
MANAGEMENT PROCEDURE FOR

**THE MANAGEMENT OF NEW WORKS,
MODIFICATIONS AND REPAIRS INCORPORATING
COMMISSIONING, OPERATIONAL AND ASSET
ACCEPTANCE**

MAY 2018

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FOREWORD

This document was approved by the appropriate Technical Authority Level (TAL) and Standards Steering Group (SSG) for use throughout Northern Gas Networks Limited (NGN).

NGN documents are revised, when necessary, by the issue of new editions. Users should ensure that they are in possession of the latest edition by referring to the Master document register available on the NGN Standards website.

Compliance with this document does not confer immunity from prosecution for breach of statutory or other legal obligations.

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BRIEF HISTORY

First published as T/PR/G17 Revised and Re-issued Editorial update to reflect demerger November 2000 Revised to incorporate minor amendments Revised to incorporate T/PR/EL14 Revised to incorporate T/GN/98/01 & align to Gas Requirements Manual	January 1999 April 2001 June 2001 January 2002 May 2003 August 2004	EPSG/T02/630 EPSG/T03/812
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Revised to include risk assessment process	JULY 2014	NGN/PM/G/17
Material update to reflect changes to IGEM/GL/5 Edition 3	November 2017 Version 6	NGN/PM/G/17
Reviewed and updated to reflect current working practices	May 2018 Version 7	NGN/PM/G/17

DISCLAIMER

This document is provided for use by NGN and such of its contractors as are obliged by the terms of their contracts to comply with this document. Where this document is used by any other party, it is the responsibility of that party to ensure that the document is correctly applied.

MANDATORY AND NON-MANDATORY REQUIREMENTS

In this document:

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.

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MANAGEMENT PROCEDURE FOR THE MANAGEMENT OF NEW WORKS, MODIFICATIONS AND REPAIRS INCORPORATING COMMISSIONING, OPERATIONAL AND ASSET ACCEPTANCE

1. INTRODUCTION

The purpose of this Management Procedure is to provide a framework for management and control of new works, modifications and repairs on gas transmission, storage and distribution systems as defined in the scope. This Management Procedure incorporates the philosophy outlined in the Institution of Gas Engineers & Managers (IGEM) guidance document IGE/GL/5 "Managing new works, modifications and repairs" which recommend the processes for appraising and approving modifications to a gas transmission system and its associated support systems. This Management Procedure is also based on assignment of responsibilities to nominated personnel who, where appropriate, have been trained and assessed to ensure technical competence and suitability for their roles.

Successful control of modifications to plant and equipment is essential to protect people, assets and the environment and a key element must include a procedure for authorising, planning, implementing, testing and recording of modifications. This Management procedure incorporates the philosophy of both PSSR and COMAH in that a formal procedure is in place that requires:-

- All modifications must be Authorised
- All modifications have undergone a planned modification priority and risk assessment the results of which must be reviewed by the NGN User (or Nominated Deputy).
- A system of design approval / appraisal is in place prior to implementation.
- Projects should follow the NGN Integrated Management System (IMS)

In emergency situations, it may be necessary to install new or modify existing plant and equipment without the prior adoption of this Management Procedure. Should this be necessary then this Management Procedure should be complied with retrospectively as a matter of urgency but must be completed within 28 days.

This document aims to provide practical guidance to support the Gas Safety (Management) Regulations (GS(M)R) and the Pipelines Safety Regulations (PSR). Whilst still applicable to comply with GS(M)R and PSR, this minimum standard of documented procedures for managing new works, modifications and repairs to any plant or system associated with the supply of fuel gas is to be implemented to ensure compliance with the Pressure Systems Safety Regulations (PSSR), the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR), the Electricity at Work Regulations (EWR), and the Control of Major Accident Hazard Regulations (COMAH) where applicable. This Standard applies to other plant and systems, for example control systems and software.

Construction (Design and Management) Regulations (CDM)

These Regulations apply to the whole construction process on all asset construction projects from concept to completion and beyond. Duty holders include clients, designers, principal designers, principal contractors, contractors and individual workers. Foreseeable risks, such as those that may arise during construction work or in maintaining and using the asset once it is built are required to be eliminated, reduced or controlled.

Control of Major Accident Hazard Regulations (COMAH)

These Regulations aim to prevent major accidents involving significant quantities of flammable, environmentally hazardous or toxic substances and if they happen, require Asset Owners to limit the effects on people and the environment.

Dangerous Substances and Explosive Atmospheres Regulations (DSEAR)

DSEAR are concerned with protection against risks from fire, explosion and similar events arising from dangerous substances used or present in the workplace. DSEAR require that risks from dangerous substances are assessed, eliminated or reduced. They contain specific requirements to be applied where an explosive atmosphere may be present and require the provision of arrangements to deal with accidents, emergencies, etc. and provision of information, training and use of dangerous substances. DSEAR also require the identification of pipelines and containers containing hazardous substances.

DSEAR require an employer to classify gas installations into hazardous and non-hazardous areas. In particular:

- where a dangerous substance is or is liable to be present at the workplace, the employer is required to make a suitable and sufficient assessment of the risks to their employees which may arise from that substance
- where an explosive atmosphere may occur at the workplace sufficient information is required to be given to show:
- those places which have been classified into zones (Regulation 7)
- equipment which is required for, or helps to ensure, the safe operation of equipment located in places classified as hazardous
- that any required verification of overall explosion safety has been carried out
- the aim of any required coordination (Regulation 11) and the measures and procedures for implementing it.

Electricity at Work Regulations (EWR)

These Regulations were made under the Health and Safety at Work etc. Act 1974. The Regulations require precautions to be taken against the risk of death or personal injury from electricity in all work activities.

The Regulations cover all electrical equipment, which includes switchgear, control panels, distribution boards, electrical accessories, portable tools and equipment and cables. The Regulations apply to all electrical systems including portable generators, batteries and instruments containing or operating from a source of electricity.

The Regulations impose legal duties on persons in respect of work on or near electrical systems, equipment and conductors. They state the responsibilities shared by managers, supervisors and employees to ensure electrical safety.

Gas Safety (Management) Regulations (GS(M)R)

GS(M)R places specific duties on Gas Transporters (GT) to:

- prepare a Safety Case and have it accepted by the Health and Safety Executive (HSE)
- comply with that Safety Case and keep it up to date

- deal with gas incidents such as escapes, loss of supply and over pressurisation as soon as is reasonably practical
- only convey gas in its network compliant with specified pressure and composition criteria.

The Safety Case describes:

- the risks associated with the management of the flow of gas in the network
- how those risks are managed
- the specifications and procedures employed in designing, operating and maintaining the network
- the arrangements for ensuring the competence of employees and contractors
- the arrangements for dealing with escapes, incidents and supply emergencies.

Health and Safety at Work etc. Act (HSWA)

HSWA applies to all persons involved with work activities, including employers, the self-employed, employees, designers, manufacturers, suppliers etc. as well as the owners of premises. It places general duties on such people to ensure, so far as is reasonably practicable, the health, safety and welfare of employees and the health and safety of other persons such as members of the public who may be affected by the work activity.

All persons engaged in the design, construction, commissioning, operation, testing, servicing, maintenance, alteration, disconnection and decommissioning of pipework/systems are required to be competent to carry out such work. Competency is achieved by an appropriate combination of education, training, practical experience and exhibiting appropriate behaviours.

Pipelines Safety Regulations (PSR)

These Regulations apply to all pipelines, both onshore and offshore, but excluding pipelines that are:

- wholly within premises
- contained wholly within caravan sites
- used as part of railway infrastructure
- used to convey water.

Generally, the Regulations place emphasis on pipeline integrity and have specific additional requirements for pipelines of MOP exceeding 7 Bar, including the production of a Major Accident Prevention Document (MAPD) and the requirement for the Local Authority to produce emergency plans. The Regulations complement (GS(M)R) and include the:

- definition of a pipeline
- general duties for all pipelines
- need for cooperation between pipeline operators
- arrangements to prevent damage to pipelines
- description of a dangerous fluid
- notification requirements

- preparation and maintenance of a MAPD
- arrangements for emergency plans and procedures.

Pressure Systems Safety Regulations (PSSR)

These Regulations cover the safe design and use of pressure systems. The aim of PSSR is to prevent serious injury from the hazard of stored energy (pressure) as a result of the failure of a pressure system or one of its component parts. The only hazard under consideration is that due to pressure and associated stored energy. Hazards due to the flammable or toxic characteristics of the relevant fluid are not covered by the Regulations.

Individual pressure vessels and associated pipework intended to be used at work operating at pressures greater than 0.5 Bar are subject to PSSR. The User/Asset Owner/Asset Manager should be able to justify any decision to exclude parts of the system from the scope of the Written Scheme of Examination (WSoE) and in doing so be able to demonstrate that a defect would not give rise to danger due to the release of pressure. All pipework is subject to the initial integrity, installation, operation and maintenance provisions in the Regulations.

Gas pipelines of MOP not exceeding 2 Bar (or not exceeding 2.7 Bar under fault conditions) are exempt from the Regulations. Pipework downstream of the ECV (including meter installations) with an MOP exceeding 0.5 Bar is not exempt from the Regulations. However where the system does not incorporate a pressure vessel with a pressure/volume product of 250 Bar/litres or more, Regulations 5(4), 8, 9, 10 and 14 do not apply.

The User of an installed system is not to operate the system, or allow it to be operated unless the safe operating limits of that system have been established. A WSoE is to be in place for any protective device and for any pressure vessel with a pressure/volume product of 250 Bar litres or greater. Where a WSoE is in place, checks of the pressure system and its protective devices be required to be carried out in accordance with and at the frequency specified in the WSoE by a Competent Person.

Regulation 4 imposes the duty on any person who designs, constructs, commissions, repairs or modifies pressurised systems to do so in a manner that prevents danger.

Provision and Use of Work Equipment Regulations (PUWER)

These Regulations apply to all work equipment (which includes pipelines and pipework) requiring equipment to be suitable for the intended use, safe for use and maintained in a safe condition. In certain circumstances, equipment is to be inspected to ensure the equipment remains in a safe condition. In addition, equipment is required to be used only by people who have received adequate information, instruction and training, and accompanied by suitable safety measures such as protective devices, markings and warnings. 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.

2. SCOPE

This Management Procedure applies to the management and control of new works, modifications, repairs and demolition of assets utilised for the transportation, distribution and metering of gas as follows:

- Gas transportation systems, including pipelines operating above 2 Bar or with slam shut protective devices set above 2.7 Bar
- Design Appraisal of other plant such as below 2 Bar equipment and systems considered appropriate at the discretion of the User.
- Supply point metering installations with an inlet pressure above 2.0 Bar
- Gas storage installations
- Pressure vessels operating above 0.5 Bar and a stored energy capacity exceeding 250 Bar litres
- All electrical¹, instrumentation, configurable equipment and control systems and any associated software.

