Cadent

Your Gas Network

Third Party Connections Delivery Framework

Issued: Oct 2023

Version Control

Approved by	TBC
Date of Publication	OCT 2023
Document Owner	Jadie Lawley
Document Author	John Fellows
Version Number	1

Document History

Description	Date	Document Number
New Document	Oct 2023	V1.0

Key Changes (Note: if too many to detail here use an appendix)

Section	Amendments	Version Number

Mandatory & Non-Mandatory requirements:
In this document:

Shall: 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, control of risks.

Comments and Queries:

Any comments or queries about the content of this document should be directed to:

box.DueDiligence@Cadentgas.com

Contents

1. Document Purpose

This document aims to provide a framework to enable individuals to navigate the connections process via the relevant technical documentation. This document in no way replaces and supersedes the safety and engineering technical standards, which must be complied with in full, any technical constraint or query shall be raised via the appropriate process (technical queries or deviations), these can be accessed via the Registrar. All works shall be carried out to the relevant contract(s).

2. Scope

This document provides an overview of the end-to-end processes that are considered mandatory and shall enable connection(s) to Cadent's Network. This document also provides detail on charging elements for a complex connection assurance as determined under GL/5 Complex Works and Cost Reimbursement. This document is limited to pipeline and AGI construction up to and including 7bar MOP.

This document provides:

- Full guidance of the journey a new connection will need to undertake.
- Emphasise key accountabilities for validation of full design submissions from Utility Infrastructure Providers (UIP).
- Detail of Cadent's Assurance Charging framework, this gives Cadent the opportunity to recover costs against non-compliance, late or poor data submission and audit findings that may therefore require Cadent to support further.
- Requirements for all Complex connections, Power Generation, CNG fuelling station and >2 to ≤7bar connections.
- Requirements for consideration during the design of <2bar, including risk to the existing network particularly where the requirement for Formal Process Safety Assessment may be required.

Out of Scope of this document:

- Technical design submission requirements or checklists. These are developed and maintained under CAD/PM/RE/8 or other Cadent external technical documentation and made available as appropriate.
- >7bar connections carried out by Self-Lay Organisations (SLO) and shall be managed under CAD/SP/SLO/1, a Project Co-ordinator shall be assigned.
- Bio-Methane design and contractual requirements are not provided, a Project Co-ordinator shall be assigned.

3. Contractual Framework

The contractual framework for a connection to Cadent's network consists of three elements: the *General Conditions of Contract* (as appropriate), *UIP Connection, Service Disconnection and Service Alteration Agreement* or *Inter-Gas Transporter Connections Agreement*, and the site-specific Quote, Quote Acceptance and Design Authorisation letter. The combination of these elements forms the contractual basis for each project.

Connections contracts

Cadent Your Gas Network

*All 3rd party connections are made subject to one of the GCCs below. Additionally, if the iGT/UIP is making the final connection, then the GCC applies, in conjunction with the relevant FCA.

Adopting party – iGT (CSEP) or Cadent	Load	Are Cadent making the final connection? (Y/N)	Contract(s)				
			GCCs			FCAs	
			General Conditions of Contract for a self-lay [system] below 2, 196, 000 kwh	General Conditions of Contract for a self-lay [system] Above 2, 196, 000 kwh	General Conditions of Contract for connected offtake systems	UIP Connection, Service Disconnection and Service Alteration Agreement	Inter-Gas Transporter Connections Agreement
Cadent	Below 2, 196, 000 kwh	Y	✓	×	×	×	×
		N	✓	×	×	✓	×
	Above 2, 196, 000 kwh	Y	×	✓	×	×	×
		N	×	✓	×	✓	×
iGT	N/A	Y	×	×	✓	×	×
		N	×	×	✓	×	✓

Figure 1: Contractual framework and which are required for a Connection to take place.

All iGTs and UIP's wishing to undertake a final connection of their works on behalf of the end consumer shall enter the above contract(s) with Cadent. The contract(s) set out the terms and conditions to which connections shall be undertaken and set out the obligations of both the UIP and Cadent.

Any organisation wishing to carry out the connection, alteration, or disconnection to the Cadent's network must also have signed the *UIP Connections, Service Disconnection and Service Alterations Agreement*, or the *Inter-Gas Transporter Connections Agreement*, or be a UIP working as an agent to a GT that has signed the agreement. Additionally, the Authorising Engineers (AE) or Competent Persons (CP) working on behalf of the organisation must be registered under, and compliant with, our Safe Control of Operations (SCO) process. To enter the above contract the UIP shall hold accreditation with the Gas Industry Registration Scheme Operator for the relevant accreditation within *Gas Industry Guidance* document (GIG/2)

Where the above contract has not been signed, Final Connections, Service Alteration and Service Disconnection shall be prohibited.

4. Accreditation

4.1 GIRSO

GIG/2 - Role of Interaction with Cadent

LRQA are the operator of the Gas Industry Registration scheme (GIRs), the Gas Industry Registration Scheme Operator (GIRSO). As the operator LRQA are responsible for ensuring that Gas Industry Guidance (GIG) is adopted and followed by the UIP community. The document sets out the roles, responsibilities, processes, and procedures that companies aspiring to become a UIP must have.

LRQA also manage the surveillance audit programme, as required by GIG, for existing UIP's and the registration of new UIP's against the accreditation they hold or aspire to hold.

LRQA manage an investigation process where disputes between the provider and the adopting party cannot be resolved between them. These investigations will be carried out into the specific matter and any resulting findings shared with the adopting utility and tracked through to closure by LRQA with the UIP.

LRQA host and manage two industry forums that allow the GIG document to be reviewed and updated to ensure that it remains fit for purpose. These are the Gas Industry Registration Scheme Advisory Panel (GIRSAP) comprising of Network Owners (GDN's and IGT's) alongside representative(s) of the UIP GIRS Forum. The GIRS Forum is attended by the UIP's who are registered under the scheme and provides a forum to discuss issues faced, flag concerns and provide feedback to the advisory panel.

4.2 GIRSAP

Quarterly advisory panel chaired and administered by LRQA, for GDNs and UIP representatives to review both technical and non-technical issues via an open forum.

This panel meets quarterly to discuss the GIRS processes and GIG Procedure. The panel provides an opportunity for UIPs to raise issues to a collective audience where these may be industry issues and not faced with a single GDN. The panel also sets itself focus areas for improvement within the GDNs to ensure that GDNs are providing the required services to UIP's who work on their networks.

The panel provides an opportunity for the GIRSO to advise the GDNs on the outcome of its surveillance programme on the accredited UIPs and areas for concern or focus that may be arising.

4.3 GIRS Forum

UIP forum to which GDNs can attend to brief updates by invite or upon request.

The GIRS Forum provides an opportunity for information to be passed to the UIPs from the advisory Panel and for issues to be raised to the Panel. The forum allows LRQA to provide UIP's with updates from the industry such as IGEM document updates and GDN forms such as SCO MM1 & MM2. It also delivers the LRQA Report that details the number of active companies, and the outcome of the surveillance programme it has carried out. Providing feedback on the major deficiencies that have been identified and rectification.

5. Document Guidance

Cadent will issue updated documents as per the below list via a monthly registrar report. These documents will support updated versions of accepted and released standards.

5.1 Briefing Notes

Cadent will from time-to-time release and or update briefing notes. These notes will cover process / technical changes. For complex topics a webinar with the UIP community shall be afforded, which will ensure an opportunity for Q&A's that will alleviate any ongoing concerns. Publications will also be made available on Cadent's website, issued to the GIRSO and Distribution Lists.

These briefing notes will have the intention of shaping the processes and procedures of how UIP's interact with Cadent. These will be reviewed on an annual frequency or as a result in changes to working or best practices.

