connections.

4.1 PRI Commissioning process

4.1.1 Pre-installation NP/38 appraisal

- UIP assesses viability of PRI location, size, potential issues, by completing a '*PRI Risk Assessment*' and '*Risk Assessment for Vehicle Impact*' forms
- UIP assesses design parameters of PRI, by completing a '*PRI Design Sheet*'
- UIP identifies Easement details for PRI Land Acquisition, by completing a '*Acquire Easement for an Operational Site Form*'

4.1.2 Design Submission

- UIP submits design submission, inclusive of PRI details as required under NP/38

4.1.3 Design Appraisal

- SGN appraise and approve the design submission, including a caveat that the third party cannot commission the PRI and SGN Operations will be in touch to arrange a time to undertake the required commissioning

4.1.2 Commissioning

- SGN Third Party Connections issue instruction to the local Operational depot, including specifications of the proposed PRI
- SGN Operations liaise with the third party to arrange a suitable date for SGN to attend site and commission the PRI
- PRI Commissioned, in line with relevant SCO approval