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Gas Networks Ireland

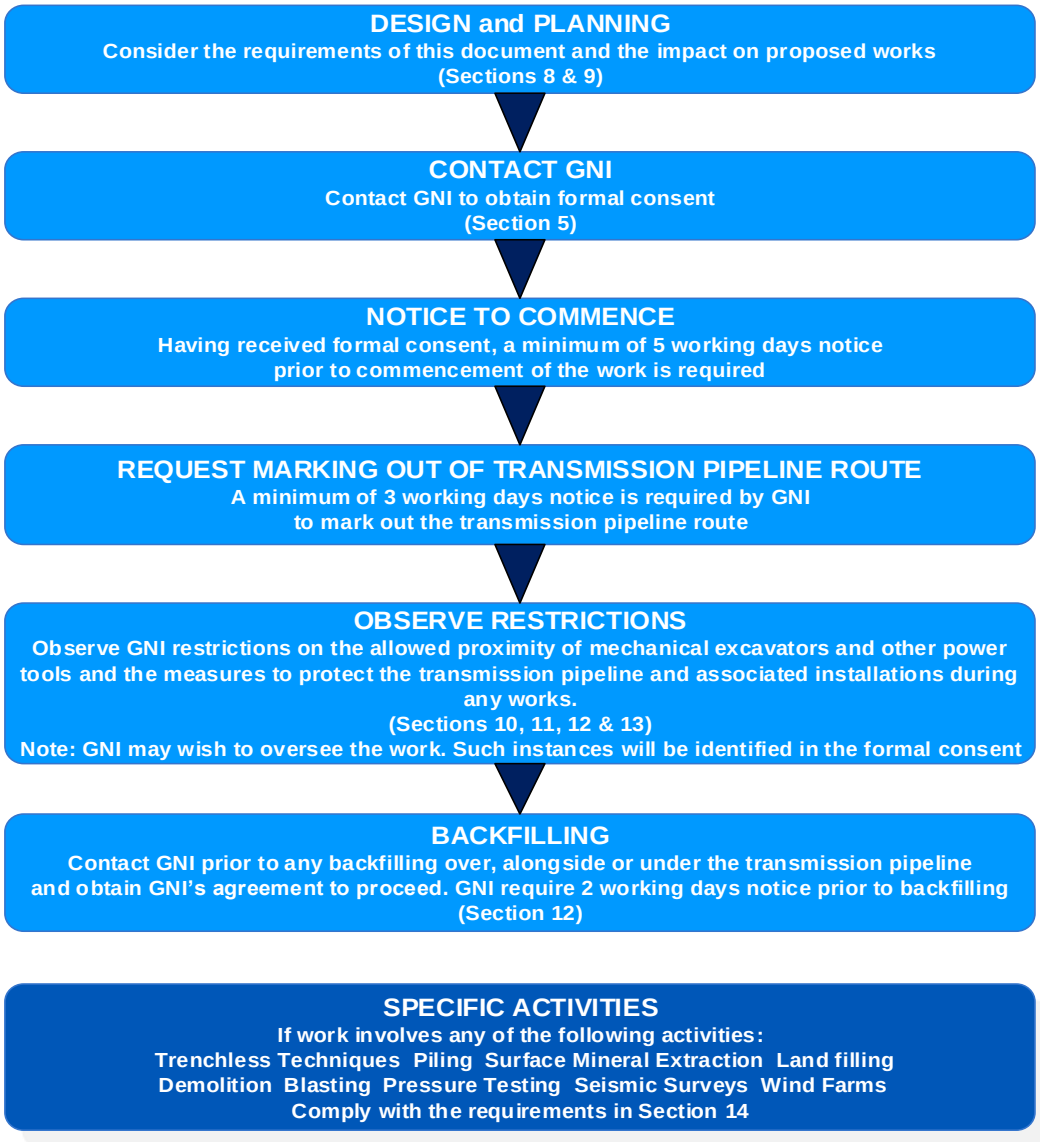
Code of Practice for:

Working in the Vicinity of the Transmission Network

Procedure No: AO/PR/127 Rev 1 Date: October 2015

WHEN CARRYING OUT WORK IN THE VICINITY OF THE TRANMSISSION NETWORK FOLLOW THE FOLLOWING PROCESS

IMPORTANT: Flowchart should be used in conjunction with this Code of Practice and not in isolation. If at any time during the works the transmission network is damaged, even slightly, then observe the precautions in Section 1 of this document.