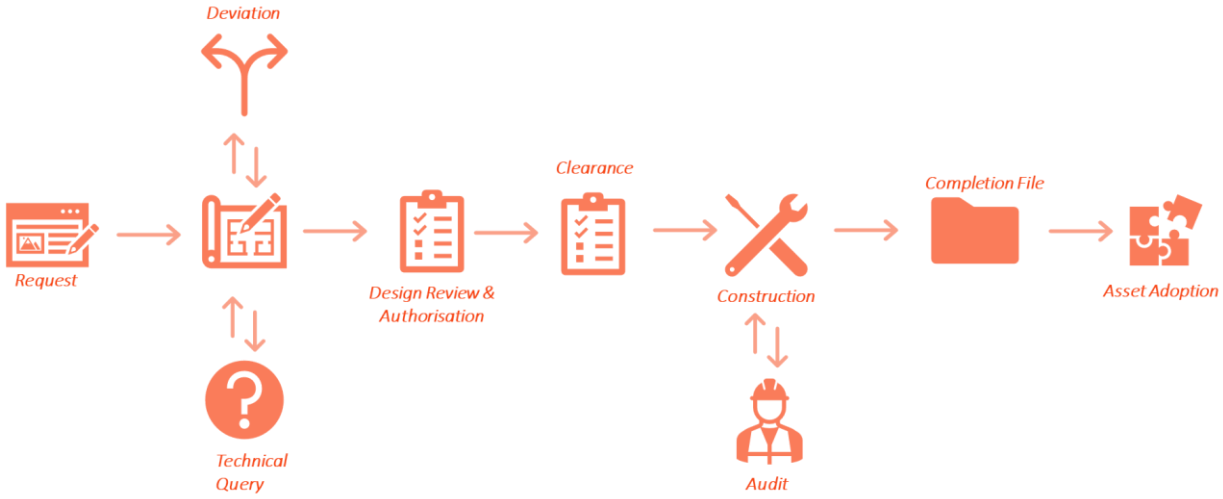
5.2 Engineering Bulletins

Cadent may choose to update documents by engineering bulletin due to changes in working practice, new products to close the gap for changes until the next document review. They are used for rapid communication of learning from incidents or product recalls etc.

Where appropriate these will be made available to the community to ensure that any information Cadent has that can affect the products used, or affecting the integrity of networks under construction are shared in a timely manner.

6. Cadent Processes / Documentation

6.1 Process



6.2 Application

6.2.1 Land Enquiry

A Developer Land Enquiry identifies the availability of capacity and pressure at a customer's proposed connection point if provided, it indicates whether reinforcement is required to support the submitted load. Enquiries are for any load and can be submitted by any customer. The customer will be advised of an available connection point and where reinforcement would be required to supply a requested load. This product is a pre-curser to a Land Enquiry or quotation, this does not have an associated FM document.

A Land Enquiry identifies the availability of capacity and pressure at a customer's proposed connection point. It indicates whether reinforcement is required to support the submitted load, and location of the charging point. These enquiries are for loads which fall outside of the standard load/pressure tables within CAD/SP/NP/14E. If a Land Enquiry indicates that reinforcement is not required and there will not be CHP, boosting or compression equipment on site, a fast-track application can be submitted to secure the capacity.

FM suite documents *- FM172 (IGT) FM137 (UIP).*

6.2.2 Detailed Analysis Study (DAS)

A DAS is an in-depth analysis study looking at the network surrounding the proposed site in its entirety, to identify suitable points of connection, exploring all reinforcement and alternative to reinforcement options to allow connection to be made to the network. A DAS can be initiated by:

- A GT/UIP or developer (Exit connection)
- Consultant / developer (Entry connection)

The DAS product was created to aide customer choice and enable a customer to make an informed decision in relation to their project. The DAS Application form is available on the Cadent website.

6.2.3 Heat Recovery and Material Selection

For 2-7 barg (IP) enquiries and request to connect, Cadent will carry out heat recovery calculations to determine where the temperature of the gas recovers to 0°C by the time it reaches the proposed connection point to our pipeline. This information should be used to ensure that the material selection and design for the connection is in accordance with IGEM/TD/3 & GIS/PL/2-8 which covers PE pipelines operating at a temperature of 0°C to 20°C inclusive.

The heat recovery tool shall be applied to any connection request where the consideration for <0°c may apply. The calculations will be provided within the returned planning data sheet (FM352). The UIP shall use the information provided to apply a suitably considered material choice for the proposed connection location.

FM suite documents *– FM352 (Planning Data Sheet)*

6.2.4 Quotation

Quotations are issued by Cadent for 2 reasons, the first is where the UIP has requested for Cadent to make the final connection of fit for purpose assets onto its network. This quote shall be for the time and materials required to connect and commission the agreed network.

Cadent will also issue quotations where the network does not have the required capacity to support the connection and load being requested. A charging point shall be identified, and the economic test applied to determine the contribution from the UIP/IGT to the reinforcement works.

FM suite documents *– FM153 (IGT) FM138 (UIP).*

6.2.5 Fast Track

A Fast-track is a self-quote request and is only applicable for exit connections with loads which fall within standard load/pressure table A2 within CAD/SP/NP/14E for schemes which do not contain CHP, boosting or compression equipment on site, or from a Land Enquiry/Exit DAS which indicates reinforcement is not required. Biomethane entry connections utilise the fast-track route following a completed Entry DAS and contract(s) acceptance.

FM suite documents *– FM153a (IGT) FM138a/FM138b (UIP).*

6.2.6 Definitions of Sufficiently Complex

For guidance and support on projects deemed Sufficiently Complex please refer to Cadent's Connection Charging Statement 4b, available here.

6.2.7 Sufficiently Complex - Connection Only

These occur when the connection is to be made to an above 2bar system (Intermediate Pressure/High Pressure), or where there are known obstacles on the proposed route of the new apparatus and the anticipated total cost of the construction works including applicable overheads is expected to exceed value applied in Connections Charging Statement (4b), or where the total construction costs including applicable overheads, based on experience of projects of a similar nature, is expected to exceed the valued applied in Connections Charging Statement.

6.2.8 Sufficiently Complex - Reinforcement

These occur when the reinforcement solution identified at quotation stage, includes any apparatus that is designed to operate at above 2bar, or where there are known obstacles on the proposed route of the reinforcement apparatus and the anticipated total cost of the construction works including applicable overheads is expected to exceed value applied in Connections Charging Statement, or where the total construction costs including applicable overheads, based on experience of projects of a similar nature, is expected to exceed value applied in Connections Charging Statement.

6.3 Design Review

6.3.1 Compass Analysis

When a customer identifies that any of the following equipment, is to be installed on their proposed design: Combined Heating & Power (CHP), Boosters, Compressors or if the site operates as a Power Generation site, Compass Analysis is to be undertaken in accordance with CAD/SP/NP/14E (appendix C4) to assess the impact the equipment will have on the network, during start up and shut down. As part of the quotation response the stipulation on operation will be recorded with the agreement from the customer provided as part of the acceptance.

If a design is not available at the time of quotation, Compass Analysis will be undertaken when a full design submission is received, as part of the quotation acceptance. In this scenario, stipulation on operation will be recorded and the customer shall be required to agree to this prior to design authorisation being provided.

6.3.2 Design Authorisation

Design validation is completed on all accepted project design submissions, to ensure that designs submitted to Cadent are fit for purpose and meet policy requirements. Design authorisation is provided within timescales outlined in the *Gas Transporter Standard Special License Condition* D10, available online here and agrees proposed works for construction. However, for projects where further design approvals are required i.e., IGEM/GL/5, must be gained independently of design authorisation and serve as the final authorisation notice, these will be stipulated in the body of the design authorisation.

The customer is advised to not lay at risk, prior to receiving full design authorisation.