This Management Procedure encompasses all disciplines (Mechanical, Gas Engineering, Electrical, Cathodic Protection, Instrumentation and Control, Civil / Structural, Safety and Software) and applies to both in-house and outsourced activities.

There are also some works which do not require any part of the NGN/PM/G/17 formal procedures to be raised these are defined in Appendix 11.

2.1 Like for Like Changes

For a modification to be deemed 'Like for Like' evidence must be produced that demonstrates that the new component/ equipment has the exactly the same technical specification as the existing. In this circumstance and only by approval of the USER work can be undertaken requiring only parts A, D, E and F to be completed.

For Electrical and Instrumentation (E&I) equipment "like-for-like" changes should be recorded on the relevant Electrical or Instrument Like for Like Record sheet (Appendix 7). For clarity a record must be made for all 'like for like' equipment changes capturing: serial number, manufacturer, hazardous area location and/or hazardous area certificate.

3. PROJECT RISK RANKING

The Management procedure recognises the need to differentiate between the type and scale of modification and hence the level of design approval / appraisal that is required to be undertaken. The level of design approval / appraisal must be determined by the result of a formal risk assessment to categorise the project type as follows:

3.1 Low Risk Project

Work covered by generic G19 or a modification that will not require a design appraisal, where the User/Asset Owner/Asset Manager already has an existing approved model design. The result of the formal Risk Assessment shows that the modification is low risk and would cover modifications such as the replacement of existing identical equipment, an example being the replacement of a damaged temperature probe or pressure transmitter where it is exactly the same device.

Low Risk Projects must have a suitable commissioning plan, if applicable, and where applicable the modification / asset data must be provided by the Competent Initiator for update onto the asset record and work management system by the work management system team, **this will be controlled by**

¹ *Electrical installations within non-operational buildings are excluded from the scope of these management procedures. However applying the principles of NGN/PM/G/17 will enable Users/Asset Owners/Asset Managers to comply with the Design and Development section of BS EN ISO 9001.*

completion of Parts A, D E and F of Appendix 4. It is essential that Part F be completed by the Competent Initiator and forwarded to the User, even where no records updates are required, to close out the process.

3.2 Medium Risk Project

New work or modification which following a formal Risk Assessment by a Competent Engineer is deemed not to be either low or high risk. The User/Asset Owner/Asset Manager may choose to nominate a further independent assessment by a Competent Person to confirm the risk category and to determine whether formal appraisal in accordance with this Standard is required. Examples of medium risk activities include:

- a modification that involves a minor change to an approved design or replacement of equipment with new equipment that may perform the same function, but may have a different manufacturer or operating characteristics
- an Original Equipment Manufacturer (OEM) modification
- single discipline designs or simple multidiscipline designs

A Medium Risk categorisation of modification must require a formal independent design appraisal by nominated and registered G17 appraisers on the NGN G17 register.

These modifications would usually involve single discipline designs or simple multi discipline designs, the Competent Initiator will propose the disciplines requiring appraisal.

Note that for multi discipline designs each different design discipline must be approved by the User by signature on Part C (There will be a Part C for each discipline). The Competent Initiator must retain all supporting information associated with the Risk Assessment and Modification Assessment.

Medium Risk Projects must have a suitable commissioning plan if applicable and where applicable the modification / asset data must be provided by the Competent Initiator for update on the asset record and work management system by the work management system team, this will be controlled by completion of Parts A to F of Appendix 4. It is essential that Part F be completed by the Competent Initiator and forwarded to the User, even where no records updates are required, to close out the process.

3.3 High Risk Project

A modification or project that is categorised by formal risk assessment as high risk must have an independent formal design appraisal undertaken by approved appraisers/approvers registered on the appraiser database.

A high risk project involves complex design issues and may require a multi-discipline design input. For instance, a design of a new pipeline and pig trap installation, or the upgrade of a large AGI such as an offtake, or the cut out and replacement of pressure containing pipework on the recommendations of an integrity assessment, are examples of high risk projects.

Note that for multi discipline designs each different design discipline must be approved by the User by signature on Part C (There will be a Part C for each discipline). The Competent Initiator must retain all supporting information associated with the Risk Assessment and Modification Assessment.

High Risk Projects must have a suitable commissioning plan if applicable and where applicable the modification / asset data must be provided by the Competent Initiator for update on the asset record and work management system by the work management system team, this will be controlled by completion of Parts A to F of Appendix 4. It is essential that Part F be completed by the Competent Initiator and forwarded to the User, even where no records updates are required, to close out the process, this may also include confirmation of certification as per NGN/PM/RE18

Once the **User** has accepted the category for the modification or repair as Low, Medium or High Risk, then this categorisation applies to the whole project until completion, provided that the scope of work does not change during the project.

4. DEFINITIONS

The definitions applying to this Management Procedure are given below

Table 1 Responsible Persons

Competent Person	<p>IGEM / G / 4 Competent person</p> <p>Person having the ability, appropriate training, knowledge and experience to supervise or carry out work being undertaken in a safe and proper manner.</p> <p>Competent Person under PSSR (PSSR definition – see Regulation 2 and L122²)</p> <p>A competent individual person (other than an employee) or a competent body of person corporate or unincorporated; and accordingly any reference in these Regulations to competent person performing a function includes a reference to his/her performing it through his/her employees.</p> <p>The term “competent person” refers not to the individual employee who carries out duties under the Regulations but to the body which employs the person charged with those duties. The definition of a Competent Person makes it clear that the legal duty to comply rests with a competent person’s employer and not with an individual, unless that person is self-employed (see ACoP L122 Regulation 2 guide).</p> <p>NGN/PR/PS/3</p> <p>“Competent Person” is the organisation nominated by NGN to undertake the legislative role under PSSR.</p> <p>NGN/PM/SCO1</p> <p>Competent Person - The Competent Person is the person responsible for overall control of activities at all sites involved in an operation. He/she must remain in attendance at the location(s) of operational activities whilst work is in progress, unless specifically stated within the procedure. For operations with multiple sites, each site must be under the direct control of a competent person who must be named on the relevant documentation. It is the responsibility of the Competent Person to bring to the attention of the Authorising Engineer that a particular work type is being undertaken for the first time or has been undertaken infrequently, and to request for mentorship to either discuss the work or arrange for a mentor to attend the site whilst the work is being undertaken. To increase the effectiveness of routine and non-routine operational procedures it is preferable for the Competent</p>
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² L122 is an Approved Code of Practice providing guidance on the role and attributes of the Competent Person under PSSR in relation to the drawing up and certification of a WSoE. Those attributes include professional qualification at either Incorporated or Chartered Engineer level depending upon the category of the system. It follows that the same attributes apply to the design and appraisal role.

	<p>Person to prepare those they have been assigned to carry out or supervise. The Competent Person must always have the written permitry available on-site during the operation.</p> <p>Eawr1989 – REG 16 – Competent Person</p> <p>No person must be engaged in any work activity where technical knowledge or experience is necessary to prevent danger or, where appropriate, injury, unless he possesses such knowledge or experience, or is under such degree of supervision as may be appropriate having regard to the nature of the work.</p>
Competent Initiator	<p>The Competent Initiator is the person who identifies the need for new work, or appointed to undertake as Competent Initiator the modification or repair through to project completion. They will be able to demonstrate an appreciation of the technical disciplines relevant to the works they are initiating.</p> <p>He/she ensures that the project progresses through all of its stages from the initiation stage to the final commissioning stage and that all of the relevant drawings, test results and paperwork are completed and presented to the User. In the event of a change of the Competent Initiator during the course of a project, a formal documented handover must take place.</p>
Line Manager	<p>Specifically the Competent Initiator's Line Manager, he/she is responsible for:</p> <ul style="list-style-type: none"> • Nomination of Competent Initiators to be included in the 'G17 Competent Initiator Database' • Nomination of Competent Initiator for any given project, this includes the management of any handover between different Competent Initiators • Formal request for G17 extensions <p><i>Note: for 3rd party organisations the Competent Initiator and Line Manager may be the same person</i></p>
Competent Design Authority	<p>The Competent Design Authority (CDA) is a body appointed by the company having responsibilities for the assessment of design organisations and appraisers and who may exercise controls within the design acceptance process</p>
Commissioning Engineer	<p>The Commissioning Engineer is an Engineer within the company or within an external organisation with the relevant competencies and authority to commission and put systems into use</p>
Design Appraiser	<p>The Appraiser is an Engineer with the relevant competencies to appraise design work in a specified discipline(s). The Appraiser must be demonstrably independent of the work to be appraised. Appraisers must be nominated through the project plan or in writing to the Competent Initiator. Appraisers should be on a CDA Register</p>

Design Approver	The Design Approver is an Engineer with the relevant competencies to approve a design that meets the requirements of the contract or design brief, legislation, standards and is safe. Design Approvers must be nominated through the project plan or in writing to the Competent Initiator. Design Approvers should be on a CDA Register
Design Organisation	The person or organisation who undertakes the design stage of a project
Installer	The person or organisation who undertakes installation, inspection, testing and commissioning activities. The Design Organisation and the Installer may be part of the same company
User	The User is a person representing the Company who has responsibility for the work being constructed, modified or repaired, who grants approval for work to be undertaken. The NGN Head of Asset Integrity, Asset Risk Management is designated to act as the "User" under this procedure. For Electrical, Instrumentation and Software this role can be designated to the nominated 'Electrical Duty Holder' as defined in the Electricity @ Work Regulations.

Table 2 General

CDA Register	A relational database managed by the CDA holding appraisers and approvers for all disciplines registered to undertake new works and modifications on NGN's gas systems
G/17 Progress Database	A database that is used to initialise and track the various stages of the G/17 lifecycle

Table 3 Processes and Outputs

Design Brief	The Design Brief is a descriptive statement, which outlines the project-preferred solution The Competent Initiator ensures that the Design Brief is produced. HAZOPs, HAZIDs and other safety assessment studies may be undertaken at this stage, and Safety Integrity Levels (SIL) allocated to the safety functions where appropriate. A Design Brief is required for all projects. The detail in the Design Brief will be relative to the size of the project.
Design Approval	An Approval is a review of a design output package, numerically and quantitatively, by an Approver to establish that appropriate legislation, design codes, policies, procedures and standards have been applied, that there are no omissions within the detailed design, and that NGN's requirements have otherwise been met. It does include the responsibility to check and approve the design.