IF IN DOUBT CONTACT GNI

Foreword

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

This code of practice does not cover emergency work or normal agricultural work (as defined below), but it is recommended that in such cases the requirements of the code should be observed as far as possible.

Any damage to a transmission pipeline or its coating can affect its integrity and can result in failure of the transmission pipeline with potentially serious hazardous consequences for individuals located in the vicinity of the transmission pipeline. It is therefore essential that the procedures outlined in this document are complied with when working near the transmission network.

Failure to apply for consent and/or to comply fully with this Code of Practice to the satisfaction of GNI may result in the commencement of legal proceedings by Gas Networks Ireland to stop such works.

Activities associated with working in the vicinity of the transmission network may impact on the safety of the general public, site workers, GNI staff and contractors, and may affect the local environment. All Third Parties working close to the transmission network shall carry out suitable and adequate risk assessments prior to the commencement of work to ensure that all such issues are properly considered and risks mitigated.

Contractors and other users external to GNI should direct their requests for further copies of GNI engineering documents to Gas Networks Ireland.

1 SAFETY PROCEDURE IN THE CASE OF DAMAGE TO THE TRANSMISSION NETWORK

If the GNI transmission network is damaged or leaking, the following precautionary measures shall be taken immediately:

- **In the event of gas leakage do not switch any machinery on or off in the vicinity of the leak.**
- **Prohibit smoking, the use of naked flames, the use of electrical switches, the use of mobile phones and the use of all other ignition sources in the vicinity of the leak/damage.**
- **Evacuate all personnel away from and upwind of the affected area.**
- **Ensure that no one approaches the affected area without the consent of Gas Networks Ireland.**
- **Once clear of the area, report all damage or leakage, however minor it may appear, to the GNI 24hr Emergency Service on 1850 205050.**
- **Do not attempt to repair the damage or stop the leak.**

Note: Any damage to the coating of a GNI transmission pipeline, no matter how apparently insignificant, shall be brought to the attention of GNI in order to carry out repairs. Minor damage to pipe coating and/or ancillary connections brought to the attention of GNI will be repaired free of charge.

2 DEFINITIONS

For the purpose of this Code of Practice the following definitions shall apply:

GNI:
Gas Networks Ireland.

GNI Inspector:
The person appointed from time to time by GNI, to act as the GNI Representative on site, to ensure compliance with this Code of Practice.

Third Party:
The promoter of New Works, the person or persons, firm, company or authority for whom new services or other works are being provided, including their servants, agents and contractors.

Wayleave:
A strip of land, upon and over which GNI has, under the terms of Gas Act (1976 as amended), acquired the rights to lay, construct, inspect, maintain, protect, use, replace, remove or render unusable a main or pipe for the transmission or storage of gas or other materials connected with the exercise and performance of the functions of GNI and all necessary apparatus ancillary thereto. The wayleave can extend up to 9 metres either side of the transmission pipeline.

A GNI wayleave is a legal burden on the title of the property within which it exists and is noted as such on the relevant Land Registry Folio.

Normal Agricultural Works
For the purpose of this Code of Practice, 'Normal Agriculture Works' are such works which do not involve the use of

a) Excavators (tracked or wheeled) irrespective of the proposed excavation depth, or
b) Other mechanical soil penetrating machines such as fence post augers.

Installation
GNI transmission installations are primarily above ground (AGI) with a number below ground (UGI) comprising some or all of the following: Main stream pipework, control pipework, telemetry, instrumentation, boiler houses, analyser kiosks, generators and services.

Hot Works
Hot works is any tool, equipment and/or activity, which produces sparks, fire or has the potential to cause fires or explosions including, but not limited to, electric/battery powered tools, welding, cutting, brazing, soldering, grinding, etc.

3 SCOPE

This Code of Practice sets out the requirements and considerations for the design, construction and maintenance of services and/or structures and other works in the vicinity of existing Gas Networks Ireland (GNI) Gas transmission pipelines and associated Installations located in both Wayleaves and public roadways.

4 PURPOSE

The purpose of this Code of Practice is to:

- Set out considerations for the design, planning and execution of works.
- Advise on the GNI procedures associated with works.
- Identify the measures to be taken to ensure the integrity of the gas network, and
- Assist in ensuring the safety of persons involved in the works.

5 FORMAL CONSENT

5.1 Work shall not be undertaken within a wayleave, installation, or within 3 meters either side of a transmission pipeline in a public roadway **without the prior Formal Consent of Gas Networks Ireland**.