FM suite documents *- FM163 (Design Approval) FM140a (Variation Approval).*

6.3.3 GL/5 Complex Works

Complex connections are defined as IP (Intermediate Pressure) which shall require the IGEM/GL/5 process to be applied, this may include governor works below 2 bar and shall be discussed with a project co-ordinator at the point of request. Each new Complex project shall have a Project Co-ordinator assigned to facilitate constructive engagement with Cadent through the project life cycle. The role of the Project Co-ordinator is to support all technical and planning queries through the life of the project. It also allows Cadent the opportunity to challenge design considerations that may impact the long-term life of the asset and maintenance.

See IGEM/GL/5 for guidance on,

- Civil/Structural
- Electrical
- Instrumentation
- Mechanical
- Corrosion Protection
- Software
- Process
- Safety

If any of the above disciplines form part of a request in accordance with IGEM/GL/5, only suitably competent Approvers and Appraisers shall be considered acceptable for design progression.

*All Bio-Methane connections shall utilise the CAD/PM/G/17 process for which guidance shall be provided via your assigned project Co-ordinator. This would not include the export main unless >2bar which would invoke the IGEM/GL/5 complex process to be followed. All <2bar mains laying activities shall still be expected to meet the requirements of this document.

6.3.4 Governor

Cadent have published CAD/PM/PRI/2 which specifies the process and information that shall be adhered for the installation of governors for adoption by Cadent. This document covers feasibility, design, procurement, fabrication, transportation, storage (supported by supplement to GIS/E34) and construction. Your Project Co-ordinator shall provide the opportunity to discuss project impacts at a kick-off meeting to be arranged by the customer in conjunction with the Project Co-Ordinator.

Associated documentation but not exhaustive to,

- CAD/PM/PRI/2
- IGEM/TD/13
- GD/SP/E/2
- CAD/SP/E/34

6.3.5 Easement Requirements

There is no general right to enter onto private land to lay or maintain gas apparatus without the permission of the landowner. Cadent requires that specific legal rights must be negotiated and agreed

with the landowner. It is the responsibility of the UIP to identify the requirement and secure such rights. Cadent have published guidance on when it considers there to be a requirement for an easement, the standard legal terms are also available on our website. Where outstanding Easement agreements are still outstanding Clearance to Proceed shall not be granted.

All guidance notes can be found via https://cadentgas.com/services/3rd-party/igt-uip/igt-uip-document-library.

6.3.6 Deviation Requirements

Deviation should be submitted to Cadent at the earliest opportunity by the UIP/IGT, failure to do so will restrict the review and authorisation of design and or Part C USER acceptance. Retrospective deviations will not be accepted.

All deviations shall have a 10-day SLA applied from point of receipt into Cadent .boxes, if at application this should be submitted to box.igt-uipapplications@cadentgas.com, during the design authorisation phase networkdesign@cadentgas.com, for issues found on site requiring a quick turnaround box.DueDiligence@cadentgas.com, deviations relating to GL/5's should be submitted to box.complexexitconnections@cadentgas.com and the Project Co-ordinator.

Deviations shall only be sought where there is no Engineering or Technical alternative to carry out the required works. Deviations shall not be considered where alternatives are available.

6.4 Construction

6.4.1 Weld Procedure Approval

The UIP/IGT must submit welding procedures to Cadent for review and approval prior to work taking place, these must be approved prior to works taking place. Use of the weld procedure template (WPS) to summarise the submission should accompany the supporting information. Once submission is reviewed, the welding procedure approval document will be issued with approval status. Connection shall not take place without formal approval of these procedures. Guidance can be sought via your Project Co-ordinator and Welding briefing note.

6.4.2 Whereabouts

There is a requirement under IGEM/TD/101 Ed. 3 for weekly whereabouts to be submitted to the adopting GT by the UIP. This is to provide the opportunity for the GT(Cadent) to undertake site audits on construction activities prior to commissioning and adoption.

A template has been developed to provide clear guidance on the information required the for the 'Weekly Whereabouts' and can be requested from Box.DueDiligence@cadentgas.com.

Where projects are of significant complexity or duration it may be appropriate for other forms of whereabouts' submission to be agreed on an exception basis. This should be discussed with the Project Co-ordinator.

It is anticipated that one project may require multiple lines representing construction activities in the construction plan.

Weekly whereabout are to be submitted Cadent via Box.DueDiligence@cadentgas.com on a weekly basis, 5 working days prior to the whereabouts commencing.

6.4.3 Control of Operations

All works shall apply Safe Control of Operations (SCO), where it's deemed a requirement in the form of Routine Operation (RO) or Non-Routine Operation (NRO) in accordance with IGEM/GL/6 edition3. Where the requirement for these is not stated a Start Date Notification (SDN)

A 5 working day turnaround SLA will be required for all RO and NRO activities to be reviewed and granted clearance to proceed. Where a review is required inside of 5 working days an 'Early Start Request' shall be made and supported with comprehensive justification. This request shall also need to have a formal early start request acceptance submitted from the Connections team (networkdesign@cadentgas.com) to support the request progression through Network Control.

SDN for below <63mm construction activities, shall require approval for clearance to proceed via the 3rd Party Connections team, this has a review SLA of 3 working days.

All CP and AE activities shall always require in date EUSR records.

All works shall have Clearance to Proceed (CtP) granted by Cadent, if it is identified via an audit or alternative route that (CtP) was not granted, a full investigation response shall be expected to be delivered by the UIP in question. This is likely to drive further audit requests that may be charged back for complex works.

Each NRO submission should be available for review at the earliest opportunity for internal review, this shall allow for:

- CP/AE audit requirements to be planned.
- Adequate planning and a consistent approach to each submission.
- Adequate time to return comment and update procedures.
- Adequate time allowed for contingency procedures to be planned and checked.

Where authorisation for clearance to proceed has been identified as being required and not complied with an investigation shall be initiated by the UIP, Competent Person and Authorising Engineer to provide to Cadent a narrative explanation as to how works have been carried out without the appropriate authorisation. Where further action is warranted, this may result in:

- Request for review and update of relevant RAMS by the UIP
- Escalation to LRQA for non-compliance with industry standards
- Notification to the Network Controller for increased or modified auditing of CP/AE
- Enhanced Due Diligence audit regime

6.4.4 Due Diligence Audit

Cadent will carry out auditing of construction and commissioning activities to assure that the asset that is vesting in, or adopted by the Cadent is fit for purpose.

These audits will be scheduled from the information provided in the weekly Whereabouts. These audits will cover all activities carried out by the UIP across multiple works, from excavation through to commissioning of the pipeline.

Should the UIP fail to include a project on the whereabouts and as a result on site works are identified to be in progress from a Construction Site Self Survey (CSSA) the UIP shall provide whereabouts of remaining works, to enable the adopting party to perform a follow-up due diligence audit.

Cadent shall endeavour to ensure that Audit's identifying rectification works shall be notified whilst on site to the team leader and formally to the company within 24 hours. The UIP/IGT shall provide Cadent with company lead(s) who are to be contacted when issues are identified. This can either be a central compliance person or operational leads, where geographic areas are split, please provide the postcodes or regions they are responsible for.

6.4.5 Construction Site Survey App (CSSA)

CSSA is defined as a platform for the collection and recording of on-site data, owned, and maintained by Cadent. All connection jobs shall have a completed survey carried out by the UIP/IGT via a suitable onsite competent person.

All data collected is for the sole purposes of evidence of construction to required standards and assets constructed are fit for purpose when commissioned.

The use of the CSSA benefit both parties (Cadent and UIP), it will assist in identifying issues during construction whilst operations are ongoing to minimise the impact of rectification works being required. Rectification of site works post completion are both costly and time intensive.