<p>Design Appraisal</p>	<p>An Appraisal is a review of an approved design output package by an Appraiser to establish that appropriate codes, policies, procedures and standards have been applied, that there are no omissions within the detailed design, and that NGN's requirements have otherwise been met. It does not include the responsibility to check or approve the design, although selective checking may be carried out to prove specific aspects of the design.</p>
<p>Approval Report</p>	<p>A summary of the Approver's assessment of the design output package. See examples in Appendix 5.</p> <p>The Approver must produce a report of the approval, detailing all his/her comments, graded according to the following criteria:</p> <p>A - Integrity: comments under this category have system integrity or code compliance implications and must be resolved within the Approval procedure.</p> <p>B - Design: comments under this category relate to aspects of the Design. These comments are raised to highlight an issue which the Approver considers should be addressed.</p> <p>C - General: comments under this category will include minor points of interest raised for information purposes. The adoption of this category of comment will be at the Competent Initiator's discretion.</p> <p>All comments should be relevant, justifiable and objective in terms of compliance with Codes, NGN's Standards & Specifications etc.</p> <p>This report will be signed by the Approver and issued to the Project Manager (or competent initiator) for onward transmission to the Designer.</p>
<p>Appraisal Report</p>	<p>A summary of the appraiser's assessment of the design output package. See examples in Appendix 6.</p> <p>The Appraiser must produce a report of the appraisal, detailing all his/her comments, graded according to the following criteria:</p> <p>A - Integrity: comments under this category have system integrity or code compliance implications and must be resolved within the Appraisal procedure.</p> <p>B - Design: comments under this category relate to aspects of the Design. These comments are raised to highlight an issue which the Appraiser considers should be addressed.</p> <p>C - General: comments under this category will include minor points of interest raised for information purposes. The adoption of this category of comment will be at the Initiator's discretion.</p> <p>All comments should be relevant, justifiable and objective in terms of compliance with Codes, NGN's Standards & Specifications etc.</p> <p>This report will be signed by the Appraiser and issued to the Project Manager (or competent initiator) for onward transmission to the Designer.</p>

Table 4 Discipline Definitions

Mechanical	Defined as the pressure-containing plant, equipment, pipework, etc., which form the physical pressurised system
Gas Engineering	Defined as the physical processes applied to the gas during transportation. This will include filtration, pre-heating, metering, Local Gas Treatment, pressure regulation and expansion, compression, metering, and other processes. It is not intended that it should include the physical availability of the gas supply for a particular application – this is the reserve of Asset Planning and System Operation and is not a design issue
Civil/Structural	Defined as the design and construction of all civil and structural elements which protect, support or enclose the pressure-containing elements, or their supporting equipment, to ensure that they are able safely to resist the forces to which they may be subjected, along with the suitability and capability of the soils to support such civil and structural elements without causing any detrimental effects
Electrical & Instrumentation	<p>Defined as the design, installation, testing and commissioning of all electrical and instrumentation equipment, plant and systems which protect and support production, transmission, distribution and storage installations.</p> <p>All electrical work (design, installation, testing and commissioning) must comply with The Electricity at Work Regulations (1989). The Regulations cover all electrical equipment, which includes switchgear, control panels, distribution boards, electrical accessories, portable tools and equipment and cables. The Regulations apply to all electrical systems including portable generators, batteries and instruments containing or operating from a source of electricity.</p> <p>CONFIGURABLE DEVICES 'Where applicable for good Engineering practice include in the Design Output Pack a table documenting the design for configurable points with values/settings/results/outputs/actions, this document should be used to validate and document compliance to the Approved and Appraised design. This table will be updated by the Commissioning Engineer to document the commissioned values/settings of the configurable points, as a record of the 'as built' configuration for maintenance use'.</p> <p>TELEMETRY OUTSTATIONS utilise a configurable PAK/DB1 file with pre-approved standard modules, as long as the standard modules are used then the "Ulysses Type Build" outstation can be described as a configurable device and does not need software approval and appraisal, as long as testing and configuration is carried out as detailed by the requirements for "Configurable Devices" above</p>

Cathodic Protection	Defined as a form of protection against corrosion utilising electrical power. Cathodic Protection (CP) is an essential component in ensuring the integrity of the gas transportation system. It is therefore intended that CP Appraisal should be included within both the mechanical and electrical appraisals, as aspects of each discipline impact upon the integrity of CP design.
Software	Defined as the design, installation, testing and commissioning of all software for electrical and instrumentation equipment, plant and systems which protect and support production, transmission, distribution and storage installations. All software contained within electrical and electrical system should be appraised by an E&I Appraiser.

5. COMPETENT INITIATOR

The Competent Initiator must ensure that User/Asset Owner boundaries are identified. The Designer should ensure the interfaces between boundaries have a consistent design by clearly presented sketches or other documentation.

Note: For new works initiated by an independent third party the Competent Initiator is to be the same Competent Initiator on both upstream and downstream user designs.

The Competent Initiator must ensure that Competent Designers develop a detailed Design Output Package consistent with the Design Brief, Legislation, NGN Standards, procedures and any requirements stipulated by the User/Asset Owner.

Note: The Competent Initiator may appoint a Lead Designer to coordinate the development of each part of the Design Output Package.

Each Designer must ensure that their contribution to the Design Output Package, typically the design specifications, drawings, calculations and other documentation is clearly presented. Each Designer should discuss the content of the package with the relevant Design Approver and other Designers as appropriate to ensure that there are no omissions or contradictions and otherwise to facilitate the appraisal of the Design Output Package. A schedule of documents must be included within the Design Output Package.

6. COMPETENCE

Definition: Competence is the combination of skills, knowledge and understanding to perform consistently to the current recognised standards.

Any person engaged in the initiation, design, design approval, appraisal, validation, construction, testing, commissioning, maintenance and auditing activities must be competent for the role they are undertaking. NGN, its appointed contractors, designers and constructors must:

- have a documented process for determining competency that details minimum competency requirements such as training, experience, knowledge, understanding, qualifications and professional registration as appropriate
- establish and maintain sufficient current, valid, credible and authentic evidence to demonstrate that individuals are competent to undertake their assigned role in the discipline or sub-discipline, by:
 - ensuring that the minimum documented competencies are satisfied

- ensuring that personnel are trained and qualified for the work they carry out
- a suitably Competent Person undertaking a documented assessment of persons performing roles for which competencies have been set
- arranging for the review of individuals' ongoing competencies by a suitably Competent Person. These competence reviews must be documented and recorded
- have a training programme which is adequate to close any competency gaps in place.

7. COMPETENT INITIATOR REGISTER

NGN's Asset Integrity Team manage the G17 Competent Initiator Register. Any person not registered as a Competent Initiator will not be permitted to raise a G17. Competency will be determined by way of assessment following the relevant training.

It may be necessary for persons to be mentored through the process before being deemed competent to raise G17s independently. Entry on to the Competent Initiator Register is only by User approval.

Once deemed competent registration can be requested using the 'Competent Initiator Registration Form' (Appendix 8). The form must be completed and signed by the relevant Line Manager before submitting to the Asset Integrity Team via the G17 Mailbox.

Competent Initiators are expected to demonstrate an appreciation of the different disciplines and sub-disciplines relevant to the works they are initiating.

Table 5 – Disciplines and sub-disciplines as per G17 and competent design authority (CDA) register relevant to this standard.

G17 Discipline	CDA Register Discipline	Sub-Discipline Example
Mechanical	Mechanical Engineering	<ol style="list-style-type: none"> 1. 2–7 Bar Mains – Steel 2. 2–7 Bar Mains – PE 3. Up to 7 Bar Pressure Reduction Installations and Metering 4. Above 7 Bar Pipelines 5. Above 7 Bar AGI's/PRI's and Meter Installations 6. HP Storage Systems 7. Compressor Systems 8. Pipework Stress Analysis 9. Hazardous Zoning

		10. Above 0.5 Bar Installation Pipework and Pressure Vessels
Gas Engineering	Process Engineering	<ol style="list-style-type: none"> 1. Natural Gas 2. Liquefied Natural Gas 3. Liquefied Petroleum Gas
Civil / Structural	Civil Engineering	<ol style="list-style-type: none"> 1. Civil and Structural 2. Compressor Structural 3. Geotechnical Engineering
Electrical & Instrumentation	Electrical Engineering Instrumentation Engineering	<ol style="list-style-type: none"> 1. Electrical – High Voltage 2. Electrical – Low Voltage 3. Hazardous Equipment 1. Safety Related 2. Non Safety Related 3. Control Systems 4. Telemetry Systems 5. PLC Systems 6. Hazardous Equipment
Cathodic Protection	Corrosion Protection	<ol style="list-style-type: none"> 1. Cathodic Protection 2. Coatings
Software	Software Engineering	<ol style="list-style-type: none"> 1. Safety Related 2. Non-Safety Related
	Additional Safety Engineering ³	<ol style="list-style-type: none"> 1. HAZID Studies

³ Further to the six disciplines set out herein the G17 procedure, the CDA register also contains the discipline of Additional Safety Engineering. The Additional Safety Engineering Sub-Disciplines shown

		<ol style="list-style-type: none"> 2. HAZOP Studies 3. Functional Safety Assessments 4. QRA Studies 5. Emergency Planning Studies
--	--	---

8. COMPETENT DESIGN AUTHORITY (CDA)

8.1 Assessment

The CDA must assess the competency of Design Approvers and Appraisers in accordance with this Management Procedure.

8.2 Appointment

The CDA for all disciplines defined within these Management Procedures must be a Chartered Engineer with extensive and recent relevant experience of statutory requirements, NGN operations and relevant codes of practice for equipment used by NGN. For all disciplines within this Management Procedure, the responsible NGN Director or his nominated deputy must appoint the CDA in writing. The G17 CDA register should contain the CDA's for all disciplines.

9. ASSESSMENT OF DESIGN ORGANISATION

9.1 Assessment and Appointment

The Design Organisation's capabilities must be assessed by the CDA. Personnel must only be considered for appointment as Design Approver when they have demonstrated the appropriate competence. A record of the assessment and any appointment must be written and made available within NGN as required.

9.2 Register

The CDA must maintain a register of Design Organisations, Approvers and Appraisers assessed and appointed by the CDA, a file of assessment reports and letters of appointment

9.3 Execution of Design Work

9.3.1 Personnel

The Competent Initiator must ensure that only Design Approvers who have been appointed and registered with the CDA for the particular discipline manage design work and approval. The Competent Initiator must ensure that operators of software packages for design work are trained and experienced in the use of the particular program.

9.3.2 Communications

Prior to commencement of the detailed design work the Design Organisation must inform the Competent Initiator in writing of any matters requiring resolution or clarification.

in table 5 whilst aiding and supporting both the design and construction process are not required to be approved or appraised.