5.2 GNI shall be consulted if work is to be undertaken within 10 meters either side of a transmission pipeline in a public roadway.

5.3 Formal Consent may be issued by GNI following receipt of the following items.

(a) Written agreement to implement the terms & conditions of this Code of Practice and any site specific requirements as advised by GNI.

(b) A method statement detailing the work which will be undertaken and the means of ensuring the integrity of the gas network.

(c) An indemnity as outlined in Section 5.

(d) Evidence of insurance cover to the level required by GNI.

5.4 Formal Consent may, in its simplest form, consist of a valid GNI Permit or a more comprehensive list of conditions.

5.5 Where Formal Consent has been issued, the Third Party shall notify GNI, 5 working days in advance of commencing the works.

6 INDEMNITY

It is an essential part of the granting of Formal Consent in the terms of this document that the Third Party shall indemnify GNI, its servants, agents and contractors against all loss, damage, expense, claims and actions incurred by or brought against GNI, its servants, agents and contractors in consequence of the provision of the new service and any works and activities associated therewith, or ancillary thereto.

7 ROLE OF GNI INSPECTOR

7.1 The primary role of the GNI inspector is to ensure the integrity of the gas network.

7.2 The GNI Inspector has the right to stop any work where in his/her opinion, the actions of the Third Party may adversely affect the integrity of the gas network.

7.3 The GNI Inspector shall inform the person in charge on site of his/her reason for stopping work and afford them the opportunity to address the issue to the satisfaction of the GNI Inspector.

7.4 A 'Corrective Action' shall be issued and recorded against the Third Party if the reason for stopping work is for non conformance to any, some or all of the following:

(a) This Document,

(b) Conditions of the Formal Consent,

(c) Conditions of GNI Permits.

7.5 The GNI Inspector reserves the right to inspect any plant or equipment and/or any or all documentation/certification associated with plant, equipment and/or personnel associated with the work and not permit the use of any such plant, equipment and/or personnel in the works if found to be non compliant.

8 DESIGN CONSIDERATIONS FOR PROPOSED WORKS

8.1 Services Crossing Transmission Pipelines

8.1.1 Where a new service is to cross over the transmission pipeline a clearance distance of 0.6 metres between the crown of the pipeline and underside of the service shall be maintained. If this cannot be achieved the service shall cross under the transmission pipeline with a minimum clearance distance of 0.6 metres.

8.2 Services Parallel to Transmission Pipelines

8.2.1 Pipelines within a wayleave.

No new service shall be laid parallel to the transmission pipeline within a wayleave.

8.2.2 Pipelines within a roadway.

Any new service running parallel to a transmission pipeline in a roadway may, in consultation with GNI, be laid with a minimum horizontal clearance of 1m (5m for High Tension Cables) to the side of the pipeline and may not be above or below a transmission pipeline within that distance.

Under certain circumstances consideration may be given to the relaxation of the above conditions on a case by case basis following prior consultation with GNI Asset Integrity, where the methods and safeguards to be employed have been considered and specified under a Safe Syetm of Work Plan and where the work is supervised by GNI on site.

8.3 Cathodic Protection

Cathodic Protection is applied to GNI's transmission network and is a method of protecting pipelines from corrosion by maintaining an electrical potential difference between the pipeline and anodes placed at strategic points along the pipeline.

Where a new service is to be laid and is to be similarly protected, GNI will need to carry out interaction tests to determine whether its own system is adversely affected. The cost of any mutually agreed remedial action shall be borne by the Third Party.

Should any cathodic protection posts or associated apparatus need moving to facilitate construction operations, reasonable notice shall be given to GNI.

8.4 Installation of Electrical Equipment

Where electrical equipment is being installed close to the transmission network, the effects of a rise of earth potential under fault conditions shall be considered by the third party and a risk assessment shall be submitted to GNI for its approval as part of the Formal Consent process.

8.5 Slabbing and other Protective Measures

8.5.1 Protective measures including the installation of concretes slab protection shall not be installed over or near to the transmission pipeline without the prior written consent of GNI.

8.5.2 Where consent has been given, a GNI Inspector must be present for the entire installation.

8.5.3 The material, composition, dimensions and method of installation of the proposed protective measure shall be agreed with GNI and shall form part of the submission for Formal Consent.

8.6 Changes to Depth of Cover

Any works, which will result in an increase or decrease in the cover of an existing Transmission Pipeline on completion of those works, shall be agreed with GNI in advance.