The CSSA will be used to record works across all pressure tiers to provide qualitive information on the construction of pipeline activities and assets. Targeting key construction activities to enable review of the construction and interaction between new construction and existing buried plant to ensure maintenance activities are still achievable. The output of this application will form a part of the Due Diligence programme that Cadent operates.

Cadent reserve the right to utilise the captured data in the CSSA together with the Completion File to support the closure of projects and the issue of a Final Completion Letter that may have otherwise been unachievable.

6.5 Completion

6.5.1 Completion File

Cadent shall be provided with a completion file by the UIP/IGT containing information in accordance with IGEM/TD/101. Completions files shall be submitted to Cadent no later than 14 calendar days from the commissioning date, as per the contractual terms and conditions.

Failure of submission or repeated poor quality of submissions with opportunity to improve ignored, shall put the UIP at risk of escalation to LRQA for breach of accreditation. Cadent also reserve the right to suspend application of new works under the Final Connections Agreement until issues are satisfactorily resolved.

Challenges by the UIP that demonstrate Cadent may have inadvertently created a rejection under a misguided or false premise should be submitted to networkdesign@cadentgas.com where this is in relation to works carried out under IGE/GL/5 the Project Co-ordinator shall act as the point of escalation.

Where the project is related to IGEM/GL/5 and or CAD/PM/G/17 the assigned project Co-Ordinator shall support the UIP to progress and close the Management of Change records through to Part F Competent Design Authority closure.

6.5.2 Final Completion letter

Once a full and complete pack has been processed with no rejections outstanding a Final Completion Letter shall be issued to the associated UIP/IGT. Where IGEM/GL/5 has been applied, Part F sign off including, Competent Design Authority (CDA) acceptance, will also be required prior to issuing of the Final Completion Letter.

7. Design and Certification Review Process

Through the Project Design and Certification pack review cycle, Cadent shall utilise a single control document for issues and challenges identified together with resolutions where applicable. Both Cadent and the UIP will update a common control document and accurately record through to design or certification acceptance.

Minutes for stakeholder meetings that discuss design and construction actions should be clearly documented as a record of discussion and technical agreements. Whilst it may be accepted not all informal correspondence and guidance will be formally documented, Cadent shall only cater for revision to designs through appropriate Variation processes and where standards cannot be complied with, or formal guidance sought through Deviations and Technical Query processes.

Structure to submitting a <7bar certification file shall be made available at design authorisation and Cadents external website, any queries or clarifications contract the assigned Project Co-ordinator.

7.1 Design, Challenge and Review

Cadent will undertake a design challenge and review of Part B approved and appraised designs to ensure that Cadent specific requirements have been understood and implemented. Cadent will populate a comments tracker that provides the document reference comment and status, it is advised that the UIP respond on this tracker to ensure that one version is used as a record of changes.

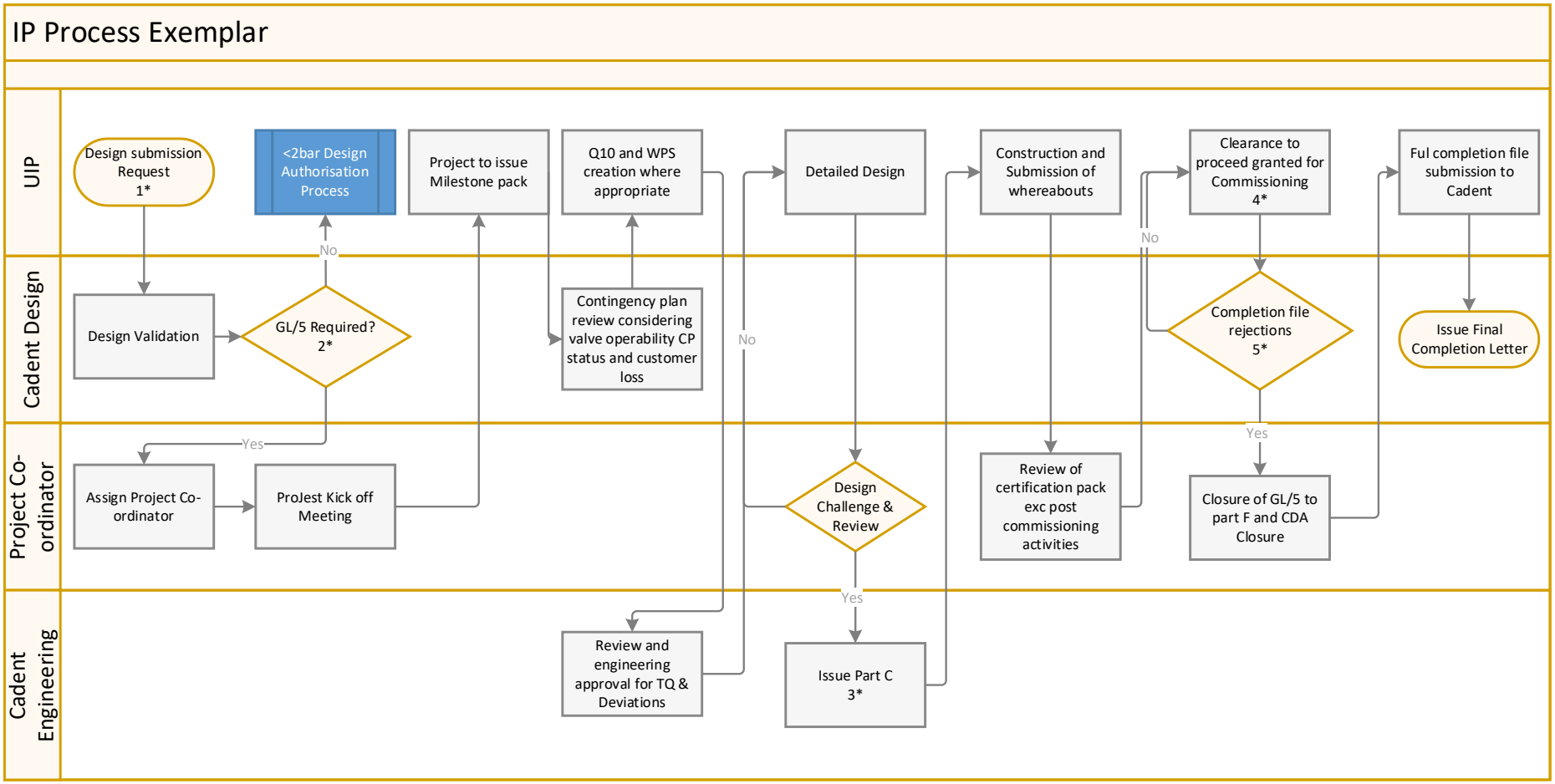
Following completion of the challenge and review, the design will be put forwards for Part C User acceptance.

Due to differing complexities of designs, it shall be expected the UIP/IGT allows for a 10-working day SLA for all IGEM/GL/5 Design pack review comments have been accommodated for in any reasonable project timeline, Cadent shall always look to return design comments at the earliest opportunity.

If a design variation has been made post Part C approval, the review process shall restart, allow for a further 10-day SLA, this shall enable Cadent to plan and manage all work requests on a consistent basis. Cadent acknowledge certain restrictions and permit requirements may push this SLA, in the case of this you should engage the Project Co-Ordinator to assist the process.

7.2 Complex Process (exemplar)

The below process map provides a visual detail for whole life journey of a connection project to the Cadent Network, accreditation, and submission of a design through to final connection. Each decision point/Stage gate shall be monitored and reviewed by your nominated project co-ordinator and shall be clearly defined in your milestone plan which is expected will be delivered to Cadent pre-construction for all complex activities.