10. ASSESSMENT OF APPRAISERS/APPROVERS

10.1 Assessment and Appointment

The Design Appraisers and Approvers capabilities must be assessed by the CDA. Personnel must only be considered for appointment as a Design Appraiser or Approver when they have demonstrated the appropriate competency. A record of the assessment and any appointment must be written, and made available within NGN as required.

Generally Design Approvers and Appraisers will be professionally qualified at Chartered level, especially for works with MOP > 7 Bar and those categorised as "High Risk". Suitably experienced and otherwise competent Incorporated and Chartered Engineers may be acceptable to the User.

10.2 Register

The CDA must maintain a Register of assessed and appointed Design Appraisers and Approvers and a file of assessment reports and letters of appointment.

10.3 Execution of Appraisals and Approvals

The Competent Initiator must ensure that only Design Appraisers and Approvers, who have been appointed and registered on the database for the particular discipline, undertake the design appraisal and approval.

10.4 Auditing

The CDA should conduct a sample audit of the organisations carrying out Design and Design Appraisal work for the company. Audits are required in order to demonstrate:

- compliance with legislation, NGN Corporate Policy and Directives, and the Gas Requirements Manual
- that adequate management control systems are in place and are implemented
- that Health, Safety & Environment issues are properly addressed
- that a continuing improvement in application of the process is achieved
- That consistency of design appraisals is achieved.

The auditor may examine any or all of the following aspects of the appraisal process:

- how an organisation manages and controls appraisal work
- how an individual appraiser undertakes an appraisal
- how any specific or particular appraisal is undertaken and managed
- the effectiveness of a particular appraisal by undertaking a parallel appraisal
- The ongoing competence and suitability of a particular appraiser.

The audit must include examination of the organisation's understanding and application of this Management Procedure and of relevant documentation. The execution of one or more completed Design or Design Appraisal contracts should be examined in detail by means of discussion with the User/Competent Initiator, Design Approver and Appraiser, and by inspection of relevant documentation.

The frequency of audits should be managed by the User in agreement with the CDA and should be based on content, quality and regularity of the work undertaken in accordance with the company safety management framework. The CDA should manage the requirements of the audit.

11. PROJECT CONTROL

11.1 General

There are six distinctive G17 stages in the life of a new works, modification or repair projects:

1. Part A Initiation

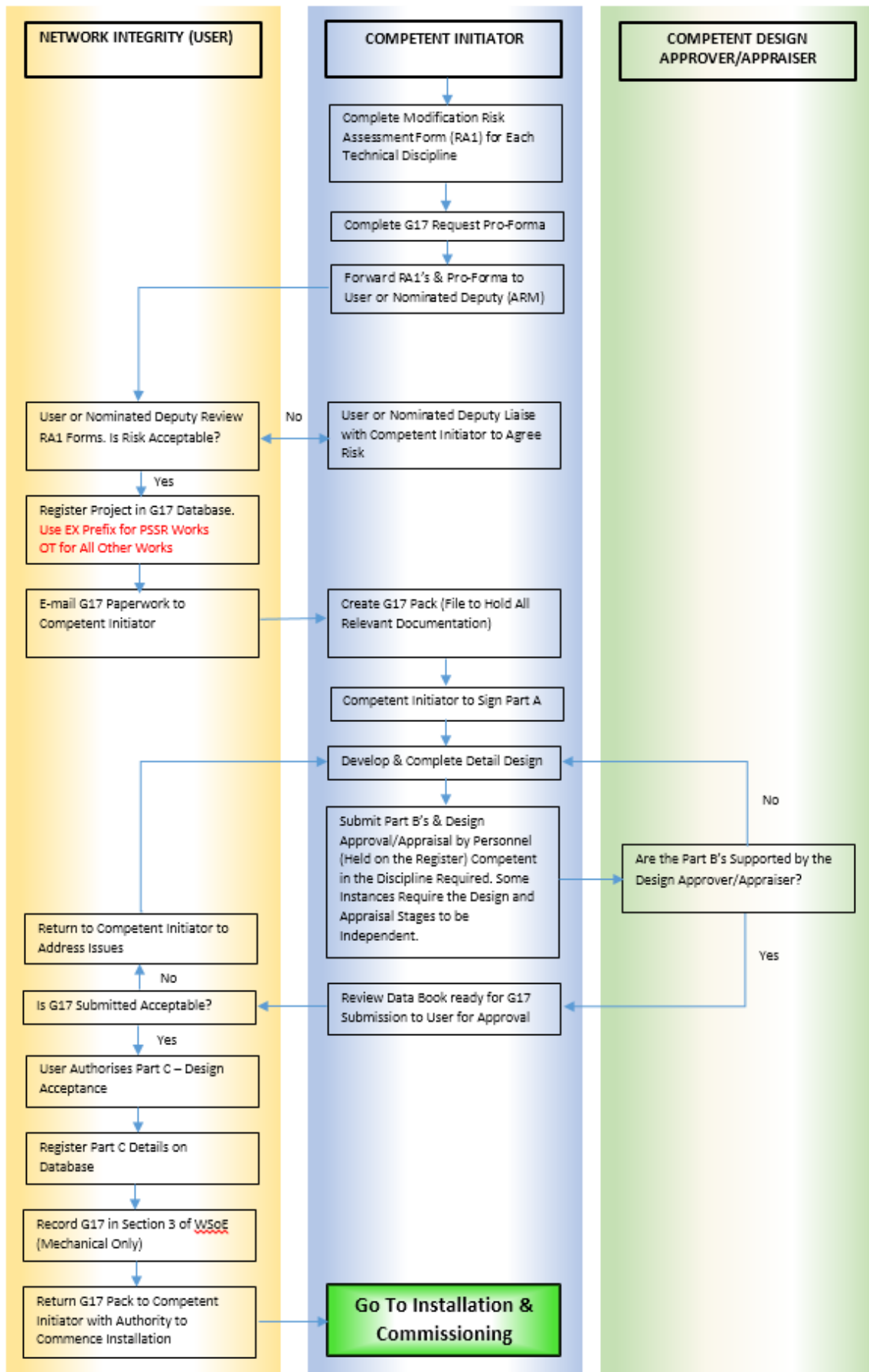
2. Part B Design Approval/Appraisal
3. Part C User Acceptance
4. Part D Installation Completion
5. Part E Commissioning Completion
6. Part F Records & User acceptance

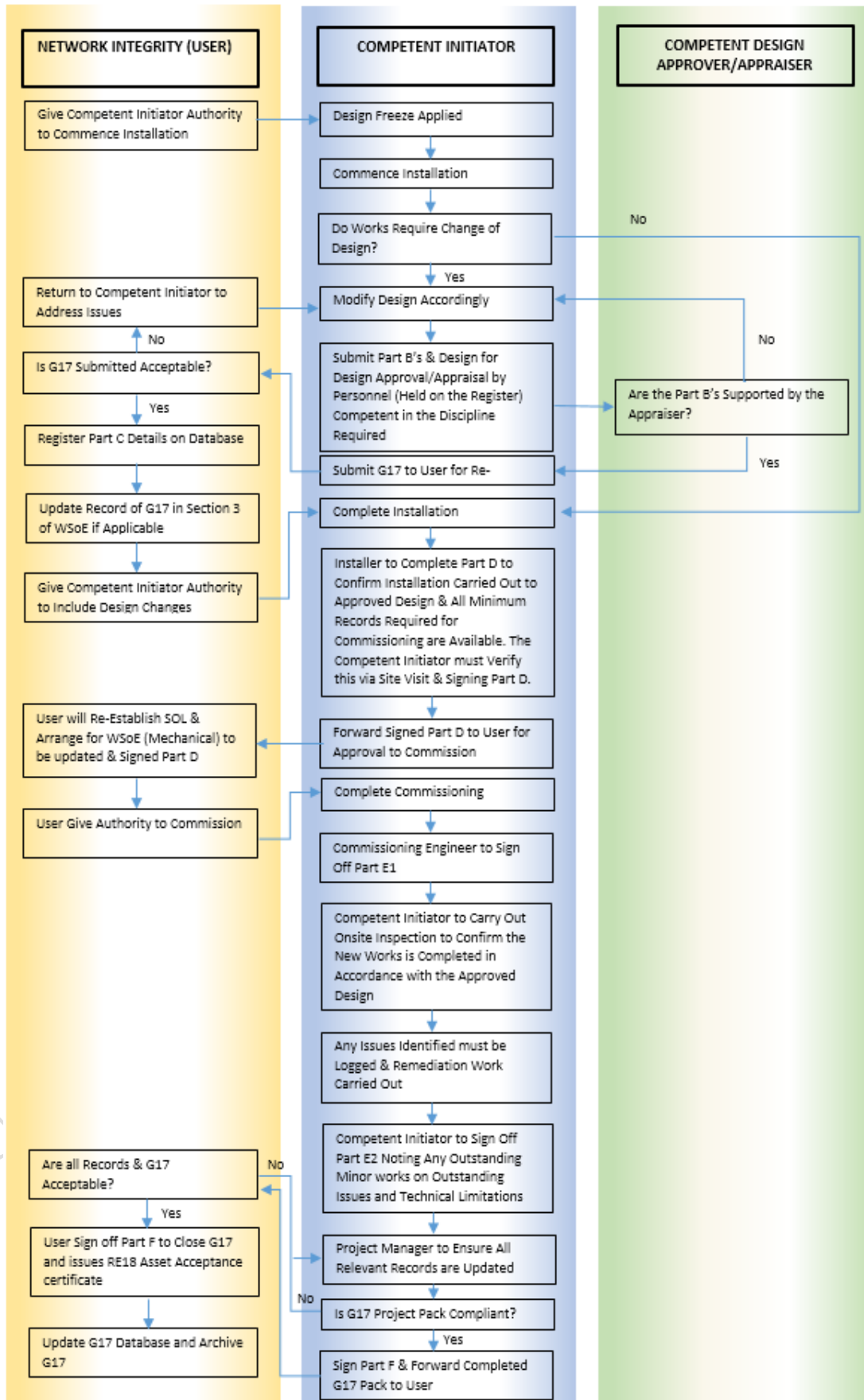
To ensure that the project meets its overall objectives, engineering controls are required at each stage. These controls ensure that the responsible persons agree and accept that the objective of each stage has been met. Appendix 4 contains typical forms that should be used to control the key stages of the project.

The key stages of the G17 procedure are shown in the following flow charts:

Uncontrolled when printed/after download

12. G17 PROCESS FLOW CHART





13. PROJECT KEY STAGES

13.1 Initiation Stage

For the procedure to commence a Competent Initiator must undertake a risk assessment by answering ALL of the questions on the Modification Risk Assessment Form in Appendix 1. This is mandatory for all modifications. The Competent Initiator should monitor and progress the project through to completion. An assessment should be carried out for each individual discipline to determine the risk category for each discipline. The Competent Initiator must also complete a G17 request Pro-Forma (Appendix 2).