9 GENERAL CONSIDERATIONS FOR PROPOSED WORKS

9.1 GNI Protective Measures

Where protective measures are required by GNI, work shall not commence until such time as the GNI Inspector is satisfied that those measures meet the requirements of GNI.

9.2 Gaseous Atmospheres

Third Parties shall be mindful of potentially gaseous atmospheres and the generation of sparks, particularly indoors or when a change in wind conditions/direction occurs.

9.3 Inductions

Personnel involved in the works may be required to attend a GNI induction. Such a requirement shall, if required, be identified in the Formal Consent.

9.4 Method Statements

Method statements, where required, shall include risk assessments and be submitted to GNI for review no fewer than 10 working days in advance of commencing works associated with that method statement.

9.5 Identification of Transmission Pipeline Route

9.5.1 Before any work is carried out in the vicinity of existing transmission pipelines, GNI shall, with 3 working days notice, mark/peg out the transmission pipeline route.

9.5.2 The Third Party shall confirm the position of the pipeline before work commences.

9.5.3 A GNI Inspector shall be in attendance for the duration of the excavation of any trial holes necessary to confirm the position of the pipe.

9.6 Handheld Power Assisted Tools

Where the use of handheld power assisted tools is required in the vicinity of the live network, alternatives to electrically/battery powered tools should, in the first instance, be considered. These tools, as with others, by

virtue of their makeup generate a spark when activated/run and as such are in themselves subject to 'Hot Work' permits and associated procedures.

9.7 Hot Work

Hot works shall not take place within an installation, wayleave or within 3 metres either side of a transmission pipeline in a public roadway without the prior written consent of Gas Networks Ireland.

9.8 Induced Voltage

Where high voltage power lines run parallel to a transmission pipeline, there is potential to induce high voltages on the pipeline. To prevent injury, people working on exposed pipe in this area must have suitable protection against electric shock. GNI can provide advice in relation to suitable protection measures and a GNI Inspector must be present when any such work is being performed.

9.9 Construction Traffic

9.9.1 Construction traffic shall not be sited over or moved along or across a transmission pipeline without the prior written approval of GNI.

9.9.2 Construction traffic shall only cross a transmission pipeline at previously agreed and clearly marked crossing lanes.

9.9.3 All crossing lanes shall be fenced on both sides over a width to be specified by GNI. These fences shall be returned along the wayleave on both sides for a distance of 6m away from the crossing.

9.9.4 The crossing lane shall be protected by laying approved sleeper rafts or by protection made from other GNI approved materials, unless otherwise agreed in writing with GNI.

9.9.5 Construction traffic shall be operated at "dead slow" when using crossing lanes.

9.9.6 Suitable warning notices, drawing attention to the danger of not using the crossing, shall be erected and maintained in a clearly legible condition

9.10 Lifting

9.10.1 Any plant and/or equipment involved in lifting shall be certified fit for purpose.

9.10.2 Slewing across an exposed pipe shall not be permitted in any circumstances.

9.11 Storing Materials

9.11.1 Materials, including those excavated or stripped shall not be stored within a wayleave or Installation without the prior written approval of GNI.

9.11.2 Materials, including those excavated or stripped shall not be stored over a transmission pipeline.

9.12 Fires

Fires shall not be permitted within a wayleave or in the vicinity of an installation.

10 PRELIMINARY WORKS

10.1 Demarcation

Where work is being carried out parallel to a transmission pipeline within or immediately adjoining a wayleave, a demarcation line shall be erected, to the satisfaction of GNI, so as to clearly delineate the boundary between

the works site and the wayleave/pipeline

10.2 Surface Stripping

10.2.1 Cultivated/Unmade Ground

Where trial holes have established that sufficient depth of cover exists, light tracked vehicles may strip top soil to a depth of 0.25 metres using a toothless bucket.

10.2.2 Metalled Surfaces

Bituminous or concrete surface layers may be stripped to a depth of 0.3 metres by mechanical means.

Where the bituminous or concrete layer extends below 0.3m, only the use of handheld power assisted tools is permitted, and only in the presence of GNI.

11 EXCAVATIONS

11.1 Plant/Equipment Limitations

The following limitations shall be observed when working in the vicinity of a transmission pipeline.

(a) Hand dig within 1.5 metres of the pipeline.

(b) Handheld power assisted tools permitted beyond 1.5 metres of the pipeline.

(c) Mechanical excavators permitted beyond 3 metres of the pipeline.