IP Process Exemplar
UIP
Cadent Design
Project Co-ordinator
Cadent Engineering
Design submission Request 1*
<2bar Design Authorisation Process
Project to issue Milestone pack
Q10 and WPS creation where appropriate
Detailed Design
Construction and Submission of whereabouts
Clearance to proceed granted for Commissioning 4*
Ful completion file submission to Cadent
Design Validation
GL/5 Required? 2*
No
Yes
Contingency plan review considering valve operability CP status and customer loss
No
Completion file rejections 5*
No
Yes
Issue Final Completion Letter
Assign Project Co-ordinator
ProJest Kick off Meeting
Design Challenge & Review
Review of certification pack exc post commissioning activities
Closure of GL/5 to part F and CDA Closure
Yes
Review and engineering approval for TQ & Deviations
Issue Part C 3*

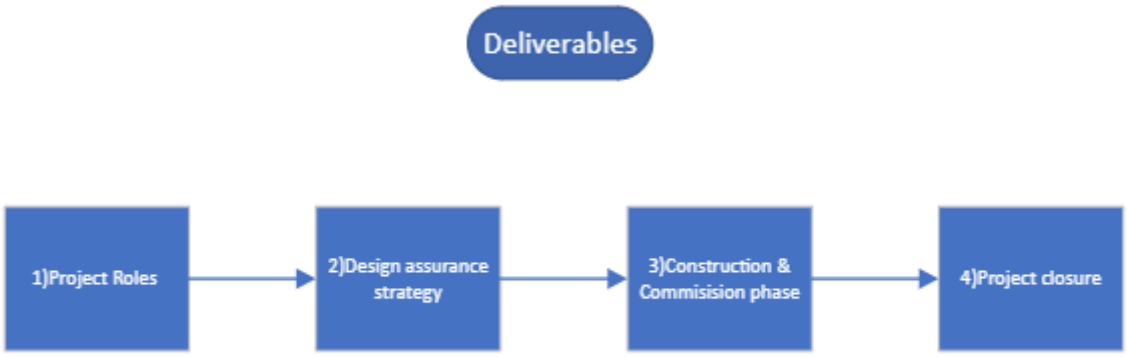
1. UIP's must hold the relevant accreditations for the works being proposed.
2. IGEM/GL/5 shall be applied where the document requires.
3. Part C acceptance must be granted prior to works being undertaken, Cadent cannot take responsibility for any works that are carried out at risk.
4. CtP (Clearance to proceed) shall be required as per SCO suite of documents, likely causes for rejection are but not exhaustive to,

    - Unsealed easement rights.
    - NRO contingency analysis will be considered not valid due to inaccurate dates or location detail.
    - Incorrect or expired competencies against CP or AE.
    - Pre-Commission certification pack not submitted in full.
    - WPS (Weld procedure specification) not approved.
    - Early start request process not followed.

5. Completion file data shall always comply with IGEM/TD/101 and FCA requirements, this shall ensure regulatory and industry commitments are to be met. A Final Completion letter shall be provided on acceptance that the asset is fit for purpose and has satisfied all specification and regulatory requirements via a fully vetted completion file, the GL/5 shall also need to be closed by the Competent Design Authority in Cadent Management of Change system.

7.3 Project Plan/Milestone & Delivery

At the onset of a complex project the UIP/IGT must deliver a clear scope and plan of works (Project milestones), this shall enable Cadent to plan and forecast workloads and track the project progress. It should include timeline of all expected key activities. All activities should consider and comply with CDM 2015 including the active project management applied by each UIP/IGT.



1) Project roles should consider all stakeholders as per CDM 2015 in the construction of the asset. Gas on date requirements must be provided when available at the earliest opportunity, operational requirements for Cadent may supersede on occasion the ability to deliver if this date is not provided with a reasonable timeline applied.
2) Design assurance strategy should provide a full E2E documentation of the project to include but not exhaustive to,

- Design risk register associated with the construction such as complex route and assurance applied to choose.
- Q10 Date requirements to enable Cathodic protection isolation.
- GL/5 project plan and timeline to consider all multi discipline requirements, where Formal Process Safety may be applied this must be detailed at the earliest opportunity.
- All commissioning activities

3) Construction and Commissioning phase should identify all key project milestones such as dates for lay, Q10, hot works, pressure testing and final connection dates. The UIP shall also be responsible for identifying and arranging all operational requirements such as Plant Protection, NRO contingency support, technical support for commissioning activities. This may be via the support of your nominated Project Co-ordinator.
4) Project Closure shall clearly identify known gas on date requirements and completion file submission dates to follow. NRO shall be closed with Network Control immediately and the onset of completed works to allow for an accurate date for completion files and not to withhold capacity on the network.

7.3.1 Supporting guidance

- Internal Engineering review (Part C/Technical queries).
- Operational support (Energy Operations).
- Plant protection and supervision for onsite requirements that does not impact safety critical maintenance.
- SCO contingency plan reviews to work alongside other proposed works and plan in any required remediations.
- Customer requirements i.e., gas on dates, where end customer contracts may be out of scope for Cadent, it is expected that consideration should be applied for expected Gas on date by end consumer and the impacts on a design plan and regulatory requirements.
- Commissioning date, this date shall consider contractual requirements and understanding of Cadent's commitments to assure, and review supplied timelines.
- The UIP/IGT must provide the Project Co-ordinator with regular updates concerning design proposal approval and appraisal, this shall allow for adequate USER delegate review and comment. Failure to meet project timelines will have the consequence of delayed review, Cadent in this circumstance cannot be held accountable for non-delivery of approval whilst we shall always endeavour to meet customer requirements.
- A clear scope of proposed changes should feed into updates, including key roles and accountabilities for the project works, including design, fabrication/ welding, testing, excavation, pipe lay, reinstatement and compliance checks is to be provided.

7.4 Delivery

At the outset of a complex project the UIP/IGT must provide a Connections delivery plan, this shall be populated and provided to Cadent that comprises all the interested parties involved in the project and should supplement your milestones. This should include (but not be limited to):

- Designer
- Procurement
- Fabrication
- Excavation
- Construction
- Testing
- Reinstatement
- Compliance checks
- Commissioning dates

7.5 Certification File

The UIP/IGT shall provide appropriate Certification Files as per defined in IGEM/GL/5 and the General Conditions for self-lay, it shall be required on all IP works, governor works and any works that are required to meet the standards set by IGEM/GL/5 or CAD/PM/G/17 and form part of the General Conditions of Contract for self-lay systems. These files are a necessary component of Cadent carrying out its obligations to ensure adoption of fit for purpose assets in line with IGEM/TD/101. Certification files will be submitted in accordance with certification file structure provided. Submission of these files will be outlined in the Connections Design Authorisation letter.

The submission and sign off these packs shall meet the pre and post construction certification pack requirements. Final Clearance to Proceed will only be provided where the file has been fully accepted by Cadent. In the event the connection proceeds and Cadent identifies the provision of Clearance to Proceed was not provided or inaccurately reported, the UIP/IGT shall provide evidence to Cadent the Certification File had been accepted and will not place any asset at risk.

Timeline of submission will be by agreement with the project Co Ordinator and will be dependent on the complexity of the works. Consideration shall be given on whether the pack should be divided agreed in clearly defined sections e.g., long length of pipelines can be broken into sections and reviewed as constructed to reduce the SLA for review upon completion of the construction.

Other areas of complexity:

- Governor works.
- Multiple services.
- Long sections of pipeline (to be determined via communication / via inclusion of strategic valves)
- Above ground crossings.

- Bio Methane/Power generation and CNG Connections.

The contents of the certification pack will be subject to the design and agreement with the project coordinator at the outset of the project. It will be reviewed against the authorised design and IGEM/GL/5 Part C approval, variation to the design or to the construction will need to be reflected in the pack.

Medium and Low-pressure sites will be outside of the scope of a full pack, unless stated otherwise, however they will be subject to being certified via submission of a pressure testing certificate and an as laid drawing, this can be a red line drawing of the approved design. This does not take away the requirement to submit a completion file to the company in line with GD/PM/DR/8.