The Modification Risk Assessment Form, G17 Request Pro-Forma and any supporting information should then be submitted to the User or his nominated Deputy for review. When the User accepts the risk categorisation, the project will be registered into the G17 Database, which will allocate a unique reference number and produce a G17 Paperwork Pack to be provided to the Competent Initiator. Should the Competent Initiator change throughout the duration of the project a full document handover must take place.

For each G17 raised a unique reference number should be used to track the documentation and project progress.

The referencing system used for NGN/PM/G/17's will be in the format WW/XX/YY/ZZZZ where:-

WW identifies the type of work and will either be EX for remedial works following a Pressure Systems Inspection or OT for all other works.

XX identifies the Network NO – NGN

YY is the year G17 raised

ZZZZ is the unique modification/repair number

13.2 Develop Design

The Designer must ensure that the design output package, typically the design specifications, drawings, calculations and other documentation is clearly presented and meet NGN's Specification and Procedures. The Designer should discuss the content of the package with the Competent Initiator to ensure that there are no omissions and otherwise to facilitate its appraisal. A schedule of documents should, where applicable, be included within the design output package.

13.3 Design Approval (High Risk Only)

A design approval (numerically and quantitatively) should be undertaken for compliance with legislation, design codes, standards and NGN requirements. Upon completion of the design approval, the design should be formally approved prior to submission for appraisal. This design approval stage may be omitted if a pre-determined design is available e.g. for a filter or service governor. A design approval is required for larger works or for anything the User may specifically request.

Upon completion of the Design Approval, each Approver should complete the relevant Approval Report (see Appendix 4) and the part B *Design Approval form* (see Appendix 4) and categorise any comments accordingly

13.4 Design Appraisal (Medium and High Risk)

Upon completion of the detailed design stage, design output package must be forwarded to the nominated Appraisers. The Appraisers must review the drawings and other documentation within their discipline to ensure that the designs meet the required standards, and that all of the documentation required for the project is complete.

Any discrepancy identified by an Appraiser, which cannot be resolved by the Design Approver, must refer them back to the Competent Initiator for resolution. The Competent Initiator/Design Approver

must address any comments made by an Appraiser and the resolution must be returned to the Appraiser for close-out.

For Major works, such as those involving the construction of new pipelines and large AGI's, then it is desirable that the Design Development & Design Approval stages are fully independent from the Appraisal. I.e. The work must not be carried out within the same company.

The User will also reserve the right to decide that for any particular project, independence of the Design and Appraisal stages are carried out as per the previous paragraph.

Upon completion of the Appraisal, each Appraiser should complete the relevant Appraisal Report (see Appendix 4) and the part B *Design Appraisal form* (see Appendix 4) and categorise any comments accordingly.

13.5 User Acceptance

The completed Part A *Initiation Form*, Part B *Design Appraisal Form*, the appraisal reports and the design output package must be submitted to the User. When the User is satisfied that all design issues have been addressed then the Part C *Design Acceptance form* must be completed and signed before the project can enter the installation stage. Note that for multi discipline designs each different design discipline must be approved by the appropriate "User" (There will be a Part C for each discipline)

See Definitions section for the appropriate User definition

The User is not giving technical approval of the modification, but confirming that appropriate appraisals have been carried out. Technical approval is the responsibility of the Design Organisation that carried out the design.

13.6 Design Freeze

Once Part C-User Acceptance, has been completed, the design is frozen and no changes must be authorised unless the process outlined in the Design Changes section that follows has been completed.

13.7 Design Changes

The Designer must create and manage a Design Change Control Register to record all design changes post NGN/PM/G/17 User Acceptance (i.e. Design Freeze). The Designer must undertake a multi-discipline assessment of all design changes to determine the requirement for NGN/PM/G/17 re-approval and appraisal. The Competent Initiator retains responsibility for the whole G17 process and must be informed of all design changes post NGN/PM/G/17 User Acceptance and must consult the Design Co-ordinator on any design changes that do not require a NGN/PM/G/17 re-approval and appraisal.

As a minimum, a formal NGN/PM/G/17 re-approval and appraisal of a design may be required if the design change includes any of the following;

- Gas Engineering
- Equipment functionality / capacity
- Process parameters (e.g. pressure, temperature, flow, speed etc.)
- Change of hazardous Area Zones if affecting electrical equipment or safety considerations
- Material Specification
- Stress Analysis
- Other changes at the discretion of the Competent Initiator
- Electrical Load increase

The Competent Initiator must carry out regular reviews of the Design Change register to ensure that NGN/PM/G/17 Design re-approval and appraisals has been invoked and, where necessary, seek Part-C approval for the changes.

13.8 Installation, Inspection and Testing

The competent Initiator must be satisfied that the Installer is fully briefed on the design and what is required of them.

It is essential to prepare a full specification prior to commencement or alteration of an installation, inspection and testing. The specification should set out the detailed design and provide sufficient information to enable installer (where appropriate) to carry out the installation and to commission it. The specification must include a description of how system is to operate and all the design and operational parameters. It must provide for all the commissioning procedures that will be required and for the provision of adequate information to the user. This should be by the means of an operational manual or schedule, and 'as build' drawings. The size and complexity of the installation will dictate the nature and extent of the manual.

The Installer must ensure that the works are undertaken in accordance with the approved design and the relevant NGN policies, procedures and specifications. Any agreed changes may require additional design, design approval, and appraisal as determined by the User.

Any Permitry required for testing must be in accordance with appropriate procedures i.e. NGN/PM/SCO/2.

Upon completion of the installation, inspection and testing stage, any Safe Operating Limits must be verified and Written Schemes of Examination made available as required under the Pressure System Safety Regulations together with requirements of the Electricity at Work Act and the Installer must complete the part D *Installation Completion Form*, the installation **must** then be verified on site by the Competent Initiator who should sign the Part D (There will be a Part D for each discipline). If the Competent Initiator doesn't have the relevant technical competency to verify the installation then a technically competent person must be appointed for that purpose. The Competent Initiator does however still remain responsible for completing the Part D records.

Part D is required not later than 10 working days prior to the agreed commissioning date. Part D will only receive approval on submission of compliant Part D records. This must be signed by the User prior to commissioning.

Where deemed appropriate by the User, at the time of Part C approval he may Pre Approve commissioning on the Part D, this would normally be on small Low Risk projects.

Commissioning must be undertaken by a suitably qualified competent person. The competent person carrying out the inspection and testing of any installation must, as appropriate to his or her function, have a sound knowledge and experience relevant to the nature of the installation being inspected and tested, and of relevant technical standards. The competent person must be fully versed in the inspection and testing procedures and employ suitable test equipment during the inspection and testing process.

Furthermore, the competent person must have sufficient inspection experience in interpreting the results with respect to the requirements of BS7671 and PSSR.

In the event of a dangerous situation being found, the competent person should recommend the immediate isolation of the defective part. The User should be informed, in writing, of this recommendation without delay.

Any Permitry required for commissioning must be in accordance with appropriate procedures i.e. NGN/PM/SCO/2.

13.9 Commissioning Completion

Upon completion of commissioning of the installation, the Commissioning Engineer must complete section E1 of the Part E *Commissioning Completion Form*, confirming that the work has been

commissioned in accordance with the approved design. This is required not later than 10 working days following completion of site commissioning.

The installation must then be verified on site by the Competent Initiator assisted by a technically competent person, where appropriate or technically competent person who should complete and sign section E2 of Part E *Commissioning Completion Form*.

13.10 Records

On completion of the project the Competent Initiator must then confirm that all relevant Project documents have been received and relevant systems updated. This should be done by completing the Part F *Records Completion Form*. For High Risk projects this would include confirmation of certification as per NGN/PM/RE18. All rows must be completed, where a particular record is not relevant to the project N/A should be entered.

Basic guidance notes are available as Appendix 12 herein to assist in Part F form completion.

Once complete the Competent Initiator must sign the Part F and forward the other relevant completed Parts of the G17, together with any other relevant paperwork etc., to the User as per the agreed completion date as defined in the (G17 Request Proforma) . If everything is acceptable the User will then sign Part F of the G17 to close the Process and issue (if applicable) the RE18 Asset Acceptance Certificate.”

13.11 G17 Extensions and Transfer of Competent Initiator

The transfer of Competent Initiator for a given project can only be done with User approval. The request must be made by the relevant Line Manager using the form in Appendix 9 ‘Transfer of Competent Initiator Form’.

Any request to extend the completion date of a G17 must be done in writing using the ‘G17 Extension Request Form’ appendix 10. This must be completed and signed by the Competent Initiators Line Manager and returned to the Asset Integrity Team.

13.12 Submission Requirements and Timelines

Note: All submissions must be in HARDCOPY form and accompanied by a completed G17 Document Transmittal form (see Appendix 13).

Databook submissions must be made through the G17 Technical Administrator. The submission will be logged in the G17 Document Control Database against the relevant Technical Discipline and approval type required. The G17 Technical Administrator issue a confirmation email and pass the databook to the relevant person for checking.

The Asset Integrity team will respond to submissions as per the timelines set out below. If errors and or omissions are identified through the checking process then these will be communicated using the NGN/PM/G/17 Comment Response Sheet (CRS), see appendix 14. It is the responsibility of the Competent Initiator to address and action all comments then subsequently re-submit the updated databook.

Following the checking process the G17 Technical Administrator will log the result in the G17 Document Control Database and send a confirmation email. The databook then will be returned with the relevant Approval form or CRS.

- **Part A: Initiation and Appendix 1: Modification Risk Assessment Form RA1**

Required on the commencement of project and agreement of commissioning date.

- **Part B: Design Approval / Appraisal Stage**

As per requirements fully approved and/or appraised design with all supporting documentation must be presented in a coherent manner by discipline.

- **Part C: User Acceptance**

NGN integrity will issue a response to submission of the Part B within 10 working days on receipt of the Part B documentation. Part C will only receive approval on submission of a compliant Part B.

Note: A number of iterations of this process may be required to achieve approval.

- **Part D: Installation Completion**

This is required not later than 10 working days prior to the agreed commissioning date. Part D will only receive approval on submission of compliant Part D records. *Note: A number of iterations of this process may be required to achieve approval.*

- **Part E(1 & 2): Commissioning Completion**

This is required not later than 10 working days following completion of site commissioning.

- **Part F: Records completion**

This is required no later than 30 working days following commissioning.

All communications must be via the G17mail (see appendix 15).