(d) The use of 'chain trenchers' is not permitted within 3 metres of the pipeline.

(e) A mechanical excavator may not reach across a pipeline while working, i.e. cab at one side of pipeline with bucket (rock breaker, etc.) on opposite side of pipeline.

(f) A mechanical excavator shall not 'pull' towards the pipeline.

Under certain circumstances consideration may be given to the relaxation of the above conditions on a case by case basis provided that the excavation methods and safeguards to be employed have been considered and specified under a Safe System of Work Plan and the work is approved and supervised by GNI on site.

Factors that should be considered in this determination include, but are not limited to:

Pipeline size, pressure, wall thickness and location.
Excavator size (weight)
Operator competency and experience
Type and width of bucket/attachment (e.g. toothless)
Ground conditions (e.g. rock, soft ground etc.)
Weather conditions
Visibility, particularly of the machine operator
Machine orientation (e.g. working along the axis of the pipe)
Supervision arrangements

Note: Mechanical excavators must never be permitted to work closer than 0.5 meters from the pipeline.

11.2 Exposed Pipeline Protection

11.2.1 Once a pipeline has been exposed, it shall be immediately protected with timber or nylon batons at least 50mm wide and 25mm thick secured to each other with webbing at a distance of no greater than 10mm over the entire exposed area of the pipeline. The method of securing the webbing to batons should be such that any impact would not cause damage to the pipeline coating.

11.2.2 Where heavy gauge trench sheets are used in addition to batons to protect a pipeline, care should be taken while placing the trench sheets that buried stones, debris, etc. are not dislodged against the pipeline.

11.2.3 Depending on the type of work being carried out, ground conditions, etc., GNI may require additional measures.

11.3 Pipeline support

Where it is necessary to excavate below a transmission pipeline, the pipeline shall, during stages of the operation, and for the duration of the works, be supported to the satisfaction of GNI, by means of ratchet straps secured to a steel beam (or GNI approved equivalent) across the pit/trench. On completion, permanent supports shall, if necessary, be constructed to avoid future settlement.

12 BACKFILLING

12.1 The Third Party shall give GNI at least 2 working days notice of their intention to backfill below, above or adjacent to an existing transmission pipeline.

12.2 The Third Party shall afford GNI the opportunity and facility to inspect the coating on the pipeline and/or ancillary connections to the pipeline prior to backfilling.

12.3 A GNI Inspector shall be in attendance to monitor backfill around the pipeline during the whole of the backfilling operations.

Note: Any damage to the coating of a GNI transmission pipeline, no matter how apparently insignificant, shall be brought to the attention of GNI in order to carry out repairs. Minor damage to pipe coating and/or ancillary connections brought to the attention of GNI will be repaired free of charge.

13 ABOVE GROUND INSTALLATIONS

13.1 PPE Requirements

GNIs minimum PPE requirements for working in a live installation are hard hat, safety glasses, safety shoes/boots, gloves and Hi-Viz Jacket/vest. All clothing shall be anti static and flame retardant. Contact GNI Safety Department for information on compliance of PPE.

13.2 Above ground pipework with ancillary connections

Where construction plant and machinery are used in an AGI, all above ground pipework with ancillary control pipework, telemetry and/or instrumentation adjacent to the work, shall be protected on all sides by timber/metal hoarding, secured in place, a minimum of *2* metres from any extremity and extending vertically to the uppermost point of any pipe/equipment. A suitable point of access shall be provided in the hoarding. Where this 2 meter separation distance cannot be physically achieved due to the layout and size an installation, the works may be allowed to proceed but only where suitable precautions have been agreed and implemented to protect all relevant pipework and personnel. The risks and associated mitigating measures shall be idenitifed on the relevant risk assessment and method statement for the proposed works. The relavant details supporting any relaxation of this code of practice shall be recorded on the relevant general works permit or excavation

permit by the permit issuer.

Heras type fencing may be used where a distance of 6m from any extremity can be achieved.

13.3 Above ground pipework without ancillary connections

Where construction plant and machinery are used in an AGI, all above ground pipework which does not have ancillary connections adjacent to the work, shall be protected on all sides by heras type fencing a minimum of 2 metres from any extremity. A suitable point of access shall be provided in the fencing. Where this 2 meter separation distance cannot be physically achieved due to the layout and size an installation, the works may be allowed to proceed but only where suitable precautions have been agreed and implemented to protect all relevant pipework and personnel. The risks and associated mitigating measures shall be idenitifed on the relevant risk assessment and method statement for the proposed works. The relavant details supporting any relaxation of this code of practice shall be recorded on the relevant general works permit or excavation permit by the permit issuer.