All pressure tier sites shall be expected to comply with section 7.12 and complete the Construction site survey app.

All pressure testing shall be submitted in line with industry standard requirements, this should consider but is not exhaustive to;

- Gauge accuracy to F/S, you should all valid calibration certification concerned.
- Test duration to include material type, size
- Full details input on test certification
- Where applicable temperature consideration

Submitted certification that does not meet these requirements or does not provide enough detail to confirm all requirements shall result in the test certification being rejected. If following rejection reasons being received sufficient detail Is not provided to allow the test to be closed out as per industry or design approved standard, Cadent shall consider submission of a complaint for further investigation as per LRQA process.

8. Assurance & Charges

Cadent will apply assurance costs for the duration of each project associated with an IGEM/GL/5 (complex), these costs will support key project milestones driving performance. Assurance costs are considered a key part of any new asset and will act to both improve safety, drive a right first-time policy, and reduce project costs.

The holding fee shall be applied post design authorisation and pre part C of the IGEM/GL/5 request once a frozen design is in place, it will act as upfront fee. This will ensure costs occurred during the design challenge review and construction phase have been paid for. Part C is a key project milestone to assure the activities of a project, all potential risks, forecast and deliverables should be known by this stage gate.

To assure and cement quality control, safety, and communication lines, Cadent shall request for 2-7 Barg or any IGEM/GL/5 related works to require an upfront administration holding fee to be paid as part of the fixed design alongside Part A of your project. Information regarding this can be found in the working example provided or the Charging Statement. A mandatory fee shall be deducted from the upfront charge to ensure key touch points are consistent across all projects. To promote performance a re-imbursement of the fee may occur if the project has driven right first-time performance and not exhausted the holding fee via assurance input. This shall be paid upon the final completion letter being issued, however the full re-imbursement of the remainder of the fee shall be driven by the stakeholder performance against milestones applied. All activities shall be charged on an hourly rate which a full breakdown shall be offered upon request of the project and captured with regular updates to be scheduled as part of project deliverables. Cadent reserves the right to request reconciliation of costs if

the holding fee has been exhausted through poor project management. In this scenario once all holding fee funding has been exhausted it shall be agreed as soon as is reasonably practicable a forecast for remaining spend. It is expected the customer shall deliver a clear update on the project programme of works prior to Part C being granted to ensure assurance spend and forecast is accurate. If the fee remains unpaid or assurance costs have exceeded the holding fee Cadent may place the project on hold until monies are paid, and a clear programme of works is in place.

It is expected project milestones consider a minimum of 6 weeks for Part B submission through to commission, where designs submitted for approval or requests for operational support or within this time frame a single charge will be applied at weeks 5,4 & 3 to ensure no financial loss is encountered by other projects that may have had priority. This lead time is sufficient to drive all rejections approvals and onsite requirements plus enables Cadent time to support closure of projects in an acceptable timeframe.

Once the design request has been submitted and accepted, the nominated Project Co-Ordinator shall initiate a project Kick Off meeting. This is to discuss proposed times lines and expectancies that will drive all milestones, this will be delivered via a standardised template for all projects.

Cadent understands timelines shall have an element of flexibility to allow for unknown variables and in certain scenarios will not qualify for charging. What shall be considered for charging (non-exhaustive):

- Project Plan and associated kick off meeting
    - A project schedule should allow for 6 weeks post part B design approval and appraisal through to connection date. Where 6 weeks are not accounted for a charge may be applied to allow for short turnaround and potential alternative customer commitments that may be impacted elsewhere. This charge shall apply at 5,4 & 3 weeks retrospectively and discussed via your project co-ordinator or escalation point of contact. Short turn around requests run the risk of impacting other projects and therefore the cost of enabling this may become elevated.
- Design Review
    - Design review requests post Part B approval and appraisal, through to Part C approval, where technical alterations are required such as the need to revisit Part B this will be considered a new design and invoke a new charge for review.
- Audit and rectification
    - Audit findings that result in an enhanced audit regime or site visit(s) to ensure improvements have been met. Non-adherence to policy, procedure, and specification, such as commissioning without prior relevant SCO approval or incorrect material use.
- Certification Review
    - Certification pack returns and validation, Cadent see no reason why materials and equipment used on any project should not have valid certification available to be submitted upon request as per section 7.4. The UIP/IGT should ensure manufacturers have been informed ahead of time to supply the required documents.
- Safe Control of Operations (SCO)
- Operational / Technical Support

- Technical support which may be required to support a project such as deviation request, complex contingency planning support, every endeavour should be made to complete the templated format in full.

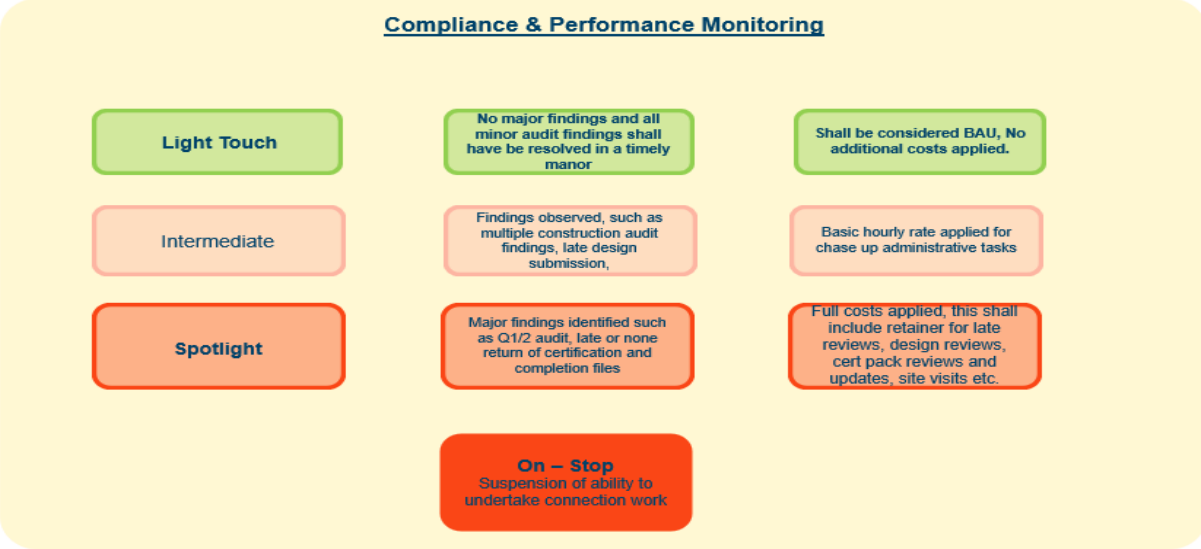
- Project Closure

9. Compliance

Cadent shall apply the following compliance monitoring structure to future findings, the staged progression may be utilised to ensure the UIP understands the likelihood that Cadent may push for an enhanced audit regime and in a worst-case scenario place a UIP on stop.

- Light touch-This shall be considered a business usual approach to all data requests.

- Intermediate-The UIP may be observed as an intermediate risk following repetitive behavioural audit findings or poor data file submission. The UIP should seek to clarify within a timely manner why this is the case and respond to any Cadent request.
- Spotlight-The UIP may be observed as a high risk or in the “spotlight” where major findings on site and been identified. Poor construction and data file submission may also be a causal factor to drive the enhanced level of concern here. The UIP should ensure all findings and investigation requests are responded to immediately, failure to do so may result in Cadent restricting activities, CtP or placing the UIP on stop.



Auditing may be performed by Cadent against any form of record submission or construction activity by the UIP/IGT, the combined output of which shall form the basis of the charging methodology for complex works. Onsite auditing issues being identified as Observations, Minor Non-Conformance, Major Non-Conformance, shall also be considered and discussed against findings.