13.13 Project Quality Assurance Control Checks

Quality Assurance (QA) Control Checks may be identified as a requirement by the User at Part C approval stage and indicated on the Part C form. The objectives of the G17 project compliance audits are to:

- Assess compliance, and evaluate the effectiveness of the G17 process and project management system
- Provide assurance that integrity requirements are achieved
- Assess leadership, authority, decision-making and accountability
- Define solutions, the need for intervention, corrective and/or preventive action
- Define opportunities for adding value and continual improvement
- Confirm the availability of up-to-date data books, records and information at points of use.

Where this requirement has been identified it is the responsibility of the Competent Initiator to appoint a competent Quality Assurance assessor. Quality Assurance Control Checks are required at two stages:

- Installation Completion Part D prior to commissioning
- Records completion Part F following commissioning

The QA Assessor must sign the relevant section of the G17 part D and part F documents as evidence that the checks have been completed.

User approval/acceptance will not be granted where the Quality Assurance Control Check requirement has been identified but the relevant paperwork has not been signed by an appointed QA assessor.

APPENDIX 1 – REFERENCES

This Management Procedure makes reference to the documents listed below

Unless otherwise specified the latest versions of all references apply.

NGN procedures

NGN/MPT/IMS/01	Integrated Management System
NGN/PR/P/11	Inspection, assessment and repair of damaged (non-leaking) steel pipelines designed to operate at pressures > 2 Bar
NGN/SP/PA/10	New and maintenance painting at works and site for above ground pipeline and plant installations
NGN/PM/ECP/2	Cathodic protection of buried steel systems
NGN/PL/RE/1	Capture, update and retention of engineering asset records
NGN/PM/RE/18	Commissioning, operational and asset acceptance
NGN/PM/G/19	NGN's application of model design appraisals
GRM	Gas Requirements Manual

British Standards

BS EN 1514-1	Flanges and their joints. Dimensions of gaskets for PN-designated flanges. Non-metallic flat gaskets with or without inserts
BS EN 1514-2	Flanges and their joints. Gaskets for PN-designated flanges. Spiral wound gaskets for use with steel flanges
BS 3381	Specification for spiral wound gaskets for steel flanges to BS 1560
BS 7531	Rubber bonded fibre jointing for industrial and aerospace purposes. Specification
BS 7671	Requirements for Electrical Installations. IET Wiring Regulations

IGEM

IGE/GL/5 edition 3	Managing new works, modifications and repairs
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Regulations

COMAH	Control of Major Accident Hazards Regulations
ATEX	Directive 99/92/EC, Directive 94/9/EC
DSEAR	Dangerous Substances and Explosive Atmospheres Regulations
PSSR	Pressure Systems Safety Regulations
EAWR	Electricity at Work Regulations
L122	HSE guidance on PSSR

APPENDIX 2 – MODIFICATION RISK ASSESSMENT – RA1

MODIFICATION RISK ASSESSMENT – RA1

Description of Modification

Provide PIPELINE SECTION DETAILS or SITE NAME with a clear description of the work and reason.
 Note: Include / attach the design or modification information.

Technical Discipline Type		
PSSR System Number	Competent Initiator	
BOL Area		

All questions must be completed with a Low, Medium or High Risk Ranking

Question		Categorisation Yes or No	Risk Response Yes or No	Outcome Low, Medium or High
1	Is the work covered by G19?	Yes – Low No - Low, Medium or High		
2	Does Replacement device / equipment have the same specification & manufacturer? For E&I refer to NGN/PM/G17 Appendix 11 Point 15	Yes – Low No – Medium or High		
3	Is there a new design/ specification required for the modification or repair?	Yes – Medium or High No – Low		
4	Will a new or change to a hazardous area occur as a result of the repair / modification?	Yes – Low, Medium or High No - Low		
5	Is this a new Asset being introduced?	Yes – Medium or High No – Low or Medium.		
6	Will there be a change to any drawing or diagram e.g. ELD, Instrument / Electrical Loop, Hazardous Area, Drainage etc.	Yes – Low, Medium or High No - Low		
7	Does the modification or repair affect a Safety Integrity Loop?	Yes – Medium or High No - Low		
8	Will the modification alter the control panel display (Human Factors) or alarm handling processes?	Yes – Medium or High No - Low		
9	Does the modification result in a change to software settings or logic?	Yes - Medium or High No - Low		
10	Will the modification involve welding to pressure containing equipment?	Yes – High No – Low		

Assessment Outcome

Confirm if Initiator has overdue G17		Numbers	
Competent Initiator Signature		Date	

User Agreed Risk Rank			
NGN/PM/RE/18 Requirement	Yes	No	
User Comments (Inc Allocated G17 Reference Number)			
User Signature or Nominated Deputy		Date	

APPENDIX 3 – G17 REQUEST PRO-FORMA

G17 Request Pro-Forma

Please completed this form when requesting G17 to be raised and return with applicable Modification Risk Assessment Forms to ARM Network Integrity department

Complete all Yellow highlighted sections

NGN/PM/G/17 Request Pro-Forma	Identify Work Type: eg.	EX = PSSR Remedial Work Only		
		OT = All Other Work		
New Works/Modification / Repair Location	(Site name/location)	BOL Area		
REASONS FOR NEW WORKS, MODIFICATION OR REPAIR				
Pressure System No (if applicable)		Reason:		
Safe Operating Limits (if applicable)				
DESIGN BRIEF FOR NEW WORKS, MODIFICATION OR REPAIR				
PROJECT DRAWINGS, DOCUMENTATION ETC				
Required Completion Date				
DESIGN APPROVAL & APPRAISAL REQUIRED TO SUPPORT DESIGN ACCEPTANCE				
Appraisal Type	Design Approval	Design Appraisal	Risk Category	<p>Please Indicate which Approval & Appraisal are required together with Risk Category for the Project</p> <p>Complete all Boxes – Enter N/A where Not Applicable</p>
Mechanical				
Gas Engineering				
Civil/Structural				
Electrical				
Instrumentation				
Cathodic Protection				
Software				
COMPETENT INITIATOR				
Name		Signature		
Title		Date		
Postal Address				
E-mail Address				
Line Manager Name				

APPENDIX 4 – TYPICAL FORMS FOR NEW WORKS, MODIFICATION & REPAIR

NGN/PM/G/17: PART A INITIATION	REFERENCE NUMBER	
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New Works/Modification / Repair Location	
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User		Address	
Competent Design Authority		Address	
Design Organisation		Address	

REASONS FOR NEW WORKS, MODIFICATION OR REPAIR		
Pressure System No (if applicable)		Reason:
Safe Operating Limits (if applicable)		

DESIGN BRIEF FOR NEW WORKS, MODIFICATION OR REPAIR

PROJECT DRAWINGS, DOCUMENTATION ETC

Required Completion Date	
---------------------------------	--

TECHNICAL APPRAISAL TYPE REQUIRED TO SUPPORT DESIGN ACCEPTANCE					
Appraisal Discipline	Design Approver	Approver Ref	Design Appraiser	Appraiser Ref	Risk
Mechanical					
Civil/Structural					
Gas Engineering					
Cathodic Protection					
Electrical					
Instrumentation					
Software					

COMPETENT INITIATOR			
Name		Signature	
Title		Date	
Address			

NGN/PM/G/17: PART B DESIGN APPRAISAL STAGE	Reference Number	
New Works/Modification / Repair Location		

BASIC INFORMATION	
Technical Appraisal Type	

DESIGN APPROVAL			
Name Of Approver		NGN G/17 APPROVER DATABASE REF NO.	
Position Of Approver			
Address Of Approver			
APPROVAL RESULTS			
Design Approved (See Attached Report)		YES/NO	
Comments:			
Signature Of Approver			
Date			

DESIGN APPRAISAL			
Name Of Appraiser		NGN G/17 APPRAISER DATABASE REF NO.	
Position Of Appraiser			
Address Of Appraiser			
APPRAISAL RESULTS			
Appraisal Supported (See Attached Report)		YES/NO	
Comments:			
Signature Of Appraiser			
Date			

NGN/PM/G/17: PART C USER ACCEPTANCE	Reference Number	
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New Works/Modification / Repair Location	
---	--

TECHNICAL APPRAISAL TYPE	
--------------------------	--

User Name		Address:
User Title		
User		
Date		

ASSET DATA COLLECTION TO COMMENCE AT THIS POINT AND MAINTENANCE SCHEDULES TO BE PREPARED FOR UPDATE.
DATA COLLECTION TEMPLATES TO BE REQUESTED FROM *ASSET DATA*

DESIGNS ARE FROZEN FOLLOWING PART C APPROVAL.
ALL FURTHER DESIGN CHANGES MUST BE APPROVED BY USER.

Comments:

Quality Assurance Control Check required at Parts D & F	YES	NO
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NGN/PM/G/17: PART D INSTALLATION COMPLETION		Reference Number	
New Works /Modification / Repair Location			
Technical Appraisal Type			
INSTALLER SECTION			
NEW WORKS / MODIFICATION / REPAIR INSTALLED IN ACCORDANCE WITH THE APPROVED DESIGN. ALL RELEVANT INSPECTION AND TESTING HAVE BEEN CARRIED OUT AND CERTIFICATION PROVIDED AS SPECIFIED BY THE PROJECT.			
Installer		Installer Address	
Installer Title			
Installer Signature			
Date			
COMPETENT INITIATOR SECTION			
Certification As Per NGN/PM/RE/18		YES / NO	
Minimum Records Requirements	Pipes, Mains & Services (Y/N or NA)	Governors Y/N or NA	E & I (Y/N or NA)
Fully up to date Data book			
As-built Records, Sketch, Valve details			
QA Report			
Confirmation of CP Installation			
Material Test Certification			
Weld Inspection Report			
Hydraulic Test Results & Certification			
Pneumatic Test Results & Certification (Incl. Impulse)			
Updated PSSR Drawing (Copy on Site)			
Certificates of Conformity			
SAP Maintenance schedules set			
ATEX/DSEAR Compliant			
Hazardous Area Drawing on site			
Electrical Cable Test Sheets			
Calibration			
Pre-commissioning – From the design confirm maximum Zs permitted value before commissioning			Ω
Asset Data SAP updated	Asset Data Sign		
Comments including Deviation details			
FOLLOWING SITE INSPECTION I CONFIRM THAT WORKS ARE INSTALLED IN ACCORDANCE WITH THE APPROVED DESIGN. ALL RELEVANT INSPECTION AND TESTING HAS BEEN CARRIED OUT AND CERTIFICATION PROVIDED AS SPECIFIED BY THE PROJECT.			
Name	Signature	Date	
QUALITY ASSURANCE CONTROL CHECK			
FOLLOWING A REVIEW I CONFIRM THAT THE PROJECT DOCUMENTATION IS IN ACCORDANCE WITH NGN SPECIFICATIONS AND REQUIREMENTS			
QA ASSESSOR	Name	Signature	Date
USER ACCEPTANCE			
		Asset Integrity Signature(s)	
Safe Operating Limits Have Been Confirmed	Yes / Not Applicable		
Written Schemes Of Inspection Are Available	Yes / Not Applicable		
Electricity at Work Act	Yes / Not Applicable		
Comments:			
APPROVAL TO COMMISSION			
User / Duty Holder Signature			Date