13.4 Plant and Machinery

Petrol powered plant, machinery or vehicles shall not be permitted within the confines of an AGI.

13.5 General

This code of practice shall apply to all work carried out within an AGI.

14 SPECIFIC ACTIVITIES

This section details the precautions that need to be taken when carrying out certain prescribed activities in the vicinity of the transmission network. Consult GNI if you are intending to undertake one of the listed prescribed activities and/or you require further advice on whether the work that you are intending to undertake has the potential to affect the transmission network.

The table below shows, for some specific activities, the prescribed distances within which GNI shall be consulted.

Activity	Distance within which GNI shall be consulted
Any Excavation Actions	**10 m**
Piling	**15 m**
Surface Mineral Extraction	**100 m**
Land filling	**100 m**
Demolition	**150 m**
Blasting	**400 m**
Wind Farm	**2 times the turbine mast height from the nearest edge of a transmission pipeline**

14.1 Trenchless Techniques

Trenchless techniques must not take place within 10m of the GNI Transmission Network without prior consultation with GNI.

14.2 Piling

Piling shall not be permitted within 15 metres of the transmission network without an assessment of the vibration levels at the pipeline. Contact GNI with regard to peak particle velocity criteria and other precautionary measures.

Where ground conditions are of submerged granular deposits of silt and sand, an assessment of the effect of vibration on settlement and liquefaction at the transmission pipeline shall be made.

14.3 Surface Mineral Extraction

An assessment shall be carried out on the effect of surface mineral extraction activity within 100 metres of the transmission network.

Where the mineral extraction extends up to the transmission pipeline wayleave, a stable slope angle and stand-off distance between the transmission pipeline and slope crest shall be determined by GNI. The wayleave strip should be clearly marked by a suitable permanent boundary such as a post and wire fence, and where appropriate, slope indicator markers shall be erected to facilitate the verification of the recommended slope angle as the slope is formed, by the Third Party. The wayleave and slope needs to be inspected periodically to identify any signs of developing instability. This may include any change of slope profile including bulging, the development of tension cracks on the slope or wayleave, or any changes in drainage around the slope. The results of each inspection should be recorded.

Where surface mineral extraction activities are planned within 100 metres of the transmission pipeline but do not extend up to the pipeline wayleave boundary, an assessment, by GNI may be made on whether the planned activity could promote instability in the vicinity of the pipeline. This may occur where the transmission pipeline is routed across a natural slope or the excavation is deep. A significant cause of this problem is where the groundwater profile is affected by changes in drainage or the development of lagoons.

Where the extraction technique involves explosives the provisions of section 14.6 apply.

14.4 Land filling

The creation of slopes outside of the wayleave may promote instability within the vicinity of the transmission pipeline. An assessment should therefore be carried out on the effect of any land filling activity within 100 metres of a transmission pipeline. The assessment is particularly important if land filling operations are taking place on a slope in which the pipeline is routed.

14.5 Demolition

Demolition shall not be permitted within 150 metres of a transmission network without an assessment of the vibration levels at the pipeline. Contact GNI with regard to peak particle velocity criteria and other precautionary measures.

Where ground conditions are submerged granular deposits of silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the transmission pipeline shall be made.

14.6 Blasting

Blasting shall not be permitted within 400 metres of a transmission network without consulting GNI and making an assessment of the vibration levels at the pipeline. Contact GNI with regard to peak particle velocity criteria and other precautionary measures.

Where ground conditions are of submerged granular deposits of silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the transmission pipeline shall be made.

14.7 Pressure Testing

Hydraulic or pneumatic testing shall not be permitted within 8m of the transmission network unless precautions have been taken against the effects of a possible burst. These precautions may include the use of pre installation tested pipe, sleeving, barriers, etc., as agreed with GNI.

14.8 Seismic Surveys

GNI shall be advised of any seismic surveying work in the vicinity of a transmission pipeline. Contact GNI with regard to peak particle velocity criteria and other precautionary measures.

14.9 Wind Farm Development

GNI should be consulted if wind turbines are to be sited any closer than 2 times the proposed height of the turbine mast away from the nearest edge of a transmission pipeline or associated installation.

15 REFERENCE DOCUMENTS

IS328: Code of Practice for Gas Transmission Pipelines & Pipeline Installations.