- Observations - Issues that are identified that do not affect the construction of the asset that holds vested interest by the adopting GDN.

- Minor non-conformance - Issues that will require rectification and could have an impact on the integrity of the asset or an implication to the process and procedures of the UIP/IGT and adopting GDN.
- Major non-conformance - Issues result in an impact on the integrity to the construction and or network and must be resolved prior to commissioning.

These may be observed in the form of Q1/Q2 and Q3 with Q1 identified as a major finding with immediate danger that should result in the halting of all works.

Non - Rectification Consequence

Cadent maintains an escalation route through LRQA as the GIRSO, where responses to findings are not closed in a satisfactory manner or repeated Major non-conformances are identified with no improvement noted across future works or whereas issues are of a nature that the company feels they warrant further investigation by a third party.

The UIP shall complete in full the construction site survey app (CSAA) where applicable, this shall provide Cadent with an increased level of confidence that construction and commissioning activities have been carried out to Industry standards. It shall also support the UIP/IGT in ensuring a project closure can be validated when resolution may be sought. The purpose of the CSSA is collate accurate data that may at times be difficult to obtain or in extreme circumstances missing.

Appendix A - Associated Documents

Contracts

Reference	Title
	General Conditions of Contract for self-lay systems above 2196000KWH February 2017
	General Conditions of Contract for self-lay systems below 2196000KWH February 2017
	General Conditions of Contract for Site Engineering Works for Connected Offtake Systems
	UIP Connection, Service Disconnection and Service Alteration Agreement
	Inter-Gas Transporter Connections Agreement
New UIP registration	UIP Registration Form

IGEM Documents

Reference	Title
IGEM/GL/5	Managing new works, modifications, and repairs
IGEM/TD/3	Steel and PE pipelines for Gas Distribution
IGEM/TD/4	Pe and Steel gas services and service pipework
IGEM/TD/13 Edition 2	Pressure regulating installations for Natural Gas, Liquefied Petroleum Gas and Liquefied Petroleum Gas/Air
IGEM/G/5 Edition 3	Gas in multi-occupancy buildings
IGEM/TD/101	Adoption of Pipe systems by a GT-Management of UIP activities
IGEM/GL/6	Safe Control of Operations for Gas Networks

Gas Industry Standards

Reference	Title
GIG/2	
GIS/F1	Carbon and Carbon Manganese Steel Forgings and Forged Components for Operating Pressures Greater than 7 barg
GIS/F7 (CAD/SP/F/7-Supplement to GIS/F7:2006)	Steel welding pipe fittings, nominal size 15 mm to 450 mm inclusive, for operating pressures not greater than 7 bar
GIS/CW5	Field applied external coatings for buried pipework and systems

Cadent Specifications and Procedures

Reference	Title
CAD/SP/NP/14E	Engineering Specification for: The design of system extensions, connections, and services below 7bar.
CAD/PM/MSL/1	Main Laying and Service Laying on systems operating at pressures up to and including 7bar.
CAD/PR/ML/4.1	Work Procedure for Shallow Mains
GD/PM/DR/8	Engineering Management Procedure for the capture of pipe asset records by UIP/GT organisations
GD/SP/P1	Welding Of Steel Pipe Designed To Operate At Pressures Not Greater Than 7 Bar
CAD/SP/P9	The Welding of Fittings to Pipelines Operating under Pressure (Supplementary to BS 6990)
GD/SP/NDT 2	Non-Destructive Testing of Welded Joints In Steel Pipelines and Pipework
GIS/P16	The Dimensions and Applications of Standard Weld End Preparations for Steel Pipe Fittings and Valves
CAD/PM/V/17	Valves in Pipelines Operating at Pressures up to and Including 7 Bar
Guidance for organisations constructing and connecting assets to the Cadent Gas distribution network	Laying Pipes and Installing Above Ground Apparatus in Land
Supplementary Specification for GIS/E34	Pressure Regulating Modules with Inlet Pressures Above 75 mbar but No Greater Than 7 Bar for Regulators with Design Flow Rates Greater than 6 m^3/h

Appendix B - Glossary and Definitions

Abbreviation / Acronym / Initialism	Definition
AE	Authorising Engineer
CDA	Competent Design Authority
CHP	Combined Heat and Power
CNG	Compressed National Gas
CP	Competent Person
CPQMS	Connection Process Quality Management System
CSSA	Construction Site Survey App
CtP	Clearance to Proceed
DAS	Detailed Analysis Study
E2E	End to End
F/S	Full Scale
FCA	Final Connections Agreement
FPSA	Formal Process Safety Assessment
GDN	Gas Distribution Network
GIG	Gas Industry Guidance
GIRS	Gas Industry Registration Scheme
GIRSO	Gas Industry Registration Scheme Operator
GIS	Gas Industry Standard
HP	High Pressure
IGT	Independent Gas Transporter
IP	Intermediate Pressure 2>7bar
LP	Low Pressure <75mb
LRQA	Lloyds Register Quality Assurance
MP	Medium Pressure 75mb>2bar
NRO	Non-Routine Operation
PE	Polyethylene
PG	Power Generation
PRI	Pressure Reduction Installation
Q10	Management Procedure for Sampling & Testing of Steel pipe
RO	Routine Operation
SCJ	Sufficiently Complex Job
SCO	Safe Control of Operations
SDN	Start Date Notification
SLA	Service Level Agreement
SLO	Self-Lay Organisation
UIP	Utility Infrastructure Provider
WPS	Weld Procedure Specification

Technical definitions within this document can be found in IGE/G/4 available for free from the IGEM website.

Phrase	Definition
Adopting Utility	A GDN or IGT that holds a vested interest in construction activities and will adopt assets post connection and/or once asset conveys gas.
Appraiser	The design appraiser is a person who is technically competent in an appropriate professional discipline. The appraiser must be demonstrably independent of the work to be appraised.
Approver	The design approver is an engineer with the relevant competencies to approve a design that meets the requirements of the design brief, legislation, standards and is safe
Authorising Engineer	As per IGEM/GL/6
Clearance to Proceed	Authorisation given by the GT for works to commence on a written procedure or start date notification
Competent person	As per IGEM/GL/6
Deviation	Where an engineering or technical constraint prevents compliance with the applicable procedure a deviation can be requested and considered for approval.
Engineering	Designated Cadent department that shall have final approval on designs via USER delegation and or document owner status for TQ and deviation requirements.
FCA	The Final Connection Agreement is a term used to refer to both the UIP Connection, Service Disconnection and Service Alteration Agreement and the Inter-Gas Transporter Connections Agreement
Final Completion	A letter issued by Cadent to the UIP or adopting iGT confirming that all works within the process have been completed.
Gas Distribution Network	(GDN) A gas transportation system that delivers gas to industrial, commercial, and domestic customers.
Heat Recovery	The distance for cold gas to recover to 0oC should it exit and AGI cold
High Pressure (HP)	Pipeline operating above 7bar (>7bar)
Independent Gas Transporter	(IGT) An independent Gas Transported that operates and maintains local gas transportation networks. IGT networks are directly connected to the Gas Distribution Network (GDN) via a Connected System Entry Point or indirectly to the GDN via another IGT.
Intermediate Pressure (IP)	Pipeline operating between 2bar and 7bar (>2bar to ≤7bar
Lloyds Registry Quality Assurance (LRQA)	Operator of the Gas Industry Registration Scheme (GIRs) on behalf of the UK Gas Transporters.
Low Pressure (LP)	Pipeline operating up to 75mbar (≤75mbar)
Medium Pressure (MP)	Pipeline operating between 75mbar and 2bar (>75mbar to ≤2bar
Project Co-Ordinator	A designated Co-ordinator supplied by Cadent gas to both assist and ensure project delivery through each milestone
Technical Query	Query for Cadent's interpretation of a specification or procedure to provide technical input
USER	The 'User' is the Cadent Head of Engineering. The User has delegated sign off to individuals technically competent in each discipline

Utility infrastructure provider	(UIP) A Third-party organisation who designs and constructs gas infrastructure to be directly connected to a GDN and on behalf of IGTs.