NGN/PM/G/17: PART E COMMISSIONING COMPLETION	Reference Number	
---	------------------	--

New Works /Modification / Repair Location	
--	--

E1	NEW WORKS/MODIFICATION / REPAIR COMMISSIONED IN ACCORDANCE WITH THE APPROVED DESIGN.		
Commissioning Engineer Name			
Signature		DATE	
Address			
Comments:			
<p>Only Applicable To Electrical Systems</p> <p>When Zs values are calculated, the maximum Zs value shall comply with BS7671: 2008. ($Z_s = Z_e + (R_1 + R_2)$) Note: <i>If compliance is not achieved refer to Project Manager for guidance.</i></p>			
Max permitted Zs value from design _____ Ω		Max Zs value on commissioning: Ω	

E2	FOLLOWING ON SITE INSPECTION I CONFIRM THE NEW WORKS/MODIFICATION / REPAIR IS COMPLETED IN ACCORDANCE WITH THE APPROVED DESIGN AND COMPLIANT WITH ALL RELEVANT NGN TECHNICAL DOCUMENTS AND SPECIFICATIONS.		
Competent Initiator			
Signature		Date	
Drawings / Documentation Provided For Records:			
<p>Comments / Outstanding Minor Work:</p> <p>(For High Risk Projects An "Technical Limitations & Restricted Operation" Form Must Be Used - See NGN/PM/RE/18)</p>			

NGN/PM/G/17: PART F. Records Completion	Reference No	
New Works /Modification / Repair Location		

All Project Documents Received By Initiator & Relevant Systems Updated			
Records Updated	Update Confirmed By	YES or N/A	Signature
Certification As Per NGN/PM/RE18	INITIATOR		
PSSR Drawings Updated & On Copy Site	INITIATOR		
Hazardous Area Drawings Updated & Copy On Site	INITIATOR		
All Components Labeled As Per PSSR Drawing	INITIATOR		
Site Drawings & Records (as per NGN/PL/RE/1) & On Site	INITIATOR		
CP Schedules (UPTIME)	INITIATOR		
SAP Maintenance Schedules	INITIATOR		
GIS Maps	INITIATOR		
As Laid / Strip Maps	INITIATOR		
SRP (Aerial Surveillance >7Bar Pipelines)	INITIATOR		
FR/1 Form / UKOPA Database (>7 Bar pipelines)	INITIATOR		
FR/2 Form / UKOPA Database (>7 Bar pipelines)	INITIATOR		
Project Data book	INITIATOR		
Electrical Drawings & On Site	INITIATOR		
Instrument Drawings & On Site	INITIATOR		
Electrical / Instrumentation "Like For Like" Record Sheets	INITIATOR		
Asbestos Register Updated	INITIATOR		
Other Relevant Records	INITIATOR		
Copy of approved deviation	INITIATOR		
Asset Information Database Updated	ASSET DATA		
Competent Initiator	Signature		Date

Quality Assurance Control Check			
FOLLOWING A REVIEW I CONFIRM THAT THE PROJECT DOCUMENTATION IS IN ACCORDANCE WITH NGN SPECIFICATIONS AND REQUIREMENTS			
QA Assessor	Name	Signature	Date

User Section			
Records Updated	Update Confirmed By	YES or N/A	Signature
PSR Database (> 7 Bar)	NGN ARM		
SOL Reaffirmed	NGN ARM		
WSoE Updated	NGN ARM		
G17 Database	NGN ARM		
Comments:			
	Signature		Date
User Acceptance	Signature		Date

APPENDIX 5 - DESIGN APPROVAL REPORT FORM




NGN/PM/G/17 TECHNICAL APPROVER REPORT		CATEGORY OF COMMENTS	
Discipline		A INTEGRITY	Comments under this category have system integrity or code compliance implications and must be resolved under the approval procedures.
This exercise is a check of a submitted design or modification – DETAIL DESIGN		B – DESIGN	Comments under this category relate to aspects of the design. These comments are raised to highlight an issue the Approver considers should be addressed.
It DOES include the responsibility to check & approve the design in accordance with NGNs' specifications, policies and procedures.		C – GENERAL	Comments under this category will include minor points of interest raised for information purposes
Location:			
G17 Ref No:			
Approver Name:		Client:	
Signature:		Address:	
Address:		Contact Telephone No:	
Contact Telephone No			
Issue No.	Date:	Number of pages: 1 of x	

APPENDIX 6 - DESIGN APPRAISAL REPORT FORM



NGN/PM/G/17 TECHNICAL APPRAISAL REPORT		CATEGORY OF COMMENTS	
Discipline		A INTEGRITY	Comments under this category have system integrity or code compliance implications and must be resolved under the appraisal procedures.
This appraisal is an assessment of a submitted design or modification It does not include the responsibility to check or approve the design, although the appraisal process may involve checking specific aspects of the design against NGNs' specifications, policies and procedures. Location:		B – DESIGN	Comments under this category relate to aspects of the design. These comments are raised to highlight an issue the appraiser considers should be addressed.
G17 Ref No: _____ NGN CDA ID: _____ Appraiser: _____ Signature: _____ Address: _____ Contact Telephone No _____		C – GENERAL	Comments under this category will include minor points of interest raised for information purposes
Issue No. _____ Date: _____		Client: _____ Address: _____ Contact Telephone No: _____ Number of pages: 1 of x	


APPENDIX 7 - ELECTRICAL LIKE FOR LIKE RECORD SHEET

Electrical Equipment/Cable Replacement Register			
Site /Location:		JV:	
Removed Equipment / Cable			
CIRCUIT DESCRIPTION EQUIPMENT TITLE / USE	LOCATION	NOTES	
	PLANT No.		
MODEL No.	SERIAL No.		
MANUFACTURER	QUANTITY		
EQUIPMENT Ex CLASS:-	Zone	TEMPERATURE CLASS	Drawing Number
		GROUP	
CERTIFICATE No.	CERTIFICATE AVAILABLE		
CERTIFICATION BODY	DATE OF ISSUE		
New Equipment			
CIRCUIT DESCRIPTION EQUIPMENT TITLE / USE	LOCATION	NOTES	
	PLANT No.		
MODEL No.	SERIAL No.		
MANUFACTURER	QUANTITY		
EQUIPMENT Ex CLASS:-	Zone	TEMPERATURE CLASS	Drawing number
		GROUP	
CERTIFICATE No.	CERTIFICATE AVAILABLE		
	DATE OF ISSUE		
Checklist			
Technician / Engineer	Initial	Remarks	
Name :-			
Signature :-			
Date:-			
1. Inspection and test results 2. Site maintenance records updated 3. Office maintenance records updated 4. Drawings Updated			
Notes :- On completion of work please send copy of this form and relevant documentation to ARM Integrity.			


INSTRUMENT LIKE FOR LIKE RECORD SHEET

Instrument Equipment/Cable Replacement Register.										
Site /Location:		JV:								
Equipment Details (removed)										
Loop/Cable/Tag Number	Manufacturer	Model no	Serial No.	Certification Body	Certification No.	Zone	I.S. cable calc check Doc ref if required	Drawing Number	Description/Remarks	
Equipment Details (new)										
Loop/Cable/Tag Number	Manufacturer	Model no	Serial No.	Certification Body	Certification No.	I.S. cable calc check Doc ref if required	Drawing Number	Description/Remarks		
Installer Checklist										
Technician / Engineer						Initial				Remarks
Name :-										
Signature :-										
Date:-										
Notes :- On completion of work please send copy of this form and relevant documentation to ARM Integrity.										


APPENDIX 8 – G17 COMPETENT INITIATOR REGISTRATION FORM

					
<p>G17 COMPETENT INITIATOR REGISTRATION FORM</p>					
<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Initiator First Name</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	Initiator First Name		<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Initiator Surname</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	Initiator Surname	
Initiator First Name					
Initiator Surname					
<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Line Manager</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	Line Manager		<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Business Unit</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	Business Unit	
Line Manager					
Business Unit					
<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">G17 Trained</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	G17 Trained		<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Training Date</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	Training Date	
G17 Trained					
Training Date					
<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Comments</th> </tr> <tr> <td style="height: 60px;"></td> </tr> </table>		Comments			
Comments					
<p>I confirm the Competent Initiator has the relevant technical knowledge and experience to meet the requirements of the G17 process</p>					
<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Signed By Line Manager</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	Signed By Line Manager		<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Date</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	Date	
Signed By Line Manager					
Date					
<p>Once all the above fields have been completed please sign and return back to G17mailbox@NorthernGas.co.uk</p>					
<p><u>Asset Integrity Use Only</u></p>					
<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Signed by User</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	Signed by User		<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">Date</th> </tr> <tr> <td style="height: 20px;"></td> </tr> </table>	Date	
Signed by User					
Date					
<table border="1" style="width: 100%;"> <tr> <th style="background-color: #cccccc;">User Comments</th> </tr> <tr> <td style="height: 60px;"></td> </tr> </table>		User Comments			
User Comments					

APPENDIX 9 – TRANSFER OF INITIATOR REQUEST FORM

							
TRANSFER OF INITIATOR REQUEST FORM							
G17 Reference	Location						
Current Competent Initiator ID	Current Competent Initiator						
New Competent Initiator ID	New Competent Initiator						
Date of Transfer	Requested By						
Brief Description							
I confirm handover documentation has been completed to allow transfer of Initiator							
Signed by Line Manager	Date						
Once all the above fields have been completed please sign and return back to G17mailbox@NorthernGas.co.uk							
Asset Integrity Use Only							
User Comments							
	Mechanical	Software	Civil / Structural	Electrical	CP	Gas Eng	Instrument
Part A							
Part C							
Part D							
Part E							
Signed by User		Date					