Appendix C – Working Example

Complex assurance charge working example.

Example project details

Lay and commission IP/MP main, Governor: hot tap welded tee connection onto an existing 300mm ST IP Cadent main. Lay 200m of 6-inch ST and 500m of 180mm PE IP main.

Explanation example for costs applied.

Hourly rates are as per Table 2

Fee due £5600 (Excl VAT) Post Design Authorisation and will be discussed at kick off meeting.

- Kick off meeting with relevant parties to discuss project timelines, deliverables, and preliminary design; charged at 1 hour.
- Validation/support of contingency options for proposed NRO; charged at 1 hour.
- Design Challenge and review of proposed design this will be charged respectively for Project Co-ordinator and technical review: charged at 8 hours and 4 hours for 1st pass.
- Certification pack review/Validate; charged at 4 hours for 1st pass.
- Project Closure of GL/5; charged at 8 hours 1st pass.

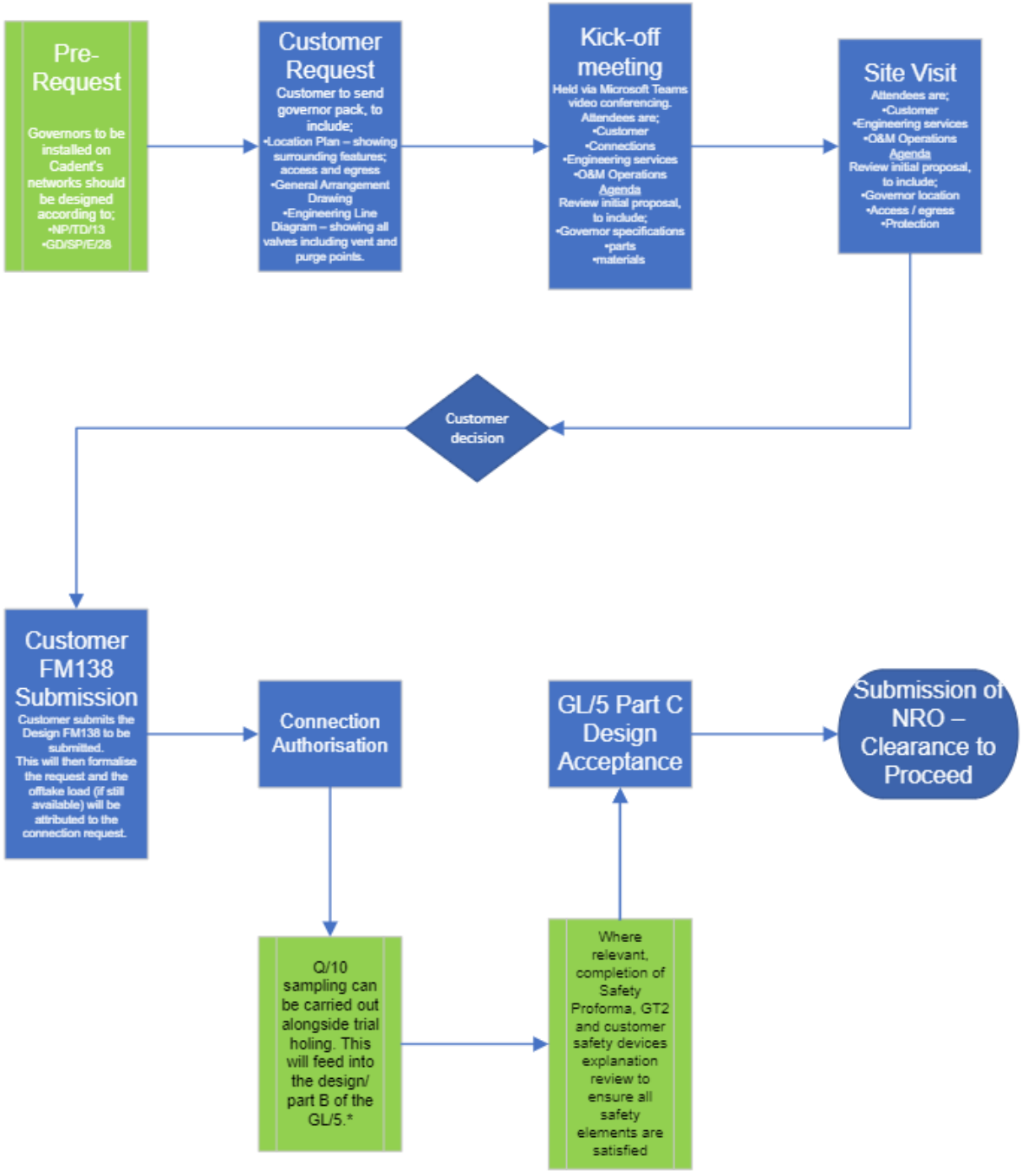
Additional assurance costs associated with working example.

- Deviation approval required for this project.
- Design variation request accompanied with late submission.
- Connections audit requirements charged for day.
- Cathodic protection isolation applied and required onsite attendance.
- Site witness requirements to progress construction issues onsite.

Activity Complex Connection *	**Project Management**	**Technical Review/ECC**	**Operational support**	**Hours (Total)**
	Cost			
Kick-off meeting	£35.49	N/A	N/A	1
Site meeting	£141.96	N/A	N/A	4
Validation of contingency	£35.49	£43.03	N/A	2
Witness commissioning (Pressure test/Jointing)	£283.92	£172.12	N/A	12
Connections Audit	£35.49	£344.24	N/A	9
Validate Cert file IP	£283.92	£43.03	N/A	9
Design Challenge and Review	£283.92	£172.12	N/A	12
Deviation/TQ support	£35.49	£43.03	N/A	2
GL/5-G/17 closure	£425.88	£86.06	N/A	14
CP Isolation requirements	£141.96	N/A	£336.96	8
Operations commissioning/ (governor)	£283.92	£172.12	£673.92	20
SCO audit	N/A	£172.12	N/A	4
DSC & R 5 weeks	£141.96	£43.03	N/A	5
DSC & R 4 weeks	£212.94	£86.06	N/A	8
DSC & R 3 weeks	£283.92	£129.09	N/A	11
Design variation	£425.88	£86.06	N/A	14
Total	**£5,733.65**			**130**

Appendix D - Governor complex project example timeline

Sample project path for a governor installation, the project shall consider all IGEM/GL/5 requirements.



Appendix E – FM Suite Documents

Document Reference	Document Name
FM048	Notification of Withdrawal of Quote
FM080	Connections Design work Letter
FM081	Reinforcement Design Letter
FM082	Reinforcement and connection Design work Letter
FM083	Acceptance of Acknowledgement Letter
FM137	UIP Land Enquiry Form
No formal document for submission	Developer Enquiry Request
FM138	UIP Quotation Request
FM138a	UIP Fast track Request
FM138b	Bio UIP Self connection Proforma
FM139	Design submission Checklist
FM140	
FM140a	Variation Acknowledgement
FM142	Design Unapproved Letter
FM143	GT Design Authorisation Letter
FM144	SDN Form
FM150	D180 letter
FM153	GT Quotation Request
FM153a	GT Fast Track Request
FM159	Acceptance Rejection Letter
FM160	Request for minimum Information Letter
FM163	UIP Design Authorisation Letter
FM167	
FM172	GT Land Enquiry
FM176	Pressure Tier Request
FM272	Site Audit Inspection form
FM351	Milestone Extension Letter
FM352	Heat Rec PDS Template
	Design variation form