APPENDIX 10 – G17 EXTENSION REQUEST FORM

		G17 EXTENSION REQUEST FORM							
G17 ID No	Requested By	Job Title							
Request Date	Phone Number	Email							
G17 Reference		Location							
Previous Issue Date		Previous Completion Date							
Description of Work									
Reason for Extension Request									
Is the G17 overdue?		Y/N							
Requested New Completion Date of									
Initiator Signature		Date							
Line Manager Signature		Date							
Asset Integrity Use Only									
Extension requested previously?									
How many times previously?									
Date of last Extension?									
	Mechanical	Software	Civil / Structural	Electrical	CP	Gas Eng	Instrument		
Part A								Signed Date	
Part B								Signed Date	
Approval								Signed Date	
Appraisal								Signed Date	
Part C								Signed Date	
Part D								Signed Date	
Part E								Signed Date	
User Signature							Date		
Extension Approved		Yes / No							
User Comments									

APPENDIX 11 - WORKS WHICH DO NOT REQUIRE ANY PART OF THE FORMAL PROCEDURES TO BE RAISED

1. any inspection works wholly completed under the NGN/PR/P/11 Procedures
2. superficial or minor surface corrosion
3. soft part replacements, including filter element replacement provided it is in-line with approved procedure
4. Like for like gasket replacement. To BS EN 1514 Pts 1 & 2, BS 3381 & BS 7531
5. painting or painting repairs if carried out to NGN/SP/PA/10
6. grit blasting or wire brushing operations provided it is in-line with an NGN approved standard
7. replacement and repairs to wrapping or insulation if carried out to PA/10
8. rectification of leaks associated with gaskets or soft seals
9. reaffirmation of MOP's
10. Fitting of temporary pressure or temperature gauges to existing fittings
11. Cathodic protection works not in contact with pressure containing parts if to NGN/PM/ECP/2
12. Realignment or retightening of existing stud bolts and nuts
13. Updating of pressure systems drawings or records
14. Certain LP gasholder work and modifications such as
 - a. The replacement of defective rivets with an equivalent bolt, toggle bolt or similar component
 - b. The reinforcement of existing wasted structural steelwork members
 - c. Repairs to access stairs, ladders & platforms and hand railing
15. Replacement of E&I equipment with the same or better safety certification, function, capacity and load, such as:
 - a. Relay
 - b. Safe area light switch
 - c. Battery
 - d. Cable
 - e. Fuse
 - f. Isolator
 - g. Simple Devices

APPENDIX 12 – PART F RECORDS CLOSURE GUIDANCE NOTES

The G17 part F form should be signed as evidence that each of the relevant records requirements have completed. Any items that are not relevant should be indicated as such.

The Competent initiator must complete all sections as per table 1 below:

Table 1 - To be completed by the Initiator

PSSR Drawings Updated & On Copy Site	Drawing to be updated on NGN's Meridian Drawing system, laminated copy to be on site prior to commissioning
Hazardous Area Drawings Updated & Copy On Site	Drawing (as per SR25) to be updated on NGN's Meridian Drawing system, copy to be on site prior to commissioning
All Components Labeled As Per PSSR Drawing	Detailed check to be performed by the PM or their appointed agent to verify that the assets on site correspond with the PSSR drawing
Site Drawings & Records (as per NGN/PL/RE/1) & On Site	For guidance see: NGN/PL/RE/1, Policy for: Capture, Update and Retention of Engineering Asset Records
CP Schedules (UPTIME)	Initiator to update CP schedule in Uptime
Asset Information Database Updated	Asset records to: assetinformation@northerngas.co.uk
SAP Maintenance Schedules	Once asset health has been updated i.e. the assets have been built in SAP PL/Competent Initiator to inform the maintenance department that maintenance schedule can be modified for any new or removed equipment and maintenance activity recommenced
GIS Maps	

	Provide details to: assetinformation@northerngas.co.uk
As Laid / Strip Maps	>7Bar Pipelines – details to pipelinesteam@northerngas.co.uk
SRP (Aerial Surveillance)	>7Bar Pipelines – details to pipelinesteam@northerngas.co.uk
FR/1 Form / UKOPA Database	>7Bar Pipelines – details to pipelinesteam@northerngas.co.uk
FR/2 Form / UKOPA Database	>7Bar Pipelines – details to pipelinesteam@northerngas.co.uk
Project Data book	Full comprehensive, concise data book covering all aspects of the project, for large multi-disciplinary projects each discipline should be presented separately. This must contain all relevant G17 documentation and supporting evidence.
Electrical Drawings & On Site	Drawing to be held in the Meridian Drawing System and two copies left on site: <ol style="list-style-type: none"> 1. Control copy – to be returned to the drawing team when redlined 2. Site Copy – to be kept on site until replaced with updated version
Instrument Drawings & On Site	Drawing to be held in the Meridian Drawing System and two copies made available on site: <ol style="list-style-type: none"> 1. Control copy – to be returned to the drawing team when redlined 2. Site Copy – to be kept on site until replaced with updated version
Electrical / Instrumentation “Like	

For Like” Record Sheets	Electrical (NGN/PM/G/17 Appendix 6) and Instrumentation (NGN/PM/G/17 Appendix 7) forms should be completed and return to the Asset Information team at: assetinformation@northerngas.co.uk
Asbestos Register Updated	Web-based system hosted by Vision Risk Management – Contact NGN EH&S team for further details
Other Relevant Records	Other records may be required to satisfy the User that work will be / has been completed to the required standard.

The Asset Risk Management have to complete four sections to confirm that the relevant records have been updated as shown in Table 2:

Table 2 - To be completed by the Asset Risk Management Department

SOL Reaffirmed	Integrity Team (Mech / Pipelines) to confirm Safe Operating Limits (SOL)
WSoE Updated	Integrity Team (Mech / Pipelines) to confirm that the Pressure System Written Scheme of Examination has been updated
G17 Database	Integrity Team – to confirm that G17 database has been updated as per project requirements
PSR Database	For Major Accident Hazard (MAH) Pipelines only – Integrity team (Pipelines) to update the database

APPENDIX 13 – NGN/PM/G/17 DOCUMENT TRANSMITTAL FORM

G17 Document Transmittal Form

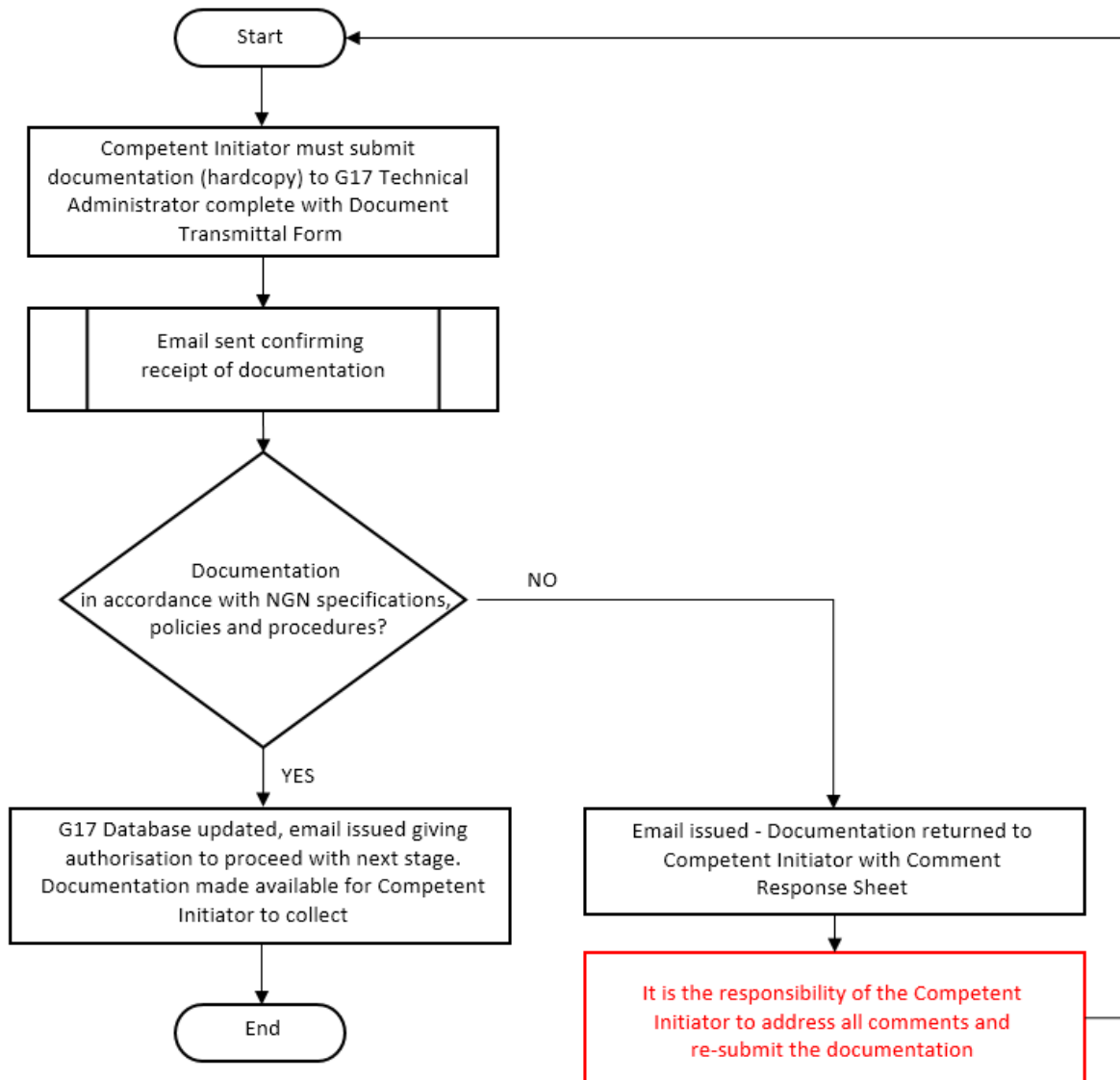
Competent Initiator Section			
G17 Reference number			
Works Location			
Competent Initiator		Date	
Issue No.			
Discipline Type and Approval Requested			
	Part C	Part D	Part F
Mechanical			
Gas Engineering			
Cathodic Protection			
Civil Structural			
Electrical			
Instrumentation			
Software			
Comments			

G17 Technical Administrator Section – check in			
Logged In Database	Yes / No	Email sent	Yes / No
Signed		Date	

User Section			
Comments			
Approved	Yes / No	Referred with CRS	Yes / No
User Returned Date:			

G17 Technical Administrator Section – check out			
Logged out of Database	Yes / No	Email sent	Yes / No

APPENDIX 15 – G17 COMMUNICATION PROCESS FLOW CHART



Uncontrolled

ENDNOTE

Comments

Comments and queries regarding the technical content of this safety and engineering document should be directed to:

Standards Team
Northern Gas Networks Limited
7 Camberwell Way
Moorside Park
Sunderland
Tyne & Wear
SR3 3XN

You can also email the Standards Team at Standards@northerngas.co.uk

Buying documents

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